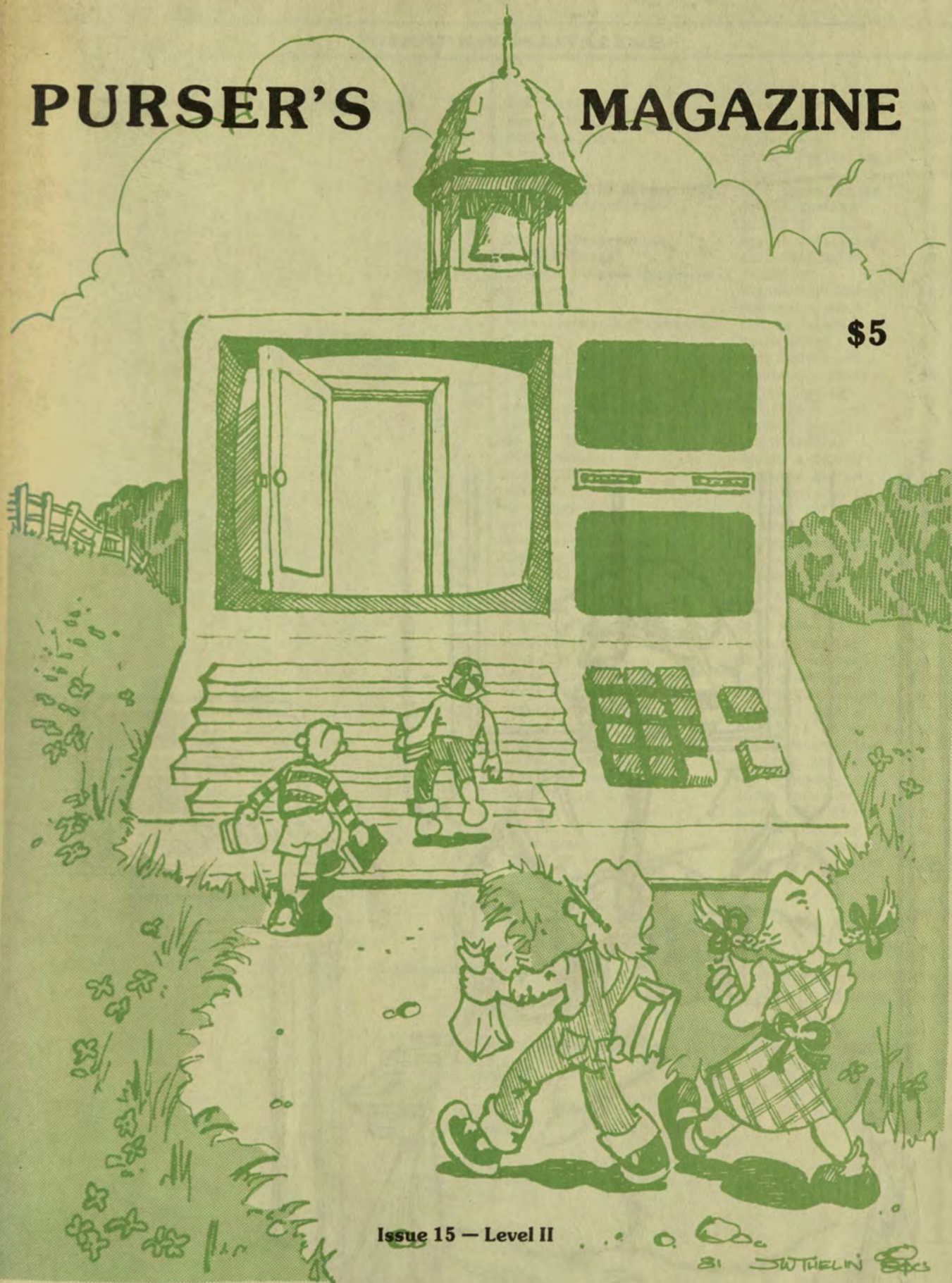


PURSER'S

MAGAZINE

\$5



Issue 15 — Level II

31 JUTHELIN



TABLE OF CONTENTS

ARTICLES	Page
Program Publishers	
Acorn Software	4
Advanced Operating Systems	6
Adventure International	5
Creative Computing	6
Hayden Publishing Co.	4
Instant Software	7
Program Authors:	
Robert Lafore, Interactive Fiction	14
Timothy Smith, Olympic Decathlon	11
Kathe Spracklen, Sargon II	15
Books	95
Letters	93

PROGRAM REVIEWS	Page
Program Name	Publisher
Algebra Billiards 2.3	Curriculum Appl.
ASCII November, 1980	ASCII
ASCII January, 1981	ASCII
Astrology	Radio Shack
Auto. Graph. of Functions	D. Modney
Backgammon	Hayden Publishing
Bartender	Tape-Tronics
Baseball Simulation	Comrec Systems
Batter Up!!	Hayden Publishing
Big Board	Ozark Mountain
Cashflow & Summary	McBride Accounting
CLOAD Magazine	CLOAD
Complex Mathematics	Hayden Publishing
Cribbage 2.0	Dynacomp Inc.
Cribbage & Checkers	Instant Software
Curse of Crowley Manor	Adventure Inter.
Data Smoother	Dynacomp Inc.
Dragonquest	Programmer's Guild
Dragons of Hong Kong	Interactive Fic.
Duel-N-Droids	Acorn Software
80-Index, Search & Scan	Hexagon Systems
Energy Audit	Instant Software
Engineering Mathematics 1	Hayden Publishing
Escape from Traam	Adventure Inter.
Everest Explorer	Acorn Software

Family Tree	Jensen Software	66
Family Tree Directory	DMLK Enterprises	68
Finder & CoGo	Disco Tech	30
Finplan	Hayden Publishing	28
Flextext-I	Apparat, Inc.	18
Floppy Doctor & Mem. Diag.	Meta Technologies	25
Football Simulation	Comrec Systems	62
GAPP	Robert G. Gallie	32
General Mathematics 1	Hayden Publishing	77
Golden Voyage	Adventure Inter.	50
Graphic Dungeon Treasures	Xelent 80	52
Gridiron	Hayden Publishing	60
Hexspell	Hexagon Systems	24
Home Energy Cost Savings	DEMI-Software	39
K-8 Math	Radio Shack	74
Lazy Writer 1.8	Soft Sector Mktg.	22
LDOS 5.0.1A	Galactic Software	16
Learning to Count Money	Mercer Systems	90
Lighting Calculations	Coolidge & Assoc.	38
Local Call for Death	Interactive Fic.	13
Market Tracker 3.0	H & H Trading	36
Microcosm I	Basics & Beyond	80
Microcosm II	Basics & Beyond	81
Microproof	Cornucopia Soft.	20
Mind Warp	Instant Software	58
MyChess	Programma	45
New Starship Voyages	Synergistic Solar	56
Olympic Decathlon	Microsoft	8
Othello	Instant Software	78
Paddle Pinball	Radio Shack	61
Plotting Graphs	Advanced Operating	69
Poetry Writing	Cybertext	73
Positional Mathematics	Turtle Computer	86
Prop	Program Manager	42
Roman Banquet	Curriculum Appl.	72
Royal Flush	Hayden Publishing	59
Satellite Tracking	Sat Trak Inter.	70
Savage Island, Parts 1 & 2	Adventure Inter.	50
Space Ace 21	Synergistic Solar	54
Stock Market Monitor	Galactic Software	33
Stock Tracker 2.4	H & H Trading	34
SuperScript	Acorn Software	19
Tenpins	Acorn Software	79
Tree2	Program Manager	67
Ultra-Trek	Galactic Software	57
Voyage of the Valkyrie	Advanced Operating	92

INDEX TO ADVERTISERS	Page
Adventure International	96

PURSER'S MAGAZINE
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TRS-80th ISSUE
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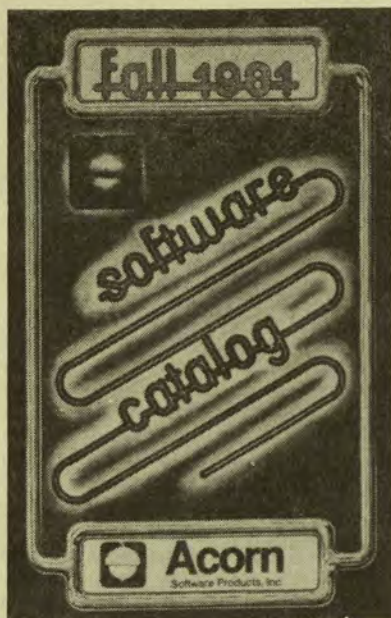
This issue was produced on a TRS-80th Model I, Level II, computer. Most of the issue was written using Radio Shack's SCRIPSIT, modified by Apparat's FLEXTXT-1, and printed

using Radio Shack's Line Printer IV.

If you have written a program you want to sell, read the articles in this issue about Timothy Smith, Robert Lafore, and Kathe Spracklen. Also read what some of the major software houses have to say about programs they buy.

The programs reviewed in this issue are a representative sample of many of the programs for sale. Choosing a program is a personal thing, so have fun.

thA registered trademark of The Tandy Corporation. ■



ACORN SOFTWARE PRODUCTS, INC.

634 North Carolina Ave. S.E.
Washington, DC 20003

In June we talked to Daphne Schor, President of Acorn Software Products, Inc., about Acorn's policies when program authors submit programs to them. Ms. Schor told us that Acorn receives a synopsis of a program before it is written about as often as they receive a completed program.

Frequently they can judge the marketability of a program from a synopsis. They can sometimes suggest the author try another software house if Acorn feels they cannot easily market the program. Acorn may only work with 10% to 15% of the programmers who have submitted a synopsis to them.

When the author sends them a finished program, it should be sent to Ms. Schor's attention. She said that Acorn would like to know as much about the program as possible -- what it is supposed to do and how it works. "Good documentation can sell a program," said Ms. Schor. She added that sometimes Acorn will receive a cassette with no information about whether it is a system or BASIC program or even which computer it is for. Of course a program such as this is returned with no attempt to look at it.

Acorn looks for programs that are selling well at that particular time. Arcade games are an example. However, all programs are compared with others on the market to look for better features in the one submitted.

They look at how much support a program will require, particularly business programs. Game programs sell better if one or two players can play it at the same time -- a game limited to a single player does not sell nearly as well. Acorn looks for good programming and easy marketing. They want programs for the TRS-80 Model I and III, Apple II, and Atari. Many of their current programs for the TRS-80 Model I are being translated for the other computers.

It may take from two weeks to many months to get a program on the market. If the program is an excellent arcade game, finished, with good documentation, and it is close to Christmas, it may take only two weeks to start selling it. If it is a serious program, such as their language series, it may take many months of writing and rewriting the program before it can be sold.

Until this fall, Acorn Software sold primarily through dealers, although they did sell directly to the public if asked. They have now published a catalog of their own and are handling more direct sales. They pay a quarterly royalty based on the wholesale price, and have a form letter they send to prospective authors with brief information.

Ms. Schor said that Acorn's authors are apparently happy doing business with them. Several authors have brought more than one program to Acorn to market for them. One of these authors is John Allen, who writes in machine language and is the author of PINBALL, TENPINS and BASKETBALL. Another is the team of Andrew and Cindy Bartorillo, authors of Acorn's language series. The Bartorillos are presently rewriting SPANISH for the Atari computer which may be completed by the time you read this. ■



Acorn
Software Products, Inc.

634 North Carolina Ave. S.E. Washington, D.C. 20003 (202) 544-4008

June 12, 1985

Dear Mary Ann:

Thank you for your letter concerning Acorn's policy toward publishing authors' works.

Acorn has no intention of publishing authors' works. We are not a publisher. We are a software house. We are not a publisher. We are a software house.

If you feel your program is likely to be of interest to us, please send us a brief description of it. We will then decide whether we want to publish it. We will then decide whether we want to publish it.

If you feel your program is likely to be of interest to us, please send us a brief description of it. We will then decide whether we want to publish it. We will then decide whether we want to publish it.

When a program is accepted, we reserve the right to publish it. We reserve the right to publish it. We reserve the right to publish it.

I hope this has answered all your questions. We are interested in publishing for the future. We are interested in publishing for the future.

Sincerely,

Daphne Schor

President



HAYDEN BOOK COMPANY, INC.

50 Essex Street
Rochelle Park, NJ 07662

On May 7, 1981, we asked Mr. Bill Madaras, Public Relations Section of Hayden Publishing Co., about Hayden's policy on program authors. Mr. Madaras wrote the following for us about the Hayden publishing process for books and software:

A budding writer or software enthusiast may feel that sending out a book manuscript or program to a publisher is similar to a beginning swimmer wading into the English Channel. Some of the best advice an acquisition editor can offer one who seeks fame and fortune with a typewriter or microcomputer is practice, practice, practice.

"Naturally it's better if someone has had some articles published before (writing a book), but it's not always necessary," says Karen Nelson, Hayden Book Company's book acquisition editor.

Steve Radosh, Hayden's acquisition editor for software games, offers similar advice. "It makes sense that the more experience someone has, the better their program will be, but that's not always the case," Radosh says many would-be authors frequently call or write about "great ideas" they have for a program. "That's often about as far as it goes. I don't accept unsolicited ideas. The product must be finished," says Radosh.

Radosh goes on to suggest that an author who wants to write software programs contact an editor and find out what is hot in the market or what the market needs. "This way, you can be sure your program will at least be marketable. You then have to make sure it's a good program," says Radosh.

Nelson says there are three things required from an author before a book can be seriously considered. First, a prospectus, two or three pages describing the book's content and market, must be submitted. Next, a detailed table of contents, including chapter subheadings, is needed. The final item required is a chapter sample. However, in some cases there are exceptions to the chapter sample. "In the case of writers who are well known, the sample chapter is not necessary," says Nelson.

The criteria for software is different. The program itself is submitted on cassette or disk. The prospectus, a table of contents and a sample chapter are not needed. "Before I consider any software, I look to see if we have one already. We can't carry products that compete against each other," says Radosh. If the program is a game, other features are also considered, such as how easy the game is to win or whether the game is interesting to look at on the screen. "I try to ask myself the same questions a customer buying the game would," says Radosh.

The next step along the road to being published is for the editor to receive the final product and decide if any revisions need to be made. The book or program may be returned to the author with suggestions for revisions. "In some cases a project can be 3/4 completed and we will accept it, but only if it's very, very good," says Radosh.

At this point, an author may ask for an advance against anticipated royalties. Radosh says that the amount is decided by need since the author may have to purchase hardware or software to complete the program. An author could also have to take time off from work to meet a deadline and an advance is used in lieu of a pay check.

After the author is satisfied with the manuscript, the prospectus, table of contents and sample chapter are sent to a reviewer who generally specializes in the field that the book is concerned with. The process is similar for software and takes about one month. Radosh reviews many of the almost two dozen programs he receives monthly, himself. However, a game will be sent to a technical editor for review if he is unfamiliar with the specifics of a particular game.

A cost analysis is then done on a book or program. Radosh says he

▷ (continued on page 14)



ADVENTURE INTERNATIONAL

P. O. Box 3435
Longwood, FL 32750

During May, we talked with Mr. Russ Wetmore of Adventure International about their policies for prospective software authors. Adventure International has an Author Package which is sent to prospective authors, and Mr. Wetmore sent us a copy of the package.

The Author Package contains a copy of their standard contract. This contract shows that Adventure International pays a royalty of 7% of the retail price if the program is wholesaled to other dealers, and 15% of the retail price if Adventure International sells the program at retail. The royalty checks are sent monthly to the author. However, Mr. Wetmore told us that their firm would possibly negotiate a higher royalty with an outstanding author such as Leo Christopherson.

They prefer programs in a finished form, with fairly complete documentation. However, if a program shows a great deal of promise, they may work with a very few of the authors on improvements. Adventure International conducted an extensive advertising campaign early in 1981 for new authors. They now receive about 100 programs a month, out of which they have accepted 7 in two months.

They look at a program through

the user's eyes. If the program holds their interest, it may sell well. "Sometimes you can walk through here after working hours and see our people still playing a new game," Mr. Wetmore says. This is one indication that the program may be a winner.

Adventure International is also looking for talented authors to convert successful programs between the Apple II, TRS-80, and Atari 800. These authors are paid a monthly royalty based on the royalty paid to the original program author. The prospective author is sent a sample program to convert. If the author shows high quality and quick turnaround, he will be sent actual programs to convert.

Because games are presently top sellers on the market, Adventure International has a reputation for games. However, they do accept other programs. Adventure International is now publishing MAXI MANAGER, a data base program for the TRS-80, since they felt it was better than any of the others on the market. They turn down many utility programs since there are others for sale which are just as good. They prefer to publish programs which will bring the author at least \$500 a month in royalties.

Mr. Wetmore says that many of the better programmers feel that more money can be made by starting their own business. One of the best examples is Scott Adams himself, the founder of Adventure International. Mr. Adams began by writing and selling his own programs. Now he has advanced to owning his own firm and can concentrate on selling the cream of the game programs. Adventure International is dropping their less expensive programs -- they are concentrating on the best. ■



Peripherals
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CATALOG

creative
computing

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MICROSYSTEMS

SYNC

CREATIVE COMPUTING

39 E. Hanover Avenue
Morris Plains, NJ 07950

Mr. George Blank, Editorial Director of Creative Computing, told us in May of some of Creative Computing's policies when authors submit programs to them. Creative Computing publishes the monthly "CREATIVE COMPUTING" magazine and also sells programs and related computer items. Mr. Blank said that they have an Author's Guide for the magazine but not a printed author's guide for programmers.

When a programmer talks to them about a program, they do not want ideas -- they want a finished program. They prefer that the program and the documentation be submitted on disk rather than tape. If the program is on tape and it does not load after two or three tries, it is returned to the programmer. They do not go to extraordinary lengths to look at the program, no matter how good it might have been. If the documentation is submitted on disk, they can typeset the written material directly from the disk. Otherwise, they ask that the documentation be typed double spaced.

When they receive a program, they look at it for marketability and how much support the user will need. Because of the support needed, they do not handle business programs such as accounting or inventory. They do want programs such as games, educational programs, and professional programs for personal use such as programs for the stock market, graphing, and scientific plotting.

Creative Computing receives two or three programs a day but they only accept two or three a month. Eight criteria are used when they evaluate software:

1. Originality.
2. Ease and convenience of use.
3. Program polish.
4. Instructions and help hints in the program which are complete and easy to understand.
5. Well-written and complete documentation.
6. Effective use of the computer's special features, such as graphics, sound, and color.
7. More than one level in games and educational programs.
8. Marketability.

They handle programs for the Apple, TRS-80, Radio Shack's Color Computer, Atari, Pet, VIC20, Heath/Zenith H89, and the Exidy Sorcerer.

Their royalty schedule is normally 10% of the retail price. The retail price is used even if the program is sold wholesale to other firms. They pay the royalties semi-annually as copies of the program are sold. They may pay an advance royalty based on the first 100 sales.

Mr. Blank says, "There is money to be made by experienced programmers who can write good, saleable programs." He himself is an example, since he receives about \$300 a month in royalties for programs he has written. George Blank is the author of the popular SANTA PARAVIA AND FIUMACCIO, a simulation of a 15th Century Kingdom.



PLOTTING GRAPHS FOR VIDEO DISPLAY

- Histograms • Cartesian Plots
- Semi-Logarithmic Plots
- Log-Log Plots • Polar Plots

BY HONARD L. BROWN



DATA SYSTEMS (OPTIONAL DISPLAY)
PLOTTING GRAPHS
FOR VIDEO DISPLAY (F56004)

VOYAGE OF THE VALKYRIE

ADVANCED OPERATING SYSTEMS

FOR VIDEO DISPLAY (F56004)

ADVANCED OPERATING SYSTEMS

FOR VIDEO DISPLAY (F56004)

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ADVANCED OPERATING SYSTEMS

450 St. John Road, Suite 792
Michigan City, IN 46360

In April, 1981, we received a letter from Mr. Palmer T. Wolf, Software Acquisition Manager of Advanced Operating Systems. Mr. Wolf told us that his job is to hunt for good software to publish for their new firm. His letter to us states in part:

"My title here is Software Acquisition Manager, and, as the title infers, it is my job to hunt for good software to publish. I know you come in contact with some pretty hot stuff. I would like the opportunity to bid on rights to publish some of your software. I hope you will send some authors my way."

"I found that a major problem with most other software houses today is the wait the authors have to experience before receiving their first royalty checks. I expressed this feeling to the people at ITT and they have authorized me to be able to pay an advance on royalties. This should be a real benefit to those who have had to wait so long in the past."

"Howard W. Sams & Co. has over 150 reps out in the field now selling technical books to computer and electronics stores. These same reps will be handling our software as well."

"I will be looking for good advanced games (arcade type), utilities, and eventually education and business software. We will support all the popular micros: TRS-80 (I, II, III, and Color), Apple, Atari, etc. We are offering a 20% royalty on monies we receive for the program."

Mr. Wolf went on to say in his letter of May 18 that "As you know we are a new company and need exposure to head the better authors our way. We have already had over 50 submittals in the six weeks we have been in existence. Top authors such as Jake Commander, Leo Christopherson, The Programmer's Guild, and Bill Schroeder have all submitted their better programs to us. They see the potential Advanced Operating Systems has for marketing software. We have accepted, with contracts, about 6 programs for publication. Some of these are good game software, some utilities, and some are business programs. We prefer our submittals to be as complete as possible. The more complete the program, the more chance it has for being accepted. We require software to be submitted on magnetic media along with enough documentation for us to be able to run the program properly to get a good evaluation. The documentation does not have to be ready to publish -- we will do the coloring and our documentation editors will get it into final form."

"We figure our royalties, on the average, at 20% of our net receipts. We will be paying our royalties monthly. Our marketing direction will be through computer and electronics stores. We will be doing some direct sales through our catalog and magazine advertising. With some programs dealing in a specific field, we will advertise in respective trade magazines."

"Advanced Operating Systems is owned by the Howard W. Sams & Co., Inc., of Indianapolis, an ITT company. It is located in Michigan City, Indiana. Joe Alinsky, the Director, came from Programma of California, and Palmer T. Wolf, the Software Acquisition Manager is from Instant Software in New Hampshire."

Palmer T. Wolf
Software Acquisition Manager
Advanced Operating Systems



INSTANT SOFTWARE

Peterborough, NH 03458

Mr. Scott Spangenberg of Instant Software told us in May of some of the processes at their firm when a programmer talks to them about handling a new program. They frequently receive inquiries from programmers who have an idea for a program and want to know if it is saleable before spending the time to write it. They will try to advise the author but will also tell him if his program is similar to one they are already selling, so he can try to sell it elsewhere.

Instant Software receives as many as 35 programs a week. Of these, about 50% are returned to the author after a first look at the program. They will work with the authors of the other 50%. Only about 10% of these are eventually saleable.

When a program is submitted to them, Instant Software asks that the author also send them the design or purpose of the program, the audience for whom it is intended, a listing of the variables if the program is in BASIC, and instructions on how to make the program do what it should. They have a documentation staff who will go through the program later, look at it through the user's eyes, and help on the written material. Instant Software also asks that the author send them a statement assuring them that it is the author's program before they sign a contract with him.

They take an initial look at the program for any potential. They look for style and technique, and determine the market for that type of program. If it shows potential, they send a review copy of the program to three or more Associate Editors who are knowledgeable about the subject matter. If there are conflicting reviews from the Associate Editors, the staff at Instant Software takes a

further look at the program in order to condense the reviews. Then copies of these reviews are sent to the author with recommendations for improvement. They will work with the author to improve the program to the point where it is saleable. Instant Software's policy is to treat this as a "learning process for the author."

Sometimes the program is a good one but could not be sold without companion programs. This is particularly true with games. In this case, the author's program may be held waiting for other programs to be included in the same package. If the program is unique but needs a complementary program to round out the package, they may ask the author to write a second program to go with the first. It may take as long as a year in some cases from the time the author first submits a program to the time it is marketed.

The royalty depends on the program. If the program is sold alone, or as a package of programs all by the same author, the author could receive royalties of as much as 20% of the gross receipts. If the package contains programs by more than one author, the royalties are split by merit, value, and complexity of each program.

Instant Software also may distribute programs for smaller software houses who do not want to or cannot market their own programs. In this case, the royalties can be paid to the software houses, or Instant Software will distribute it to both the software house and the author. Some of Instant Software's programs are written by their own staff members during their free time. These programs are treated the same as those by outside authors.

If a program is well done and has been selling well for one computer, they may convert it to a different computer. Most of their programs are for the TRS-80, Apple, and Pet, in that order. They do sell a very few for the TI, Atari, and North Star. Eventually they want to expand to programs for the Heath/Zenith and Exidy Sorcerer as well.

Mr. Spangenberg offers a suggestion to programmers: "Do not write programs to sell. Write programs to solve problems." These programs have a much better chance of selling. If a programmer can write a GREAT program, not merely a good one, then there is money to be made. The best-selling programs are applications programs and some games, particularly arcade type, adventures, and simulations. ■



OLYMPIC DECATHLON

Level II 32K disk
by Timothy W. Smith
from Microsoft
400 108th Ave. N.E., Suite 200
Bellevue, WA 98004

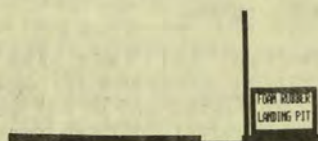
You can take part in the OLYMPIC DECATHLON with this program. You can run, jump, and throw. You learn hand-eye coordination and timing by participating in the events.

OLYMPIC DECATHLON is a series of ten sporting events. The "athlete" can take part in the Decathlon of all the events or practice any of the individual events. Up to eight players can take part at one time. Each player earns points by comparing his performance with a set standard instead of with another player. This makes the program as much of a challenge for one player as for several. If you are practicing,

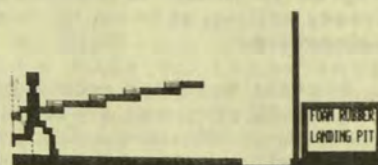
you are told what your score would be if you were in the Decathlon. In the Decathlon itself, you may request your scores after each event or go right on to the next event. The series starts with easier events and works up to very difficult ones.

The track races start with a 100-Meter Dash. Two Decathlon players can compete at the same time, or one player can practice. A race track is shown on the screen, with the start and finish lines marked. Pressing separate keys controls the movement of the left and the right foot. You walk your marker up to the start line. After "On your mark," "Set," "GO," you race to the finish line. If you start running before the "GO" signal more than twice, you will be disqualified. Your time is shown while you are running. The 400-Meter Dash is similar but you must go all the way around the race track. Your marker takes the curves automatically -- you only have

USE THE (+) AND (-) KEYS FOR RUNNING.
USE THE (A) KEY FOR THE PLANT (CLOSERING THE POLE INTO THE BOD).
USE THE (P) KEY TO PULL YOURSELF UP INTO A HANGSTAND ON THE POLE.
USE THE (CLEAR) KEY TO PUSH OFF FROM THE POLE (LET GO).
YOU MAY START YOUR APPROACH RUN WHEN READY.
SPEED = 0 CM/SEC
DISTANCE = 30 M



SPEED = 627 CM/SEC
DISTANCE = 6 M



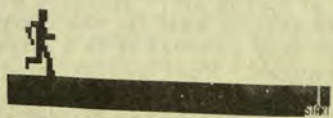
SPEED = 508 CM/SEC
DISTANCE = 3 M



POLE VAULT

PLEASE TAKE YOUR PLACE AT THE STARTING LINE.
USE THE (1) AND (2) KEYS FOR RUNNING (LEFT FOOT AND RIGHT FOOT).

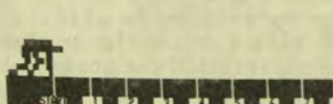
-TIME-
8.8



ON YOUR MARKS.
SET.



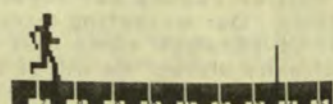
-TIME-
8.8



ON YOUR MARKS.
SET.



-TIME-
10.6



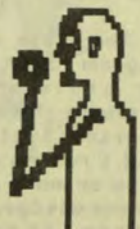
110-METER HURDLES

YOU MAY NOW TAKE YOUR LAST TRIAL.
HOLD DOWN THE (+) KEY TO EXTEND THE ARM WITH THE TRICEPS.
HOLD DOWN THE (P) KEY TO LIFT THE ARM WITH THE SHOULDER
MUSCLES.

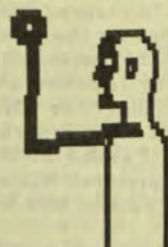
HEIGHT = 1.5 M
DISTANCE = .8 M



HEIGHT = 1.5 M
DISTANCE = .8 M



HEIGHT = 1.7 M
DISTANCE = .1 M



SHOT PUT

to move fast. The 1500-Meter Run makes you go around the track four times. But this time, you must use four keys to guide your marker's direction of travel. You get a little practice because you must move your marker around one curved end of the track up to the start line. The speed is pre-set. Your speed increases as long as you don't bump into a wall or the other runner. If you do bump into something, your marker slows down. You must use the direction keys to change course, preferably before you bump into something.

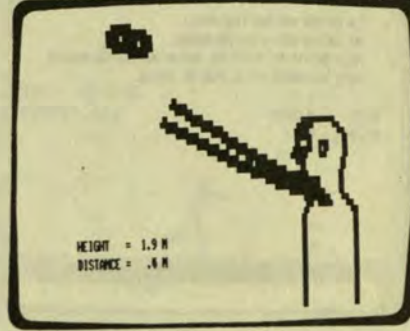
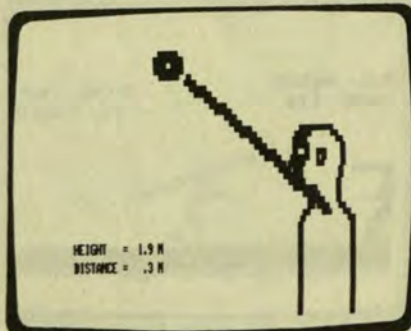
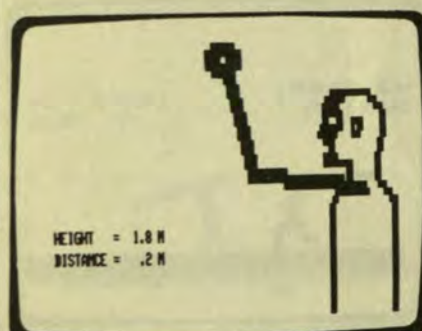
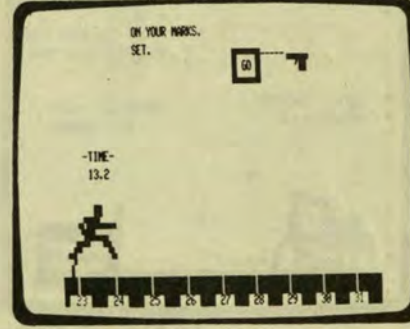
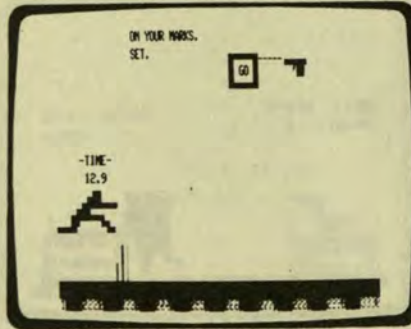
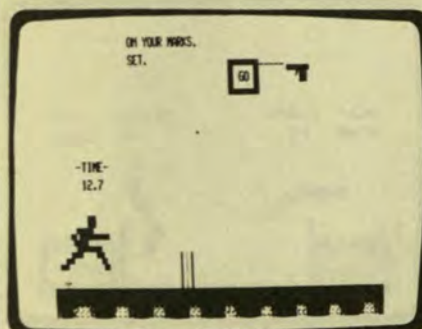
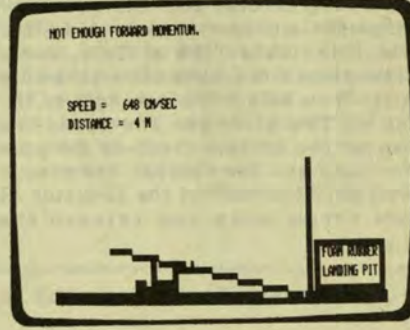
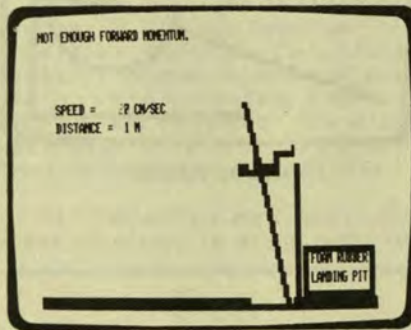
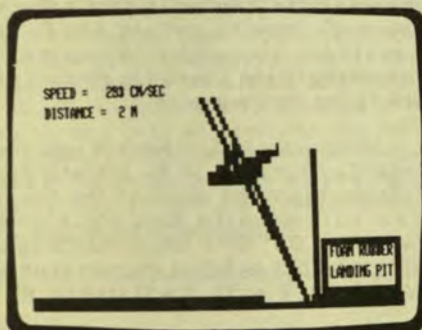
The jumping events start with the Long Jump. A side view of the track, the take-off line, and the athlete is shown. You select the speed of the run-up and press a key to start running. You are told the distance to the take-off line as the athlete approaches it. As he gets close to the take-off line, he appears on the screen. You press one key to plant his take-off foot before he gets to

the line, and another key to jump as his body starts to tilt forward. You are disqualified if he crosses the line before you plant his take-off foot. You are also disqualified if he doesn't jump in time -- he will fall flat on his face instead of jumping forward. After the jump, you are told the degree angle and the distance of the jump. If the athlete jumped too high and not very far, you are told "This is a broad jump, not a high jump." You have three tries and only your best score is counted.

The High Jump is similar, but your timing and angle must be right to jump for height instead of distance. Otherwise the athlete may not make it over the crossbar. If he jumps the crossbar within three tries, you can have it raised from the starting height of 135 cm to try for a higher score.

The Pole Vault, although similar, is more complicated. The crossbar is

placed at a height of 300 cm unless you select a greater height. You select the length of the athlete's run-up rather than a set speed. The longer the run-up, the faster the speed you can attain, but the harder it is to judge the timing. You also select the height to grip the pole. The shorter the grip, the less speed needed, but the grip needs to be high enough for the athlete to clear the crossbar. As the athlete approaches the crossbar, you press a key to plant the end of the pole into the box in front of the crossbar. As the pole tilts forward, you press a key to pull the athlete into a handstand on the pole. You press another key to release the pole, so the athlete continues on across the crossbar. If you wait too long to plant the end of the pole, you are disqualified because you missed the vaulting box. If you don't have enough speed, the athlete falls back down. If you don't start the handstand soon enough, the athlete won't clear the crossbar. If



you don't release the pole at the right time after the athlete is in the handstand, he will fall straight down onto his head.

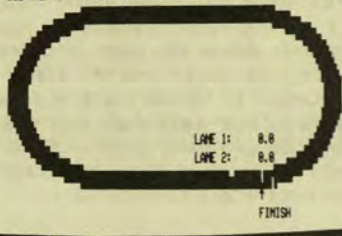
The 110-Meter Hurdles presents a challenge. Your athlete is scored for accuracy and speed as he races along a track, jumping the hurdles as he approaches them -- or knocking them down if you don't make his stride long and high enough.

The Shot Put requires that your athlete extend his arm using his triceps muscle and lift his arm with his shoulder muscles to throw the put overhand as far as he can. If you extend his arm too far down, the put will fall to the ground. If you extend his arm straight up, the put will be tossed high into the air and fall down beside or behind him. You must find the right combination of lift and extension in the arm movements to throw the put the farthest distance.

In the Discus Throw, you see a top view of the safety cage, the throwing circle, and the boundary lines for a proper throw. A square block indicates the athlete, and a line shows his extended throwing arm. You select the strength of the turn. The stronger the turn, the faster the athlete revolves and goes forward and the farther the discus will go. You control the direction of the throw when you release the discus.

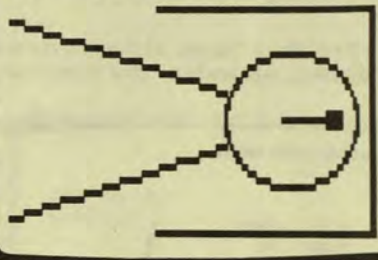
The Javelin Throw is similar to

YOU WILL BE RUNNING IN LANE 1.
PLEASE TAKE YOUR PLACE AT THE STARTING LINE.
(THE STARTING LINE FOR LANE 1 IS THE SAME AS THE FINISH LINE).
USE THE (1) AND (2) KEYS FOR RUNNING (LEFT FOOT AND RIGHT FOOT).



RACE TRACK

PRESS THE SPACE BAR TO BEGIN TURNING.
PRESS THE ENTER KEY TO RELEASE THE DISCUS.



DISCUS THROW

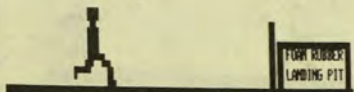
the Pole Vault. As the athlete comes into view, he holds a javelin beside him. Before he reaches the throwing line, you press a key to tilt the javelin into position and, at the right time, another key to throw it. If you start the javelin's tilt too far back, it will point to the sky before you want to release it. If you release it while it is pointing too high or when the athlete is too far back from the throwing line, the javelin will not go far enough.

The winner of the Gold Medal in the OLYMPIC DECATHLON is the player with the highest total score. The maximum score for each event is 1,000 points. Sometimes you can be lucky and get a high score in one event. But practice is the only way to really improve your score.

This program makes excellent use of the TRS-80's limited graphics. Even if you are not physically a good athlete, you can still improve your coordination and have the feeling of doing well. The only very minor imperfection I found is that unless you know how to answer the first question, you will find yourself competing in the Decathlon instead of practicing single events.

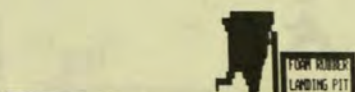
I think my favorite event was the Pole Vault -- even if my athlete did fall on his head most of the time. You will have to find your own favorite. OLYMPIC DECATHLON is a program that belongs in everyone's collection. Buy it! You'll like it! ■

SPEED = 660 CM/SEC
DISTANCE = 4 M



HIGH JUMP

SPEED = 660 CM/SEC
DISTANCE = 1 M

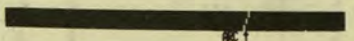


SPEED = 660 CM/SEC
DISTANCE = 0 M



YOU MAY NOW TAKE YOUR FIRST TRIAL.
USE THE (+) AND (-) KEYS FOR RUNNING.
PRESS THE (1) KEY TO TILT THE JAVELIN INTO THROWING POSITION.
PRESS THE (ENTER) KEY TO THROW THE JAVELIN.

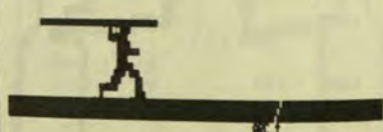
SPEED = 0 CM/SEC
DISTANCE = 35.0 M



SPEED = 620 CM/SEC
DISTANCE = 6.0 M



SPEED = 620 CM/SEC
DISTANCE = 3.4 M



JAVELIN THROW

TIMOTHY W. SMITH

Author of
Olympic Decathlon

OLYMPIC DECATHLON is one of the most popular and best written programs currently available for the TRS-80 and Apple computers. It is reviewed separately in this issue. We thought you might like some information about the author so we wrote him. This is what he replied:

"I left my job as Senior Systems Programmer and Group Leader at Burroughs Corporation in August 1979 to begin a career as a free-lance author of personal computer software. I knew I was taking a big gamble financially. The weekly paychecks would stop, and I knew it might be twelve months or more before I would receive any income from my free lancing. But I had the feeling that writing programs for personal computers was what I had wanted to do all my life (even though the possibility of doing such work has only existed for the last few years). Fortunately my wife was willing to make the necessary sacrifices to give my dream a chance -- and we took the plunge."

"I spent ten months writing the TRS-80 version of 'Olympic Decathlon.' Then it took another six months to get it published and on the market. Eating was made possible by a nice royalty advance from Microsoft and my wife's income, supplemented by a few personal loans."

"Everyone who tried 'Olympic Decathlon' liked it, so I decided to do another version of the game for the Apple computer. This version also took ten months to complete. It took just as long as the first version because the microprocessors and the graphics are both quite different on the two machines. Both versions had to be programmed in assembly language to achieve fast and smooth animations."

"On the strength of these two versions of 'Olympic Decathlon', the people at 'Creative Computing' magazine decided to honor me with the Creative Computing Award of 1980. I was delighted. The award was presented to me at the 6th West Coast Computer Faire in April 1981."

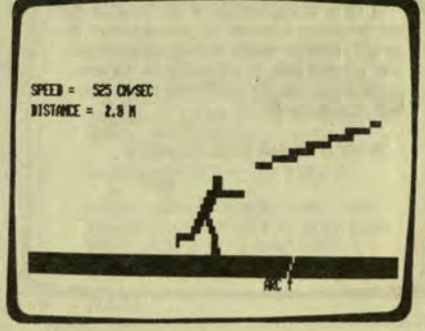
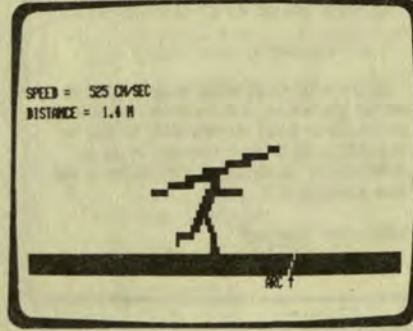
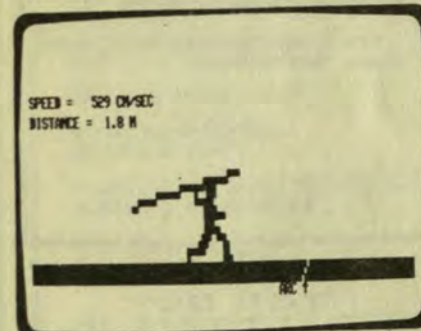
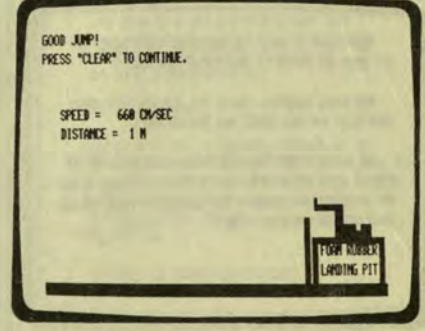
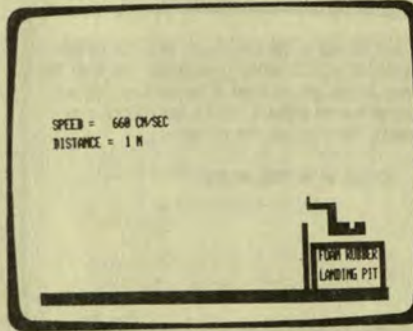
"At the same time I was in the midst of trying to decide what my

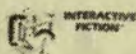
next project would be. After working on nothing but 'Olympic Decathlon' for almost two years I was eager to get started on something new. But the award along with glowing reviews in several publications and the strong encouragement from Microsoft convinced me it was worth doing versions for other machines. By next summer it's possible there will be as many as six different versions of 'Olympic Decathlon', making it available for nearly all of the popular microcomputers. To accomplish that I have the help of independent software companies in addition to my own employees."

"Within the next year I expect to begin a new project, which will probably be an information storage and retrieval system. I feel that the current state of the art in data base systems and programming languages leaves a lot to be desired. They are still primarily machine oriented and not people oriented. Major breakthroughs are necessary before the age of the 'personal' computer will really have arrived."

Timothy W. Smith

■





INTERACTIVE FICTION
LEVEL II 32K disk
by Robert Lafore
Box 603
Inverness, CA 94937

DRAGONS OF HONG KONG
Level II 32K disk
by Robert Lafore
Box 603
Inverness, CA 94937



DRAGONS OF HONG KONG

Level II 32K disk
by Robert Lafore
from Interactive Fiction
Box 603
Inverness, CA 94937

ATTENTION! Mystery story fans -- this program is for you. If you like whodunits and would like to take part in one, try DRAGONS OF HONG KONG.

You take an active part in this story. Your decisions have a vital bearing on the plot. There are at least six different endings, and each depends on what you do at a critical

"DON'T GIVE US THAT. THE OLD GEEZER HAS A DAGGER IN HIS CHEST AND YOU'RE THE ONLY PERSON NEAR HIM."

THEY MOVE, GLOMERING, TOWARD YOU, ROLLING THEIR HANDS INTO FISTS NOT MUCH LARGER THAN BOILING BALLS.

YOU GLANCE BEHIND YOU. YOU COULD MAKE A BREAK FOR THE SERVICE DOOR, BUT RUNNING FROM THE SCENE OF A CRIME IS NOT THE SUREST WAY TO ESTABLISH YOUR INNOCENCE. MAYBE YOU CAN TALK YOUR WAY OUT OF IT. YOU _

THE FBI ON THE OTHER HAND MIGHT BE MORE PATIENT AND MIGHT HAVE THE RESOURCES TO CHECK OUT THE PROFESSOR'S STORY. OR-- YOU KNOW A REPORTER. MAYBE HE COULD GET YOUR SIDE OF THE STORY INTO PRINT BEFORE YOU TURN YOURSELF IN. AND THERE IS YOUR PRIEST, A MAN WITH STATURE IN THE COMMUNITY, WHO MIGHT INTERCEDE FOR YOU.

YOU STOP AT A PAYPHONE AND DIAL THE NUMBER OF _

moment. You can get killed at least two different times. You can win or lose either of two girls. You can become a rich hero. You can smash an evil plot. Or you can become a "might-have-been" and never know the ending.

The story starts by asking your name and your favorite expletive. Then you enter Al's Bar and meet Professor Goodman. The Professor tells you he knows inflation is caused by the Gregarine Order in Hong Kong, headed by Akbar D'Evile. Then the Professor is killed.

If you survive and go to Hong Kong, you meet a blond Wyoming gal named Daisy Rae and a black-haired oriental girl named Francine Tang. You become friendly with one of them. Then you spot a member of the Gregarine Order and chase him.

If you survive the chase, you think of a way to contact Akbar

SO YOU CANNOT GO BACK TO YOUR OLD LIFE. THE POLICE WILL BE WATCHING YOUR HOUSE, YOUR CAR, EVERYTHING. YOU FIGURE THERE ARE TWO OPTIONS. YOU CAN GO UNDERGROUND, USE A NEW NAME, START A NEW LIFE. OR YOU CAN HEAD FOR HONG KONG AND TRY TO FIND THE GREGARINES AND THIS MASTER TRANSACTION FILE. THAT WOULD CLEAR YOU, ASSUMING THE GREGARINE ORDER IS NOT MERELY A FIGMENT OF THE PROFESSOR'S IMAGINATION.

YOU MAKE UP YOUR MIND. YOU WILL _

WHAT YOU NEED IS SOME KIND OF A BIG BREAK, BUT YOU WILL SETTLE FOR A LITTLE FRIENDLY COMPANIONSHIP. YOU'VE MET TWO WOMEN IN HONG KONG AND EITHER OF THEM WOULD MAKE YOU LOOK BETTER THAN YOU DESERVE IF YOU WERE SEEN WITH HER ON THE STREET. DAISY RAE, OR FRANCINE TANG?

YOU PICK UP THE PHONE AND DIAL _

"DO YOU LIKE BEING HERE WITH ME?" SHE ASKS YOU.

"I LIKE IT VERY MUCH

THE FACT IS THAT YOU ARE HALF-WAY IN LOVE WITH HER. YOU KNOW THAT SOON THERE WILL BE NO TURNING BACK: YOU WILL BE TOO INVOLVED WITH HER TO KNOW WHAT YOU'RE DOING. BUT RIGHT NOW THERE IS STILL TIME TO BACK OFF EMOTIONALLY, TO STAY JUST FRIENDS WITH HER. OR--WHY NOT?--TO SERVE HER, FOR THE PURE ANIMAL PLEASURE OF IT.

(PRESS -ENTER- TO CONTINUE)_

D'Evile. Hopefully you live long enough to infiltrate the Gregarine headquarters to try to recover information from their master files. You have a chance to become a hero and perhaps win your girl.

There are many plot twists to this story. A decision you make early in the story can determine how the plot goes much later on. Something simple that you say or do may change the course of the story. There are many subplots. Even after you have been through the story several times, you want to start again and try different answers along the way. There may be more than one way to reach the same ending. You'll have to find out for yourself. As for me, I am going to try again.

DRAGONS OF HONG KONG is a must for every mystery story fan.

WITH A WOMAN'S INSTINCT SHE ASKS, "WHAT ARE YOU THINKING?"

"I'M HESITATING WHETHER TO FALL IN LOVE WITH YOU, COLLEAGUE, OR JUST STAY FRIENDS."

"I WON'T ASK YOU WHAT YOU'VE DECIDED. I COULDN'T TRUST YOU TO TELL ME ANYWAY."

"SMART GIRL," YOU SAY.

YOU HAVE DECIDED YOU WILL _

HE DASHES FROM DECK TO DECK ACROSS THE NOODLED HOUSEBOATS, LEAPS INTO A SWAMP, YANKS THE OUTBOARD MOTOR TO LIFE, AND ROWS OUT INTO THE HARBOR.

ANOTHER SWAMP LIES NOODLED NEARBY. YOU STARE AT IT IN DECISION. YOU COULD EASILY FOLLOW HIM IN IT, AND SO FAR HE IS YOUR ONLY LEAD TO THE GREGARINES. BUT THE HARBOR IS RISING FAST, HOWLING IN THE RIGGING OF THE NOODLED JUNKS.

WHETHER YOU CAN CATCH HIM BEFORE THE FULL FURY OF THE TYPHOON OVERHELMS YOUR SWAMP LIES NOT IN YOUR HANDS, BUT IN THOSE OF SOME ANCIENT CHINESE WIND GOD.

TO FOLLOW THE ASSASSIN, OR LET HIM GO?

YOU DECIDE TO _

HE LOOKS YOU OVER CAREFULLY WITH HIS CUEL, BRILLIANT EYE, AND ENGAGES YOU IN A DISCUSSION OF FOREIGN AFFAIRS. YOU REALIZE YOU APPEAR SURPRISINGLY UNIFORMED.

"YOU'RE NO UNDERSECRETARY," AKBAR D'EVILO SAYS. HE LOWERS HIS VOICE. "WHAT'S THE PASSWORD?"

WHAT WOULD YOU DO?



LOCAL CALL FOR DEATH

Level II 32K disk
by Robert Lafore
from Interactive Fiction
Box 603
Inverness, CA 94937

LOCAL CALL FOR DEATH is a mystery story for the reader to take part in and solve. The story is set in England in the style of Sherlock Holmes. You are an amateur detective, visiting from America. You join Lord Colin, Major Wormsley, and Mr. Blackwell at dinner in a prominent restaurant. You take a minor part in the conversation, ordering a drink, and playing bridge.

THERE IS A PAUSE IN THE CONVERSATION AND EVERYONE FALLS TO THE REST AND THE EXCELLENT 1913 CHATEAU MUST BE PICKED. YOU LOOK AROUND THE HUGE ONE-PANELLLED DINING HALL. FIRES CRACKLE IN MASSIVE STONE FIREPLACES AND A SCORE OF WHITE-JACKETED SERVANTS MOVE UNOBTUSIVELY AMONG THE TABLES. YOU RECOGNIZE THE MINISTER OF WARING, AN ARCHBISHOP, AND TWO MEMBERS OF THE ROYAL FAMILY. YOU HAVE COME A LONG WAY FROM PLACERVILLE.

MAJOR WORMSLEY: WHAT DO YOU DO BACK IN AMERICA, MRS. DOBSON?

MRS. DOBSON: I USE A COMPUTER.

MR. BLACKWELL (RETURNING TO THE TABLE): SO—I TRUST YOU CHAPS HAVE LEFT ME SOME CHATEAU WHISTIS, WHAT?

LORD COLIN: PLENTY MORE WHERE THAT CAME FROM.

MRS. DOBSON (STARTING AT MR. BLACKWELL'S LAPEL PIN): IS THAT A PARTRIDGE?

MR. BLACKWELL: YES, RATHER. IT'S THE PIN FROM MY HUNTING CLUB IN THE HUNFOLK BOWNS. DO YOU HUNT, MRS. DOBSON?

MRS. DOBSON: NO, BUT MY UNCLE IS THE SWEET CHAMPION OF PLACERVILLE. HE'S THINKING OF TOURING ENGLAND TO SEE WHAT THE SHOOTING'S LIKE OVER HERE.

(PRESS -ENTER- TO CONTINUE).

STARTING DINNER

During the evening, Blackwell receives a telephone call from his good-for-nothing nephew Rodney. Blackwell returns to the table and says he heard Rodney pretend to commit suicide. The next morning, Blackwell has been unable to reach Rodney. You and Lord Colin go with Blackwell to Rodney's flat and find him dead. Lord Colin enlists your help in solving the mystery. Was it suicide? Was it murder? If Rodney was killed, who did it? Why? How do you know?

Now you take on an important part of the story. Your questions and answers can be complete sentences. You can examine the body and the room and objects in it. Each thing you examine tells you more. Lord Colin does not accept a suicide answer and asks if there is anything more in the room you would like to examine. When you have decided who did it, Lord Colin asks for proof that can be put to a jury. If you can give

BUT RODNEY WILL NOT BE GETTING UP EVER AGAIN. HE SITS SLUMPED OVER THE ROOM'S ONLY TABLE, HIS HEAD RESTING IN A PUDDLE OF SPILLED COFFEE, BESIDE THE REMAINS OF A MEAL. THERE IS A REVOLVER IN HIS HAND AND A SMALL HOLE IN THE SIDE OF HIS HEAD, OUT OF WHICH AN OCCASIONAL DROP OF BLOOD STILL TRICKLES. YOU NOTICE A SMALL PIECE OF FUZZY BROWN MATERIAL CAUGHT ON A SPLINTERED PART OF THE TABLE LEG NEAR THE FLOOR. ON THE TABLE NEAR THE DEAD MAN IS A NOTE. YOU SHIVER, NOT ONLY FROM THE SIGHT OF THE BODY. IT IS ALMOST AS COLD IN THE FLAT AS IT IS OUTSIDE.

(PRESS -ENTER- TO CONTINUE).

THE SCENE OF THE CRIME

LORD COLIN: RATHER A DISTRESSING SIGHT TO COME ACROSS SO EARLY IN THE MORNING, WHAT? POOR RODNEY. WELL, IT CERTAINLY LOOKS LIKE AN OPEN AND SHUT SUICIDE, BUT IN CASE THERE'S AN ENQUIRY WE HAD BETTER GO OVER THE PLACE A BIT, WHILE THE CLUES ARE FRESH. I SAY, DOBSON, WHY DON'T YOU HAVE A GO AT IT? SEE WHAT YOU CAN FIGURE OUT—VERIFY THAT IT'S A SUICIDE, OR WHATEVER.

MRS. DOBSON: THAT'S VERY GENEROUS OF YOU, LORD COLIN. I ACCEPT.

LORD COLIN: JOLLY GOOD. FIRST, IS THERE ANYTHING YOU'D LIKE A BETTER LOOK AT? THE BED, FOR INSTANCE, OR THE GARAGE CUP?

MRS. DOBSON: .

THE GARAGE CUP CONTAINS THE REMAINS OF WHAT APPEARS TO BE AN UN-EATEN BREAKFAST: TWO FRIED EGGS AND A SAUSAGE.

LORD COLIN: ANYTHING ELSE LOOK INTERESTING?

MRS. DOBSON: THE BED.

THE BED IS RUMPLED AND HAS OBVIOUSLY NOT BEEN MADE FOR SOME TIME. THERE ARE TWO OR THREE THIN WOOL BLANKETS AND A DIRTY SHEET. ON THE FLOOR NEARBY LIE A PILE OF RACING FORMS, A DIARY, AND SOME RUMPLED NEWSPAPERS.

LORD COLIN: ANYTHING ELSE LOOK INTERESTING?

MRS. DOBSON: THE NEWSPAPERS.

EXAMINING THE SCENE

him enough proof, he will tell you how he reconstructs the crime. Not everyone can succeed in coming up with enough proof.

After Lord Colin's reconstruction, you run through it again so you can take a look at the things you missed. After that, you put it aside until you have forgotten the ending.

LOCAL CALL FOR DEATH is an important program because it shows what can be done to let you interact with a computer. Mystery story fans will love it. You get so involved with the story that you ignore the many times the disk drive starts running. Sometimes the message on the screen pauses for a second in the middle of a word, but you don't care. You just want to see what happens next or look at something more in the room. This is a program you should have.

LORD COLIN: ANYTHING ELSE YOU WANT TO LOOK AT?

MRS. DOBSON: NO.

LORD COLIN: SO YOU THINK IT WAS A SUICIDE, AS IT APPEARS?

MRS. DOBSON: NO.

LORD COLIN: WHO DO YOU THINK MURDERED RODNEY THEN? (DON'T WORRY, DOBSON. IT'S NOT ALL THAT DIFFICULT, FOR SOMEONE OF YOUR CALIBRE. OF COURSE PROVING WHO DID IT IS SOMETHING ELSE AGAIN.)

MRS. DOBSON: BLACKWELL.

SUICIDE?

LORD COLIN: WHO DO YOU THINK MURDERED RODNEY THEN? (DON'T WORRY, DOBSON. IT'S NOT ALL THAT DIFFICULT, FOR SOMEONE OF YOUR CALIBRE. OF COURSE PROVING WHO DID IT IS SOMETHING ELSE AGAIN.)

MRS. DOBSON: BLACKWELL.

LORD COLIN: AH, HA! AN INTERESTING HYPOTHESIS, BUT HOW DO YOU EXPLAIN THAT THE EVIDENCE POINTS TO RODNEY'S HAVING BEEN KILLED OVER HIS SUPPER LAST NIGHT, WHILE HE KNEW UNDISPUTABLY THAT BLACKWELL WAS WITH US UNTIL EARLY THIS MORNING? BLACKWELL COULD NOT, PRESUMABLY, HAVE BEEN IN TWO PLACES AT THE SAME TIME.

MRS. DOBSON: NO, YOU'RE RIGHT OF COURSE.

NAME THE KILLER

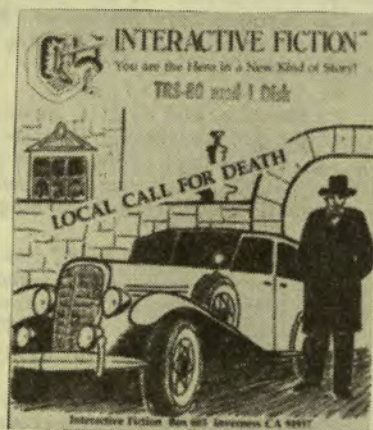
LORD COLIN: AGAIN I DON'T UNDERSTAND YOU. I SAY, DOBSON, IF YOU THINK, FOR EXAMPLE, THAT POOR RODNEY WASN'T REALLY KILLED AT SUPPERTIME, THEN YOU CAN SAY JUST THAT, OR TELL US WHEN HE WAS KILLED. THAT'S THE SORT OF EXPLANATION WE'RE LOOKING FOR. NOW, TELL ME AGAIN: HOW COULD IT BE THAT RODNEY WAS APPARENTLY KILLED OVER HIS SUPPER, YET MR. BLACKWELL WAS WITH US AT SUPPERTIME AND INDEXED FAR INTO THE NIGHT?

MRS. DOBSON: HE WAS NOT REALLY KILLED AT SUPPERTIME.

LORD COLIN: VERY GOOD! I'M INCLINED TO AGREE WITH YOU—RODNEY WAS NOT KILLED LAST NIGHT AT ALL, BUT SOMETIME THIS MORNING. BUT WHAT EVIDENCE DO YOU HAVE TO SUPPORT THAT HYPOTHESIS?

MRS. DOBSON: .

PROOF ■



ROBERT LAFORE

Interactive Fiction
Box 603
Inverness, CA 94937

Robert Lafore is the author of **DRAGONS OF HONG KONG** and **LOCAL CALL TO DEATH** reviewed separately in this issue. "Author" is the correct term for the programmer. These two programs are closer to reading a book and changing its ending than they are to the usual computer program. Consequently, we asked Mr. Lafore for information about himself. This is what he replied:

"I got started in computers working at the Lawrence Radiation Laboratory in Berkeley in the sixties, programming PDP-5's. Those were the dark ages! despite being twenty feet long, filled with racks of discrete transistors, the machines couldn't do half what a TRS-80 or Apple will do today."

"We programmed in assembly language, of course. No one had ever heard of BASIC, and anyway there was no room for an interpreter in a machine with only 4 K. But the limitations of the machine forced us to write very small, fast programs, and to learn a lot about hardware --

what really made the computer go. It was a good education."

"After I'd done that for a number of years I did what everyone did in the sixties! dropped out. I bummed around the South Pacific for a while on a boat, and eventually ended up back in California, writing novels about sailing and a column for the local newspaper."

"But I was still infected with the computer bug, and when the TRS-80 hit the market it occurred to me that I could combine fiction and computers. The result was Interactive Fiction™."

"One of the big ways Interactive Fiction is different from traditional stories is that it's fun to watch someone else read/interact with it. This is partly because you never know what the program is going to do next; but more important is that you can see people's responses as they get involved in the story."

"Sitting in my booth at the Computer Fair I can look over the top of the monitors and watch people's faces. The most usual expression of someone playing (or watching the screen while someone else plays) "Six Micro-Stories" is a sort of bemused smile, occasionally breaking into outright laughter if the program delivers a particularly apt reply. And some people become more emotionally involved: men especially get quite intrigued and hopeful if, for instance, their conversation with the lady in the park is going well. Or, if she gives them a hard time, they may stalk off in a huff."

"In the longer stories, where a wrong decision can cost you your ship ("His Majesty's Ship Impetuous") or your life ("The Dragons of Hong Kong") users sometimes identify so much with their character that they become genuinely nervous, wondering if the next decision they make will spell disaster."

"Since Interactive Fiction involves (as the name implies) some reading (as well as some writing), people who don't like fiction tend not to relate well to the stories, especially the longer ones. ("That's ridiculous!" muttered one chap in a three-piece suit as he passed by my booth at the Fair.) And very technically oriented people tend to wonder what the point is, and hurry on to the space wars display. But mostly, people who like to read, like Interactive Fiction."

Robert Lafore
Interactive Fiction

Ed. Note: I like to read and I agree!

HAYDEN

(continued from page 5)

predicts how the program will sell based on sales of similar programs and what other companies have to offer. The type of system the program can be played on, the language used and whether it can be played on a cassette or disk are not factors. "I look for a good program -- period," says Radosh.

For a book, the author must estimate how many pages it will be, how many illustrations are used and when the final manuscript will be completed. Sales are then anticipated, based on the reviewer's comments and the editor's knowledge of the market. "We then estimate our profit and see if it's worth our while," says Nelson.

An Editorial Review Board comprised of the General Manager, National Sales Manager and Advertising and Promotion Director examine the findings of the editor and reviewer of the book or program. "In order for the book to be published, the review must be good and our rate of return must show a profit," says Nelson.

If the board okays the book or program, production begins. When the book is completed, the author will then begin receiving royalty checks quarterly. The amount of the checks depends on how the publisher promotes the product, how well the product sells, the opinions of book reviewers, what the competition has to offer and even the health of the economy.

Bill Madaras
Hayden Book Co.



KATHE SPRACKLEN



Photograph by Evan Katz

**KATHE
SPRACKLEN**
Author of SARGON

Published by Hayden Book Co.

In May we talked with Mr. Bill Madaras, Public Relations Section of Hayden Book Co., about Hayden's policy on program authors. We also asked him about program authors he knew who had made a success of writing programs. Mr. Madaras immediately thought of Kathe Spracklen, author of SARGON. He offered to interview Mrs. Spracklen for us. This is what he told us:

Many an aspiring writer, planted squarely in front of a typewriter, may be dreaming about the romantic lifestyle of a Hemmingway or the Jet Set style of Truman Capote. Nothing to do but write novels, magazine articles, grant interviews and cash huge royalty checks.

A bit of practical advice for those writers who have such romantic notions is to stop dreaming, start typing, work at a steady part-time job while writing, count on rejection and be able to support yourself for at least one year. And don't count on big advances or royalty checks right

away. These are some of the realities found by Kathe and Dan Spracklen, a California based husband-and-wife writing team.

The duo gained fame with their computer chess game, SARGON, which won first place in chess competition at the West Coast Computer Faire in 1978. The Spracklen's succeeded in becoming published when the Hayden Book Company of Rochelle Park, New Jersey, agreed to publish the program and sold it as a paperback entitled "SARGON: A COMPUTER CHESS PROGRAM." "This was our first experience writing a book. Before Hayden picked us up, we were copying our program and selling it to friends," says Kathe.

The idea for SARGON came about as a way for Dan to prevent boredom in the evenings while Kathe attended night classes to obtain a degree in Computer Science from San Diego State University. She soon joined in the project with her husband and helped iron out some of the program's wrinkles. Both were working in the computer field.

SARGON, the book, took six months to write and was later developed into a software program entitled SARGON I and can be used on a TRS-80 and Apple. "Sargon took about one year to appear on the market, but during that year we were doing freelance articles for Byte (magazine) and Personal Computing (magazine)," says Kathe. "I figured the amount of time we spent on SARGON I gave us 35 cents an hour each," says Kathe.

She says one of the biggest problems with SARGON I was piracy. Everyone kept making copies of the program, thus robbing the couple of royalties. Kathe advises any new software author to have a protection device built into the tape to prevent illegal copies from being made.

Soon afterward, Sargon I was updated and entitled SARGON II and was made to be used on disk along with the previous cassette versions. However, this time a protection device was built in.

She says some authors can

increase their royalty checks by helping to advertise the book themselves. "Do as much yourself as you can. Write your own ad copy and send it to the advertising manager. If he or she doesn't use it, at least they will know you are interested in how the book is being advertised."

