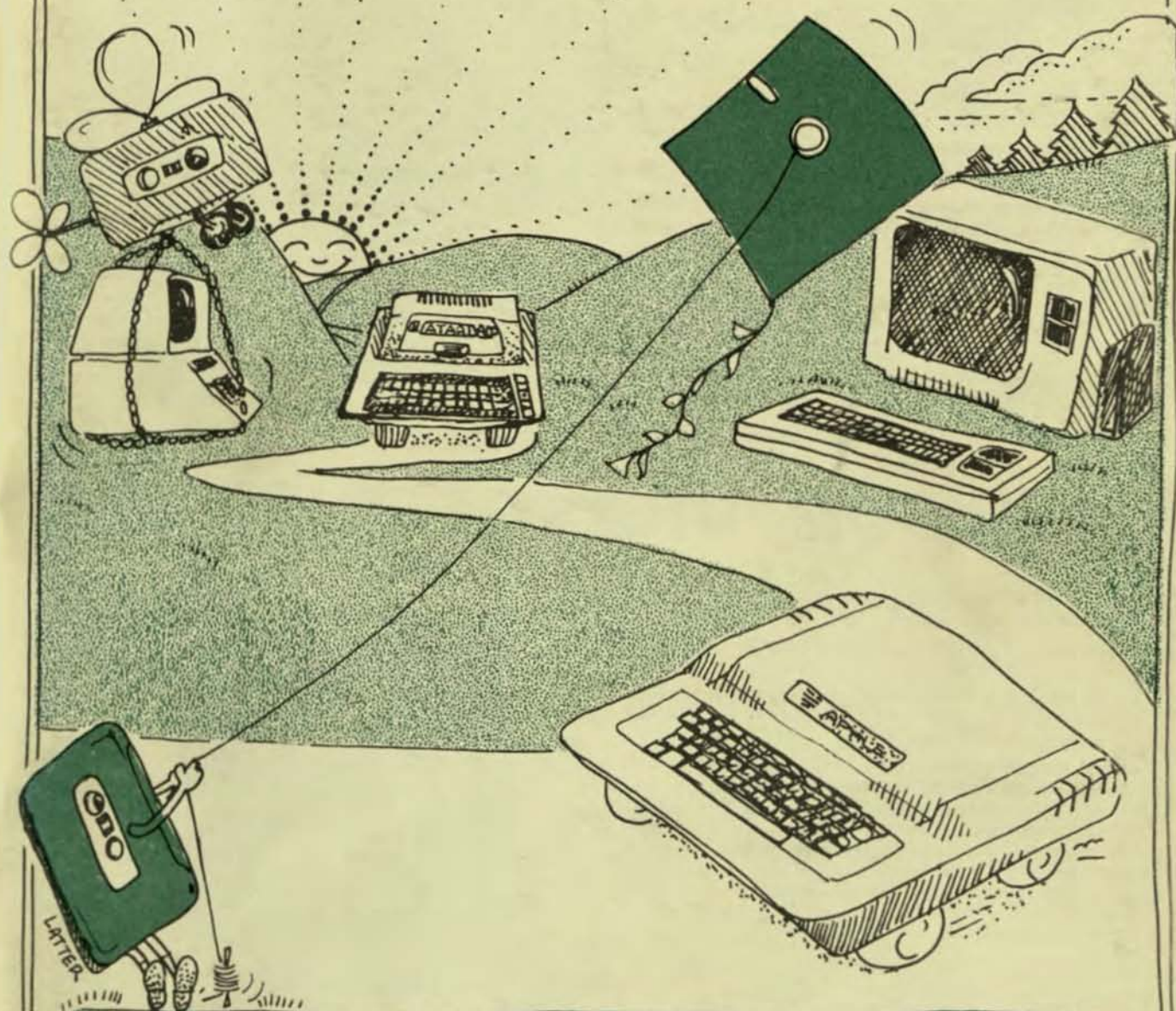


PURSER'S MAGAZINE

SPRING 1980

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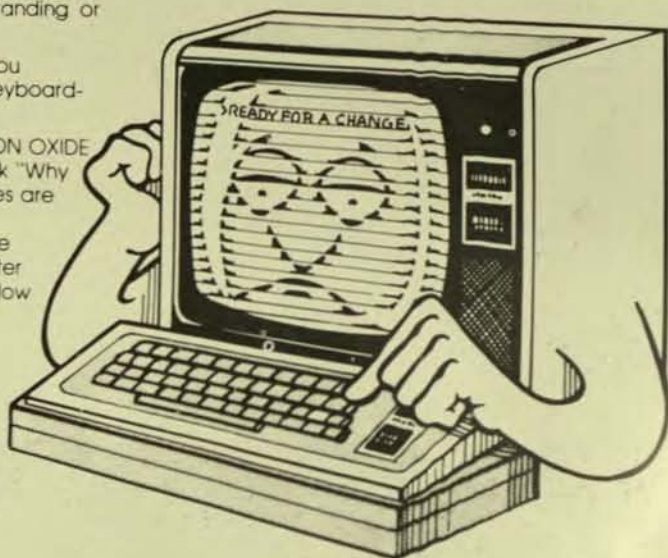
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ROBERT PURSER'S
MAGAZINE

SPRING 1980
Edition 9

Apple II & TRS-80 Level II
plus a little
Atari & PET

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Denice Silva
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Change! Change! It is time for a change.

Starting this issue, the entire magazine, including the software directory, is composed and typeset using word processing on the Apple Computer. The word processing program is Muse's SUPER-TEXT and my new typewriter printer is a Decwriter 34.

The Software Directories now show the memory size and the other computer requirements for each program. The directories no longer list same programs.

In this issue, I begin reviewing Apple disk computer programs. Most Apple owners have disk drives.

Another change is the growth in educational software. From now on this magazine will try to show you more practical, educational programs.

The PET Software Directory has been replaced by a PET Vendor List. The PET Software Directory has had no overall growth since the last issue. Most PET owners have the old ROM set (version 2) in their computer. The changes between version 2 and version 3 were great. Many good programs will not run on computers with the new ROMs. With the addition of version 4 and especially version 5, this problem will intensify.

In the next issue, I will make even more changes. Rather than rely solely on reviews of programs, I will print "testimonials" from people who have bought computer programs and are using them. Are you regularly using a commercially available program? If so, let me know.

I hope you like the changes. I will do my best to keep each issue a surprise.

ROBERT PURSER, PO BOX 466, EL DORADO, CA 95623



Level II TRS-80, Apple, PET & Atari

ROBERT PURSER'S MAGAZINE is published seasonally. The North American subscription rate is \$12 a year. Shipment outside North America is \$8 extra. Subscriptions start with the current issue unless you specify otherwise. Sample copies are \$4 to North America and \$6 elsewhere.

This is not a catalog. Never order cassettes or diskettes from the software directory. Always contact the manufacturer first before ordering.

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Listings in the Software Directory is absolutely free. Anyone who has original software for sale or trade will be listed. No distributors or dealers are listed.

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If you regularly use a commercially available program in your home, please let me know. Please send me a polaroid snapshot or 35 mm negative of you using the program and tell me why the program is useful for you.

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Please send two copies of your publication to me for my files. I like to see what people are up to these days.

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NAME CHANGES

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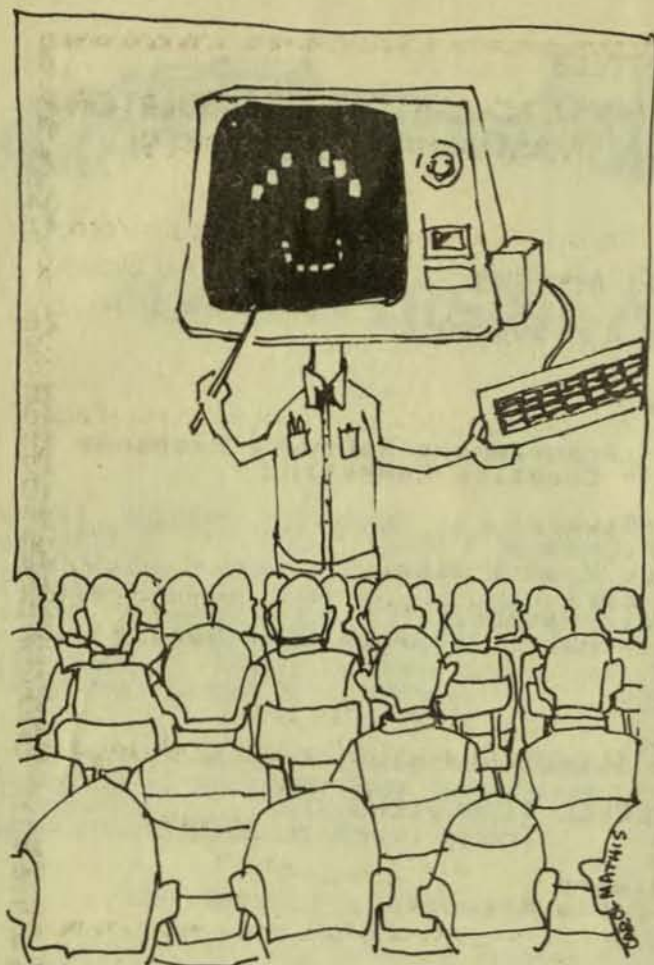
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EDUCATIONAL SOFTWARE What Is It?

Four years after the birth of the mass-produced personal computer, some trends in educational software are becoming clear. From my vantage point, here is what I see.

First, let us clear up what the term "Computer Aided Instruction" (CAI) means. Computer program manufacturers use the term "CAI" to mean almost anything. When you see it used in any sales literature, do not assume anything about the quality or type of the program. For the purposes of this article, I will use it to mean any educational computer program for the Apple II, TRS-80, Atari, or PET computers.

Another term that is being kicked around is "Teacher Authoring Language". This means any program that helps a teacher create a computerized lesson or examination for students. Five such programs are reviewed in this issue.

Educational software can be broken down into 4 categories. Almost no program fits perfectly into just one category. Sometimes the better programs have a little of each.

Category I. CONVENTIONAL CAI

Since the invention of the Gutenberg Press, classroom education has been based on lectures supplemented by textbooks. When the Apple, TRS-80, Atari, and PET were invented, people tried to put the lectures and textbooks on the computer. Often the results were boring, dull, and lifeless.

I have talked to publishers who feel that most of the future CAI programs will be done by an assembly line effort. This is the method that is used in writing many textbooks.

Already, companies such as Microphys, Programs For Learning, and Dorset have produced massive amounts of educational programs. Some of it is great and some of it is dull. See the reviews in this issue of the chemistry programs by Microphys and Programs For Learning. These reviews show the great contrast that can exist between identical programs.

Selecting good conventional programs is difficult. I have trouble just reviewing them. In the future, I will try to find people who are using these programs and tell you their story. Never buy this type of program without getting an independent evaluation of it first.

II. ENTERTAINMENT

Educational games are popular but their actual learning value cannot be measured or controlled.

Probably the most notable game that should be in every classroom is the Adventure series from Scott Adams. These programs are actually "puzzles in logic". They are very good for training young minds. There are other games that teach logic but few of them are as well thought out and entertaining.

"Hansman" is typical of the worst in educational games. Here is a simple game which is better suited to pencil and paper than a computer. For the lack of anything better to do, over a hundred people have written and are selling their own computerized version of this game.

"Spell-Bound" by Robert Baker of Sacramento, CA is a spellings game. It is specifically designed for the computer. Very effectively, it teaches spelling and speed-reading. It is far more effective than Hangman. From "Spell-Bound", we see that a good computer program is possible.

Some teachers write simple game programs to emphasize science or math ideas. Star Trek, which uses "slope" as the method of aiming the ship, teaches slope to kids who will soon study the principles of slope in their classroom. This approach is very good but it requires the teacher to learn computer programming and to have lots of time for programming.

III. SIMULATION

Now we come to what I feel is the best of the educational programs. The computer is like a dream machine. With a well-written program, you can have a nuclear power plant in your own living room. You can be transported to the operations rooms of the British admiralty on May 25, 1941. You can land NASA's space shuttle. You can have a complete chemistry laboratory. With it, you can do experiments on titration or buffered acids. You can be flying blind using only your airplane's OMNI indicator to land at Little Rock Airport. Or, you can design weaving patterns on your own automated 24 harness 16 color loom.

Computer simulations are often written by people who are experts in the subject that they are simulating. No educational background is necessary to create a successful simulation which can be used in the classroom. Conventional education programs are limited by the lack of educators who can write professional quality programs. There is no such limitations for simulation programs.

The only difficulty with simulation programs is they do require more teacher (or student) preparation.

VI. TEACHER AUTHORIZING PROGRAMS

Here is the real sleeper. A few months ago, few if any of these programs existed. Now every educational software company is trying to capture what will be a fantastically rich market.

Since any program that helps a teacher write a lesson or test for students is a teacher authoring language, a number of unrelated programs fall into this category. The computer language, PILOT, is called a teacher authoring language. However, most other programs in this category have much more

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*TM - Apple Computer Co.

page 5

rigid formats for the teacher to follow. Many teacher authoring programs just ask questions and give answers as a drill. Some have text as well as questions and answers.

Profit Motive

Everyone who has a computer will need one of these teacher authoring programs. They are that useful. However, rarely will anyone buy more than one of these programs. There is just no need for two.

Hence, we will see extreme competition. The best program will sell 30,000 to 50,000 copies a year. The second best selling program can expect to sell only a few hundred copies. In this race, the difference between first and second place is about half a million dollars a year.

This means that the quality of these programs will continue to improve dramatically while prices will fall. This will be the first non-game program to be mass produced.

A Comparison

One of the simplest teacher authoring language programs is Creative Computing's "Study Made Easy". It is designed for anyone who must memorize facts. The entire program is self-contained. Part of the program helps the teacher (or the student) set up the questions and answers. The rest of the program gives the test. Questions can be in only one format. There are no "options" or "bells and whistles". It is simple to the point of being trivial.

Carta Associates program (reviewed in this issue) is much more sophisticated. It still has only questions and answers but the student can choose to have the questions posed in 5 different formats. The advantage of this is that a student can ask for true and false questions or multiple choice questions if the subject is difficult. Once the student is familiar with the subject, he or she can ask for fill in the blank questions or reversed questions. The program is even designed to give an entire class a test and provide a complete scoring for the teacher. The student-testing program is separate from the teacher's authoring program which is separate from the question and answer data tape. This program's sophistication is gained at the price of compactness.

The program CAIWARE from MicroGnome (reviewed in this issue) is even more sophisticated. The program provides for

text as well as questions and answers. The text can be structured so that if the student answers enough questions correctly, the program skips some of the text. With this program, not only are the student's program, the teacher's program and the questions and text on separate tapes but the questions and text must be read off the tape while the lesson is being given. To repeat anything, the tape must be rewound and the program started all over again. Questions can not be repeated or given in a random order as they can with all other programs.

A different type of teacher authoring language is the spelling test. A good example of this is Instant Software's "Spelling Bee" (reviewed in this issue). It is simple and complete.

Summary

The purpose of teacher authoring programs is two fold

1. To help students
2. To help teachers

The more sophisticated the system the greater the potential for helping the student. However, we quickly run into "Purser's Rule Of Educational Software":

THE MORE COMPLEX A TEACHER AUTHORIZING PROGRAM IS THE LESS LIKELY IT WILL BE USED.

In fact, I feel that only the simplest of systems will ever be successful. I feel that Carta Associate's program is close to the optimum complexity and sophistication.

Well, so much for theories. In future issues of this magazine, I hope to report actual examples of students and teachers using these computer programs. Do you know anyone who is using a commercially available educational program? Do you know anyone who has stopped using an educational program for any reason? If so, please let me know.

VALID COMMANDS: T,A,M,J,U,E,C,R,G,N,S,B
NORMAL SYNTAX IS COMMAND:OBJECT.
EXAMPLE--T:HERE IS THE HOUSE OF NED.
TYPE WHAT YOU WISH TO DO.
PILOT:■

WHAT LESSON DO YOU WISH TO SEE?■

page 7

This program is written in BASIC. It is as well-written and as easy to use as is possible for a program written in BASIC. I recommend this version of Pilot.

[illegible]

For more information about this program, see the article, "A Tale of Two PILOTS".

TO STOP USING PILOT, TYPE 'STOP' WHEN
ASKED WHAT LESSON DO YOU WISH TO SEE?

100

APPILOT

AND

TEXT EDITOR

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PRESS THE RETURN KEY TO USE LESSONS
OR
PRESS THE ESC KEY TO EDIT LESSONS
OR
PRESS THE SPACE BAR TO LIST LESSONS

THE THREE MOST BASIC COMMANDS
ARE T, A AND M. THESE STAND FOR:
TYPE, ANSWER AND MATCH.

WHEN PILOT SEES THE LINE:
T: I LIKE AARDVARKS
IT WILL TYPE THE PHRASE WHICH
FOLLOWS THE COLON.

A IS THE ANSWER OR ACCEPT STATEMENT.
WHEN PILOT SEES THIS -- A
IT WILL ACCEPT AN ANSWER
AND WILL EVEN REMEMBER THE ANSWER
IF YOU GIVE IT A NAME FOR THE
ANSWER BEGINNING WITH A DOLLAR SIGN.

PILOT WILL REMEMBER THIS, AND
WHATEVER THE STUDENT TYPES MAY BE
STORED AND REFERRED TO IN A FUTURE
T STATEMENT.

TYPE P AND PRESS RETURN TO CONTINUE. ?

page 8

APPILOT

Apple II 32K Disk

The Muse Software Company
330 North Charles Street
Baltimore, Maryland 21201

Appilot is an Apple II version of
the teacher authoring language, PILOT.
This is a computer language designed for
teachers of elementary grades to help
them prepare computer lessons for their
students. The greatest advantage of
PILOT is the ease by which a lesson can
be created. Little or no computer
knowledge is required to create very
personal and very effective computer
assisted instruction.

One of the demonstration programs
of Appilot is a lesson on how to use
Appilot. A listing of the program shows
that it has more BASIC language
instructions in it than PILOT language
instructions.

The Appilot program is a paradox.
It slows down the teacher because it has
so many options to make programming
easier and faster for the teacher.

A TALE OF TWO PILOTS

Apple Pilot
vs.
Appilot

There is no Joy in Mudville.

But before we get to that story,
let me explain why PILOT was invented.
Teachers have very little time to write
customized lessons for their students.
Also, a teacher's time is better spent
in teaching than in studying computer
programming. What is needed is a simple
language that is easy to learn and easy
to use. So PILOT was invented.

APPLE PILOT

When Earl Keyser wrote his Apple
Pilot, it was one of the first and the
best versions for the Apple. This
program is now sold by Cook's Computer
Co. It is written in BASIC so it has
some limitations.

APPILOT IS A VERSION OF PILOT
DESIGNED SPECIFICALLY FOR THE APPLE
II COMPUTER. IT IS CODED INTO THE
APPLE II IN ASSEMBLY LANGUAGE FOR
THE 6502 MICRO PROCESSOR. APPILOT
ALSO MAKES USE OF THE INTEGER BASIC
ALREADY CODED INTO YOUR APPLE'S ROM.
THIS ALLOWS THE USE OF MANY BASIC
COMMANDS FROM WITHIN APPILOT.

PRESS RETURN TO GO ON.

PILOT:DELETE

DELETE WHAT LINE NUMBER?30
DELETED.

PILOT:INSERT

THE NUMBER OF LINES YOU WISH INSERTED
WILL BE PLACED AFTER THE LINE NUMBER
THAT YOU GIVE ME.

HOW MANY LINES DO YOU WISH INSERTED?1
FOLLOWING WHAT LINE?29

30 T:SEND HELP FAST!!!
INSERTED.

PILOT:LIST

LINE # LINE #?30,30
30 T:SEND HELP FAST!!!

PILOT:SAVE

WHAT DO YOU WISH TO NAME THE LESSON?■

First of all, the catalog is hard to understand by anyone who does not know DOS. True, there is a quick explanation of all the different symbols. However, if the program was written in machine language, the catalog could have a number by each lesson. The student or teacher could type a single number to load any lesson. Muse's Super-Text program has this feature. Surely, their version of PILOT will also have this feature. (It doesn't.)

Another advantage of a machine language program is that the operation of PILOT could be simplified for the teacher. The teacher could write a little of a program in PILOT and then see how it runs. Then, in the wink of an eye, the teacher could make some more corrections or additions to his program. In Earl Keyser's version, the teacher had to understand how to "LOAD" and "RUN" BASIC programs just to go from the authoring part to the student part of the program. What a hassle! Surely, things will be a lot better in a machine language version.

APPILLOT

I was overjoyed when I first saw this program. It is in machine language. It offers twice as many PILOT commands as Earl Keyser's version. One fantastic advantage is that the program will accept BASIC commands just like any PILOT command. Earl Keyser's version allows only one BASIC subroutine and that has to be written into the main program and not into the PILOT lesson.

Appilot has almost every feature you can possibly imagine. Not only can you save lessons on disk but you can save them on tape which is cheaper and easier to mail to other schools. The teacher tutorial is fantastic. Written in Pilot, the tutorial is well structured and very informative. The sample lessons far surpass those of Earl Keyser.

But what about all those wonderful conveniences that we desperately need. Appilot does not have them. It is still easier to use Earl Keyser's version of PILOT.

Other Comparisons

Earl Keyser's PILOT has only single character labels so this limits the number of places you can jump to. Appilot uses complete words for labels so the lesson can be self-documenting.

Appilot has some odd funny uses of the symbols "\$", "!", and "%". The "!" symbol is used as a match delimiter like:

```
M:FROG!TOAD!WORT!PRINCE
```

This allows for "," to be used as part of an answer match.

With Appilot you have this:

```
A:NAME$
T:HELLO, $NAME$
```

and with Apple Pilot you have this:

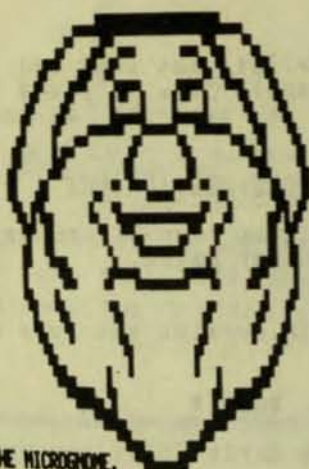
```
A:$NAME
T:HELLO, $NAME
```

I do not see the advantage of Appilot's method. I believe that it only adds confusion.

Most of the extra PILOT commands in Appilot are very useful. "LOC" allows you to position printed messages on the screen. "TW" is for typing black letters on white.

The editing commands of Earl Keyser's PILOT are full words. It is very hard to be confused. The editing commands of Appilot are much more powerful but much harder to get accustomed to. There is one definite mistake in the editing commands of Appilot. "Q" is used to kill everything. There is no recovery from this key so you will lose whatever lesson you were working on since the last time you SAVED it. The problem occurs because the "Q" key is next to the "ESC" key. The "ESC" key is used often in editing. If you accidentally hit both keys while entering a lesson, WIPE OUT!