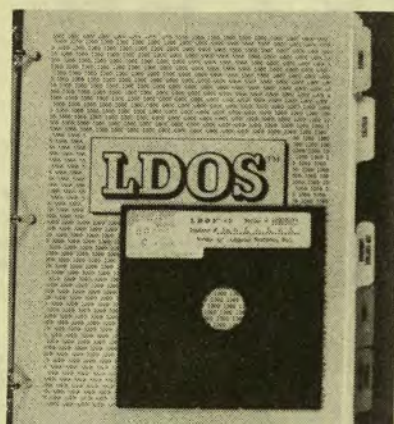
Although she enjoys writing, Kathe says either her husband or she would always keep a full-time job since writing does not provide enough money for them to live on. "You can't beat the security of a regular income. You don't feel comfortable not knowing how much you'll get every three months when the royalty check comes in," says Kathe, who works with Dan for Fidelity Electronics. She says she no longer writes full-time but prepares articles in the evening and on weekends. "Anyone starting out should be prepared to write during their spare time and keep a regular job unless they have some other source of income like stock dividends," says Kathe.

Despite the Spracklen's not discovering a pot of gold at the end of their typewriter ribbon, Kathe says there are ways to make money by learning and writing about software. "Many of the programs on the shelf are not ready made for a particular business and must be adapted to meet that business's needs. Tailoring a system for a business can be very profitable," she says. She recommends that a computer enthusiast first learn enough about systems and software by writing articles, programs and books before becoming a consultant.

The Spracklen's most recent publication is a game program made for the Apple II on disk entitled REVERSAL which is published by the Hayden Book Company. The game is a microcomputer version of the 200-year-old Reversi strategy. The program includes full color graphics, sound, and 27 levels of complexity.

Kathe has recently written a book, "Z-80 AND THE 8080, ASSEMBLY LANGUAGE PROGRAMMING," for the Hayden Book Company.

Bill Madaras, Public Relations
Hayden Book Company, Inc. ■



LDOS 5.0.1A
Level II 32K disk
from Galactic Software LTD
11520 N. Port Washington Rd.
Mequon, WI 53092

LDOS is a disk operating system -- a program to operate the disk drives on your Model I computer. A version is also available for the Model III. Radio Shack has it's own TRSDOS system but it is more limited in what it can do. This review is written using SCRIPSIT modified to run under LDOS.

LDOS comes with a very good manual, but the manual does not have a good index. There is a brief Table of Contents and a section on getting started. There are sections on Library Commands (in alphabetic order), Extended Utilities, Device Drivers and Filters, Job Control Language, LBASIC, Technical Information (which has a Table of Contents), and a Glossary. You may have to thumb through pages in the sections to find the information you want. For example, I had trouble finding one of the special commands. Most of the commands are listed alphabetically in the "Library Commands" section of the manual. But some of them are grouped under "System" in that section. I looked for a long time for one command before I found it listed under "System."

When you first start using LDOS, you must copy BASIC from a Radio Shack disk onto a copy of your LDOS disk. The LDOS manual gives you good step-by-step instructions. It tells you how to use LDOS' special XFER (transfer) command to copy BASIC if you only have one drive. Then you rename it LBASIC and modify it by using two programs on the LDOS disk. Now LBASIC will have extra features that the original BASIC does not have. Copying and changing it is simple to do, but the commands you type are long. You must be very careful to type them correctly and in the right order. Then you can kill the two modifying programs so you have more room on the disk.

LDOS comes with programs to modify ELECTRIC PENCIL and SCRIPSIT so you can use these word processing programs with LDOS. It can be a little more complicated to put SCRIPSIT on the same disk with LBASIC. There is just enough room on the LDOS disk for all the LDOS programs, the modified LBASIC, and the modified SCRIPSIT. If you have two disk drives, you can juggle disks. If you have one drive and all the LDOS programs on the same disk, you will not have room for many other programs.

The modified SCRIPSIT will let you look at the disk directory while you are still using SCRIPSIT. The unmodified SCRIPSIT under TRSDOS will not. Both the modified SCRIPSIT and the

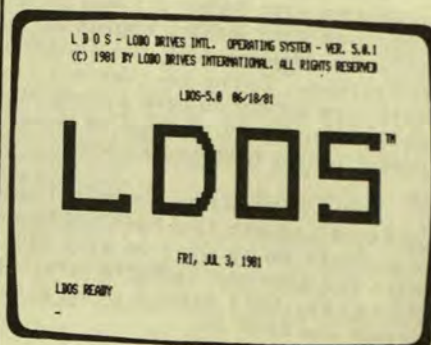
modified PENCIL will let you reserve memory for a printer driver or other use. However, the directions for modifying SCRIPSIT and PENCIL are in the last two pages in the manual. They are not listed in the Table of Contents.

One advantage LDOS does not provide is to be able to kill files while in SCRIPSIT so you have more room on the disk. The MINI-DOS feature of NEWDOS/80 lets you do this. You can also kill files if you are using SCRIPSIT modified by SUPERScript.

If you use your computer to run programs written by others, LDOS is almost invisible but still has added features that you will find useful. You can "XFER" programs from disk to disk using only one drive without LDOS on either disk. This could be very useful if you have two drives and one is not working. You can still run programs saved on a data diskette.

Each time you turn on your computer to start using LDOS, you enter the date. When you save or modify a file, LDOS enters the date and a special mark in that file's directory. When you make a backup copy of that file, LDOS removes the special mark. When you look at the directory and ask to see the length of the files, you also see the date a file was saved or last modified. You also see a mark near the name of the file if you have not made a backup of that file yet. Now you have no excuse if you ruin your only copy of a program.

You see the amount of disk space used by each program in "K" or bytes. Other disk operating systems use "GRANS" or half-tracks. If you are accustomed to another DOS, it will take you a little while to get used to this. Each time you see the directory, you also see the amount of free space on that disk. If you don't specify drive 0, you will see the directory and free space on all disks. The screen display of the directory will pause after



fifteen lines unless you tell it not to. The directory can be printed out if you have a printer. You can even see a directory of only those files that have certain letters in their names.

Radio Shack's Model III lets you route whatever you see on the screen to the printer, or vice versa. LDOS lets you do that and more on the Model I. Not only can you route information from one device to another, you can also link them so that the information goes to both. LDOS even lets you route information to or from a disk file. Routing sends information intended for one device to another device instead. For example, you can send anything that is supposed to be shown on the screen to a printer or to a disk file. An example of linking devices is that of linking the screen to the printer so whatever you type on the keyboard will go to both. This can give you a printed copy of information even if the program you are running does not provide for a printout.

Another advantage of LDOS is that you can format an old disk to reuse. This erases the old information and you do not have to use a bulk eraser. If you do try to format a used disk, you are warned that the disk contains information and are told the present name of the disk. Then you can tell the program to go ahead or to stop.

There are many other features of LDOS besides these. You can save a system program on disk. You can make up a file that will automatically carry out several tasks before it runs your program. You can set up a special format for your printer to use when it prints information. This can include margins, indenting, blank lines at the top and bottom of your page, and many other things.

LDOS comes with a printer driver for serial printers. It also comes with a SPOOL program. Information to be printed can go to another area of your computer's memory or to a disk file. From there, it goes to the printer while you are entering more information in the program. You don't have to wait for the printer to finish before you can go on with the program.

LDOS has a program to let you communicate with other computers and bulletin boards over the telephone lines if you have the RS-232 hardware and a Modem. LDOS has a "PATCH" utility to make minor changes or repairs to existing program or data files. If you write programs, LDOS includes a special utility to let you specify that certain keys mean certain BASIC words. Then you don't have to type the full word each time as you write your program. You can renumber your program lines and have a list of all the variables or line numbers referred to in your program. You can use

commands when in BASIC to do several things that would normally be done in DOS. You can see the directory, list a file, turn off the "Break" key entry to DEBUG, and send the current screen display to the printer.

LDOS has still more features that you may or may not make use of. If you have the lower case modification, LDOS will automatically recognize lower case. If you write programs that use random access or sequential access files, there are new commands that refer to an existing old or to a new file. If you write assembly language programs, you will find a lot of necessary information in the Technical Information section of the manual. There is a Job Control Language which lets you give preprogrammed commands to the DOS. LDOS supports a wide variety of disk drives. You can use 5" or 8" drives or a combination or even a hard-disk drive. If you have a clock speed-up kit, you can run it fast or slow.

LDOS has good support. A quarterly newsletter keeps you up on current information. When or if changes are made to LDOS, you can send them your original disk and \$5 and they will return the disk to you with the changes. They have an 800 phone number so you can call and ask about any problems you are having.

Their quarterly newsletter No. 2 says that LDOS comes with a special program, "REPAIR," so that LDOS can read TRSDOS disks. This program is not listed by name on my diskette with LDOS Version 5.0.1A. There is no mention of it in the manual that came with this version. I may have to send the original disk back to them with \$5 and get the latest version.

LDOS is a powerful disk operating system with many advantages for both the non-programmer and the programmer. It has good support. You should think seriously about upgrading from TRSDOS to LDOS. ■

LDOS READY
DIR
FREE SPACE= 8.8 K BYTES LDOS-5.0 - 06/10/81

PATCH.COM P	POPCAL.FIX	RSVILT.P
LDOS.DCT P	LDOS.COM P	RS232.DIR P
LDOS.DCT.FIX	LDOS.DCT.FIX	LDOS.DCT.FIX
RS232.DIR P	POPCAL.P	

LDOS READY

DIRECTORY

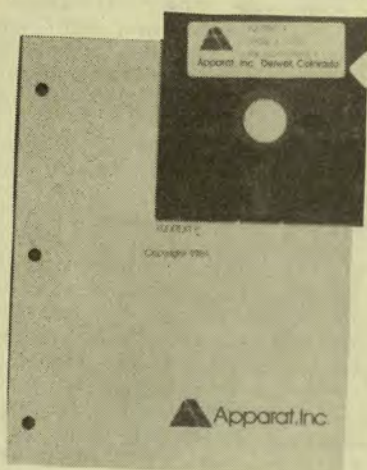
■ SCRIPTSIT.FIX - 02/14/81
- PATCHES FOR UPPER/LOWER CASE SCRIPTSIT.

- This patch forces SCRIPTSIT to use the active printer: driver, honor HIGHs, eliminate the initial LF to the parallel printer, disable the printer test.
- "END" goes to DOS, enable interrupts during DOS 1/0, and adds the "Q" or "Query" DOS Directory command.

105202-49 15 05 15 03 00 01 01 01 01 01
105203-49 49 40 25 25 00 00 00 00 00
105204-49 00 00 00
105637-0E 3F 00
106637-0E 3F 00

SPECIAL COMMAND L SCRIPTSIT.FIX

SCRIPTSIT PATCHES



FLEXTEXT-I

Level II 32K disk
from Apparat, Inc.
4401 S. Tamarac Parkway
Denver, CO 80237

FLEXTEXT-I is a program to be used on the Model I with Radio Shack's SCRIPSIT and their Line Printer IV or the Centronics 737 printer. It lets you use more of the special features of these printers.

Radio Shack's Line Printer IV and the Centronics 737 printer have three print styles. One of them is the normal 10 characters per inch (cpi.). Another is the condensed 16 cpi. The third is the proportional characters. These printers will also underscore words, print letters or words a half line above or below the regular line, and print any of the styles in elongated style.

Radio Shack's SCRIPSIT program is a word processing program for printing text so it looks as though it were typed. Our Issue #12 contains a complete review of SCRIPSIT on disk. There are many things that SCRIPSIT can do, like setting margins on the printed material and lining up the right margin. But SCRIPSIT is written to work best with print that has a specific number of characters in each inch. The width of the characters in proportional print varies. Also, SCRIPSIT cannot underline or print half a line above or below the regular lines.

FLEXTEXT was written to let SCRIPSIT use more of the features of the Line Printer IV or Centronics 737 printer. You can use FLEXTEXT to print in proportional or condensed characters. You can change back and forth in the middle of a line. The

lines of print can be even on the right side. You can underscore words or lines. You can use the elongated print with the proportional or condensed characters.

You can print a half line above or below the regular line of printing.

However, you can use the special features of FLEXTEXT only with the proportional or condensed print. It does not work with the normal print. But you can have all the text printed normally by using the regular SCRIPSIT printing code. When you print the document in FLEXTEXT, you add an extra word to the "Print" command that tells SCRIPSIT to use FLEXTEXT to do the printing. After the document is printed, you can print it again, or return to SCRIPSIT or go to the Disk Operating System.

While printing some of the reviews, I may have found an advantage to FLEXTEXT that is not mentioned in their instructions. We are using NEWDOS/80 as the disk operating system, and have made the modified SCRIPSIT load automatically when the reset button is pressed. If I want to format a new diskette or make a backup copy of a diskette, I first go to NEWDOS/80's MINI-DOS. Then I leave MINI-DOS and go to the regular DOS to work on the diskette. If I press the reset button, I go back to the modified SCRIPSIT. The screen still shows the same text that was there before I left it. This does not work with the unmodified SCRIPSIT, nor does it work unless the modified SCRIPSIT loads automatically. Since the instructions do not mention this, it will be an emergency procedure only.

However, I have also found a few problems with FLEXTEXT. When you

BLANK-2 RM-01 TM-1 RM-79 PL-75

XC-Y J-M

CSKSE(SUB R A F %

CEL

FLEXTEXT-I

CELEvel II 32K disk

with SCRIPSIT

from Apparat, Inc.

XC-Y J-M

FLEXTEXT-I is a program to be used with Radio Shack's SCRIPSIT and their Line Printer IV or the Centronics 737 printer. It lets you use more of the special features of

SPECIAL COMMAND? L R15

CONTROL CODES

This review was written using SCRIPSIT modified by FLEXTEXT. The codes after a ">" are SCRIPSIT codes. The codes after a "<" are FLEXTEXT codes.

have finished printing a document, the screen clears. If you go back to SCRIPSIT, the text returns to the screen. But FLEXTEXT has added blank spaces or words at the end of your text. You must look at the end of your text each time and delete anything extra.

SCRIPSIT allows you to start printing a document and then press the CLEAR key to stop the printing and return to SCRIPSIT. If you use FLEXTEXT and stop the printing at a spot with the special FLEXTEXT Control Codes, the codes change to meaningless characters when you return to SCRIPSIT.

SCRIPSIT lets you set the width of the text on the screen. You can have the text displayed up to 132 characters wide or as narrow as one character. But after printing, the screen text changes to the same width as the last line of printing. This is minor but annoying.

FLEXTEXT does not seem to keep an accurate count of the lines in your text. It adds an extra blank line at the bottom of your page. If you have set SCRIPSIT for a page 6 lines long, you can only print on five lines. If you have a 6th line, it is printed on the next page.

If you use a "Header" in SCRIPSIT to be printed on each page, FLEXTEXT has another problem. The unmodified SCRIPSIT lets you set the top margin before printing starts on a page. Then it prints the header, which can be a page number or any words you want. Then it starts that page of text. For example, you can set the top margin at 6 blank lines. Your header is printed on the 7th line. If your header is one line, your text starts printing on the 8th line. When you print with FLEXTEXT, the header is printed on the 2nd line of the page. Then your printing will start after another 6 blank lines.

Something to be careful of is having one long word printed in elongated print in a narrow column. The elongated letters take up more room than the regular letters. If your elongated word is too long to fit, the printer starts printing the first few letters in the word and then has fits. It starts printing long, long lines of nonsense. You must go back and add a space to it by hyphenating the word in the text before you can print it properly.

I recently found another problem with FLEXTEXT. I lost all the text I wanted to print. I had loaded one text file, and then tried to add

> (continued on page 21)



SUPERSCRIPT
Level II 32K disk
by Richard P. Wilkes
from Acorn Software
634 N. Carolina Ave. S.E.
Washington, DC 20003

SUPERSCRIPT is a program that modifies Radio Shack's SCRIPSIT so you can use some additional features of your printer. It will run under TRSDOS or NEWDOS+ disk operating systems, but not under NEWDOS/80 or VTOS. You must have lower-case to use SUPERSCRIPT. A version of SUPERSCRIPT is also available for the Model III.

SCRIPSIT from Radio Shack is a word processing program. It lets you use your computer like a typewriter. This issue is printed on Radio Shack's Line Printer IV. This printer will do a lot of things that SCRIPSIT cannot do.

If you change SCRIPSIT by using SUPERSCRIPT, you can underline and ^{super}script or _{sub}script. You can also print **boldface**.

You can also change the kind of printing if your printer will do this. The Line Printer IV has a proportional print that we used in the other reviews.

The Line Printer IV will print 16 characters to the inch. Other printers will print 12 characters to the inch.

SUPERSCRIPT has a few other features. You can print special characters.

[You can use brackets.]
{You can use braces.} You can print the caret symbol (^). Other printers have different symbols and you can experiment with them.

SUPERSCRIPT can modify SCRIPSIT to use with other printers as well. Some of them can slash zeroes, underline, and print half lines. SUPERSCRIPT will work with the following printers:

1. Diablo parallel and serial printers.
2. NEC Spinwriter 5530 parallel printers and NEC 5510 and 5520 serial printers.
3. Line Printer IV or Centronics 737 printers. No slashed zeroes.
4. Radio Shack's Daisy Wheel II. It will over-strike instead of using boldface.
5. Parallel printers -- dot-matrix. You may have underlining and slashed zeroes only.
6. Parallel printers that need a custom driver, such as Qume, Sanders, and Anderson-Jacobson.
7. Serial printers -- those that don't use the ETX/ACK protocol of communications. This includes the NEC, Diablo, and Qume printers.
8. Serial printers that need a custom driver but do use the ETX/ACK protocol.

You can control how many spaces are to be put between words. You use a special symbol that SUPERSCRIPT interprets as a letter instead of a space. When SCRIPSIT tries to make an even right margin, it inserts extra spaces anywhere there is already a space.

You can do a few more things using SUPERSCRIPT. If you use SCRIPSIT with TRSDOS, you cannot see the directory or kill a file while in SCRIPSIT. You have to end SCRIPSIT and lose the text you are working on. SUPERSCRIPT lets you look at the directory, find out the free space on a disk, or kill a file, and still keep your text.

You can make the printer pause so you can insert a

word or two at the end of a line. This insertion won't be justified so you should do it only at the end. If you try to insert a word in the middle of a line, the line won't be the right length.

I found one feature that is not mentioned in the instruction pamphlet. I have the new ROM chips and don't have to worry about a key bouncing and printing twice. The cursor that tells me where I will be typing moves slowly. In SUPERSCRIPT, the cursor is FAST. I can scroll through the lines of text like a speed-reader.

SUPERSCRIPT comes with a lower case driver. You can use this driver from DOS or from BASIC. If you use it, you must set your computer's memory size to protect it. Then you can use the auto-repeat and screen printing functions. This will let you print out whatever you see on the screen. It also lets you send special codes to your printer.

SUPERSCRIPT is fairly easy to start using. You first choose your printer driver and answer from three to seven questions about your printer. Then you transfer the modified SCRIPSIT to your working disk. The manual has good instructions about the drivers and about how to use the new control codes to make your printer do what you want.

If you have a Line

If you have a printer that can do things you cannot do using SCRIPSIT, you can use SUPERSCRIPT to underline and ^{super}script or _{sub}script and slash zeroes, or print **boldface**.

XJH-10 RM-43
XJH-22 RM-70

You can also change the kind of printing if your printer will do this. The Line Printer IV has a proportional print that we used in the other reviews.

**SUPERSCRIPT
ON THE SCREEN**

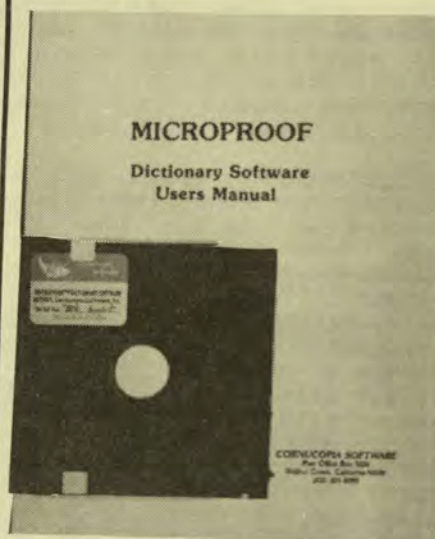
This is how one draft of this review looked on the computer screen.

Printer IV or Centronics 737 and use NEWDOS/80, you should also look at our review of FLEXTXT-1 in this issue. There are some things that FLEXTXT-1 can do but SUPERScript cannot. FLEXTXT-1 will justify the proportional and boldface printing. FLEXTXT-1 will print all text in boldface until you tell it to stop. You have to tell SUPERScript to print boldface for each line. You do not have to reset your margins in FLEXTXT-1 to change between proportional, condensed, and elongated (boldface) printing. You can even change these print styles in the middle of a line and FLEXTXT-1 will keep your right margin even. With SUPERScript, you can only change print styles at the beginning of a new line. If you use NEWDOS/80, you can find out how much space each file used on the disk and can rename files, as well as see the directory of files and kill files.

But SUPERScript can do some things on the Line Printer IV or Centronics 737 that FLEXTExT-1 cannot. You can use the special features of the IV or 737 in the normal print with 10 characters to the inch. You can change back and forth between all three print styles. FLEXTExT-1 only lets you use the proportional and condensed spacing.

SUPERScript lets you insert a word or two at the end of a line. You can specify a certain number of spaces between words. You can print [brackets], {braces}, and carets (^). You don't have to use NEW-DOS/80 to see the directory or kill a file. And SUPERScript keeps track of the number of lines you have already printed better than FLEXTExT-1 does. However, it takes a lot of experimenting to reset the margins when you change print styles.

SUPERSCRIP will work on a wide range of printers. If you are unhappy because SCRIPSIT won't do everything your printer will do, try SUPERSCRIP.



MICROPROOF

Level II 32K disk
from Cornucopia Software
P. O. Box 5028
Walnut Creek, CA 94596

MICROPROOF, by Philip Manfield, is a program to add a dictionary to your computer. You use a word processing program like **SCRIPSIT** or **ELECTRIC PENCIL** or **LAZY WRITER** to type your letter or document. Then you have **MICROPROOF** proofread your document for errors. The words that aren't in the dictionary files will be shown to you on the computer screen or printed on your printer if you want. A version of the program is available for the Model III as well as the Model I. A good reference pamphlet, written by Richard Bidleman with the assistance of B. J. Peck, comes with the program.

MICROPROOF comes in several versions. You can buy the Standard version for the Model I or Model III. This version will proofread a text file you have saved on disk and display or print a list of words that could be misspelled. Then you use

XLN=5 RY=34 TR=1 BR=90 PL=90
XC=Y J=PL

Level II 32K disks
from Compucon Software.

● 2008 年 11 月

MICROPROOF, by Philip Hanfield, is a program to add a dictionary to your computer. You use a word processing program like **SCRIPTIT** or **ELECTRIC PENCIL** or **LAZY WRITER** to type your letter or document. Then you have **MICROPROOF** proofread your document for errors. The words that aren't in the dictionary files will be shown to you on the

SPECIAL COMMAND? A FILE

your word processing program to change the misspelled words that were listed. A separate program, ADDTODIC, that comes with the Standard version is used to add new words to the dictionary.

The Correcting version for the Model I or Model III will let you correct each misspelled word without having to look at your complete document again. If you are using MICROPROOF with SCRIPSIT or ELECTRIC PENCIL, you should also buy the "patch" program. This patch lets you proofread a document while you are using your word processing program. You do not need this patch if you are using LAZY WRITER. The Correcting version lets you add new words to the dictionary while the document is being proofread.

If you are using the Correcting version to proofread a document you just finished typing, your original document is saved on disk before it is proofread. MICROPROOF goes through the document very quickly. It recognizes hyphenated words as one word and checks them for spelling. It ignores any special "control codes" or "comment lines" and any single-letter words in your text. It shows you a list of the words that it did not find in its dictionary files.

Then it goes on to show you each word, one at a time, so you can take any action you want. You can press "ENTER" if the word is correct but you do not want it added to the dictionary files. You can retype the word with the correct spelling. That word will be corrected everywhere in the text. You can add a new word to the dictionary. You can see the word with a few of the words before and after it. You can even stop proofreading the document and leave it as it was. When you are through, you are returned to your word processing program with your corrected document on the screen as if you had just typed it. Now you can save it on disk under a new name or under the old name.

MICROPROOF
PART OF
MICROPROOF DICTIONARY SOFTWARE
CORP. 1981 CORNUCOPIA SOFTWARE, INC.
SERIAL # 11141

PROCESSING DOCUMENT

PROOFING DOCUMENT.
BIBLEN EE 11 111 ANTONIC MICROPROOF DICTIONARY FLEX-1
DISKETTE DISKETTES LOWER-CASE PRINTED MICROPROOF
MICROPROOFING MEANS ONE-LETTER PHILIP PROGRAM QUESTIONED
RICHARD SCRIPTS SO SINGLE-LETTER SOFTWARE
00 PROOFING COMPLETE 00 PRESS (ENTER) TO CONTINUE 00

BEFORE MICROPROOFING

LIST OF POSSIBLE MISSPELLINGS

When you add new words to the dictionary files, you can tell the computer that the word is a noun, a verb, an adverb, or an adjective. The dictionary recognizes plural nouns and other forms of verbs, adverbs, and adjectives. This means that the dictionary files can contain a lot more words. You don't have to enter the words "diskette" and "diskettes" separately. You just tell the computer that "diskette" is a noun. The dictionary files come with 50,000 words that the computer recognizes. And you can add as many more as you want. Both the Standard version of MICROPROOF and the Correcting version come with a separate program to add words. You can type a list of words using your word processing program and easily add them in a group.

A nice feature is the way the program treats upper and lower case letters. Even if you have the lower case modification, you do not have to load a separate driver program. When MICROPROOF shows you a word it did not find in its files and you type in the correct spelling, the letters in the corrected word stay in capital or lower-case letters as they originally were. If the old word was capitalized at the beginning of a sentence, the corrected word will be also. If the old word was all upper case letters, the new word will be too. However, this won't catch words which should have been capitalized but weren't.

The manual warns you of a few drawbacks. Since the dictionary files recognize common prefixes and suffixes for words, it will recognize "inclose" as well as "enclose." It does not check one-letter words. If you type "s" instead of "a," it is up to you to proofread this. You must be willing to do a little of your own proofreading.

A recent addition to MICROPROOF is a way to see, add to, change or delete words in one of the dictionary files. The dictionary is in

three files. The first two are large files that come with MICROPROOF. The third is a small file that comes with MICROPROOF. Your new words are added to this third file. Now you can change this third file. If you added an incorrect word to the dictionary, you can correct or delete it. You can add new words as well.

I can only think of one thing to wish for. When you first proofread your document, you see your choices on the screen -- to see the word in context, to add the word to the dictionary, to leave it as is, or to correct it. If you want to see some of the doubtful words in their context, you must first finish proofreading the entire document. Then you are shown each of those particular words with a few of the words that come just before and just after it. This time, you are asked for your response but aren't shown the list of your choices. Once you have used the program a few times, though, you will find it easier to remember them.

MICROPROOF can be used with one disk drive if you change disks when the program asks you to. The manual explains what files you must have on each disk. However, it also warns you that you must have a NEWDOS disk operating system or use a friend's computer with two disk drives to set up your operating disks.

I have been testing the Correcting version of MICROPROOF with a patched SCRIPSIT, using NEWDOS/80 as the disk operating system. It has worked fine. It took less than 60 seconds for MICROPROOF to read this review. I took another 90 seconds to check through the words it questioned. It asked about words like "MICROPROOF," "SCRIPSIT" and "II". It also asked about the control codes that FLEXTXT-I uses in addition to those of SCRIPSIT. I could see that most of the words were correct so I just pressed "ENTER." I did need to

look at "II" in its context. I saw it was in the heading so I did not need to change it.

MICROPROOF won't catch all my typing errors but it will catch most of them. I have a favorite misspelling of dropping the "a" in a word or adding an "s" in the middle of a word. MICROPROOF will catch this. I also find I sometimes use the word "loose" when I mean "lose." MICROPROOF won't catch this. But neither would any other dictionary program.

MICROPROOF is expensive, but if you need a program to check your spelling, you should investigate this one.

JOHN RICH TH-1 TH-50 PL-50
JOY J-1

CSK-SCRIPROOF-CE
Level II 32K disk
from Compucon Software

JOHN J-1

MICROPROOF, by Philip Hanfield, is a program to add a dictionary to your computer. You use a word processing program like SCRIPSIT or ELECTRIC PENCIL or LAZY WRITER to type your letter or document. Then you have MICROPROOF proofread your document for errors. The words that aren't in the dictionary files will be shown to you on the

AFTER MICROPROOFING ■

FLEXTXT

(continued from page 18)

another file. The additional file was too long to fit in the computer's memory. I received a normal error message and the new text did not show on the screen. I then started to print the first document but changed my mind part way through and stopped the printing. If this happens in SCRIPSIT, it does not matter. But with FLEXTXT, I lost all of the first text.

As you can tell, I have a love-hate relationship with FLEXTXT. I like the advantages of using proportional print with an even right margin. I like being able to use the elongated print anywhere in the text, even in the middle of a line. Much of this issue of the magazine is printed on the Line Printer IV using SCRIPSIT modified by FLEXTXT. But I dislike it when it adds extra lines to the screen text or the printed text. And I wish it would also let me use 10 cpi. with the proportional and condensed print. ■

SELECT APPROPRIATE RESPONSE:

CORRECT MISPELLED WORD:	ENTER CORRECT WORD.
LEARN WORD "AS IS":	NOT CENTERED KEY
DISPLAY WORD IN CONTEXT:	?
ADD WORD TO DICTIONARY:	+
EXIT:	!

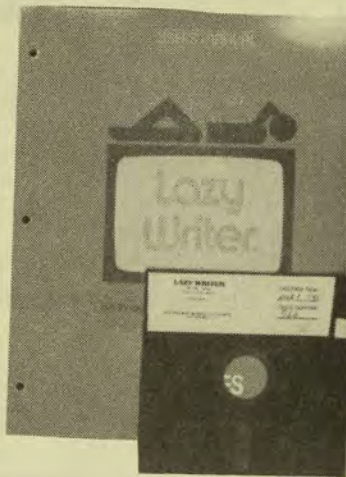
WORD: PROGRAM
RESPONSE: ?

SELECTING THE APPROPRIATE RESPONSE

BY PHILIP HANFIELD, IS A PROGRAM TO ADD A DICTIONARY TO YOUR

WORD PROGRAM
RESPONSE: PROGRAM

SEEING THE WORD IN CONTEXT



LAZY WRITER

Level II 32K disk

by David Welsh

from Soft Sector Marketing
6250 Middlebelt Road
Garden City, MI 48135

LAZY WRITER is a program to let you type letters, books, or any other text on your computer and then print it out as you want it. It is one of several "word processors." This review is written using LAZY WRITER. Radio Shack has its own SCRIPSIT which we have used for most of the reviews. I have used SCRIPSIT for over a year and am just learning LAZY WRITER. LAZY WRITER comes with a good manual to explain the many commands. It also comes with a small card you can put next to your keyboard. This card shows you a summary of some of the "Edit" commands on one side and the "Print" commands on the other. LAZY WRITER is for the Model I only. It will work even if you have only upper case letters on your computer.

LAZY WRITER has three main programs or phases. The first one is TEXT ENTRY. You enter your text using this phase. All you need to do is type as though you were using a typewriter and watch your words appear on the screen.

The second phase is EDIT. If you change your mind about some words you have used, or if you make a typing mistake, you press "BREAK" to switch to the EDIT phase. Then you can go to any place in the

text and change a word, a sentence, or a paragraph. You can type right over it. You can insert more words. You can delete any part of the text or even delete it all. You can move words around or duplicate them somewhere else. You can skim through your text a screen page at a time, forward or backward. You can set tabs. You can find any character or word and replace it with something else. You can even look at the directory of files on your disk in any drive.

The third phase is PRINT. This is the way you tell your printer how you want your text to look. You can set the left and right margins of your text. You can change the width of the text on your computer screen so you will see how it will look printed out in that width. You can have your text printed single space, double space, or even triple space if you want. You can use any length of paper you want and set the length of the page and the number of lines to print on it. You can have your text printed in all upper case letters or in capitals and lower case (if your printer will print lower case).

You can type these and other printing commands

directly into your text. You can center your titles, you can change your margins, you can even "reverse indent" your paragraphs. You can have your text printed with extra spaces between the words so that the right margin is even. You can have special "headers" printed at the top of every page or "footers" printed at the bottom. You can have the page number printed in these headers or footers.

There are special things you can do with LAZY WRITER. If your printer has special characters like [brackets] or a trademark symbol, you can print these on the printer. You can change a letter, word, or all your text from lower case to all capitals or vice versa. You can underline or print in bold or double-wide letters if your printer can do these. You can hyphenate your text so that it looks better when it is printed. You can list another file on your disk so you can look at it. Then you can go back to your original text or you can add part or all of the other file to what you are working on. You can set up special "command" keys that will perform a series of things when you press them. For example, you can insert a line of stars across the page of an ad.

There is a special program to help you recover whatever text you were working on if something went wrong and you think you have lost your text. You can have one file printed and then another and another, one continuing right after the other. You can use a special program to set up LAZY WRITER to work best with your particular printer. You can even use LAZY WRITER to

HELP FILE
IF YOU WANT TO LEAVE THE "HELP FILE", PRESS "BREAK".

1. Enter and leave Edit by pressing "BREAK".
2. # SCROLLING # Get to the end of your text by pressing "ENTER".
Get to the beginning of your text by pressing "SHIFT", up arrow.
3. # CURSOR MOVES # Move the cursor through text with the arrows; you can make left and right arrow move faster by holding down "SHIFT" as well.

Hit Any Key File Len. 576

"CLEAR", "ENTER".

5. # OVERTYPING # Overlapping should be used only when a few characters are wrong. If you've typed "test" when you meant "text", move the cursor to the "t", press "o" enter the right character (in this case, "e"), then press "ENTER".
6. # INSERT # There are two types of "insert": If you have a lot of material to insert, press "I" (capital "I"). If you have only a small amount to insert, press "i" (small "i"). Either way, you need to position the cursor on the character just after where you want to begin inserting. You'll see a bigger cursor on the screen and, remember, EDIT 1 < Cursor 62 < Line Len.

PARTS OF THE HELP FILE

help file
if you want to leave the "help file", press "break".

1. ENTER AND LEAVE EDIT BY PRESSING "BREAK".
2. # SCROLLING # GET TO THE END OF YOUR TEXT BY PRESSING "ENTER".
GET TO THE BEGINNING OF YOUR TEXT BY PRESSING "SHIFT", UP ARROW.
3. # CURSOR MOVES # MOVE THE CURSOR THROUGH TEXT WITH THE ARROWS; YOU CAN MAKE LEFT AND RIGHT ARROW MOVE FASTER BY HOLDING DOWN "SHIFT" AS WELL.

EDIT 1 < Cursor 38 < Line Len.

REVERSED CAPITAL LETTERS

communicate with other computers if you have the hardware you need.

SCRIPSIT will do some of these things and will also do some things that LAZY WRITER won't. SCRIPSIT will let you automatically have extra spaces between paragraphs. It will let you tell your printer to end a printed page before it is full. It will let you easily exchange two words, paragraphs, or blocks of text. It will let you clear one tab stop from many and shows you all the tab stops on a bar across the bottom of the screen. It will let you set your screen so your text is up to 132 characters across. This is particularly nice for columns of figures if the printing will be wider than 64 characters. You can print a signature or a page number or other words so they are even with the right margin.

However, LAZY WRITER will let you do a lot of things that SCRIPSIT won't. You can do little things like going back and changing your text from capitals to lower case or back again. You can automatically capitalize the first word of every sentence and the pronoun "I." You can scroll through your text a screen page at a time (something I have really wished for). You can put in mandatory spaces between words. You can print those extra characters on your printer. You can send control codes of any kind to your printer so you can change print styles or subscript or superscript or underline or print bold-face or double wide. You can mark where you were in your text, then move to somewhere else in your text to do something, and go back to your first spot. You can move a

block of text to a new spot and delete it from the old spot in one move.

LAZY WRITER will also let you do some big things that SCRIPSIT won't. You can tailor the printer driver program to your special printer. You can set up the "command" keys. You can look at a directory of the files on your disk. You can (hopefully) recover lost text when something goes wrong. You can call a special "HELP" file with notes about how to do something and then go back to your text. You can protect some of the computer's memory. You can chain files for printing even if they won't fit in memory. It has a special program so you can communicate with other computers (if you have the RS-232 board and a modem). It will load both compressed files and those saved in ASCII, Editor/Assembler files, object code files, and data files. However, the manual warns of the difficulties in object code and compressed files.

LAZY WRITER uses the CLEAR, BREAK, and SHIFT keys, as well as almost all the letter keys, to do all these things. SCRIPSIT uses the BREAK key and the "@" key and about 12 other letter keys.

PRINTER COMMANDS

> - starts printer commands
/ - additional command on same line
stop printer
- non-printing comments
w - number - sets width
m - number - sets left margin
r - number - sets right margin
ms - number - moves text to right
d - number - moves line feeds
f - form feed
i - number - indent
j - justify
s - send number instead of binary
c - number - centers text
t - center title
e - terminates title command
u - changes case
b - number - moves bold face
number alone initiates CHRS in BASIC
"downline lead" or "Enter" and command line
EXAMPLE
center 80 / bold 6

EDIT COMMANDS

BREAK - enter Bk, with Bk
+ - enter Bk, scroll up, move
cursor up
- - scroll down, move cursor
down
ENTER - scroll to end of text
SHIFT + - scroll to top of text
+ - scrolls down one page
- - scrolls up one page
+ - adds line at bottom
- - adds line at top
w - moves cursor one word
s - moves cursor one sentence
p - moves cursor one paragraph
+ - moves cursor to the right
- - moves cursor to the left
SHIFT + w - moves cursor
backward one word
SHIFT + s - moves cursor
backward one sentence
+ - any character - moves cursor
backward to that character
- - any character - moves cursor
backward to that character
+ - sets tabs
- - CLASH - clears tabs
+ - overtyping
- - insert
+ - delete
+ - w - deletes next word
+ - - - deletes whole sentence
+ - - - deletes all material after
this marker
+ - f - one character - deletes all
material to this character
+ - u - underlines and removes
underlining
+ - f - first word or phrase
+ - go to next occurrence of word
word
+ - replaces all instances of
searched for word
+ - move block
+ - copy block
+ - change case
+ - autoedit
+ - auto line
+ - multi-function command
+ - execute multi-function command
+ - help file
+ - breaks paragraphs, line feeds,
underlining
+ - correct case, under the
line
+ - save to disk
+ - save from disk
+ - go to DOS

SUMMARY OF EDIT COMMANDS

I find it a little difficult to change and I have to look up most of the LAZY WRITER commands to find out what control key to use. The letter keys are easy to remember. For instance, a "d" means "delete." My biggest problem has been starting to do something by mistake. For instance, I will forget to look at the bottom of the screen to see that I am in EDIT. I start typing and all of a sudden the screen says "Name of file to Load." Then I have to press the BREAK key to abort it and get back to my text. I use the BREAK key a lot to get out of doing something I don't really want to do. In fact, I use the BREAK key to change my mind in the middle of inserting or deleting text. I can't do that with SCRIPSIT.

The LAZY WRITER disk comes with several "command" keys already in files and another file that tells you about them. Some of the "command" keys are listed as being able to "swap" letters, sentences, and paragraphs. But there are no instructions about how to do this or exact details about what the "swap" does.

I miss being able to set the width of the text wider than 64 characters across the screen, but it will "wrap around" in LAZY WRITER. I miss being able to easily set a top margin on a printed page, but I can put blank lines into a "header" in LAZY WRITER that will do the same thing.

I do particularly like the "page" scrolling in LAZY WRITER, the ability to chain files for printing, and all the print commands. I like to be able to see the directory of disk files from LAZY WRITER, but I wish I could also see the size of each file. I have been using LAZY WRITER with NEWDOS/80 and have had no problems. I have even used NEWDOS/80's Mini-DOS to see the size of the files on the disk.

The more I use LAZY WRITER, the easier it gets. The more I use LAZY WRITER, the more impressed I am. If you want to write letters, documents, or even a book, you should take a good look at LAZY WRITER. ■

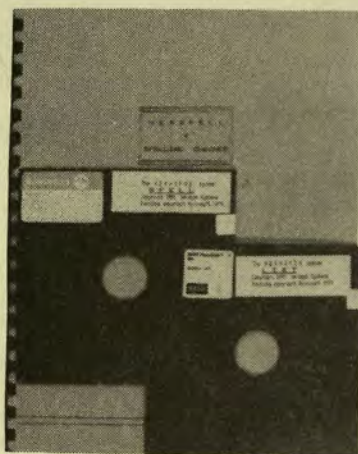
TYPE TO CHANGE:

PARALLEL DRIVER READY
(left) vars. 6 (right) vars. 78
Colwidth of text 72 Colwidth of lines 54
Colspan width 96 Colspan linefeeds 1
CPHASE LINES (CP, P) 66 (justification) on
Subscript off (top of page end) on
Subscript print code off Page no. 1
Colspan 1 (a) = software form feed off

COMMANDS

PRINT = Print Text
a = Call text
t = (Use the cursor
f = (From the cursor
e = (edit) - Return to "edit"
a = (Auto Commands

PRINTER MENU



HEXSPELL
Level II 48K 2-disk
by Bernard J. Hughes
from Hexagon Systems
P. O. Box 397, Station A
Vancouver, B.C., CAN V6C 2N2

HEXSPELL checks your spelling. It is like a dictionary with 20,000 words and room to add another 8,000. You type a letter or document using SCRIPSIT from Radio Shack or ELECTRIC PENCIL by Michael Schrayner. Then you read the letter using HEXSPELL. HEXSPELL will stop at each word that is not on its list and ask you if the word is right. If it is, you can go on. If it is wrong, you can change it. The program comes on two disks with a very good instruction manual. HEXSPELL may or may not work using NEWDOS/80 but Hexagon Systems has had no problems reported to them by people using LDOS.

You are asked for the name of the document you want to check and the temporary file name you want to use. Then the program starts showing you the document on the screen. When it comes to a word that is not in its list, it stops and shows you that

HEXSPELL - SPELLING CHECKER

COPYRIGHT 1980 - BERNARD J. HUGHES, HEXAGON SYSTEMS

ENTER THE NAME OF THE FILE YOU WISH TO CHECK - TEXT

File Not Found at address 8008

DOS READY

BAD START

I entered the wrong file name and the program ended.

word. It also shows you a little more of the text so you can see how the word is used.

You may "Skip" the word and leave it as is. This is handy for a word you want to purposely misspell. You may "Replace" the word with another word. This lets you correct the spelling. You may have the word "Learned" by the program. This adds the word to the list so the program will recognize it next time. The program can ignore any words that have a capital letter in them. This can help you proofread a BASIC program and will ignore the codes used by SCRIPSIT to print the letter.

When you have a new word added to the list, another word will be dropped from the list. Slowly you will add the words that you yourself use the most. Words that you never use will be dropped. You can delete a particular word from the list if you added one accidentally. You can even "Clear" the list and start a whole new list of words. Then you can start a list of words in another language if you want, or a list of very technical words used by engineers or doctors.

This is an example of a text being checked by HEXSPELL. The text scrolls up the screen as it is checked. When an error is detected, you have three choices.

1) REPLACE the incorrect word. The replacement word is INSTANTLY RE-CHECKED for correctness, then inserted in the text.

2) The word is correct, leave it as it is.

3) Leave the word as it is, AND tell HEXSPELL to LEARN this word for future reference, with just one keystroke.

Here is an example of a word that is not in the wordlist, #

WORD IN ERROR: madrigal

CONTINUATION: Press "L" to make HEXSPELL learn this word.

PRESS: R) REPLACE WORD S) LEAVE AS IS L) LEARN WORD

LEARN WORD

The word "madrigal" was not in Hexspell's dictionary. I want to add it so I will have the program "Learn" the word.

1) REPLACE the incorrect word. The replacement word is INSTANTLY RE-CHECKED for correctness, then inserted in the text.

2) The word is correct, leave it as it is.

3) Leave the word as it is, AND tell HEXSPELL to LEARN this word for future reference, with just one keystroke. Here is an example of a word that is not in the wordlist, madrigal. Press "L" to make HEXSPELL learn this word.

The next example is a word that we wish to use once but wouldn't want permanently in the wordlist, #

WORD IN ERROR: zoosoon

CONTINUATION: Press "S" to skip this word.

PRESS: R) REPLACE WORD S) LEAVE AS IS L) LEARN WORD

SKIP WORD

I want to use this word for emphasis. I don't want to add it to the list of correct spellings. I will have the program "Skip" it.

HEXSPELL is handy and fast but it has drawbacks. The program reads your original letter or document. If you enter the wrong file name, the program ends with an error message. Your changed document is put into a temporary file as you make the changes. Then it is copied back over your original document. You do not have the option of saving your

> (continued on page 39)

LEARN this word for future reference, with just one keystroke. Here is an example of a word that is not in the wordlist, madrigal. Press "L" to make HEXSPELL learn this word.

The next example is a word that we wish to use once but wouldn't want permanently in the wordlist, zoosoon! Press "S" to skip this word.

Next we will replace a word. To replace a word press "R". You will then be asked to enter the correct word. (Ensure that you are using lower case, type in the correct word and press "Enter". Try "R".

WORD IN ERROR: misstake

CONTINUATION: Press "R" then enter "mistake". The word

PRESS: R) REPLACE WORD S) LEAVE AS IS L) LEARN WORD

REPLACE WORD

The word "misstake" is spelled wrong and I want to replace it with the right spelling.

wordlist, madrigal. Press "L" to make HEXSPELL learn this word.

The next example is a word that we wish to use once but wouldn't want permanently in the wordlist, zoosoon! Press "S" to skip this word.

Next we will replace a word. To replace a word press "R". You will then be asked to enter the correct word. (Ensure that you are using lower case, type in the correct word and press "Enter". Try "mistake". Press "R" then enter "mistake". The replacement word is checked, it is in the word list in the program.

Internal Error at address 990C

DOS READY

INTERNAL ERROR

I don't know why the program ended with this error message. Now I have to run the program again.

WORDS PROCESSED = 367

WORDS UNRECOGNISED = 7

Copying corrected document back to original file.

Disk Write-protected at address 800C

Disk Write-protected at address 800C

DOS READY

WORDS PROCESSED

The program processed 367 words. There were 7 words it did not recognize. I wanted the corrected text to be saved on another disk so I had a write-protect tab on this one. The program ended with an error message again.



FLOPPY DOCTOR 3.0 MEMORY DIAGNOSTIC 2.2

Level II 16K disk
by The Micro Clinic
from Meta Technologies Corp.
26111 Brush Avenue
Euclid, OH 44132

These programs are written to help the user find out if there is something wrong with his disk drives or his computer's memory. They come with an instruction pamphlet which tells what the user will be asked on the screen and how to answer. This pamphlet also explains what each test does. If a test shows errors, it explains what might cause these errors and some possible cures.

FLOPPY DOCTOR is a set of 9 tests to use on disk drives. You can test up to 80 tracks with single or double density. You can also test drives which work at speeds up to 6 milliseconds. The tests make sure the drives can read and write on the correct track on the disk and that the correct information goes to and from the computer and the disk. One test checks the speed of a disk drive. If the speed is too fast or too slow, the computer prints this message on the screen. One of the tests is used when aligning the drives. Another test makes sure disks written by one drive can be read from another drive. If errors show up during a test, the screen will show the type of each error and where it occurred on the disk. Sometimes it can be the fault of the disk itself.

MEMORY DIAGNOSTIC checks the computer's memory in the keyboard

and in the expansion interface. You tell the computer how much memory is to be checked. You can also have the program pause each time an error is found so you can write down where it occurred. One test makes sure each bit of the computer's memory can store and keep information. Another test executes machine language in each section of memory. If errors occur consistently in certain locations, the instruction pamphlet tells you what might cause these and what you might do to cure them. The pamphlet warns you that you will void your guarantee if you open the keyboard or the expansion interface.

If you are having trouble with your computer and don't know much about hardware, or if you just want to make sure that everything is running right, you will want this program. You can copy down the error messages you get so you can tell the repairman what is happening. The pamphlet suggests some simple things you can look for first, like making sure the cables or disk drive heads are clean.

One thing which it would help to have in the FLOPPY DOCTOR test would be the option to print out any error messages on a printer. You can ask that the disk drive tests end if more than ten errors of the same kind occur. However, if there are several kinds of errors, the message about each one scrolls the screen. You may not have time to read them all.

The program is easy to use after you read the pamphlet and know what to expect. There are no unpleasant surprises since it warns you that the program may crash if you do certain things wrong. I liked knowing in advance what questions to expect on the screen and the choices in answering them. I also liked knowing that after I had cleaned the cable ends, I no longer had any error messages. Everything then worked fine and I saved a trip to the computer repair center. You will have to find out elsewhere how to do the actual cleaning, though.

You will still want to have DISK DRIVE TIMER from Disco Tech (Morton Technologies) to check the speed of your drives. FLOPPY DOCTOR will tell you if the speed is too fast or slow. DISK DRIVE TIMER shows you graphically how fast or slow. The TRS-80 version of DISK DRIVE TIMER was reviewed in Issue #11.

FLOPPY DOCTOR AND MEMORY DIAGNOSTIC, along with DISK DRIVE TIMER, make excellent additions to any TRS-80 owner's library.

THE FLOPPY DOCTOR -- MODEL 1 TRS-80 FLOPPY DISK DIAGNOSTIC
VERS. 3.0 -- (C) 1981 BY DAVE STANDAUGH -- ALL RIGHTS RESERVED
THE MICRO CLINIC-17375 BROOKHURST 0114-FOUNTAIN VALLEY-CA-92708

ENTER THE DRIVES TO BE TESTED? (0-3) 0
HOW MANY TRACKS? (1-35, 2-40, 3-77, 4-80) 1
SINGLE OR DOUBLE DENSITY? (1-SINGLE, 2-PERSON DOUBLED) 1
TK-TK ACCESS TIME? (1-40 MS, 2-20 MS, 3-12 MS) 1
TESTS? (ABCDEFGHIJ, ST) ABCDEF
RUN CONTINUOUSLY? (Y OR N) N
TERMINATE TEST ON EXCESSIVE ERRORS? (Y OR N) Y
OPERATOR INTERVENTION? (Y OR N) Y
TEST DISKETTE INTERCHANGEABILITY? (Y OR N) .

QUESTIONS

You answer these questions when you start the disk drive tests.

DRIVE UNDER TEST ==> 0 ## OPERATING MODE: SINGLE DENSITY ##

TEST A -- CHECK NORMAL DRIVE & CONTROLLER FUNCTIONS
OPEN DRIVE DOOR AND PULL OUT DISKETTE 1/2 INCH.
LEAVE THE DOOR OPEN AND PRESS "ENTER" WHEN READY.
INSERT A NON-WRITE-PROTECTED DISKETTE, CLOSE DRIVE DOOR.
PRESS "ENTER" WHEN READY.
TEST B -- CHECK DATA READ FUNCTION & ERROR STATUS
TEST C -- CHECK DRIVE SEEK FUNCTION
SEEKING TRACK ==> 20
TEST D -- CHECK SINGLE SECTOR AT/AD AND VERIFY ACCURACY
TEST E -- CHECK FOR CROSS-TRACK INTERFERENCE PROBLEMS
READING DATA -- TRACK=22 SECTOR=49
TEST F -- CHECK WRITE/READ OF ALL POSS. DATA PATTERNS
WRITING DATA -- TRACK=00 SECTOR=00

RUNNING THE TESTS

This is what you see on the screen as the disk drive tests are running.

COMPLETE PASSES ==> 01 ## OPERATING MODE: SINGLE DENSITY ##
DRIVE 0 - ERRORS: CRC=00 SEEK=00 LOST DATA=00 RCD NOT FND=00

==> PRESS "R" TO RESTART TEST OR "ENTER" TO BOOT DOS <==

RESULTS

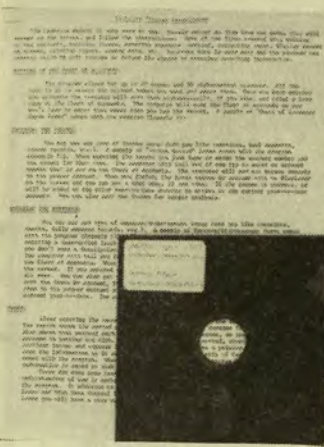
When the disk drive tests are over, you are told the total errors of each kind.

TRS-80 MEMORY DIAGNOSTIC -- VERSION 2.2

RUNNING WRITE/READ TEST ### LOOP => 38 WRITE/READ

MEMORY DIAGNOSTIC

This is what you see while the memory diagnostic test is running. The figures change to tell you how many loops have run so far. ■



CASHFLOW REPORTS CASHFLOW SUMMARY

Level II 32K disk
from McBride Accounting Service
P. O. Box 423
Star, NC 27356

CASHFLOW REPORTS was written to let the small business user keep monthly totals of each kind of cash income and expense. CASHFLOW SUMMARY keeps and prints out a summary of the year-to-date reports. These programs are not a General Ledger program nor are they a double-entry bookkeeping system. They keep track of cash income and expenses only. You first enter your monthly figures on REPORTS. Then you run SUMMARY to add the monthly figures to the year-to-date figures.

- 000 MAIN MENU 000
- ENTER 1 TO LOAD PRIOR CASHFLOW SUMMARY DATA
 - ENTER 2 TO LOAD CASHFLOW REPORT DATA
 - ENTER 3 TO SEE MONTHLY INCOME
 - ENTER 4 TO SEE MONTHLY EXPENSE
 - ENTER 5 TO PRINT REPORT
 - ENTER 6 TO SAVE CURRENT CASHFLOW SUMMARY DATA
 - ENTER 7 WHEN FINISHED

?4

SUMMARY MENU

These are the choices in the main summary menu. Each step is separate.

Both programs come with an instruction pamphlet. REPORTS comes with sample filled-in report sheets and blank forms.

You can have up to 20 income and 50 expense accounts in REPORTS. You can enter the account names by hand or from a previous disk file. When you enter data from a disk file, you must enter "1" as a buffer number. Only programmers know what a buffer number is. If you enter the account names from previous information, you can have a chart of accounts printed out.

If you entered the account names from an earlier month at the start of a new month, you must cancel the amounts for the earlier month. Then you enter the new income and expense amounts. For income, you enter the amount and then the code. For expenses, you reverse this order and

- ENTER 1 TO INPUT ACCOUNT NAMES
- ENTER 2 TO INPUT INCOME
- ENTER 3 TO INPUT EXPENSE
- ENTER 4 TO SEE INCOME
- ENTER 5 TO SEE EXPENSE
- ENTER 6 TO PRINT THE REPORT
- ENTER 7 TO SORT INCOME
- ENTER 8 TO SORT EXPENSE
- ENTER 9 TO SEE MAIN MENU
- ENTER 10 WHEN FINISHED
- ENTER 11 TO TOTAL YEAR-TO-DATE
- ENTER 12 TO SAVE DATA ON DISK
- ? 1
- IS ACCOUNT SAVED ON DISK (YES/NO)? YES
- ENTER BUFFER NUMBER ? 1
- ENTER FILE NAME ? HOME.ARM

MENU

These are the choices on this menu. If the account is already on disk, I must enter the Buffer Number. The instruction manual says to enter "1". Why do I have to enter it if it is always the same?

- ENTER 5 TO SEE EXPENSE
- ENTER 6 TO PRINT THE REPORT
- ENTER 7 TO SORT INCOME
- ENTER 8 TO SORT EXPENSE
- ENTER 9 TO SEE MAIN MENU
- ENTER 10 WHEN FINISHED
- ENTER 11 TO TOTAL YEAR-TO-DATE
- ENTER 12 TO SAVE DATA ON DISK
- ? 5
- DO YOU WANT A FAST, MEDIUM, OR SLOW DISPLAY (F/M/S)? S
- ACCOUNTING 50.00 300.00
- ADVERTISING 0.00 150.00
- BANK CHARGES 2.00 12.00
- ELECTRICITY 185.00 555.00
- HEAT 0.00 350.00

EXPENSES

I asked to see the expenses in a slow display. I think the first column is for the month and the second column is for the year up to the start of the month. But I don't know.

enter first the code, next the amount, and then the description. The amounts must not contain a comma but you are not told this. If you do have a comma, you are told "Extra Ignored."

When you are entering income, the instruction pamphlet says to enter "End" as the amount or "21" as the income code when you are finished. If you try to enter "21" as the income code, you are told "subscript out of range in 730" and

```
ENTER END FOR AMOUNT OR 21 FOR CODE WHEN FINISHED
DO YOU WANT TO CHANGE ALL INCOME TO 0 (Y/N)? N
ENTER THE INCOME AMOUNT: ? 1,345.72
?EXTRA IGNORED
ENTER THE INCOME CODE: ? 1
ENTER THE INCOME AMOUNT: ? 230.70
ENTER THE INCOME CODE: ? 21
SUBSCRIPT OUT OF RANGE IN 730
READY
?.
```

ENTERING INCOME

I have entered one income amount and code. Then I tried to enter an income amount with a comma. Then I wanted to stop entering amounts. Now the program has ended with an error message.

```
ENTER 2 TO SEE OR CHANGE INPUT
ENTER 3 TO ADD ANOTHER LINE TO THE INPUT
ENTER 4 TO PRINT INPUT
ENTER 5 TO SORT INPUT BY CODE
ENTER 6 WHEN FINISHED
? 2
DO YOU WANT A FAST OR SLOW SCREEN DISPLAY (F/S)? S
ITEM NO. DESCRIPTION CODE AMOUNT
1 1 25.00
2 2 67.50
3 3 75.41
TOTAL 170.29
```

DO YOU WANT TO CHANGE AN ITEM (Y/N)?

DO YOU WANT TO CHANGE AN ITEM (Y/N)? Y

```
ENTER THE NUMBER OF THE ITEM YOU WANT TO CHANGE ? 1
THIS IS THE CURRENT VALUE FOR ITEM: 1
CODE: 1
AMOUNT: 25
DESCRIPTION:
```

ENTER THE NEW CODE ?.

CHANGING EXPENSES

I want to change an expense item entered a few days ago.

the program ends. Then you must start it over. The instruction manual does say that if you want to interrupt the program, hit "Break." Then type "Goto 60." This is the only way to save all the information you have already entered. You cannot change or cancel an income amount.

When you enter expense items, the instruction pamphlet says you can enter a description of the expense. There is only one way to do this. When you start to enter expenses, one of the questions is, "Do you want to change input to 0?" If you answer "Y," you are allowed to enter descriptions after you enter the code numbers and the amounts. This means that you cannot add an expense a few days later. Also, there is no way to completely cancel an expense entry. If you want to cancel an item, you must enter the number of the item and then enter a "0" for the code and the amount.

You can sort the expense items alphabetically. You can sort the income or the expense amounts by the

```
ENTER 1 TO INPUT EXPENSE
ENTER 2 TO SEE OR CHANGE INPUT
ENTER 3 TO ADD ANOTHER LINE TO THE INPUT
ENTER 4 TO PRINT INPUT
ENTER 5 TO SORT INPUT BY CODE
ENTER 6 WHEN FINISHED
```

```
DO YOU WANT TO CHANGE PERIOD EXPENSE TO R (Y/N) ? N
DO YOU WANT TO CHANGE INPUT TO R (Y/N) ? N
ENTER THE EXPENSE CODE : 1
ENTER THE EXPENSE AMOUNT : 35.00
ENTER THE EXPENSE CODE : 5
ENTER THE EXPENSE AMOUNT : 67.00
ENTER THE EXPENSE CODE : 3
ENTER THE EXPENSE AMOUNT : 75.41
ENTER THE EXPENSE CODE : 200
```

ADDING EXPENSES

I wanted to add several expense items to those entered a few days ago. I don't want to change all the earlier figures to "0". But I can't enter a description unless I change all the earlier figures to "0" and enter them all again.

ENTER 3 TO ADD ANOTHER LINE TO THE INPUT
ENTER 4 TO PRINT INPUT
ENTER 5 TO SORT INPUT BY CODE
ENTER 6 WHEN FINISHED

```
DO YOU WANT TO CHANGE PERIOD EXPENSE TO @ (Y/N) ? N
DO YOU WANT TO CHANGE INPUT TO @ (Y/N) ? Y
DO YOU WANT TO ENTER DESCRIPTIONS (Y/N) ? Y
ENTER END OR 99 FOR CODE WHEN FINISHED (NUMBER) 18
ENTER THE DESCRIPTION : ? CHECK 734
ENTER THE EXPENSE CODE : ? 1
ENTER THE EXPENSE AMOUNT : ? 350.75
ENTER THE DESCRIPTION : ? 8
ENTER THE EXPENSE CODE : ? 3
ENTER THE EXPENSE AMOUNT : ? 240.81
ENTER THE DESCRIPTION :
```

EXPENSES

Now that I have changed all the previous expenses to "0", I can enter a description on the expense items for the new month.

largest or smallest amount. But you must not sort the items by the amount if you later want to save them in your disk file.

You can look at the income or expense amounts which you have already entered. You can have a printed report of the income and expense amounts entered for that month. You can look at the same menu again, end the program, run a year-to-date total, or save the data as a separate file.

You can also have a printout of the detailed expenses. But make sure your printer has more than 80 columns. If the printout contains the description, the printed line is 81 columns wide. This is a change from the other printouts in REPORTS and the printed SUMMARY which will fit in 80 columns.

When you see the income or expense REPORTS on the screen, you

CASHFLOW STATEMENT				
ACME SERVICE STATION PERCENT PREVIEW				
	PERIOD	PERCENT	YEAR-TO-DATE	PERCENT
INCOME				
GAS	\$4,358.00		\$49,188.00	
OIL	725.00		7,785.00	
WASH & LUB	800.00		8,225.00	
SALES & ACCESS.	1,925.00		20,875.00	
REPAIRS	425.00		2,225.00	
PRODUCTS	1,025.00		6,575.00	
SALES TAX COLL.	190.00		817.00	
TOTAL INCOME	\$11,973.00		\$66,262.00	
PAID-OUT				
ACCOUNTING	\$54.00	0.5 %	154.00	0.2 %
INTERESTING	2.00	0.0 %		0.0 %
ADMIN. CHARGES	2.00	0.0 %	12.00	0.0 %
RENT	100.00	0.8 %	355.00	0.6 %
ELECTRICITY	30.00	0.3 %	354.00	0.5 %
MISCELLANEOUS	20.00	0.2 %	100.00	0.2 %
OFFICE EXPENSE	80.00	0.7 %	35.00	0.1 %
PAYMENT-ACCT.	125.00	1.1 %		
PHONE	1.00	0.0 %	1.00	0.0 %
PAYMENT-INSUR.	480.00	3.9 %	2,488.00	3.8 %
PERSONAL	1.00	0.0 %	1.00	0.0 %
POSTAGE	4.00	0.0 %	1,741.00	2.6 %
PURCHASES-ACCES	448.00	3.7 %	2,174.00	3.3 %
PURCHASES-GAS	613.00	5.1 %	3,861.00	5.8 %
PURCHASES-OIL	910.00	7.6 %		
PURCHASES-PROD.	1,896.00	15.8 %	10,875.00	16.4 %
PURCHASES-TIRES	309.00	2.6 %	5,622.00	8.5 %
NEW	0.00	0.0 %	1,688.00	2.5 %
REPAIRS	0.00	0.0 %	235.00	0.4 %
SUPPLIES	0.00	0.0 %	258.00	0.4 %
TAX-OTHER	0.00	0.0 %	171.00	0.3 %
TAX-PAYROLL	0.00	0.0 %	799.00	1.2 %
TELEPHONE	65.00	0.5 %	2,648.00	4.0 %
TRAVEL	180.00	1.5 %	1,118.00	1.7 %
WAGES	489.00	4.1 %	2,488.00	3.8 %
WATER	0.00	0.0 %	1.00	0.0 %
TOTAL PAID-OUT	\$10,556.00	90.3 %	\$44,317.00	66.9 %
NET GAIN	\$1,417.00	11.7 %	\$21,945.00	33.1 %

PRINTED REPORT

This is the printed Cashflow Report. It lists all the income and expense accounts.

DETAILS OF EXTENSE REPORT			
ACME SERVICE STATION			
4/26/81			
ITEM NO.	DESCRIPTION	ACCOUNT	AMOUNT
1	CHECK 734	ACCOUNTING	234.
2	CHECK 735	ADVERTISING	85.
3	CHECK 734 5/21	BANK CHARGES	43.
4	CHECK 737	ACCOUNTING	248.
5	CHECK 736 4/1	PAYMENTS-LOAN	18.
TOTAL			644.

PRINTED EXPENSE DETAILS

This is the printed detail of the expenses. It is hard to read because I only have an 80-column printer.

have the option of a fast or a slow display. This is necessary because the information scrolls up the screen instead of printing one page of information at a time and then letting you press "Enter" to continue.

When you use the SUMMARY program, you must load both the previous SUMMARY data and also the last REPORTS data. The account names are in the REPORTS data. Then you add the REPORTS amounts for the previous month to the SUMMARY amounts. You should then save this new SUMMARY onto your disk. You can see any earlier month's income or expenses by entering the month's number instead of the name. Then you are shown in a fast or slow scroll either the income or the expenses.