So, you see, we still do not have an ideal version of PILOT. Earl Keyser's PILOT is better for non-programmers while Appilot is better for teachers who are programmers. Neither is the ideal version of PILOT that all schools need so desperately. No, there is still no joy in Mudville.



HELLO!
I AM THE MICROGnome.
WHAT IS YOUR FIRST NAME? BOB _

page 10

CAIWARE
TRS-80 Level II 16K

MicroGnome
Donald E. Coyne
Fireside Computing, Inc.
5843 Montgomery Road
Elkridge, MD 21227

This is a "teacher authoring language" program. It helps the teacher put the next day's lessons and tests on the TRS-80 computer.

CAIWARE has four separate parts

1. The teacher's program
2. The student's program
3. The lesson tape
4. The program to copy lesson tapes

The student program is designed to read questions and text from a tape. The lesson tape is created by the teacher's program. The teacher may choose the material to be shown to the student. A lesson can have

1. Questions and answers
2. Multiple choice
3. Text
4. Text which is skipped if the student does well.

The student program reads only one screen full of material at a time from the tape. The lesson is not stored in the computer's memory. Therefore, the lessons are not limited by the size of the computer's memory. However, this does make for slow going for the student.

If the teacher ignores the various options of this program, it is easy and practical. My major concern is that with all the possible options, this program becomes complex and time consuming. When designing a lesson, you can consider

1. Specifying student performance criteria
2. Identifying programmable (drill) questions.
3. Identifying programmable, structured text
4. Classifying structured text into three levels.

Don't mind me if I chuckle a little at the manual that comes with the programs. Mr. Coyne goes to great length to make you feel comfortable with this program. He realizes that most teachers will not know computer programming. Therefore, the style of the manual and the program is very "folksy". However, he keeps forgetting himself and starts talking in either computer garson or in "Educationese". For example, when defining the word "structured" he says, "structured means that a heirarchical discipline is imposed upon the decomposition of an expression of information such that each succeeding level of detail discloses no new concept or element that was not summarized in the next higher level." Similarly, he uses the symbol "!" as a "delimiter" to separate alternate answers just as a normal person might use a ";".

I am reviewing version 18 of "Super-CAIWARE". In the three months since I received my first copy of this program, there have been two updates to the program. The update service costs an additional \$22 for one year. I believe that it is necessary. Even after these most recent updates, I have noticed things that should be changed.

THE STANDARD PERFORMANCE CRITERIA GOVERNING PROGRAMMED INSTRUCTION ARE AS FOLLOWS:

THIS GRADE AND ABOVE:	BYPASS ALL THE SKIPPABLE QUESTIONS AND THIS TEXT:
95	ALL
85	DETAIL & INTERMEDIATE
78	DETAIL

DO YOU WANT TO CHANGE THE PERCENTILES (Y/N)? Y

KEY IN GRADE LEVEL 1 AND PRESS 'ENTER' ? 90
KEY IN GRADE LEVEL 2 AND PRESS 'ENTER' ? 80
KEY IN GRADE LEVEL 3 AND PRESS 'ENTER' ? 70 _

TITLE: AMERICAN HISTORY LESSON 1: COLONIAL TIMES
TOPIC: EXPLORATION INSTRUCTIONS: ENTER THE LETTER
FOR THE CHOICE THAT BEST ANSWERS THE QUESTION.

QUES. # 1: WHEN COLUMBUS DISCOVERED THE NEW WORLD, HE WAS

- A. SEARCHING FOR PLACES TO FOUND NEW CITIES
- B. LOOKING FOR A SHORTER PASSAGE TO INDIA
- C. SEEKING TO ESCAPE FROM RELIGIOUS PERSECUTION

ANS: [-]

GO AHEAD, BOB. FOR 1 POINT

Here is one small bus. In the student program, it asks if the student needs information on CAI programs. It then does not seem to accept a "NO" answer. Only after hitting the "N" button a couple times does the program seem to accept your response.

Here is another small bus. The answers to some of the questions are displayed faster than most readers can read.

I feel that over the next year, the program will improve sufficiently to justify the added expense of the update subscription service.

This program will have a great impact on the use of the TRS-80 in education. If a teacher limits his use of the many options in this program, CAIWARE is an excellent way to present text with questions. I feel that most schools will benefit from this program.

For more information on teacher authoring languages, see the article on Educational Software.

END OF TOPIC.

PI GRADE PERCENTILES : 90 88

78

STUDENT'S NAME: BOB PURSER

NBR OF QUESTIONS: 19

TOTAL ATTEMPTS : 37

TOTAL ATTEMPTS ALLOWED = 58

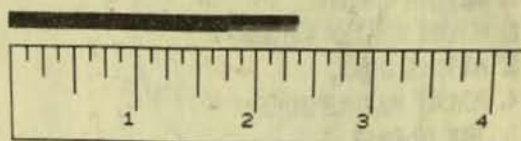
MAXIMUM POINTS ON 1ST TRY = 48

EARNED POINTS - ON 1ST TRY = 22

GRADE : 45 %

PLEASE CONSULT WITH YOUR ADVISOR BEFORE GOING ON.

DRAW A $1 \frac{3}{4}$ INCH LINE
YOUR LINE WAS $\frac{5}{8}$ INCH TOO LONG.



HIT ~~SPACEBAR~~ TO CONTINUE.

page 11

CURSOR MAGAZINE PET 8K

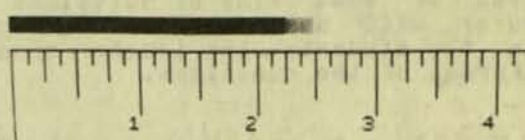
Cursor Magazine
PO Box 550
Goleta, CA 93017

Occasionally, Cursor magazine has an education program. Here is one of the most recent.

The advantage of "magazines on a cassette" like Cursor for the PET or Cload for the Level II is their low cost. For very little money you can get a wide selection of programs from many different authors.

This program is called "Ruler" and is in issue #17, February 1980. It is a skill building program to teach kids to read a ruler. It not only tells you if you are wrong but also shows you how much. The program is excellent.

DRAW A $2 \frac{1}{2}$ INCH LINE
YOUR LINE WAS $\frac{1}{4}$ INCH TOO SHORT.



HIT ~~SPACEBAR~~ TO CONTINUE.

CARTA ASSOCIATES, INC.
MASTER LESSON PROGRAM

SELECT EXERCISE BY NUMBER: _

1. QUESTION & ANSWER
2. REVERSE QUESTION & ANSWER
3. MULTIPLE CHOICE
4. REVERSE MULTIPLE CHOICE
5. TRUE OR FALSE
6. LOAD NEW LESSON
7. NEW STUDENT
8. END

BOB: # RIGHT: 0 # WRONG: 0 SCORE: 0%

MASTER LESSON PROGRAM
TRS-80 Level II 16K

Carta Associates, Inc.
Education Products Division
640 Lancaster Avenue
Frazer, PA 19355

Attention school teachers! This one is for you.

"Educational software" means different things to different people. That is why I have written a separate article devoted to explaining what it is. Read that article before reading this review.

The combination of the programs "Lesson Builder" and "Master Lesson Program" are the most practical aids for teachers that I have seen. The programs are relatively simple to use by the teacher and easy to use by the student.

The Master Lesson Program controls what the students do. It can ask a student questions for review or give the entire class a quiz. The questions will automatically be asked in any one of five different formats from true/false to reverse fill-in. When the student is studying, the student has control of what kind of questions the computer will ask. When the teacher tests the students, the teacher chooses the format of the questions.

Usually only one or two of the five formats will be useful. Much depends on the student's knowledge of the subject. Beginning students should try the true/false questions while the advanced students will try questions and answers.

Note that even though the questions can be asked in many different formats, the teacher only types in the questions, the answers, and some bluffs. The program does all the conversion to the different formats.

This program can be used in the home as well. Though most of the design of the program is aimed at use in the classroom, the programs will work well for the student at home who needs to memorize answers to questions.

The testing feature of this program is probably the best news teachers have had in a long time. It is fast and efficient. It is automatically graded and the test can be timed.

Carta Associates also sells data tapes (lesson tapes) for the Master Lesson Program. I do not recommend them. Though they are good demonstrations for the teacher, they rarely fit a teacher's specific needs. The Lesson Builder Program from Carta Associates is a far better way to create exercises for the students.

The program is not without some problems. The current version will sometimes display the correct answer for only one second. The time is too short for reading complicated answers. Once a test is given, the teacher cannot record the scores and start the students in a review. For some unknown reason, the instructions ask you to reload the lesson data tape for that lesson.

See the article on educational software for more information on this program.

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MASTER LESSON PROGRAM TEST MODE

ANSWER QUESTIONS WITH:

'Y' 'N' OR A NUMBER FOLLOWED BY 'ENTER'

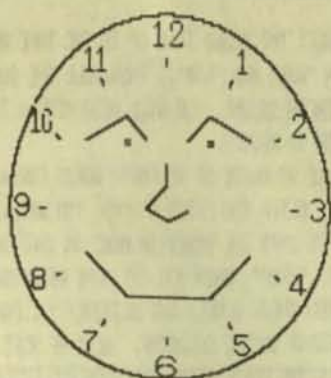
HOW MANY STUDENTS ARE TO BE TESTED? 5.

SELECT TEST METHOD BY NUMBER:

1. A CERTAIN NUMBER OF QUESTIONS
2. TIME LIMIT
3. BOTH

HOW MANY QUESTIONS? 10.

HOW MANY MINUTES PER STUDENT? 3.



SET THE CLOCK
FOR 10:15

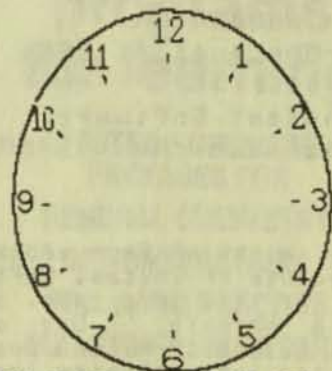
AND PRESS THE
SPACE BAR TWICE.

page 13

CLOCK Apple II

Hartley Software
3268 Coach Lane #2A
Kentwood, MI 49508

Here is a program for kids to learn to tell time. The program shows a clock. Its hands can be moved forward with the "F" key and backward with the "B" key. The student can either read the time or set the time on the clock. The program keeps a record of mistakes that the student makes and prints the results at the end.



SET THE CLOCK
FOR 10:00

WAY TO GO!

PRESS SPACE BAR TWICE. ■

SELECT MODE

PRESS SPACE BAR TWICE.

- 1 - RANDOM PROBLEMS
(DIGITAL TIME GIVEN)
- 2 - RANDOM PROBLEMS
(CLOCK TIME GIVEN)

WHICH? 1 ■

NAME: BOB

INC: 15 MIN

MODE: SET CLOCK

YOU GOT 16 CORRECT OUT OF 20.

YOUR ANSWER

CORRECT

3:30
3:30
4:30
7:45

4:30
4:30
7:30
7:30

PRESS SPACE BAR

Instant Software

PRESENTS...

SPELLING BEE

16K LEVEL II

COPYRIGHT (C) 1979 BY INSTANT SOFTWARE, INC. (P)
ALL RIGHTS RESERVED.

page 14

WORDWATCH
TRS-80 Level II 16K

Instant Software
Peterborough, NH 03458

This is a set of four educational programs. Because of Instant Software's low prices for its programs, this is definitely a bargain. One of the programs is called "Spellings Bee". It is a type of teacher authoring language.

I am particularly interested in any type of spelling lessons, especially those with sound. Because of the TRS-80 ability to have spoken words as part of a spelling test, the TRS-80 is an ideal way to teach spellings.

The photos will give you some idea of how the program works. The quality is average, the price is right, and there are not too many bugs in the program. An example of a bug is that the program forgets to erase some of the words that the last student missed so that one student gets blamed for another student's mistakes. Actually this is a minor problem that can be easily overcome.

Because the program is self contained (student and teacher parts in the same program) and because of the ease of use of this program, I feel that most schools and homes will want a copy.

FIRST, DISCONNECT THE PLUGS THAT GO TO THE TAPE RECORDER FOR BOTH "AUX" AND "EAR". THEN PULL THE DUMMY PLUG IF THERE IS ONE. YOU WILL ALSO NEED A TAPE ON WHICH TO RECORD.

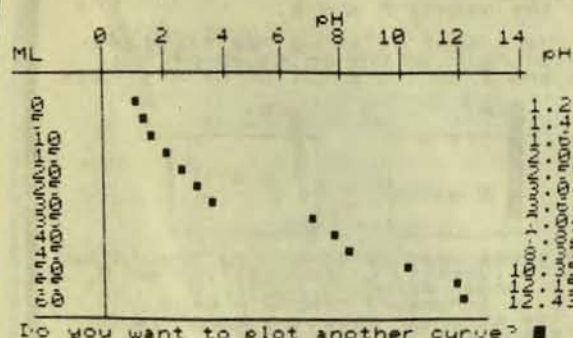
YOU WILL BE ABLE TO WRITE UP TO FORTY WORDS FOR A SPELLING BEE. AFTER YOU ENTER A WORD, YOU WILL BE ASKED TO SAY IT INTO THE BUILT-IN MIKE ON YOUR TAPE RECORDER. TYPE "STOP" WHEN YOU ARE DONE WITH YOUR LIST. BE SURE THAT YOU SPEAK SLOWLY AND DISTINCTLY...PAUSING FOR A SECOND BEFORE SPEAKING. ALSO BE SURE THAT YOU SPELL THE WORDS CORRECTLY WHEN YOU ENTER THEM!

PRESS THE <ENTER> KEY WHEN YOU ARE READY.

```
#####  
#PLEASE TYPE WORD NUMBER 2. #  
#TYPE "STOP" WHEN YOU ARE DONE. #  
#? BEGINNING #  
#####  
#NOW, PLEASE SAY THE WORD — #  
#"BEGINNING". #  
#YOU WILL HAVE FIVE SECONDS. #  
# #  
#####
```

OKAY, BOB,
YOU'LL HAVE A CHANCE
TO SPELL 3 WORDS THAT
YOU'LL HEAR ON THE TAPE
RECORDER.

WHEN YOU'RE READY,
PRESS <ENTER>.



TITRATION CURVE PROBLEMS

skip H2A type problems? NO

56 ML of .026 molar base is titrated with .416 molar HCl using the following reaction:



The base is a strong base

What is the pH of the reaction mixture after adding the following amounts of HCl to the base?

0 ML: pH = ?

page 15

ACID-BASE CHEMISTRY PET 8K

Programs for Learning, Inc.
PO Box 954
New Milford, CT 06776

This is a set of eleven programs with a 35 page instructor's guide. The programs cover a wide range of topics from pH, buffer solutions, acid-base equilibria, titration, etc. The programs also seem to have a wide range of authors and styles.

For a complete list of the programs in this series, write Programs for Learning for their free brochure which gives a description of all of their different series of programs.

These programs are adapted from larger computers. Some of the programs have been modified for personal computers but the results are still a little rough. For this reason, I feel that these programs are only a first step.

Some of the programs are simulations. Some are drills. Most are designed to test the student to see if he or she already knows the material. Almost all the programs require an introduction by the teacher.

I consider these programs a good start. However, they are only a start. Chemistry programs are one of the most practical for personal computers. I believe as competition becomes stronger, these programs will be replaced by better versions.

ANY COMPUTER CAN RUN

programs for learning

TESTED SOFTWARE
PACKAGES FOR
GENERAL CHEMISTRY
DEMONSTRATIONS
DRILL AND PRACTICE
QUESTION GENERATORS

in BASIC and ready to go
on YOUR system
Send for descriptive brochure

programs
for learning, inc.

P.O. BOX 954
NEW MILFORD, CT. 06776

GIVE THE FORMULA FOR:

THE WEAK ACID COMPONENT? HAC

THE SALT BUFFER COMPONENT? NAAC

WHAT IS THE $K(EQ)$ FOR HAC? 1.8E-5

WHAT IS THE CONCENTRATION (MOLES/LITER)
OF HAC? .01

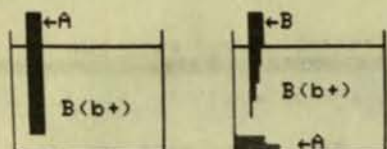
OF NAAC? .05

THE PH OF THE BUFFER IS 5.443

DO YOU WISH TO ADJUST THE PH (Y OR N)? Y

ENTER THE TOTAL VOLUME OF THE
BUFFER (IN ML)? 100

We have:



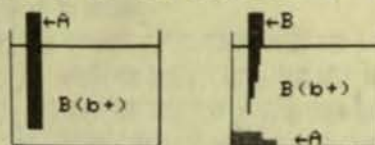
Reaction in the left beaker would be reduction of $B(b+)$ by A . A would be oxidized, but in so reacting it would be serving as a REDUCING AGENT. For reaction in the right beaker, the roles would be reversed.

During the reduction of $A(a+)$ by B , ALL 4 SPECIES ARE PRESENT, but the reaction continues. B is the stronger reducing agent.

Press **ENTER** to continue

Let's start with $N=2$ (2 metals and 2 solutions)
Call the metals A and B .

You might test relative reactivities by placing A in the solution of B 's salt and B in the solution of A 's salt.



From these observations, you should be able to identify which metal, A or B , is the stronger REDUCING AGENT. Which is stronger? (PRESS A or B .) No. The stronger reducing agent is B . Let's analyze the reactions.

Press **ENTER** to continue

page 16

OXIDATION - REDUCTION (REDOX)

PET 8K (old ROM)

Dr. William Butler
Dept. of Chemistry
University of Michigan
Ann Arbor, MI 48109

This program teaches the chemistry of oxidation/reduction. It is suitable for high school or beginning college chemistry. A student can complete this program in 15 to 30 minutes. I classify this program as a simulation.

The chemistry programs from Dr. Butler are for the old ROM 8K PET. CONDUIT will offer these programs for the 16K PET. They will be titled "Chemistry Laboratory Simulations." Soon, there will be a total of 6 programs. Each seems to be written by a different author so the quality and scope vary with each program. I have already reviewed "Titration". It is outstanding, being an excellent simulation and a stern task master.

REDOX program does not have the depth that "Titration" has. The only subject covered is how to determine which (hypothetical) metal is the stronger reducing agent. The amount of simulation is minimal. However, it is easy to use, easy to understand, informative and covers the subject better than a teacher could in the same time. The program is well-designed and costs only \$10.

I believe that anyone interested in chemistry will want this program. I highly recommend it.

SIMULATION OF OXIDATION-REDUCTION REACTIONS

You will be given N METALS (unknowns) and N SOLUTIONS, each containing a soluble salt of one of the metals. The object is to test for reactions between metals and solutions, and from the observations to RANK the metals in order of decreasing strength as REDUCING AGENTS.

One of the metals might be silver, for which the metal and corresponding ionic form would be designated Ag and $Ag(1+)$. Or we might have zinc designated Zn and $Zn(2+)$. In general we have metal X and its ionic form $X(x+)$.

Press **ENTER** to continue

Trial	Metal	Soln.	Observations
1	A	A(a+)	No Reaction
2	A	B(b+)	No Reaction
3	A	C(c+)	No Reaction
4	A	D(d+)	No Reaction
5	B	A(a+)	B dissolves, A forms
6	B	B(b+)	B dissolves, C forms
7	B	C(c+)	No Reaction
8	B	D(d+)	C dissolves, A forms

Which metal (LETTER)? Press # to RANK

WELCOME TO THE CREATIVE COMPUTING
SOFTWARE LIBRARY

PRESS KEY COORESPONDING TO
THE DESIRED GAME

- U.S. MAP
- MATH DRILL
- ADD WITH CARRY
- SPELLING
- LIFE EXPECTANCY
- PSYCHOTHERAPY
- COMPUTER LITERACY
- ALCOHOL
- SEX ROLE

WHICH?

```
  812
+ 235
-----
    7
```

HIT '/' TO STOP

CAI INSTRUCTION AND
KNOW YOURSELF
Apple II Disk

Creative Computing
PO Box 789-M
Morristown, NJ 07960

page 17

One example is the "Addition with Carry" program for teaching addition. Little or no instruction is given for the program. Little or no assistance is given by the program. A far better program for learning "Addition with Carry" is sold by Cursor Magazine. The cost is the same, yet Cursor's version offers more.

This is a disk full of programs that demonstrate some of the uses of the Apple Computer.

Everyone I have shown these programs to likes them. They represent a wide range of applications. If someone wants to look at your computer, pop in this diskette and give them a real treat.

Personally, I am a little disappointed with most of these programs. Though it is a nice collection, each program by itself comes off second best when compared with other identical programs sold elsewhere. I expected a little more depth from the company that brings us the best educational magazine for personal computers.



0 02 05 10 15 30 40 50
PERCENT ALCOHOL IN YOUR BLOOD!
HIT ANY KEY FOR FURTHER ANALYSIS.



STATE? WY
NO IT'S DES MOINES, IOWA
STATE?

EARLY WARNINGS

YOU EXHIBIT SIGNIFICANT EARLY WARNING
SIGNS OF SERIOUS EMOTIONAL PROBLEMS.
YOU SHOULD PROBABLY SEEK A PROFESSIONAL
OPINION RIGHT AWAY. IT WILL BE EASIER
IF YOU DON'T DELAY.

HIT ████████ TO CONTINUE

1. THE SEVEN AGES OF MAN

2. HOW DO I LOVE THEE?

3. TO BE OR NOT TO BE

4. YOU'RE LYING AWAKE

5. THE NEW COLOSSUS

6. OZYMANDIAS

7. O CAPTAIN!

8. THE TIGER

9. THE STAR-SPANGLED BANNER

A. THE WONDERFUL ONE-HOSS SHAY

B. THE DESTRUCTION OF SENNACHERIB

C. THE CHARGE OF THE LIGHT-BRIGADE

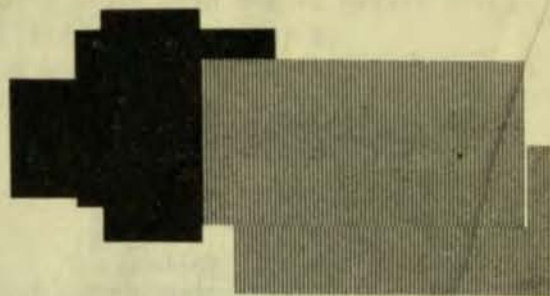
WHICH
READING?

D. DIXIE

E. INVICTUS

F. YANKEE DOODLE

G. OLD IRONSIDES



THE SHIP HAS WEATHER'D EVERY ????,
THE PRIZE WE SOUGHT IS WON,

3

READINGS IN LITERATURE Apple II 32K Disk

page 18

George Earl
1302 South General McMullen
San Antonio, TX 78237

This is a very unusual program.
The advertisements read, "A challenging
way to memorize famous readings.
Decorated with Mondrian displays."

The program gives you a selection
of well known literature such as "Casey
at the Bat", "O Captain! My Captain!",
The Bill of Rights, etc. Once you have
made your choice, you are presented with
the first two lines of the literature.
One word of the piece is missing
(specifically the last word in the first
line). You are asked to type the first
letter of the missing word. If you do
not guess it in three tries, the word is
displayed. If you guess correctly, the
program goes on. The program always
shows the last line that you saw
previously, plus a new line. The old
line has the last word missing. If you
miss, you will occasionally be given the
line over again.