If you want to correct individual income or expense items for a certain month, you again select "Load the Cashflow Report Data" from the

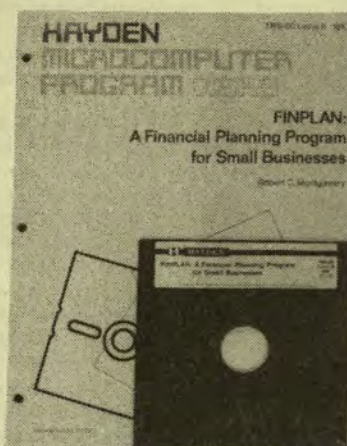
[illegible]

ITEM	JUN	AUG	SEP	OCT	NOV	DEC	TOTAL
GAS	4,358	0	0	0	0	0	44,454
PAID	1,237	0	0	0	0	0	4,504
LAMPS & LUB	870	0	0	0	0	0	5,968
CELLS & ACCESS-	725	0	0	0	0	0	7,275
TIRES	925	0	0	0	0	0	7,375
PRODUCTS	1,525	0	0	0	0	0	18,185
SALES TAX COLL.	180	0	0	0	0	0	1,880
TOTAL INCOME	811,873	0	0	0	0	0	877,330
ACCOUNTING	58	0	0	0	0	0	258
REPAIRS	15	0	0	0	0	0	158
BANK CHARGES	2	0	0	0	0	0	14
TELEPHONE	180	0	0	0	0	0	14
MEAT	30	0	0	0	0	0	88
CELLULAR/NOV OFFICE EXPENSE	30	0	0	0	0	0	88
PAVMENT ACROSS	325	0	0	0	0	0	870
PAVMENTS-LAMPS	175	0	0	0	0	0	870
PERSONAL	904	0	0	0	0	0	75
POSTAGE	0	0	0	0	0	0	75
PURCHASES-ACCESS	308	0	0	0	0	0	2,861
PURCHASES-GAS	6,880	0	0	0	0	0	2,861
PURCHASES-LUB	1,412	0	0	0	0	0	11,842
PURCHASES-PARTS	610	0	0	0	0	0	6,662
PURCHASES-TIRES	1,412	0	0	0	0	0	6,662
PURCHASES-TRUCKS	258	0	0	0	0	0	2,276
RENT	0	0	0	0	0	0	784
REPAIRS	0	0	0	0	0	0	2,276
SUPPLIES	0	0	0	0	0	0	54
TAX-TOTALS	0	0	0	0	0	0	258
TAX-PAYMENTS	0	0	0	0	0	0	19
TAX-SALES	0	0	0	0	0	0	930
TELEPHONE	45	0	0	0	0	0	407
TRAVEL	180	0	0	0	0	0	1,299
WAGE	180	0	0	0	0	0	1,299
WATER	0	0	0	0	0	0	0

PRINTED SUMMARY

The printed summary looks like this. It is printed in two parts because it will not fit across on one page.

▷ (continued on page 48)



FINPLAN
Level II 32K disk
by Robert C. Montgomery
from Hayden Publishing Co.
50 Essex Street
Rochelle Park, NJ 07662

FINPLAN is a tool for small businessmen to use in financial planning. The program is in two parts. It comes with a sample file on the disk and an instruction manual

BALANCE SHEET — JONES DISTRIBUTORS
(DOLLARS)

	1979	1984	CHANGE %
CASH & EQUIV	\$ 8,673	\$ 61,417	886.1
NET RECEIVABLES	\$ 18,697	\$ 48,986	161.6
INVENTORIES	\$ 42,143	\$ 106,288	152.2
NET DEPRECIABLE ASSETS	\$ 48,441	\$ 37,726	22.1
NONDEPRECIABLE ASSETS	\$ 27,888	\$ 27,888	0.0
OTHER ASSETS	\$ 2,736	\$ 2,736	0.0
— TOTAL ASSETS	\$140,598	\$162,148	9.1

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

BALANCE SHEET — JONES DISTRIBUTORS
(DOLLARS)

	1979	1984	CHANGE %
— TOTAL ASSETS	\$140,598	\$162,148	9.1
CURRENT PAYABLES	\$ 8,982	\$ 22,452	152.2
LONG TERM DEBT	\$ 12,000	\$ 12,000	0.0
— TOTAL LIABILITIES	\$ 20,982	\$ 34,452	64.8
— EQUITY CAPITAL	\$127,696	\$127,696	0.0

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

BALANCE SHEET

The balance sheet shows you figures for the two years you have entered based on the original figures and the projected growth. It also shows you the percent of change between the two years.

which takes you through the main part of the programs step by step. It is also available on tape for 16K memory.

MODULE I of the program allows you to enter one year's financial statements, both earnings and balance sheet. The information can be from the sample data file already stored on disk, or from your own business. In your own figures, you decide what percent to allow for real growth in the business, and what percent for inflation. The sample figures use 10% inflation for all categories (except capital assets, inventories, long term debt, interest and depreciation). Real growth varies by the type of account. The program extends these figures for five years to show you what would happen. You may change the base year information to show what would happen if you purchased major depreciable or non-depreciable assets. It will show what would happen financially if you incorporate and pay the federal income tax from the corporation. You may change any of the coming five years to show the results of adding extra capital, or purchasing major depreciable assets, or borrowing money.

The program provides for sales in four categories or lines. If you have sales with a much higher or lower inventory cost, or part of your business is wholesale, or part is service, you may separate these figures. Each sales "line" has a separate cost of sales. Real growth may be different for each of these lines. Of you are thinking of expanding one of the sales lines, you will want to separate them. The program will add them together for a total net sales, cost of sales, and gross margin.

Officers salaries may be separate from other salaries. Other

CHANGES BEFORE END OF 1984 — JONES DISTRIBUTORS

1981
CHANGE IN LONG TERM DEBT NOW: \$ 0 NEW: (\$ + OR -) 10000
CUMUL. INTEREST RATE CHANGE NOW: 0 % NEW: (X POINTS + OR -) 10
EQUITY ADDED/WITHDRAWN NOW: \$ 0 NEW: (\$ + OR -) 5000
CHANGE IN NONDEPRECIABLE ASSETS NOW: \$ 0 NEW: (\$ + OR -) 10
CHANGE IN NET DEPRECIABLE ASSETS NOW: \$ 0 NEW: (\$ + OR -) 10

ENTER 'P' IF NO CHANGE — NO CHANGES, PLEASE

CHANGE

If you are thinking of adding new capital or borrowing money for 1980, 1981, and 1982, it is easy to enter the information.

expense figures may be separated into 8 categories so you may allow for individual growth or future changes. The program uses various rates of real growth, depending on the type of income or expense. It suggests changes to make in some of the expense categories, such as salaries, if you incorporate your

EARNINGS STATEMENT — JONES DISTRIBUTORS
(DOLLARS)

	1979	1984	CHANGE %
NET SALES—LINE A	\$143,289	\$256,499	148.8
NET SALES—LINE B	\$ 81,432	\$163,789	188.1
NET SALES—LINE C	\$ 61,492	\$238,315	271.3
— NET SALES	\$286,193	\$748,603	161.6
COST OF SALES—LINE A	\$ 48,432	\$238,888	148.8
COST OF SALES—LINE B	\$ 48,221	\$ 98,899	188.1
COST OF SALES—LINE C	\$ 15,871	\$ 72,788	271.3
— COST OF SALES	\$112,524	\$384,675	152.2
— GROSS MARGIN	\$173,669	\$363,928	172.1

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

EARNINGS STATEMENT — JONES DISTRIBUTORS
(DOLLARS)

	1979	1984	CHANGE %
— NET SALES	\$286,193	\$748,603	161.6
— COST OF SALES	\$112,524	\$384,675	152.2
— GROSS MARGIN	\$173,669	\$363,928	172.1
— TOTAL EXPENSES	\$181,248	\$289,579	187.4
— PROFIT BEFORE TAX	\$ 32,429	\$153,946	374.7
FEDERAL INCOME TAX	\$ 0	\$ 0	0.0
— POSTTAX PROFIT	\$ 32,429	\$153,946	374.7
DISTRIBUTED TO OWNERS	\$ 32,429	\$153,946	374.7
— RETAINED EARNINGS	\$ 0	\$ 0	0.0

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

EARNINGS STATEMENT — JONES DISTRIBUTORS
(DOLLARS)

	1979	1984	CHANGE %
OFFICERS' SALARIES	\$ 27,888	\$ 67,185	148.8
OTHER SALARIES	\$ 43,248	\$ 89,438	161.6
RENT	\$ 5,288	\$ 8,375	61.1
TRAVEL & COMMISSION	\$ 1,458	\$ 3,623	148.8
UTILITIES & SUPPLIES	\$ 4,321	\$ 18,752	148.8
ADVERTISING & PROMOTION	\$ 5,643	\$ 14,842	148.8
REPRESENTATION & INSURANCE	\$ 8,377	\$ 25,565	285.2

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

EARNINGS STATEMENT — JONES DISTRIBUTORS
(DOLLARS)

	1979	1984	CHANGE %
ST & LOCAL TAXES	\$ 2,188	\$ 6,489	285.2
OTHER COSTS	\$ 888	\$ 1,288	61.1
INTEREST	\$ 968	\$ 968	0.0
DEPRECIATION	\$ 2,143	\$ 2,143	0.0
— TOTAL EXPENSES	\$181,248	\$289,579	187.4
— PROFIT BEFORE TAX	\$ 32,429	\$153,946	374.7

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

EARNINGS STATEMENT

The earnings statement projects the figures from the base year to the years you have entered and shows you the results.

business. If you borrow money to enlarge your inventory, it will result in added salaries for new employees, added sales, added inventory, added long term debt, and added interest. You are shown how to make these changes.

You may see separate figures for earnings statements and balance sheets. These figures will show you the comparison for any two years. You may see an analysis of any two years' figures. You may see a bar chart of any one account which shows you vividly the rate of growth or decline in that account during the five years.

The analysis shows you for any two years the cash flow in dollars, the ratio of current assets to liabilities, and the percent of debt to debt and equity. It shows you the "days receivables" which is the ratio of accounts receivable to annual sales, expressed in days of a 365-day year. It shows you the "days inventory". It shows the dollar amount of sales you must have to break even with your expenses. It

shows you the percent of gross margin, return on sales, and return on equity. It shows you the compounded rate of growth, both real and inflationary, for the five years for sales and earnings.

MODULE II shows you the rate of return on equity, cash flows from depreciable asset (inventory) purchases, and the results of changing from one type of depreciation to another. The depreciation figures may be extended for up to 26 years. It will figure separately the federal corporate income tax on any amount, and the investment credit.

Depreciation in the sample file in Module I uses the straight life method for a ten-year life with no salvage value. Module II lets you try changes from straight life depreciation to double declining balance or sum of the years' digits. It also lets you separate each prospective year's asset purchases and have a separate depreciation life for each year. Module I lets you add new depreciable assets but uses averages for the depreciation life over the five-year extension. Either Module lets you change the total salvage value expected, although Module II lets you use individual salvage values for each year assets are purchased. Both Modules allow for the 10% Federal Investment Credit.

The projections in this program are the type of information bankers want when you borrow money. They will help you foresee what might happen if you had one bad year or one great year. They might point out a huge overdraft at the bank in three or four years unless you put in more capital or borrow working money or

do a little of both. The manual suggests areas where you should get professional help to carry out your planning.

The manual suggests how you may make temporary changes to figures and account names by using a section of the program. It also tells you how to change the data statements in the program itself to show permanent changes in the account names. It explains which account numbers should be used for sales, which for expenses, and which for balance sheet accounts. The program lets you change account names as well as dollars, percents for real and inflationary growth, interest rate, depreciation, corporate or individual ownership, debt, non-depreciable assets, days inventory, and equity. The manual explains that dollar amounts may be shown in thousands of dollars instead of actual dollars, if most of your figures are over \$10,000. The program will automatically switch to thousands in case of need.

FINPLAN is a powerful tool. When I read the manual, I couldn't wait to start using the program. Unfortunately, I had several problems. I was told to transfer the

> (continued on page 44)

CASH & EQUITY — JONES DISTRIBUTORS (DOLLARS)

	B	25 K	50 K
1979	10000000		
1980	10000000000000		
1981	1000000000000000		
1982	10000000000000000		
1983	10000		
1984	\$ 16,417		

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

CHART

The chart of the Cash and Equivalent Account shows that unless more new capital is found, the business will be overdrawn \$16,417 at the end of five years.

ANALYSIS — JONES DISTRIBUTORS (DOLLARS)

	1979	1982
CASH FLOW	\$ 2,143	\$ 2,143
CURRENT ASSETS-LIABILITIES	7.8	5.3
% DEBT-EQUITY	8.6	8.6
DAYS RECEIVABLES	23.8	23.8
DAYS INVENTORY	108.9	108.9
BREAK-EVEN SALES	\$216,761	\$325,583
% GROSS MARGIN	46.7	47.8
% RETURN ON SALES	11.3	17.1
% RETURN ON EQUITY	25.4	67.7
% 3 YEAR SALES GROWTH		21.8
% 3 YEAR EARNINGS GROWTH		38.7

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

ANALYSIS

The analysis of the business between 1979 and 1982 shows the analysis for each of the two years I entered.

COMPANY DESCRIPTION

NAME: JONES DISTRIBUTORS
 NEW: (30 CHRG) ? JONES DISTRIBUTORS INC
 DATA IN DOLLARS OR THOUSANDS (0 OR 1)
 TAXABLE CORPORATION (TX OR NT)
 CURRENT INTEREST RATE % ((100))
 DEPREC LIFE, NEW INVESTMENTS ((26 YEARS, 34))
 BASE YEAR (19—)
 STANDARD INFLATION % ((100))

ENTER 'M' IF NO CHANGE — NO COMMS, PLEASE

CHANGES

I want to see what will happen if I incorporate. Module I allows depreciation for a minimum of 4 years and a maximum of 26. I will also change the figures in the Officers Salaries Accounts to show a larger salary.

REVIEW/CHANGE DATA — JONES DISTRIBUTORS INC (DOLLARS)

NEW DEPRECIABLE INVESTMENTS	NEW:	1980, 1981	NEW: ? M
1980	NEW:	10,000	NEW: ? 0000
1981	NEW:	10,000	NEW: ? 0000
1982	NEW:	2,000	NEW: ? 0000
1983	NEW:	7,000	NEW: ? 5000
1984	NEW:	8,000	NEW: ? M

ENTER 'M' FOR NO CHANGE — NO COMMS, PLEASE

DEPRECIATION SCHEDULES — JONES DISTRIBUTORS INC (DOLLARS)

DEPRECIABLE INVESTMENTS	1980	1981	1982	1983	1984
AMOUNT \$100,000	\$ 7,000	\$ 6,000	\$ 5,000	\$ 0	\$ 0
YRS LIFE	10	10	10	10	10
METHOD	SL	SL	SL	SL	SL
SALVAGE %	0	0	0	0	0
DEPRECIATION AMOUNTS	1980	1981	1982	1983	1984
1980	\$ 10,000	\$ 0	\$ 0	\$ 0	\$ 0
1981	\$ 10,000	\$ 700	\$ 0	\$ 0	\$ 0
1982	\$ 10,000	\$ 700	\$ 600	\$ 0	\$ 0
1983	\$ 10,000	\$ 700	\$ 600	\$ 500	\$ 0
1984	\$ 10,000	\$ 700	\$ 600	\$ 500	\$ 0

PLEASE HIT 'P' TO PRINT, ANY KEY TO CONTINUE

DEPRECIATION SCHEDULES

I think I may make major depreciable purchases in several coming years. Module II lets me set up separate depreciation schedules for each year to see what will happen.



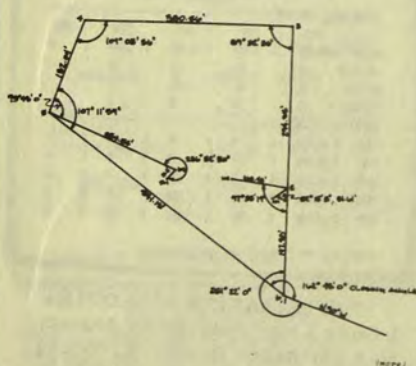
**FINDER-1
COGO-1**
Level II 48K disk
from Disco-Tech
Morton Technologies, Inc.
P. O. Box 11129
Santa Rosa, CA 95406

These programs are for surveyors. FINDER-1 will reduce their field note data. CoGo-1 is a coordinate geometry program for their use. Each program must be used with NEWDOS+ by Apparat as the Disk Operating System. The programs come with an extensive manual to take the user step by step through entering data. The manual shows you what appears on the

SCREEN SHOTS FROM FINDER-1

The following pages contain examples of how we computed the traverse which is illustrated on this page.

MORTON TECHNOLOGIES, INC. • (707) 527-9000
1130 CORDON ROY CENTER • SANTA ROSA, CA 95406
FIELD DATA TRAVERSE
P.M. 2 SAMPLE SURVEY
MARCH 5, 1988



FINDER SURVEY

screen and how you are to answer each question. FINDER-1 has a complete example of entering field notes for a piece of property, from entering the first data point to the final printout. CoGo-1 has examples of entering many points from a subdivision survey, including streets, a dead-end drive, and lots with curved corners. Each program has an initial set-up to enter your firm's name and address and information about your printer, and to copy NEWDOS+ to the diskette. Each also has a subsection to format a data diskette.

The manual says, "FINDER-1 reduces field data for either closed or point-to-point traverses to coordinate points; closes; either adjusts angles evenly or does no angle adjustment, permitting manual adjustment, if desired; balances by compass, Crandall, or transit rule (all three methods may be reviewed

before deciding which one to keep); rotates bearings; transforms coordinates; and stores coordinates on a diskette for future use with Disco-Tech's CoGo-1 (Coordinate Geometry) program."

Directions may be entered as turned and/or deflected angles and are entered as DD.MMSS. The degrees are entered before the decimal point, and the minutes and seconds after it, using a 0 if needed to make a two-digit number. Left angles are entered as negative angles, and right as positive. Bearings are entered with an "N" or "S" just before the direction, and an "E" or "W" just after it. The computer changes your entry to make it more readable on the screen. Distances are entered as horizontal or slope, using either vertical or

- PROGRAM OPTIONS
- 1 - CLOSE TRAVERSE
 - 2 - BALANCE TRAVERSE
 - 3 - EXAMINE DATA
 - 4 - CHANGE SOME VALUES
 - 5 - INVERSE BETWEEN POINTS
 - 6 - CONTINUE TRAVERSE
 - 7 - ROTATE BEARINGS
 - 8 - TRANSFORM COORDINATES
 - 9 - STORE COORDINATES ON DISC
 - 10 - PRINT DATA & OR RESULTS ON LINEPRINTER
 - 11 - EXIT PROGRAM

OPTION? -

FINDER OPTIONS

INITIAL TRANSIT REFERENCE DATA

FROM POINT #? 1
NORTHING: 10000
EASTING: 10000
BACKSIGHT BEARING: N 90 00 00 W
OR
BACKSIGHT POINT -
NORTHING: 10000
EASTING: 10000

TO NEXT TRAV. POINT (1), TRAV. SINE SHOT (2), OR SINE SHOT (3)?
OPTION? -

POINT #? 2
BACKSIGHT ANGLE: 251.22
DISTANCE: 197.90

NORTHING: 10187.6824
EASTING: 9936.7433

TO NEXT TRAV. POINT (1), TRAV. SINE SHOT (2), OR SINE SHOT (3)?
OPTION? -

ENTERING POINTS

CLOSURE ERROR: 0.0009
LAT. ERROR: -0.0392
DEP. ERROR: -0.0707
DIRECTION: S 61 00 19 W
PERIMETER: 1596.060
PRECISION: 19733
TOTAL ANGLE ERROR IS 0 0 31
PER ANGLE: 0 0 6

ANGLE ERROR DISTRIBUTED EVENLY? (0=NO, 1=YES)

CLOSURE ERROR

CHANGE #? 4
BACKSIGHT ANGLE: 89.3236
DISTANCE: 300.56

NORTHING: 10342.0601
EASTING: 9483.0638

PRESS ANY KEY TO RETURN TO OPTION LIST.

MAKING CORRECTIONS

CLOSURE ERROR: 0.0109
LAT. ERROR: -0.0113
DEP. ERROR: -0.0152
DIRECTION: S 53 26 23 W
PERIMETER: 1596.060
PRECISION: 04400

PRESS ANY KEY TO RETURN TO OPTION LIST.

NEW CLOSURE ERROR

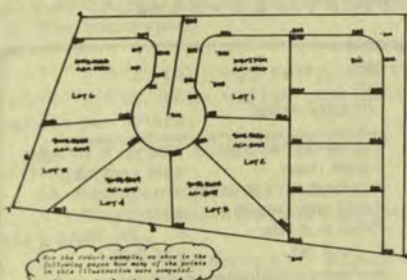
zenith angles. Side shots may be entered from a fixed traverse point or as successive side shots. If you make a mistake in entering data, a correction is easy.

FINDeR-1 allows up to 2799 point numbers if you have one disk drive, and from 1 to 4549 if you have two drives. You may not reuse a point number already entered, but must use a new one. You may use a maximum of 150 points in any one traverse.

You will see the coordinates for each computed point on the screen before you enter the next one, and you may also see the results of each balancing method. During closing, you will see the closure and/or angle error, perimeter, and precision. You may have a printout of the list after closing with and/or without the angle

error adjustment. You may also have a printed list of the points, and a final list after choosing the balancing method.

The manual says that CoGo-1, the Coordinate Geometry Program, "provides a variety of useful functions, performing calculations for geometric shapes encountered in land subdivisions. To name a few, these functions include traversing and/or inverting with area accumulation (including radius points), location of points by traverse, inverse, intersections (of lines, arcs, perpendiculars, streets), curve design, area cutoff (parallel and hinged sides), tangencies to curves, point editing, and considerably more."



CoGo SURVEY

OPTION: BEARING/BEARING
20 - BEARING / BEARING
21 - BEARING / DISTANCE
22 - DISTANCE / DISTANCE
23 - OFFSET / OFFSET
24 - PARALLEL LINE
25 - PERPENDICULAR LINE

POINT: 2
BEARING: S 60 19 19 W
POINT: 5
BEARING: S183°57'E

BEARING OPTION

OPTION: CURVE DESIGN
26 - AREA / PARALLEL SIDE
27 - AREA / HINGED SIDE
28 - CURVE DESIGN
29 - UNIVERSAL CURVE

FROM POINT: 4
TO POINT: 5
TO POINT: 6
RADIUS: 30
EXTERNAL: 14/0
TANGENT: 14/0

000 CALCULATING ... ONE MOMENT, PLEASE. 000

CURVE DESIGN

CoGo-1 will work from the points entered by FINDeR-1 or you may enter continuation points. Angles and bearings are entered in the same format as in FINDeR-1. Previous bearings may be continued with multiples of 90 degrees added or with two point numbers. You may not reuse an earlier point number. New points may be stored on the data diskette, and at the end of the program, all points will be stored.

CoGo-1 has the nice feature of being able to print out any information which appears on the screen except for the group of choices at the top of the screen. These choices are shown about six at a time. If you want a different function, you press the down arrow key to go on to the next group. After you have chosen the function you want to use and are shown the computation, you may press the up arrow key and have a printout. Your computation stays on the bottom of the screen while you page through the choices shown at the top of the screen. Once you have chosen a new function, the bottom of the screen clears and asks for the new information. You may also have a printout of the stake-out data, a continuation list of the points, or an area accumulation by inverse, including radius points, for all lots or for an individual lot.

Both FINDeR-1 and CoGo-1 are easy to use. You are shown how many

▷ (continued on page 41)

TRAVERSE DATA COMPASS RULE

FROM	ANGLE	DISTANCE	NORTHING	EASTING	TO
1	N 10 30 00 W	197.981	18187.683	9936.743	2
2	N 10 30 00 W	294.351	18466.525	9842.675	3
3	S 79 54 32 W	388.956	18342.857	9403.878	4
4	S 88 00 00 W	182.839	18168.810	9403.857	5
5	S 72 40 00 E	541.134	18000.000	10000.000	6

PRESS ANY KEY TO RETURN TO OPTION LIST.

TRAVERSE DATA COMPASS RULE

PURSER'S MAGAZINE
P.O. BOX 446, EL DORADO, CA 95623 PHONE (916) 422-5288
FIELD DATA TRAVERSE
REVIEW 1
EXAMPLE JUNE 24, 1981

FROM	ANGLE	BEARING	DISTANCE	NORTHING	EASTING	TO
1		N 95 00 00 W		18888.888	18888.888	1
2	S 251 21 58	N 10 30 02 W	197.981	18187.682	9936.741	2
3	S 52 35 3	S 90 37 81 W	35.438	18161.278	9919.741	3
4	S 90 35 10	S 70 57 17 W	182.839	18167.786	9835.727	4
5	S 72 40 00 E	N 10 30 02 W	294.351	18466.522	9842.675	5
6	S 79 54 32 W	S 79 54 32 W	388.956	18342.856	9403.862	6
7	S 88 00 00 W	S 88 00 00 W	182.839	18168.811	9403.857	7
8	S 72 40 00 E	S 86 14 05 E	254.548	18343.584	9737.861	8
9	S 72 40 00 E	S 28 30 55 W	21.589	18123.978	9729.487	9
10	S 187 11 57	S 72 40 58 E	541.134	9899.989	9999.995	10

CLOSURE ON POINT 1:
CLOSURE ANGLE (1/2 OF 360)
CLOSURE ERROR: 0.0000 (LAT. ERROR) 0.0010 (DEG. ERROR) 0.0017
DIRECTOR: S 52 36 23 W
PERIMETER: 1284.668
PRECISION: 0.0000

PURSER'S MAGAZINE
P.O. BOX 446, EL DORADO, CA 95623 PHONE (916) 422-5288
FIELD DATA TRAVERSE
REVIEW 1
EXAMPLE JUNE 24, 1981

FROM	ANGLE	BEARING	DISTANCE	NORTHING	EASTING	TO
1		S 71 22 00 W		283589.478	1889348.848	1
2		N 37 14 00 W	197.981	283767.836	1889228.150	2
3		S 19 59 00 W	35.438	283716.381	1889219.905	3
4		S 48 19 19 W	182.839	283695.822	1889138.295	4
5		N 37 14 00 W	294.351	283981.288	1889044.921	5
6		S 52 14 32 W	388.956	283746.144	1888748.910	6
7		S 18 37 57 E	182.839	283575.942	1888687.876	7
8		N 75 45 00 E	254.548	283641.461	1889853.839	8
9		S 81 57 00 W	21.589	283619.873	1889852.382	9
10		N 38 34 00 E	541.134	283589.478	1889348.848	10

FINDeR PRINTOUTS

EXAMPLE 10 / CURVE / Examples (cont'd)

MORTON TECHNOLOGIES, INC. 8 (707) 527-8500
1150 CORDON ROSS CENTER SANTA ROSA, CA 95404
A.W.'S. LAND SURVEY
MARCH 5, 1981

FROM	BEARING	DISTANCE	TO
228	N 48 24 44 E	181.9821	229
229	N 48 24 44 E	45.0000	301
301	N 72 17 2 W	45.0000	211
211	S 9 18 12		
ARC	44.5748		
TAN	23.4173		
CHORD	44.5754		

FROM	BEARING	DISTANCE	TO
211	N 72 17 2 W	20.0000	304
304	N 41 39 4 E	20.0000	214
BETA	44.3 52		
ARC	-14.8786		
TAN	8.5028		
CHORD	15.4500		

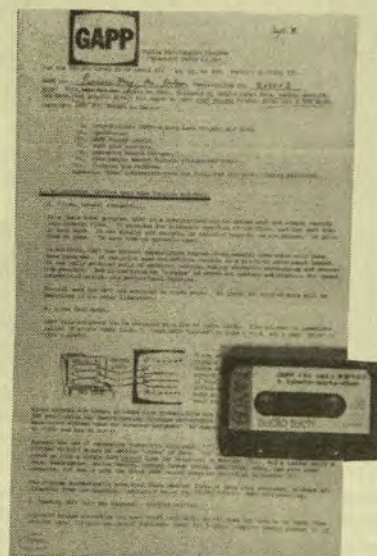
FROM	BEARING	DISTANCE	TO
214	N 28 20 55 W	22.0347	208
208	S 41 39 5 W	20.0000	304
304	N 37 42 28 W	20.0000	209
BETA	99.22 33		
ARC	34.4887		
TAN	23.5731		
CHORD	30.5813		

FROM	BEARING	DISTANCE	TO
209	S 52 14 32 W	78.0861	210
210	S 18 37 57 E	111.2300	228

AREA OF TRAVERSE: 10174.0468
ACRES: 0.2334

End of Survey
Survey 101

CoGo PRINTOUT
Part of a printout of a CoGo Survey would look like this.



GAPP
Level II 16K, 32K, 48K tape
from Robert G. Gallie
4726 West 13th Street
Cicero, IL 60650

GAPP is a data-base program for cassette users. The instructions say that "GAPP file structure can be compared to a box of index cards. Each GAPP 'record' is like a card; and a GAPP 'file' is like a boxful." It will store names and addresses and phone numbers. It will store simple accounting records. It will print mailing labels or file folder labels. The program comes with four pages of instructions on how to set up your own files. The version we reviewed also came with sample data already on the tape.

When you first load the program, you can reserve memory for a keyboard debounce routine. If you don't need this, you must delete a program line before you run the program. The instructions say that the Model III version will delete it automatically.

The program starts by asking you the average characters you want to enter for each record. The records cannot have more than 255 characters because of limits in the Radio Shack cassette storage. The instructions suggest the average characters for an accounting entry or a mailing list entry. If you just press "Enter," the program will use 35 characters per

record. Then you are shown the menu of choices.

You can make new entries from the keyboard or load entries from a tape file. This is the first thing to do when you run the program but these are selections 5 and 6 on the menu. Then the file scrolls on the screen as it loads. If you want to look at the file while it loads, you hold down the shift and the "@" keys to stop the scrolling.

You can search for a word or part of a word in a record. The search can be for one word, two different words, or for either of two words. You can sort the records alphabetically or by zip code and can save, see, or print them. You can ask for the number of characters or records you can have in the file you are working on. You can

```
CPR?
CPR?
771 RECORDS POSSIBLE.
*****
1 SEE THE FILE (SHIFT+HALT). 7 SAVE FILE TO TAPE/PRINTER.
2 SEARCH (TOTAL). 8 SORT ALPHABETICALLY.
3 SEE/CHANGE/DELETE ONE RECORD. 9 ...NUMERICALLY. ZIP.
4 CHECK CHARACTER/PROGRAM SPACE. 10 PRINT MAIL LABELS.
5 ENTER BY KEYBOARD. 11 ...FILE LABELS.
6 ...BY TAPE. 12 ONE BY ONE.
***** ? 6.
```

START

The first question you are asked is "CPR?" This stands for "characters per record." Then you are shown the choices. You must start with #5 for a new file or #6 for an old file. Then you can make another selection.

```
1 SEE THE FILE (SHIFT+HALT). 7 SAVE FILE TO TAPE/PRINTER.
2 SEARCH (TOTAL). 8 SORT ALPHABETICALLY.
3 SEE/CHANGE/DELETE ONE RECORD. 9 ...NUMERICALLY. ZIP.
4 CHECK CHARACTER/PROGRAM SPACE. 10 PRINT MAIL LABELS.
5 ENTER BY KEYBOARD. 11 ...FILE LABELS.
6 ...BY TAPE. 12 ONE BY ONE.
***** ? 2
TOTAL LINE 1-2-3 (NONE-0)? 1
TYPE OF SEARCH (1-SINGLE 2-AND 3-OR)? 1
CHARACTER SEARCH SOUGHT? ESTR
IN LINE 1-2-3 (GAPP-4)? 4
# 8 *****
129.5/CASA M. ESTRA/RAFAELAS/1529 N CALIFORNIA/CHI 60622
2229445
/11/
```

SEARCH

I asked for a simple search in any line for a word with the letters "ESTR". This file is an account file. Since the first numbers in line 1 show the amount due, I asked for a total of line 1. This is the entry I was looking for. But it is a little hard to read on the screen because of the "/" separators.

print mail labels three across or file labels which will show an extra line of code. You can look at the records one by one. You can save the whole file on a new tape or have the whole file printed. You can add new records or records from part of another tape file at any time during the program.

Each record contains three lines of information. If the file includes names and addresses, they should be on the first line. If the first item in the record is a code, you use "/" between the code and the name. You use one "/" to separate the name, street address, and city and zip code. This tells your printer to print these on separate lines. The second and third lines can be dates, amounts, or any other information you want. The program can do simple accounting if you enter the amount as the first number of a line. One of your program choices is to see a total of these numbers. However, the program uses the first word (or amount) in a line if it sorts the records alphabetically.

```
/11/
TOTAL? 129.5
*****
1 SEE THE FILE (SHIFT+HALT). 7 SAVE FILE TO TAPE/PRINTER.
2 SEARCH (TOTAL). 8 SORT ALPHABETICALLY.
3 SEE/CHANGE/DELETE ONE RECORD. 9 ...NUMERICALLY. ZIP.
4 CHECK CHARACTER/PROGRAM SPACE. 10 PRINT MAIL LABELS.
5 ENTER BY KEYBOARD. 11 ...FILE LABELS.
6 ...BY TAPE. 12 ONE BY ONE.
***** ? 3
ENTER RECORD # (RANDOM-0)? 3
# 3 *****
53.8/JESSE AUERBACH/NEIGHBORHOOD WORKS/1250 N HEMPSTON/CHI 60653
9676543
/1488/
CHANGE LINE 1-2-3 (NONE-0) (DELETE ALL LINES-4)?
```

SORT BY ZIP CODE

I asked the program to sort the records by zip code. This is what I saw on the screen. Now I can look at the records, have them printed, or save them in a separate file.

```
/1488/
ENTER FOR MENU
*****
1 SEE THE FILE (SHIFT+HALT). 7 SAVE FILE TO TAPE/PRINTER.
2 SEARCH (TOTAL). 8 SORT ALPHABETICALLY.
3 SEE/CHANGE/DELETE ONE RECORD. 9 ...NUMERICALLY. ZIP.
4 CHECK CHARACTER/PROGRAM SPACE. 10 PRINT MAIL LABELS.
5 ENTER BY KEYBOARD. 11 ...FILE LABELS.
6 ...BY TAPE. 12 ONE BY ONE.
***** ? 9
SORT BY LINE 1-2-3 (ZIP-4) (MENU-5)? 4
*****
*****
*****
*****
*****
ENTER FOR MENU
```

ONE RECORD

I wanted to look at one record. I chose menu option #3 and entered the number of the record. Now I can delete or change this record.

▷ (continued on page 48)



STOCK MARKET MONITOR 2.0

Level II 32K disk
from Galactic Software Ltd.
11520 N. Port Washington Road
Mequon, WI 53092

STOCK MARKET MONITOR 2.0 is written to let the active trader measure the performance of selected stocks against the performance of the overall market. It comes with a good manual to take you step-by-step through entering the needed information. You enter the basic information for each stock from "Value Line." You also enter the closing price and daily volume for the stocks you are following and for the Dow Jones Industrials from a daily newspaper stock report. Then you can see a report on the computer screen of the performance of each stock. The report can be printed if you have a printer.

When you first create a file, you enter the previous month's average daily volume in millions and the closing price for the Dow Jones Industrials. Then you enter information about each stock, including the company name and symbol. You will also enter the Standard & Poor's rating, the current

and last year's high and low prices, and last month's total volume and closing price. You will use information from "Value Line" to enter the Value Line page number and Beta factor. You enter the current year's earnings per share and dividends per share. You enter the number of common shares outstanding, the current year's gross sales, and the net worth.

Each day that you want to see a report on a stock, you will enter the previous day's Dow Jones Industrials volume and closing, and the volume and closing for those stocks.

The report you are given will repeat the basic information and the daily figures for that stock. It will also show you the calculated figures for the following:

1. Price/earnings ratio, and the sales, yield, book value, and profit margin per share.
2. Percent of earnings paid as dividends.
3. The average daily volume.
4. The indicated price using the Beta formula.
5. The technical relative strength in the present market.
6. The Dow's ratios of change in volume and closing price from last month.
7. The stock's ratios of change in volume and closing price from last month.
8. The technical or relative change of the stock to the Dow in volume and price.

In addition, the printed report also shows you the probable indicated price of the stock if the Dow rises or falls 50 points. The manual shows you the formulas used in all the calculations.

STOCK MARKET MONITOR 2.0 is easy to use. The most difficult part is gathering the basic information. Value Line has all but the S & P Rating and last month's volume and

close. If you don't subscribe to Value Line or know a broker who does, you may have to get the information from a large library. The Standard & Poor's Stock Guide has much of the information but not the Beta factor and the current year gross sales. Your local newspaper or The Wall Street Journal will have daily information about the Dow and the stocks.

You should read the manual thoroughly before you start to enter information. You should also look at the samples of the reports. About the only thing the manual doesn't specifically say is to enter the Dow's average daily volume for last month in millions, although it does say to use millions for the day's volume. The stock's volume is always entered in hundreds.

The format of the report on the computer screen is abbreviated so all the information will fit. The printed report has a better title for each figure because there is more room.

It is easy to enter the basic information. After you have entered this information, you can correct one figure or update one stock or make a monthly update of all stocks. You can delete a stock entirely from your records. You can add a new stock at any time. You can have stocks in separate files since you name the file. You can see a list of all the stocks in your file.

It is easy to enter one day's information. You enter the Dow information and the stock's closing price and day's volume. If you have forgotten the symbol for the stock, or its name, you can see a directory of all your stocks. You will also see a special mark beside the stock's name if you have already entered that day's information. Then you can see a report on that stock on the computer screen. You can also have a dated, printed report on that stock.

STOCK MARKET MONITOR 2.0 is not written to keep a running diary for each stock. It keeps only the

▷ (continued on page 35)

1. COMPANY NAME — TANDY CORP.	
2. COMPANY SYMBOL — TAN	
3. S & P RATING — B+	10. VALUE LINE PAGE — 1716
4. CURRENT YEAR HI — 36.7	11. BETA — 1.45
5. CURRENT YEAR LOW — 26.1	12. CUR YR EARN P/S — 1.12
6. LAST YEAR HI — 26.8	13. CUR YR DIV P/S — 8
7. LAST YEAR LOW — 7.1	14. COMMON SHRS OUT — 182,620
8. VOLUME LAST MO — 29589	15. CUR YR GR SALES — 1277.5
9. CLOSE LAST MO — 37.862	16. NET WORTH — 427.6

GIVE NUMBER OF ITEM TO BE CORRECTED ***
TYPE 'P' IF NO CORRECTION IS TO BE MADE

ENTERING BASIC INFORMATION

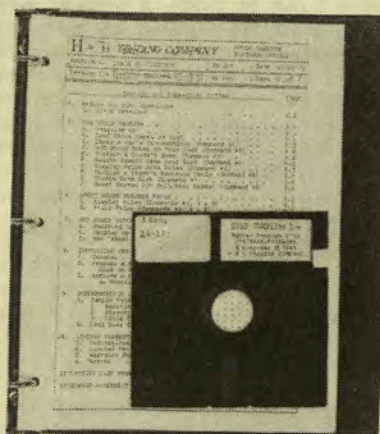
TANDY CORP.		CLS: 34.25	VOL: 2554	SYN: TAN
LAST YR HI. 26.8	CUR. YR HI. 36.7	V/L PAGE... 1716		
LAST YR LO. 7.1	CUR. YR LO. 26.1	BETA... 1.45		
CLS L/M. 37.862	VOL L/M. 29589	AV DAY VOL. 1396		
EARN P/S 1.12	DIV P/S... 8.00	SAP RATE... 34		
SALES... 1277.5	SHARES OUT 182,620	NET WORTH 427.6		
SALES P/S 12.45	YIELD... 8.8%	BOOK P/S... 4.17		
P/E RATIO 38.6	2 MARGIN 9.8%	201Y-ERN 8.8%		
BETA IND PRICE... 37.4	REL STRENGTH... 88	-8.21		
MARKET VOL RATIO... 1.35	NON CHANGE RATIO... 1.81			
2 VOLUME CHANGE... 154.6%	2 PRICE CHANGE... -7.6%			
VOLUME CHANGE RATIO... 2.35	PRICE CHANGE RATIO... 8.92			
REL VOLUME CHANGE... 1.89	REL PRICE CHANGE... 8.92			
TYPE 'P' TO PRINT OR		(ENTER) TO CONTINUE		

SCREEN REPORT

DATE 04/01/81

TANDY CORP.	SYN: TAN	LATEST CLOSING 34.25	LATEST VOLUME 2554
LAST YR HI... 26.8	CUR. YR HI... 36.7	VALUE LINE PAGE... 1716	
LAST YR LO... 7.1	CUR. YR LO... 26.1	BETA... 1.45	
CLS L/M... 37.862	VOL L/M... 29589	AV DAY VOL... 1396	
EARN P/S... 1.12	DIV P/S... 8.00	SAP RATE... 34	
SALES... 1277.5	SHARES OUT 182,620	NET WORTH 427.6	
SALES P/S 12.45	YIELD... 8.8%	BOOK P/S... 4.17	
P/E RATIO 38.6	2 MARGIN 9.8%	201Y-ERN 8.8%	
BETA IND PRICE... 37.4	REL STRENGTH... 88	-8.21	
MARKET VOL RATIO... 1.35	NON CHANGE RATIO... 1.81		
2 VOLUME CHANGE... 154.6%	2 PRICE CHANGE... -7.6%		
VOLUME CHANGE RATIO... 2.35	PRICE CHANGE RATIO... 8.92		
REL VOLUME CHANGE... 1.89	REL PRICE CHANGE... 8.92		
TYPE 'P' TO PRINT OR (ENTER) TO CONTINUE			

PRINTED REPORT



STOCK TRACKER 2.4

Level II 48K, 2-disk
from H & H Trading Company
P. O. Box 549
Clayton, CA 94517

STOCK TRACKER 2.4 is written to let the active stock trader keep track of a stock or option and to give buy, hold, and sell signals. A version is available for the Model III. Another version, available for the Apple Computer, has an automatic data entry through the Dow Jones Stock Quote Service. The program comes with an excellent manual to take you step by step from turning on

your computer, to entering your data, to understanding the results and suggesting books to read.

The Model I version will run under NEWDOS/80 disk operating system as well as TRSDOS 2.3. The sales brochure says you need 48K and 2 disk drives, but one page of the manual suggests the program will run in 32K and several pages also give instructions for a single drive.

You can track up to 15 stocks on each data disk. You enter the daily closing price and the volume for each stock you are tracking. Just after the 15th of the month, you will enter the short interest for any stock that has it. You will also enter information about a stock split, a new high or low, or if the stock is sold excluding the dividend. You can find

this information in The Wall Street Journal or Barrons. Each day, the program figures its recommendations and shows them to you. It also keeps a running file of the recommendations. You can look at the history of the stock or have it printed out.

The manual has over a dozen pages of explanation of the theory behind the recommendations and how the program arrives at them. It uses the On-Balance-Volume (OBV) theory first developed by Joseph Granville in the early 1960's. According to the manual, "The theory holds that volume patterns precede price patterns." You are shown the OBV each day in the history file.

The daily recommendations are given both for stocks and for options. They include: Buy Stock or Call, Hold Position, Sell Stock or Buy Put, and Close Position. Close Position means to sell a stock if you are "long," or buy to cover it if you are "short". If it is an Option, you should sell calls or puts.

The program keeps track of up, down, high, low, or undetermined fields for each day. The manual says, "A field of high or low indicates a minor OBV resistance or support point." It charts rising, doubtful, and falling trends in the OBV. You can see on the screen or have a printed list of the Field Theory Table Contents for any of your stocks. This table shows you information on

ENTER THE FOLLOWING DATA ITEMS FOR TODAY

DATE 06/01/81
PRICE OF STOCK 34.25
VOLUME SOLD 355.4
COMMENT CODE
SHORT INTEREST

ENTER NUMBER OF SHARES (CONTRACTS) SOLD IN THOUSANDS (MM'S); DO NOT USE COMMA. ONE DECIMAL PLACE IS FOR NEAREST HUNDRED SHARES. (PRESS DOWN ARROW TO ESCAPE.)

THE DAY'S VOLUME

ENTER THE FOLLOWING DATA ITEMS FOR TODAY

DATE 06/01/81
PRICE OF STOCK 34.25
VOLUME SOLD 355.4
COMMENT CODE S SPLIT RATIO: 2 FOR 1
SHORT INTEREST

ENTER COMMENT CODE: (PRESS DOWN ARROW TO ESCAPE.)

D — NEW 12-MONTH LOW PRICE REACHED ANY TIME TODAY
S — STOCK SPLIT EFFECTIVE TODAY
U — NEW 12-MONTH HIGH PRICE REACHED ANY TIME TODAY
X — STOCK SOLD EXCLUDING DIVIDEND TODAY
PRESS (ENTER) IF NONE OF ABOVE.

SPLIT

ENTER THE FOLLOWING DATA ITEMS FOR TODAY

DATE 06/01/81
PRICE OF STOCK 34.25
VOLUME SOLD 355.4
COMMENT CODE S SPLIT RATIO: 2 FOR 1
SHORT INTEREST

FIELD = DOWN TREND = UNDETERMINED

INSUFFICIENT DATA FOR RECOMMENDATIONS AT THIS TIME.

DO YOU WISH TO ENTER ANY MORE DATA FOR TODAY (Y/N)?

THAT DAY'S RECOMMENDATIONS

ENTER THE FOLLOWING DATA ITEMS FOR TODAY

DATE 06/25/81
PRICE OF STOCK 32.30
VOLUME SOLD 323.2
COMMENT CODE
SHORT INTEREST

FIELD = DOWN TREND = FALLING

TODAY'S RECOMMENDATIONS:
STOCKS — SELL
OPTIONS — BUY PUT

DO YOU WISH TO ENTER ANY MORE DATA FOR TODAY (Y/N)?

ENTER THE FOLLOWING DATA ITEMS FOR TODAY

DATE 07/31/81
PRICE OF STOCK 31.80
VOLUME SOLD 355.7
COMMENT CODE
SHORT INTEREST

FIELD = UP TREND = RISING

TODAY'S RECOMMENDATIONS:
STOCKS — BUY
OPTIONS — BUY CALL

DO YOU WISH TO ENTER ANY MORE DATA FOR TODAY (Y/N)?

OTHER DAYS' RECOMMENDATIONS

ENTER THE FOLLOWING DATA ITEMS FOR TODAY

DATE 06/01/81
PRICE OF STOCK
VOLUME SOLD
COMMENT CODE
SHORT INTEREST

ENTER TRADE DATE (MM/YY); I'LL INSERT SLASHES FOR YOU. (PRESS DOWN ARROW TO ESCAPE.)

TRANSACTION DATE

ENTER THE FOLLOWING DATA ITEMS FOR TODAY

DATE 06/01/81
PRICE OF STOCK 34.25
VOLUME SOLD
COMMENT CODE
SHORT INTEREST

ENTER CLOSING PRICE IN DECIMAL FORM; DO NOT USE DOLLAR SIGN (\$) OR COMMA (,). (PRESS DOWN ARROW TO ESCAPE.) DECIMAL VALUES OF FRACTIONS ARE:

1/16 = .06 1/8 = .13 3/16 = .19 1/4 = .25 5/16 = .31
3/8 = .38 7/16 = .44 1/2 = .50 9/16 = .56 5/8 = .63
11/16 = .69 3/4 = .75 13/16 = .81 7/8 = .88 15/16 = .94

THE CLOSING PRICE

the dates of the support, resistance, and breakout points of the OBV for that stock. It shows you the OBV and OBV Change, the type of field, the trend, and the short interest for those days.

The program also shows you or will print out a Decision Table for the stock. According to the manual, "The Decision Table contains all variables and their associated values that have any impact on trading signals, the generation of new breakouts or trend changes, or the creation of new support and resistance levels." It contains four pages of explanation to help you interpret this table.

STOCK TRACKER 2.4 is easy to use. It is as fool-proof as possible. You enter the transaction date as a six-digit number but the program inserts slashes as you enter it so it is easier to read. You need to enter this date only once for each group of 15 stocks. You enter the closing price in decimals instead of fractions but the program shows you at the bottom of the screen how to convert the fractions to decimals. You enter the volume in thousands, using a decimal point to include the hundreds as shown in the newspaper. You just press "Enter" on the days there is no short interest or extra comment. You must type the full word "YES" or "NO" when asked if the information is correct. Then the program

calculates the recommendation and saves all the information.

If you are entering several days for one stock, you can continue on to the next date. The previous date remains on the screen until you type over it with a new date. If you want to correct an entry, you need only correct the one piece of data entered wrong.

The manual suggests extensive use of back-up data disks weekly. Similar information was later published by Radio Shack in their "TRS-80 Microcomputer News" of July, 1981. If you enter wrong information for a day's transaction and don't correct it in time, you can go back to the last back-up disk and will have only a week's transactions to enter again.

I had only two problems with this program. One was in not reading the manual thoroughly enough. I had trouble initializing a data disk. Upon first use of the program or a new data disk for a new group of stocks, the data disk must be initialized. Each data disk will hold one year's transactions for 15 stocks. One section of STOCK TRACKER 2.4 covers "archiving" the data disks. This section transfers essential data about the stocks to a new disk so you can continue entering daily transactions. This section on "archiving" also initializes new data

disks. A separate section in the manual covers how to do this. I didn't look in the manual's index and find this section. The section on Run Stock Tracker talked briefly about starting up but didn't refer me to the other manual section. When I finally checked the index, I found the correct section.

The other problem I had was in remembering to use a decimal point when entering the volume of trading. The newspaper prints the volume in thousands but the program asks for the volume in hundreds. I feel this could have been overcome by the program itself.

My stock tracking results were inconclusive. I tracked three stocks for three months each, from May through July. Tandy (Radio Shack) gave sell signals on June 25 and July 6. The low closing came on July 13, when the price started rising again. Apple gave a buy signal June 9, before the high on June 11. It gave a sell signal June 16, before the low on July 10. July 31 it was still under the June sell signal. These two stocks followed the OBV theory. However, Warner Communications (Atari) performed the opposite. The buy signal on June 24 was at a high. The sell signal on July 21 was at a low.

If you are interested in the On-Balance Volume theory, look at STOCK TRACKER 2.4. ■

STOCK NUMBER: 7 STOCK NAME: TANDY

TYPE: U FIELD: 0 TREND: R OBV NONCONFIRMATION FLAG:
CURRENT PRICE: 31.00 HIGHEST PRICE: 36.25
FIRST OBV: -61.1990 (7/25/81) NO PRICE: 1804.2
UP/DOWN OBV: -61.1990 (7/25/81) LOW PRICE: 28.25
UP/DOWN PRICE: 31.00
HIGHEST LOW: 999999 (B/B/B) LAST 3 UNRECORDED
(B/B/B) 1) 999999
1ST COMPLETED UP: -161.7 (7/25/81) 2) 999999
2ND COMPLETED UP: 61.0002 (7/1/81) 3) 999999
1ST COMPLETED DOWN: -62.7 (7/25/81)
2ND COMPLETED DOWN: -1933.6 (7/15/81)

PRESS ENTER TO CONTINUE

DECISION TABLE

FIELD THEORY TABLE CONTENTS - TANDY - 06/06/80 00:41:47

DATE	PRICE	OBV	UNCHARGE	TYPE	TREND	S.D.T.
5/15/81						1,216,738
5/26/81	\$26.50	+1,804.2	+1,804.2	UP		
6/18/81	\$26.00	-1,136.2	-1,136.2	DOWN		2,117,300
6/15/81						
6/12/81	\$26.00	+208.2	+208.2	UP		
6/19/81	\$26.50	+21.5	+208.7	DOWN		
6/23/81	\$26.63	+496.1	+474.6	UP	FALLING	
6/25/81	\$26.75	-461.6	-527.7	DOWN	FALLING	
7/1/81	\$21.50	+6.8	+208.4	UP	FALLING	1,961,808
7/15/81						

PRESS ENTER TO CONTINUE

FIELD THEORY TABLE

DAILY HISTORY FILE CONTENTS - TANDY - 06/06/80 00:41:47 PAGE 1 OF 2

DATE	PRICE	OBV	COMMENT	RECOMM.
4/28/81	\$27.25	+124.1		UP
5/1/81	\$27.00	+276.4		UP
5/2/81	\$23.00	+139.1		UP
5/3/81	\$23.00	+148.1		UP
5/4/81	\$23.00	+157.5		UP
5/5/81	\$23.00	+167.0		UP
5/6/81	\$23.00	+176.5		UP
5/7/81	\$23.00	+186.0		UP
5/8/81	\$23.00	+195.5		UP
5/9/81	\$23.00	+205.0		UP
5/10/81	\$23.00	+214.5		UP
5/11/81	\$23.00	+224.0		UP
5/12/81	\$23.00	+233.5		UP
5/13/81	\$23.00	+243.0		UP
5/14/81	\$23.00	+252.5		UP
5/15/81	\$23.00	+262.0		UP
5/16/81	\$23.00	+271.5		UP
5/17/81	\$23.00	+281.0		UP
5/18/81	\$23.00	+290.5		UP
5/19/81	\$23.00	+300.0		UP
5/20/81	\$23.00	+309.5		UP
5/21/81	\$23.00	+319.0		UP
5/22/81	\$23.00	+328.5		UP
5/23/81	\$23.00	+338.0		UP
5/24/81	\$23.00	+347.5		UP
5/25/81	\$23.00	+357.0		UP
5/26/81	\$23.00	+366.5		UP
5/27/81	\$23.00	+376.0		UP
5/28/81	\$23.00	+385.5		UP
5/29/81	\$23.00	+395.0		UP
5/30/81	\$23.00	+404.5		UP
5/31/81	\$23.00	+414.0		UP
6/1/81	\$23.00	+423.5		UP
6/2/81	\$23.00	+433.0		UP
6/3/81	\$23.00	+442.5		UP
6/4/81	\$23.00	+452.0		UP
6/5/81	\$23.00	+461.5		UP
6/6/81	\$23.00	+471.0		UP
6/7/81	\$23.00	+480.5		UP
6/8/81	\$23.00	+490.0		UP
6/9/81	\$23.00	+499.5		UP
6/10/81	\$23.00	+509.0		UP
6/11/81	\$23.00	+518.5		UP
6/12/81	\$23.00	+528.0		UP
6/13/81	\$23.00	+537.5		UP
6/14/81	\$23.00	+547.0		UP
6/15/81	\$23.00	+556.5		UP
6/16/81	\$23.00	+566.0		UP
6/17/81	\$23.00	+575.5		UP
6/18/81	\$23.00	+585.0		UP
6/19/81	\$23.00	+594.5		UP
6/20/81	\$23.00	+604.0		UP
6/21/81	\$23.00	+613.5		UP
6/22/81	\$23.00	+623.0		UP
6/23/81	\$23.00	+632.5		UP
6/24/81	\$23.00	+642.0		UP
6/25/81	\$23.00	+651.5		UP
6/26/81	\$23.00	+661.0		UP
6/27/81	\$23.00	+670.5		UP
6/28/81	\$23.00	+680.0		UP
6/29/81	\$23.00	+689.5		UP
6/30/81	\$23.00	+699.0		UP
7/1/81	\$23.00	+708.5		UP

DAILY HISTORY FILE

A minor fault I found with the manual was that in the Overview on Page 2, it said the user "may input daily issue data ('high', 'low', 'close', and 'volume') from any newspaper containing this information." There is no provision in the program itself to enter the high or low.

If you are interested in the calculations performed by STOCK MARKET MONITOR 2.0, the program is a good one. ■



MARKET TRACKER 2.0

Level II 32K 2-disk
from H & H Trading Company
P. O. Box 549
Clayton, CA 94517

MARKET TRACKER 2.0 tracks the stock market and gives buy and sell signals. It is an intermediate-trend timing index. It uses information from the Dow Jones Industrials, from the number of new highs, lows, advances, declines, and most actives, and from the short interest ratio. All the information except the short interest ratio is published in The Wall Street Journal. The short interest ratio is found in Barron's. The program comes with an excellent manual and sample graph forms.

This program does not show you graphs or charts. It does require that you keep some graphs and use judgment when entering information from them. It requires that you also use STOCK TRACKER 2.4 on the 30 Dow Jones Industrials to arrive at figures to chart on a "Climax Indicator" graph. STOCK TRACKER 2.4 is reviewed separately.

As do other dependable firms, H & H Trading will let you know if a bug is found in their program. We received a "program correction letter" which told us how to fix two problems that had been found. The directions were simple and easy to follow.

Each day, you enter the closing average of the Dow Jones industrials and the number of new highs, new lows, advances and declines. You count the number of advances and declines in the 15 most active stocks and enter the sum. Once a month you enter the short interest ratio. You count the up and down Fields from the STOCK TRACKER 2.4 program on

1) ENTER DATA COMMAND. (LAST DATE ENTERED WAS 06/10/81.)
PLEASE ENTER THE FOLLOWING INFORMATION:

MARKET TRADE DATE	06/11/81	CLIMAX INDICATOR
DOW INDUSTRIALS		CHART PATTERN
SHORT INTEREST RATIO		NUMBER OF ADVANCES
NUMBER OF NEW HIGHS		NUMBER OF DECLINES
NUMBER OF NEW LOWS		A/D GRAPH RESULT
MOST ACTIVES FIGURE		

ENTER MARKET TRADE DATE IN THE FORM (MM/DD/YY).
I WILL INSERT SLASHES FOR YOU.
(PRESS (N) TO ESCAPE.)

1) ENTER DATA COMMAND. (LAST DATE ENTERED WAS 06/10/81.)
PLEASE ENTER THE FOLLOWING INFORMATION:

MARKET TRADE DATE	06/11/81	CLIMAX INDICATOR
DOW INDUSTRIALS	1007.42	CHART PATTERN
SHORT INTEREST RATIO		NUMBER OF ADVANCES
NUMBER OF NEW HIGHS		NUMBER OF DECLINES
NUMBER OF NEW LOWS		A/D GRAPH RESULT
MOST ACTIVES FIGURE		

ENTER CLOSING DOW JONES INDUSTRIALS AVERAGE FOR THIS DATE. DO NOT USE A COMMA.
(PRESS (N) TO ESCAPE.)

1) ENTER DATA COMMAND. (LAST DATE ENTERED WAS 06/10/81.)
PLEASE ENTER THE FOLLOWING INFORMATION:

MARKET TRADE DATE	06/11/81	CLIMAX INDICATOR
DOW INDUSTRIALS	1007.42	CHART PATTERN
SHORT INTEREST RATIO		NUMBER OF ADVANCES
NUMBER OF NEW HIGHS		NUMBER OF DECLINES
NUMBER OF NEW LOWS		A/D GRAPH RESULT
MOST ACTIVES FIGURE		

ENTER MONTHLY SHORT INTEREST RATIO FROM BARRON'S. LAST MONTH'S RATIO WAS 0. PRESS (ENTER) ALONE IF RATIO IS UNCHANGED OR IF NO RATIO IS PUBLISHED AT THIS TIME.
(PRESS (N) TO ESCAPE.)

1) ENTER DATA COMMAND. (LAST DATE ENTERED WAS 06/10/81.)
PLEASE ENTER THE FOLLOWING INFORMATION:

MARKET TRADE DATE	06/11/81	CLIMAX INDICATOR	1
DOW INDUSTRIALS	1007.42	CHART PATTERN	1
SHORT INTEREST RATIO	0	NUMBER OF ADVANCES	1146
NUMBER OF NEW HIGHS	121	NUMBER OF DECLINES	
NUMBER OF NEW LOWS	15	A/D GRAPH RESULT	
MOST ACTIVES FIGURE	14		

ENTER NUMBER OF ADVANCES ON N.Y.S.E. DO NOT USE A COMMA.
(PRESS (N) TO ESCAPE.)

1) ENTER DATA COMMAND. (LAST DATE ENTERED WAS 06/10/81.)
PLEASE ENTER THE FOLLOWING INFORMATION:

MARKET TRADE DATE	06/11/81	CLIMAX INDICATOR	1
DOW INDUSTRIALS	1007.42	CHART PATTERN	1
SHORT INTEREST RATIO	0	NUMBER OF ADVANCES	1146
NUMBER OF NEW HIGHS	121	NUMBER OF DECLINES	442
NUMBER OF NEW LOWS	15	A/D GRAPH RESULT	1
MOST ACTIVES FIGURE	14		

10-DAY ADVANCE-DECLINE IS 546. POST TO GRAPH AND ENTER RESULTING SIGNAL.
(PRESS (N) TO ESCAPE.)

ENTERING INFORMATION

the 30 Dow Jones Industrials and post this information on a graph. Then you draw trend lines on this graph. You also draw trend lines on the published graph of the Dow Jones industrials. If an uptrend or downtrend breaks, you enter a figure in MARKET TRACKER 2.0 to show this. The program will figure a 10-day advance/decline figure from the numbers you entered. You post this information on a graph and draw lines across the tops and bottoms. Then you enter indicators from these lines into the program.

If all this sounds complicated, it is. You must keep a "Climax Indicator" graph from figures obtained in STOCK TRACKER 2.4. You must keep an "Advance/Decline Line" graph which you post as you run MARKET TRACKER 2.0. The manual suggests keeping a graph of the

RESULTS FOR 05/26/81 AT DOW INDUSTRIALS 1005.50
5-DAY MOVING AVERAGE OF NEW HIGHS 50.8
5-DAY MOVING AVERAGE OF NEW LOWS 23.8
30-DAY MOST ACTIVES OSCILLATOR +30
10-DAY ADVANCE/DECLINE LINE +4.75

HI/LOW + AD-DEC + CLIMAX + S.L.R. + R.A.S. + DWT + DWT
+0 +1 +1 +1 +1 +1 +1

LAST SELL SIGNAL WAS 06/06/81 AT DOW 1005.50. NET DOW POINTS SINCE LAST SIGNAL IS +0.00.
TOTAL DOW POINTS SINCE START = +0.00.
AND WARNING: THE INTERMEDIATE COMPOSITE HAS TURNED BULLISH. CONSIDER CORRECTING CLOSING SHORTS, GOING LONG.

DO YOU WANT A PRINTED COPY OF THIS REPORT (Y/N)?

BUY SIGNAL 5/26

RESULTS FOR 06/11/81 AT DOW INDUSTRIALS 1007.42
5-DAY MOVING AVERAGE OF NEW HIGHS 50.4
5-DAY MOVING AVERAGE OF NEW LOWS 23.8
30-DAY MOST ACTIVES OSCILLATOR +30
10-DAY ADVANCE/DECLINE LINE +546

HI/LOW + AD-DEC + CLIMAX + S.L.R. + R.A.S. + DWT + DWT
-1 +1 +1 +1 +1 +1 +1

LAST BUY SIGNAL WAS 05/26/81 AT DOW 1005.50. NET DOW POINTS SINCE LAST SIGNAL IS +25.46. THIS BUY SIGNAL STILL IN FORCE.
TOTAL DOW POINTS SINCE START = +25.46.

DO YOU WANT A PRINTED COPY OF THIS REPORT (Y/N)?

RESULTS 6/11

5-DAY MOVING AVERAGES OF NEW HIGHS AND NEW LOWS FILE CONTENTS
REPORT PRINTED 06/06/81
LAST DATE ENTERED 06/10/81
PREVIOUS HI AVG. 50.8
PREVIOUS LOW AVG. 23.8
PREVIOUS SIGNAL -1

DATE	HIGHS	AVERAGE	LOW	AVERAGE	SIGNAL	DWT
06/24/81	42	44.2	18	11.4	-1	-1
06/25/81	39	41.4	15	12.2	-1	-1
06/26/81	27	40.4	18	11.4	-1	-1
06/29/81	37	39.8	18	13.0	-1	-1
06/30/81	28	33.8	22	15.0	-1	-1

END OF LIST
PRESS (ENTER) TO CONTINUE.

5-DAY MOVING AVERAGES

30-day moving average of the "Most Actives Oscillator" and a graph of the five-day moving average of new highs and new lows. However, the program uses all this information in coming up with the "Buy" or "Sell" signal.

The program makes it as easy as possible to enter all this information. MARKET TRACKER 2.0 keeps track of the daily information you enter. This information can be easily changed at any time, even days later. You can have any of the information printed out that you see on the screen. You are always told the date of the last information you entered. You must enter the full word "YES" or "NO" to say whether the information is correct. If you change an earlier entry, the later entries are all up-dated. You can store 259 trading days of information

on one data disk. When it is full, you can copy just the latest information onto a new disk to continue. The manual shows you samples of each graph filled in, and suggests how to interpret the information.

You can look at the latest 5-day moving average of new highs and lows. You can look at the 30-day most actives oscillator file contents. You can look at the 10-day advance/decline line file contents. You can look at the intermediate composite file contents. You can look at the latest day's results. You can look at any day's entry.

The manual warns, "Market Tracker can and will generate some recommendations that lead to losses; there is no infallible method of

directional market movement and timing. Nor can past results guarantee future profitability. Further, because some judgement is required from the person using the system, the results obtained by any one user may be better or worse than those obtained by Mr. Howard (David K. Howard, who created and designed MARKET TRACKER) or any other user."

MARKET TRACKER 2.0 is easy to use and keeps a lot of records. If you can keep graphs and are interested in this system of tracking the stock market, you should investigate this program further.

P.S. You should also look at STOCK TRACKER 2.4 to keep track of individual stocks.

30-DAY MOST ACTIVES OSCILLATOR FILE CONTENTS: PRINTED 06-06-90

DATE	FIGURE	OSCILLATOR	SIGNAL	INDEX
06/03/91	+1	+34	+1	+3
06/04/91	+3	+37	+1	+3
06/05/91	+13	+38	+1	+1
06/06/91	+4	+34	+1	+1
06/07/91	+1	+35	+1	+2
06/08/91	+18	+35	+1	+2
06/09/91	+14	+39	+1	+2
06/10/91	+5	+44	+1	+8
06/11/91	+12	+34	+1	+1
06/12/91	-5	+188	+1	+1

PRESS (ENTER) TO CONTINUE.

ONE PAGE OF 30-DAY MOST ACTIVES OSCILLATOR

10-DAY ADVANCE/DECLINE LINE FILE CONTENTS: PRINTED 06-06-90

DATE	ADVANCES	DECLINES	A-D LINE	SIGNAL	INDEX
06/17/91	782	751	+1,305	+1	+1
06/18/91	479	1,188	+782	+1	-1
06/19/91	787	814	+215	+1	+1
06/20/91	789	828	+114	+1	-1
06/21/91	981	581	+785	+1	-1
06/22/91	566	913	+98	+1	-1
06/23/91	725	759	-640	+1	-1
06/24/91	683	886	-1,129	+1	-1
06/25/91	491	1,849	-2,857	+1	-1
06/26/91	479	1,862	-2,241	+1	-1

END OF LIST 000

PRESS (ENTER) TO CONTINUE.