Throughout this process, the
program uses a great deal of very good
graphics and sound.

I am at a loss to know what to say
about this program. Going through any
piece of literature two lines at a time
takes quite awhile. It quickly becomes
boring. However, memorizing anything
like the Declaration of Independence is
boring to start with. I think it is
sufficient for me to describe the program
and let you decide if it fits your
needs. The program is certainly well
written and very unusual. I just do not
know if it will be practical in the
classroom or home. If you buy this
program, let me know what you think of
it.

O CAPTAIN! MY CAPTAIN!
BY WALT WHITMAN

COPYRIGHT 1978 BY GEORGE EARL
1302 S. GEN. MCMULLEN, SAN ANTONIO, TEXAS

AFTER COLOR DISPLAY APPEARS, TYPE THE
FIRST LETTER OF ??? MISSING WORD.

IF CORRECT, YOUR TYPING WILL CHANGE THE
QUESTION MARKS INTO THE MISSING WORD.

PRESS RETURN

GEORGE EARL --- 1980 CATALOG

PRICE FOR EACH UNIT GE1 TO GE6:
on diskette \$24.95.
on a single cassette \$19.95.

REPLACEMENT OFFER -- If a diskette or cassette becomes damaged
in use -- send \$10.00 and the damaged diskette or cassette to
GEORGE EARL 1302 S. Gen. McMullen, San Antonio, Texas, 78237.
Please subject to change without notice.

GE1 *** MOTHER GOOSE RHYME PROGRAMS ***

A fun way to inspire reading mastery for the pre-school and
early elementary grade children. A total of 660 screen pages
with the child typing an answer on each page.

GE2 *** FAVORITE GUESSING GAMES ***

CITIES -- Guess the State -- 338 different cities.
CAPITALS -- Given the State or Country -- 150 different capitals.
PRESIDENTS & V. PRESIDENTS -- Since George Washington.
FIRST LADIES -- President's wives -- Since Martha Custis.
HANSHAN -- 700 everyday words.
SPORTS HANSHAN -- 500 sports related words.

GE3 *** LESSONS IN ALGEBRA ***

SETS AND SUBSETS -- RATIONAL NUMBERS -- REAL NUMBERS -- SENTENCES
SIGNS -- FRACTIONS -- MULTIPLICATION -- EQUATIONS -- INEQUALITIES
POLYNOMIALS

GE4 *** SPANISH ***

SPANISH HANSHAN -- 700 Spanish words.
SPANISH PHRASE HANSHAN -- over 200 phrases.
SPANISH-ENGLISH DRILL
ENGLISH-SPANISH DRILL

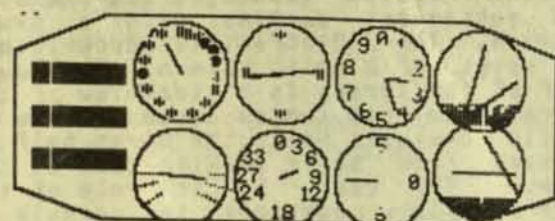
GE5 *** READINGS IN LITERATURE ***

A challenging way to memorize famous readings.
Decorated with Mondrian displays.
GETTYSBURG ADDRESS -- THE TIGER -- CASEY AT THE BAT -- FATHER WILLIAM
TO BE OR NOT TO BE -- THE SEVEN AGES OF MAN -- O CAPTAIN! MY CAPTAIN!
ANNABEL LEE -- BILL OF RIGHTS -- DECLARATION OF INDEPENDENCE

GE6 *** THE GEORGE EARL SAMPLER ***

A sample of some of the best from each of the above.

CASSETTES REQUIRE 16K AND INTRON BASIC. DISKETTES REQUIRE 32K AND
WILL RUN ON EITHER APPLE PLUS OR THE REGULAR APPLE II COMPUTER.



OBS TOP (LOC)=220 OBS BOTTOM=360
TIME 8:32 FUEL=28 FIX X=87 Y=107

TIME 8:32 FUEL=28 FIX X=105 Y=108
THIS IS YOUR FLIGHT PATH

page 19

AIRCRAFT SIMULATOR I Apple II 24K

Programmers' Software Exchange
Vernon Brown
2110 North 2nd Street
Cabot, AR 72023

This program simulates flying a plane using only instruments to guide you. The aircraft starts somewhere near the Little Rock Airport. If you follow the correct procedures for using the OMNI range indicator while "flying" the plane with your joystick, you can locate the airport. Then you can begin the approach and follow the slide path down to 600 feet.

Ever wonder why you bought a computer? I think I have an answer. A personal computer makes an excellent flight simulator. Flight simulators are learning tools for anyone interested in flying. Also they are fun. With a good introductory program, you will learn about flying a plane and instrument flying. With an advance program, you can gain actual flight experience.

A year ago, this same program was little more than an elementary game. The author of this program added more and more until now the program is an accurate, educational, and useful simulation.

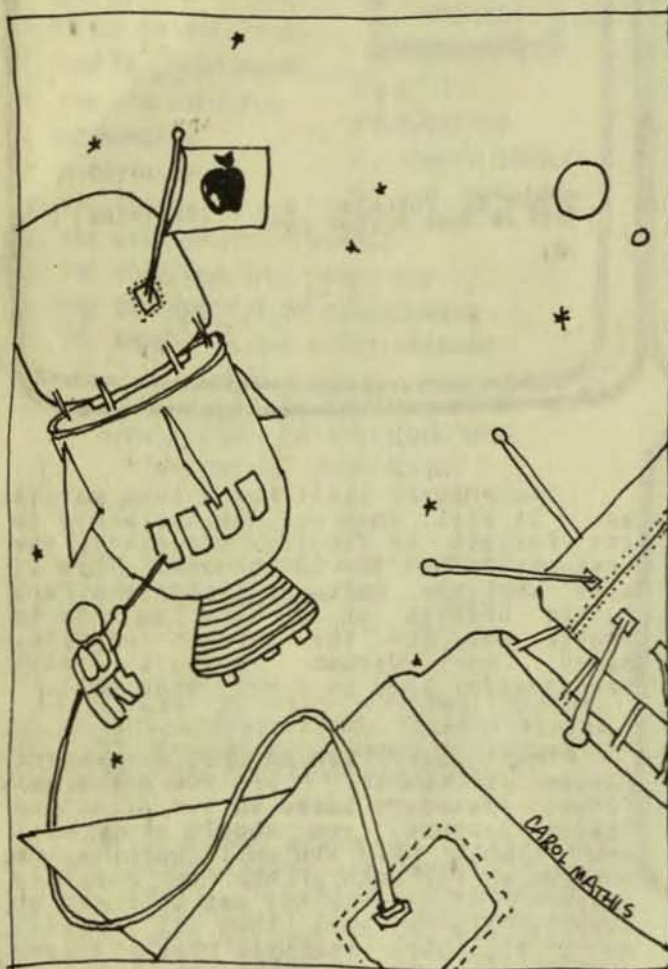
The program still has a long way to go. It still does not use the Apple to its fullest to simulate the plane, the instruments and the flight map. This is also why the Software Exchange offers future updates at a very low rate to people who buy the current version. Based on Vernon Brown's past performance, this is a very good deal.

The theory behind OMNI instrument flying is simple. If you use a set flight procedure based on two direction finder beacons, you should never miss the runway. All you must learn is the procedure for each of the four possible cases. If you do not get confused or overfly the airport then all is well. As a beginner, you will probably lose your way, crash, and die.

Once you have finished the flight you will see your flight on the computer display.

It is nice to find an application for personal computers which is practical, useful, and fun all at the same time.

TIME 8:38 FUEL=17 FIX X=54 Y=144
THIS IS YOUR FLIGHT PATH



Through the use of some excellent high-resolution graphics displays, 3-D Docking Mission simulates the approach and subsequent docking with a space station. The 3-D effect is accomplished by means of a split screen. The lower half of the screen is a side view of the approaching ship (which appears to be an Apollo capsule) while the upper half is a view from above looking down at the ship. The user, in the role of the ship's pilot, controls the capsule by firing one second bursts from six thrusters which allow maneuvering in two dimensions on each half of the screen. This results in a very good simulation of three-dimensional control.

By firing the six thrusters, controlled from the keyboard, the user must align the nose of the capsule with the docking collar on the space station. The capsule must be properly aligned in both displays. The real difficulty in even getting to the station is in maneuvering around the many asteroids littering the screen. If the ship touches an asteroid in both displays at the same time (remember we are in three dimensions, so it is possible to go under, above, or around asteroids while seemingly crashing through them in one display), then the capsule is destroyed and the user is given a new ship (a new life, too) and is sent back out to have another go at it. In addition, there is one asteroid which comes flying across the screen at random points from time to time. Much concentration is required to succeed. However, after becoming familiar with the controls, a success rate upwards of 75% is common.

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3-D DOCKING MISSION
BY Chris Oberth
Progamma International

REVIEWED BY
Tom Dolezal
PO Box 1435
Kinssville, TX 78363

The only real flaw in 3-D Docking Mission is the fact that the controls are rather awkward. The split screen also takes a bit of getting used to. However, this is more than made up for by the superb reaction time to commands, trying to get to the station in the least possible time, and the excitement of just barely missing an asteroid. After a successful mission, the space station's beacon beeps and flashes to hail the brave space pilot.

The game has one more feature which prevents it from becoming boring. When a docking attempt is successful, a score is calculated from the amount of fuel expended and the time it took to reach the station. This results in a much more competitive game and encourages the users to have "just one more try." This also leads to the "if I can get just one more point..." syndrome. Prepare to spend hours trying to get there just a little faster or by using just a little less fuel.

4. What is the gram-molecular mass
of IRON(II) NITRATE ? 189

***INCORRECT**

Do you need formula of compound ? YES

Fe(NO₃)₂

NOW: What is the gram-molecular mass
of IRON(II) NITRATE ? 229

Q=15.0 S=32.0 P=31.0
NA=23.0 F=19.0 U=39.0
MG=24.0 CL=35.5
NO-TRY AGAIN!
? 222

NO-YOU MISSED AGAIN!! THE ANSWER
SHOULD BE 132

HIT ANY KEY WHEN YOU'RE READY

WHAT IS THE GRAM-MOLECULAR WEIGHT OF
SODIUM FLUORIDE, NAF

NO-TRY AGAIN!
? 49

NO-YOU MISSED AGAIN!! THE ANSWER
SHOULD BE 42

HIT ANY KEY WHEN YOU'RE READY

page 21

GRAM-MOLECULAR MASS, PC23 PET 8K

Microphys Programs
2048 Ford Street
Brooklyn, NY 11229

Here is one of the many science
programs from Microphys. The program
teaches how to calculate the Gram
Molecular weights for compounds.
Another program comes on the reverse
side of the tape. It gives homework
assignments to the students and helps
the teacher correct the assignments.
Each student is given a different
assignment.

The program starts with the name of
the compound and asks for the weight.
If the student does not get this
correct, the computer will give the
student the atomic formula for the
compound. Then if the student fails to
get the correct weight, the computer
explains the correct answer.

FUNDAMENTAL SKILLS FOR GENERAL CHEMISTRY PET 8K

Programs For Learning, Inc.
PO Box 954
New Milford, CT 06776

This is a set of 12 programs which
introduce students to chemistry
fundamentals. The program set includes
programs on balancing equations,
Metric/English conversion, density,
exponential notation, etc. The programs
come with a 31 page instructor's guide.

One of the programs is call MOLWT.
The program gives the symbols and
weights of 7 elements. The program then
asks you for the molecular weight for 15
or more compounds. If you are wrong, it
tells you so but gives you no help.

As a comparison, see the program
opposite. It shows the difference
between an OK program such as this one
and an excellent program which is
specially designed to teach rather than
just test the student.

***Incorrect** GMM of Fe(NO₃)₂

is computed as follows:

1 atom of IRON(II) @ 56	= 56
2 atoms of Nitrogen @ 14	= 28
6 atoms of Oxygen @ 16	= 96
	<hr/>
	180

So, GMM of IRON(II) NITRATE
is 180 Gm/Mole

TYPE 'C' TO CONTINUE ?

HOW MANY GRAMS IN ONE MOLE OF
BENZENE, C₆H₆

NO-TRY AGAIN!
? 88

NO-YOU MISSED AGAIN!! THE ANSWER
SHOULD BE 78

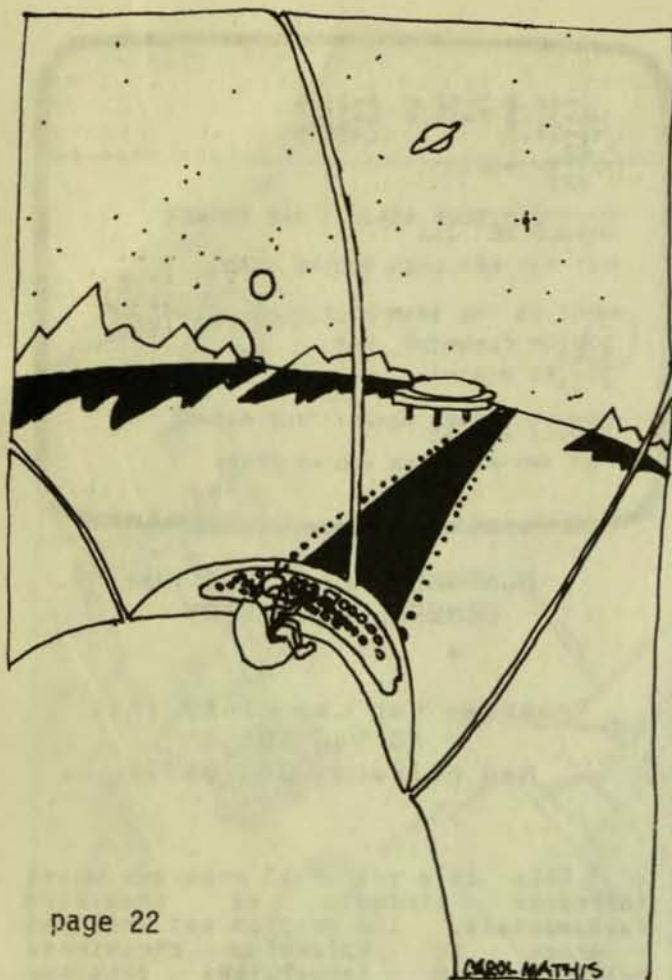
HIT ANY KEY WHEN YOU'RE READY

HOW MANY GRAMS IN ONE MOLE OF
MAGNESIUM NITRATE, MG(NO₃)₂

NO-TRY AGAIN!
? 188

NO-YOU MISSED AGAIN!! THE ANSWER
SHOULD BE 148.3

HIT ANY KEY WHEN YOU'RE READY



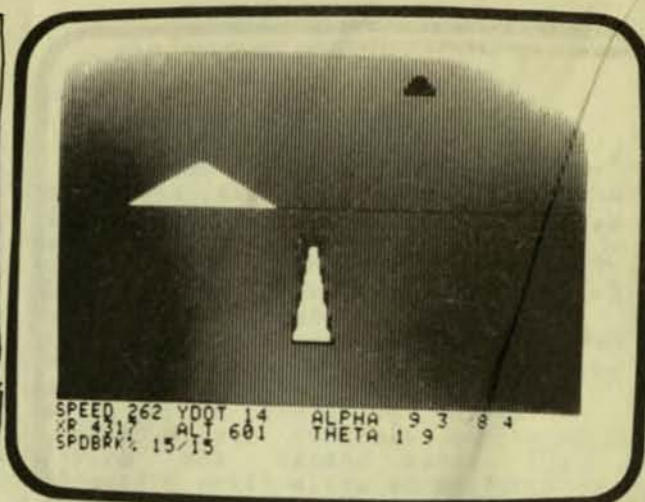
page 22

SPACE SHUTTLE LANDING SIMULATOR Apple II 48K

Harvey's Space Ship Repair
Box 3478
University Park
Las Cruces, NM 88003

With a name like "Harvey's Space Ship Repair", you know it can't be all bad. Actually, this program is well done and unusual. I think you will like it.

In Texas at the Johnson Space Center, there is a twenty million dollar flight simulator for the Space Shuttle. Astronauts can practice entire missions on the simulator. This program covers only the landing phase of the simulation. Landing the space shuttle is like landing a 75 ton rock. You have one chance to get it right.

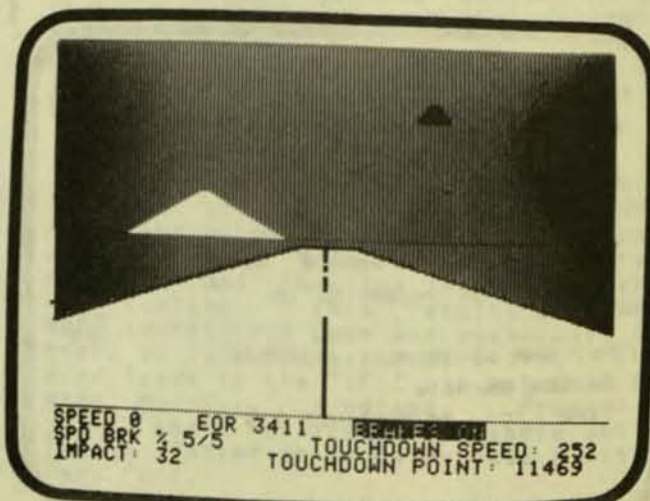


The program is written for someone having flight experience. However, the program comes with a well-written, nine page manual so almost anyone can use the program.

About 5 years ago someone discovered that simulations can be fun. Flying a "Lunar Lander" is the most popular of these simulations. Everyone and his cousin has written a version of Lunar Lander. Finally, we have something new.

Being the first means that this program can stand some improvement. The author did the display using Applesoft Basic rather than machine language. You see only one update of the display each second. The twenty million dollar Shuttle Simulator does 30 pictures per second. Therefore, you have to use a little more imagination with the Apple program. The author is working on a machine language version which will be better. Also note that there are other versions of the program for different Apple computer configurations. Write for more information.

This program is interesting and different. Try it. I think you will like it.




```

COUNT # 52  END G
COUNT # 53  F
COUNT # 54  HD: ILLEGAL
COUNT # 54  H.
COUNT # 54  D
COUNT # 60  A
COUNT # 66  +T: T= 6
COUNT # 66  A
COUNT # 72  B
COUNT # 78  C
COUNT # 84  D
COUNT # 90  E
COUNT # 96  F
COUNT # 102

```

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MUSIC COMPOSER/EDITOR
TRS-80 Level II 16K

PFDC Software
3500 Garden Oaks #128
Alsiers, LA 70114

Here is a fun program.

I have always been interested in music computer programs. So far the best I have found is Gary Shannon's 'FORTE' for the Apple Computer. So when I saw the advertisements for this program, I was very interested.

'UNTITLED'

```

1 : 36 36 36 3E 3E 3E 26 26 2A 2B 3C 2A 3C 36 36
16 : 36 36 3D 36 36 36 3E 3E 3E 3C 36 10D 1F 2E
31 : // 10D 3B 20C 10A 1G 36 30F 2E 1C 30F 2C
44 : / 20F 10D / 30G / 2A 1D 26 2F 2D 2D 2D 2D
58 : 2D 2D 2A 2A 2A 2A 2A 2A 2A 2A 2A 2A 2B 2B 2B
75 : 2B 2B 2B 2C 2C 2C 2C 2C 2D 2D 2D 2D 2D 2E 2E
92 : 2E 2E 2E 2E 2F 2F 2F 2F 2F 2F

```

PRESS P OR PRESS ENTER

When I first got this program, I thought I had made a mistake. It does not use an amplifier as most TRS-80 music programs do. Instead, the program requires that you use a radio placed near the computer.

Then I took a quick look at the manual and I was sure that this was a turkey. It is only six pages long without a single illustration or reference table.

So reluctantly, I tried it.

Surprise! The program is nicely done and easy to use. The program has many options which can be used if you want. Yet, if you want to keep it simple, you need only press just a few buttons and create some very interesting music.

The program is a little difficult to make changes to a musical score if you need to. But other than that, the program is a complete musical system. It even has an instruction called "HELP!" to give you a list of all the possible commands in order of importance.

I believe that all schools will want this program. It is good.

MISOSYS: serious software (tm)

MACHINE LANGUAGE PROGRAMS FOR YOUR TRS-80 (*)

- **tutil** An all purpose utility for the tape user. Examine, clear, initialize, move, and modify data in memory. Compare two blocks or search for up to 24 bytes of string (HEX or ASCII). Punch, load, verify, or execute 280 programs. Registers are displayed and changed in English. Jump and set 2 breakpoints. Output to Printer and CRT simultaneously. TUTIL also provides a MODIFY program that remodels the EDTASM (strips I/O routines, relocates variable list, & re-references all pointers) to provide superior method of assembly language programming for the tape user. (16K, 32K, & 48K; all three for \$19)
- **disk** All features of TUTIL plus read & write disk sectors, even to the DIRECTORY! Read entire tracks including address marks. Scroll through the disk sector by sector. (16K, 32K, & 48K; all three for \$20)
- **diskmod** Turn your Editor/Assembler into a DISK package. This patch modifies EDTASM 1.1 & 1.2 under DOS, NEWDOS, or VTOS. Capabilities? You couldn't ask for more! Add full disk I/O (source and object code), block move, global change, pagination with optional end-of-page prompting, sorted symbol table, print text buffer utilization, corrected DEFN expansion, protect memory, and recover after boot. From within the modified EDTASM, you will have DIR, FREE, and KILL. This package is a must for assembler programmers. A 32K system is required to run this patch. (\$20)
- **dsmbir** Complete your assembly language tools with this disassembler. 2-passes provide SYMBOLS, EQUATES, and ORG. Output to CRT, Printer with paging, or tape cassette. The tape loads into Editor/Assembler. Relocate or modify machine code programs that you purchase. (16K & 32K; both for \$19)



MISOSYS DEPT P
5904 Edgehill Dr.
Alexandria, Va. 22303
703-960-2998 (5P-11P)

VISA

(*) TRS-80 is a registered trademark of Tandy Corp.

• **cmdtil** Append 2 or more CMD files and/or SYSTEM tapes. All features of LMOFFSET. Capabilities similar to PATCH. I/O to/from DISK or TAPE. Backup CMD files to tape. More! (\$20)

COSAPPLE COPYRIGHT 1979 BY DANN MCCREARY

```
R0 R1 R2 R3 R4 R5 R6 R7
1000 B7C1 8B38 5192 509B 88E5 8006 801E

R8 R9 RA RB RC RD RE RF
9BED E83A 23E5 048A ED1A ACCD 1104 2C67

Q D DF 1 2 3 4 P X T IE OP BK
00 4A 01 00 00 00 00 00 23 01 71 N
```

SIMULATED COSAPPLE DISPLAY

NOTE THAT THE PROGRAM COUNTER MAY
BE ANY 16 BIT REGISTER, AS DETER-
MINED BY THE VALUE OF REGISTER P.