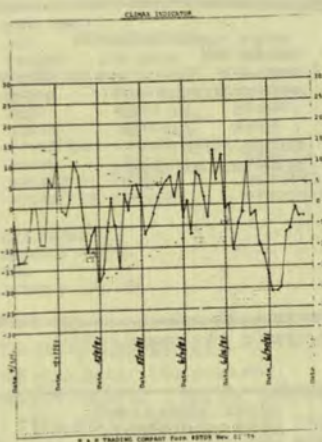
10-DAY ADVANCE/DECLINE LINE

INTERMEDIATE COMPOSITE FILE CONTENTS PRINTED 06-06-90 PAGE 2

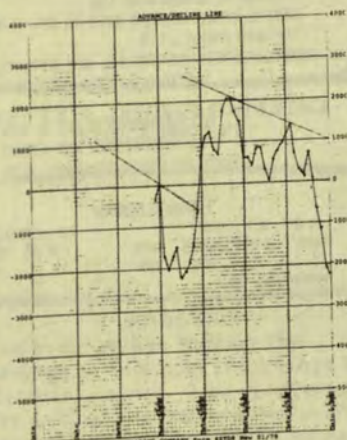
DATE	NEW	H/L	A/D	CLX	SIR	NEW	CLX	INDEX
06/02/91	367.48	+8	+1	+1	-1	+1	-1	+1
06/03/91	369.71	+8	+1	+1	-1	+1	+1	+3
06/04/91	366.74	+8	+1	+1	-1	+1	+1	+3
06/05/91	393.79	+8	+1	+1	-1	+1	-1	+1
06/06/91	395.64	+8	+1	+1	-1	+1	-1	+1
06/07/91	394.44	-1	+1	+1	-1	+1	+1	+2
06/08/91	393.88	-1	+1	+1	-1	+1	+1	+2
06/09/91	1,067.42	-1	+1	+1	-1	+1	+1	+2
06/10/91	1,086.28	-1	+1	+1	-1	+1	-1	+8
06/11/91	1,011.99	-1	+1	+1	+8	+1	-1	+1

PRESS (ENTER) TO CONTINUE.

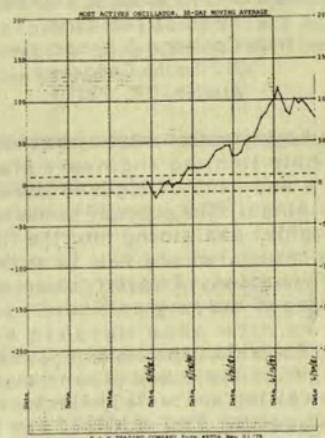
ONE PAGE OF INTERMEDIATE COMPOSITE



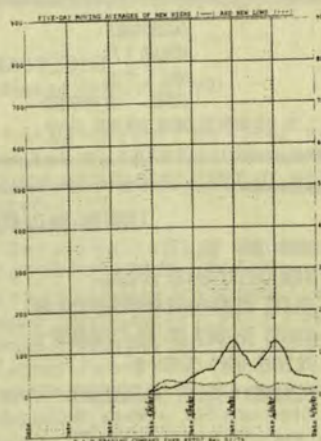
CLIMAX INDICATOR GRAPH



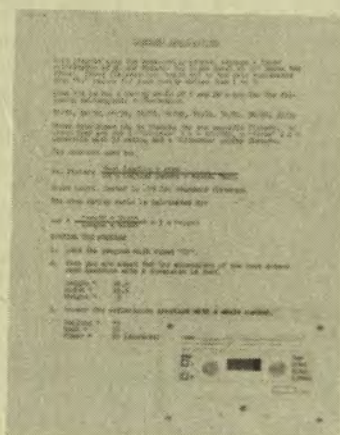
ADVANCE/DECLINE LINE GRAPH



MOST ACTIVES OSCILLATOR GRAPH



5-DAY MOVING AVERAGE GRAPH



LIGHTING CALCULATIONS

Level II 16K tape
from Coolidge & Associates
1317 South Congress
Austin, TX 78704

Lighting Calculations is written to help lighting engineers plan the size and kind of light fixtures for buildings. The program comes with a pamphlet explaining how the figures are calculated and how to enter the information. It also comes with a listing of the program lines.

You enter the length, width, and height of the room. Then you enter the ceiling and wall reflectance for that room. You are told the total

LIGHTING CALCULATIONS

ROOM DATA
LENGTH (FT) ? 24
WIDTH (FT) ? 16
HEIGHT (FT) ? 8

REFLECTANCES
CEILING ? 75
WALL ? 50
FLOOR 20 (ASSUMED)

DO YOU WISH TO CHANGE ANY DATA (Y/N)?

LIGHTING CALCULATIONS

AREA= 384 SQ. FT.
ROOM CAVITY RATIO IS 2.86
SELECT MAINTAINED FOOTCANDLES? 40
SELECT DESIRED NO. OF FIXTURES? 4
PRINTER COPY (Y/N)? N
STANDARD FIXTURE CALCULATIONS? (Y/N)

ENTERING BASIC INFORMATION

square feet and the cavity ratio. Then you enter the number of footcandles (lighting level) you want, the number of fixtures, and the fluorescent lamp lumens. You may have the results printed or shown on the screen.

You are shown the figures for "Lithonia" 2x4 troffers, "Globe" 2x4 parabolic fixtures with 32 cells, and "Lithonia" coffer fixtures. These figures tell you how many lamps, fixtures, and watts would be needed to come closest to the number of footcandles you want in that area. You are also told how many footcandles would be produced by the number of fixtures you want, using fixtures with normal wattage. For example, if you want one fixture in a 12x8 room to produce 50 footcandles of light, you would need a 200 watt 2X4 troffer to give you 43.1

LIGHTING CALCULATIONS

NO OF LAMPS	NO OF FIXTURES	FOOT CAVITIES	WATTS	FC AND WATTS
1	9	39.27	450	17.45 200
2	5	43.63	500	34.9 400

BEST CHOICE (1 OR 2)? 2
HOW MANY SPECIAL CASES (10 MAX)? 1

COFFER FIXTURE CALCULATIONS

IS FIXTURE 1 RECESSED OR 2 NOT? 2
DISTANCE FROM CEILING (FT)? 2
THE ROOM CAVITY RATIO IS 1.82
WHAT IS THE CEILING REF. FOR A CCR OF 1.84? 20
FIXTURE TOTAL LAMP LUMENS = ? 1740
TOTAL FIXTURE WATTS = ? 30
NO. OF LAMPS? 2
MAINTAINANCE FACTOR (.100) = .80
CHANGE FOOTCANDLES TOP 50
CHANGE NO. OF FIXTURES TOP 4
FROM CU TABLE FOR THIS FIXTURE
ENTER THE FOLLOWING VALUES (.100)
ENTER CU FOR CEILING REF. OF 50 AND WALL REF. OF 50
FOR CAVITY RATIO OF 1.7 .35
FOR CAVITY RATIO OF 2.7 .32

ENTERING SPECIAL FIXTURE INFORMATION

NO OF LAMPS	NO OF FIXTURES	FOOT CAVITIES	WATTS	FC AND WATTS
2	40	49.90	1520	5 152

PRINTER COPY (Y/N)?

SPECIAL FIXTURE CALCULATIONS

footcandles. 150 watts would give you only 32.32 footcandles, and 100 watts would give you only 21.55 footcandles.

As you are shown the figures for each type of fixture, you choose which calculation is your best choice. After the three fixture types have been displayed or printed, you may enter information for special fixtures. Then you can use more than one type of fixture in a room and find out how much light each would give you. You can try up to 10 special fixtures to determine which would be best.

If you want a special fixture, you first enter whether or not the fixture is recessed. If it is not, you enter the distance in feet from the ceiling. You are told the room cavity ratio and asked to enter the ceiling reflectance for a CCR value. Then you enter the total lamp lumens, watts, number of lamps, and maintenance factor. You also change the footcandles and number of fixtures. You enter the two CU values from the fixture catalog for the nearest whole-number cavity ratios. Then you will be shown the footcandles produced by this special fixture. This information can also be printed.

You are then shown on the screen the figures for your best choice of each type of fixture and any special

> (continued on page 39)

LIGHTING CALCULATIONS

CHOICE LIST				GIVEN NO. FIXTURES	
LAMPS	FIXTURES	FC'S	WATTS	FC'S	WATTS
1 5	0	0	0	0	0
2 4	3	42.69	600	56.92	800
3 2	5	43.63	500	34.9	400
4 2	40	49.90	1520	5	152

WHAT NEXT
1 ANOTHER FIXTURE
2 ANOTHER ROOM
3 END

LIST OF BEST CHOICES

LIGHTING CALCULATIONS					
COMPUTER ROOM 80/10/80					
2000					
ROOM LENGTH = 24 X 16 ROOM 8 X 8 HIGH					
REFLECTANCES: CEILING 75 WALL 50 FLOOR 20					
FOR 40 MAINTAINED FOOT CAVITIES AND 4 FIXTURES....					
AREA 384 SQ. FT. AND CCR = 2.86					
5000 FLUORESCENT LAMP LUMENS					
NO. OF LAMPS	NO. OF FIXTURES	FOOT CAVITIES	WATTS	FC AND WATTS	FC AND WATTS
FOR 2 X 4 TROFFER					
1	9	39.27	450	39.27	450
2	5	43.63	500	43.63	500
3	3	42.69	600	42.69	600
PARABOLIC FIXTURE					
1	9	39.27	450	39.27	450
2	5	43.63	500	43.63	500
3	3	42.69	600	42.69	600
COFFER FIXTURE					
1	9	39.27	450	39.27	450
2	5	43.63	500	43.63	500
3	3	42.69	600	42.69	600

SPECIAL CASE NO. 1 (MANUAL)
CCR = 1.82 FLOOR 20 = 1740 LAMP/FC = 2 W = 150 FC = 4
40 2 49.90 1520 5 152

PRINTED CALCULATIONS



HOME ENERGY COST SAVING ANALYSIS

Level II 16K tape
from DEMI-Software
6 Lee Road
Medfield, MA 02052

HOME ENERGY COST SAVINGS ANALYSIS is written to help you decide if it would pay you to insulate part of your home. It will run on the

Model III and under disk BASIC. The program will figure the savings on your windows or walls or ceiling. You must enter the indoor temperature and average outdoor temperature. You enter the type of heating fuel you use and its cost. You enter the square feet of the area you are considering, the construction materials that make up this area, and the new materials you are thinking of using. The program will tell you the reduction in heat loss and fuel cost savings per hour. Then you enter the cost of making the improvement. The program will tell you how many days it will take for the improvement to be paid for by the savings.

You must find out your average yearly outside temperature. The program does not ask for an average indoor temperature -- do you enter the daytime or nighttime temperature or the average temperature?

MATERIAL LAYER-1

- | | | |
|----------------------|-------------------------|------------------|
| 1-AIR | 11-CHIPPED VERMICULITE | 21-PLASTER |
| 2-ALUMINUM | 12-FIBERBOARD | 22-PLYWOOD |
| 3-ASBESTOS COMPT. BR | 13-FIBERGLASS | 23-URETHANE FOAM |
| 4-ASPHALT | 14-GRAVEL | 24-SAND |
| 5-BRICK | 15-GYPSUM | 25-SHAUNT |
| 6-CONCRETE | 16-INSULITE | 26-SLATE |
| 7-CONCRETE BLOCK | 17-INCERATED PAPER FILL | 27-STYROFOAM |
| 8-COPPER | 18-MINERAL WOOL | 28-KITMOH GLASS |
| 9-CORRBOARD | 19-PAPER | 29-400B SHINGLE |
| 10-CORRUGATED CARD | 20-PINE LUMBER | 99-4 TERMINATE |

SELECT MATERIAL? 15
THICKNESS IN INCHES? 5/8
PACED
THICKNESS IN INCHES? .625

MATERIALS

First you enter the present material layers. This is called just "Material Layer." Next you will enter the materials you are thinking of using. That will be called "New Material Layer." If you want to use 5/8 inch gypsum board, you will have to change that to decimal inches.

HOME ENERGY COST SAVING ANALYSIS

EFFECTIVE HEAT LOSS REDUCTION- 433.69 BTU/HOUR 64.00 %
FUEL COST SAVINGS-\$ 8.0022/HOUR

WHAT IS COST OF IMPROVEMENT? 1250
PAYBACK WILL OCCUR IN 23563 DAYS
PRESS (ENTER) FOR ANOTHER EVALUATION? _

ANALYSIS

The program has told me the savings in fuel cost if I change the Material Layers. I have entered the cost of the improvement. It has told me the cost would be paid back in 23563 days. Now I must get out the calculator to find out how many years that is.

The program asks for the thickness of the material. It does not tell you that it will not accept an answer of 5/8 inch thickness for gypsum board - you must enter .625 instead of 5/8. Otherwise you are told "?REDO."

The program asks for the cost of the improvement. It does not say that you cannot enter a comma in the figure. It says "Extra Ignored".

You must figure each area separately. The areas must all be composed of the same materials. For example, you must subtract the area of the windows before you enter the area for the walls. Otherwise the program will think you have a layer of glass in all your walls. And there is no provision for storm or double-paned windows.

If you buy HOME ENERGY COST SAVING ANALYSIS, you will also need a calculator. Figures for improvement cost payback are not normally given in days. They are given in years. ■

HEXSPELL

(continued from page 24)

original document before it was changed. If you accidentally press the "Break" key at the wrong time, the program ends with an error message and may even destroy the file with your list of words.

HEXSPELL lets you easily and quickly correct a typing error or misspelled word in a document, but it doesn't forgive any errors you make when you run the program. I feel it should have had a little more work. ■

LIGHTING

(continued from page 38)

fixtures. Then you may enter information about another special fixture or another room or end the program.

Entering the information in LIGHTING CALCULATIONS is easy, and the printouts are a good feature. If you need to try more than 10 special fixtures, you can select the "Another Room?" option. You don't have to enter the basic room information again. All you need to do is press "Enter" when you are asked the initial questions. A lighting engineer may well find LIGHTING CALCULATIONS useful. ■

TEMPERATURE

First you enter the indoor temperature. Then you enter the outside temperature.

HOME ENERGY COST SAVING ANALYSIS

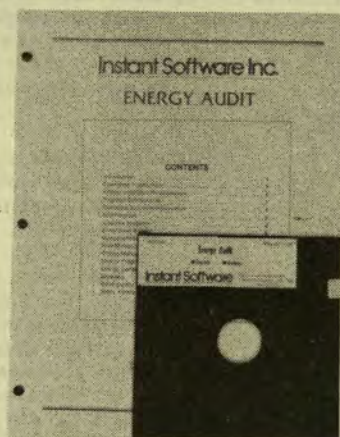
SELECT FUEL IN USE...

- 1-ELECTRICITY
- 2-GAS (NATURAL)
- 3-GAS (L.P.)
- 4-OIL (HE FUEL)
- 5-COAL
- 6-GEOSIDE
- 7-WOOD
- ??

ENTER UNIT COST OF FUEL? 100
ENTER AREA SIZE(SQ.FT.)? 1250

FUEL

You are asked what type of fuel you use and it's unit cost. Then you enter the square feet of the area you want to improve.



ENERGY AUDIT

Level II 32K disk
from Instant Software
Peterborough, NH 03458

ENERGY AUDIT is designed to analyze your home's heating energy use and show you where and how you might save money by adding energy-saving items. It does not include cooling costs. It includes figures for a test home of a preset size and construction so you may see how the program works. The program

IS THE FLOORPLAN OF YOUR HOME

- | | |
|-----------------|--------------|
| (1) RECTANGULAR | (2) L-SHAPED |
| (3) T-SHAPED | (4) U-SHAPED |
| (5) OTHER | |

? 1

YOUR HOME'S STYLE

- | | |
|-----------------|---------------|
| (1) 1-STORY | (2) 2-STORY |
| (3) SPLIT-LEVEL | (4) TRI-LEVEL |
| (5) 2-1/2 STORY | (6) OTHER |

? 1

TYPE OF HOME

- | | |
|----------------|----------------|
| (1) SINGLE | (2) S/S DOUBLE |
| (3) U/S DOUBLE | (4) QUAD-PLEX |

? 1

- | | |
|--------------|-----------------|
| (3) FUEL OIL | (4) BOTTLED GAS |
| (5) COAL | (6) WOOD |
| (7) KEROSENE | (8) OTHER |

? 6

ENTER FUEL COST IN \$ PER CORP? 200

WHAT TYPE HEATING SYSTEM

- | | |
|---------------------|--------------------------|
| (1) STEAM/HOT WATER | (2) FORCED AIR |
| (3) ELEC. BASEBOARD | (4) RADIANT FLOOR |
| (5) WOOD-COAL STOVE | (6) HEAT PUMP/FORCED AIR |

? 5

WHAT IS YOUR:

DAYTIME THERMOSTAT SETTING? 65
NIGHTTIME THERMOSTAT SETTING? 45

BASIC INFORMATION

You enter the basic shape and style of your home. You will also enter information about the condition and size of your home and the type and cost of your heat.

is in two sections. The first section allows you to enter figures for a home. The second section uses those figures to show you areas where you can save money and energy. The program comes with a good manual to explain how to measure your home and enter the figures. It includes a filled-in worksheet as an example and a blank worksheet for you to use in measuring your home. The manual also explains some of the energy terms used. You should read the manual first to understand some of the terms and what kind of information the program wants you to enter. The catalog says the program is compatible with the Model III.

IN THIS STEP, PERIMETER WALL AREA WILL BE COMPUTED. DIMENSIONS WILL BE ENTERED AS WIDTH AND HEIGHT FROM GROUND LEVEL TO THE UPPERMOST HEATED AREA. FOR INSTANCE, IF WE ARE LOOKING AT A 2-1/2 STORY ELEVATION WITH A GABLE END (ATTIC BEHIND GABLE), ONLY THE WALL HEIGHT UP TO THE ATTIC LEVEL WILL BE MEASURED.

DIVIDE THE PERIMETER WALL AREA SURROUNDING HEATED SPACE INTO ONE OR MORE RECTANGLES SO THAT AREAS ARE NEITHER OVERLAPPED NOR OMITTED
HOW MANY AREAS (0 TO LEAVE)? 4

ENTER WIDTH & HEIGHT OF RECTANGLE # 1 TO THE NEAREST FOOT USING A COMMA TO SEPARATE NUMBERS. ? 26,10

PERIMETER WALLS

You need to enter the size of your walls. The program explains how to enter these figures.

- | | |
|-----------------------|-------------------------|
| 1 ASBESTOS SIDING | 2 BRICK 4IN |
| 3 BUILDING PAPER | 4 CARPET 1/4IN |
| 5 CONCRETE BLOCK 8IN | 6 CONCRETE BLOCK 12IN |
| 7 CONCRETE BLOCK 14IN | 8 CONCRETE BLOCK 16IN |
| 9 CONCRETE, CAST 8IN | 10 GYPSUM BOARD/DRYWALL |
| 11 HARDWOOD FLOORING | 12 INSULATION (ALL) |
| 13 LATH & PLASTER | 14 LINOLEUM |
| 15 PLYWOOD 1/4IN | 16 PLYWOOD 3/8IN |
| 17 PLYWOOD 1/2IN | 18 PLYWOOD 5/8IN |
| 19 PLYWOOD 3/4IN | 20 SHEATHING-WOOD 3/4IN |

(KEY (ENTER) TO CONTINUE/REPEAT LIST)

ENTER THE # OF THE OUTERMOST COMPONENT OF YOUR PERIMETER WALL (0 TO LEAVE)?

- | | |
|----------------------------|-------------------------------|
| 21 SHEATHING-FIBERBOARD | 22 SHEATHING-RIGID FOM 3/4IN |
| 23 SHEATHING-RIGID FOM 1IN | 24 SHINGLES, WOOD |
| 25 SHINGLES, ASPHALT | 26 SIDING, ALUM. VINYL, STEEL |
| 27 SIDING, BEVEL 1/2 X 8IN | 28 SIDING, BEVEL 3/4 X 10IN |
| 29 SIDING, DROP 3/4IN | 30 SIDING, PANEL (GIB) 1/4IN |
| 31 TONGUE & GROOVE 3/4IN | 32 HEAD AIR SPACE |

33 OTHER

(KEY (ENTER) TO CONTINUE/REPEAT LIST)

ENTER THE # OF THE OUTERMOST COMPONENT OF YOUR PERIMETER WALL (0 TO LEAVE)?

COMPONENTS

These are the items which are in your walls, ceiling and floors. First you enter the number of each item in your outside walls. Next you will enter the number of each item in your ceilings or floors.

You measure the size of your home, including the size of the windows. You look at the materials in the construction and their condition, and the present insulation. You enter this information, the type of heating you have and its cost, and the "degree days" for your area. A

***** DATA BASE ENTRY *****
(NOTE: A + SYMBOL INDICATES DATA IN FILE)

- | | |
|-------------------------|-------------------------------|
| + (1) BASIC INFORMATION | + (8) WINDOW/DOOR AREA |
| + (2) BASEMENT AREA | + (9) PERIM. WALL COMPONENTS |
| + (3) MAIN FLOOR AREA | + (10) ROOFT. WALL COMPONENTS |
| + (4) SECOND FLOOR AREA | + (11) CEILING & FLOOR CORP. |
| + (5) THIRD FLOOR AREA | + (12) REVISION DATA |
| + (6) CEILING AREA | + (13) I/O DATA |
| + (7) WALL AREA | + (14) ANALYSIS |

EXECUTE (1-11) IN SEQUENCE. ENTER # OF DESIRED ROUTINE? *

INFORMATION

You will enter information in any of these categories that apply to your home. You may review a summary of the information at any time. If you want to change the size of one window, you must enter all the information about all the windows and doors. If you choose #13, you may save the information in a separate file on the disk. If you choose #14, you may analyze the home you are working on or figures from another home or end the program.

AS A FINAL CHECK ON THE DATA BASE THAT HAS BEEN ESTABLISHED FOR YOUR HOME, PLEASE CONFIRM THE FOLLOWING INFORMATION:

BASEMENT AREA: 0 SQ
MAIN FLOOR AREA: 1500 SQ
2ND FLOOR AREA: 1500 SQ
3RD FLOOR FINISHED ATTIC AREA: 0 SQ
HEATED PERIMETER AREA (TOTAL): 3000 SQ
RTY-SINGLE-GLAZED WINDOWS: 30
RTY-DOUBLE-GLAZED WINDOWS: 0
RTY-TRIPLE-GLAZED WINDOWS: 0
RTY-EXTERIOR DOORS: 2
NET HEATED PERIMETER AREA: 3000 SQ

(KEY (ENTER) TO CONTINUE)

"R" VALUE, PERIMETER WALLS: 15.0
"R" VALUE, CONVENTIONAL CEILING: 3.67
"R" VALUE, CATHEDRAL CEILING: 0
"R" VALUE, MAIN FLOOR ABOVE UNHEATED SPACE: 3.67
"R" VALUE, 2ND FLOOR ABOVE UNHEATED SPACE: 0
CONVENTIONAL CEILING AREA: 1500
CATHEDRAL CEILING AREA: 0

IF ANY FIGURES DO NOT SEEM CORRECT, PLEASE RE-ENTER THAT SECTOR

(KEY (ENTER) TO CONTINUE)

SUMMARY

This is a summary of all the information you have entered. You may change or add information if you choose.

degree-day map of the U.S. is in the manual. The program summarizes the information and you can make changes or enter more information if you need to. Then the information is saved in a separate file.

The second section analyzes information in the file. It explains first in words and then in a table how much money you could save if you made certain improvements. This section allows you to print out any of the pages of information. This information covers air infiltration, windows and doors, ceilings, floors, walls, and other areas. The tables show information about the present 5-year energy cost for each area, a suggested dollar investment for improvements, the 5-year savings if these investments are made, and how many years it would take the savings to pay back the investment. You may then examine each area and enter figures for a different cost of improvement or make even greater improvements, such as adding more insulation than suggested. You will be shown the tables with the changed information. You can make changes

as many times as you like and examine the alternatives.

ENERGY AUDIT seems to consider almost everything in heating your house except going solar. It includes details of your home construction and costs. Under a category of "Other," it includes lowering your thermostat and adding attic ventilation. It allows you to change the anticipated cost of making improvements. It allows you to print out the tables or a breakdown of cost estimates.

The program has some drawbacks. The first section of the program is not as easy to use as it might be. This section is used to enter information about your home. Most of the time you have a choice of one to four items but must press the "Enter" key after your choice. If you want to change one item of construction information about an area, you must again enter all the information about that area.

The second section also has drawbacks. You are asked first, "What time delay do you want (I suggest 50)." Neither the manual nor the screen explains what the limits are or why you are asked for a time delay. The section to change the estimated cost of making the improvement shows a comma if the figure is over \$1,000. However, you are not told that you may not use a comma if you change that figure.

The manual could also be improved a little. Only the first page refers to the disk version. All the other pages refer to a tape version. The manual briefly says that you may want to change some of the variables in the ANALYSIS program to reflect changing costs. It says to "Edit" these variables which are "initialized in line 112." This is great for a programmer but how about the non-programmer? The manual also uses rather technical terms which might be difficult for a novice to understand, although it does include a glossary.

I have the impression that the two sections of the program were written by different programmers. The second section is much easier to use than the first.

ENERGY AUDIT analyzes a lot of information and helps you decide what improvements to make to save money. It has many good features. But with a little extra effort, it could have been easier to use. ■

UNDER PRESENT CONDITIONS OF YOUR HOME'S STRUCTURE, LOCAL FUEL COSTS AND AREA CLIMATE, HEAT LOSS THROUGH AIR INFILTRATION MAY BE COSTING YOU AS MUCH AS \$1000 PER YEAR.

DECREASING THE INFILTRATION RATE FROM 2.8 TO 1 COULD REDUCE THIS COST TO AS LOW AS \$500 PER YEAR.

AT CURRENT (1979) NATIONALLY-AVERAGE PRICES FOR SEALANTS YOU INSTALL, IT WOULD TAKE AN INVESTMENT OF \$1,000 TO COULD EXPERIENCE A NET SAVINGS OF AS MUCH AS \$400 OVER 10 YEARS.

THESE DATA SUGGEST EXCELLENT ENERGY COST SAVINGS POTENTIAL BY DECREASING AIR INFILTRATION. THIS WILL BE DETAILED LATER.

PRESS (SHIFT)F5 TO PRINT, OR ANY KEY TO CONTINUE

ANALYSIS

The program shows you an analysis of each area where you could make improvements and save money.

SUMMARY BY AREA					
AREAS EVALUATED	CURRENT 5-YR COST	INVESTMENT	NET 5-YR SAVINGS	YES TO YES TO	NO TO NO TO
AIR INFILTRATION	\$ 5,000	\$ 100	\$ 4,900	0.16	
WINDOWS & DOORS	\$ 3,200	\$ 300	\$ 2,900	0.10	
CEILING AREAS	\$ 5,100	\$ 500	\$ 4,600	0.15	
FLOOR AREAS	\$ 2,500	\$ 500	\$ 2,000	1.18	
PERIMETER WALLS	\$ 2,200	\$ 100	\$ 2,100	2.86	
OTHER MEASURES	\$ 0	\$ 0	\$ 0	0.00	
TOTALS	\$10,000	\$ 1,000	\$ 9,000		

***** WHAT IS THE 1ST LETTER FOR ANALYSIS? *****
PRESS (SHIFT)F5 TO PRINT, OR ANY KEY TO CONTINUE

TABLE

The detailed summary of the analysis shows you the cost of heat loss, cost of improvements, 5-year savings, and the years to pay back the improvement. You may change the investment figures in any of the categories.

INCREASING INSULATION OF YOUR CONVENTIONAL CEILING FROM R-3 TO R-26

AT A PLANNED COST OF \$ 545 MAY SAVE AS MUCH AS \$3,970 IN 5 YEARS

AND PAY BACK IN 0.6 YEARS

DO YOU WANT TO:

- (1) INSERT PLANNED R-VALUE
- (2) INSERT PLANNED COST
- (3) INCORPORATE THE ABOVE INTO YOUR PLAN
- (4) EXIT WITHOUT CHANGING PLAN

PRESS (SHIFT)F5 TO PRINT

? 1

CHANGES

If you want to change the Ceiling Area figures, you may insert your own cost or estimate or change the "R" value. This will change the figures shown on the detailed summary table. You can change the figures as many times as you like so that you can try out different ideas. But if you change the cost, do not use a comma even though one is shown.



DEGREE DAY MAP

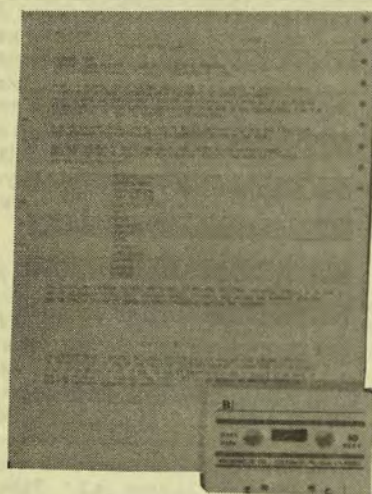
This map comes with the manual.

FINDER

(continued from page 31)

letters or numbers may be used in each piece of information entered. The manual explains when you may just press "Enter" instead of entering information, and what happens if you do. Except for the compass bearings of "N," "S," "E," and "W," and once the job title is entered, all the entries can be made on the numeric keypad -- even a Yes/No entry. If you are given two choices, you may press "1" for the first choice and "2" for the second.

I felt comfortable trying FINDER-1 and CoGo-1 with the detailed manual next to me, explaining what I would see and how to enter the information. If you need this kind of help in your surveying work, you should look into these top-quality programs. ■



PROP
Level II 32K disk
by Chet Behrman
from The Program Manager
P. O. Box 45
Inglefield, IN 47618

PROP is a program to keep records of rented or leased real estate. It will keep month-to-date and year-to-date records for as many as 50 properties. The figures for the month and the year are totals for that time period. The description of the property, address, date acquired

ADD OR DELETE? ADD
NEW PROPERTY NUMBER? 1
PROPERTY NAME
? CON. BLDG.....
LOCATION
? 5000 21ST ST.....
DATE ACQUIRED...MM/YY/YY? 03/21/75
ORIGINAL COST? 30,000
? EXTRA IGNORED
ENTER MONTH-TO-DATE AND YEAR-TO-DATE FOR THE FOLLOWING:
IMPROVEMENTS? 500
?? 1000
DEPRECIATION? 5000,5000
RENT RECEIVED? 500,2500

1. ADDING PROPERTY

01 CON. BLDG DATE ACQUIRED 03/21/75
5000 21ST ST
ORIGINAL COST MONTH-TO-DATE YEAR-TO-DATE
IMPROVEMENTS 500.00 1000.00
DEPRECIATION 5000.00 5000.00
RENT RECEIVED 500.00 2500.00
? PRESS ENTER FOR MORE

2. FIGURES FOR ONE PROPERTY

and original cost are entered first. Then you enter the improvements, depreciation, and rent received. The expenses are in categories for electricity, heat, water, insurance, repairs, taxes, interest, commission, and three other expense accounts. The documentation says to change certain data lines in the program to use your own headings on the three expense accounts.

First you add each property and start the file (Figure 1). You can add another property or delete one at any time. You can see the month-to-date and year-to-date figures for any property you wish (Figures 2 and 3). You can select one expense account and see the totals for all your properties in figures and on a graph. However, the graph is not clear if you have only one property. You can print a three-page report on all your properties on a 132-column printer. This report shows each property description, the cost and income figures for each, and the expense figures for each (Figure 4). You can add rent receipts and post improvements and expenses. A separate section allows you to correct any entry (Figure 5). Another section updates the year-to-date

01 CON. BLDG	5000 21ST ST
MONTH-TO-DATE	YEAR-TO-DATE
ELECTRICITY 0.00	0.00
HEAT 0.00	0.00
WATER 25.00	150.00
INSURANCE 0.00	500.00
REPAIRS 0.00	60.00
TAXES 250.00	250.00
INTEREST 0.00	0.00
COMMISSION 0.00	0.00
EXPENSE 1 30.00	30.00
EXPENSE 2 60.00	60.00
EXPENSE 3 90.00	90.00
TOTALS 455.00	1140.00

PROPERTY NUMBER? ..

3. MORE FIGURES FOR THIS PROPERTY

YEAR-TO-DATE PROPERTY REPORT YOUR COMPANY NAME				
NO.	PROPERTY	LOCATION	ACQUIRED	COST
1	CON. BLDG	5000 21ST ST	03/21/75	30000.00
04/26/81				
NO.	PROPERTY	IMPROVEMENTS	DEPRECIATION	RENT RECEIVED
1	CON. BLDG	1000.00	5000.00	2500.00
TOTALS		1000.00	5000.00	2500.00

01 CON. BLDG	5000 21ST ST
MONTH-TO-DATE	YEAR-TO-DATE
ELECTRICITY 0.00	0.00
HEAT 0.00	0.00
WATER 25.00	150.00
INSURANCE 0.00	500.00
REPAIRS 0.00	60.00
TAXES 250.00	250.00
INTEREST 0.00	0.00
COMMISSION 0.00	0.00
EXPENSE 1 30.00	30.00
EXPENSE 2 60.00	60.00
EXPENSE 3 90.00	90.00
TOTALS 455.00	1140.00

4. PRINTED REPORT

figures so you can start a new month.

The program keeps a running total in each category. I found only a few problems. One is that neither the printed instructions nor the program tell you how to have the name of your own company printed on the report of the properties. Another is that I don't like to see non-programmers have to change program lines. The printed instructions tell you to leave a comma at the end of the last data line although they don't say why. The major problem is that neither the printed instructions nor the screen tell you not to use a comma when you enter a dollar amount. You are told "Extra Ignored" and instead of \$30,000, the program uses \$30. And yet when you add a new property, you enter both the month-to-date and year-to-date amounts with a comma between the entries. This time you aren't told that you should use a comma. If you don't enter the two amounts, you see a "??".

The program is easy to use with clear directions otherwise. The printed instructions tell you to press "Enter" to go on to a different function. You will want a printed report if you have more than one property. You must enter the property number when you enter improvements, rent, or expenses. If you have very many properties, you cannot remember what number goes

> (continued on page 76)

WHICH YEAR-TO-DATE ACCOUNT?

- | | |
|-----------------|-----------------|
| 1 ORIGINAL COST | 2 IMPROVEMENTS |
| 3 DEPRECIATION | 4 RENT RECEIVED |
| 5 ELECTRICITY | 6 HEAT |
| 7 WATER | 8 INSURANCE |
| 9 REPAIRS | 10 TAXES |
| 11 INTEREST | 12 COMMISSION |
| 13 EXPENSE 1 | 14 EXPENSE 2 |
| 15 EXPENSE 3 | 16 |

? 1
CURRENT FIGURE IS 30.00
NEW FIGURE? 30000

5. MAKING CORRECTIONS

- | | | | |
|---------------|--------------|--------------|---------------|
| 5 ELECTRICITY | 6 HEAT | 7 WATER | 8 INSURANCE |
| 9 REPAIRS | 10 TAXES | 11 INTEREST | 12 COMMISSION |
| 13 EXPENSE 1 | 14 EXPENSE 2 | 15 EXPENSE 3 | |

PROPERTY NUMBER, EXPENSE ACCOUNT NUMBER, AND AMOUNT
WITH COMMA BETWEEN
? 1,7,25

6. ENTERING EXPENSES



Everest Explorer on Mt. Everest



Everest Explorer on Mt. Everest
Level II, 16K or 32K disk system



EVEREST EXPLORER

Level II 16K tape
Level II 32K disk
by William Godwin
and Don Knowlton

from Acorn Software Products
634 N. Carolina Ave. S. E.
Washington, DC 20003

CHALLENGE! DANGER! ADVENTURE! These are yours when you organize an expedition to climb Mount Everest. On your fight to the top, you must cope with the weather, bad or even fatal accidents to your men, and thinning oxygen.

EVEREST EXPLORER is a simulation that lets you organize and direct the expedition, from purchasing supplies out of your budget to choosing which man will attempt the very peak of Mount Everest - if you get that far. The disk version lets you have a doctor in your expedition, but the native Sherpas who help your climbers may lose confidence after one or more deaths and refuse to help anymore. The disk version also lets you save

the climb if you run out of time to finish it. The instruction pamphlet gives good information and suggestions of what you will need on your climb. The program won't show you where to drive each piton on your climb, but instead lets you direct the overall movements of your men from one camp to the next.

You have a limited budget, set at random at the start of each climb. You finance your climbers (up to 26) and the helping Sherpas (up to 30), and buy 2-men tents, oxygen tanks, fuel supplies, and meal packets. Then you set the date to start your trip to the foot of the mountain where your base camp will be. You will choose whether you want to attempt the traditional climb by South Col, or the more dangerous route up the Western ridge. There are six camps to set up before you attempt the peak. And you must also get your men safely back to base afterwards.

Your trip to the base of the mountain takes a random time. Once there, you are given a weather report

each morning. This will tell you what to expect at the sites of the three lower and three upper camps and what your best climbers forecast the weather to be for that day. If the weather looks good, you can send some of your climbers and Sherpas to tackle clearing the ice fall between the base and the first camp. This can take as long as five days of good weather. If the weather is bad or looks threatening, you may lay over in the base camp. If you trusted the weather forecast and sent climbers to clear the way, and if the weather turned unexpectedly bad, you may lose men to accident or death at the very start.

You must consider food, fuel, tents, and oxygen when sending climbers or Sherpas from one camp to another. You have the help of reports of supplies in each camp after you have established it. You also have reports on the condition of each climber and Sherpa. After a strenuous day under a heavy pack in bad weather, all your climbers may be too exhausted to try another camp the next day. You may have to send some Sherpas back and forth between camps to bring up more supplies.

Each morning, you have the help of a weather forecast as well as the other reports before you give orders to your men. Your orders tell each man whether to go on, to stay put, or

APRIL 5, MORNING

THIS MORNING'S WEATHER:

ON THE LOWER MOUNTAIN (CAMPS 1-3) THE PRESENT WEATHER IS CLEAR, MODERATE WINDS (15-25 MPH)

ON THE UPPER MOUNTAIN (CAMPS 4-6) THE PRESENT WEATHER IS MAJOR STORM, NO VISIBILITY

THE GROUP'S MOST EXPERIENCED CLIMBERS PREDICT THE NEXT 12 HOURS WEATHER WILL BE SNOW, MODERATE WIND (25-40 MPH)

PRESS < ENTER > TO CONTINUE

CLIMBING ORDERS

APRIL 11, MORNING

EXPEDITION DAY 26

CLIMBING ORDERS: ANDERSON

MAN AT CAMP 1, SCHEDULED TO CLIMB TO CAMP 2
CONDITION: EXCELLENT

LOAD: 1 TENTS TOTAL LOAD
10 FUEL UNITS 45 POUNDS
1 OXYGEN
5 MEAL UNITS

ORDERS: C - SET/CHANGE CLIMBING SCHEDULE
L - SET/CHANGE LOAD
< ENTER > - DONE FOR THIS CLIMBER

WEATHER REPORT

ITEM	COST EACH	YOU NOW HAVE
CLIMBERS	\$ 4000	15 (INC. EQUIPMENT, TRANSPORTATION)
SHERPAS	\$ 1500	20 (INC. WAGES & EQUIPMENT)
TENTS	\$ 400	20 2-PERSON
FUEL UNITS	\$ 10	100 PERSON-DAYS
OXYGEN	\$ 25	100 TANKS
MEAL UNITS	\$ 14	100 PERSON-DAYS

YOU HAVE SPENT \$15,000 AND YOU STILL HAVE \$35,000

CHANGE NUMBER OF:

C - CLIMBERS S - SHERPAS T - TENTS
F - FUEL UNITS O - OXYGEN TANKS M - MEAL UNITS
X - NO MORE CHANGES

YOUR BUDGET

APRIL 4, EVENING

EXPEDITION DAY 19

HERE ARE THE EVENING REPORTS:

ANG PAU SHERPA HAS BEEN KILLED IN AN ICEFALL ACCIDENT

BECAUSE OF THE FATAL ACCIDENTS, THE SHERPAS HAVE LOST CONFIDENCE

IN THE EXPEDITION, AND ARE RETURNING TO BASE CAMP.

ICEFALL ROUTE IS ABOUT 15% ESTABLISHED

END OF EVENING REPORT

PRESS < ENTER > TO CONTINUE

EVENING REPORT

to go back. They also tell each man what equipment or supplies to carry. You are shown the weight carried by each man so you can lighten or increase his load if you think it wise. Each evening, you are told any special events that happened that day -- for example, if the weather has changed unexpectedly or if there has been an accident to one of your men.

All commands are simple to enter. You can change the commands to any of your men at any time before you enter the final command to start. You can look at the reports at any time if you forget where a man is or what his health condition is. One additional report would have been nice, though. You cannot look at one report for a particular camp and find out what supplies and men are there. You must keep track of the supplies yourself. You must look at the report for all the men to find out which men are at a particular camp.

There seem to be no problems in the program unless you try to run the tape version under Disk BASIC. When I tried this, I got an error statement about half way to the peak and the computer froze. When I ran the tape version in Level II, it worked fine.

The program will only let you press the keys for the legal commands. You cannot accidentally ruin your climb -- unless you do

LOWER MOUNTAIN CAMPS:

CAMP 1 - 12 TENTS (2 PERSONS/TENT), 453 TANKS OXYGEN, 985 FUEL UNITS, AND 896 MEAL UNITS. THERE ARE NOW 28 CLIMBERS AT THIS CAMP.

CAMP 2 - 5 TENTS (2 PERSONS/TENT), 9 TANKS OXYGEN, 6 FUEL UNITS, AND 28 MEAL UNITS. THERE ARE NOW 9 CLIMBERS AT THIS CAMP.

CAMP 3 - 3 TENTS (2 PERSONS/TENT), 6 TANKS OXYGEN, 33 FUEL UNITS, AND 28 MEAL UNITS. THERE ARE NOW 5 CLIMBERS AT THIS CAMP.

PRESS < ENTER > TO CONTINUE

YOUR CAMPS



MAP OF THE CLIMB

something like sending an exhausted man on a climb above 20,000 feet in horrible weather with a 60-pound pack and no oxygen tank to breathe from during his climb. Then you have lost your man.

I found the tape version easier because I lost a climber and the Sherpas' help very early the first time I ran the disk version. I didn't have to worry about losing the Sherpas in the tape version. But when a climber in the tape version broke his leg, I wished for the doctor allowed in the disk version.

If you want a challenge, buy EVEREST EXPLORER. ■

FINPLAN

(continued from page 29)

programs to a disk with TRSDOS 2.3 -- the program will not run under NEWDOS. The disk came with a program on it to transfer the Modules and the sample data by simply inserting the program disk into my drive, and then inserting a TRSDOS 2.3 disk. When I started to run Module II, I found that not all the program had been transferred. When I transferred it the second time, it worked properly.

Both Modules have a routine so you may print whatever you see on the screen. This print routine does not work with the lower case modification unless you have a lower case driver loaded in. Otherwise your printer goes wild. The manual does not warn you of this.

One line in Module II had a bug. The wrong BASIC word was used. This is in the screen printing routine, and you get an error message instead of printed information. This is not a typographical error, but may have been a temporary problem when our particular review copy of the disk was made.

Due to the size of the program, it is written in two parts. You may save data from the first part to use in the second part. The manual very briefly says, "For disk users, the data file will be written out to the disk. It is not necessary to have a separate data disk. Once the data have been saved, type NEW and hit ENTER. The program will request that you bring in the previously saved data."

What actually happens is that Module I uses what is called "base data." When you save your data at the end of Module I, you save the

projected data which is used by Module II. You are also asked if you want to save your "base data." You aren't warned that you do need to save this if you have made any changes to it. Otherwise, any changes to the base data must be entered again if you go back to Module I. You assign separate file names to these files since the files are not interchangeable. Module I must use the "base data." Module II must use the "projected data." Otherwise, you get an error message when you are loading the files.

The problem with transferring the program and the bug in a program line probably would not happen to anyone else. But the manual should warn you about the need for the lower case driver. It should also give you more instructions about saving and reloading the files. It is excellent about telling you how to use the main part of the programs and how to interpret the results. It just doesn't tell you everything you need to know about the data files. Whoever wrote the one page about transferring information from Module I to Module II wasn't thorough enough.

FINPLAN is an excellent program which is easy to use and gives you valuable information. However, the manual should have been a little more specific in the two areas.

CASH FLOWS FROM NEW INVESTMENT -- JONES DISTRIBUTORS INC (DOLLARS)

YEAR	INVESTMENT	DEPRECIATION	WORKING CAPITAL	INVESTMENT CREDIT	THREE LESS CASH FLOW FROM OPERATIONS
1980	\$ 100,000	\$ 18,000	\$ 17,500	\$ 3,500	\$ 36,000
1981	\$ 75,000	\$ 18,000	\$ 0	\$ 3,495	\$ 36,000
1982	\$ 6,000	\$ 11,000	\$ 0	\$ 4,700	\$ 36,000
1983	\$ 5,000	\$ 11,000	\$ 0	\$ 4,500	\$ 36,000
1984	\$ 0	\$ 11,000	\$ 0	\$ 4,744	\$ 36,000
1985	\$ 0	\$ 11,000	\$ 0	\$ 4,744	\$ 36,000
1986	\$ 0	\$ 11,000	\$ 0	\$ 4,744	\$ 36,000
1987	\$ 0	\$ 11,000	\$ 0	\$ 4,744	\$ 36,000

PLEASE HIT "P" TO PRINT, ANY KEY TO CONTINUE

CASH FLOWS FROM NEW INVESTMENT -- JONES DISTRIBUTORS INC (DOLLARS)

YEAR	INVESTMENT	DEPRECIATION	WORKING CAPITAL	INVESTMENT CREDIT	THREE LESS CASH FLOW FROM OPERATIONS
1980	\$ 0	\$ 11,000	\$ 0	\$ 4,744	\$ 36,000
1981	\$ 0	\$ 11,000	\$ 0	\$ 4,744	\$ 36,000
1982	\$ 0	\$ 11,000	\$ 17,500	\$ 360	\$ 0
1983	\$ 0	\$ 1,100	\$ 0	\$ 230	\$ 0
1984	\$ 0	\$ 500	\$ 0	\$ 180	\$ 0
1985	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
1986	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
1987	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
TOTAL	110,000	110,000	\$ 36,940	\$ 36,000	

COMPUTE INTERNAL RATE OF RETURN (% YR OR X?)

CASH FLOW

Module II lets me project the cash flow in the business until all the assets are depreciated. ■



MYCHESS
Level II 32K disk
from Programma International

MYCHESS is a chess partner for a beginner or an experienced player. It plays at 9 levels of difficulty. You can set a time limit for a certain number of moves. You can force the computer to make a quick move or you can see the best moves it has found for you to make. You can have a printout of all the moves as they are made. You can save a game in progress. You can set up the board to try various strategies, you can reverse sides in midgame, and you can even make the computer play itself. The pamphlet that comes with the program explains your options and also tells you a little of the history of chess on a computer.

At the start of the game, you can decide to set the time controls, and send the moves to the printer. You can have the computer display the best moves for you to make. You or the computer can take White to make the opening move. If you decide to set up the board, you can also set up the conditions for castling if you want to allow it. If you set a control on the time allowed to make each move, the computer will automatically play at difficulty level or "ply" 4. However, you can change this at any time during the game.

```

MY MOVE 01 -- 07-05
AA BB CC DD EE FF GG HH
8 1 BB BB BB BB BB BB 1 8
7 1 BB BB BB BB BB BB 1 7
6 1 11 11 11 11 11 1 6
5 1 11 11 11 11 11 1 5
4 1 11 11 11 11 11 1 4
3 1 11 11 11 11 11 1 3
2 1 BB BB BB BB BB BB 1 2
1 1 BB BB BB BB BB BB 1 1
AA BB CC DD EE FF GG HH
YOUR MOVE 02 G1-F3
    
```

GAME COMMANDS
MOVE FORMAT: FROM - TO
COL-C ROW-R CR-CR
TO CASTLE
KING SIDE = "0-0" (ALPHA)
QUEEN SIDE = "0-0-0"
PROMOTIONS
SR FROM-SR TO-PIECE
Q-QUIT: P-CHANGE PLIES
M-MOVE PIECE (SET-UP BOARD)
G-FORCE MYCHESS TO MOVE
(BREAK)=SAVE GAME TO DISK

```

MY MOVE 02 -- 08-06
AA BB CC DD EE FF GG HH
8 1 BB 11 BB BB BB BB BB 1 8
7 1 BB BB BB BB BB BB 1 7
6 1 11 BB 11 11 11 11 1 6
5 1 11 11 BB 11 11 11 1 5
4 1 11 11 11 BB 11 11 1 4
3 1 11 11 11 11 BB 11 1 3
2 1 BB BB BB BB BB BB 1 2
1 1 BB BB BB BB BB BB 1 1
AA BB CC DD EE FF GG HH
YOUR MOVE 03 C2-C4
    
```

GAME COMMANDS
MOVE FORMAT: FROM - TO
COL-C ROW-R CR-CR
TO CASTLE
KING SIDE = "0-0" (ALPHA)
QUEEN SIDE = "0-0-0"
PROMOTIONS
SR FROM-SR TO-PIECE
Q-QUIT: P-CHANGE PLIES
M-MOVE PIECE (SET-UP BOARD)
G-FORCE MYCHESS TO MOVE
(BREAK)=SAVE GAME TO DISK

```

MY MOVE 03 -- 09-06
AA BB CC DD EE FF GG HH
8 1 BB 11 BB BB BB BB BB 1 8
7 1 BB BB BB BB BB BB 1 7
6 1 11 BB 11 11 11 11 1 6
5 1 11 11 BB 11 11 11 1 5
4 1 11 11 11 BB 11 11 1 4
3 1 11 11 11 11 BB 11 1 3
2 1 BB BB BB BB BB BB 1 2
1 1 BB BB BB BB BB BB 1 1
AA BB CC DD EE FF GG HH
09-03
YOUR MOVE 04 B2-B4
    
```

GAME COMMANDS
MOVE FORMAT: FROM - TO
COL-C ROW-R CR-CR
TO CASTLE
KING SIDE = "0-0" (ALPHA)
QUEEN SIDE = "0-0-0"
PROMOTIONS
SR FROM-SR TO-PIECE
Q-QUIT: P-CHANGE PLIES
M-MOVE PIECE (SET-UP BOARD)
G-FORCE MYCHESS TO MOVE
(BREAK)=SAVE GAME TO DISK

```

MY MOVE 04 -- 10-04
AA BB CC DD EE FF GG HH
8 1 BB 11 BB BB BB BB BB 1 8
7 1 BB BB BB BB BB BB 1 7
6 1 11 BB 11 11 11 11 1 6
5 1 11 11 BB 11 11 11 1 5
4 1 11 11 11 BB 11 11 1 4
3 1 11 11 11 11 BB 11 1 3
2 1 BB BB BB BB BB BB 1 2
1 1 BB BB BB BB BB BB 1 1
AA BB CC DD EE FF GG HH
10-02
YOUR MOVE 05 D1-C2
    
```

GAME COMMANDS
MOVE FORMAT: FROM - TO
COL-C ROW-R CR-CR
TO CASTLE
KING SIDE = "0-0" (ALPHA)
QUEEN SIDE = "0-0-0"
PROMOTIONS
SR FROM-SR TO-PIECE
Q-QUIT: P-CHANGE PLIES
M-MOVE PIECE (SET-UP BOARD)
G-FORCE MYCHESS TO MOVE
(BREAK)=SAVE GAME TO DISK

```

MY MOVE 05 -- 11-06
AA BB CC DD EE FF GG HH
8 1 BB 11 BB BB BB BB BB 1 8
7 1 BB BB BB BB BB BB 1 7
6 1 11 BB 11 11 11 11 1 6
5 1 11 11 BB 11 11 11 1 5
4 1 11 11 11 BB 11 11 1 4
3 1 11 11 11 11 BB 11 1 3
2 1 BB BB BB BB BB BB 1 2
1 1 BB BB BB BB BB BB 1 1
AA BB CC DD EE FF GG HH
11-03
YOUR MOVE 06 B1-C3
    
```

GAME COMMANDS
MOVE FORMAT: FROM - TO
COL-C ROW-R CR-CR
TO CASTLE
KING SIDE = "0-0" (ALPHA)
QUEEN SIDE = "0-0-0"
PROMOTIONS
SR FROM-SR TO-PIECE
Q-QUIT: P-CHANGE PLIES
M-MOVE PIECE (SET-UP BOARD)
G-FORCE MYCHESS TO MOVE
(BREAK)=SAVE GAME TO DISK

EARLY MOVES IN
ONE GAME

While playing the game, you see a very simple chess board at one side of the screen. A pair of colons appears on each black square not occupied by a chess piece. The squares are lettered "AA," "BB," "CC," and so on across the top and bottom. However, your moves are made using only a single "A," "B," or "C." The squares are numbered 8 down to 1 on the sides. To make a move, you enter the letter and number of the square you are going to. You press "Enter" after each move or answer to a question.

The screen also shows you the game commands. You are told what keys to press to quit, change the ply, make a move out of turn, force the computer to make a hasty move, and save the game. You are also reminded how to enter your move.

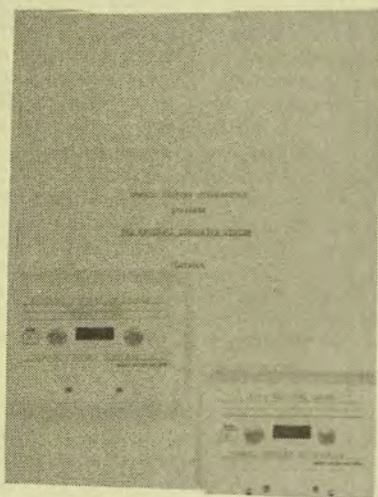
Above the playing board, you are told what the computer's last move was. Below the board, you are shown any suggested moves for you to make. While you are thinking about your move, the computer is busy deciding the best move to make if you take one of its suggested moves. It is thinking on your time. Depending on the ply, it can take from 5 seconds to several days for the computer to make its move. The average time is about three minutes at ply 4. Multiply by six for each additional ply. You can see why it is worthwhile to save a game in progress. In fact, you can save up to six games on the same disk. If you want to quit the game, you can start a new game immediately.

You are not told in any special way when a piece is captured. This is shown only by the position of the piece on the board. Nor are you told when you have placed the computer's king in check. It is up to you to see this.

MYCHESS may not have good graphics but it plays a mean game of chess.

```

=====
WHO AM I PLAYING? >> HART AM
TIME CONTROL BY Y=YES I
FIRST CONTROL
ENTER NUMBER OF MOVES 48
ENTER NUMBER OF MINUTES 128
SECOND CONTROL
ENTER NUMBER OF MOVES 48
ENTER NUMBER OF MINUTES 128
DISPLAY BEST VARIATION? Y
DO YOU WANT MATE? >> Y
=====
HART AM VS MYCHESS
01 02-04 07-05
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BASEBALL SIMULATION

1979 National and American League
Level II 16K tape
from Comrec Systems Corporation
P. O. Box 34008
Houston, TX 77034

BASEBALL SIMULATION SYSTEM is both a game and a simulation written for baseball fans. If you've ever wanted to manage the Mets or the Giants, the Yankees or the Orioles, you can do it with this program. Or if you just like to watch a game, you can pick the teams and sit back and watch them play.

The program comes with statistics on two fictitious teams, the Blues and the Greens. You can

EXPOS NEXT HITTER

PLAYER # 1; 01 IN THE LINEUP L/R

EYE 10
STRENGTH 29
DIR. 30
VAR. 4
CONTACT 34
SPEED 23

PRESS A KEY TO CONTINUE

HITTER

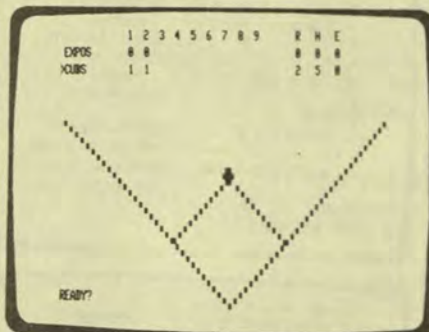
These are the ratings for the next player at bat. He is #1 in the lineup, left-handed, and is rated (from 10 to 50) 10 in tendency to swing only at strikes (eye), 29 in ability to hit the long ball (strength), 30 in direction of most power (dir), 34 in how well he tends to hit the ball (contact), 23 in base running speed, and is rated (from 1 to 7) 4 in how much he will "spray" the ball (variance).

also buy a separate tape with the 1979 National and American League team statistics. Each player on the team has been rated on seven playing characteristics -- from his tendency to swing only at strikes, to his base running speed, to his fielding ability. Each pitcher has extra ratings for ability to hit the intended target, to throw hard, and to pitch into late innings. The players also are listed as a left or right or switch hitter. The pitchers have a left or right throwing side.

You can manage one or both teams. The printed pamphlet that comes with the program has the ratings for all the players and you see on the screen the ratings of each player as he comes to bat. You can move the infielders or outfielders in or back and can move the outfielders left or right. You can substitute players. You can call the pitch -- type, speed, height, and location across the plate. If your team is at bat, you can take the pitch, bunt, force a swing, or let the computer decide how the batter would react. Your batter can try to hit the ball to a certain part of the field, either in

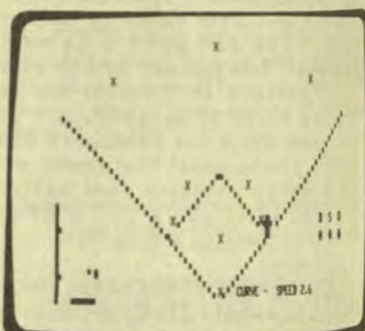
the air or on the ground. You can force your runner to go with the pitch and try to steal a base. Since all players have their individual ratings or characteristics, some players respond better to some orders. A player with a high rating in tendency to swing only at strikes has only a slim chance of hitting a fast ball that is low and outside if you force him to take a swing.

Or you can just watch a game. The playing diamond is shown on the screen, with each man marked as an "X". The lower left corner shows the pitch as if you were the catcher. The catcher's signal of where he wants the ball is shown by an asterisk. When the pitch is made and the ball approaches home plate, its position is shown by a marker in the same area. If the ball is right where the catcher wanted it, it replaces the asterisk. The bat reaches out from the side (left or right depending on the batter's stance) and hits or misses the ball. The ball moves out on the main field in the direction of the hit. You are told briefly in words the speed and type of pitch, and the speed and type of hit. You are also told if it was a foul ball.



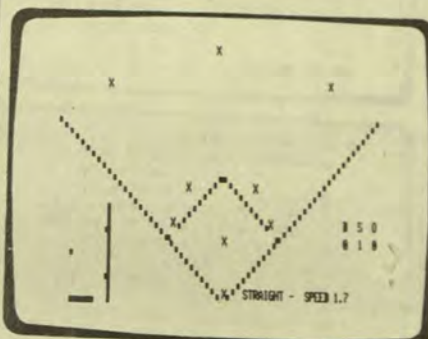
SCOREBOARD

It is the bottom half of the 2nd inning. The Cubs are at bat. The Cubs have 2 runs, 5 hits, and no errors. The Expos have no runs, no hits, and no errors.



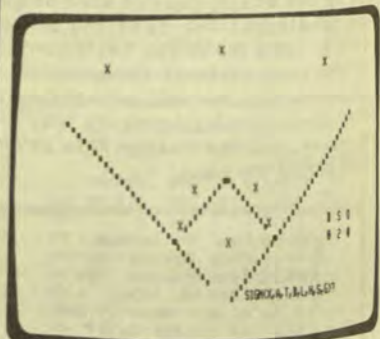
CURVE

This pitch was a curve ball at a speed of 2.6. There is a man on first base.



PITCH

The pitch was a straight ball at a speed of 1.7. The catcher called for a wide pitch. The team has no outs, and the batter has no balls and one strike.



SIGNALS

These are the signals you can give the batter. You can tell him to take the ball or swing at it. You can tell him what kind of pitch to look for. You can tell him where to attempt to hit it.

caught on the fly, a grounder, or any other results of the hit. Your man moves to the base if he made a hit. Then you see the ratings of the next man at bat.

After each man comes to bat and you see his ratings, the baseball diamond is redrawn. If you are only watching the game, you can press a key during this time and see the scoreboard at the top. This shows the innings, hits, runs, and errors. Then pressing another key will put the field players into position. During this time, you can enter your own commands for either team. As each man bats, you are shown the balls, strikes, and outs. Although the program is written in BASIC, the action on the field is fast. But the words showing the speed and type of pitch or hit or the results of the hit may not stay on the screen long enough for a slower reader.

One problem I had with this program when watching a game was understanding when to press a key to see the scoreboard. This must be done while the diamond is being drawn. And words would flash at the bottom of the screen for an instant. When I understood about pressing a key while the men were being positioned, then I realized that the words were to let me direct the pitch or the men in the field or the batter. Otherwise the words just flashed for an instant even if I was just watching and not managing one of the teams.

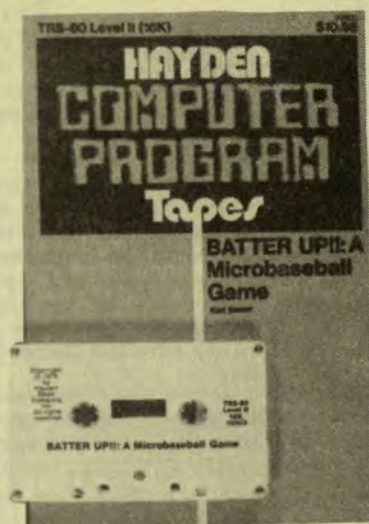
BASEBALL SIMULATION does have one problem in the program itself. At the end of the ninth inning, it will go on automatically to a tenth inning to break a tie. If there is no tie, you are told "Game

> (continued on page 48)

BATTER									
TEAM	1	2	3	4	5	6	7	8	9
1	25	45	25	15	10	20	10	10	10
2	20	40	20	10	10	10	10	10	10
3	20	40	20	10	10	10	10	10	10
4	20	40	20	10	10	10	10	10	10
5	20	40	20	10	10	10	10	10	10
6	20	40	20	10	10	10	10	10	10
7	20	40	20	10	10	10	10	10	10
8	20	40	20	10	10	10	10	10	10
9	20	40	20	10	10	10	10	10	10
10	20	40	20	10	10	10	10	10	10

TEAM STATISTICS

These are the printed statistics for one of the teams. The manual tells you how to interpret the statistics.



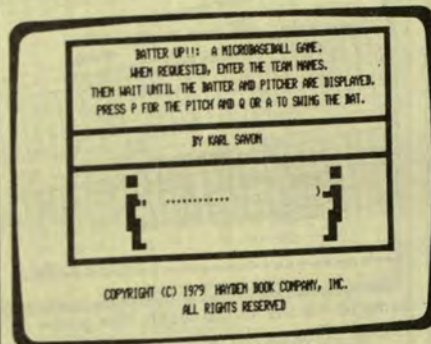
BATTER UP!!

Level II 16K tape
by Karl Savon
from Hayden Publishing Co.
50 Essex Street
Rochelle Park, NJ 07662

BATTER UP!! is a child's baseball game. You press a key to start the pitch. You press one of two other keys to control when and if you will bat high or low. The catch and the pitch are random within certain odds. The program will run under disk BASIC.

The pitch may be into the very highest or lowest "ball" zones. The strike zone is in two sections between. Most strike pitches are in the lower zone. A few are in the upper zone. A home run occurs only if the pitch is in the upper strike zone and you strike it late enough to have enough power. Otherwise, even if you hit it, the catcher has a 50% chance of catching it.

The first display is of the pitcher and batter. The second



INSTRUCTIONS

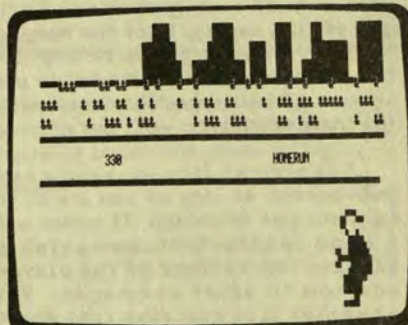
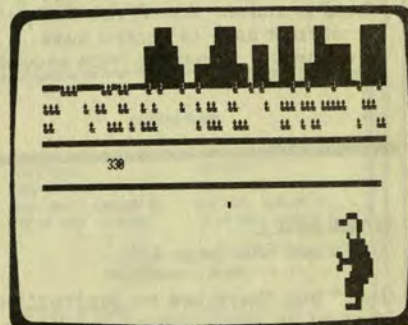
This is how you play the game.

BATTER									
TEAM	1	2	3	4	5	6	7	8	9
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2	20	40	20	10	10	10	10	10	10
3	20	40	20	10	10	10	10	10	10
4	20	40	20	10	10	10	10	10	10
5	20	40	20	10	10	10	10	10	10
6	20	40	20	10	10	10	10	10	10
7	20	40	20	10	10	10	10	10	10
8	20	40	20	10	10	10	10	10	10
9	20	40	20	10	10	10	10	10	10
10	20	40	20	10	10	10	10	10	10

BATTER									
TEAM	1	2	3	4	5	6	7	8	9
1	25	45	25	15	10	20	10	10	10
2	20	40	20	10	10	10	10	10	10
3	20	40	20	10	10	10	10	10	10
4	20	40	20	10	10	10	10	10	10
5	20	40	20	10	10	10	10	10	10
6	20	40	20	10	10	10	10	10	10
7	20	40	20	10	10	10	10	10	10
8	20	40	20	10	10	10	10	10	10
9	20	40	20	10	10	10	10	10	10
10	20	40	20	10	10	10	10	10	10

BATTING

The pitcher has pitched the ball. The batter has hit it for a possible homerun. There is a man on first and another on second base.

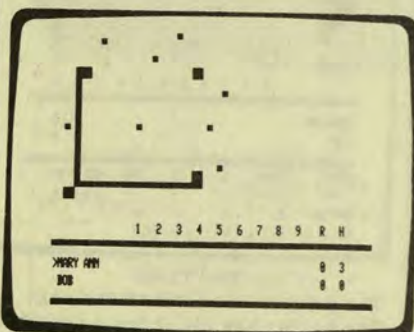


CATCHING

The catcher moves his glove randomly up and down. If the glove meets the ball, it will be an out. The crowd is in the bleachers behind the field, with the city's skyline in the background. I don't know what the "330" on the back fence means. This time the catcher missed the ball and it was a homerun.

display is of the catcher, with the stands in the background. The third display is of the playing field, showing the runner making a base. You are shown the game statistics at the bottom of each display. Before each team takes its next turn at bat, the current game statistics are shown.

BATTER UP!! would be fine for a child. The graphics are cute and the game is easy to play. However, compare this simple baseball game with the adult "BASEBALL SIMULATION" from Comrec Systems, reviewed in this issue.



PLAYING FIELD

The ball was a hit so the playing field is shown. A man is moving from first base to second base, and another is moving from second base to third. ■

BASEBALL

(continued from page 46)

Over" but there are no instructions what to do next. I pressed "Enter." Then a tenth inning started. At the end of that inning, I got the message "Return without gosub in 365" and the program ended. I wanted to play again so I had type "Run" and reload the team ratings.

The program lets you save a game in progress as long as you are at the beginning of an inning. It comes with a good instruction pamphlet to explain the ratings of the players and how to enter commands. This pamphlet also explains that due to the size of the program, some error trapping routines were not included. It does point out which areas of the game are up to the player to use properly. This is particularly true when you are substituting ball players so your lineup won't become unrealistic.

BASEBALL SIMULATION seems like it would hit the spot for the baseball fan. ■

CASHFLOW

(continued from page 27)

menu. When you are asked if you want to load the report from disk, you must answer "N". Then you enter the number of the month, and the total income and the total expense for each account.

You can choose to have a printout of the summary. The printout is in two sections and can be printed on an 80-column printer. The first section shows the account name and figures for January through June; the second section shows the account name, the figures for July through December, and the totals.

Both programs are specific in one area. If you are asked to enter "Y" or "N," you must not enter "YES" or "NO." If you are asked to enter "YES" or "NO," you must not enter "Y" or "N." The programs do not forgive you if you enter the wrong answer.

The printouts in both programs are not set for a page length. If you are printing out something too long to fit on one page, it just continues printing. The printout of the SUMMARY is particularly slow, with a long pause between each account name.

With a little extra effort, the programs could have been easier to use.

[illegible]

REPORT SHEETS

Sample forms come with the program. You enter all your figures on these forms first. Then you enter them in the program. ■

GAPP

(continued from page 32)

The instructions tell you what program lines to change so you can space the printing differently or print one page at a time.

GAPP has a lot of uses, but it does have a few drawbacks. You must use the shifted "Q" to stop the scrolling when you look at the whole file. The "Break" key is not disabled but the instructions warn you what will happen if you press it. If you want to save or print the whole file or the entries one by one, you must have the printer or the tape recorder turned on. If you have the printer turned on, the entries are printed. If you have the tape recorder turned on, the entries are saved on tape. This is how you choose which you want.

The main drawback to GAPP is trying to read the entries on the screen. The lines with a "/" between the words instead of a space or other punctuation are extremely hard to read. However, the program is evolving as time passes. After we received the first version of GAPP, we were sent a small notice of improvements to make in a few program lines. Later we were sent a tape copy of this improved version and have since received a third version. Hopefully all purchasers of earlier versions are kept informed as improvements are made.

ENTER FOR MENU

- ```

1 SEE THE FILE (SHIFT+HALTS). 7 SAME FILE TO TAPE-PRINTER.
2 SEARCH (TOTAL). 8 SORT ALPHABETICALLY.
3 SEE/CHANGE/DELETE ONE RECORD. 9 ...NUMERICALLY. ZIP.
4 CHECK CHARACTER/PROGRAM SPACE. 10 PRINT MAIL LABELS.
5 ENTER BY KEYBOARD. 11 ...FILE LABELS.
6 ...BY TAPE. 12 ONE BY ONE.

```

\*\*\*\*\* 12  
NOTE COUNTER. PRESS RECORD & PLAY AND ENTER (END-1).<sup>7</sup>

99.4 PEGGY BOYER/BGA/238 IN MICHIGAN 0171A/CHI 66481

00000

1-END, 2-TO TAPE & PRINTER, 3-SKIP.

# ONE BY ONE

I want to look at the records one by one. I can also save any one record on tape or have it printed.

|                    |                      |                      |
|--------------------|----------------------|----------------------|
| 6.S 3486222/161941 | 91-0 NO PHONE        | 51-0 7674545         |
| FRANK AGUILAR      | MORE ANTEWER         | 51-0 HAWKINS         |
| 310P 010005        | 2820 LAMOTON PL WEST | HE JENNINGS MONT     |
| CHS 48424          | CHS 48414            | 1705 W HEMPHR        |
| 51-0               | 44-5 2444230         | CHS 48457            |
| JOHN AYLES         | JONATHAN AY          | 99-4                 |
| 51-0 W HURLEY      | 3150 N JAMES ST      | PEDEST DRIVER        |
| CHS 48447          | CHS 48413            | 004                  |
| 51-5 3399118       | 129-5 2221445        | 7100 N KIDMAN R171   |
| CHS                | CAROL MAYER          | CHS 48411            |
| 51-0 JACQUES 8093  | RAE AEL PISA         | 148-5 9434-2         |
| CARD               | 10701 N FALCON DR    | NO INTERFERENCE RESP |
|                    | CHS 48402            | NO INTERFERENCE DEPT |
|                    |                      | 5240 S-1113          |

LABELS

These are the labels that were printed out. The information on the top line is a code from the first line of the entry. It also includes information from the third line. ■



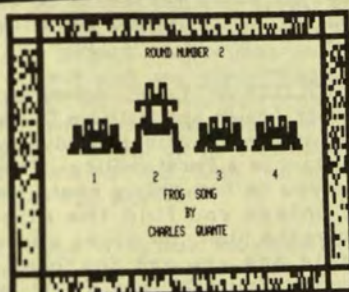
```

YOU
HOW ABOUT WALK, I'M SORT OF TIRED RIGHT NOW.
READY
XLIST
WHY, DO YOU GOT AN ERROR OR SOMETHING?
READY
XCLEAR
NO, ACTUALLY IT LOOKS LIKE RAIN.
READY
XDELETE
ARE YOU TRYING TO CHANGE THIS PROGRAM?
READY
XEND
NO, THIS IS ONLY THE BEGINNING.
READY
>_

```

#### LEVEL 0.

This program is just for fun. It lets your computer talk back to you.



#### FROG SONG

A game with sound. You match the notes played by the frogs.



#### BUG SOLUTION

The solution to BUG HUNT, a program in the March, 1981, issue. Programmers had to find the bugs in this program to make it run.