PRESS SPACE BAR TO CONTINUE

TRACE MODE

PRESSING THE 'T' KEY WILL START THE
SIMULATOR TRACING THROUGH THE 1802
PROGRAM. AFTER EACH STEP THE NEW
CONTENTS OF ALL REGISTERS WILL BE
DISPLAYED.

THE SPEED OF THE TRACE IS DETERMINED
BY THE SETTING OF PADDLE 0. TURNING
PADDLE 0 ONE WAY AND ANOTHER WILL
CHANGE THE TRACE SPEED WHILE THE
SIMULATOR IS RUNNING.

TO STOP TRACING AND RETURN TO THE
SINGLE-STEP MODE PRESS 'CONTROL C'.
BREAKPOINTS WILL ALSO CAUSE A HALT.

PRESS SPACE BAR TO CONTINUE

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COSAPPLE 1802 SIMULATOR APPLE II 16K

Dann McCreary
Box 16435-Y

San Diego, CA 92116

This program is for the next generation of students. It is a simulation and so can be classified as an educational program as well as engineering aid. If you are an electronic engineer, you probably already know about this program. If you are just learning about microcomputers, you will want to know more about it. Therefore, I will address my comments to the beginning computer students out there.

The next time you buy any product, it just might have a computer inside. Microwave ovens, washing machines, and electric blenders are all becoming computer controlled. Most automobiles after 1985 will have to be computer controlled to meet the air pollution standards. A recent electronic computer show had appliances that talked to you using a microprocessor.

Little computer chips are becoming the building blocks of our society. Children of today must learn to build with these microcomputer chips just as the last generation played with Lincoln Logs or Erector Sets. One of the more popular but least known microcomputer chips is the "RCA 1802". It is one of the few microcomputer chips that uses very little power. Also, it is designed to operate differently from most other microcomputers. Therefore, it is a very interesting chip to study.

Cosapple turns the Apple display into an RCA 1802 microcomputer. With simple instructions via the keyboard, you can operate this imaginary 1802 computer. Students can learn how the 1802 works. Inventors can test a new design using this program. The simplicity of this microcomputer makes it an excellent choice for a demo program for computer literacy courses.

I have only one complaint. The program comes with little information about the 1802. Though the documentation does mention the existence of an 1802 manual from RCA, ordering instructions are not given. Perhaps this is because the author of the program thinks that he is only selling to electrical engineers. If this program had enough instructions, it would be an excellent program for anyone even remotely interested in microcomputers.

MEMORY USAGE

THE 1802 SIMULATOR IS A MACHINE LANGUAGE PROGRAM WHICH INTERPRETS 1802 OBJECT CODE. IN ORDER TO DO THIS IT MUST BE CO-RESIDENT IN MEMORY WITH AN 1802 PROGRAM. THE SIMULATOR AND ASSOCIATED TABLES OCCUPIES HEX ADDRESSES \$800-\$FFF AND IT USES 0 PAGE ADDRESSES \$0-\$1F AND \$62-\$90. THIS PRECLUDES CONCURRENT USE OF 'SWEET 16', BASIC, AND ALSO THE SECONDARY LO-RES DISPLAY PAGE.

1802 PROGRAM WORKSPACE BEGINS AT \$1000 HEX. CARE MUST BE TAKEN TO AVOID ACCIDENTALLY MODIFYING WITH YOUR 1802 PROGRAM ANY MEMORY USED BY THE SIMULATOR.

PRESS SPACE BAR TO CONTINUE

*** MENU ***

- 1 - SKILL DRILL #1
- 2 - CREATE NEW LIST
- 3 - MODIFY EXISTING LIST
- 4 - MAKE A TAPE
- 5 - RUN STUDENT PLANNING
- 6 - RUN CLOCK PGM

ENTER YOUR SELECTION
AND PRESS RETURN ■

LISTNAME: U10
NUMBER OF WORDS: 20
YOU WILL HAVE APPROXIMATELY 10 SECONDS
TO SAY EACH WORD AFTER YOU
PRESS THE SPACE BAR.

STIMULUS: B_TTER RESPONSE: A
PRESS SPACE BAR WHEN READY TO SPEAK.

*****<<<< ■

START
TALK

STOP
TALK

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APPLE SPELLER
Apple II ROM

Hartley Software
3268 Coach Lane, #2A
Kentwood, MI 49508

This program is both unusual and educational. The program uses a little black box to control the off/on of a tape recorder. The program controls the recording of spelling tests, giving the spelling test, scoring the test, and keeping records for the teacher.

There are many programs that have some of these features. Most of these programs are for the TRS-80. However, no other program combines the whole process into a single package. This program is definitely a first.

All schools using the Apple will probably want a copy of this program. I feel that they will find it useful and even necessary. However, please note that the program has some awkward moments. Since the program comes from an individual rather than a large company, the program will continue to improve. By the time you read this, many of the problems should be corrected.

It is just the little things that bother me. When creating a spelling test, instructions are not given to create the blank spaces that the student must fill in. Yet, these same needed instructions are given in the program which edits a lesson. The program will accept any length of answer and prompting message. Yet, the program will die if the answer wraps around the display. If the program bombs, it is hard to restart since the disk operating system is not on the program disk. The controlling black box for the tape recorder plugs into the same socket as the same paddle. As it is set up, the same paddle plug must be removed completely. The use of the space bar is very confusing. Most programs use the "RETURN" key to signify that the student feels his answer is complete. Instead, this program uses two hits of the space bar. The program does not tell the teacher or the student which spelling lessons are stored on the disk. Similarly, the program has very few messages of help to either the student or the teacher when they chose a lesson.

The program requires more effort by the programmer to make it more user-orientated.

b_tter

TYPE THE LETTER WAIT
AND PRESS THE SPACE BAR TWICE.

STUDENT: TIM HARTLEY

WORDLIST: U10

MISSED: 5

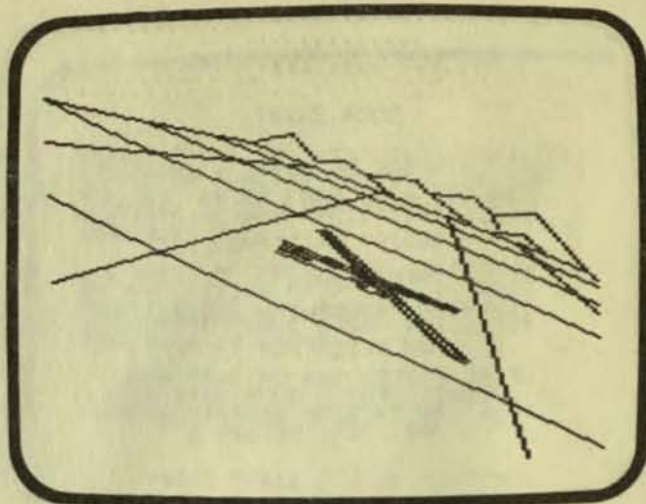
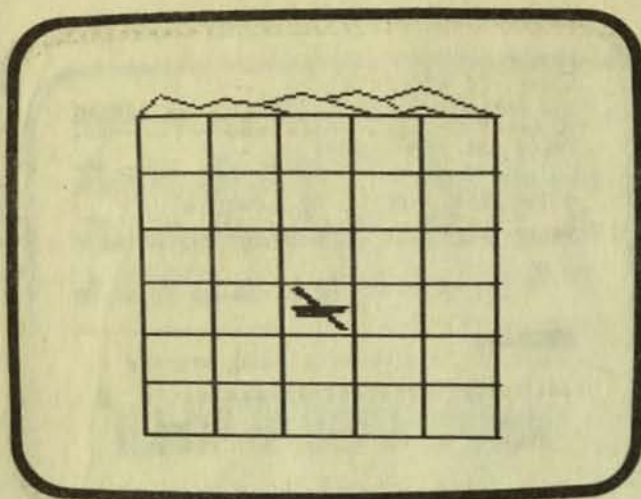
INCORRECT

SHOULD BE

E
U
T
T
E

I
O
U
E
T

HIT RETURN ■



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APPLE II ANIMATION PACKAGE
2-3D1 Apple II 16K minimum

subLOGIC
Box V
Savoy, IL 61874

This package consists of a textbook, a booklet, and four computer programs. The textbook teaches you the theory of 3D graphics. The booklet instructs you on how to use three of the programs for creating graphics. The fourth computer program is a demonstration of one application of 3D graphics.

Once in a great while, I come across a product that I can point to and say "See! That is the way it should be done."

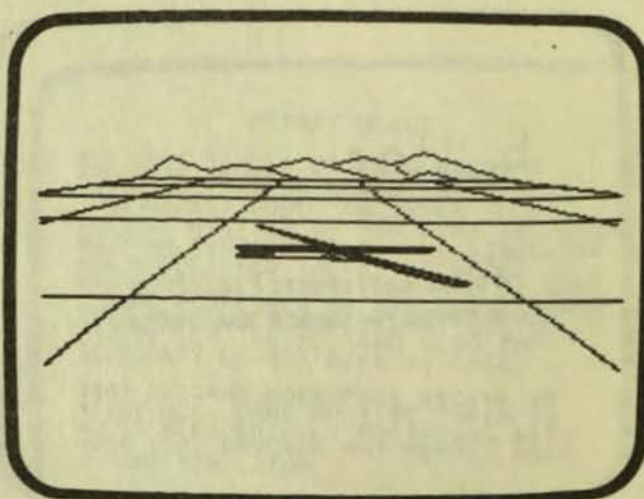
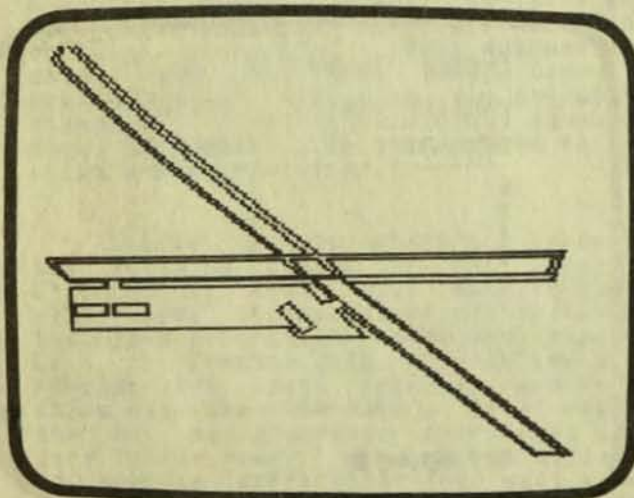
Every part of this package is designed to use each educational media to its fullest. It instructs using textbooks and demonstrates using the computer.

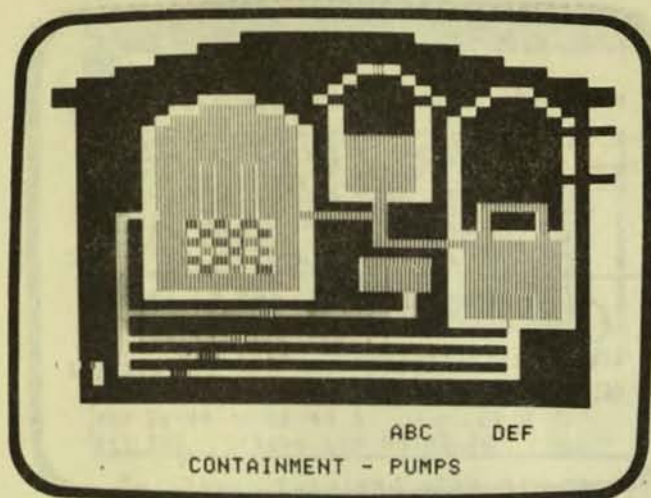
This is a complete package for people who want to understand 3D graphics. Also it is designed for programmers who want to add 3D graphics to their machine language programs. This is truly an educational package.