```

TRACK >> LOCATION BY GRAY <<
1 1 >>BOOT SYS(SIP)(1) 2 >>SYN SYS(SIP)(1)
2 3 >>SYN SYS(SIP)(2) 4 >>SYN SYS(SIP)(3)
3 5 >>FORWAT CHK(CP)(1) 6 >>FORWAT CHK(CP)(2)
4 7 >>FORWAT CHK(CP)(3) 8 >>BACKUP CHK(CP)(1)
5 9 >>BACKUP CHK(CP)(2) 10 >>BACKUP CHK(CP)(3)
6 11 >>TEST2 IN(C)(12) 12 >>FREE —
7 13 >>FREE — 14 >>FREE —
8 15 >>FREE — 16 >>FREE —
9 17 >>TEST1A CHK(C)(1) 18 >>TEST1A CHK(C)(2)
10 19 >>FREE — 20 >>FREE —
11 21 >>FREE — 22 >>FREE —
12 23 >>FREE — 24 >>FREE —
ENTER TO CONTINUE?_

```

#### MAPDISK

A utility to show you where each file is stored on your disk.

```

BOB, WE ARE IN A SECLUDED BLUE ALCOVE OF THE CASTLE.
I CAN SEE A SIGN
HE COULD GO: NORTH
<----->

```

```

HARRY ANN TOLD ME TO GO SOUTH
O.K. I DID. HE WON'T SEE WHERE HE IS TILL HIS NEXT TURN.
NOW IT IS BOB'S TURN.

```

```

BOB, WHAT DOES THOU THINKEST HE SHOULD DO? READ SIGN
IT SAYS:BOB, DROP TREASURE HERE AND SAY: SCORE.

```

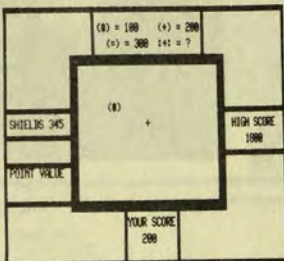
```

BOB, WHAT DOES THOU THINKEST HE SHOULD DO?_

```

#### MEDIEVAL ADVENTURE

An adventure game for two players.



#### SPACE GALLERY

An arcade game.

#### TIME-SPACE PROGRAM

```

EARTH FRAME: SHIP FRAME:
DATE: 8 / 1983 DATE: 1 / 1982
DIST. TRAV: 1.968 LIGHT YRS DIST. TRAV: 0.390 LIGHT YRS
THE SHIP LIVES: 2.00 YEARS THE SHIP LIVES: 0.40 YEARS

```

TIME DIFFERENCE: 1.60 YEARS

```

BOB'S AGE: 33.8 YEARS JOHNNY'S AGE: 28.4 YEARS
CHUCK'S AGE: 42.8 YEARS JOE'S AGE: 31.4 YEARS

```

#### SPACE TIME

This program compares the time on earth to the time on a spaceship traveling under the speed of light.

#### \* GOMOKU \*

```

 1 2 3 4 5 6 7 8 9
1 + + + + + + + + +
2 + + + + + + + + +
3 + + + + + + + + +
4 + + + + + + + + +
5 + + + + + + + + +
6 + + + + + + + + +
7 + + + + + + + + +
8 + + + + + + + + +
9 + + + + + + + + +
 1 2 3 4 5 6 7 8 9

```

```

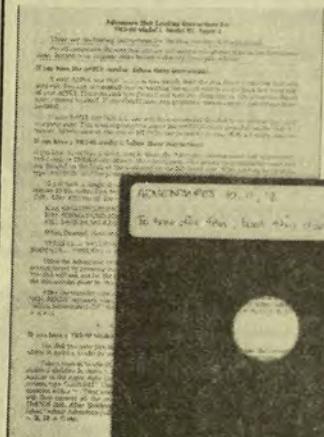
YOUR MOVE: 7,5
I MOVE TO: 7,5
<USE ARROW-KEYS - THEN =ENTER=>

```

#### GOMOKU

A strategy board game. ■





**SAVAGE ISLAND  
Parts 1 and 2  
GOLDEN VOYAGE  
ADVENTURES 10, 11, and 12**  
Level II 32K disk  
from Adventure International, Inc.  
P. O. Box 3435  
Longwood, FL 32750

These adventure games are the latest from Adventure International. Each Adventure is available by itself on tape or with two others on disk and will run on the Model I and the Model III.

For those of you who are not familiar with adventure games, you are shown a brief description of your surroundings at the top of the screen. You enter two-word commands to go in a direction or handle an object or do something. You are told what you see when you move to a new place. You can examine objects for special traits. Each adventure has a goal -- sometimes to gather treasure, sometimes to perform a mission, sometimes just to explore and survive the dangers. Like earlier games, these can be saved if you are part way through so you can continue later. You can ask for help or an inventory of objects you are carrying. If you are killed during the game, you can start over.

SAVAGE ISLAND, Part 1, was reviewed in Issue #12 of PURSER'S MAGAZINE. We have now been sent a "pre-release" copy of Version 1.23 of Part 1 and Version 1.33 of Part 2.

Part 1 was written by Scott Adams, and Part 2 by Scott Adams and Russ Wetmore.

You begin SAVAGE ISLAND, Part 1, on a sandy island beach. Your object is to explore the island and search for treasure. The island has a volcano, wild animals, and many dangers and deaths. It also holds a surprise -- alien beings from a spaceship. If you successfully complete Part 1, you are told the password you will need to start Part 2. Part 2 of SAVAGE ISLAND, Adventure 11, continues with the aliens and you must try to return to the island. We can't tell you more than that since the adventures are rated for "experienced adventurers only."

GOLDEN VOYAGE, Adventure 12, by Scott Adams and William Demas, is also for the experienced adventurer. You start in a Persian City. The king tells you he has only a short time to live unless you find the elixir to rejuvenate him. He gives you a bag of gold and you set forth on your search. You sail to a small island that has a magic fountain and a sacred temple. You must overcome a living statue, find the elixir, and return to the king within 3 days. Like the earlier adventures, you face many dangers and ways of dying.

The Adventures are not random. You start in one place and logically take an action, gradually moving towards your goal. If you take a false step, you can die. You need to think out your actions and what could happen. Sometimes the results are surprising, though.

The Adventures are not easy, either. They recognize over 120 words. If the word you use is not one of them, you are told, "I don't know how to .... something." Sometimes you are told, "I can't go in THAT direction."

I know of one possible problem with the Adventure games. If you buy the disk version and want to save your game in progress, you must save

it on the original disk. You cannot make a back-up copy of the disk. Nor can you save the game on another disk. I bought a copy of Adventures 1, 2 and 3 on disk without knowing this. Now I am afraid to save a game in progress in case something goes wrong with the disk. The pre-release disk versions of Adventures 10, 11 and 12 call for saving on tape so I don't know if this problem still exists.

As long as you know about the disk "save" feature, I recommend SAVAGE ISLAND and GOLDEN VOYAGE for experienced adventurers.

P. S. William Demas is also the author of the well-animated FROG, a children's game from Adventure International.

I am in a beach by ocean. Visible items:

Sand. Large stone head. Edge of impenetrable jungle.

Some obvious exits are: SOUTH EAST WEST NORN

OK  
resembles  
me  
Ward!  
--> Tell me what to do? LOOK JUNGLE  
OK  
I see  
trees, wild animals,  
vines  
--> Tell me what to do? .

**SAVAGE ISLAND, Part 1**

I am in a lot of trouble

Welcome to Adventure 11 "SAVAGE ISLAND PART 1"  
by Scott Adams & Russ Wetmore. Dedicated to Adventure fans everywhere.  
metallic voice whispers in my mind  
"localize password please"  
--> Tell me what to do? .

**SAVAGE ISLAND, Part 2**  
You must know the password from Part 1 to get any further.

I am in a Persian city. Visible items:

Merchant. Sandals.

Some obvious exits are: WEST

Welcome to Adventure 12 "THE GOLDEN VOYAGE"  
by William Demas & Scott Adams  
Dedicated to British band "GREEN"  
--> Tell me what to do? .

**GOLDEN VOYAGE ■**

■ ADVENTURE 11 (Version 1.23) Adventure number 12 Version 1.23  
Copyright Adams 1979, Box 3435 Longwood FL 32750 1-800-662-6917

This program will allow you to have an "adventure" without ever leaving your armchair! You will find yourself in a strange new world. You will be able to LOOK AT, PICK-UP and otherwise MANIPULATE the objects you find there. You will also be able to TRAVEL from location to location. I will be your puppet in this adventure. You command me with 2 word ENGLISH sentences. I've over 120 word vocabulary so if a word doesn't work, try another!

Some commands I know: HELP, SAVE GAME, SCORE, INVENTORY, QUIT.

The Author has worked over a year on this program and is currently writing many new adventures, so PLEASE: DON'T COPY OR ACCEPT A "PIRATED" COPY OF ADVENTURE! Press enter.



silver streams, ancient aliens and large caverns."

In both games, you see an unchanging sketch of either the Manor or Traam at the right of the computer screen. A brief description of your surroundings appears at the top, changing as you move about. In a separate area, you type your command to do something. If the command was to go somewhere, your surroundings change. If the command was to do something else, you see the results of your action toward the bottom of the screen. The command you gave disappears, waiting for your next command.

You can use "LOOK" to see what else is in the room or area. You can use "LOOK" and another word to look at one object. Sometimes you look at an object and see something more to "LOOK" at. If you go to an object, you use "GO" and the name of the object. If you go in a direction, you just use "S" to mean "go South" or "N" for "go North."

Some of your movements are detailed - you must go to some objects, get them, and then look at them. Sometimes you must climb steps and other times you just go in that direction. Some commands take several words, such as "GO CROWLEY MANOR" or "TIE ROPE TO BUSH." If you ask for "HELP," you see "WHAT?" or "HUH?" instead of clues. If you use words the program doesn't recognize, you are just told "WHAT?" or "HUH?". You are allowed to carry six objects. They must be visible objects before you can "GET" them.

You can save your adventure on disk if you want to quit for the night. You can "QUIT" at any time and start over. If you are killed, you are asked if you want to start over. If you start over in CROWLEY MANOR, you are back in your office. If you start over in TRAAM, you are back in the forest. In either game, you will find the surroundings as you left them. If you moved an object, it will be at its new location.

Adventure International rates these games as "very difficult." I believe them! It took me half an hour just to find the almost 30 commands to get from the office to the entry hall at CROWLEY MANOR. Once I knew the commands, it only took a few minutes the next time. I still haven't gotten beyond the first dark cave on TRAAM. I'm still trying on both adventures.

If you want a challenging adventure game, try CURSE OF CROWLEY MANOR or ESCAPE FROM TRAAM.



## CURSE OF CROWLEY MANOR

### ESCAPE FROM TRAAM

Level II 32K disk  
by Jyym Pearson  
from Adventure International  
Box 3435  
Longwood, FL 32750

THE CURSE OF CROWLEY MANOR and ESCAPE FROM TRAAM are two adventure games in the "Other-Venture" Series from Adventure International. Since they are played in a similar way, they are reviewed here together. Both games have a tape version which will run on the Model I or Model III. The disk version is for the Model I only.

In THE CURSE OF CROWLEY MANOR, you are Mr. Black, in your office at Scotland Yard. You receive a telephone call telling you there has been a murder at Crowley Manor and asking you to come. When you arrive, you are told that Inspector Strade is inside the Manor, in the kitchen with the body. You start exploring the Manor, searching for the kitchen. When you find it, neither Inspector Strade nor the body are there. You later find Inspector Strade's body. You find the dead body of a man you talked to a little bit ago. You find hints that demons inhabit Crowley Manor and have killed the Manor's owner. You may get devoured by a monster as I was.

ESCAPE FROM TRAAM starts when you are in a space ship above the planet Traam. The control panel starts smoking and the ship crashes into a forested area. You look through the wreckage for useful items, then set off to explore. You meet an alien who speaks a foreign language. You find a cave. Your goal is to try to get home. The catalog says "Your subsequent journeys take you through a world of strange trees,

#### VISIBLE ITEMS >>

YOU ARE STANDING ON THE PORCH OF CROWLEY MANOR. STEPS LEAD TO THE DOOR.

I

"CROWLEY MANOR"

THE CABBIE SAYS "I've taken 10 shillings for the fare..."



#### VISIBLE ITEMS >>

YOU ARE IN A PLUSH ENTRY HALL... THE FURNISHINGS ARE OPULENT.

I

"CROWLEY MANOR"

A LARGE CABINET IS HERE...



#### VISIBLE ITEMS >>

YOU ARE IN A DIMLY LIT ROOM. A SMALL FIGURE HIBBLES IN THE DARK.

LOOK

"CROWLEY MANOR"

HE SAYS "MY NAME IS DAVON. NO MAN MURDERED MY MASTER"



## CURSE OF CROWLEY MANOR

#### VISIBLE ITEMS >>

YOU ARE IN THE COCKPIT OF A SMALL SPACE SHIP... FLYING OVER A FOREST...

LOOK

"ESCAPE FROM TRAAM"

THE SHIP IS GOING DOWN



#### VISIBLE ITEMS >>

YOU ARE IN A BRUSH THicket. A LARGE ALIEN HARBORER IS HERE READING A MAP...

TALK ALIEN

"ESCAPE FROM TRAAM"

HE SAYS "TERRY AM YOU YOU SAY VECB RH XAFU"



## ESCAPE FROM TRAAM





**DRAGONQUEST**  
Level II 32K disk  
by Charles Forsythe  
from The Programmer's Guild  
Box 66  
Peterborough, NH 03458

DRAGONQUEST is an adventure game in which you attempt to rescue a kidnapped princess before nightfall. You use two-word commands to examine objects and move to other areas.

Like other adventure games, you must use logic in your actions. But sometimes the most logical thing is the wrong thing. You cannot pour oil from a flask into a lamp. The oil has another purpose and you light the lamp another way. Perhaps you find an old temple. How do you take a silver sword stuck in a stone? Perhaps you find a dark cave where you may fall to your death if you make the wrong move. What do you do there? If you delay too long in your search, time runs out and night comes. Then you've lost the game.

A tape version of the game is available for the Model III. On the Model I, Level II, you may use shifted letters for going in a direction. The shifted "N" is translated "Go North," for example. This is handy. You can ask for "Help" by the shifted "H" and will be given a cryptic message by an angel or demon. The shifted "I" will tell you the inventory of objects you are carrying. The game may be saved on tape to continue later.

Can any of you help me get out of the dark woods?

YOU ARE IN A CASTLE HALL.  
YOU SEE: PASSAGE, KING ON THRONE.  
OBVIOUS EXITS: SOUTH.

"DRAGON QUEST" ADVENTURE BY CHARLES FORSYTHE ADVENTURE #2,  
DEDICATED TO CARL (MAY) LEVINE.  
== COMMAND ==> ASK KING  
THE KING SAYS: "I WILL GIVE YOU HALF OF MY KINGDOM IF YOU  
FREE MY DAUGHTER THE PRINCESS FROM THE DRAGON. THE DRAGON SAYS  
HE WILL DEVOUR HER AT SUNDOWN.  
THERE IS NOT MUCH TIME LEFT!  
HE OPENS A PASSAGE.  
== COMMAND ==> .

YOU ARE IN THE TEMPLE.  
YOU SEE: SWORD IN STONE.  
OBVIOUS EXITS: EAST.

== COMMAND ==> GO NORTH  
== COMMAND ==> RIM UPSTREAM  
== COMMAND ==> GO WEST  
== COMMAND ==> GO STAIRS  
== COMMAND ==> GET BOX  
YOU FIND SOMETHING!  
== COMMAND ==> GO WEST  
== COMMAND ==> .

YOU ARE IN A DARK CAVE.  
YOU SEE: 100 FOOT PILLAR, SCROLL, SKELETON.  
OBVIOUS EXITS: EAST.

== COMMAND ==> GO WEST  
== COMMAND ==> GO SKELETON  
YOU CANNOT GO THAT WAY!  
== COMMAND ==> LOOK SKELETON  
IT HAS TWO BROKEN LEGS!  
== COMMAND ==> READ SCROLL  
IT IS HARDLY LEGIBLE: "I HAVE SLIPPED OFF THE PILLAR AND AM  
DYING. TAKE MY AMULET OF FLYING MADE WITH GOLD OF ASSORTION."  
== COMMAND ==> .

YOU ARE IN THE DARK HOOB.  
OBVIOUS EXITS: NORTH, SOUTH, EAST, WEST.

== COMMAND ==> GO NORTH  
== COMMAND ==> GO WEST  
== COMMAND ==> GO WEST  
IT IS ALMOST SUNSET, HURRY!  
== COMMAND ==> HELP  
A DEMON APPEARS AND SAYS:  
WAIT HERE FOR THE TROLLS - THEY WILL GIVE YOU SOMETHING  
"GOOD-BYE" HE VANISHES IN A PUFF OF PALE BLUE SMOKE  
IT IS ALMOST SUNSET, HURRY!  
== COMMAND ==> .

YOU ARE IN THE DARK HOOB.  
OBVIOUS EXITS: NORTH, SOUTH, EAST, WEST.

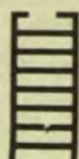
BOX  
SILVER SWORD  
SWORD  
IT IS ALMOST SUNSET, HURRY!  
== COMMAND ==> EAT FOOD  
IT TASTES AWFUL!  
YOU ARE TOO LATE. IT IS SUNSET!!!!  
THE ADVENTURE IS OVER.  
DO YOU WANT TO PLAY AGAIN (Y/N)?

Index  
GRAPHIC DUNGEON TREASURES  
BY ARTHUR W. HUFFMAN  
Side  
1  
2  
Type  
Star  
C-D  
Daily  
Time

**GRAPHIC  
DUNGEON  
TREASURES**  
Level II 16K tape  
from Xelent 80 Software  
434 Goward Road  
Victoria, B.C., CAN V8X 4M6

GRAPHIC DUNGEON TREASURES  
is a simplified game of Dungeons &  
Dragons. You choose two weapons

STRENGTH 100 %  
WOUNDS SUSTAINED 0  
YOUR WEAPONRY IS SWORDS, DAGGER  
AND METAL ARMOUR  
COMMAND ?



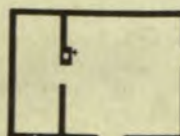
SO FAR YOU HAVE:  
0 DIAMONDS  
0 GOLD BITS  
0 SILVER BITS  
0 RUBIES

AND YOU'VE KILLED:  
0  
MONSTERS

**STAIRCASE**

You start on the second step of the staircase. The top of the screen is the bottom of the staircase and the way to the dungeons.

STRENGTH 100 %  
WOUNDS SUSTAINED 0  
YOUR WEAPONRY IS SWORDS, DAGGER  
AND METAL ARMOUR  
COMMAND ?



SO FAR YOU HAVE:  
15 DIAMONDS  
06 GOLD BITS  
66 SILVER BITS  
14 RUBIES

AND YOU'VE KILLED:  
0  
MONSTERS

**TREASURE**

I have picked up all the treasure in this room. Now I am next to a "hole in the wall."



and your armor and then go down a staircase to rooms in a dungeon to search for treasure and kill monsters. Each time you play the game, the rooms are different. The rooms and their contents are shown on the screen. The room may hold treasures, a monster, a hole in the wall which contains something, or a combination of these. All instructions are on the screen. There are several levels of speed, and the program will run under disk BASIC.

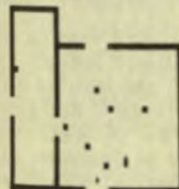
First you give the command to move, and then you use the arrow keys to move your marker to explore rooms or get close to treasure. Then you give the command to stop.

If you are next to a treasure, you give the command to pick it up. If you move on top of a treasure, it disappears. Your treasure may be diamonds, gold bits, silver bits, and rubies.

If you are next to a hole in the

STRENGTH 99 %  
WOUNDS SUSTAINED 0  
YOUR WEAPONRY IS SWORD, DAGGER  
AND METAL ARMOR

COMMAND ?



SO FAR YOU HAVE:  
20 DIAMONDS  
114 GOLD BITS  
70 SILVER BITS  
10 RUBIES

AND YOU'VE KILLED:  
0 MONSTERS

### MONSTER

This room holds an ogre (X) as well as treasure. Shall I fight him or move into another room? Should I defend myself? What weapon will I use against him?

STRENGTH 59 %  
WOUNDS SUSTAINED 15  
YOUR WEAPONRY IS SWORD, DAGGER  
AND METAL ARMOR

WHICH WEAPON (1 OR 2) ?



SO FAR YOU HAVE:  
20 DIAMONDS  
114 GOLD BITS  
70 SILVER BITS  
10 RUBIES

AND YOU'VE KILLED:  
0 MONSTERS

### FIGHTING

I am fighting the monster. I have sustained 15 wounds and my strength is down to 59%. If I can kill the monster, I can stay still for a while to recover my strength. If I get too many wounds, I will die and the game will be over.

> (continued on page 89)



## BARTENDER

Level II disk

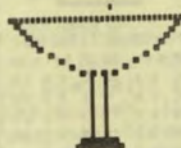
by Axel Beyreuther

from Tape-Tronics

346 N. Western Avenue

Los Angeles, CA 90004

HAVE A NICE PARTY WITH YOUR



COMPUTER BARTENDER GUIDE

HOW MANY GUESTS? 4

TO BE WELL EQUIPPED FOR 4 GUESTS, YOU NEED 1 BOTTLE EACH OF:  
WHISKY, GIN, SCOTCH, VODKA, RUM, TEQUILA, VERNON, BARRY

YOU MIGHT ALSO NEED 1 BOTTLE EACH OF:  
CREME DE CACAO, CREME DE MENTHE, CURACAO, KAWAIA, CHAMPAGNE

IN ADDITION, YOU SHOULD HAVE 2 BOTTLES EACH OF:  
ORANGE JUICE, LEMON SODA, COLA, CLUB SODA, TONIC WATER

PLUS PLENTY OF:  
LEMON JUICE, LIME JUICE, PINEAPPLE JUICE, TOMATO JUICE

MAKE SURE YOU ALSO HAVE AVAILABLE:  
SUGAR, SWEET CREAM, OLIVES, EGGS, CHERRIES, LEMONS AND LINES  
AND ANGOSTURA BITTERS, TABASCO SAUCE, WORCESTERSHIRE SAUCE  
OPEN 2 BAGS POTATO CHIPS, SERVE WITH FRENCH OR ONION RIPS

NOW GREET YOUR GUESTS  
AND ENJOY YOUR DRINKS

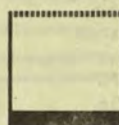
- 1 ACAPULCO
- 2 ALEXANDER
- 3 ASTRONAUT
- 4 BACARDI COCKTAIL
- 5 BEACHCOMBER
- 6 BERNUDA HIGHBALL
- 7 BIRD OF PARADISE
- 8 BLACK DEVIL
- 9 BLACK RUSSIAN
- 10 BLOODY MARY
- 11 BOURBON HIGHBALL
- 12 BRANDY ALEXANDER
- 13 CHAMPAGNE COCKTAIL

SELECT DRINK BY NUMBER OR PRESS 'ENTER' TO CONTINUE? 1  
HOW MANY GLASSES (1 TO 4)? 4

### ACAPULCO

(FOR FOUR)

- 6 OZ. (100 ML.) DARK RUM  
2 OZ. (60 ML.) TRIPLE SEC  
2 OZ. (60 ML.) LIME JUICE  
4 TEASPOONS SUGAR  
4 EGG WHITES



SHAKE WELL WITH ICE  
STRAIN INTO GLASS  
OVER ICE CUBES

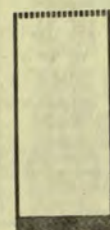
- 50 TEQUILA COLLINS
- 51 TEQUILA SUNRISE
- 52 TOM COLLINS
- 53 TURKISH COFFEE
- 54 VODKA COLLINS
- 55 VODKA GINLET
- 56 VODKA MARTINI
- 57 VODKA STINGER
- 58 VODKA TONIC
- 59 WALLBANGER
- 60 WHISKEY HIGHBALL
- 61 WHISKEY SOUR
- 62 ZORBIE

SELECT DRINK BY NUMBER OR PRESS 'ENTER' TO CONTINUE? 65  
HOW MANY GLASSES (1 TO 4)? 2

### ZORBIE

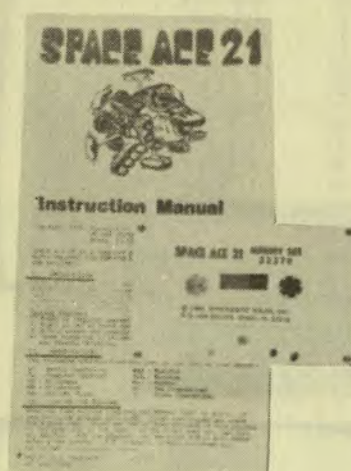
(FOR TWO)

- 6 OZ. (100 ML.) DARK RUM  
1 1/2 OZ. (45 ML.) BARRY  
2 OZ. (60 ML.) PINEAPPLE JUICE  
2 OZ. (60 ML.) PASSION FRUIT JUICE  
1 1/2 OZ. (45 ML.) LIME JUICE  
2 TABLESPOONS SUGAR



SHAKE WELL  
STRAIN INTO GLASS OVER ICE  
TOP WITH MARASCHINO CHERRY





# SPACE ACE 21

Level II 16K tape  
by Brian H. Rotolante  
from Synergistic Solar, Inc.  
P. O. Box 560595  
Miami, FL 33156

SPACE ACE 21 is a game of tactical space combat for one or two players. You design your own space craft, using 12 different parts. You can play in 2 dimensions or 3. You can choose to play one of three scenarios of the game, each of which has sound. SPACE ACE 21 is also available for the Model III, and on tape for 48K disk BASIC. The

| CODE | MODULE       | MASS (KG) |
|------|--------------|-----------|
| A    | ARMOR        | 25000     |
| B    | BRIDGE       | 10000     |
| C    | CARGO        | 100000    |
| D    | DISRUPTOR    | 10000     |
| E    | ENGINE       | 40000     |
| F    | FUEL         | 110000    |
| G    | GENERATOR    | 30000     |
| L    | LIFE SUPPORT | 10000     |
| M    | MISSILE      | 15000     |
| P    | PHASERS      | 10000     |
| S    | SENSORS      | 5000      |
| T    | TORPEDOES    | 14000     |
| Z    | ZERO         | 0         |

TOM, ENTER MODULES:

| CODE | MODULE       | MASS (KG) |
|------|--------------|-----------|
| A    | ARMOR        | 25000     |
| B    | BRIDGE       | 10000     |
| C    | CARGO        | 100000    |
| D    | DISRUPTOR    | 10000     |
| E    | ENGINE       | 40000     |
| F    | FUEL         | 110000    |
| G    | GENERATOR    | 30000     |
| L    | LIFE SUPPORT | 10000     |
| M    | MISSILE      | 15000     |
| P    | PHASERS      | 10000     |
| S    | SENSORS      | 5000      |
| T    | TORPEDOES    | 14000     |
| Z    | ZERO         | 0         |

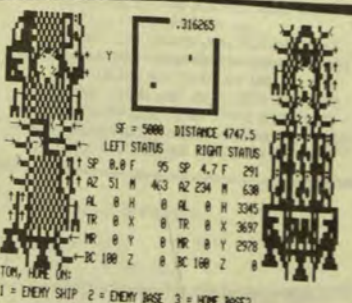
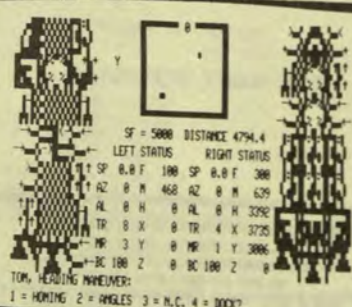
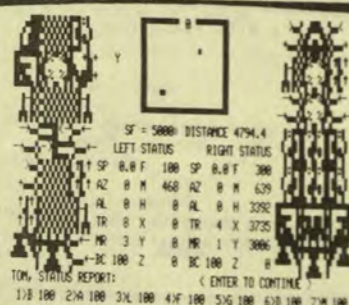
MODULE CHECK

## DESIGNING YOUR SHIP

program comes with an instruction brochure.

One scenario is "Smuggler." If you play against the computer, it is the smuggler. The smuggler ship on the right side of the screen tries to get past the ship on the left and dock at home base with as much cargo or passengers as possible. One scenario has a "Refuel Option." You can return to your home base, dock, and be resupplied with fuel, torpedoes, and missiles after you have been in combat. The third scenario is "Phoenix Decathlon." You must defeat all ten of the computer's ships, one at a time.

You start by deciding if you want two or three dimensions. If you play against the computer, you decide which of the computer's ships you will fight. Then you design your space ship. You choose how many of which ship parts you want. There are engines, armor, and weapons among other parts. Some of the parts have their own requirements.



## TWO DIMENSION PLAY

If you play in 2 dimensions, you move or fire in a 2-dimensional display in the center of the screen. If you play in 3 dimensions, you are also shown a side view of the dimension. The larger block in the display is the left side's ship and the smaller is the right side's. They move as the players take their turns.

You are shown the status of the ships. You are told their speed, position and direction of heading, distance to their home bases, remaining fuel and battle capability, mass, and remaining torpedoes and missiles.

You enter your commands. Then your opponent enters his. Then all commands are carried out and it is your turn again. The commands are to see a status report of all your spaceship parts, to change your heading, or speed, to fire your weapons at your opponent, or to dock at your home base. If your opponent's fire damages a part of your ship, you may not be able to fire at him, or you may lose part of your fuel, or any number of other things may be wrong. The display of your ship will show the damage.

The author has sent us some information about himself. Mr. Rotolante is 33 and married with 4 children. He holds a Bachelor of Science Degree in Mechanical Engineering and in Chemistry with a minor in Mathematics. He has been a pilot with the USAF, flying McDonnell Douglas RF-4C Phantom Jet Aircraft. He is currently a Medical Products Engineer, and his hobbies are science fiction, astronomy, energy conservation, art, canoeing, and cycling.

"I've always enjoyed wargames, from battleship to Avalon Hill's complex Blitzkrieg," said Mr. Rotolante. "A Star Trek game on the University of Miami computer started me on the path to computer gaming. When my TRS-80 arrived in July 1978,



## THREE DIMENSION PLAY



I started writing my own games. I became fairly competent in BASIC in a few months. Z-80 CODE however, took a little longer to learn. Most of my games are stop action strategy type."

He continued, "To me the microcomputer is the ultimate gaming machine. By combining a rather exciting aviation career as a reconnaissance pilot, an over active imagination, and a strong academic ability in algebra and the physical sciences, I was able to fabricate the masterpiece, Space Ace 21. The game concept was given to me by a fellow wargamer. To produce a program that would do everything I wanted in a mere 16K took 9 months and a lot of programming magic. Believe me, I was in hyperdrive the whole time."

We asked Mr. Rotolante why he didn't go to a software publisher. He replied, "I did. In the summer of 1979 Radio Shack turned down what is now my second best seller and highly acclaimed program, !!!Ants!!!. Instant Software's contract made my stomach turn. Others like Softside and Creative Computing Software were too vague. I knew my programs were top notch so I decided to market them myself. It has worked out just fine." He added, "I will continue to write programs as a sideline because it is more enjoyable that way."

If you like complicated games with lots of rules, SPACE ACE 21 has them. ■



BRIAN H. ROTOLANTE  
The author.



## DUEL-N-DROIDS

Level II 16K disk

by Leo Christopherson

from Acorn Software Products

634 N. Carolina Ave. S. E.

Washington, DC 20003

DUEL-N-DROIDS is one of Leo Christopherson's latest animations. Two androids duel with swords on your computer screen. One of the androids is controlled by your computer. The other android is yours. You must teach it to duel.

You may watch a demonstration duel when you first start with your android. He will be pitted against other androids of random skill.

Then you can start teaching your 'droid to duel. He starts at level 7 in skill, the lowest. You practice with him, teaching him how to duel against the computer's android. You have four commands to give him -- back off, face off, attack, and block. Face off starts the duel. You must block the other android's attack until the moment is right for your attack. If you win the duel at that level, your 'droid advances to the next higher level. If you lose the duel, your 'droid stays at the same level and you can practice again.

After you have bested an opponent at the "master" level, you can go on to the tournament and have a chance of winning the duels with the computer's androids. These duels start with an opponent at level 7 and advance to level 1. If you can win all seven duels, you have won the tournament.

DUEL-N-DROIDS also comes on tape. The animation of the 'droids is excellent. Even with high-speed photography, we had trouble getting clear pictures. The program includes sound effects of the clicking swords as they meet and a musical rendition if you win the tournament. However, it is easy to cheat. If you buy DUEL-N-DROIDS, buy it for Leo Christopherson's animation. ■

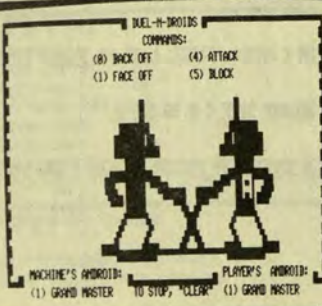
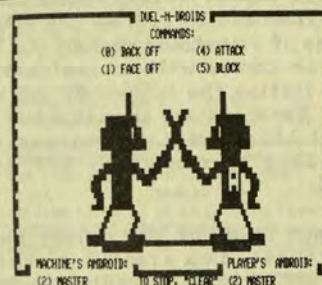
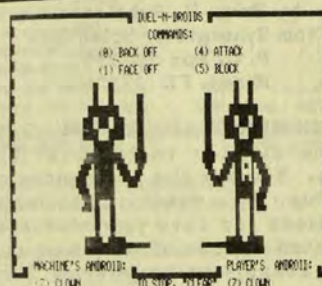
### DUEL-N-DROIDS

(A) BEFORE THE TOURNAMENT, YOU MAY MANUALLY TAKE CONTROL OF YOUR ANDROID AND PRACTICE DUELING WITH IT. EACH WIN WILL RAISE YOUR ANDROID TO THE NEXT HIGHER RATING. THE ANDROID'S RATING NOW IS:

- (1) GRAND MASTER
- (2) MASTER
- (3) PRO
- (4) APPRENTICE
- (5) LEARNER
- (6) RANK AMATEUR
- (7) CLOWN

(B) THE TOURNAMENT: YOUR ANDROID MUST SURVIVE SEVEN DUELS WITH THE MACHINE'S ANDROIDS, RANKED FROM "CLOWN" TO "GRAND MASTER".  
(C) THE RANDOM TOURNAMENT: A RANDOMLY SELECTED STARTING RATING. OR PRESS "CLEAR" TO QUIT.

(CONNECT THE AUX TAPE CABLE TO AN AMPLIFIER FOR SOUND EFFECTS.)





## THE NEW STARSHIP VOYAGES



## INSTRUCTION MANUAL

Copyright 1985, Synergistic Solar Inc.  
20 Box 30300  
Miami, FL 33136

1. Introduction  
2. Game Objectives  
3. Special Features  
4. How to Play  
5. Game Rules  
6. Game Commands  
7. Game Play  
8. Game End  
9. Game Credits

## THE NEW STARSHIP VOYAGES

REMIKAWA BOX SET

REMIKAWA BOX SET

REMIKAWA BOX SET

REMIKAWA BOX SET

## THE NEW STARSHIP VOYAGES

Level II 16K tape

by Brian H. Rotolante  
from Synergistic Solar Inc.  
P. O. Box 560595  
Miami, FL 33156

THE NEW STARSHIP VOYAGES is a game similar to the Star Trek games. You are the commander of a starship. Your mission is to destroy the aliens and save your starbase in a limited number of moves or time. The galaxy can have from 2 to 5 levels and there are 6 levels of difficulty (Figure 1). The game also includes sound, moving enemy ships, and a command to redraw the screen display if you should disrupt it. The program comes with an instruction sheet listing the commands you may give. Versions are available for the Model III. Special versions are available to run under 48K disk BASIC.

Each level of the galaxy has 9 quadrants. You start in a random quadrant. Each quadrant contains a number of stars and possibly some

SIGN IN (NAME: FIRST, LAST)? JESSE, JONES

PICK GALAXY SIZE (2 TO 5)? 2

PICK A DIFFICULTY FACTOR BETWEEN 1 AND 6? 2

## 1. SIGNING IN

alien ships. Somewhere in the galaxy is your starbase. You have a short range scan to check the other quadrants on your galaxy level. You have a limited number of long range probes to check a quadrant on another level.

You choose the design of your own ship but you don't know what your starbase looks like when you first play the game. You only know what one kind of enemy ship looks like. There are five different enemy ship designs. One of the enemy ships is "cloaked" or invisible. If you see an alert condition of Red which means there are at least two enemy ships but you can only see one, you can use your Anti-Cloak device to turn the screen white. The enemy will show up as a black area on the screen so you can find him (Figure 2).

You see on the screen the quadrant you are in. It is marked off into 81 sectors. You must fire your torpedoes or phasers into the proper sector that contains the enemy ship or you will waste energy or a torpedo (Figure 3). If you move your ship or fire a torpedo, you must order the angle of movement or fire. A "Battle Computer" will tell you the angle to fire your torpedo or the energy to use to fire your phaser. You also have "Corbomite Devices" which let you destroy an entire quadrant, but then you can only move completely through it. You cannot stop in it.

You start with a limited amount

MAXIMUM STATUS REPORT  
GALAXY LEVEL 1  
QUADRANT 1, 1  
TIME FACTORS 187  
ALERT CONDITION RED  
ENERGY UNITS 5876  
PHOTON TORPEDOES 15  
CORBOMITE DEVICES 2  
SCANNER PROBES 1  
BATTLE CAPABILITY 99  
ENEMY REMAINING 28

ANTI-CLOAKING ACTIVATED

(ENTER TO CONTINUE)

## 2. ANTI-CLOAK DEVICE

MAXIMUM STATUS REPORT  
GALAXY LEVEL 1  
QUADRANT 1, 1  
TIME FACTORS 189  
ALERT CONDITION RED  
ENERGY UNITS 6177  
PHOTON TORPEDOES 15  
CORBOMITE DEVICES 2  
SCANNER PROBES 1  
BATTLE CAPABILITY 100  
ENEMY REMAINING 28

ENTER ENEMY SECTOR (Y,X)? 8,7  
DO YOU WISH PHASERS OR TORPEDOES (P OR T)? P

## 3. AIMING WEAPONS

of energy. Firing phasers, moving your ship, and many other actions take energy. You can replenish your energy, torpedoes, and battle capability at the starbase when you dock. Most commands count as one move or unit of time.

The difficulty level determines how many enemy you must find and destroy, the energy needed to fire your phasers or move your ship, the number of moves or amount of time per enemy ship, the amount of your resupply during docking, and the damage caused by enemy fire (Figure 4).

I played at difficulty level 1 with 2 levels in the galaxy and destroyed all the enemy within the time allowed. I almost destroyed my own starbase because I thought it was an enemy craft (Figure 5). I did destroy a star system with a torpedo because I didn't aim right. I doubt if I would ever be good enough to win at difficulty level 6.

At first I couldn't figure out how to give a command while the enemy was firing at me. I found I had to wait until they quit firing before I could enter a command. The program is written in BASIC so it seemed to be a long wait.

THE NEW STARSHIP VOYAGES could be a challenge at the higher difficulty levels.

MAXIMUM STATUS REPORT  
GALAXY LEVEL 1  
QUADRANT 1, 1  
TIME FACTORS 185  
ALERT CONDITION RED  
ENERGY UNITS 5869  
PHOTON TORPEDOES 14  
CORBOMITE DEVICES 2  
SCANNER PROBES 1  
BATTLE CAPABILITY 99  
ENEMY REMAINING 28

MAXIMUM ... DAMAGE ON DECK LEVEL 5

## 4. DAMAGE REPORT

MAXIMUM STATUS REPORT  
GALAXY LEVEL 1  
QUADRANT 1, 1  
TIME FACTORS 189  
ALERT CONDITION RED  
ENERGY UNITS 6177  
PHOTON TORPEDOES 15  
CORBOMITE DEVICES 2  
SCANNER PROBES 1  
BATTLE CAPABILITY 100  
ENEMY REMAINING 28

STARBASE DELTA IS UNDER ATTACK

(ENTER TO CONTINUE)

## 5. STARSHIPS AND STARBASE





**ULTRA TREK**  
Level II 16K tape  
by William Schroeder  
from Galactic Software Ltd.  
11520 N. Port Washington Road  
Mequon, WI 53092

ULTRA TREK is a game of Star Trek. You are the commander of the Starship Enterprise and are searching for the enemy base to destroy it. Along the way, you are trying to destroy 30 Klingon ships and 15 Romulan ships. You have a limited time to do this.

The quadrant of space you are in is a 7 x 7 grid of 49 sectors. Each sector has 49 coordinates. You explore one sector at a time. You can try to destroy the enemy you see with the help of your photon torpedoes or your phasers (if they are operational). The outcome of your battles is random. Sometimes the enemy takes evasive action and you miss. Your shields are usually damaged and must be replenished and sometimes you suffer damage to your weapons or drive systems. If your weapons are damaged too much, you cannot fight back. Your drives may be damaged to the point that you cannot use them at all.

You have the help of a long-range navigation chart which shows you all the sectors. Information on each sector includes the number of stars, any Federation base planets, any supply planets, and the number of enemy Klingons and Romulans. You

are not told where the hostile base is hidden.

Each action you take uses energy and time. Time uses up your food supply as well as time to complete your mission. The energy, weapons and food supply may be partially replaced at a supply planet. But after you have used a supply planet, it is destroyed. If you are lucky enough to have a Federation base planet somewhere in your quadrant, you may resupply completely there.

Each time you order information or take action, the screen shows you what the enemy is doing. Each action you want to take needs several commands. After the first command, the enemy usually starts firing at you. You may change your mind about a command between the time you start an action and the final step. Perhaps you were going to fire at the

YOU ARE IN SECTOR - 3,3  
AT COORDINATES - 4,4  
ENERGY LEVEL (UNITS) - 49%  
SHIELDS ARE AT - 100%  
LIFE SUPPORT SYSTEM - GREEN  
COMPUTER SYSTEMS - YELLOW  
WEAPONS SYSTEMS - GREEN  
WARP DRIVE SYSTEM - GREEN  
IMPULSE POWER - GREEN  
STAR DATE - 10.60  
ALERT CONDITION - YELLOW

ENTERPRISE IS BEING FIRED ON BY HOSTILES  
THE ENTERPRISE HAS BEEN HIT !!  
NO DAMAGE SHIELDS HAVE HELD

## HOSTILE ACTION

YOU ARE IN SECTOR - 3,3  
AT COORDINATES - 4,4  
ENERGY LEVEL (UNITS) - 49%  
SHIELDS ARE AT - 25%  
LIFE SUPPORT SYSTEM - GREEN  
COMPUTER SYSTEMS - YELLOW  
WEAPONS SYSTEMS - GREEN  
WARP DRIVE SYSTEM - YELLOW  
IMPULSE POWER - GREEN  
STAR DATE - 11.00  
ALERT CONDITION - YELLOW

### DEFENSE SYSTEM

SHIELDS PRESENTLY AT 25 PERCENT  
ENTER THE LEVEL YOU WANT THEM SET AT (0 TO 100)? 100.

## SHIELDS ARE DOWN

YOU ARE IN SECTOR - 3,3  
AT COORDINATES - 4,4  
ENERGY LEVEL (UNITS) - 49%  
SHIELDS ARE AT - 0%  
LIFE SUPPORT SYSTEM - GREEN  
COMPUTER SYSTEMS - YELLOW  
WEAPONS SYSTEMS - GREEN  
WARP DRIVE SYSTEM - YELLOW  
IMPULSE POWER - GREEN  
STAR DATE - 12.00  
ALERT CONDITION - YELLOW

### WEAPONS CONTROL: TORPEDOS

ENTER THE COORDINATES OF TARGET AS CX,YY? 4,1  
ENTER (END) TO ABORT - PRESS ENTER TO FIRE?

## FIRING YOUR WEAPONS

YOU ARE IN SECTOR - 3,3  
AT COORDINATES - 4,4  
ENERGY LEVEL (UNITS) - 42%  
SHIELDS ARE AT - 32%  
LIFE SUPPORT SYSTEM - GREEN  
COMPUTER SYSTEMS - YELLOW  
WEAPONS SYSTEMS - YELLOW  
WARP DRIVE SYSTEM - GREEN  
IMPULSE POWER - GREEN  
STAR DATE - 14.50  
ALERT CONDITION - GREEN

DAMAGE CONTROL REPORTS: ENTER TO CONT?

AT THIS TIME WE ARE 80 PERCENT OPERATIONAL:  
COMPLETE REPAIRS WILL TAKE ABOUT 3.8 STAR DAYS  
SYSTEMS IMPERFECT - NONE

## DAMAGE REPORT

YOU ARE IN SECTOR - 3,3  
AT COORDINATES - 4,4  
ENERGY LEVEL (UNITS) - 42%  
SHIELDS ARE AT - 32%  
LIFE SUPPORT SYSTEM - GREEN  
COMPUTER SYSTEMS - YELLOW  
WEAPONS SYSTEMS - YELLOW  
WARP DRIVE SYSTEM - GREEN  
IMPULSE POWER - GREEN  
STAR DATE - 14.50  
ALERT CONDITION - GREEN

NAVIGATION MODE: DATA ON SECTOR (2,3) ENTER TO CONT?  
STARS 1: BASES 0: SUPPLY PLANETS 1: ROMULANS 0: KLINGONS 0  
DISTANCE TO (2,3) IS 1.000 PARSECS  
WARP FACTOR 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0  
TIME NEEDED 1.00 0.50 0.33 0.25 0.20 0.17 0.14 0.13 0.11 0.10  
ENERGY USED 60 120 180 240 300 360 420 480 540 600

## TRAVEL TIMES

YOU ARE IN SECTOR - 3,3  
AT COORDINATES - 4,4  
ENERGY LEVEL (UNITS) - 41%  
SHIELDS ARE AT - 100%  
LIFE SUPPORT SYSTEM - GREEN  
COMPUTER SYSTEMS - YELLOW  
WEAPONS SYSTEMS - YELLOW  
WARP DRIVE SYSTEM - GREEN  
IMPULSE POWER - GREEN  
STAR DATE - 14.00  
ALERT CONDITION - GREEN

### NAVIGATION MODE: LONG RANGE

ENTER THE COORDINATES OF DESTINATION AS CX,YY? 3,2  
AT WHAT WARP FACTOR DO YOU WISH TO TRAVEL 1 TO 10? 4.

## TRAVEL OUT OF THIS SECTOR

## THE START

1. [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
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## QUADRANT MAP

There are no Federation bases this time.



enemy and gave the command for Weapons. Before you could choose the weapon to fire, your shields were heavily damaged. You could abort that command and raise the energy level in your shields instead.

The manual that comes with the program is very detailed and simple enough for even a beginner to understand. Each game starts with a random quadrant. If you are lucky and have at least one Federation base somewhere in the quadrant, you may have a chance to win before your time and supplies run out or your ship is completely destroyed. If you are unlucky and have only a few supply planets and no Federation base, you probably cannot win.

The second time I played ULTRA TREK, I was lucky enough to have two Federation bases in the quadrant. I stumbled on the hostile enemy base in a nearby sector of space. Just under the time deadline, I had destroyed the hostile base, 30 Klingon ships, and 15 Romulan ships, and saved the Federation. The third time I played the game and photographed it, I lost. I didn't have any Federation bases in the quadrant where I could resupply. A better player might have won anyway but would still have needed luck in his battles with the enemy. The game will run under disk BASIC.

```

YOU ARE IN SECTOR - 7, 5
AT COORDINATES --- 3, 4
ENERGY LEVEL (UNITS) - 1632
SHIELDS ARE AT --- 28%
LIFE SUPPORT SYSTEM - GREEN
COMPUTER SYSTEMS --- GREEN
WEAPONS SYSTEMS --- GREEN
WARP DRIVE SYSTEM - GREEN
IMPULSE POWER --- GREEN
STAR DATE --- 78L79
ALERT CONDITION --- GREEN

```

THE ENTERPRISE HAS FAILED IN ITS MISSION  
 THE FEDERATION WILL BE LOST TO THE HOSTILES

#### FAILURE

#### STATUS AT THE END OF YOUR FAILURE:

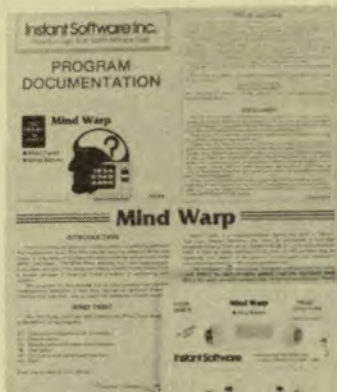
```

ENERGY REMAINING ----- 1631.9%
STARDATE ----- 78L7914
DAYS OF SUPPLIES REMAINING --- 1
TOMENOS REMAINING ----- 1
CREWMEN DEAD OR INJURED --- 83
PERCENT OF SYSTEMS OPERATIONAL --- 88%
KLINGON SHIPS DESTROYED --- 28
ROMULAN SHIPS DESTROYED --- 11
HAS THE KLINGON BASE DESTROYED NO

```

DO YOU WISH TO PLAY AGAIN (YES OR NO)  
 ?

#### RESULTS ■



### MIND WARP

Level II 16K tape  
 from Instant Software  
 Peterborough, NH 03458

One type of mastermind game is where a player tries to guess some numbers in the right order. MIND WARP includes two variations of this game. In MIND TWIST, the player chooses four or five digits to guess. These digits are numbers 1 to 6, and may be repeated. In MIND BENDER, the player chooses from three to five digits, numbers 0 to 9, which are not repeated. These programs will run on the Model III and also under disk BASIC.

The computer screen shows the numbers you guessed in columns. As you try to guess the numbers, you are told how many of the numbers are right and how many of them are in the right place. Your numbers are shown in the columns in the order you guessed them. You use logic to eliminate the wrong numbers from the wrong positions. You may play a regular game or a test game. The test game allows you to enter the digits to guess and then try out strategies to guess them. Both the test game and the regular game can be played with fixed openings. The computer will display three or four opening guesses so you can see how the computer figures the correct numbers.

MIND BENDER tells you that par is eight guesses for five digits. MIND TWIST doesn't say. You try to develop your logic and beat your previous score.

Somehow I can't get enthusiastic about these games.

#### PROGRAM 2—REGULAR GAME

DO YOU WANT TO PLAY A 4- OR 5-DIGIT GAME? 4

BLACK MATCHES NUMBER AND POSITION  
 WHITE MATCHES NUMBER BUT NOT POSITION—TRIAL ? 1  
 YOUR CHOICE HAS 4 DIGITS  
 ? 4

YOUR CHOICE HAS 4 DIGITS  
 ? 1234

| NO. | A | B | C | D | BK. | WH. | TRIAL ?      |
|-----|---|---|---|---|-----|-----|--------------|
| 1 - | 1 | 2 | 3 | 4 | 0   | 2   | TRIAL ? 2541 |
| 2 - | 2 | 3 | 4 | 1 | 2   | 0   | TRIAL ? 2540 |
| 3 - | 2 | 5 | 4 | 3 | 1   | 0   | TRIAL ?      |

| NO. | A | B | C | D | BK. | WH. | TRIAL ?      |
|-----|---|---|---|---|-----|-----|--------------|
| 1 - | 1 | 2 | 3 | 4 | 0   | 2   | TRIAL ? 2541 |
| 2 - | 2 | 3 | 4 | 1 | 2   | 0   | TRIAL ? 2540 |
| 3 - | 2 | 5 | 4 | 3 | 1   | 0   | TRIAL ? 1    |

YOUR CHOICE HAS 4 DIGITS

? 0000

YOUR CHOICE HAS 4 DIGITS

? 2651

| NO. | A | B | C | D | BK. | WH. | TRIAL ?           |
|-----|---|---|---|---|-----|-----|-------------------|
| 4 - | 2 | 6 | 5 | 1 | 3   | 0   | TRIAL ? 3651      |
| 5 - | 3 | 6 | 5 | 1 | 2   | 0   | TRIAL ? 2651      |
| 6 - | 2 | 4 | 5 | 1 | 2   | 0   | TRIAL ? 2641      |
| 7 - | 2 | 6 | 4 | 1 | 3   | 0   | TRIAL ? 2631      |
| 8 - | 2 | 6 | 3 | 1 | 3   | 0   | TRIAL ? 2611      |
| 9 - | 2 | 6 | 1 | 1 | 4   | 0   | FOUND IN 9 TRIALS |

DO YOU WANT TO PLAY THE SAME GAME (Y/N)?

#### REGULAR GAME

I chose 4 digits to guess. I did not understand the question "Trial?" at first. Then I entered my four-digit guesses. The digits appeared in the columns in the order I entered them. The number in the column "BK." shows how many of my digits are in the right answer. The number in the column "WH." shows how many of my digits are in the right column. This is the regular game in MIND TWIST.

#### MIND BENDER, SUBPROGRAM 3—FIXED OPENING, 5 PLACES

| NO. | A | B | C | D | E | NR. | SR. | TRIAL ?                     |
|-----|---|---|---|---|---|-----|-----|-----------------------------|
| 1 - | 1 | 1 | 2 | 2 | 2 | 2   | 0   | TRIAL ? 14579               |
| 2 - | 3 | 3 | 4 | 4 | 4 | 3   | 0   | TRIAL ? 14567               |
| 3 - | 5 | 5 | 6 | 6 | 6 | 2   | 0   | TRIAL ? 14571               |
| 4 - | 7 | 7 | 8 | 8 | 8 | 5   | 0   | FOUND A B C D E IN 7 TRIALS |
| 5 - | 1 | 4 | 5 | 7 | 8 | 5   | 0   | TRIAL ? 14579               |
| 6 - | 1 | 4 | 5 | 8 | 7 | 5   | 0   | TRIAL ? 14571               |
| 7 - | 0 | 4 | 5 | 7 | 1 | 5   | 5   | FOUND A B C D E IN 7 TRIALS |

DO YOU WANT TO PLAY THE SAME GAME (Y/N)?

#### FIXED OPENING

I chose 4 digits to guess. The computer showed me a "fixed opening" of four guesses. Column "NR." shows how many of the digits in each guess were right. If the digit is right, the count shows how many times it appears in the same guess. Column "SR." shows how many digits are in the right column A, B, C, or D. My guesses are numbered from 5 to 7. These column headings are used in MIND BENDER. ■



105-65 Level II ROM

\$54.95

# ROYAL FLUSH

## Competitive Poker Solitaire

Version 2.0 (ROM)

A single selection game you can play alone or with any number of players. High scores only in this poker-themed, fast-paced card game.

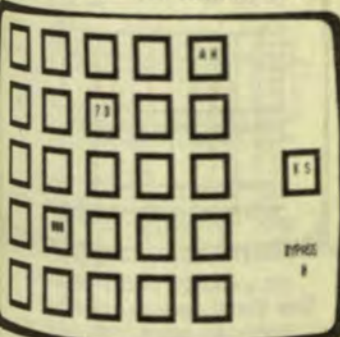
ROYAL FLUSH Competitive Poker Solitaire

# ROYAL FLUSH

Level II 16K tape

by Norman J. Wazaney, Jr.  
from Hayden Publishing Co.  
50 Essex Street  
Rochelle Park, NJ 07662

ROYAL FLUSH is an elaborate card game of solitaire using scoring similar to poker. It can be played by several players in turn to try for the highest score, or by one player trying to beat his earlier score. There are four variations of the same game in this program. You are dealt 25 cards, one at a time. You try to place the cards on a grid made up of 5 rows of 5 cards. Each horizontal and vertical row and the two diagonal rows are counted as separate hands. The total of the 12 hands is your total score. The booklet that comes with the program explains how each game works and how the cards are scored. There are a total of 3,340 points you can get, but most scores are rarely beyond 700 or 1000 points. The program will run under disk BASIC.



# DEALING THE CARDS

I have just been dealt the King of Spades. I've moved the marker to the place I want that card.

In Game 1, you place each card as it is dealt in the position you want it and it cannot be moved. You must play all the cards you are dealt. Game 3 lets you bypass up to 5 cards as they are dealt, but you never know the next card to be dealt.

In Game 2, you place each card as it is dealt, but then you can switch any two cards. You can make as many switches as you like before counting your score. Game 4 lets you bypass up to 5 cards and also switch cards.

Scoring values are similar to poker but changed slightly to allow for the new playing rules. A single pair counts 10 while a royal flush counts 500.

After all 25 cards are in place, your total score is counted. You can see a detailed breakdown of the points scored in each row or hand. You can replay the same cards in any of the games. You can look again at the playing board. You can start a

|    |    |    |     |     |
|----|----|----|-----|-----|
| BS | 4C | 2S | 6H  | 10H |
| 4D | 8C | 7D | AH  | 10C |
| 7C | 5C | 9C | 7S  | AC  |
| 8H | KS | 7H | 10D | 10S |
| KC | 9D | KH | JD  | 2C  |

BYPASS  
2

# MOVING CARDS

I played the Bypass game and have passed 2 cards. All the cards have been dealt and I am going to switch the places of the 10 of Diamonds and the Ace of Clubs. I have marked the first card and now I will mark the second card.

|    |     |    |    |    |
|----|-----|----|----|----|
| 6D | 10D | 6S | JH | 7C |
| 9S | 10S | 2S | 7H | 3D |
| AS | AH  | 7S | JD | 3S |
| KH | 7D  | KD | KS | KC |
| QD | 8S  | 8D | 4D | 9C |

TOTAL  
400BYPASS  
2

# TOTAL

I got a score of 400 for the cards in these places. If I want, I can repeat the game with the same cards and try them in different places for a higher score.

brand new game with new cards or end the game completely.

Playing is easy -- the marker always starts in the first vacant position closest to the upper left corner of the playing board. You move the marker to the place you want the card by holding down the right arrow key. The marker moves quickly through the rows from left to right and drops down to the next row. I can't help but wish the marker could be moved backward even though it does move forward quickly.

If you are playing one of the games which allow you to move the cards, you just hold down the space bar and the cards quickly fill each place in the order they are dealt. Switching the cards is easy, too. You move the marker to one of the cards and press the "M" key to mark the card. Then you move the marker to the other card and mark it. Then you press the "S" key to switch them. You press the "F" key when you are finished. Then your score is totalled.

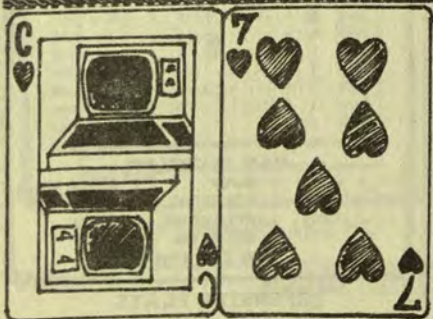
Only one key needs to be pressed for each command. The game is well thought out and has no bugs that I could find. You could play the same game with real cards, but the computer keeps score in ROYAL FLUSH and saves you this chore.

# DETAIL BREAKDOWN OF HANDS

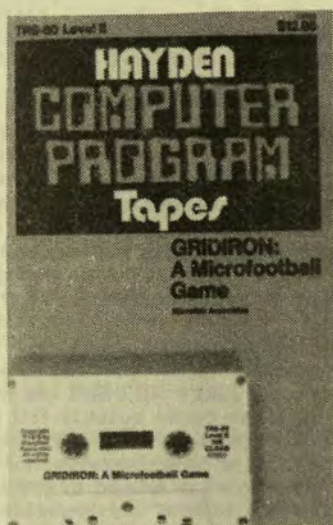
|              |     |       |
|--------------|-----|-------|
| 1 PAIR       | 10  | HOR 1 |
| NOTHING      | 0   | HOR 2 |
| 1 PAIR       | 10  | HOR 3 |
| 4 OF KIND    | 160 | HOR 4 |
| 2 PAIR       | 30  | HOR 5 |
| NOTHING      | 0   | VER 1 |
| 1 PAIR       | 10  | VER 2 |
| NOTHING      | 0   | VER 3 |
| 1 PAIR       | 10  | VER 4 |
| 1 PAIR       | 10  | VER 5 |
| NOTHING      | 0   | DIA L |
| 4 OF KIND    | 160 | DIA R |
| TOTAL POINTS | 400 |       |

# BREAKDOWN

I wanted to see how the computer scored each row or hand of cards. I had no points in 4 rows but I had a high score of 160 for 4 of a kind in Horizontal Row 4. ■







**GRIDIRON**  
Level II 16K tape  
by Microflair Associates  
from Hayden Publishing Co.  
50 Essex Street  
Rochelle Park, NJ 07662

GRIDIRON is a game of football for two players. One player is the visiting team, one the home team. The offensive player chooses one of eleven offenses. The defensive player chooses one of ten defenses. Then the ball goes into action on the playing field while the clock is running.

|       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  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184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270 | 271 | 272 | 273 | 274 | 275 | 276 | 277 | 278 | 279 | 280 | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291 | 292 | 293 | 294 | 295 | 296 | 297 | 298 | 299 | 300 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 313 | 314 | 315 | 316 | 317 | 318 | 319 | 320 | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332 | 333 | 334 | 335 | 336 | 337 | 338 | 339 | 340 | 341 | 342 | 343 | 344 | 345 | 346 | 347 | 348 | 349 | 350 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | 361 | 362 | 363 | 364 | 365 | 366 | 367 | 368 | 369 | 370 | 371 | 372 | 373 | 374 | 375 | 376 | 377 | 378 | 379 | 380 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 | 395 | 396 | 397 | 398 | 399 | 400 | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 | 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 | 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 | 531 | 532 | 533 | 534 | 535 | 536 | 537 | 538 | 539 | 540 | 541 | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 | 551 | 552 | 553 | 554 | 555 | 556 | 557 | 558 | 559 | 560 | 561 | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 | 571 | 572 | 573 | 574 | 575 | 576 | 577 | 578 | 579 | 580 | 581 | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 | 591 | 592 | 593 | 594 | 595 | 596 | 597 | 598 | 599 | 600 | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 | 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 | 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 | 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 | 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 | 721 | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 | 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 | 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 | 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 | 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 | 815 | 816 | 817 | 818 | 819 | 820 | 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 | 835 | 836 | 837 | 838 | 839 | 840 | 841 | 842 | 843 | 844 | 845 | 846 | 847 | 848 | 849 | 850 | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 | 861 | 862 | 863 | 864 | 865 | 866 | 867 | 868 | 869 | 870 | 871 | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 | 881 | 882 | 883 | 884 | 885 | 886 | 887 | 888 | 889 | 890 | 891 | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 | 901 | 902 | 903 | 904 | 905 | 906 | 907 | 908 | 909 | 910 | 911 | 912 | 913 | 914 | 915 | 916 | 917 | 918 | 919 | 920 | 921 | 922 | 923 | 924 | 925 | 926 | 927 | 928 | 929 | 930 | 931 | 932 | 933 | 934 | 935 | 936 | 937 | 938 | 939 | 940 | 941 | 942 | 943 | 944 | 945 | 946 | 947 | 948 | 949 | 950 | 951 | 952 | 953 | 954 | 955 | 956 | 957 | 958 | 959 | 960 | 961 | 962 | 963 | 964 | 965 | 966 | 967 | 968 | 969 | 970 | 971 | 972 | 973 | 974 | 975 | 976 | 977 | 978 | 979 | 980 | 981 | 982 | 983 | 984 | 985 | 986 | 987 | 988 | 989 | 990 | 991 | 992 | 993 | 994 | 995 | 996 | 997 | 998 | 999 | 1000 | 1001 | 1002 | 1003 | 1004 | 1005 | 1006 | 1007 | 1008 | 1009 | 1010 | 1011 | 1012 | 1013 | 1014 | 1015 | 1016 | 1017 | 1018 | 1019 | 1020 | 1021 | 1022 | 1023 | 1024 | 1025 | 1026 | 1027 | 1028 | 1029 | 1030 | 1031 | 1032 | 1033 | 1034 | 1035 | 1036 | 1037 | 1038 | 1039 | 1040 | 1041 | 1042 | 1043 | 1044 | 1045 | 1046 | 1047 | 1048 | 1049 | 1050 | 1051 | 1052 | 1053 | 1054 | 1055 | 1056 | 1057 | 1058 | 1059 | 1060 | 1061 | 1062 | 1063 | 1064 | 1065 | 1066 | 1067 | 1068 | 1069 | 1070 | 1071 | 1072 | 1073 | 1074 | 1075 | 1076 | 1077 | 1078 | 1079 | 1080 | 1081 | 1082 | 1083 | 1084 | 1085 | 1086 | 1087 | 1088 | 1089 | 1090 | 1091 | 1092 | 1093 | 1094 | 1095 | 1096 | 1097 | 1098 | 1099 | 1100 | 1101 | 1102 | 1103 | 1104 | 1105 | 1106 | 1107 | 1108 | 1109 | 1110 | 1111 | 1112 | 1113 | 1114 | 1115 | 1116 | 1117 | 1118 | 1119 | 1120 | 1121 | 1122 | 1123 | 1124 | 1125 | 1126 | 1127 | 1128 | 1129 | 1130 | 1131 | 1132 | 1133 | 1134 | 1135 | 1136 | 1137 | 1138 | 1139 | 1140 | 1141 | 1142 | 1143 | 1144 | 1145 | 1146 | 1147 | 1148 | 1149 | 1150 | 1151 | 1152 | 1153 | 1154 | 1155 | 1156 | 1157 | 1158 | 1159 | 1160 | 1161 | 1162 | 1163 | 1164 | 1165 | 1166 | 1167 | 1168 | 1169 | 1170 | 1171 | 1172 | 1173 | 1174 | 1175 | 1176 | 1177 | 1178 | 1179 | 1180 | 1181 | 1182 | 1183 | 1184 | 1185 | 1186 | 1187 | 1188 | 1189 | 1190 | 1191 | 1192 | 1193 | 1194 | 1195 | 1196 | 1197 | 1198 | 1199 | 1200 | 1201 | 1202 | 1203 | 1204 | 1205 | 1206 | 1207 | 1208 | 1209 | 1210 | 1211 | 1212 | 1213 | 1214 | 1215 | 1216 | 1217 | 1218 | 1219 | 1220 | 1221 | 1222 | 1223 | 1224 | 1225 | 1226 | 1227 | 1228 | 1229 | 1230 | 1231 | 1232 | 1233 | 1234 | 1235 | 1236 | 1237 | 1238 | 1239 | 1240 | 1241 | 1242 | 1243 | 1244 | 1245 | 1246 | 1247 | 1248 | 1249 | 1250 | 1251 | 1252 | 1253 | 1254 | 1255 | 1256 | 1257 | 1258 | 1259 | 1260 | 1261 | 1262 | 1263 | 1264 | 1265 | 1266 | 1267 | 1268 | 1269 | 1270 | 1271 | 1272 | 1273 | 1274 | 1275 | 1276 | 1277 | 1278 | 1279 | 1280 | 1281 | 1282 | 1283 | 1284 | 1285 | 1286 | 1287 | 1288 | 1289 | 1290 | 1291 | 1292 | 1293 | 1294 | 1295 | 1296 | 1297 | 1298 | 1299 | 1300 | 1301 | 1302 | 1303 | 1304 | 1305 | 1306 | 1307 | 1308 | 1309 | 1310 | 1311 | 1312 | 1313 | 1314 | 1315 | 1316 | 1317 | 1318 | 1319 | 1320 | 1321 | 1322 | 1323 | 1324 | 1325 | 1326 | 1327 | 1328 | 1329 | 1330 | 1331 | 1332 | 1333 | 1334 | 1335 | 1336 | 1337 | 1338 | 1339 | 1340 | 1341 | 1342 | 1343 | 1344 | 1345 | 1346 | 1347 | 1348 | 1349 | 1350 | 1351 | 1352 | 1353 | 1354 | 1355 | 1356 | 1357 | 1358 | 1359 | 1360 | 1361 | 1362 | 1363 | 1364 | 1365 | 1366 | 1367 | 1368 | 1369 | 1370 | 1371 | 1372 | 1373 | 1374 | 1375 | 1376 | 1377 | 1378 | 1379 | 1380 | 1381 | 1382 | 1383 | 1384 | 1385 | 1386 | 1387 | 1388 | 1389 | 1390 | 1391 | 1392 | 1393 | 1394 | 1395 | 1396 | 1397 | 1398 | 1399 | 1400 | 1401 | 1402 | 1403 | 1404 | 1405 | 1406 | 1407 | 1408 | 1409 | 1410 | 1411 | 1412 | 1413 | 1414 | 1415 | 1416 | 1417 | 1418 | 1419 | 1420 | 1421 | 1422 | 1423 | 1424 | 1425 | 1426 | 1427 | 1428 | 1429 | 1430 | 1431 | 1432 | 1433 | 1434 | 1435 | 1436 | 1437 | 1438 | 1439 | 1440 | 1441 | 1442 | 1443 | 1444 | 1445 | 1446 | 1447 | 1448 | 1449 | 1450 | 1451 | 1452 | 1453 | 1454 | 1455 | 1456 | 1457 | 1458 | 1459 | 1460 |  |
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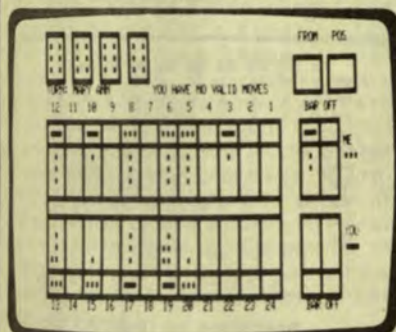


the game when he was very young. The game uses those early rules and does not allow for doubling the cube. But the author has given the player the advantage of choosing to roll the dice and of choosing to go first. The player may even roll a double for the first move.

When you play the game, all the pieces are shown as dots on each point. A solid bar at the base of the point shows your men. A dotted bar shows your opponent's. The dice are rolled and appear in the upper right corner. Below the dice are the areas for the "bar" and "off the board." You enter the point number as your starting point. If you have a piece on the bar, you enter the word "BAR" as the starting point. Then you enter the number shown on the die as the number of places to move your piece. If you roll a double, four dice are shown instead of two. As you move according to each die, that die disappears.

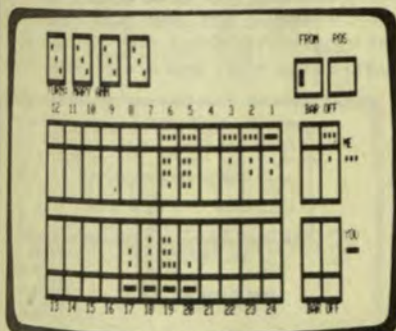
BACKGAMMON may be of more interest to a beginner than someone

> (continued on page 63)



#### ON THE BAR

I have two men on the bar. I must move one of them off the bar and back on the playing board before I can move any other pieces. I have no valid moves this turn.



#### A PIECE OFF THE BOARD

The computer has a piece off the board. Before the computer could take the final move for that piece, all the pieces had to be on the last six points.



#### PADDLE PINBALL

Level II 16K tape

by Eric E. Quintana

from Radio Shack

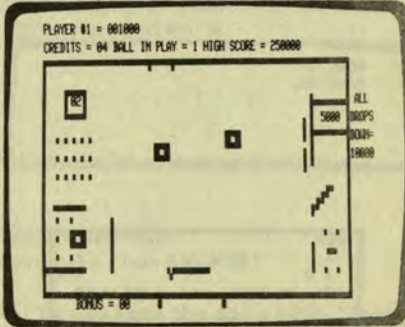
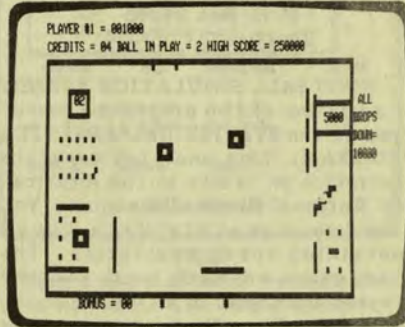
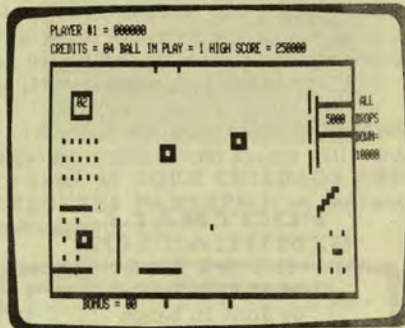
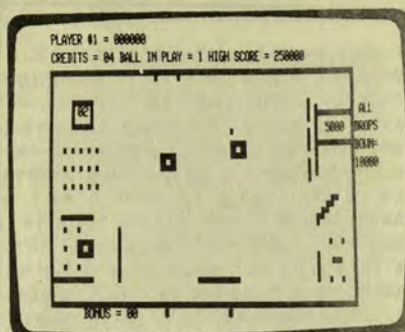
700 One Tandy Center  
Fort Worth, TX 76102

PADDLE PINBALL lets you play Pinball on the screen. You have the use of a paddle at the bottom of the screen to hit the ball back into play. You have bumpers, a chute, a Music Box, and Bonus Dots. Scoring is explained in the manual. If you score enough points, you win extra games. The program will also run on the Model III.

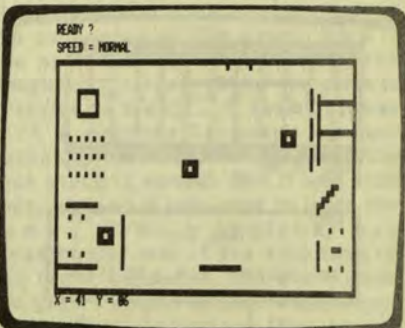
The ball drops from the top of the screen. Action of the ball is realistic, and it gradually slows down. You move the paddle by using the right and left arrow keys. You can move the paddle even faster by using the shifted arrow keys.

The game has several extra features. You can stop the action of the ball by pressing the up arrow key. Then you can think about the game a bit during the "time out." You can change the position of the bumpers, bonus dots, and random dots. You can erase or add dots. You can change the position of the gap at the top where the ball starts. You can save the changes on a separate tape to load them for another game. You can slow down the speed of the game.

PADDLE PINBALL is good for a beginner as well as for the more advanced player. The beginner can make the Pinball area easier while he is learning. The more advanced player can try a more difficult layout.

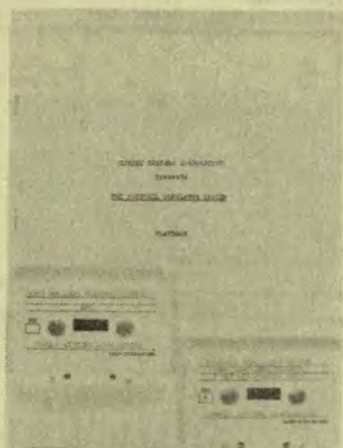


#### THE BALL IN PLAY



#### CHANGED BUMPERS AND GAP





### FOOTBALL SIMULATION SYSTEM

Level II 16K tape  
by John B. Saxon  
from Comrec Systems Corporation  
P. O. Box 34008  
Houston, TX 77034

**FOOTBALL SIMULATION SYSTEM** is a system of two programs. One of them is the **STATISTICAL ANALYZER PROGRAM**. This analyzes separate statistics on teams in the American and National Football Leagues. You can buy separate data tapes containing these statistics. The statistics on each team and the players are shown in an accompanying pamphlet. The other program is the **GAME SIMULATOR PROGRAM**. This

lets you manage two opposing football teams during a game. The programs come with an analysis of two teams so you can start right off managing a game. You also receive a good instruction manual.

The statistics for a team include the punting, punt return, and kick return averages and the field-goal rank. Each player has a separate rating on his performance. The **STATISTICAL ANALYZER PROGRAM** uses the statistics for any two teams you select and figures the odds that one of ten offenses by one of the teams will be successful against one of the ten defenses of the other team. It also figures how many yards the play will gain on the average if it is successful. If you have the 1978 American and National Football League Statistics, you may choose any two teams from the 28 teams to play against each other.

The program reads in the statistics for the two teams. Then it shows a symbol gradually filling in a grid on the screen so you know it is working and how far along it is. It writes an analysis of these teams onto your new blank tape. You use this analysis for the actual game program. The analysis takes about an hour to figure all the possibilities (200 combinations of offensive and defensive plays by the two teams). Since there are 28 teams, you will want to keep each analysis in case you again play the same teams

against each other.

The **GAME SIMULATOR PROGRAM** reads in the analysis of two opposing teams. You can use the "Blacks" and the "Greys" which come with the game. If you bought the League Team statistics and have run the **STATISTICAL ANALYZER PROGRAM**, you can use those teams. You enter the offensive play you want to use from the ten choices. Then you enter the defensive play from those ten choices. The teams carry out your plays on a playing field shown at the top of the screen. The results of the play are shown in the center of the screen. The scoreboard at the bottom keeps you up-to-date on the time remaining, the down and yards to go, the position of the ball, and the remaining time. The time changes after the completion of the play and is calculated by what happened during that play.

The result of any offensive and defensive play is not set. The analysis of the strengths and weaknesses of the two teams helps determine whether the play was

> (continued on page 81)

OFFENSE ? SHPL  
DEFENSE ? REEL

BLACKS GREYS  
0 1 QUARTER 14 : 31 0  
3 TO 3 TO  
GREYS BALL ON GREYS 41.2 YL. 2 DOWN 3.8 TO GO

BLACKS GREYS  
0 1 QUARTER 14 : 31 0  
3 TO 3 TO  
GREYS BALL ON GREYS 41.2 YL. 2 DOWN 3.8 TO GO

PLAYING THE GAME

| BLACKS      | SCORE                   | GREYS        |
|-------------|-------------------------|--------------|
| 0           | FIRST DOWNS             | 0            |
| 0           | OFFENSIVE PLAYS         | 2            |
| 0 : 0 : 0.0 | RUSHING                 | 2 : 40 124.2 |
| 0 : 0 : 0.0 | PASSING                 | 0 : 0 : 0.0  |
| 0           | PASSING 2               | 0            |
| 0.0         | YARDS/ATTEMPT           | 0.0          |
| 0.0         | YARDS/COMPLETION        | 0.0          |
| 0           | LOST ATTEMPTING TO PASS | 0            |
| 0           | FUMBLES LOST            | 0            |
| 0 : 0       | PENALTIES               | 0 : 0        |
| 0 : 0.0     | PUNTING                 | 0 : 0.0      |
| 0           | RETURN YARDS            | 0            |
| 0           | TOTAL OFFENSE           | 40           |

PRESS ENTER TO CONTINUE

RECAP

ENTER STATISTICS TAPE, POSITION, PUT INTO PLAY, AND PRESS ENTER

69 5 257 3 28111 28112 269 5 271 6 269 5 266 5 270 5 268 5 271 6  
250 3 28011 28010 270 6 272 6 271 6 270 5 271 6 273 6 272 5 263  
4 280 9 280 9 272 5 274 6 272 5 272 5 274 6 264 7 257 5 2  
7422 27421 263 7 263 7 263 7 263 7 264 7 263 7 2

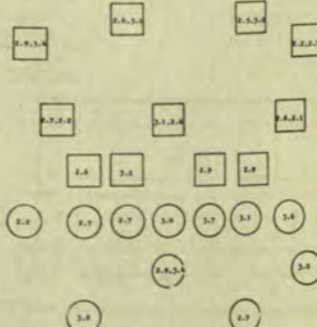
READING IN THE  
TEAM STATISTICS

REEL RUSH ZERO PUNK PUNK BALL BALL DOWN  
SUPPL 0 0 0 0 0 0 0 0  
SUPPL 0 0 0 0 0 0 0 0  
DOWN 0 0 0 0 0 0 0 0  
DOWN 0 0 0 0 0 0 0 0  
DOWN 0 0 0 0 0 0 0 0  
DOWN 0 0 0 0 0 0 0 0  
DOWN 0 0 0 0 0 0 0 0  
DOWN 0 0 0 0 0 0 0 0

PATRIOTS OFFENSE VS. JETS DEFENSE

ANALYZING THE TEAMS

Punting average: 35.0 Yard return average: 25.0  
Field-goal rank: 3.0 Kick return average: 25.0



ONE TEAM'S STATISTICS  
This is the printed statistics on one of the fictitious teams.

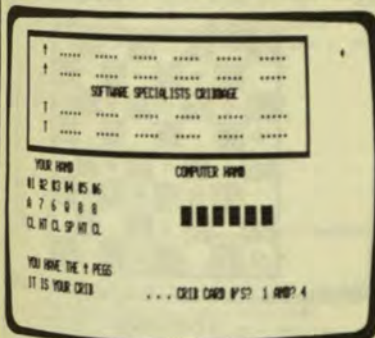


TRS-80 LEVEL II



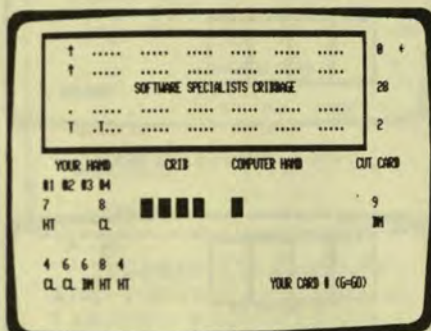
Level II 16K tape  
from Dynacomp  
6 Rippingale Road  
Pittsford, NY 14534

You and the computer are dealt your cards, with the computer's cards face down. Your cards are numbered #1 to #6. If you are uncertain what cards to put into the crib, you may press "H" and the computer will make a suggestion. You choose the crib cards by using the card numbers 1 to 6. The four crib cards are placed in the center between your cards and

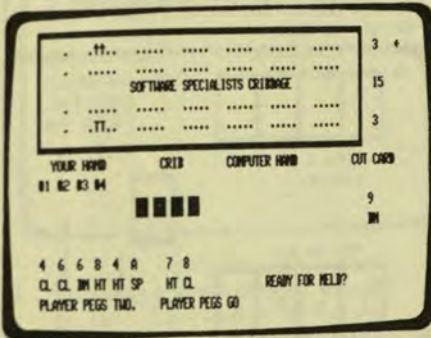


**CRIB CARDS**  
I have chosen cards 1 and 4 for my  
crib. These are the Ace of Clubs  
and the Queen of Spades

There are drawbacks. It is difficult to remember at first which player is using which side of the cribbage board and which markers -- it would be nice if "You" and "Me" were shown at the end of the board as well as the scores. The total of the played cards is shown at the end of the cribbage board instead of close to the cards that are played. You are shown only the total points on the meld and the crib instead of a breakdown of the points as well.

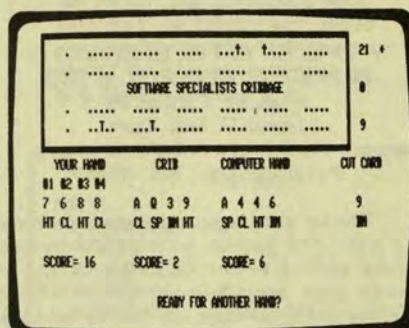


The cards at the bottom have been played so far. They total 28. It's my turn but I can't play either the 7 of Hearts or the 8 of Clubs so I will press "G" for "GO." The computer still has one card to play.



READY FOR MELD  
All the cards have been played. I have pegged "GO." Now I am ready for the meld.

A beginner will enjoy CRIBBAGE 2.0. An experienced player will want to look at YOUR CRIBBAGE AND CHECKERS PARTNER from Instant Software.



I have a score of 16 in my hand and 2 in the meld. The computer has a score of 6. So far the cribbage board shows 21 points for me and 9 for the computer. ■

(continued from page 61)

who has played the game many times. When a piece moves, it blinks for a time both at the starting and ending place. You set this blinking time at the beginning of the game. This is the only way to keep up with the computer's moves. Since the game is written in BASIC, it seems slower than a machine language version would be. It redraws the dice after each piece is moved. But it will still appeal to you if you want to learn the game. Even a beginner can occasionally win if the dice turn up the right numbers. However, when the game is won, it just stops right there. You must press "Break" and rerun the program to play another game. ■





# YOUR CRIBBAGE AND CHECKERS PARTNER

Level II 16K tape  
from Instant Software  
Peterborough, NH 03458

These programs give you someone to play the games with. The games come with a sheet telling you how to make your moves in the games. Both games let you look at the directions on the screen as well. Both games will work under disk BASIC.

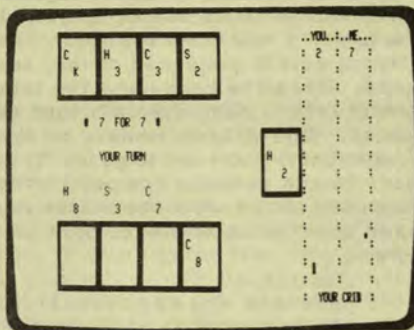
CRIBBAGE lets you choose the number of points to play for. You and the computer are dealt your cards. You arrange your cards in order and put two of them into the crib. The non-dealer cuts the deck. You enter the position number of the card you want to play. As points are scored during the play, a message appears briefly showing who won those points and the points are pegged on the crib board. The card you played appears in the center of the screen. The card the computer played is turned face up. A running total of the cards is shown near the

playing cards. The total cribbage score to date is shown on the crib board. At the end of the hand, your cards are returned to the starting position and you may count your

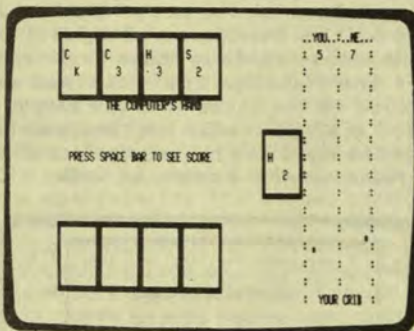
score. Then you press "Enter" to see how the computer scored your hand. The computer's cards are shown again for you to count that score. Again, you press "Enter" to see the computer's scoring. The crib cards are then displayed in the same way. As the score is counted for the player's hand or for the crib, it is pegged on the board.

This version of CRIBBAGE is a challenging game for someone who has played cribbage for some time. It is not a good one for a beginner. When you see how the computer counted the score, the score does not remain on the screen long enough for a beginner to study. If a playing point wins the game (usually the computer wins against a beginner), the game immediately stops and you are told, "The computer wins. Do you want to play again?" Unless you are watching the score on the crib board, it may catch you unawares and you cannot back up to see what was going on. Your computer opponent plays a tough game of CRIBBAGE.

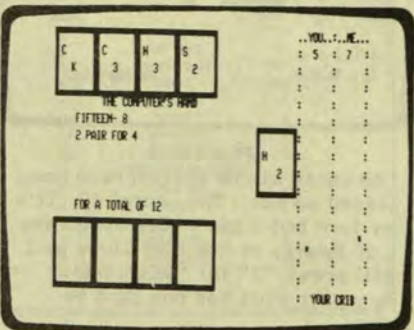
> (continued on page 66)



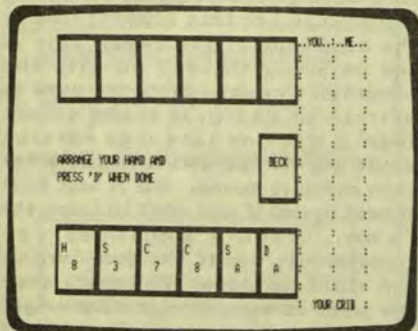
PLAYING THE HAND



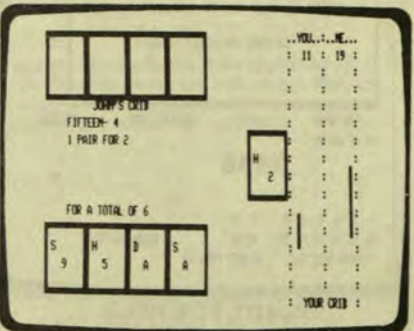
THE COMPUTER'S HAND



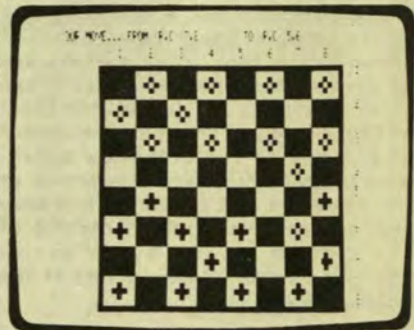
THE COMPUTER'S SCORE



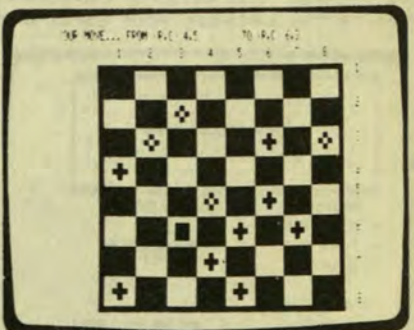
ARRANGING YOUR HAND TO PUT CARDS INTO THE CRIB



JOHN'S CRIB



**EARLY IN THE GAME**  
I am moving from row 7, column 8, to row 5, column 6. My man is just beginning to be erased from the starting place. It will be redrawn at the new place.



**JUMPING**  
The computer's man just moved to row 5, column 4. I am jumping him with my king from row 4, column 5, to row 6, column 3.



from year to year, so that a stock that performs well one year can be a bad bargain the next. The bull or

bear market is random and I couldn't predict next year's market or the stock prices. Although I couldn't beat the market's return, I made some money during the ten years.

PURCHASE CONFIRMATION

TO: JIM

YOU BOUGHT: 10 MICRO-MARKETING. . .  
NO. SHARES: 10 PRICE: \$ 110

TOTAL CHARGES: \$ 1,100  
MARGIN AMOUNT: 0

TOTAL DUE: \$ 1,100

DO YOU CONFIRM? Y\_

CONFIRMATION

I am told the name, number of stocks, and price I agreed to pay for them. If I change my mind, I can enter "N" or just press "Enter". Then I can buy another stock or make other changes in my portfolio.

CURRENT PRICES FOR YEAR: 1

|                              |                               |
|------------------------------|-------------------------------|
| 10 MICRO-MARKETING. . . 110  | MY HAND HOLDING CO. . . 107   |
| 40 DELL TELEPHONE. . . 104   | 70 LOST PARADISE. . . 90      |
| MY GOLDFINCH MINING. . . 142 | MY SEERS ROBOT CO. . . 105    |
| 20 NATIONAL MOTORS. . . 103  | 60 COLOMBIAN IMPORTS. . . 105 |
| 30 FUSION POWER CO. . . 106  | 50 BONDS (500 INT.) . . 1000  |

<< TRANSACTION SUMMARY >>

FOR JIM

|                     | CASH      | MARGIN |
|---------------------|-----------|--------|
| PREVIOUS BAL.       | \$ 10,000 | \$ 0   |
| CURRENT TRANSACTION | -1,100    | 0      |
| CURRENT BALANCES    | \$ 8,900  | \$ 0   |

JIM, ANOTHER BUY?

TRANSACTION SUMMARY

After I confirmed the purchase, I am shown a summary of the transaction. This shows my present cash balance. I could have bought stocks on margin in years 2 through 9 if I had paid 50% down and paid 5% interest.

JIM'S PORTFOLIO . . .

10 MICRO-MARKETING. . . 10 @ 110 MARGIN DUE: 0 NOM \$113  
20 NATIONAL MOTORS. . . 10 @ 103 MARGIN DUE: 0 NOM \$91  
MY SEERS ROBOT CO. . . 10 @ 105 MARGIN DUE: 0 NOM \$110  
40 DELL TELEPHONE. . . 10 @ 107 MARGIN DUE: 0 NOM \$107  
30 FUSION POWER CO. . . 10 @ 109 MARGIN DUE: \$45 NOM \$109  
60 COLOMBIAN IMPORTS. . . 10 @ 92 MARGIN DUE: 0 NOM \$92  
END OF FILE.  
HIT 'ENTER'?

PORTFOLIO

These are the stocks I bought so far. I am shown how many shares of each, the purchase price, any margin that is due, and the current price.

00 JIM'S DIVIDENDS AND INTEREST . . .

|                                     |    |
|-------------------------------------|----|
| 10 MICRO-MARKETING. . . 10 SHARES   | 10 |
| 20 NATIONAL MOTORS. . . 10 SHARES   | 20 |
| 40 DELL TELEPHONE. . . 10 SHARES    | 40 |
| 30 FUSION POWER CO. . . 10 SHARES   | 30 |
| 60 COLOMBIAN IMPORTS. . . 10 SHARES | 60 |

TOTAL DIVIDENDS & INTEREST: \$ 160

...NEW CASH BALANCE: \$ 4,428

HIT 'ENTER'...?

INCOME

At the beginning of each year, I am shown the dividends and interest my stocks and bonds earned during the last year. Now I will have more cash to buy more stocks.

↑ BULL MARKET ↑

YEAR: 4

10 MICRO-MARKETING. . . 132  
MY HAND HOLDING CO. . . 68  
40 DELL TELEPHONE. . . 119  
70 LOST PARADISE. . . 110  
MY GOLDFINCH MINING. . . 103 ROSE TO 206 & SPLIT 2 FOR 1  
MY SEERS ROBOT CO. . . 135  
20 NATIONAL MOTORS. . . 111  
60 COLOMBIAN IMPORTS. . . 97  
30 FUSION POWER CO. . . 139  
HIT 'ENTER'?

BULL MARKET

Last year was a bull market and one of the stocks split. All the new stock prices are shown at the beginning of each year.

MY SEERS ROBOT CO. . . 10 @ 105 MARGIN DUE: 0 NOM \$105  
40 DELL TELEPHONE. . . 10 @ 107 MARGIN DUE: 0 NOM \$107  
30 FUSION POWER CO. . . 10 @ 109 MARGIN DUE: \$45 NOM \$109  
60 COLOMBIAN IMPORTS. . . 10 @ 92 MARGIN DUE: 0 NOM \$92  
END OF FILE.

HIT 'ENTER'?

00 PAY ONE ITEM AT A TIME 00

ENTER STOCK NAME, MARGIN PAYMENT? F, \$45

JIM:

30 FUSION POWER CO. . . -- NEW MARGIN: 0

|     |           |             |
|-----|-----------|-------------|
| JIM | CASH BAL. | MARGIN BAL. |
|-----|-----------|-------------|

|          |      |     |
|----------|------|-----|
| OLD BAL. | 4561 | 545 |
|----------|------|-----|

|       |     |     |
|-------|-----|-----|
| LESS: | 545 | 545 |
|-------|-----|-----|

|          |      |   |
|----------|------|---|
| NEW BAL. | 4016 | 0 |
|----------|------|---|

→ NOTE CASH BALANCE. . . \$ 4016

JIM, READY?

MARGIN

Now that I have the cash, I can pay the margin on my stock. I must enter the stock name and the margin payment. Then I can pay another margin if I want to.

> (continued on page 89)

THE BIG BOARD

Level II 16K tape  
from Ozark Mountain Software  
P. O. Box 2945  
Fayetteville, AR 72701

THE BIG BOARD is a game that lets one to four players try to beat the stock market. Each player starts with \$10,000 cash and buys and sells stocks for 10 years. At the end of the game, the winner is the one with the greatest rate of return on the beginning \$10,000. The game can be played under disk BASIC and also on the Model III.

At first I didn't like this game. But the more I played it, the more interesting it became. The beginning stock prices are random. Each stock performs differently. Some stocks are good for long-term investment and some for short-term. Some are more volatile than others. Some are for the speculative investor and some for the conservative. The documentation tells which is which. However, the market conditions vary

CURRENT PRICES FOR YEAR: 1

|                              |                               |
|------------------------------|-------------------------------|
| 10 MICRO-MARKETING. . . 110  | MY HAND HOLDING CO. . . 107   |
| 40 DELL TELEPHONE. . . 104   | 70 LOST PARADISE. . . 90      |
| MY GOLDFINCH MINING. . . 142 | MY SEERS ROBOT CO. . . 105    |
| 20 NATIONAL MOTORS. . . 103  | 60 COLOMBIAN IMPORTS. . . 105 |
| 30 FUSION POWER CO. . . 106  | 50 BONDS (500 INT.) . . 1000  |

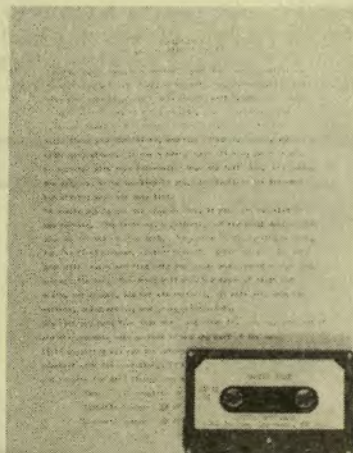
JIM, BUY:

ENTER STOCK NAME, # SHARES? M, 10.

BUYING STOCK

These nine stocks and one bond are the ones on the market. I entered just the first initial of the stock name and then the number of shares. I bought Micro-Marketing, 10 shares.





# FAMILY TREE

Level II 16K tape  
by Neal P. Jensen  
from Jensen Software  
1440 Rockway  
Lakewood, OH 44107

FAMILY TREE is a program to display your family tree on the computer screen. It will run on the Model III as well as the Model I, Level II. It will also run under Disk BASIC. The tape comes with two programs and a 2-page set of instructions. The first program is a sample so you can see how it works. It already has an imaginary family tree in it. The second program does not have this information. You must add program lines with your own family information.

The actual program is simple to use. You ask for information about a person by his or her name or nickname. Then you see a family tree for that person, listing his or her date of birth (and death), and names of the children, spouse, parents, grandparents, and great-grandparents.

## FAMILY TREE

SELECT MODE  
(1) COMPLETE NAME.  
(2) KNOWN PART OR NICKNAME.  
? 2  
NAME TO SEARCH FOR:  
? BESSIE\_

SEARCHING BY THE FIRST NAME

When you are ready to enter your own information, you make a list of all your family members. You give each one a number, starting with "1." There is room for about 300 family members if your computer has 16K of memory. You load the second program and add program lines to it. You type the number and the word "DATA" and the bits of information about each family member. The instructions tell you that each bit of information must be separated by a comma. Then you save this expanded program so you can run it another time.

I can see a few problems with this program. Sometimes two sons will give their father's name to their own son. There may be several grandsons and a grandfather who all have an identical name. There is no Jr. or Sr. or II or III. You may only see the family tree for one of them.

Another possible problem could be in typing the data lines. I can foresee typing 300 lines and then finding out that somewhere a comma was left out.

The family tree is nicely shown on the screen. The finished program is easy to use. But I am reluctant to recommend it.

SEARCHING  
JULIA MORTON  
JULIUS COOK

CHART FOR ? \_

SEARCHING BY A NICKNAME

PUSH ENTER TO CONTINUE? \_  
CONSTINE L.  
CLARK  
MICHEL JOHNSON  
JACOB B. LANE  
NORRIS M. COOK  
VICTOR CLARK  
JULIA MORTON  
JOHN JOHNSON  
BETTY SWARTZ  
JOE LANE  
MARY MOORE  
JULIUS COOK  
GRACE JOHNSON  
JESSIE ALMENA  
CLARK  
BORN 12/26/53  
DIED 7/4/58  
# SPOUSE #  
EUGENE ROBERT SMITH  
# CHILDREN #  
MARCIA VIELLA  
FREDERICK E.  
EDWARD HEALE  
ROBERT EUGENE  
HOWARD LEWIS  
MARK DUANE  
LEWIS C. CLARK  
SEAN VIELLA LANE

A FAMILY TREE ■

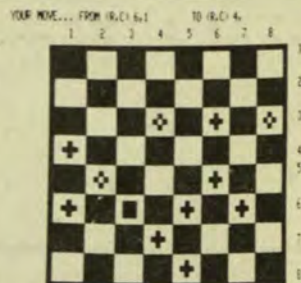
## CHECKERS (continued from page 64)

CHECKERS is the second game on the tape. You can set up your pieces and the computer's pieces on the board or you can play a regular game from scratch. The computer uses the black pieces, moving from the top down. You use the white pieces, moving from the bottom up. You must enter the row and column for the piece you want to move. Then you enter the row and column for the place you want to move it to. If you enter an illegal move, you are told "Illegal Move" and must enter the move again. If you change your mind before you have typed the last of the four digits, you may press "X" to start the move over. You must NOT press "Enter" after the numbers. If you do, the board display is destroyed. Then you must press "0" and the board is redrawn.

When the computer makes its move, you are not told the positions of the move. The computer's piece is merely erased from its starting position and redrawn in the new position. Unless you are watching or have a good visual memory, you do not know how the computer moved.

The computer is not a very smart opponent. I had three kings and one man to the computer's three kings. The computer moved one of its pieces so I could jump two of its pieces at once with no danger to my pieces. The computer had other moves it could have made. Later, it deliberately moved its last piece so I could jump it. Again, it had other moves. I won the game although I have not played checkers in years.

I recommend YOUR CRIBBAGE AND CHECKERS PARTNER to a good cribbage player who wants a challenge.



I WON

The computer has lost. I am jumping two of his men now and have his third man trapped. ■



assign. You choose the meaning of the numbers in each category and keep a separate list of them. If you want to change any information about a new person while you are entering it, you must continue to the end of the list and then start over.

You can later change individual pieces of information about a person if that person dies or if you find out more information about him. You can add a new record if you find another relative.

You can see on the screen 4 generations of ancestors' names, starting with any of the people you have entered (Figure 2). This display shortens the names because of the size of the screen. You can see on the screen information about one relative. This information includes the person's number, name, sex, birthplace, birth and death dates, age at death, and names and numbers of his or her father, mother, and spouse (Figure 3). A second page of the display will show you the numbers and names of the brothers and sister. You can see on the screen everyone with the same code for origin or occupation or with the same special code. You can also see a summary of the average age at death of all your relatives. This summary also shows you the youngest death and the oldest. This helps if you want to know how long your direct ancestors lived to find out if you might live to a very old age. It does not help if it includes brothers and sisters who died as infants.

You can have a printout of an alphabetical listing of everyone, showing their number and name (Figure 4). You can have a printed list of living relatives. You can have file folder labels printed out (Figure 5). These labels include the person's number, name, birth date, and birth place.

TREE2 has a few rough spots. After you have entered new names, changed or seen a record, or seen the 4 generations, the instructions do not tell you how to return to the main menu or end the program. You must press "Break" to end the program and then start it over if you want to do something else. The dates are often hard to read. For example, a month and day are shown as "0210" which you must translate as February 10. Only the screen display of an individual record shows the date as "Feb 10." You are not told that you should not use a comma when you enter the county and state of birth.

TREE2 is not a polished program but may help you index your family tree.

▷ (continued on page 69)

## TREE2

Level II 32K disk  
by Chet Behrman  
from The Program Manager  
P. O. Box 45  
Inglesfield, IN 47618

TREE2 is an index to genealogy records kept in a separate numbered file folder for each relative. It will keep track of relatives and their date and place of birth and date of death. It will print an alphabetical list of the relatives and labels for a card file. It will show on the screen 4 generations of a family tree.

First you make a list of what number to give each of your relatives. You must keep this list so you will know the next number to give someone new. Then you enter information about each person (Figure 1). This information is the person's number, last name, first and middle name, the number of his or her spouse, and the number of his or her father. Next you enter the birthplace - but do not use a comma between the county and state. Then you enter the year of birth and the month and day. If the person is dead, you enter the date of death. You enter the person's sex. Then you enter code numbers for origin, occupation, and a third optional category which you

### FAMILY TREE FOR MARY ANN DUNCAN

|                 |                    |                 |
|-----------------|--------------------|-----------------|
| MARY ANN DUNCAN | GRANDFATHER DUNCAN | CHARLES DUNCAN  |
|                 | MARLIN DUNCAN      | DORCAS COFFMAN  |
|                 | OLIVE CHINN        | CHARLES CHINN   |
|                 | HENRY C. HEARD     | MINERVA MATHENY |
|                 | RUTH HEARD         | ELI HEARD       |
|                 | SARAH I. CHAPIN    | JOHN C. CHAPIN  |
|                 |                    | PHIBE LESLIE    |

## 2. FAMILY TREE

|                          |              |           |
|--------------------------|--------------|-----------|
| # 2 MARLIN LANE          | DUNCAN       | SEX M     |
| BIRTHPLACE: YOLO CO      |              |           |
| BORN: DEC 01 1891        |              |           |
| AGE AT DEATH: 71         |              |           |
| ORIGIN 3                 | OCCUPATION 8 | SPECIAL 0 |
| FATHER: GRANDFATHER LANE | DUNCAN       | # 4       |
| MOTHER: OLIVE            | CHINN        | # 5       |
| SPOUSE: RUTH             | HEARD        | # 3       |

## 3. INDIVIDUAL RECORD

### ALPHABETICAL FILE LISTING

06/26/81

|    |                |         |
|----|----------------|---------|
| 13 | HARRIET AMANDA | BOLDMAN |
| 14 | JOHN CLUTE     | CHAPIN  |
| 7  | SARAH ISABELLE | CHAPIN  |
| 10 | CHARLES        | CHINN   |
| 5  | OLIVE          | CHINN   |
| 9  | DORCAS         | COFFMAN |
| 8  | CHARLES        | DUNCAN  |
| 4  | GRANDSON LANE  | DUNCAN  |
| 1  | MARY ANN       | DUNCAN  |
| 2  | MARLIN LANE    | DUNCAN  |
| 12 | ELI            | HOWARD  |
| 6  | HENRY CLAY     | HOWARD  |
| 3  | RUTH           | HOWARD  |
| 15 | PHIBE          | LESLIE  |
| 11 | MINERVA JANE   | MATHENY |

## 4. PRINTED ALPHABETIC LIST

8 DUNCAN CHARLES  
BORN: 1806 0103  
BIRTHPLACE: WHITE CO. TN

9 COFFMAN DORCAS  
BORN: 1817 0922  
BIRTHPLACE: WASHINGTON CO KY

10 CHINN CHARLES  
BORN: 1829 0700  
BIRTHPLACE: DECATUR CO. IND.

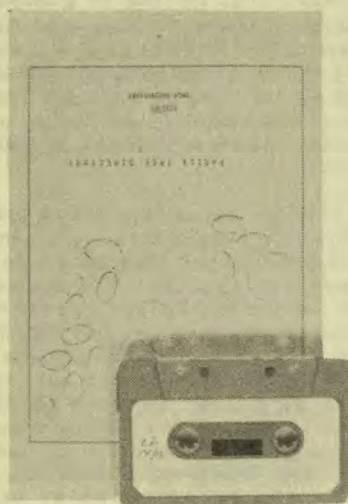
11 MATHENY MINERVA JANE  
BORN: 1832 0811  
BIRTHPLACE: WARREN CO. IL

## 5. PRINTED LABELS

NUMBER OF NEW RECORDS 1  
LAST NAME  
1 DUNCAN  
FIRST AND MIDDLE NAME  
1 MARY ANN  
NUMBER OF FATHER  
12  
NUMBER OF SPOUSE...JANE IS UNMARRIED  
13  
BIRTHPLACE...PRESS ENTER IF UNKNOWN  
1 YOLO CO, CA  
1 YOLO CO, CA  
BIRTH YEAR...FOR CHAPIN, 1904  
1 1907  
BIRTH DATE, MONTH & DATE...FOR CHAPIN, BORN FOR MARCH 8  
1 1907

## 1. ENTERING A NEW RECORD





## FAMILY TREE DIRECTORY

Level II 16K tape  
from DMLK Enterprises  
P. O. Box 2022  
Lynnwood, WA 98036

FAMILY TREE DIRECTORY keeps track of family members for the amateur genealogist. It comes with a sample family tree to experiment with, and a pamphlet explaining how to use the program. The program works under Disk BASIC as well as Level II BASIC, but saves the family data on tape. The program uses almost all your available 16K memory. If you have more memory, you can have more people listed on the same data tape.

You start your own tree by inserting your earliest ancestor. He is assigned Number 1. Then you insert his wife. Then you insert his children. You enter the person's name, sex, and years of birth and death. You must insert the basic information about a person before you can refer to him or her as a parent. However, you can revise a record later to show a parent.

The program uses "page" numbers to refer to each person. You use

single letter commands to list the parents, children, siblings, ancestors, or descendants of any person you have listed in your family tree. The person's information includes his or her page number, the dates of birth and death, and the names of his or her parents and their dates and page numbers. The information on a person's children, siblings, or descendants is shown in tabular form and also lists the dates. The information on the ancestors of a person shows the data in tree formation and gives only the names. The program will list three generations of descendants or ancestors of any person. You may also see a list of all the people in the directory.

It is easy to insert a new person and to revise information about someone already listed. The instruction pamphlet suggests using the full birth date of someone living and just the years of birth and death for someone deceased. When you enter information, you are shown how long the name might be. There are separate commands to save your family tree on tape or to load it from tape.

FAMILY TREE DIRECTORY is very easy to use and is fast. You can find a person by his name or by his page number. The only problem I found was that if you have two people of the same name, like a grandfather and grandson, and ask to see the person by name, you will be

shown only one of them. You must give the person's number to find any others.

The program does not let you make use of a printer. Instead, it uses the computer's memory for family information so you can work with a larger family tree. However, if you have a disk operating system that allows you to print what you see on the screen, you can do this.

The program is not suitable for someone doing serious research since it does not provide for any place names. It does not include in the person's information the date of marriage or the spouse's name but does show both names as parents of children. It provides for half-brothers and sisters but does not say if the spouse was the first or second marriage. However, FAMILY TREE DIRECTORY will be very easy to use for someone getting started.

### MEMBERS OF THE FAMILY TREE

|                         |             |       |
|-------------------------|-------------|-------|
| GREAT-GRANDFATHER       | 1875-1928   | P. 1  |
| GREAT-GRANDMOTHER       | 1888-1931   | P. 2  |
| MY FATHER               | 1901 JUL 22 | P. 3  |
| MY MOTHER               | 1906 SEP 9  | P. 4  |
| MY FATHER               | 1908-1925   | P. 5  |
| MY MOTHER               | 1908-1923   | P. 6  |
| MY FATHER'S FIRST WIFE  | 1908-1940   | P. 7  |
| MY FATHER'S SECOND WIFE | 1940 JUN 21 | P. 8  |
| MY UNCLE                | 1928 MAR 17 | P. 9  |
| MY AUNT                 | 1928-1968   | P. 10 |
| MY BROTHER              | 1924 NOV 9  | P. 11 |

PRESS (ENTER) TO CONTINUE

### LIST OF RELATIVES

INSERT A NEW RELATIVE INTO THE DIRECTORY  
(OR PRESS (ENTER) TO EXIT)

NAME: MY SPOUSE'S FATHER

SEX (M/F): MALE

BORN-DIED: 1900-1960

MOTHER: (THAT PERSON IS NOT LISTED IN THE DIRECTORY)  
(NOT LISTED) = P. 8

FATHER: (NOT LISTED)

### INSERTING A NEW RELATIVE

NAME: MY SPOUSE  
SEX: FEMALE  
BIRTH-DEATH DATES: 1932 MAY 3  
MOTHER: (NOT LISTED)  
FATHER: (NOT LISTED)

(D) TO REVISE NAME  
(S) TO REVISE SEX  
(B) TO REVISE BIRTH-DEATH DATES  
(F) TO REVISE FATHER  
(M) TO REVISE MOTHER

NEW FATHER'S NAME: MY SPOUSE'S FATHER

### REVISING INFORMATION

### DESCENDANTS OF MY DAD

#### GENERATION 1

CHILDREN OF MY DAD  
MY SISTER 1946 J IN 14 P. 14  
MY BROTHER 1940 F EX 28 P. 15  
ME 1949 SEP 23 P. 16

#### GENERATION 2

CHILDREN OF MY BROTHER  
MY NEPHEW 19 68 OCT 7 P. 18  
PRESS (ENTER) TO CONTINUE

### DESCENDANTS

ANCESTORS:  
MY FATHER (NOT LISTED) P. 5  
MY MOTHER (NOT LISTED) P. 11  
MY FATHER (NOT LISTED) P. 6  
MY MOTHER (NOT LISTED) P. 16  
GREAT-GRANDFATHER P. 1  
GREAT-GRANDMOTHER P. 2  
MY FATHER (NOT LISTED) P. 18  
MY MOTHER (NOT LISTED) P. 4

(C) (S) (B) (F) (M) (D) (L) (G) (T) (N) (O) (P)

### ANCESTORS

0 DATE 0 PAGE 16  
FAMILY TREE DIRECTORY  
ME  
1949 SEP 23  
PARENTS:  
MY DAD 1924 NOV 9 P. 11  
MY MOM 1926-1968 P. 18

(C) (S) (B) (F) (M) (D) (L) (G) (T) (N) (O) (P)

### FAMILY TREE DIRECTORY





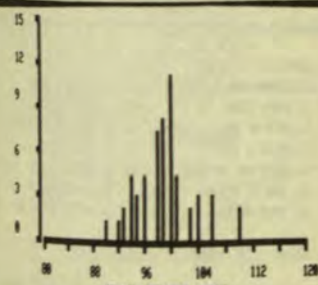
# **PLOTTING GRAPHS FOR VIDEO DISPLAY** Level II 16K tape by Howard M. Berlin from Advanced Operating Systems 450 St. John Road, Suite 792 Michigan City, IN 46360

These programs are subroutines to use if you are a programmer writing your own program. They allow you to plot a graph or chart for display on the computer screen. They will display histograms (bar graphs),

```

POINT 4 X, Y ? 94,4
POINT 5 X, Y ? 95,3
POINT 6 X, Y ? 96,4
POINT 7 X, Y ? 96,7
POINT 8 X, Y ? 99,8
POINT 9 X, Y ? 106,11
POINT 10 X, Y ? 101,4
POINT 11 X, Y ? 103,2
POINT 12 X, Y ? 104,3
POINT 13 X, Y ? 106,3
POINT 14 X, Y ? 110,2
TITLE FOR GRAPH ? 100 OHM RESISTOR SAMPLE
MIN - MAX X VALUES ARE: 90 110
MIN - MAX Y VALUES ARE: 1 11
MIN/MAX X-AXIS SCALE: ? 0.6,120
MIN/MAX Y-AXIS SCALE: ? 0.15,

```



HISTOGRAM

GRAPH IS FOR:  
1. DISCRETE DATA POINTS  
2. A POLAR FUNCTION

POLAR FUNCTION MUST BE DEFINED IN LINE 152. FOR EXAMPLE:

$$152 R(\Theta) = 1 + \cos(1/57.2957\Theta)$$

DESCRIBES A CARDIOID.

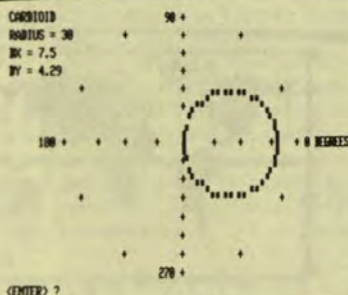
ENTER CHOICE ? 2

GRAPH TITLE (MAXIMUM 20 CHARACTERS) ? ARCHIMEDEAN SPIRAL

```

NUMBER OF DATA POINTS ? 20
MAGNITUDE, ANGLE ? 1,2
MAGNITUDE, ANGLE ? 2,4
MAGNITUDE, ANGLE ? 3,5
MAGNITUDE, ANGLE ? 3
?? 5
MAGNITUDE, ANGLE ? 4,6
MAGNITUDE, ANGLE ? 5,7

```

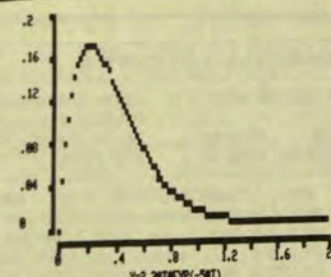


POLAR PLOTTING

```

2
SAMPLE PROGRAM FOR PLOTTING A FUNCTION USING PCARTXY
MINIMUM AND MAXIMUM VALUES OF T TO BE PLOTTED ? 0,2
TITLE FOR GRAPH ? Y=2.30THCP(-50T)
CURRENT MIN - MAX X VALUES ARE: 0 2
CURRENT MIN - MAX Y VALUES ARE: 0 .169225
DESIRED MIN/MAX X-AXIS SCALE: ? 0,2
DESIRED MIN/MAX Y-AXIS SCALE: ? 0,2

```



CARTESIAN PLOT

cartesian plots (data points), semilogarithmic plots, log-log plots, and polar plots. The program for polar plots is complete for discrete data points. The instruction booklet gives you sample programs for the other plots except for semilog plots. The booklet also explains how to merge one of the subroutines with your program so you may save a complete program on tape. The subroutines will also work in disk BASIC.

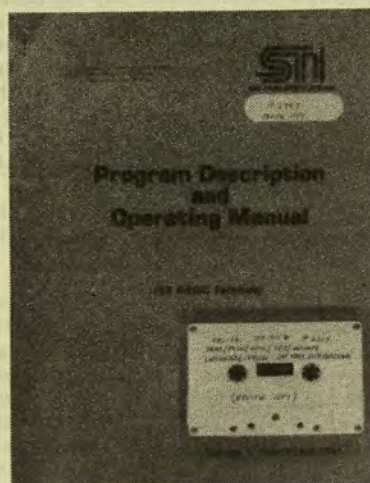
The brief sample programs in the booklet let you enter your own title on the graph, and enter the values you want plotted. These may be data points or minimum and maximum values and the scale. Then you write your program to go to the correct subroutine which does the plotting and shows you the graph. In all but the polar plots, the graph or chart shows the divisions or values along the side and bottom. The polar plots show the title and values in one corner of the plot.

If you can write programs and don't like to type, PLOTTING GRAPHS FOR VIDEO DISPLAY may save you some typing. Otherwise, it would be of just as much value if the routines were printed in the booklet, and it would probably cost less. ■

## **TREE2** (continued from page 67)

Mr. Behrman has sent us some information about himself as the author of TREE2. He has been producing custom microcomputer programs fulltime in the Evansville, Indiana, area since June, 1978. In his 50's, he has spent more than 30 years in broadcasting, the last 22 as program and operations manager of one of the Evansville TV stations. His first formal training in data processing began in 1967 at the University of Evansville. He owns both a Model I and Model II and specializes in TRS-80 custom software. Some of the programs he sells nationally, such as PROP (see the separate review), are modified versions of earlier custom programs. Others, like TREE2, reflect his own personal interests. "Complex custom business programming," he says, "requires support. That's why I confine such programming to a geographic area I can handle personally. The applications I sell nationally are reasonably simple to run, yet satisfy a specific software need." ■





## SATELLITE TRACKING

Level II 32K disk  
by William N. Barker  
and David G. Cooke  
from Sat Trak International  
c/o Computerland  
4543 Templeton Gap Road  
Colorado Springs, CO 80918

These satellite tracking programs consist of four main programs and a test program. They come on tape to be transferred to disk. The test program is included so you can make sure the other programs are running properly. The manual explains how to load and transfer the programs and how to run the test and enter the information. It explains what will appear on the screen in each program and how to answer the questions.

UPDATE lets you build a master file of orbit information for 30 to 50 satellites. The 21-page manual tells you how to get current information from NASA. The manual also shows what figures in NASA's information to use. You can transfer orbits of up to 10 satellites from the master list to a working list for everyday access. These lists can be changed easily to add new satellites or delete ones that are no longer of immediate interest.

| ORJ # | NAME  | PERIOD  | INCLIN  | ELSET | REV # | EPOCH   |
|-------|-------|---------|---------|-------|-------|---------|
| 1     | TEST  | 100.696 | 100.017 | 321   | 435   | 123.241 |
| 2     | 11404 | 1436.12 | 81.05   | 236   | 573   | 69.7851 |
| 3     | 11328 | 101.711 | 64.069  | 466   | 1420  | 73.976  |
| 4     | 11153 | 1436.11 | 80.221  | 567   | 722   | 73.8241 |
| 5     | 10703 | 103.139 | 98.8361 | 532   | 15387 | 71.5613 |
| 6     | 11060 | 101.947 | 99.8597 | 482   | 12466 | 74.8242 |
| 7     | 10382 | 91.483  | 51.6187 | 275   | 19919 | 74.3031 |
| 8     | 1     | 1440    | 1       | 1     | 1     | 2       |
| 9     | 1     | 1440    | 1       | 1     | 1     | 2       |
| 10    | 1     | 1440    | 1       | 1     | 1     | 2       |

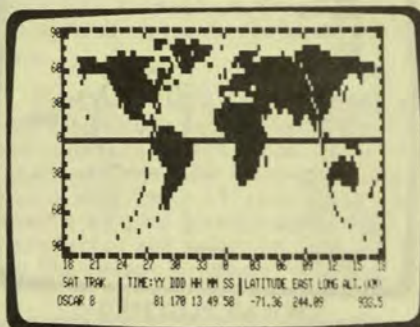
LIST OF SATELLITES

POSN/TRAK uses the information from the working list to plot the orbit of a satellite when you enter the time period and interval of time. The orbit can be shown on a map of the world or on a list.

LOOK uses the information to tell you if you can see one of these satellites. You enter your latitude, longitude, altitude, and the date and time period you want to look for the satellite. The program will tell you if the satellite will be visible to you during that time and where to look for it in the sky.

OBS (observe) lets you enter information about where and when you have seen one of the satellites on your working list. The program then figures the new orbit and shows all the information needed to update the master file.

The programs aren't as easy to use as they might be. But anyone interested in the satellites would be



| TIME              | LATITUDE | EAST LONG. | RA      | DEC     | ALTITUDE |
|-------------------|----------|------------|---------|---------|----------|
| YY MM DD HH MM SS | DEGREES  | DEGREES    | DEGREES | DEGREES | KM       |
| 81 170 13 0 0     | 75.8312  | 66.2202    | 168.085 | 75.7511 | 921.430  |
| 81 170 13 2 0     | 68.2675  | 39.2925    | 142.459 | 68.2113 | 921.224  |
| 81 170 13 4 0     | 68.7574  | 355.395    | 99.0625 | 68.7442 | 928.511  |
| 81 170 13 6 0     | 76.9678  | 324.248    | 68.4164 | 76.8957 | 919.325  |
| 81 170 13 8 0     | 71.255   | 308.95     | 53.6194 | 71.1524 | 917.608  |
| 81 170 13 10 0    | 64.9143  | 308.636    | 45.0866 | 64.7049 | 915.679  |

PATH OF OSCAR 8

| TIME              | AZIMUTH | ELEVATION | RA      | DEC      | RANGE   |
|-------------------|---------|-----------|---------|----------|---------|
| YY MM DD HH MM SS | DEGREES | DEGREES   | DEGREES | DEGREES  | KM      |
| 81 171 12 49 42   | 237.83  | 18.4096   | 161.508 | -17.1825 | 2568.56 |
| 81 171 12 50 42   | 247.38  | 12.6591   | 156.696 | -8.88358 | 2406.06 |
| 81 171 12 51 42   | 258.383 | 14.217    | 151.804 | -8.78521 | 2306.1  |
| 81 171 12 52 42   | 269.59  | 14.682    | 144.694 | -8.04524 | 2272.89 |

WHEN TO LOOK

willing to overlook this. If you wanted information about a satellite for March 2, 1981, from 9:30 PM to 11:00 PM, you would enter the information as 81,59,21,30,23,00. This translates as year 81, day 59, and the time. The manual has a chart to help change the day of the month to the day of the year. It also explains that the times should be changed to Greenwich Mean Time, and that Daylight Savings Time must be accounted for. Entering the information is a little awkward the first few times, but after that it is easier.

The manual includes a 2-page glossary of some of the terms. For example, the meaning of Elevation is "The angular distance of an object above the observers local horizon, measured on a vertical circle." Some of the definitions may send you to other books to look for information in a simpler form.

### SATELLITE OSCAR 8

ENTER OBSERVED CULMINATION TIME AS-  
YY,MM,DD,HH,MM,SS USE COMMS  
? 81,171,12,49,59

OBSERVATION SITE N 38.9 E 121.1 ALT 2000 FT MSL

CORRECTION FOR OSCAR 8 10703 EPOCH DAY 71 AT 13.4716 HRS  
NEW EPOCH 171 AT 12.8331 HRS  
PERIOD 103.139 MIN. INCLINATION 98.8361 DEG.

### YOUR OBSERVATION

| PARAMETER NAME     | DATA BASE NUMBER | HIGH ELS OLD EPOCH | UNITS    | NEW EPOCH  |
|--------------------|------------------|--------------------|----------|------------|
| SATELLITE NUMBER   | 5                | 10703              | -        | 10703      |
| EPOCH YEAR         | 81               | 81                 | YEARS    | 81         |
| EPOCH DAY          | 71               | 71                 | DAYS     | 171        |
| EPOCH FRACTION DAY | 561318           | 561318             | DEC. DAY | 561318     |
| PERIOD DECAY RATE  | 103.139          | 103.139            | PERIOD   | 103.139    |
| ELSET NUMBER       | 532              | 532                | ELSET    | 532        |
| INCLINATION        | 98.8361          | 98.8361            | DEGREES  | 98.8361    |
| RIGHT ASCENSION    | 111.444          | 111.444            | DEGREES  | 287.479    |
| ECCENTRICITY       | 0.000000         | 0.000000           | -        | 0.79462-04 |
| ARGUMENT OF PERI.  | 0.000000         | 0.000000           | DEGREES  | 166.700    |
| MEAN ANOMALY       | 277.801          | 277.801            | DEGREES  | 277.801    |
| MEAN MOTION        | 13.9618          | 13.9618            | REVS/DAY | 13.9618    |
| REV NUMBER         | 15387            | 15387              | REVS     | 15387      |

COPY NEW ELEMENTS FOR INPUT TO PROGRAM (UPDATE)?

### NEW DATA

#### SATELLITE TO UPDATE

- COMMON NAME: OSCAR 8
- NUMBER: 10703
- EPOCH YEAR: 81
- EPOCH DAY: 71
- FRACTION DAY: 561318
- PERIOD: 103.139
- ELSET: 532
- INCLINATION: 98.8361
- RIGHT ASC. OF NODE: 111.444
- ECCENTRICITY: 0.000000
- ARG. OF PERIGEE: 0.000000
- MEAN ANOMALY: 277.801
- MEAN MOTION: 13.9618
- EPOCH REVOLUTIONS: 15387

CHANGE (LINE NUMBER) OR (C=DELETE E=EXIT)?

UPDATED INFORMATION

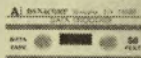






DYNACOMP

# DATA SMOOTHER



DYNACOMP, Inc. 4 Rippingale Road  
Pittsford, NY 14534

## DATA SMOOTHER

Level II 16K tape  
from Dynacomp, Inc.  
6 Rippingale Road  
Pittsford, NY 14534

DATA SMOOTHER smooths out the peaks and valleys in a series of data. A businessman could obtain a 3- or 5-month moving average of a year's sales. A stock investor could smooth out the prices of a stock. A scientist could smooth out the results of an experiment. Electrical engineers and physicists could use the program. The moving average or linear smoothing is found by using "1" as the level of fit and "0" as the derivative. Level "2" will give the parabolic fit. The program provides for 5 levels of fit and 0, 1, and 2 as the derivatives.

You enter the number of points or items you want to be smoothed, how many items are to be averaged, the desired level of fit, and the desired derivative. Then you enter the points one at a time. You enter the width of the data plot, and are told it's maximum value. Then the plot appears on the screen. If there are more than 7 points and the plot is wider than 16, the plot scrolls off

▷ (Continued on page 84)

### DATA SMOOTHER FOR EQUALLY SPACED DATA SETS

INPUT THE NUMBER OF DATA POINTS IN SET: ? 12

HOW MANY POINTS ARE TO BE AVERAGED OVER: ? 3

WHAT IS THE DESIRED LEVEL OF FIT (1,2,3,4,5): ? 1

WHAT IS THE DESIRED DERIVATIVE (0,1,2): ? 0

### INPUT DATA AS PROMPTED:

1 ? 3279  
2 ? 2421  
3 ? 4864  
4 ? 3629  
5 ? 3180  
6 ? 4744  
7 ? 6181  
8 ? 3653  
9 ? 3418  
10 ? 1722  
11 ? 1235  
12 ? 2400

### INPUT DESIRED PLOT WIDTH: ? 16

0000 DATA PLOT (SCALED) 0000

MAXIMUM VALUE= 6181

```

1-1-1-1-1-
: : :
: : :
: : :
: : :
: : :
: : :
: : :
: : :
: : :
: : :
: : :
1-1-1-1-1-

```

```

1-1-1-1-1-
: : :
: : :
: : :
: : :
: : :
: : :
: : :
: : :
: : :
: : :
: : :
1-1-1-1-1-

```

CONTINUE? \_

### THE SMOOTHED DATA IS:

1 1900  
2 3521.33  
3 3638  
4 3891  
5 3851  
6 4781.67  
7 4859.33  
8 4417.33  
9 2531  
10 2125  
11 1788.33  
12 1214.33

CONTINUE? \_

5 3851  
6 4781.67  
7 4859.33  
8 4417.33  
9 2531  
10 2125  
11 1788.33  
12 1214.33

CONTINUE? Y

THE STANDARD DEVIATION BETWEEN THE SMOOTHED AND UNSMOOTHED DATA SETS IS 979.60

CONTINUE? \_

### CURRICULUM APPLICATIONS

© 1980 BY CURRICULUM APPLICATIONS, INC.

#### DIETING DINOSAUR SERIES

ANALYSIS FOR EDUCATIONAL COORDINATORS AND TEACHERS

#### PROGRAM EVOLUTION

For many years, word games based on The Hangman Game have become very popular with children. This type of game is simple, a lot of fun to play.

Since the rapid growth of microcomputers, many of word games based on this format have appeared. They contain a game which is fun to play with a computer which is fun to use. The computer is a natural for students.

There are some critics of the use of word games as a computer. They suggest that one of the most useful games for use with word and games and that the computer is not as effective for this use. Other critics suggest that there is always too much hanging and no enough good vocabulary enhancement. They of the authors available are fun to play only when the student gets the many words, which enhances the program. Most of them are designed for use on one player which makes them somewhat impractical for classroom use.

We cannot agree with the critics since they are correct for the most part. We agree, however, that the use of microcomputers for vocabulary skills is of great importance, but that microcomputers designed to enhance writing and spelling skills is better suited for the educational community with good reason. We live in a literacy-oriented world. Literacy and language skills are one and the same.

#### STUDENT MOTIVATION

Children love word games and computers. They also learn to compare and contrast and as we are two computers but only the author does. Teaching game programs participating in a class activity like a community center with students.

Children also love to learn and they like to learn. They enjoy being responsible for their own learning and they like to learn. It's not even fun if the game is a lot more. Learning is just easier.

#### VOCABULARY

Play word games to enhance vocabulary and spelling skills. Learning is just easier.

Play word games to enhance vocabulary and spelling skills. Learning is just easier.

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Play word games to enhance vocabulary and spelling skills. Learning is just easier.

## ROMAN BANQUET

### DIETING DINOSAUR SERIES

Level II 16K tape  
by Roger W. Neal  
from Curriculum Applications  
P. O. Box 264  
Arlington, MA 02174

ROMAN BANQUET is a Hangman game for one to eight players or teams to teach Latin. But it does not use the traditional hanging man. Instead, a pet dinosaur eats only the correct letters in the words. Other languages available in the DIETING DINOSAUR series include English, French and Spanish. All have sound.

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

WRITE DOWN THIS HINT !



Latitude is a derivative.

Figure 1. HINT

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

1----

CHOOSE A LETTER, Joan.



Figure 2. CHOOSE A LETTER

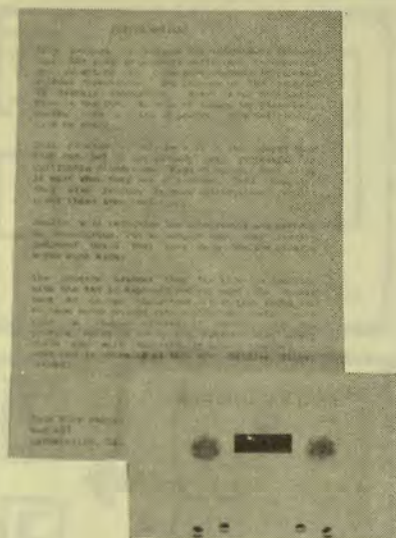


The programs will run on the Model III as well as the Model I, Level II. They come with a sample worksheet, a list of the words and their corresponding hints, and a very good set of instructions.

There are 230 Latin words and phrases in the vocabulary. Each word has a hint which is shown to the student when he first starts to guess the letters (Figure 1). For example, the hint "we will be present" is shown for the Latin word "aderimus." The hint for "incitant" is "present of incitant."

If the computer has lower case, both upper and lower case letters are shown. The student guesses or decides on a letter (Figure 2). This letter is fed to the dinosaur (Figure 3). If the letter is not correct, the dinosaur spits it out and smashes it with his foot or tail (Figure 4). If the letter is correct, the dinosaur

> (continued on page 78)



## POETRY WRITING

Level II 16K tape  
from Cybertext Corp.  
Box 860  
Arcata, CA 95521

POETRY WRITING is written for children. It introduces them to writing poetry. The computer, named William Blake, suggests five subjects for the poem. The child chooses one. The computer uses the subject as the poem's title. It gives the first line of the poem and asks the child to write the second line. It suggests an idea for the child's line. Then it and the child alternate until there is a six-line poem. Then the child can change the title of the poem. The whole poem is printed on the screen so the child can copy it. The program will run under disk BASIC.

The program does not care about rhyming words or meter. It suggests ideas for the poems and for lines in the poems. The child can begin to write basic poems. He or she is encouraged to use ideas instead of worrying about form. Free form poetry is popular now and would be a good way for a child to start. When the child is older or more confident,

HOW ABOUT ONE OF THESE:

- 1) A STRANGE ANIMAL
- 2) THE SOUND OF THE MIDDLE OF THE NIGHT
- 3) THE COLOR OF ANGER
- 4) THIS FEELING CALLED...
- 5) IN MY DREAMS I CAN FLY
- 6) SORRY, I DON'T LIKE ANY OF THESE IDEAS.

ENTER THE NUMBER OF THE SUBJECT YOU CHOOSE.? 5.

### START

You choose what subject you want to write a poem about.

he or she can be taught rhyming and meter. Poetry should not be scary to learn.

The program has a few problems. The child's line starts right after the idea for it. If it is a long line, only part of a word may be shown at the end of one screen line. The rest of the line will appear on the next screen line. Also, if the child suggests a new title, it is not centered above the poem. This could have been done easily.

One reviewer liked POETRY WRITING. Another reviewer did not because it told the child "Very Nice" no matter what the child wrote. You will have to decide for yourself.

IN MY DREAMS I CAN FLY

OF ALL THE TIMES MY DREAMS HAVE FLOWN

YOUR TURN.

WRITE A LINE THAT TELLS SOMETHING ABOUT THE KIND OF FLYING YOU DREAM ABOUT.? I DREAM ABOUT CLOUDS AND THE SUN.

IN MY DREAMS I CAN FLY

OF ALL THE TIMES MY DREAMS HAVE FLOWN  
I DREAM ABOUT CLOUDS AND THE SUN  
AND THE VERY BEST OF ALL IS WHEN  
I FLY HIGHEST IN THE SKY  
AND WHEN I FLY MY DREAM BACK HOME AGAIN

YOUR TURN AGAIN.

WRITE A LINE (OR LINES) THAT TELL SOMETHING ABOUT HOW YOU FEEL WHEN THE DREAM IS OVER.? I WISH I WAS FLYING EVEN HIGHER.

### WRITING THE POEM

The computer writes the first line and suggests what you might write in the second line. After you write this line, it writes the next line and gives you suggestions for your line.

NICE TITLE, JENNIE. HERE'S THE WHOLE POEM...

I FLY

OF ALL THE TIMES MY DREAMS HAVE FLOWN  
I DREAM ABOUT CLOUDS AND THE SUN  
AND THE VERY BEST OF ALL IS WHEN  
I FLY HIGHEST IN THE SKY  
AND WHEN I FLY MY DREAM BACK HOME AGAIN  
I WISH I WAS FLYING EVEN HIGHER

THANKS VERY MUCH, JENNIE  
I'LL HOLD HERE IN CASE YOU WANT TO COPY THE POEM.  
WHEN YOU FINISH, TOUCH 'ENTER'.

### TITLE

You may make up your own title. Then the whole poem is printed on the screen. You can copy it down if you want to.



Figure 3. FEEDING THE DINOSAUR



Figure 4. INCORRECT LETTER



Figure 5. COMMENT





**K-8 MATH**  
Level II 32K disk  
from Radio Shack  
700 One Tandy Center  
Fort Worth, TX 76102

K-8 MATH with Student Management is a series of programs to teach basic mathematics to children in Kindergarten through Eighth Grade. Both the Model I and the Model III versions come on a series of five disks. There are separate programs for Kindergarten through Third Grade and for higher addition, subtraction, multiplication and division. The programs come with a Cross-Reference Manual that coordinates the lessons with six of the most commonly-used math basals.

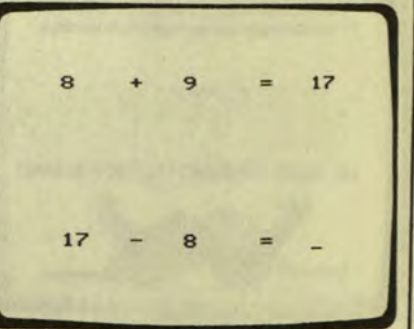
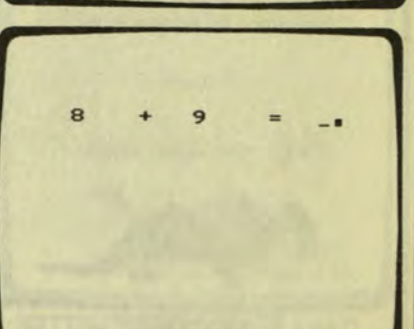
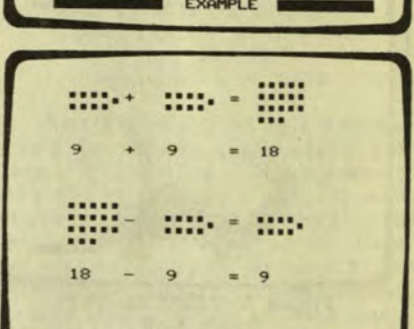
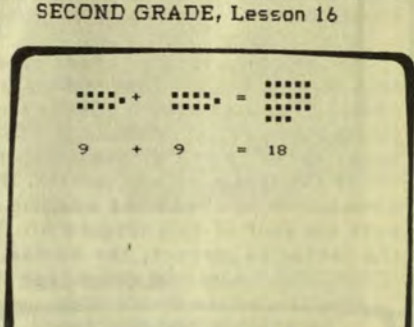
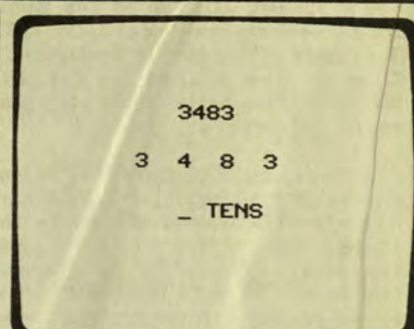
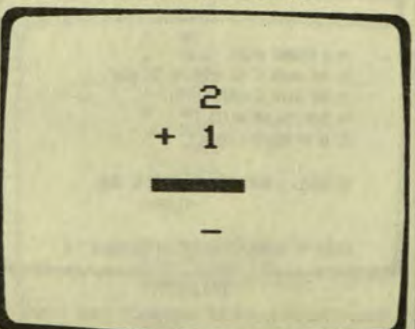
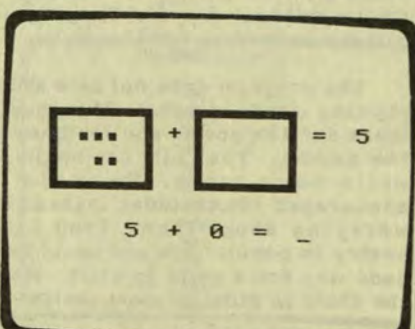
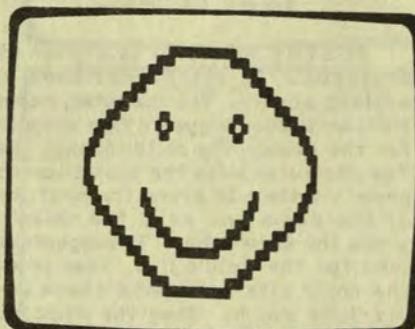
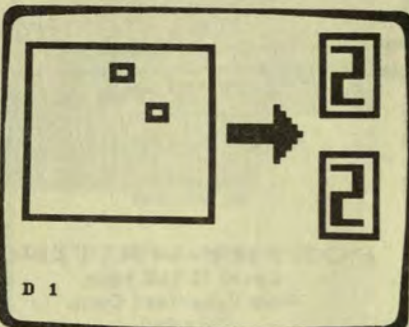
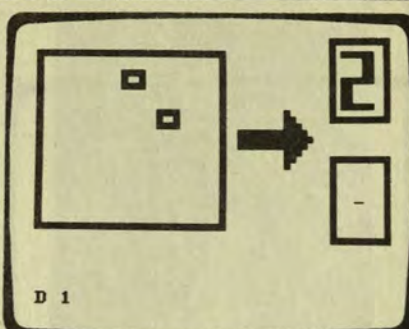
Kindergarten teaches counting in 12 lessons. The other programs have from 36 to 70 lessons each. The reference manual explains what each lesson contains. Each program keeps track of the results for up to 250 students and will give the teacher a report when requested. There is a skill-building section and a test section in each program, and a placement level section in all but Kindergarten.

The teacher can set the number of questions and a time limit for the students. The student may choose the lesson to work on.

| KINDERGARTEN |       |      |        |           |         |
|--------------|-------|------|--------|-----------|---------|
| DATE         | NAME  | HOME | LESSON | # ANSWERS | % RIGHT |
| 1/8/82       | JILL  | S.D. | 1      | 26        | 84      |
| 1/8/82       | SUSAN | S.D. | 4      | 22        | 98      |
| 1/8/82       | JOE   | S.D. | 8      | 26        | 73      |
| 1/8/82       | END   | S.D. | 2      | 36        | 100     |

PRINT REPORT ON LINE PRINTER? (Y/N):

TEACHER'S REPORT





$$\boxed{\square\square\square\square\square\square\square} = 7 \quad 7 \times 1 = 7$$

EXAMPLE

$$\begin{array}{r} 698 \\ + 159 \\ \hline \end{array}$$

..

$$\begin{array}{r} 85497 \\ \times 73 \\ \hline \end{array}$$

.....

$$\boxed{\square\square\square\square\square\square\square} = 7 \quad 7 \times 1 = 7$$

$$1 \times 7 = 7$$

EXAMPLE

$$\begin{array}{r} \phantom{0}698 \\ + 159 \\ \hline \end{array}$$

..7

$$\begin{array}{r} \phantom{0}85497 \\ \times 73 \\ \hline \end{array}$$

.....1

$$\boxed{\square\square\square\square} = \phantom{0}$$

$$\begin{array}{r} \phantom{0}1698 \\ + 159 \\ \hline \end{array}$$

..7

$$\begin{array}{r} \phantom{0}285497 \\ \times 73 \\ \hline \end{array}$$

.....1

$$\boxed{\square\square\square\square} = 4 \quad 4 \times 1 = \phantom{0}$$

$$\begin{array}{r} \phantom{0}1698 \\ + 159 \\ \hline \end{array}$$

..57

$$\begin{array}{r} \phantom{0}85497 \\ \times 73 \\ \hline 256271 \\ \hline \end{array}$$

.....9

$$\boxed{\square\square\square\square} = 4 \quad 4 \times 1 = 4$$

$$1 \times 4 = \phantom{0}$$

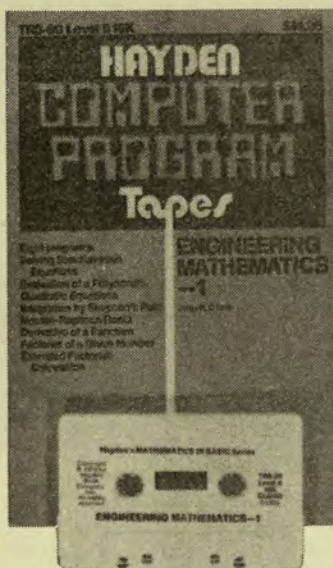
$$\begin{array}{r} \phantom{0}11698 \\ + 159 \\ \hline \end{array}$$

..57

$$\begin{array}{r} 85497 \\ \times 73 \\ \hline 256271 \\ 598479 \\ \hline \end{array}$$

.....1





## ENGINEERING MATHEMATICS

Level II 16K tape  
by Jules H. Gilder  
from Hayden Publishing Co.  
50 Essex Street  
Rochelle Park, NJ 07662

**ENGINEERING MATHEMATICS** is written to help engineers solve mathematical problems. It can also be useful to others who work with equations or functions. The program has eight sections, each solving one type of problem. It comes with a user's guide which explains each type of problem and what formula is used to find the solution. The guide also tells you where the calculations for each formula are done in the program. Five of the sections are complete. The others require you to change information in a program line. Each section asks, "Use again? (Yes = 1, No = 0)?" If you enter "0" you return to the main menu and may do some other calculation. The program will run under disk BASIC.

**SOLVING SIMULTANEOUS EQUATIONS** is one of the most common problems in science and engineering. This section of the program uses Gaussian Elimination to solve a system of linear simultaneous equations. You may solve up to 10 equations at one time. You enter the number of equations and then the values of the coefficients for each, one at a time. You will be shown the solution or told if a unique solution cannot be found.

Polynomials are used in everything from engineering to

finance. In **EVALUATION OF A POLYNOMIAL**, you enter one at a time the coefficients of the polynomial, the order or highest power, and a value to be evaluated. Then you are shown the polynomial using that value and may enter another value for the same coefficients.

**QUADRATIC EQUATIONS** are used by engineers and scientists. You can use this section to solve for real, complex, and repeating roots. You enter the three coefficients and are shown the roots.

**INTEGRATION BY SIMPSON'S RULE** is used for data or function integration. If you want to integrate data, you enter the even number of spaces the interval has been divided into and the width of the interval. You are then told the integral. If

you want to integrate a function, you are told: "You must define it at line 2165 as 'Y(J) = 'your function'' and then type 'run 1995'. For example: 2165 Y(J) = X^2-25."

**NEWTON-RAPHSON ROOTS** finds the first positive real roots of an equation. Again, you are told you must define the equation in line 2460 and the derivative in line 2470, and you are given an example. Then you must type "Run 2350." Now you are given the positive real root of your equation.

**DERIVATIVE OF A FUNCTION** uses the "First Forward Difference Method" of calculation. The user's guide says, "The derivative or tangent of a curve at a particular point can be approximated by moving a small distance along the curve and then comparing the change in the Y coordinate to the change in the X coordinate." To use this section of the program, you must define your function in a program line number and then type "Run 2620." Then you enter the point at which you want the derivative evaluated. You are told the derivative at that point and then may have it evaluated at another point.

**FACTORIAL OF A GIVEN NUMBER** computes the factorial of an integer as large as the TRS-80 can handle. All you enter is the integer, and you are shown the factorial. **EXTENDED FACTORIAL CALCULATION** will handle numbers even larger. Then the factorial is shown written in words as a number times 10 to a power, rather than in the usual numerical form.

I have some of the same hesitations about **ENGINEERING MATHEMATICS** as I did about **GENERAL MATHEMATICS**. The program requires that you use "1" for "Yes" and "0" for "No." And several sections require that you change program lines. Other than that, you must decide for yourself if you need the problem-solving ability of this program. ■

## PROP

(continued from page 42)

with what property. But the expense account numbers are shown at the top of the screen when you enter expenses, which is a help (Figure 6).

If you want to know the monthly and yearly totals of income and expenses for rental properties, **PROP** will keep the records for you. If you need to know each amount you entered in each category, this program will not do what you want. ■

### EVALUATION OF A POLYNOMIAL

THIS PROGRAM EVALUATES POLYNOMIALS. TO USE IT, YOU MUST ENTER THE COEFFICIENTS OF THE POLYNOMIAL, THE ORDER (HIGHEST POWER) OF THE POLYNOMIAL, AND A VALUE FOR X TO BE EVALUATED.

ENTER THE ORDER OF THE POLYNOMIAL? 5

ENTER THE COEFFICIENTS

AK 1) = 72  
AK 2) = 73  
AK 3) = 74  
AK 4) = 75

### POLYNOMIAL PROBLEM

AK 1) = 72  
AK 2) = 73  
AK 3) = 74  
AK 4) = 75  
AK 5) = 76  
AK 6) = 77

WHAT IS THE VALUE OF X? 3

THE POLYNOMIAL:

+ 2 X^5 + 3 X^4 + 4 X^3 + 5 X^2 + 6 X + 7 = 90

FOR X = 3

DO YOU WANT TO TRY ANOTHER VALUE OF X?

### POLYNOMIAL SOLUTION

#### INTEGRATION BY SIMPSON'S RULE

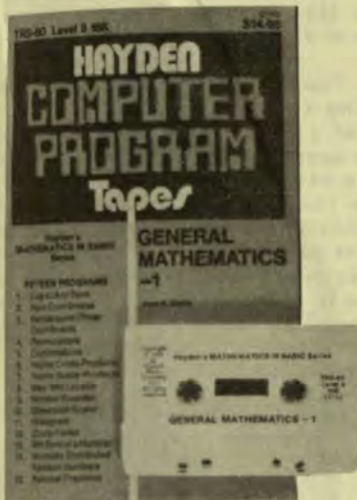
THIS PROGRAM PERFORMS INTEGRATION ACCORDING TO SIMPSON'S RULE. YOU MAY INTEGRATE EITHER A FUNCTION OR DATA. IF YOU ARE ENTERING DATA YOU MUST ENTER THE NUMBER OF SPACES INTO WHICH THE INTEGRATION INTERVAL HAS BEEN DIVIDED. THIS MUST BE AN EVEN NUMBER. YOU MUST ALSO ENTER THE WIDTH OF EACH SPACE. IF YOU ARE INTEGRATING A FUNCTION, THEN YOU MUST DEFINE IT AT LINE 2165 AS 'Y(J) = 'YOUR FUNCTION'' AND THEN TYPE 'RUN 1995'. FOR EXAMPLE:

2165 Y(J) = X^2-25

WHICH INTEGRAL (1) DATA OR (2) FUNCTION?

#### INTEGRATION BY SIMPSON'S RULE





# GENERAL MATHEMATICS

Level II 16K tape  
by Jules H. Gilder  
from Hayden Publishing Co.  
50 Essex Street  
Rochelle Park, NJ 07662

GENERAL MATHEMATICS will solve fifteen types of math problems. The program comes with a user's guide to briefly explain each type of mathematics problem and how the program solves it. The guide often shows the algebraic formula used to solve the problem and where to find the formula in the program. Some of the sections ask you to enter one number at a time. Others ask you to enter two or three numbers separated by a comma. Each asks if you want to use that section again. You must enter 1 for "Yes" or 0 for "No." If you enter "0," you return to the main list and may solve a different type of problem. The program will run under disk BASIC.

LOG TO ANY BASE will show you the logarithm of any number to any base when you enter the number and

the base. The number cannot be zero or a minus number.

Converting data from one frame of reference to another is frequently necessary in the study of physics. NEW COORDINATES asks you to enter the number of data points, the new origin, the degrees of rotation, and the old location of the data points. The original origin is assumed to be at points 0,0. You may correct the entry if you entered a wrong number. Then you are shown the data points on the new axis.

RECTANGULAR TO POLAR COORDINATES (and vice versa) is common in solving electrical engineering problems. If you want to enter polar coordinates, you press "P," and if you want to enter rectangular coordinates, you may press any other key. Then you enter the coordinates and you are shown the converted ones.

PERMUTATIONS is used in some probability problems. This program figures how many ways a number of objects can be arranged in ordered groups. You enter the number of objects and then the number in each group. The program will tell you the number of permutations of these objects. For instance, if you have 6 objects, there are 120 permutations of them if they are taken 3 at a time or 3 in one group. COMBINATIONS is similar to PERMUTATIONS but the groups do not need to be in a certain order.

VECTOR CROSS PRODUCTS figures the cross product or vector of two other vectors. You enter the three values for the two vectors and are shown the cross product for each value. VECTOR SCALAR PRODUCTS figures the dot product of two vectors when you enter the three values for the two vectors.

MAXIMUM/MINIMUM LOCATOR lets you enter a lot of numbers and

then tells you the smallest and the largest number entered. First you enter the total numbers you want to work with and then each number. This section of the program may be of more benefit used as a subroutine if you write your own program. Then the numbers would be entered for some other necessary use. By itself, it does not seem worth while.

NUMBER ROUNDER rounds off numbers with lots of decimal places. You enter how many places you want the number rounded to and then the number. However, either the TRS-80 computer or the program rounds off your number automatically to four decimal places to start with.

DIMENSION SCALER figures how to scale down a drawing to a smaller size. You enter the largest dimension of the object and of your drawing, and the units of measure of each. You enter how many dimensions you want scaled down and then each dimension. You are shown the scale factor, the original dimension, and the reduced dimension for each figure you entered. Then you can draw your object to the new scale.

HISTOGRAM plots a histogram from your function. You are told: "You enter the function to be plotted by typing:  
'2860 Y = your expression (e.g. SIN(X))' <CR>  
then type '2810 <CR>  
then type 'RUN 2800 <CR>'"  
After the plot use any key (except BREAK) to stop."

The questions by the non-programmer who looked at this program were, "Do you type the apostrophe? What is <CR>?" And if you are using NEWDOS/80 instead of TRSDOS, you must type more than just "2810" to delete a line. When you are actually using this section, you enter the YMIN and YMAX and the XMIN and XMAX and the Delta X. Then you are shown the histogram. Then, if you

▷ (continued on page 87)

## NEW COORDINATES

THIS PROGRAM WILL CALCULATE THE COORDINATES OF DATA POINTS IN A RECTANGULAR COORDINATE SYSTEM THAT HAS BEEN ROTATED OR TRANSLATED TO A NEW ORIGIN. THE ORIGINAL ORIGIN IS ASSUMED TO BE AT THE POINT (0,0).

HOW MANY DATA POINTS? 2  
ENTER NEW ORIGIN (X,Y)? 4,10  
ENTER DEGREES OF ROTATION? 60  
ENTER THE OLD LOCATION OF POINT X(1), Y(1)? 3,6  
ENTER THE OLD LOCATION OF POINT X(2), Y(2)? 7,4.7  
DO YOU NEED TO CORRECT ANY ENTRIES (YES = 1, NO = 0)?

## NEW COORDINATES

This is the information you enter so the program can calculate new coordinates.

## DATA POINTS ON THE NEW AXIS ARE:

X(1) = -3.96      Y(1) = -1.13  
X(2) = -2.6      Y(2) = -1.5

USE AGAIN? (YES = 1, NO = 0)? 0

## DATA POINTS ON NEW AXIS

The new coordinates are calculated and shown to you in this manner.

## NUMBER ROUNDER

THIS PROGRAM WILL ROUND OFF ANY GIVEN NUMBER TO ANY NUMBER OF PLACES.

ENTER NUMBER? 28.374568345

ROUND TO HOW MANY PLACES? 6

28.3746 ROUNDED TO 6 PLACES IS 28.3746  
USE AGAIN (YES=1, NO=0)? 0

## NUMBER ROUNDER

I wanted the number rounded to six decimal places but I was only given four.



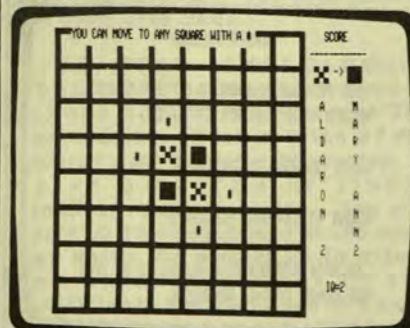


# **OTHELLO** Level II 16K tape from Instant Software Peterborough, NH 03458

This program plays OTHELLO. You can play against the computer, or two people can play against each other and the computer will keep score. You can also watch a demonstration game. The program will run on the Model III.

You use the arrow keys to position the blinking cursor on the square you want. Then you press "Enter" to record your marker. If the square is not legal, the correct squares are shown so you can move your cursor to the legal square. Your markers are solid blocks and the computer's are crosses. After each move, the new marker and any changed markers blink for a while so you can see what was done.

You can set the I.Q. or difficulty level from 1 to 7. You can change it at any time, even in the middle of a game. You can ask for help from the computer and will be shown a suggested move, but you don't have



## **START**

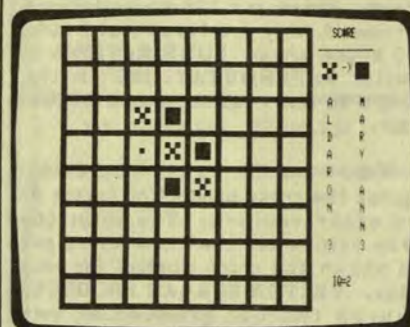
I entered an illegal move at the start of the game. Alderon (the computer) showed me the legal moves.

to take this advice. You can pass the first move so that the computer goes first, or you can pass if you think you cannot make a legal move. If you do have any legal moves, the computer will show them to you.

You can temporarily switch sides so you can decide the value of possible moves. You can stay with the new identity. You can look at your previous position. You can quit the game and start a new one. You can see what the computer is thinking by pressing a key. You can force the computer to make a hasty move while it is thinking.

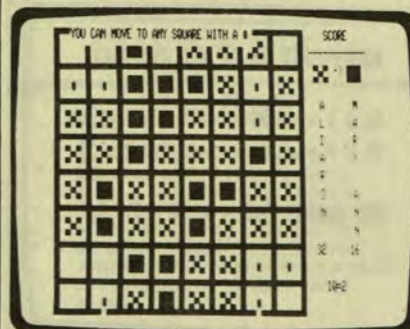
If there are two human players, the two names are shown on the screen instead of "Alderon" for the computer and your name. The scores are shown below the name. There are special keys you can use to change or delete a marker on the board so you can set it up to continue an older game.

The directions are thorough except for three things. If you want to quit the game and start a new one, you must press "Y" for "yes" after pressing the "Q" key. If you try to enter an illegal move, you aren't told "Illegal Move." You are just shown



## **MY MOVE**

I have placed the small cursor on the block where I want to put my piece. Now I will press "Enter" to place the piece there.



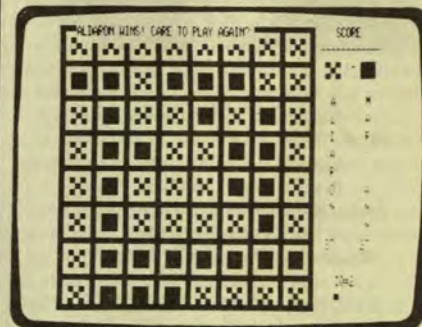
## **HELP**

The board is filling up. My score is only 16 to Alderon's 32 so I asked for help. I am shown the legal moves.

the legal moves. This may confuse you at first.

You are told to load the tape by using the "CLOAD" command. The first part of the program will load the second part. You are told not to turn off the tape recorder until you see the "READY" prompt. But the "READY" prompt is shown after the first part of the program. Then you must type "RUN." Now you are told how to load the rest of the program but you are not warned again to leave the tape recorder on until you see the second "READY" prompt.

OTHELLO plays a good game.



## **ALDERON WINS!**

I lost by a score of 37 to 27. Now I can play again if I want. ■

## **ROMAN**

(continued from page 72)

sends it to the proper places in the word being guessed and the student wins points. There is no penalty for an incorrect guess.

The teacher can make adjustments to the program. The BREAK key can be enabled or disabled. The vocabulary can be changed or the number of words changed. The hints can be eliminated. The words can be given in order rather than at random. The reading speed can be changed.

The pace of the game is slow. The author noted that the delay was to allow "for 30 kids moving around the room comparing notes."

The dinosaur makes humorous comments when an incorrect letter is chosen (Figure 5). The comments are not aimed at the student but at the food. Most of them refer to imaginary food, but a few of them refer to real food. I, for one, happen to like lima beans and liver. Other than the slowness for one or two players and a few references to disliking a real food, I like the program. ■



When the game is over, I can see the score sheet. My first ball was a strike. I had a spare in the fifth,

eighth and ninth frames. My total score was 119 (Fig. 10).



### TENPINS

Level II 16K disk or tape  
by John Allen  
from Acorn Software  
634 N. Carolina Ave. S.E.  
Washington, DC 20003

I put the disk into the computer and I'm in a bowling alley. I'm going to play TENPINS, an action game for one to four players with sound. I can play it on the Model I or Model III.

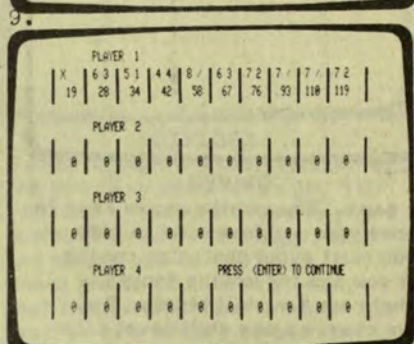
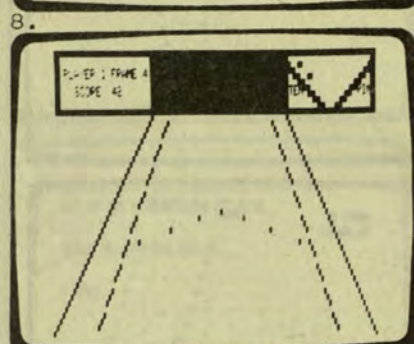
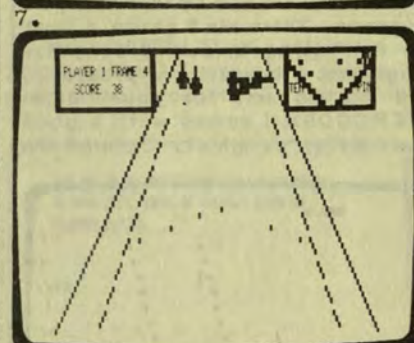
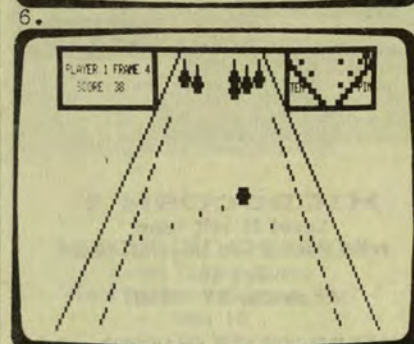
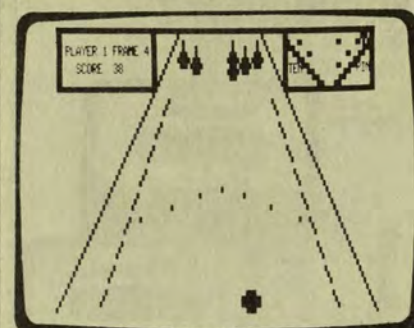
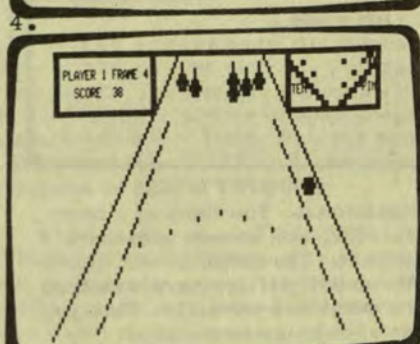
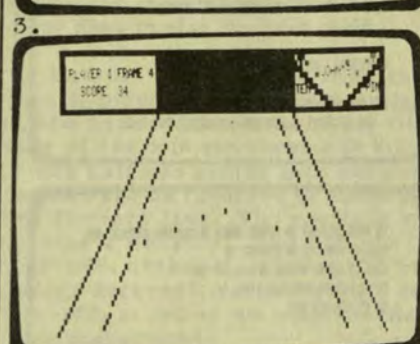
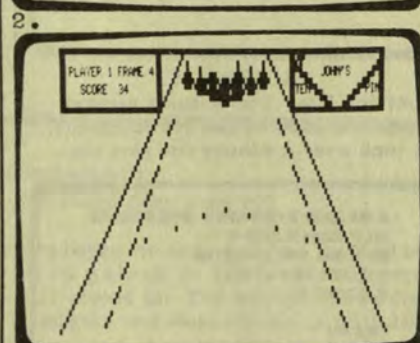
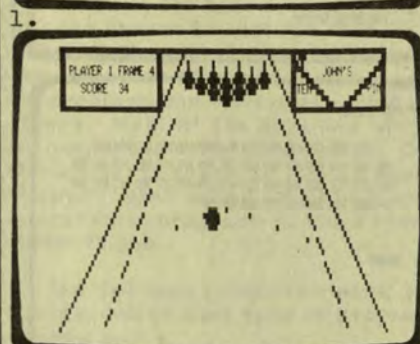
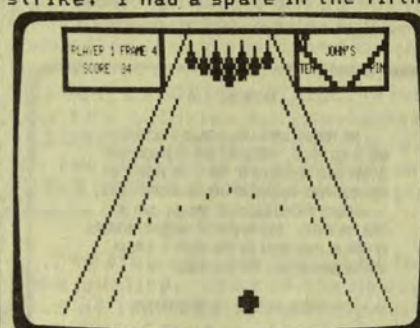
I've played three frames and am starting my fourth. The upper left corner of the screen tells me that my score is 34 so far. The ball has come down the right side. I've moved the ball into place to release it (Fig. 1).

I'll play a simple game this time and just let the ball roll, listening to it as it moves (Fig. 2). Now the ball is among the pins, knocking some of them down and I can hear them fall (Fig. 3). The back screen comes down, removing the fallen pins (Fig. 4).

The ball comes back to me for my second play (Fig. 5). I see in the upper right corner the exact position of the remaining pins. The four pins I knocked down bring my score to 38.

The ball is where I want to release it. I will play this ball quietly without sound (Fig. 6). This time I'm playing an advanced game. I've given it some extra force. Now that the ball is part way down the alley, I'll add a little direction and then a little spin (Fig. 7).

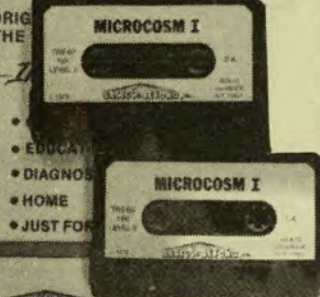
It looks like I've knocked down the four pins on the right (Fig. 8). When the back screen comes down and clears the pins, I can see the two pins I missed and my new score (Fig. 9).





# MICROCOSM I

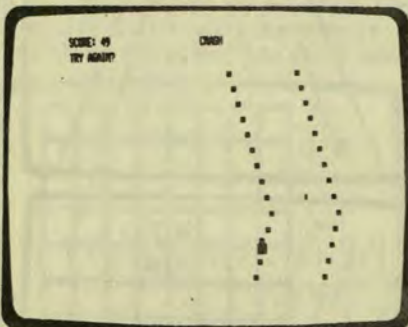
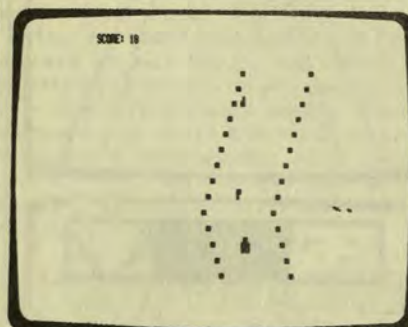
30 ORIGINAL  
FOR THE



**BASICS & BEYOND, Inc.**  
BOX 10 • AMAWALK, N.Y. 10501

**MICROCOSM I**  
Level II 16K tape  
from Basics and Beyond, Inc.  
Box 10  
Amawalk, NY 10501

MICROCOSM I is a set of 30 programs. There are 9 games, 6 "just for fun" programs, 2 diagnostic programs, 6 educational programs, and 7 programs for your home. MICROCOSM I comes with a good instruction pamphlet. Each of the



## DRIVER

A game. You use the arrow keys to move your car from side to side. You must avoid obstacles coming at you and the moving fences. There are ten skill levels. You can choose a new skill level after each crash, and try again.

programs also has its instructions shown on the screen. The programs will run on the Model I or Model III, and will run under 48K disk BASIC.

## FACTORIALS

THE PRODUCT 12345...N IS CALLED N FACTORIAL AND IS WRITTEN N!. FACTORIALS TEND TO BE VERY LARGE SO THAT HAND CALCULATION OF THEM IS TOO TENUOUS, AND MOST ELECTRONIC CALCULATORS LACK THE ACCURACY NEEDED TO CALCULATE FACTORIALS LARGER THAN 13!. 100! HAS OVER 150 DIGITS. THIS PROGRAM CAN CALCULATE FACTORIALS AS HIGH AS 2000! WHICH HAS 5736 DIGITS -- ALTHOUGH THIS CALCULATION WILL TAKE MANY HOURS.

IS A LINE PRINTER AVAILABLE FOR THE RESULT? NO

FACTORIAL OF? 99.

## 99! EQUALS:

933 262 154 439 441 526 016 992 308 562 667 004 967  
159 682 643 816 214 685 929 638 952 175 999 932 299 156 009  
414 639 761 565 182 862 536 979 280 272 237 582 511 852 189  
168 648 000 000 000 000 000 000.

READY

>

## FACTORIALS

Just for Fun. You enter a number from 1 to 2000 to see its factorial. It took over a minute for this one.

IS YOUR COUNTRY IN EITHER NORTH OR CENTRAL AMERICA? YES  
DOES IT CONTAIN 50 STATES? NO  
DOES IT SHARE BORDER WITH U.S.? YES  
IS IT LARGER THAN U.S.? YES  
IS IT CUBAN? NO

I NEED HELP --

WHAT COUNTRY WERE YOU THINKING OF? MEXICO

I BELIEVE I KNOW ABOUT MEXICO.

TRY THE SAME COUNTRY AGAIN --

YOU ANSWERED A QUESTION INCORRECTLY THIS TIME.

IS YOUR COUNTRY IN EITHER NORTH OR CENTRAL AMERICA? YES  
DOES IT CONTAIN 50 STATES? NO  
DOES IT SHARE BORDER WITH U.S.? YES  
IS IT LARGER THAN U.S.? NO  
IS IT MEXICO? YES

LET'S TRY ANOTHER ...

## COUNTRY GUESS

Educational. You think of a country. Then, you answer questions about it. The computer will guess your country if you have answered the questions correctly. Then you can answer questions about another country.

The games include ELIMINATE, a board game; DRIVER, a race track game; FAKEOUT, a guessing game; WIPE-OUT, a dice game; MATCH-EM, a memory game for two players and CHALLENGE MATCH-EM, a memory game for one; SOUTH POLE, a strategy game; NEWS PHOTOGRAPHER, an action game to capture the subject in the viewfinder; and ATLANTIS, another strategy game. Many of the games have several levels of skill.

The "just for fun" programs include MAGIC SQUARES, which produces a magic square from your numbers; FACTORIALS, which shows you the factorial of your number; BIORHYTHMS, which shows you any 30-day biorhythm cycle for a beginning birthdate; MORSE CODE, to let you practice -- it doesn't teach you unless you are wrong; REMAINDER, which guesses your number; and DAY OF THE WEEK, which changes any date after January 1, 1600, to a day of the week.

The educational programs include MUSIC TRANSPOSITION, to transpose your music notes from one key to another; DIVISOR GAME, a game to teach factoring or dividing; COUNTRY GUESS, which guesses your country after asking you a few questions; MATH TABLES DRILLS, to drill you on multiplying, dividing,

THIS IS A CONFIDENCE TEST THAT VERIFIES THE PROPER OPERATION OF MANY OF THE FUNCTIONS, RELATIONS AND STATEMENTS AVAILABLE IN LEVEL II BASIC ON YOUR TRS-80.

IF THE FIRMWARE OF YOUR TRS-80 HAS BEEN DAMAGED IN A WAY THAT MIGHT AFFECT THE EXECUTION OF BASIC STATEMENTS, THIS CONFIDENCE TEST WILL HELP VERIFY THE PRESENCE OF THE PROBLEM.

IF A CONSISTENT ERROR IS DETECTED, SERVICE FROM AN AUTHORIZED RADIO SHACK SERVICE CENTER IS ADVISED.

INPUT 7.65432? \_

NO ERRORS FOUND.

READY

>

## INSTRUCTION TEST

Diagnostic. If your computer does not use a BASIC word like "LET" or "READ" correctly, you will see that message at the end of the program.



adding, and subtracting your number; SPELLING DRILL, which lets you enter your own practice words; and SPELLING REVIEW, which can drill you in almost 800 words in three difficulty levels.

The diagnostic programs include a MEMORY TEST to test any or all locations in your computer's memory, and INSTRUCTION TEST to make sure your computer uses the BASIC language properly.

The home programs include FLOWERING HOUSEPLANTS, which tells you the growing conditions of your plants or suggests plants for your growing conditions; METRIC CONVERSION, which converts measurements between English and Metric or between any two English or

Metric units; MORTGAGE, which shows you the payment schedule of principal and interest; HOME INSURANCE, which suggests an amount of insurance based on the type of home, number of rooms, and location; CALORIES - FOODS, to tell you the calories in your meal; CALORIES - INGREDIENTS, to tell you the calories in your recipe; and CHECKBOOK BALANCING to help you balance your checkbook.

The programs are not all of the same quality. Some of the games, most of the educational programs, and a few of the home programs offer you the chance to continue them, but many of the others just end. It is easy to enter information in many of the programs, but more complicated in others. Most of the programs won't let you enter wrong information. On the whole, it seems as though more thought went into the games and educational programs to make them easier to use.

We let our computer pick at random one of each type of program to show you. ■

#### METRIC CONVERSION PROGRAM

WHICH UNITS DO YOU WANT TO CONVERT?

- D - DISTANCE
- A - AREA
- V - VOLUME
- W - WEIGHT, MASS
- T - TEMPERATURE
- S - SPEED
- E - ENERGY
- P - POWER

#### METRIC CONVERSION

UNITS - WEIGHT, MASS

ENGLISH

METRIC

- |           |                |
|-----------|----------------|
| 1) POUNDS | 4) GRAMS       |
| 2) OUNCES | 5) KILOGRAMS   |
| 3) TONS   | 6) METRIC TONS |

CONVERT FROM POUNDS

TO: 5

#### FOOTBALL

(continued from page 62)

completed or not, and the number of yards gained or lost. But chance still comes in. The manual shows the strengths and weaknesses of both the teams and the players. You should study them to play the best game.

You can choose more than the type of offensive or defensive play in the game. The team winning the toss of the coin can receive or kick. If the ball was kicked into the end zone, it can be returned or taken on the 20-yard line. You can take or decline a penalty. You can punt, kick-off, attempt a field goal or onside kick-off, return a punt or kick-off, or return an unsuccessful field-goal attempt.

If the scoreboard display is disrupted on the screen, you can redraw it. You can ask the names of the offensive and defensive plays before you enter them. You can also look at a recap of what's happened in the game so far.

You can use FOOTBALL SIMULATION SYSTEM as just a game. But it is really a great deal more. It will particularly interest someone who wants to see what might happen in a real life game. ■

#### MICROCOSM II

Level II 16K tapes

from Basics & Beyond, Inc.

Box 10

Amawalk, NY 10501

MICROCOSM II is a collection of 20 programs. There are 6 games, 7 educational programs, 3 programs for

YOU ARE IN THE MUSIC ROOM WITH A GRAND PIANO TO YOUR LEFT. HANDS OF FRIENDLY ELVES ARE PLAYING FLUTES.

? H

YOU ARE IN A ROOM COVERED WITH FINGERPRINTS. ALL OF THE FINGERPRINTS ARE ALIVE.

THERE IS A SILVER BAR HERE.

? TAKE

#### EXPLORE

You enter just the abbreviation for the direction you want to go. You can take a treasure to add to your score. You may find danger, die, and be allowed to start over. There are a few random elements that change from time to time. The program is a little slow but easy for a beginner.

#### METRIC CONVERSION

A Home Program. You choose the kind of unit you want to convert. Then you choose the two units to convert between and the value. You can convert more units the same way, or you can choose another type of unit to convert.

#### METRIC CONVERSION

UNITS - WEIGHT, MASS

ENGLISH

METRIC

- |           |                |
|-----------|----------------|
| 1) POUNDS | 4) GRAMS       |
| 2) OUNCES | 5) KILOGRAMS   |
| 3) TONS   | 6) METRIC TONS |

CONVERT FROM POUNDS

TO: KILOGRAMS

ENTER VALUE (0 TO 9999)

45 POUNDS EQUALS 20.453 KILOGRAMS



the home, and 4 programs "just for fun." The programs come with a small manual giving brief directions for each program. Each program also has its directions shown on the computer screen. They will run on the Model III as well as the Model I, and will run under disk BASIC.

The games include SHOOTING GALLERY, with 9 skill levels, for 1 to 6 players to fire at objects passing by overhead; ISOLATION, a board game; PERSPECTIVE RACER -- try to steer your race car between the fence posts coming toward you; FISH, the old card game; DECIPHER, a word puzzle for 1 to 5 players at 3 difficulty levels; and EXPLORE, an adventure game to explore a cave,

find treasure, and avoid monsters.

The educational programs include BLANK SLATE, which lets you draw a sketch on the screen and save it on tape; STATE GUESS -- the computer guesses the state you are thinking of after you answer a few yes-no questions; PLANET FINDER, which shows you the orbital elements of the planets, the location, speed, and distance of each planet from Earth, or the right ascension, declination, and constellation for each planet, for the date you select; ALGEBRAIC FACTORING, a study and quiz on factoring polynomials; SPELLING BEE, for two players to spell a word

correctly after seeing its phonetic pronunciation spelled on the screen; PREFIX, a study and quiz on the meanings of common prefixes; and SUFFIX, a study and quiz on suffixes.

The programs for the home include ELECTRICAL USE, to tell you the cost of operating one or more appliances; FOLIAGE HOUSEPLANTS, to tell you the growing conditions for a plant or which plants are best for your growing conditions; and STAINS, which suggests ways to remove a stain.

The "just for fun" programs include DOODLE ART, which draws random "modern art" white and black blocks on your screen which can be saved to tape; ROMAN NUMERALS, where you can ask the computer for the answer or take a quiz on converting Roman numerals and Arabic numerals; BASE CONVERSION, to convert your number from one base to another; and TRIVIA QUIZ, a 50-question multiple choice quiz.

Most of the programs are easy to use. Many of them let you start over. Some are simple programs but most are thoughtfully done. Some could be replaced by a book but others could be useful. We let the computer choose at random one program in each category from MICROCOSM II to show you.

- (TO TERMINATE, TYPE 'Q')
1. FINDING COMMON FACTOR
  2. DIFFERENCE OF TWO SQUARES
  3. POLYNOMIAL --  $AX^2 + BX + C$  ( $A=1$ )
  4. POLYNOMIAL --  $AX^2 + BX + C$  ( $A \neq 1$ )
  5. GROUPING
  6. TWO CUBES
  7. POTPOURRI

WHICH OF THE ABOVE DO YOU WISH TO DO?

3. POLYNOMIAL --  $AX^2 + BX + C$  ( $A=1$ )

WHEN FACTORING A POLYNOMIAL OF THE FORM  $X^2 + BX + C$  WE KNOW THAT IF FACTORS EXIST, THEY MUST BE OF THE FORM:  $(X + NX)(X + M)$ .

MULTIPLYING THESE FACTORS PRODUCES THE PRODUCT:

$(X + NX)(X + M) = X^2 + (N+M)X + NM$

THEREFORE, YOU MUST TRY TO FIND TWO NUMBERS, N AND M, WHOSE PRODUCT IS C AND WHOSE SUM IS B.

HOW ABOUT SOME EXAMPLES...

PRESS ENTER TO CONTINUE

EXAMPLE NO. 2

$X^2 - 25X + 110$

CAN BE FACTORED AS:

$(X - 11)(X - 10)$

PRESS ENTER TO CONTINUE

**ALGEBRAIC FACTORING**  
Earlier instructions told you how to enter your answers. If you choose to study one of the first six methods, you will see a page of text and then about five examples. You can choose a 10-question quiz on any one method or on the "potpourri" collection of all methods.

HOW MANY KILOWATT HOURS OF ELECTRICITY DID YOU USE ON YOUR LAST BILL? 570

WHAT WAS THE COST (IN DOLLARS)? 25

DO YOU WANT A PRINTED COPY (ONLY IF YOU HAVE A PRINTER)? NO

IS THE ABOVE CORRECT?

APPLIANCE # 1

WHAT IS THE NAME OF THIS APPLIANCE? TOASTER

WHAT IS ITS WATTAGE? 1276

ESTIMATED TIME OF USAGE (IN DAYS-HOURS-MINUTES)? 0-0-10

10 MINUTES

IS THE ABOVE CORRECT?

| APPLIANCE | TIME USED  | COST   |
|-----------|------------|--------|
| TOASTER   | 10 MINUTES | 1 CENT |
| TOTAL =   |            | 1 CENT |

PRESS ENTER TO CONTINUE

### ELECTRICAL USE

You enter the kilowatt hours from your last electric bill and the dollar cost. You enter how many appliances you want, the name of the appliance, if you know watts or amps, the wattage or amperage for it, and the length of time you use it. Then you will see a list of the cost of using each appliance. You can have a printed list if you have a printer.

THIS PROGRAM CONVERTS A NUMBER FROM ONE BASE TO ANOTHER. YOU FIRST ENTER THE NUMBER AND BASE TO BE CONVERTED. YOU THEN ENTER THE BASE TO WHICH YOU WOULD LIKE YOUR NUMBER CONVERTED. YOU MAY USE ANY BASE BETWEEN 2 AND 36. IN SOME BASES, THE DIGITS AFTER "9" ARE REPRESENTED BY LETTERS OF THE ALPHABET. FOR EXAMPLE, "10" IN BASE 10 IS "A" IN BASE 12.

PRESS ENTER TO CONTINUE

(NUMBER, BASE)? 36, 10

ONE MOMENT PLEASE...

(TO BASE)? 16

36 IN BASE 10 IS 24 IN BASE 16

PRESS ENTER TO CONTINUE

### BASE CONVERSION

You can convert a number from a base of 10 to a base of 16 or vice versa. You can convert from or to any base from 2 to 36. You select the original base and the number, and then the new base. ■





# ASC II

January, 1981  
Level II 16K tape  
from ASC II

P. O. Box 516  
Valley Stream, NY 11582

ASC II is a monthly magazine which comes completely on cassette tape. The November, 1980, issue is reviewed separately. The authors of the programs in each issue are not always given.

One side of the tape contains a newsletter. The January Newsletter has short articles about New York's big show, computers, and programming hints. By trial and error you discover that the down and up arrows page through the newsletter.

The January, 1981, Title Page calls this the "Space Issue." It includes four space games and also an extra game after the newsletter.

After you have watched the title page program run for a while, you press "Break" to end it so you can CLOAD the next program.

You hide behind protective bases and fire at the aliens in SPACE GALLERY. The aliens fly overhead at three different speeds. The faster they fly, the more points you earn by hitting them. You move from side to side using two letter keys. You fire straight up at them by using the number keys to control the speed of your shot. Your protective bases are slowly destroyed by the aliens' fire and your own fire. If you earn enough points, you are given another protective base.

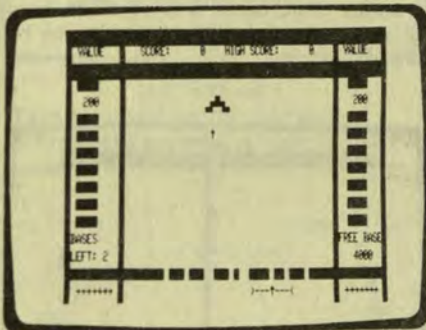
SPACE WARS, by David Koransky, is a game for two players. Each player uses letter keys to direct the movement of the ship, to stop the ship, and to fire at the other ship. Each ship starts with 2000 units of energy, which are used up as the lasers are fired. The ship can only fire in the same direction it is moving. The object is to destroy the opponent's ship.

SPACE TREK, by Michael Johnston, is a combination of luck, strategy, and skill. You must find and destroy the Klingons, using a limited amount of energy. The screen gives you information about your ship's condition and shows a star map of the quadrant you are in and a chart of the nearby quadrants. The chart

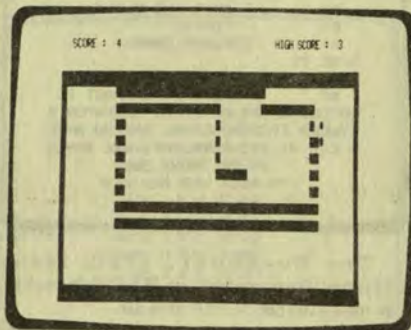
shows you the number of starbases, Klingons, and stars. As you move to a new quadrant, you may find that a nearby quadrant has a starbase for refueling. But you may move to an unexplored quadrant that contains a Klingon. You must turn to face him so you can fire your torpedo or phaser at him before he destroys you. There are ten levels of play, giving you more Starbases for refueling or more Klingons to destroy. If you are destroyed, you must rerun the program to play again.

SPACE BLOCKADE, by Roy Grabois, lets you try to destroy enemy ships by flying over them trailing your chemical smoke. This smoke kills the enemy but also will kill you if you run into it. You use letter keys to control your direction while your ship continues moving. One kind of enemy ship "\*" is visible and there is only one at a time. The other kind "+" is invisible and there are many. At the start of the game, you are shown briefly the location of the invisible enemy. As you fly around the screen, you are given points for the visible and invisible enemy you fly over. When the screen is almost white from the smoke, you can press the space bar to get into another universe free of all smoke but not free of enemies. But this works only once. And if you fly into the edge of the screen, you are lost.

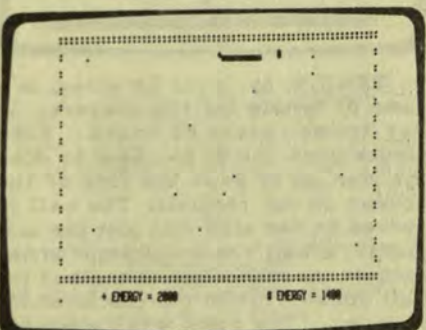
> (continued on page 87)



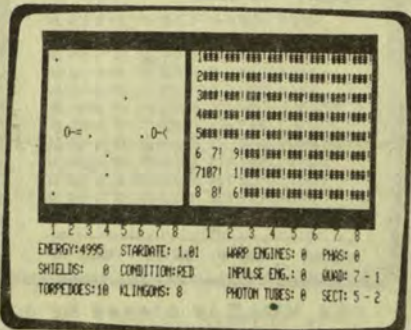
SPACE GALLERY



SPACE BLOCKADE



SPACE WARS



SPACE TREK

| TABLE OF CONTENTS |                            |
|-------------------|----------------------------|
| PAGE              | ARTICLE                    |
| 2                 | ASC II NOTES               |
| 5                 | NEW YORK'S BIG SHOW        |
| 7                 | THE PUZZLE PAGE            |
| 18                | THE 16-BIT POCKET COMPUTER |
| 14                | THE CLASSIFIED SECTION     |
| 15                | A BASICALLY HELPFUL NOTE   |
| 20                | SHY GOOD-BYE TO MODEL 1    |
| 23                | COMPUTER LOG               |

- 1 -

ASC II NOTES

OUR COMPANY IS EXPANDING RAPIDLY. LAST MONTH WE PROBABLY SAID WE WERE GETTING NATIONAL RECOGNITION NOW WE ARE RECEIVING INTERNATIONAL ATTENTION. CURRENTLY ONE OF OUR USERS CAME FROM HAWAII.

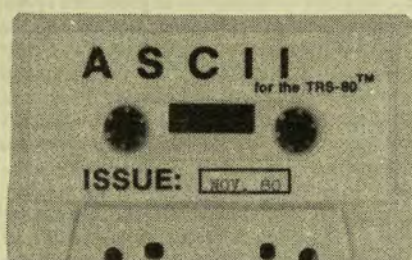
WE HAVE RECEIVED A CITATION FROM THE WESTON RESEARCH INSTITUTE THEY COMPLETED US FOR "QUALITY AND EXCELLENCE."

ALSO, EDUCATIONAL TECHNOLOGY MAGAZINE WROTE ABOUT US. WE HAVE RECEIVED FAVORABLE REVIEWS FROM SUCH PUBLICATIONS AS THE EDUCATING NEWS. THE 80 SOFTWARE CATALOG IS CURRENTLY

- 2 -

NEWSLETTER



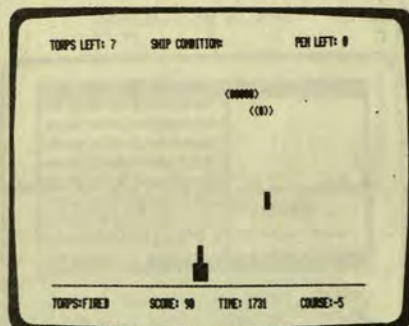


**ASCII**  
November, 1980  
Level II 16K tape  
from ASCII  
P. O. Box 516  
Valley Stream, NY 11582

ASCII is a monthly magazine which comes completely on cassette tape. There are no printed directions. The directions for each program appear at its start. One side of the tape is a newsletter and the other side of these issues has four games or other programs on it. The newsletter is in BASIC and will tell you if any of the other programs are in machine language. Not all the programs are by the same author. Only rarely is the author's name even given.

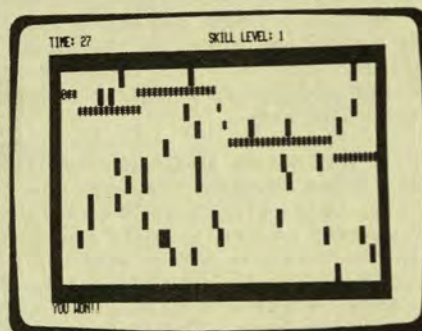
| ASCII                                                                                                                                               |                    | NOVEMBER, 1980 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------|
| SIDE 1:                                                                                                                                             |                    |                |
| #1                                                                                                                                                  | SEA WOLF           |                |
| #2                                                                                                                                                  | BEAT THE CLOCK     |                |
| #3                                                                                                                                                  | TENNIS             |                |
| #4                                                                                                                                                  | ROBOT CHASE        |                |
| SIDE 2:                                                                                                                                             |                    |                |
| #1                                                                                                                                                  | NEWSLETTER PART I  |                |
| #2                                                                                                                                                  | NEWSLETTER PART II |                |
| PROGRAMS ARE SAVED WITH LEADER B<br>ETWEEN EACH PROGRAM. IF YOU HAVE<br>A CTR-41 RECORDER, THEY ARE SAVED<br>AT THE NEXT 50.<br>TO EXIT HIT ANY KEY |                    |                |

The November, 1980, issue included four games in BASIC besides the newsletter.

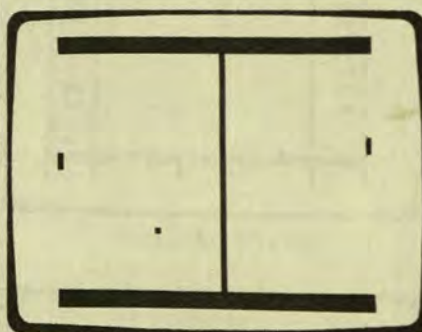


SEA WOLF is played by one player. You use the number keys to direct the aim of your slow torpedoes

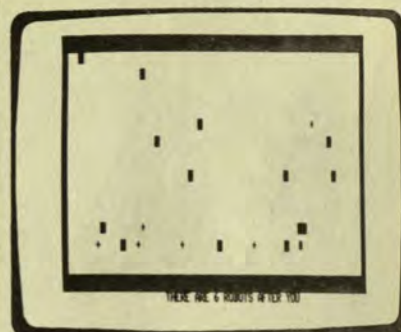
at ships passing overhead from left to right. You can choose the number of ships to hit within the time limit of the game. You have 12 torpedoes at the start and when they run out, you must lose time until they are replenished so you can fire again. The number keys are used in reverse order to direct your fire. Keys 1 to 4 fire toward the right, and keys 6 to 9 fire toward the left. The space bar cancels a torpedo already fired.



In BEAT THE CLOCK, you move through a jumble of electrified walls from the start at one side to the exit at the other, leaving a trail behind you. You use letter keys to move up, down, sideways and diagonally. When the game starts, you can study your course while the clock waits. The clock starts when you press a key the first time. You must press a key to move each space while the clock is running. There are ten levels of skill. Each one has more walls to go around. You must win at each level before going on automatically to the next.



TENNIS, by David Koransky, is a game of tennis for two players. It has three levels of speed. Each player uses one of two keys to move his man up or down the side of the screen to hit the ball. The ball is served to the side that lost the last point. A ball coming straight at the racquet can rebound at an angle if the ball doesn't hit in the center of the racquet. The game ends when ten balls are missed by the loser.



ROBOT CHASE gives you several options at the beginning of the game. You "\*" must outwit the invading robots "+" who are after you. If a robot hits a fence or another robot, it is destroyed. You can hide behind electrified fences which will protect you. These fences can disappear when a robot hits them, or they can remain to protect you. You can choose to have another fence formed when two robots collide. You use letter keys to direct your movement. The key must be pressed for each move. You win if all the robots are destroyed before you are.

The monthly issues of ASCII contain at least four programs. All the programs in each issue are the same kind. The early issues contain all games but we are told that later issues may contain other types of programs. You might want to compare ASCII with CLOAD, also a monthly magazine on cassette. Each issue of CLOAD contains several types of programs. You may want a subscription to each cassette magazine. ■

#### DATA SMOOTHER (continued from page 72)

the screen. You see a table of the smoothed data, and are told the standard deviation. You may see one more plot with another width. After the second plot, the program ends.

The manual has extensive information about the technique of data smoothing, and a listing of this and a larger version of the program. It will help to understand the information if you have had calculus or a similar course in college. The program will run under disk BASIC. ■





## ASTROLOGY

Level II 16K tape  
from Radio Shack  
700 One Tandy Center  
Fort Worth, TX 76102

ASTROLOGY is a fast machine language program to print a horoscope on the screen or an 80-column printer. You enter your name (optional) and your birthdate. You enter the time of birth if known, AM or PM, and whether or not there was daylight saving time. Then you enter the place of birth (optional) and the longitude and latitude of the birthplace. The manual shows longitudes and latitudes of some of the major cities in the U.S. It also gives a good explanation of how to answer each question.

You may choose to have all the information printed on a printer or shown on the screen. If you have an 80-column printer, you may also have a Natal Chart printed. Printing the information takes about 3 or 4

TYPE IN YOUR BIRTHDATE (MM/DD/YY) ? 06/29/37

TIME OF BIRTH (CALLING  
PRESS CANCEL) IF UNKNOWN? 5:00

AM/PM ? AM

DAYLIGHT SAVING TIME? (Y/N) ? N

WHERE WERE YOU BORN? (CITY, STATE)? MOORELAND, CA

LONGITUDE: (D/M/N) ? 122.0

LATITUDE: (D/M/N) ? 36.15

DO YOU WANT THE HOROSCOPE PRINTED? (Y/N)? N

## ENTERING INFORMATION

This is shown only on the screen.

minutes depending on your printer, and the printout is about 32" long.

The manual explains briefly how to interpret much of the information shown. If you are really interested in astrology, you will also need books that go into greater detail.

ASTROLOGY is fast and easy to use.

### ASTROLOGICAL NATAL HOROSCOPE FOR

YOU WERE BORN ON JUNE 29 1937 AT 5:00 AM  
CORRECTED LOCAL TIME 4:52 AM  
(1:00 PM CORRECTED GREENWICH MEAN TIME)  
DAYLIGHT SAVING TIME WAS NOT IN EFFECT  
PLACE OF BIRTH WAS MOORELAND, CA  
LONGITUDE WAS 122.00 DEGREES,  
AND LATITUDE WAS 36.15 DEGREES

RIISING SIGN IS 9.04 DEGREES IN CANCER  
PRESS ANY KEY TO FIND OUT MORE.

### PERSONAL INFORMATION On the screen or on the printer.

#### PLANETS IN THE SIGNS

|         |    |                              |            |
|---------|----|------------------------------|------------|
| SUN     | IS | 7.28 DEGREES IN CANCER       |            |
| MOON    | IS | 12.12 DEGREES IN PISCES      |            |
| MERCURY | IS | 26.47 DEGREES IN GEMINI      |            |
| VENUS   | IS | 21.42 DEGREES IN TAURUS      |            |
| MARS    | IS | 19.31 DEGREES IN SCORPIO     |            |
| JUPITER | IS | 24.27 DEGREES IN CAPRICORN   | RETROGRADE |
| SATURN  | IS | 4.44 DEGREES IN ARIES        |            |
| URANUS  | IS | 12.36 DEGREES IN TAURUS      |            |
| NEPTUNE | IS | 16.28 DEGREES IN VIRGO       |            |
| PLUTO   | IS | 27.40 DEGREES IN CANCER      |            |
| IL.MOON | IS | 14.58 DEGREES IN SAGITTARIUS |            |

PRESS ANY KEY TO FIND OUT MORE.

#### ASCENDANT

This information can be figured only if you entered a time of birth.



#### NATAL CHART

If you have an 80-column printer, you can have a Natal Chart printed.

#### NATAL ASPECTS

|         |                 |         |                     |       |
|---------|-----------------|---------|---------------------|-------|
| SUN     | IS TRINE        | MOON    | (120 DEGREES APART) | 4.54  |
| SUN     | IS SQUARE       | SATURN  | (90 DEGREES APART)  | 2.45  |
| SUN     | IS SEXTILE      | URANUS  | (60 DEGREES APART)  | -5.09 |
| MOON    | IS TRINE        | MARS    | (120 DEGREES APART) | -7.11 |
| MOON    | IS SEXTILE      | URANUS  | (60 DEGREES APART)  | -6.14 |
| MOON    | IS OPPOSITE     | NEPTUNE | (180 DEGREES APART) | -4.18 |
| MERCURY | IS SQUARE       | SATURN  | (90 DEGREES APART)  | -7.58 |
| MERCURY | IS SEMI-SEXTILE | PLUTO   | (30 DEGREES APART)  | 8.56  |
| VENUS   | IS OPPOSITE     | MARS    | (180 DEGREES APART) | -2.86 |
| VENUS   | IS TRINE        | JUPITER | (120 DEGREES APART) | 2.50  |
| VENUS   | IS CONJUNCT     | URANUS  | (0-9 DEGREES APART) | 5.83  |

PRESS ANY KEY TO FIND OUT MORE.

|         |             |         |                     |       |
|---------|-------------|---------|---------------------|-------|
| VENUS   | IS TRINE    | NEPTUNE | (120 DEGREES APART) | -5.08 |
| VENUS   | IS SEXTILE  | PLUTO   | (60 DEGREES APART)  | 5.58  |
| MARS    | IS SEXTILE  | JUPITER | (60 DEGREES APART)  | 4.57  |
| MARS    | IS OPPOSITE | URANUS  | (180 DEGREES APART) | 6.57  |
| MARS    | IS SEXTILE  | NEPTUNE | (60 DEGREES APART)  | 3.01  |
| MARS    | IS TRINE    | PLUTO   | (120 DEGREES APART) | -8.05 |
| JUPITER | IS TRINE    | NEPTUNE | (120 DEGREES APART) | 7.58  |
| JUPITER | IS OPPOSITE | PLUTO   | (180 DEGREES APART) | -3.08 |
| SATURN  | IS TRINE    | PLUTO   | (120 DEGREES APART) | -7.02 |
| URANUS  | IS TRINE    | NEPTUNE | (120 DEGREES APART) | 3.55  |

PRESS ANY KEY TO FIND OUT MORE.

#### ELEMENTS AND MODES

|     | FIR | EAR | AIR | WTR |
|-----|-----|-----|-----|-----|
| CAR | 1   | 1   | 0   | 2   |
| FIX | 0   | 2   | 0   | 1   |
| MUT | 0   | 1   | 1   | 1   |

PRESS ANY KEY TO FIND OUT MORE.

#### PLANETS IN THE HOUSES

|         |                      |
|---------|----------------------|
| SUN     | IS IN THE 12TH HOUSE |
| MOON    | IS IN THE 9TH HOUSE  |
| MERCURY | IS IN THE 12TH HOUSE |
| VENUS   | IS IN THE 11TH HOUSE |
| MARS    | IS IN THE 5TH HOUSE  |
| JUPITER | IS IN THE 7TH HOUSE  |
| SATURN  | IS IN THE 10TH HOUSE |
| URANUS  | IS IN THE 11TH HOUSE |
| NEPTUNE | IS IN THE 3RD HOUSE  |
| PLUTO   | IS IN THE 1ST HOUSE  |
| IL.MOON | IS IN THE 6TH HOUSE  |

PRESS ANY KEY TO FIND OUT MORE.

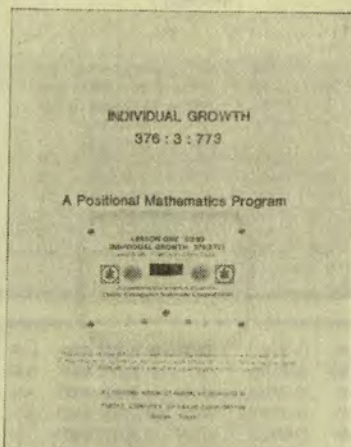
#### SIGNS ON THE CUSPS OF THE HOUSES

|                               |                             |
|-------------------------------|-----------------------------|
| THE CUSP OF THE 1ST HOUSE IS  | 9.04 DEGREES IN CANCER      |
| THE CUSP OF THE 2ND HOUSE IS  | 29.19 DEGREES IN CANCER     |
| THE CUSP OF THE 3RD HOUSE IS  | 21.40 DEGREES IN LEO        |
| THE CUSP OF THE 4TH HOUSE IS  | 19.19 DEGREES IN VIRGO      |
| THE CUSP OF THE 5TH HOUSE IS  | 24.31 DEGREES IN LIBRA      |
| THE CUSP OF THE 6TH HOUSE IS  | 3.53 DEGREES IN SAGITTARIUS |
| THE CUSP OF THE 7TH HOUSE IS  | 9.04 DEGREES IN CAPRICORN   |
| THE CUSP OF THE 8TH HOUSE IS  | 29.19 DEGREES IN CAPRICORN  |
| THE CUSP OF THE 9TH HOUSE IS  | 21.40 DEGREES IN AQUARIUS   |
| THE CUSP OF THE 10TH HOUSE IS | 19.19 DEGREES IN PISCES     |
| THE CUSP OF THE 11TH HOUSE IS | 24.31 DEGREES IN ARIES      |
| THE CUSP OF THE 12TH HOUSE IS | 3.53 DEGREES IN GEMINI      |

PRESS A KEY FOR A NEW CHART.

#### NATAL ASPECTS ■





## INTRODUCTION TO POSITIONAL MATHEMATICS LESSON ONE

**INDIVIDUAL  
GROWTH**  
Level II 16K tape  
by Paul Elton Taylor  
from Turtle Computer Software Corp.  
2713 McKinney Avenue  
Dallas, TX 75204

The written pamphlet which comes with **INTRODUCTION TO POSITIONAL MATHEMATICS, LESSON ONE**, explains: "The Program is a general overview of a small part of Positional Mathematics (PosMath) rather than a step by step detailed text on how to use formulas and

THE APPLICATION OF DIGIT-WORDS TO THE EVERY-DAY EXPERIENCES OF AN INDIVIDUAL IS BASED ON THREE THINGS THAT EACH INDIVIDUAL HAS FOR HIS LIFETIME.

1. THE DATE OF BIRTH.
2. THE NAME, AS GIVEN AT BIRTH.
3. THE PLACE OF BIRTH.

ALL NUMBERS OF MORE THAN ONE DIGIT MAY BE BASED TO A SINGLE DIGIT NUMBER BY STEP-ADDITION OF THE DIGITS.

EXAMPLE: STEP 1 -  $1988 = 1+9+8+8 = 26$

STEP 2 -  $26 = 2+6 = 8$

THE BASE NUMBER OF 1988 IS 8.

FOR LONG NUMBERS REPEAT STEPS UNTIL ALL DIGITS HAVE BEEN ADDED TO A SINGLE DIGIT. THIS IS BASED A NUMBER.

PRESS (CENTER) TO CONTINUE ?

interpret resulting answers. Much of the subject matter in Lesson One may appear to be foreign and annoying to the mathematical purist or the abstract theorist. The function of PosMath is to 'orchestrate' the qualities of life as experienced by the quantities of the living."

**LESSON ONE** is a four-part tutorial. The parts cover Words and Numbers and the Universe, the Name of Man, Numbers and Health, and Wealth and Love Balance. The computer introduces you leisurely to some of the 98 Laws of the Universe

THE NAME, BIRTHDATE & BIRTH PLACE ARE USED TO DETERMINE NINETEEN POSITIONS FOR CATEGORICAL SERIES (THE 1-9, 1-10 SERIES). THERE ARE SEVEN DEGREE POSITIONS.

| DEGREE POSITION          | CYCLES               |
|--------------------------|----------------------|
| 1. NAME                  | CREATIVITY           |
| 2. BIRTHDATE             | BALANCE              |
| 3. BIRTH PLACE           | COMPLETION           |
| 4. NAME & B-PLACE        | SUCCESS, ADVANCEMENT |
| 5. B-DATE & B-PLACE      | KNOWLEDGE            |
| 6. NAME, B-DATE, B-PLACE | GROWTH, IMPROVEMENT  |
| 7. NAME & B-DATE         | CONFLICT             |

PRESS (CENTER) TO CONTINUE ?

| NO. | POSITION PREFERENCE | RANK    |
|-----|---------------------|---------|
| 8.  | GROWTH              | GOOD    |
| 7.  | SUCCESS             | GOOD    |
| 3.  | CREATIVITY          | GOOD    |
| 6.  | KNOWLEDGE           | NEUTRAL |
| 1.  | IMPROVEMENT         | NEUTRAL |
| 4.  | ADVANCEMENT         | NEUTRAL |
| 9.  | COMPLETION          | BAD     |
| 2.  | CONFLICT            | BAD     |
| 5.  | BALANCE             | BAD     |

400,000,000 PEOPLE (+ -) HAVE THE SAME BIRTHDATE BASE AS YOU.

PRESS (CENTER) TO CONTINUE ?

PREFERENCE AND RANKING OF THE 1-10 SERIES, 10-10-10.

| NO. | PREFERENCE     | RANK | NO. | PREFERENCE    | RANK |
|-----|----------------|------|-----|---------------|------|
| 1   | 10 SEX         | G    | 10  | 9 LOVE        | M    |
| 2   | 7 HEALTH       | G    | 11  | 17 EXPERIENCE | M    |
| 3   | 13 HEALTH      | G    | 12  | 4 ADVANCEMENT | M    |
| 4   | 15 SOCIABILITY | G    | 13  | 14 PROGRESS   | B    |
| 5   | 16 SUCCESS     | G    | 14  | 12 CREATIVITY | B    |
| 6   | 3 WORK         | G    | 15  | 11 GOVERNMENT | B    |
| 7   | 1 INDEPENDENCE | G    | 16  | 10 COMPLETION | B    |
| 8   | 6 KNOWLEDGE    | G    | 17  | 2 CONFLICT    | B    |
| 9   | 8 GROWTH       | G    | 18  | 5 BALANCE     | B    |

G = GOOD, M = NEUTRAL, B = BAD

PRESS (CENTER) TO CONTINUE ?

MAINTENANCE PROGRAM FOR BOOCHEN TYPES A, B, AND C.

1. GET AT LEAST ONE HOUR PER DAY OF SUNLIGHT ON AS MUCH BODY SURFACE AS POSSIBLE. NUDE IS BEST. DON'T WEAR GLASSES OR CONTACT LENSES WHEN SUN-BATHING.
2. OXYGEN IS VITAL. SPEND AS MUCH TIME AS POSSIBLE IN CLEAN AIR. WEAR CLOTHING THAT ALLOWS MAXIMUM SKIN EXPOSURE TO AIR. GO BAREFOOT WHENEVER POSSIBLE.
3. EXERCISE EQUIVALENT TO WALKING 2 MILES PER DAY. DO CALISTOTICS AND USE WEIGHTS TO EXERCISE AS MANY MUSCLES AS POSSIBLE.
4. CLEAN THE BODY SURFACE WITH WATER EACH DAY. NO SOAP. RUB SOAP FOR 15 MINUTES MINIMUM. RUB DRY BRISKLY WITH ROUGH TOWEL. SCRAPE TONGUE EACH MORNING.

PRESS (CENTER) TO CONTINUE ?

some of the Series Definitions.

The numbers derived from your birthdate and birth name define which of the laws or series apply to you. These numbers are found by adding each digit in your birthdate until you arrive at a single digit. The numbers from your birth name are found using the digits 1 to 26 and adding them in the same way. The computer

MAINTENANCE PROGRAM CONTINUED...

5. DRINK ONLY CLEAN, PURE WATER AND FRUIT JUICES. ONLY 1
6. EAT 3 SMALL MEALS PER DAY. EAT HONEY, SEABORDS AND APPLES EACH DAY. DON'T EAT WITHIN 1 HOUR BEFORE OR AFTER EXERCISING.
7. PERSPIRE EACH DAY, EITHER FROM EXERCISE, SUN-BATHING OR STEAM BATH.
8. EMPTY BOWELS EACH MORNING. ALWAYS BEFORE EXERCISING.
9. HAVE SEX AT LEAST 5 DAYS EACH WEEK WITH AS MANY DIFFERENT PARTNERS AS POSSIBLE.

PRESS (CENTER) TO CONTINUE ?

AFTER SELF-LOVE, THE MOST IMPORTANT LOVE IS FOR OTHER PEOPLE. IT'S EASIER TO LOVE SOMEONE WITH WHOM YOU ARE MOST COMPATIBLE. IN YOUR CASE IT WILL BE PEOPLE WHOSE BIRTHDATE BASE IS 9. PEOPLE WHOSE BIRTHDATE BASES ADD TO 18 ARE THE MOST COMPATIBLE AND ARE USUALLY DRAWN TO EACH OTHER. A CONFLICT IN NAMES ASSOCIATION OR ONE OR BOTH BEING IN A 5-BALANCE RELATIONSHIP WITH THE OTHER (FROM NAME & BIRTHDATE) WILL OFFSET BIRTHDATE COMPATIBILITY. UNTIL THE 1961 6-KNOWLEDGE PERIOD BEGINS THERE WILL BE VERY FEW COUPLES IN A LOVE RELATIONSHIP WITH THE 18 AND TOTAL.

ENTER ANOTHER PERSON'S BIRTHDATE (MM/DD/YYYY) ? 4/18/1929

THEIR 1800 IS 7, YOUR 1800 IS 1 ... THE TOTAL IS 8 ...

WANT TO TRY ANOTHER (Y OR N) ?

THE SUMS OF THE TWO 1800 RANGE FROM 2 TO 18. SINCE ALL BASES ARE 1 - 9 IT'S NOT POSSIBLE TO HAVE A SUM OF 1. THE 17 COMPATIBILITY SUM MEANINGS:

|                      |                     |
|----------------------|---------------------|
| 2. M-ADVANCEMENT 12  | 11. M-SEPARATION 13 |
| 3. M-INDEPENDENCE 11 | 12. B-WRITE 17      |
| 4. G-HARMONY 6       | 13. G-PROGRESS 7    |
| 5. G-GROWTH 2        | 14. G-EXPERIENCE 4  |
| 6. M-CREATIVITY 10   | 15. G-KNOWLEDGE 8   |
| 7. B-BALANCE 16      | 16. G-SUCCESS 5     |
| 8. G-LOVE 3          | 17. M-SOCIABILITY 9 |
| 9. B-CONFLICT 15     | 18. B-COMPLETION 14 |
| 10. G-SEX 1          |                     |

G = GOOD, M = NEUTRAL, B = BAD NUMBER AFTER EACH WORD IS ORDER OF PREFERENCE

PRESS (CENTER) TO CONTINUE ?

## INTRODUCTION and LESSON ONE

ENTER BIRTH CERTIFICATE NAME  
FIRST NAME ? JOHN  
SECOND NAME ? JOHN  
LAST NAME ? DOE

ENTER BIRTHDATE  
MONTH (MM) ? 3  
DAY (DD) ? 13  
YEAR (YYYY) ? 1962

ARE BIRTHDATE CORRECTIONS REQUIRED (Y OR N) ? N

GROWTH



suggests ways to improve the health of your body, mind, and spirit, and tells you the characteristics of people with various body chemistries. It also tells you if you may be compatible with someone.

A separate program, **INDIVIDUAL GROWTH**, uses your birthdate and birthname to show you or print out charts for your growth in the areas of wealth, work, sex, health, love, knowledge, and success. You may choose which chart to see, and may then see another chart or enter information for another person.

A little of the information contained in these programs is shown in the pictures. Both programs will run under disk BASIC. If the ideas in **POSITIONAL MATHEMATICS** interest you, you may want to take a look at these programs.

```

JOHN JOHN DOE
BIRTHDATE 1 3 / 13 / 1982
WEALTH GROWTH

LIFE WEALTH GROWTH 1 PROGRESS
WEALTH GROWTH CRISIS 1 BALANCE
CRISIS YEARS 1 2880 TO 2920 AGE 1 33 - 44
SUCCESS EXPERIENCE 1 PROGRESS
SUCCESS YEARS 1 2980 TO 2985 AGE 1 21 - 23
WEALTH BALANCE 1 KNOWLEDGE
DURING YEARS 1 1995 TO 2010 AGE 1 13 - 28
LIFE WEALTH INTENSITY 1 A ON SCALE OF 1 TO 9
WEALTH GROWTH INTENSITY 1 A ON SCALE OF 1 TO 9
WEALTH GROWTH POSITION 1 3 ON SCALE OF 1 TO 9
WEALTH GROWTH BALANCE 1 POSITIVE
SCREEN TO PRINTER (1/8) 0 Y

```

```

JOHN JOHN DOE
BIRTHDATE 1 3 / 13 / 1982
SEX GROWTH

LIFE SEX GROWTH 1 EXPERIENCE
SEX GROWTH CRISIS 1 INDEPENDENCE
CRISIS YEARS 1 2880 TO 2920 AGE 1 18 - 28
SUCCESS EXPERIENCE 1 CONFLICT
SUCCESS YEARS 1 1995 TO 1995 AGE 1 8 - 13
SEX BALANCE 1 CONFLICT
DURING YEARS 1 1995 TO 1995 AGE 1 11 - 14
LIFE SEX INTENSITY 1 A ON SCALE OF 1 TO 9
SEX GROWTH INTENSITY 1 7 ON SCALE OF 1 TO 9
SEX GROWTH POSITION 1 2 ON SCALE OF 1 TO 9
SEX GROWTH BALANCE 1 NEGATIVE
SCREEN TO PRINTER (1/8) 0 Y

```

**PRINTED CHART ■**

**GRIDIRON**  
(continued from page 60)

and the opponent may accept or decline them. Turnovers can occur from fumbles, interceptions, recovered kickoffs, or failure to convert on the fourth down. Scores are provided for field goals, safeties, touchdowns, and one-point and two-point conversions.

**GRIDIRON** plays easily and will run under disk BASIC. You are shown the action of the ball on the playing field. The two player's choices of play and the action of the ball as it occurs are also described briefly below the playing field. You do not need to press more than one key to do

anything. Although the playing field is redrawn between each play, it is done quickly. The results of each team's actions are probable but vary. Penalties called during play seem random to add a touch of luck to the outcome. You can choose an inappropriate play but are not allowed an illegal one.

The game assumes you are familiar with football and its plays, since the pamphlet lacks a complete description of each play and does not explain football terms. If you are familiar with football, you should have no trouble. ■

**ASCII**  
(continued from page 83)

>>>> SCRAMBLER <<<<

THE WORD SCRAMBLED IS-  
HRESTOR

WHAT IS YOUR GUESS? ROBERTS\_

>> SUMMARY <<

| GUESS # | GUESS   | LETTERS RIGHT |
|---------|---------|---------------|
| 1       | THAMES  | 2             |
| 2       | SHIBET  | 3             |
| 3       | ROBERTS | 8             |

HIT ENTER FOR NEXT GUESS? \_

**SCRAMBLER**, by Tim Knight, is an extra game included in this issue. You choose from two to eight tries to unscramble a word. Then you are shown the scrambled word. As you enter your guesses of the correct places for the letters, you are told how many letters are in the right place. The game is similar to the "mastermind" games but uses a word instead of a series of numbers.

The staff at **ASCII** told us they plan to produce some issues that will contain all utility programs, or all useful programs, as well as the all-game issues. At a subscription rate of \$40 a year, **ASCII** will increase your library of programs. ■

**GENERAL MATH**  
(continued from page 77)

remember to press a key, you are told  
"Type '2810 GOTO2960'  
"Type 'GOTO 110'"  
This takes you back to the main menu of problems.

**CIRCLE FINDER** is used to figure the radius and center coordinates of a circle when you enter the coordinates for three points in the circumference of the circle.

**NTH ROOT OF A NUMBER** figures any root of any number to the number of decimal places you ask. However, when I asked for 6 decimal places, the answer only showed 5.

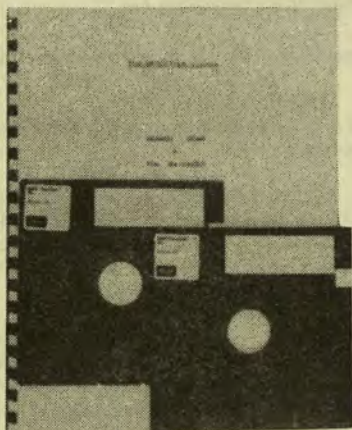
**NORMALLY DISTRIBUTED RANDOM NUMBERS** lets you enter the desired standard deviation, the mean, and the K or constant. If the K is large, the random numbers will be more accurate. If the K is small, the program will be faster. You enter how many numbers you want. The computer will then show you that many random numbers in a normal (or Gaussian) distribution.

**RATIONAL FRACTIONS** are used by designers who need to express a number this way, especially in frequency synthesizer or gear-train design applications. You enter any figure and the number of successively finer approximations you want. The approximations are printed out from coarsest to finest. If the exact fraction is reached within that number, the word "Exactly" is shown beside the fraction.

You will have to decide for yourself if **GENERAL MATHEMATICS** can help you. I did not like having to type "1" for "yes" or "0" for "no". I did not like having to type program lines without enough instruction. And I thought **MAXIMUM/MINIMUM LOCATOR** and **NUMBER ROUNDER** were trivial unless you write programs. But the usefulness of this program depends on what you want it to do. ■







## THE 80-INDEX SEARCH & SCAN

Level II 48K 2-disk  
from Hexagon Systems  
P. O. Box 397, Station A  
Vancouver, B.C., CAN V6C 2N2

Hexagon Systems has indexed many of the articles, ads and programs published in "Kilobaud," "80-US," and "80 Microcomputing." These indexes are on a disk called THE 80-INDEX. You use separate programs, SEARCH and SCAN, to find items in the indexes. SEARCH and SCAN are written in machine language so they work very quickly. A separate smaller index file of 50 restaurants in the Vancouver, B.C., area comes with the programs. The reference manual shows you step-by-step how to use this restaurant index. It shows you all the ways of finding what you want. It also explains what is in each category in each index in THE 80-INDEX.

The articles included in THE 80-INDEX all refer to the TRS-80 computer. There are separate indexes to information, advertisements, program listings,

FILE: PROG

INDEX TO SELECTED PROGRAMS APPEARING IN KILOBAUD, 80-US AND  
80-MICROCOMPUTING. UPDATED MAR 1981.

LOADING RECORD INDEX 162

PRESS 'ENTER' TO CONTINUE  
?

**LOADING THE INDEX**  
The index to programs has just  
loaded in 162 items.

The indexes contain the magazine name, month and year of publication, the page, and a brief description of the information. The information is indexed in up to 32 ways. For example, programs are indexed as business, home, education, games, utilities, application, financial, professional, accounting, and inventory. They are indexed for filing, sorting, graphics, word processing, and communications. They are also indexed as BASIC, assembly language, simple, medium, or complex.

The indexes contain the magazine name, month and year of publication, the page, and a brief description of the information. The information is indexed in up to 32 ways. For example, programs are indexed as business, home, education, games, utilities, application, financial, professional, accounting, and inventory. They are indexed for filing, sorting, graphics, word processing, and communications. They are also indexed as BASIC, assembly language, simple, medium, or complex.

THE 80-INDEX is not a complete index to all articles or ads in the magazines. It is primarily aimed toward articles about software and toward disk drive users. It does include some reviews of hardware that a disk drive owner might be interested in but does not include programs written solely for a cassette user.

| CURRENT FILE: PROG |                 | RECORDS 162     |                  |
|--------------------|-----------------|-----------------|------------------|
| A 80-MICRO 94      | B 80-US 40      | C KILOBAUD 21   | D BUSINESS 23    |
| E HOME 64          | F EDUCATION 26  | G GAMES 30      | H UTILITIES 37   |
| I FINANCIAL 9      | J PROFESSION 18 | K ACCOUNTING 17 | L INVENTORY 4    |
| M FILE 18          | N SORT 4        | O GRAPHICS 15   | P WORD PROC 6    |
| Q COMP 3           | R BASIC 145     | S ASSEMBLER 25  | T APPLICATION 19 |
| U SIMPLE 42        | V MEDIUM 73     | W COMPLEX 44    |                  |

|           |              |
|-----------|--------------|
| 1 A&E&H&B | 2 A&E&H&R&V6 |
| 3 V&U 116 | 4 E 90       |
| 5 H 118   | 6 2456       |

PRESS: 1) AND 2) OR 3) NOT 4) LIST 5) EXIT

### SEARCH

I have tried six different combinations so far.

|             |             |                |                  |
|-------------|-------------|----------------|------------------|
| Q COMP 3    | R BASIC 145 | S ASSEMBLER 25 | T APPLICATION 19 |
| U SIMPLE 42 | V MEDIUM 73 | W COMPLEX 44   |                  |

|               |              |
|---------------|--------------|
| 1 A&E&H&B     | 2 A&E&H&R&V6 |
| 3 V&U 116     | 4 E 90       |
| 5 H 118       | 6 2456       |
| 7 B&L 6-K 125 | 8 2408       |

KEY DESCRIPTORS TO AND TOGETHER. FINISH WITH ENTER  
ERROR - ILLEGAL FUNCTION CALL AT ADDRESS 7034

DOS READY

### CRASH

I forgot that I had already entered eight things to be searched for. I started to enter a ninth search. The program ended.

You use the SEARCH or the SCAN programs to find things in the index. SEARCH will search by category. SCAN will scan for a certain word or words. You can search by several categories. You can SEARCH for a program about "business or financial" and "accounting" and "not sorting and not filing" and "BASIC and complex." You can search for articles about more than one thing. You can search for articles about either one thing or another. You can search for articles that do not include something. And you can make this search all at one time.

You can SCAN all the indexes for up to four words. These words can be joined by "and" if you want the index to contain two or more words. They can be joined by "or" if you want the index to contain at least one of the words. This allows you to check at the same time for upper and lower case as well as alternate words.

Both SEARCH and SCAN have a routine to find items by a category and to place them into a temporary "Hold" file. If you remember that an article was about converting a typewriter to a printer, you could first SEARCH the categories for articles about "Printers" which is one of the categories in the information index. Then you would SCAN all the indexes to these articles for the word "typewriter." This would tell you where to find any articles about both printers and typewriters. Each indexed item is printed with all the categories it is listed under. This helps you decide if it is the right article.

If either program finds at least one indexed article that matches what you are looking for, it will tell you how many items it found. You can have the indexes printed on the

ENTER DESCRIPTOR FOR RECORDS TO BE LISTED 2  
LISTINGS: 80-MICRO AND HOME AND FILE AND BASIC AND MEDIUM  
PRESS: 1) TO SCREEN 2) TO PRINTER 3) TO HOLD FILE  
RECORD: 38

2/80 P114: HOUSEHOLD EXPENSES BY MONTH  
DESCRIPTORS: ADVANCY, 80-MICRO, HOME, ACCOUNTING, FILE, BASIC, M  
EDIUM

PRESS ANY KEY TO CONTINUE LIST, '9' TO STOP

### MATCHES

I narrowed down my search to category two. I chose to have the records displayed on the screen. This is one of the matching records. I can look at another matching record, or I can stop the search if this is the one I want.



screen or on a printer.

This is a powerful, fast index reference program. You have many ways to find what you are looking for. But I wish a few things were different.

SEARCH first shows you a list of the categories and their one-letter descriptor or key. On the bottom of the screen, you are told what number to enter for "and," "or," and "not." If you want more than one category, you choose the number for "and." Then you choose the descriptor letters for the categories you want. These appear on the screen with a number assigned to this choice. You are also shown how many indexed articles are in these categories. You can combine the choices by using the number assigned to the choice. Choice 1 might be two items joined by "and." Choice 2 might be three other items joined by "or." Choice 3 might be "not" something else. Choice 4 might be numbers 1, 2, and 3. You may have eight combinations. Do not try a ninth combination. The program will crash.

After you decide on the category of search, you choose "list." The list of categories disappears and the

- 1 = SEARCH FOR A SINGLE STRING
- 2 = SEARCH FOR SEVERAL STRINGS LINKED BY "AND"
- 3 = SEARCH FOR SEVERAL STRINGS LINKED BY "OR"
- 4 = EXIT FROM SEARCH PROGRAM

PRESS APPROPRIATE KEY

WHAT SHOULD I SEARCH FOR? EASY

OUTPUT TO SCREEN (Y OR N)? Y

OUTPUT TO PRINTER (Y OR N)? N

HOLD OUTPUT (Y OR N)? N

RECORD 81

3-100 P151: EASY-WORD WORD PROCESSOR, \$21.95

HAYSON HOUSE

DESCRIPTORS: AEC, 88-1000, 128-150, WORD PROC

PRESS ANY KEY TO CONTINUE LIST, 'S' TO STOP

## SCAN

I want to scan all the records in this file for the word "EASY." Record 81 had that word in the title of the program advertised. This is scanning through the index to ads.

\*\*\*\*\*  
LISTING FILE: P151: RECORD 81  
Data is selected program appearing in YELLOW, 81-100 and  
is MICROCOMPUTING (Updated May 1981)

SELECTED BY DESCRIPTION: 88-1000 AND 128-150 AND FILE: AEC, 88-1000 AND 128-150

RECORD 81 (3-100 P151) EASY-WORD WORD PROCESSOR, \$21.95

DESCRIPTORS: AEC, 88-1000, 128-150, WORD PROC

RECORD 81 (3-100 P151) EASY-WORD WORD PROCESSOR, \$21.95

DESCRIPTORS: AEC, 88-1000, 128-150, WORD PROC

RECORD 81 (3-100 P151) EASY-WORD WORD PROCESSOR, \$21.95

DESCRIPTORS: AEC, 88-1000, 128-150, WORD PROC

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DESCRIPTORS: AEC, 88-1000, 128-150, WORD PROC

RECORD 81 (3-100 P151) EASY-WORD WORD PROCESSOR, \$21.95

DESCRIPTORS: AEC, 88-1000, 128-150, WORD PROC

## PRINTED LIST

I searched for programs in "80-Micro" about the home, filing, in BASIC, and medium. This is the printed list of programs indexed in these categories.

first line on the screen asks, "Enter descriptor for records to be listed." Then you enter the letter for a single category or the number of the combination of categories you decided on earlier. You must remember the number or the letter of the category long enough to enter it on a blank page. After you enter this number or letter, the screen prints out the full name of the category or combination you have selected. Then you are asked if you want to see the items on the screen or on the printer or if you want the items in a "Hold" file.

I wish SEARCH would ask, "Enter descriptor for records to be listed," on the same page that you have been working on. During the screen display of all the matching items, I wish SEARCH would show you how many more items were still on the list. SEARCH gives you the chance to stop the list after each item, but it would be nice to know how many more you were going to skip. I wish that if you forgot and asked for a ninth combination of categories to SEARCH for, the program would not crash. Or that the manual would tell you emphatically in very large letters that you had an absolute limit of eight combinations.

Otherwise, the programs are powerful and fast enough to tempt you to order the other programs in Hexagon System's DESCRIBER SYSTEM. Then you could index anything you wanted. But you should wait until SEARCH is a little better at dealing with errors. I am reluctant to recommend a program that crashes. ■

## DUNGEON

(continued from page 53)

wall, you again use the command to pick it up. Some holes may contain treasure but some holes can be a trap and throw you into another room.

If you see a monster, you can give the command to kill. Then you use the number keys to point your weapon. Some monsters stand still. Some monsters start coming after you. You can also give the command to defend yourself or to move and run away.

If you fight a monster and get too many wounds, you will die and the program ends. To win the game, you must find your way back to the staircase so you can leave the dungeon.

Movement by the arrow keys in GRAPHIC DUNGEON TREASURES is slow even at the fastest level.

However, the game might be a good one for beginners because you can see the rooms.

TOO BAD YOU JUST DIED. THIS ENDS THE GAME

READY

>

I DIED

Now the game is over. ■

## BIG BOARD

(continued from page 65)

### 88 STOCK PRICE HISTORY 88

| YEAR: | 1   | 2   | 3   | 4    | 5   | 6   | 7   | 8   | 9 | 10 |
|-------|-----|-----|-----|------|-----|-----|-----|-----|---|----|
| NYC   | 110 | 113 | 116 | 132  | 77/ | 100 | 96  | 110 |   |    |
| WMD   | 107 | 144 | 78/ | 68   | 83  | 107 | 122 | 141 |   |    |
| DEL   | 104 | 107 | 102 | 119  | 131 | 149 | 143 | 78/ |   |    |
| LOS   | 98  | 102 | 90  | 110  | 121 | 131 | 129 | 141 |   |    |
| GOL   | 142 | 105 | 147 | 103/ | 75  | 53  | 91  | 136 |   |    |
| SEE   | 105 | 110 | 112 | 135  | 76/ | 101 | 110 | 136 |   |    |
| NAT   | 103 | 91  | 95  | 111  | 127 | 77/ | 73  | 64  |   |    |
| COL   | 105 | 92  | 79  | 97   | 127 | 147 | 88/ | 95  |   |    |
| FUS   | 106 | 109 | 101 | 139  | 76/ | 62  | 67  | 84  |   |    |

( / = AFTER-SPLIT PRICE.)

(CENTER) TO CONTINUE? \_

### PRICE HISTORY

This is the price history of the stocks for the last eight years. Several of the stocks have split during this time. The price history of the bond is not shown since it does not change. The bond just pays interest each year.

### 88 FINAL BALANCES 88

NET WORTH RATE OF RETURN

JUN \$ 19,816 6.6463%

MARKET RETURN: 7.4625%

\*\*\*\*\*

<< THE MARKET IS CLOSED >>

\* SEE FINAL BALANCES AGAIN? \_

### FINAL RETURN

I started with \$10,000 cash. At the end of ten years, I have a net worth of \$19,816 in cash and stocks. This was a rate of return of 6.64%. However, the market's overall return was 7.47%. I didn't beat the market's return. ■





## LEARNING TO COUNT MONEY

Level II 16K tape  
from Mercer Systems, Inc.  
87 Scooter Lane  
Hicksville, NY 11801

**LEARNING TO COUNT MONEY** is a set of programs to teach a child to count coins. Each program comes on a separate tape. The first program is the directions. **COUNTING COINS**, the second program, shows the child how to count coins and gives the child practice. **SHOPPING TRIP** is a game to let the child practice counting coins to pay for a purchase. **CHECK-OUT** teaches the child to make change.

2 PENNIES = \$0.02  
TWO CENTS

LET'S COUNT 5 PENNIES.  
COUNT ONE FOR EACH PENNY.

PRESS 'P' FOR EACH PENNY AND COUNT ONE EACH TIME.  
WATCH THE NUMBERS IN THE BOX, JOAN.

### COUNTING COINS

The child can practice counting each kind of coin. She will press "P" for each penny, "N" for a nickel, "D" for a dime, and "Q" for a quarter.

\$0.00

\$0.00

HOW USE QUARTERS - DIMES - NICKELS - AND - PENNIES

TO COUNT \$0.08  
HOW MANY QUARTERS WILL YOU PAY?  
PRESS 'Q' ONCE FOR EACH COIN.

PRESS 'ENTER' WHEN YOU HAVE ENOUGH QUARTERS.

### PAYING FOR A PURCHASE

The child adds coins until she has enough to pay. She starts with quarters.

\$0.00

\$0.75

WHOOOPS! THAT'S TOO MANY QUARTERS, JOAN!  
ADDING \$0.25 TO \$0.75 MAKES \$1.00.  
THAT'S MORE THAN \$0.88.

PRESS ANY KEY WHEN YOU'RE READY TO TRY AGAIN.

### TOO MANY COINS

If the child counts too many coins, she can try again.

\$0.00

\$0.05

HOW MANY NICKELS WILL YOU PAY?  
PRESS 'N' ONCE FOR EACH COIN.

PRESS 'ENTER' WHEN YOU HAVE ENOUGH NICKELS.

### MORE COINS

She has paid 3 quarters and 1 dime. Now she can use nickels.

OKAY, JOAN.

YOU'LL HAVE TO COUNT MONEY TO PAY FOR THE THINGS WE BUY.

THESE STORES ALL GIVE PURPLE STAMPS.  
THEY GIVE MORE STAMPS IF YOU PAY FASTER.  
TRY TO GET A THOUSAND STAMPS!

YOU'LL HAVE TO AVERAGE 125 STAMPS AT EACH STORE.  
PRESS ANY KEY WHEN YOU'RE READY.

### SHOPPING TRIP

The child tries to count money quickly to pay for what she buys.

She can choose to count slow, medium, or fast. She wins purple stamps. A child just learning to count money may not understand that she needs to average 125 stamps at each store to earn 1000 stamps.

OKAY JOAN, YOU ARE AT A SNACK BAR...

YOU HAVE JUST BOUGHT SOMETHING TO EAT.

YOU OWE \$2.23.

YOU HAVE 5 DOLLARS, 1 QUARTERS, 5 DIMES, 1 NICKELS, AND 7 PENNIES.

COUNT OUT THE BILLS AND COINS TO PAY.

PRESS ANY KEY WHEN YOU'RE READY

### PURCHASE

Joan owes \$2.23 for her purchase at the snack bar. She has a certain number of each coin to count to pay the \$2.23.

YOU OWE \$2.23

PRESS 'Q' ONCE FOR EACH QUARTER.  
PRESS ENTER WHEN YOU HAVE ENOUGH QUARTERS.

\$0.00

|          | DOLLARS                                                       | QUARTERS                                                      | DIMES                                                         | NICKELS                                                       | PENNIES                                                       |
|----------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| YOU HAVE | <span style="border: 1px solid black; padding: 2px;">2</span> | <span style="border: 1px solid black; padding: 2px;">1</span> | <span style="border: 1px solid black; padding: 2px;">5</span> | <span style="border: 1px solid black; padding: 2px;">1</span> | <span style="border: 1px solid black; padding: 2px;">7</span> |
|          | \$1                                                           | .25                                                           | .10                                                           | .05                                                           | .01                                                           |
| YOU PAID | <span style="border: 1px solid black; padding: 2px;">2</span> | <span style="border: 1px solid black; padding: 2px;"></span>  | <span style="border: 1px solid black; padding: 2px;"></span>  | <span style="border: 1px solid black; padding: 2px;"></span>  | <span style="border: 1px solid black; padding: 2px;"></span>  |

SPEED: MEDIUM

STAMPS: 271

### PAYING FOR HER PURCHASE

Joan is paying for her purchase. She has paid two dollar bills so far, and now can use a quarter. She is counting at a medium speed. The number of stamps she can win has gone down from 300 to 271. It will go down more as she takes time and counts more money.

THE CANDY COST 71 CENTS.

COUNT ALOUD AS YOU GIVE COINS TO MAKE A DOLLAR.

PRESS 'P' FOR PENNIES - 'N' FOR NICKELS - 'D' FOR DIMES - 'Q' FOR QUARTERS

REMEMBER - COUNT ALOUD UNTIL YOU REACH A DOLLAR -

PRESS ENTER WHEN YOU REACH A DOLLAR.

### PRACTICE MAKING CHANGE

The child practices making change. She starts with what they owe. Then she adds coins until she makes one dollar.



She has counted to 75 cents. Now she should count a quarter. But the screen is a little hard to read by now.

PRESS ENTER WHEN YOU HAVE A DELIAR

Now the child practices some more. This display is easier to read.

CANDY = 63

The customer has given her a dollar to pay for the candy. The child must count coins to make change.

PRESS ANY KEY TO TRY ANOTHER PROBLEM.

The child has given out more coins than necessary. The program shows her how many coins she should have used. ■

ALGEBRA BILLIARDS  
Analysis for Educational Coordinators and Teachers

from Curriculum Applications  
P. O. Box 264  
Arlington, MA 02174

The program has sound. It will run on the Model III as well as the Model I, Level II. It will not accept incorrect answers. The printing is in large letters. However, if you have the lower case modification, you must use the lower case driver or the

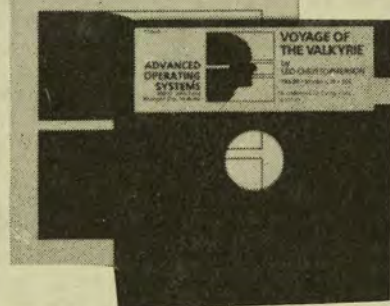
$$\begin{array}{ccccccc} X=-7 & & & & & & Z=4 \\ \cdot & & & & & & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ & & & & & & \\ & \cdot & & & & & \cdot \\ & & & & & & \\ & & X+7Y-4Z=1 & & & & \end{array}$$
$$-7 + 7Y - 4Z = 1$$

FOR 12 POINTS

$$-7 + 7Y - 16 = 1$$

**FOR 9 POINTS**





## VOYAGE OF THE VALKYRIE

Level II 16K disk  
by Leo Christopherson  
from Advanced Operating Systems  
450 St. John Road, Suite 792  
Michigan City, IN 46360

I put the disk into the computer and I'm a pilot of the attack ship VALKYRIE in an action and adventure game with sound. I can play it on a Model I or a Model III.

I am to explore the Norwegian island of Fugloy, finding and capturing ten castles defended by fierce birds. I have the help of a printed map to fill in as I explore the island (Fig. 1).

When I start, I can choose the difficulty level -- from about 60 to 600 birds to fight. I can also choose to hear music during the game, including some of "The Ride Of The Valkyrie" when I capture a castle.

I can see the number of birds and their fighting ability, the kind of birds defending each castle, and a report of my present location and energy (Fig. 2).

I've started the game. I'm looking north at Sjaelbjerg mountain (Fig. 3). When I turn and look east and west, I see an unbroken ridge of mountains. To the south is a pass (Fig. 4). I'll go that way.

I know from an earlier game not to go into a fog bank in the next area. Instead, I go west a few times and look around. I see Castle Jammer to the north. It is defended (Fig. 5). The first bird flies down to attack (Fig. 6). I see my energy level at the bottom of the screen while more birds appear (Fig. 7).

I turn on my weapons system and try to line up the crosshairs on one of the birds (Fig. 8). Before I can fire, another bird appears (Fig. 9). I've got to aim and fire quickly before I'm destroyed. If I can kill these birds and capture the castle, I can take the gold from the castle, advance in rank, and also replenish my energy. Then I can go on to explore more of the island.

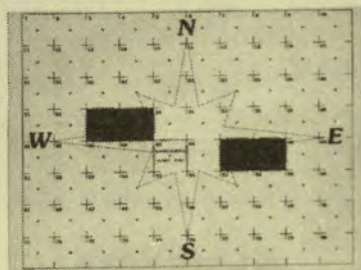


Figure 1.

|                  |        |                  |  |
|------------------|--------|------------------|--|
| FUGLOY BIRDS     |        | TOTAL ENERGY     |  |
| BIRDS DOWN:      | 0      | 20,000           |  |
| BIRDS LEFT:      | 70     | STATUS REPORT:   |  |
| FUGLOY AIR FORCE |        | NWP LOCATION: 45 |  |
| EAGLES:          | 10     | VIEW: NORTH      |  |
| FIGHTING ABILITY |        | WEAPONS: OFF     |  |
| HAWS:            | LOW    | CONDITION: GREEN |  |
| OSPREYS:         | LOW    | PROGRESS REPORT: |  |
| CONDORS:         | MEDIUM | PRIVATE          |  |
| FALCONS:         | HIGH   | GOLD: #####      |  |
| EAGLES:          | HIGH   |                  |  |
| ANGREP CONDORS:  |        |                  |  |
| DRAGE OSPREYS:   |        |                  |  |
| FRYKT FALCONS:   |        |                  |  |
| GEVNER EAGLES:   |        |                  |  |
| JAMMER HAWKS:    |        |                  |  |
| LUTTIG FALCONS:  |        |                  |  |
| MEIGAR OSPREYS:  |        |                  |  |
| TORDEN CONDORS:  |        |                  |  |
| VANDER HAWKS:    |        |                  |  |
| XEL HAWKS:       |        |                  |  |

CONTINUE GAME? YES (SPACE BAR) OR NO (N)

Figure 2.

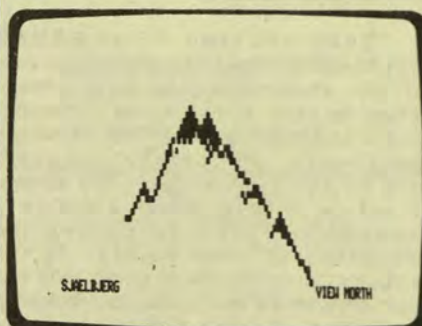


Figure 3.

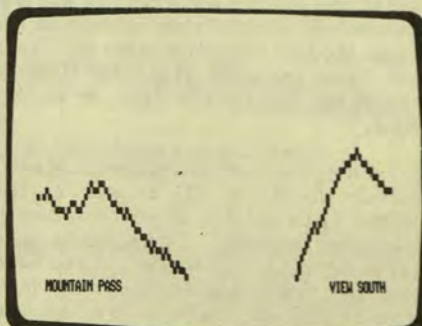


Figure 4.



Figure 5.



Figure 6.

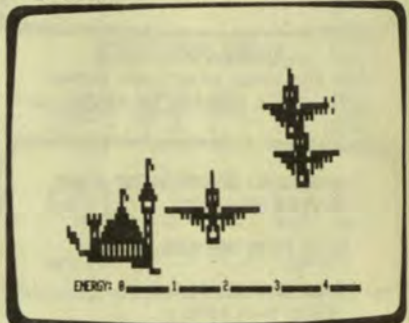


Figure 7.

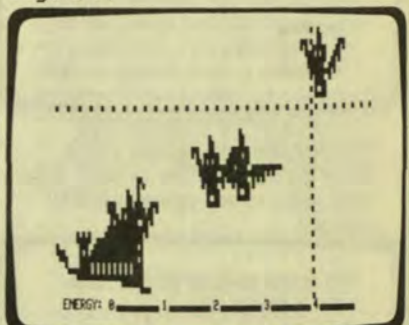


Figure 8.

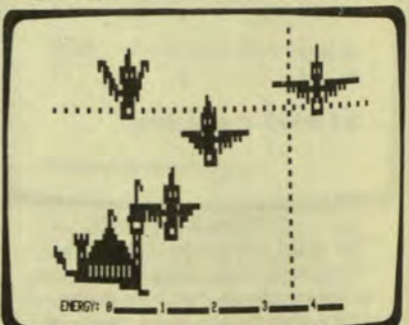


Figure 9.



# LETTERS



**microAPPLICATIONS Associates**  
present  
**microCOMPOSER-II**

*A computer based typesetting system designed to update and expand the speed and capabilities of the Compuwriter-II to include:*

- High Speed Word Processing
- Disk Text Storage
- Complete Computer Capability

**OPERATOR'S MANUAL**

Dear Purser's Magazine,

Your recent experiments and comments on the use of micros in publishing work have been of particular interest to us. We are a small publisher. We have long wanted to be free of the expensive and inefficient redundancies of conventional publishing methods. Computerized type setting has been available for some time, but not at anything near a price that a small business could possibly afford or justify. The solution for us seemed to lie in the microcomputer and in the small budget solutions that it makes possible.

I'm delighted to say that our problem got solved and that our solution might well be your solution as well—or anyone's who has a need for quality hard copy. We have an interface and the software to use any TRS-80 (model I or III) to drive a Compuwriter I, II or IV photo typesetter. We use Scripsit to do our keyboarding, but any word processor that produces ASCII files would probably work. This letter was written with Scripsit on a TRS-80 model I, then outputted to a Compuwriter-II with the result that you are now reading—beautiful, professional photo type. And affordable.

The system is called microCOMPOSER and is available for purchase by anyone with a need to be independent of old technologies and high costs, to anyone who has the wish to be free of hassles and deadline disasters caused by outside suppliers.

Of course not everyone has a need to own their own typesetting system, but microCOMPOSER has a number of features that make it ideal for sharing or co-op arrangements. First, it reads standard TRS-80 disks; second, it prints out the actual time used to typeset a text file, thus allowing for charges to be shared on a real time basis.

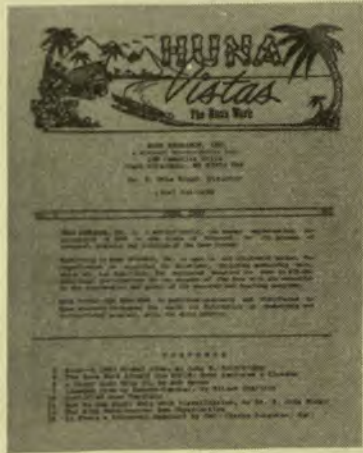
And for those whose type requirements are too light to warrant owning their own system, we will set type for them from their own disks using our microCOMPOSER system.

Certainly the last word in computerized type access is still to be written, but for now we think the next to last word is microCOMPOSER. Independence is beautiful.

We have free brochures with details for those interested in their own micro computerized type setter and for those interested only in our typesetting service. We would be glad to hear from anyone with a need for the ultimate in affordable hard copy.

Cove View Press  
Box 637  
Garberville, CA 95440  
707-923-3476

**EDITOR'S NOTE:**  
Cove View Press is now  
Cybertext Corporation  
Box 860  
Arcata, CA 95521 ■



Dear Bob,

I am sending our latest bulletin, which was set up from SCRIPSIT copy, on TRS-80 Model III 32K, 2 Disks, printed on Daisy Wheel II. That is the new model that I have, after working with Mod. I, 2, for two years. I like it very much and use it every day. I will anticipate your special issue on Model III!

I use mostly SCRIPSIT, RS Business Mailing List, and the Matrix Astrology Program (reviewed by you earlier), which I have modified for the line printer.

Mailing List is well done and I use it daily to keep up with the Huna Research membership list, inquiries, renewals, plus several small lists for various volunteer organizations (I'm the volunteer). Replaces my old addresserette system (with wet stencils). The programmer anticipated the threatened 9-digit zip code, but not the latest trick of 5 + 4, which is in effect a 10-digit zip, because it requires a hyphen. The main limitation is the limited number of spaces allowed for each line of the address, requiring some abbreviations at times, but especially Canadian and overseas addresses. (I'm sure it can be adjusted, being in BASIC, but I haven't done enough programming to figure out how.) Capacity is 990 addresses. In condensed format, 660, and the sole difference is the addition of a Remarks line. After the name, there is a place for company name or telephone number, which I use for remarks, renewals, tel. no., etc. (Any digit except a number will cause this line to print with the address. For comment or note, I add 0 before the remark.)

Your review of SCRIPSIT was excellent and reminded me of a couple of functions I had forgotten. It pays to look through the manual AFTER learning how to work with the program, to pick up the small features that can be very useful. The biggest limitation to me is my 32K memory -- I will add the next 16K when I can tear myself away from my Alter Ego long enough to ship to St. Louis for installation. (No computer service here.) It is quite easy, however, to store each part of the text as a separate file, and put together later (with appropriate adjustments for page numbering). Also can be stored and used in a variety of formats later as desired.

I particularly appreciate the update info and sample from Brown Graphics, which I expect to use later for some book projects.

Another limitation of SCRIPSIT -- no possibility of underlining. I miss the variety of type styles that I use on the IBM Selectric (especially Italic), but like the finished look of the text.

Otha Wingo, Director  
Huna Research, Inc.  
126 Camellia Drive  
Cape Girardeau, MO ■



Dear Mr. Purser,

"I appreciate the amount of work and effort that has gone into your magazine. I have found little information directed towards education in the last two years, and your magazine is one of the first which fills that gap."

"The real reason I am writing, is to take exception to your comparison of the Apple vs. the TRS-80 Model III. I am a computer teacher for the Mead School and the Whitby School, in Greenwich, Connecticut and I use both the Apple and the TRS-80 in both classroom and instructional areas."

"First of all you compared the TRS-80 Model III cassette to the Apple plus with disk. I will tell you that the TRS-80 with disk is more automatic than the Apple system and in an educational environment the features available with the Model III DOS are far superior. The TRS-80 DOS has the ability to automatically do anything the operator specifies. At the Mead School, the TRS-80's are programmed to go into BASIC and run a menu program which automatically runs any program on the disk. At Whitby the Apples will do the same thing, but you cannot change the Auto command because it was specified during the initialization of the diskette."

"I have found that teaching computing is easier with the TRS-80 Dos than with the Apple. The Dosplus Operating system we use on the Model IIIs allows us the following options which must be accomplished most times with separate programs on the Apple."

"1. Query the free space on a disk even from Basic.

"2. Copy a program from one disk to another.

"3. Renumber a program while you are in Basic.

"4. Determine which variables, and keywords are used on which lines (reference feature).

"5. To output anything on the screen to the printer automatically with control codes. I hate it when with the Apple I must break out of the program, start the printer and rerun the program.

"6. To duplicate a line of Basic in another spot.

"7. To move a line from one area to another.

"8. To search and replace anything in a Basic program. (I.E. To replace all X1\$ with Y1\$ or all GOTOs with GOSUBs)

"9. To remove all unnecessary spaces in a Basic program.

"10. Determine where on the disk a program sits (track and sector).

"11. Determine the size of a program and it's End of file position from the directory."

"Secondly the two questions the Model III asks are designed to aid the novice programmer. The MEM question allows the operator to protect high memory so that he can run hybrid programs. This is accomplished with the High\$ on the Apple. The CASS? question allows the programmer to specify high or low tape speeds so that he may load old or new tapes. In the disk system these questions are deleted."

"Thirdly, I would dispute your statement that there are more word processing programs for the Apple as opposed to the TRS-80. I have been looking for a good word processor for the Apple to rival Scripsit or Lazy Writer that don't require the Z80 card. What follows is a list of word processor programs for the TRS-80 taken out of just 80-Microcomputing."

"Scripsit"

"Electric Pencil"

"Lazy Writer"

"Word Pro (Computronics)"

"Word Star (FMC Corp)"

"Word Master"

"Textwriter III"

"Miniscript by Microdone"

"Word Processor (Pensadyne)"

"Word Slinger (Instant st)"

"Word Processor (Dr Howe)"

"Wordscribe (Tulsa Micro)"

"EZScript (Prosoft)"

"Word Processor (Micro Architect)"

"Word Processor (Blanton Software Service)"

"I like the Apple for its graphics, but when teaching programming or doing word processing I prefer the TRS-80 Model I or Model III."

"Please excuse this pettiness and keep up the good work. I will recommend your magazine to other computer teachers in my area."

"Sincerely,"

"Robert W. Jackson"  
2 Andrews Road  
Greenwich, Conn. 06830

## AUTOMATIC GRAPHING OF FUNCTIONS

Level II 8K tape  
from David L. Modney  
4144 North Via Villas  
Tucson, AZ 85719

Mr. William Harlow of Cincinnati, Ohio, writes that he is using D. Modney's AUTOMATIC GRAPHING OF FUNCTIONS.

He says, "I teach a class each quarter in Mini-computers and also classes in Numerical Methods. The students make use of TRS, H.P, and Wang campus computers in solving assigned problems. In many cases it is extremely helpful to make rough plots to locate region of roots. The HP has excellent graphing abilities - Modney's program is perfect for the TRS."

Mr. Harlow said he uses the program "maybe 6 times a quarter, usually during the first 3 weeks." He grades the program excellent in ease of use and in the subject matter, and good in making full use of the computer's capabilities and the use of graphics. "The graphing of the TRS is not the best - lines are too thick. This program sets up a very readable graph. The hard-copy to printer is very nice. It is not necessary for the "<" sign in the bounds. Would be of some help to have tic marks set up along the X-axis."

"I have written my own simple plotting programs and also will try out some of the ones that from time to time will appear in the various magazines. However, I feel strongly that Modney's is the best. He has excellent knowledge of strings. Tell him it would be marvelous if he came up with similar programs for Polar, Parametric, and Implicit Functions," added Mr. Harlow.

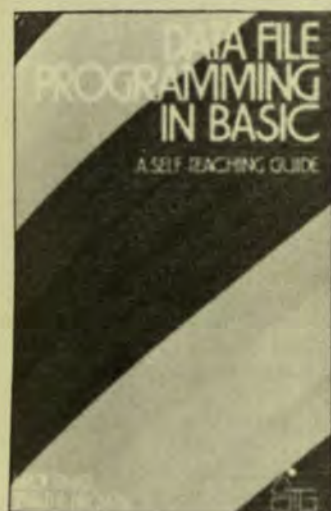




CHECK  
OUT

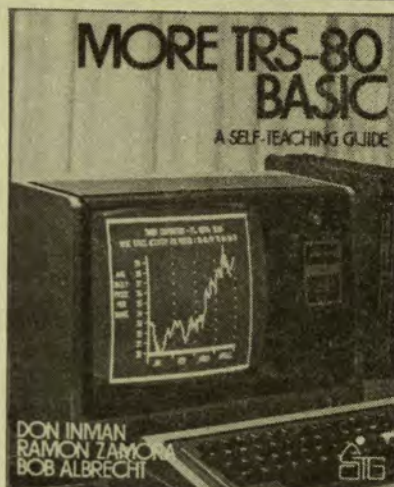


PURSER'S MAGAZINE does not usually review books. However, we have received the following books and want to mention them.



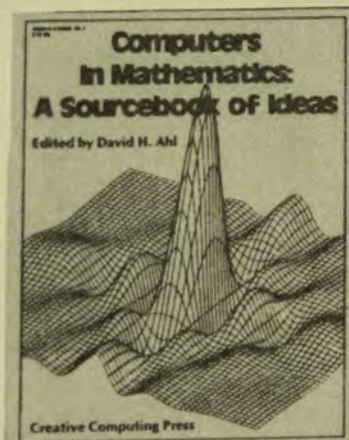
**DATA FILE PROGRAMMING  
IN BASIC**  
A SELF-TEACHING GUIDE  
by LeRoy Finkel  
and Gerald R. Brown  
from John Wiley & Sons, Inc.

An easy-to-read, detailed book for beginning programmers. It teaches you how to write programs that use data files, from opening a file to closing it. The book is primarily directed toward disk users, and covers both random access and sequential files. Only one of the 8 chapters is specifically on cassette tape data files. The book includes a review of some Level II BASIC statements and suggests good programming techniques. Each chapter ends with a self-test. The authors have used Level II Disk BASIC and MICROSOFT BASIC in the examples and have included Northstar BASIC in an appendix.



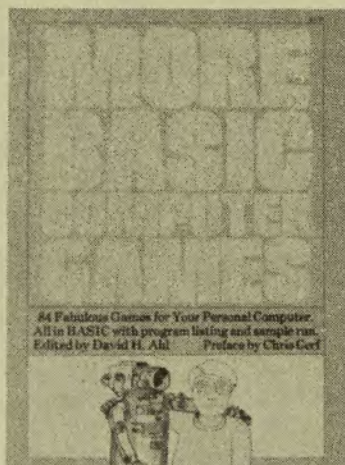
**MORE TRS-80 BASIC**  
A SELF-TEACHING GUIDE  
by Don Inman,  
Ramon Zamora,  
and Bob Albrecht  
from John Wiley & Sons, Inc.

A book to teach you more advanced programming techniques in BASIC. It has chapters on your computer's memory, graphics, cassette data files, disk files, and advanced arithmetic. Each chapter ends with a self-test. Much of the book is on ways to program and use graphics. You will want your computer in front of you when you try out the ideas.



**COMPUTERS IN  
MATHEMATICS**  
A SOURCEBOOK OF IDEAS  
edited by David H. Ahl  
from Creative Computing

Ideas for teachers using computers. These are articles and applications on everything from simple binary counting to advanced techniques like multiple regression analysis and differential equations. Some activities don't require a computer. Most do, including problems, puzzles, and programming ideas.



**BASIC COMPUTER GAMES  
&  
MORE  
BASIC COMPUTER GAMES**  
edited by David H. Ahl  
from Creative Computing

Books of game programs for you to type into your computer. You not only have the games to play, you can also use some of the programming ideas to help you write your own games.



**COMPUTER LITERACY**  
PROBLEM-SOLVING WITH  
COMPUTERS  
by Carin E. Horn  
and James L. Poirot  
from Sterling Swift Publishers

A general introduction to computers with many photographs. It includes chapters on computer jargon, history, applications, government use, and computer systems and components. There is a chapter on algorithms and flowcharting, programming and design logic, and beginning basic. Each chapter ends with exercises as a self-test. The book is on computers in general and not on any specific computer. Almost every page has one or more photographs.





# ADVENTURE INTERNATIONAL



## PRO-PIX '81

By Talley-Ho Software

TRS-80 TAPE Model 1&3  
TRS-80 DISK Model 1

010-0127 \$19.95  
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PRO-FOOTBALL-PIX, or PRO-PIX, is the culmination of over five years of development and use of a utility program to track the progress of the 28 professional U. S. football teams during the regular 224-game (16 weeks and 14 games per week) season. PRO-PIX made its public debut in 1980 under a slightly different name after extensive testing and was very successful, receiving many plaudits from users, and requests for a 1981 version. PRO-PIX is basically an updated version for 1981, with several subtle changes in presentation format and modifications to make it usable with Model III. The prediction data has been modified slightly and information is included herein for updating the program for successive seasons. PRO-PIX is designed for use on a TRS-80 Model I or Model III computer with at least 16K of memory. It operates under either Level II Basic or DOS Basic, with data handling by either tape or disk.

Features of PRO-PIX may be summarized as follows:

- List SCHEDULES by team or week of interest.
- List SCORES of all games played, by team or week.
- List current STANDINGS in division.
- Show PREDICTIONS for games to be played, by team or week.
- PRINT any screen that displays data.
- UPDATE the program by entering weekly scores.
- Set up a new SEASON.

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## INTERACTIVE FICTION

BY ROBERT LaFORE

FOURTH IN THE SERIES

HIS MAJESTY'S SHIP "IMPETUOUS"

### WHAT IS IT?

Interactive Fiction is story-telling using a computer, so that you, the reader, can actually take part in the story instead of merely reading.

### HOW DOES IT WORK?

The computer sets the scene with a fictional situation, which you can read from the CRT. Then, you become a character in the story: when it's your turn to speak you type in your response. The dialogue of the other characters and even the plot will depend on what you say.

### IS IT A GAME?

No. In a game the situation is rigidly defined and you can select from only a limited number of responses. But in Interactive Fiction you can say anything you like to the other characters. (Of course if your response is too bizarre they may not understand you.)

**His Majesty's Ship "Impetuous"** — You are the Captain, Horatio Hornblower, back in the days when His Majesty's Navy ruled the seven seas. Pirates, plunder, fame and fortune await the intrepid captain. If you have ever enjoyed books about the sea, now is your chance to take the helm and find out what this life was really like.



TRS-80 Model 1 32K DISK

His Majesty's Ship "Impetuous"

012-0077 \$19.95

ALSO AVAILABLE FOR

APPLE 2 - 48K DISK

(Applesoft in ROM required)

His Majesty's Ship "Impetuous"

042-0077 \$19.95

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