Three dimensional graphics is rarely covered in school or college. Learning it on your own is not easy. Textbooks alone cannot really do the job.

The term "educational software" is kicked around by educators and salespeople. Most think that it means a computer program that replaces a typical school textbook. The animation package proves them wrong.

I have not seen any other package which combines all the necessary educational features into one complete unit. I hope that other publishers take note of this.





MAINTENANCE SCHEDULE FOR PUMPS			
PU/STATUS	TIME	PU/STATUS	TIME
A OFF		M OFF	
B OFF		N ON	1/04:55
C OFF		O OFF	
D ON	1/04:12	P ON	1/05:13
E ON	1/04:22	Q OFF	
F OFF		R OFF	
G OFF		S OFF	
H ON	1/05:03	T OFF	
I ON	1/05:22	U OFF	
J ON	1/04:24	V OFF	
K ON	1/05:18	W OFF	
L OFF		X OFF	

TEMP=450 CNT=2

1 00 45

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THREE MILE ISLAND Apple II 48K Disk

The Muse Software Company
330 North Charles Street
Baltimore, MD 21234

I thought this was a game. It is not.

Muse's Three Mile Island is an educational program. It is a simulation of a nuclear power plant. And it is very well done.

In my opinion, there are just two ways to learn about a nuclear power plant. One way is to run a nuclear power plant. The other way is to operate a simulation of a nuclear power plant. No amount of readings can give you the understanding that this program will give you in just a few hours.

The next time some "expert" tells you about the safety of nuclear power plants, ask them if they have ever run one. You can in your own home. Why be in the dark about this very important issue when all you need is this program?

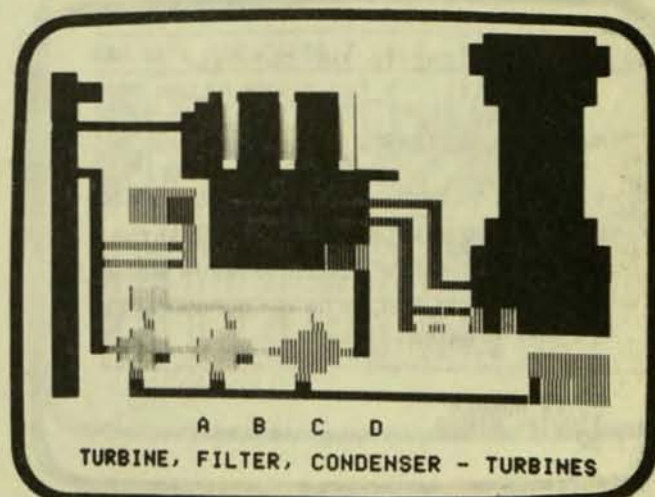
A very extensive manual comes with the disk. The manual is required reading and that takes a while. When you are ready, you simply start the program. The program will set up the plant. When it is ready, the plant will begin operation. Each second represents one minute of real-time in the daily life of a power plant.

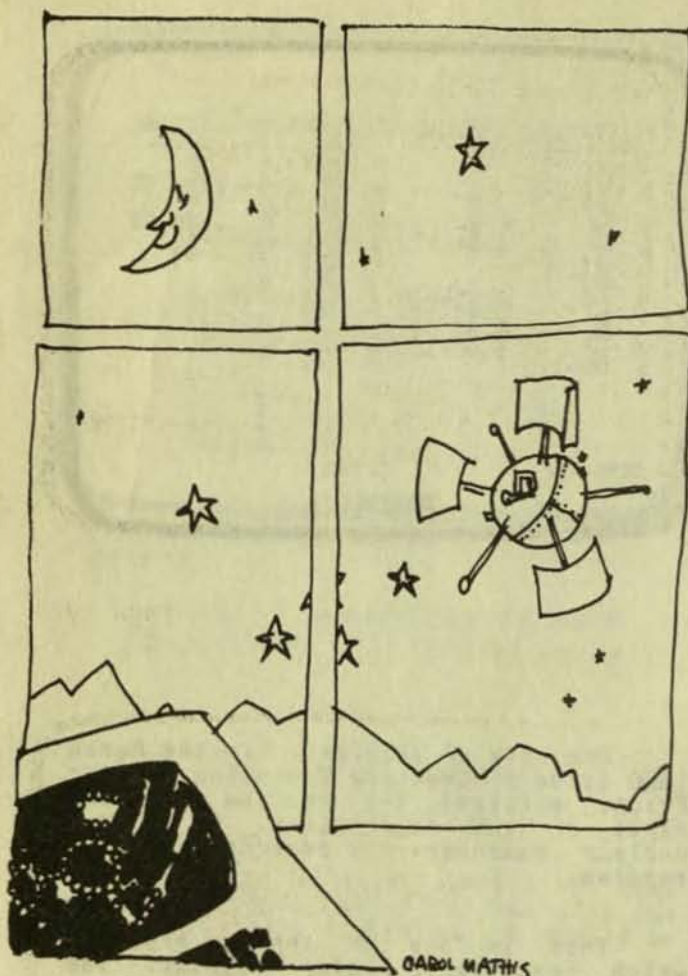
One note of interest. In the March 1980 issue of Creative Computing, Victor Fricke criticized the realism of some parts of this simulation. As he is a nuclear engineer, his remarks are worth reading.

This is one of the few programs which requires a color display. The operation of the plant is color-coded.

This program will be a classic. Every school will need a copy. The only thing you must realize is that it is not a game. Rather it is an educational tool for school or personal development.

I Recommend This Program.





CAROL MATHIS

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TRAK STI-12-T
Apple II 32K Disk

Sat Trak International
c/o Computerland
4543 Templeton Gap
Colorado Springs, CO 80909

***** SATELLITE DATA BASE *****

#	OBJ #	NAME	PERIOD	INCLIN	EPOCH
1	0	SMITH	117.69	74.84	1333.33
2	0	TEST	100.7	100.02	1333.33
3	7480	M-TEST	717.68	64.86	1333.33
4	7570	S-TEST	143.6	5.07	1333.33
5	8822	HP-TEST	225.4	10.9	1333.33
6	10091	HS-TEST	325.9	10.86	1333.33
7	10382	SALUT 6	92.13	51.6	1333.33
8	10382	SEASAT-A	100.69	10.03	1333.33
9	10703	OSCAR 8	103.16	9.91	1333.33
10	11085	RADIO 1	120.36	82.55	1333.33

SELECT SATELLITE 7

Here is an interesting program for Junior High science classes and HAM radio operators. Also, this is the best continuous demonstration program for the Apple that I have seen.

If you wish to see the actual orbit of a satellite, use the "orbital position" program. Select a satellite from the menu. Type today's date and time, remembering to correct for Greenwich Mean Time. April 1, 1980 at 7 PM in California would be 80,91,23. Then specify an ending time such as the next day at the same time (92,23). Type ".133" minutes to tell the program how often you want the display updated. Then you will see a map of the world with the position of the satellite at its actual position in the sky. Slowly, but surely, the satellite will move across the map on the display exactly as it is doing at that moment in the sky.

If you want to see a actual satellite in the sky you must wait until the satellite is in the sunlight and you are in total darkness. Also, it helps if you choose a satellite that is big and fat. In addition, it should have a low orbit like Salut 6, the Russian's orbiting space station.

WELCOME TO THE SAT TRAK

MENU OF FUNCTIONS:

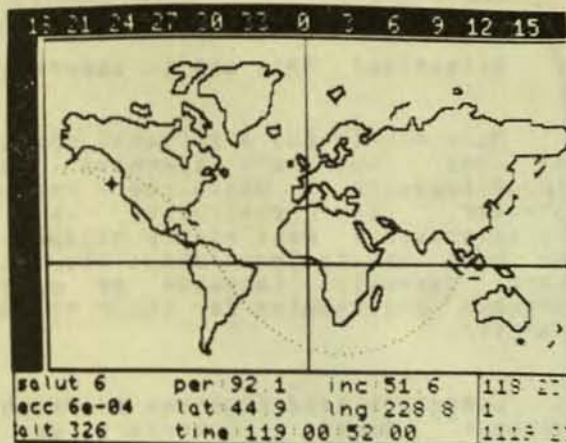
1. >>TRAK/POSN<< - EPHEMERIS GENERATOR
2. >>LOOK<< - A LOOK ANGLE GENERATOR
3. >>OBS<< - NEW ELEMENTS FROM VISUALS
4. >>UPDATE<< - FOR DATA BASE MANAGEMENT
5. EXIT FROM SAT TRAK

ENTER NUMBER
?SYNTAX ERROR

*** CONTENTS OF MASTER FILE ***

1	SMITH	2	SMITH
2	TEST	3	M-TEST
3	OSCAR-7	4	S-TEST
4	HP-TEST	5	HS-TEST
5	SALUT 6	6	OSCAR 8
6	SEASAT-A	7	RADIO 1

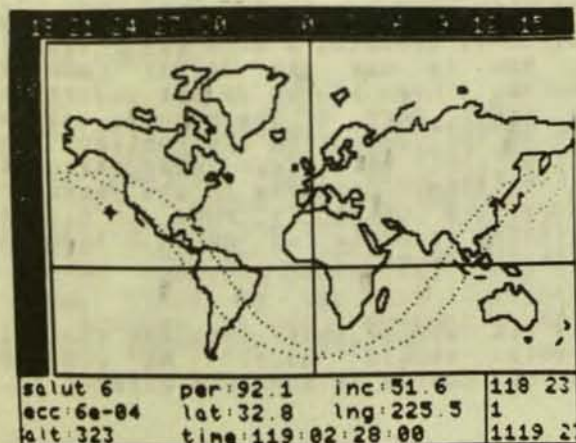
(RETURN)



To know where and when you can see the satellite, use the "LOOKING AT THE SATELLITE" program. You must know your latitude, longitude and altitude. The program is designed so all you have to do is press the RETURN key for every option. Note: it may take the computer a long time to get an answer because most of the time a satellite is not in a good position to be seen.

Once answers begin to appear, you will see the dates and times you should look for the satellite. When the time comes, take a compass and point the zero toward north. Look on the compass until you find the angle that the computer calls "azimuth degrees". This is the direction you should look to see the satellite. To know how high in the sky to look, use the angle called the "elevation degrees". Sight up in the sky along this angle. At the appointed time, you will see the satellite slowly moving across the sky.

If you are wondering why I am telling you all this, it is because none of this information is given in the manual. The manual was written by scientific folk. If their manual was a term paper in physics, it would get an "A". But it's not, and it doesn't. This is a shame because this program would be very interesting to any person with an exploring mind. For now the appeal of the program is limited to schools, Hams, and to science students.



SATELLITE TO UPDATE
 COMMON NAME: SALUT 6
 NUMBER: 10382
 EPOCH YEAR: 79
 EPOCH DAY: 275
 FRACTION OF DAY: 41112784
 DECAY RATE: 4.8892E-04
 ELSET # 31
 INCLINATION: 51.622
 RIGHT ASC OF NODE: 103.8564
 ECCENTRICITY: 0.0099E04
 ARG OF PERIGEE: 338.02906
 MEAN ANOMALY: 152.09733
 MEAN MOTION: 15.6302239
 EPOCH REVOLUTION: 11557

CHANGE FILE NUMBER OR <D=DELETE E=EXIT>

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LINES PER FRAME 10

OBS SITE N38.7W120.7 ALT 1400 FT MSL

LOOK ANGLES FOR SALUT 6 10382
 EPOCH DAY 275 AT 9.86706816 HRS
 PERIOD 92.129 MINUTES
 INCLINATION 51.622 DEGREES
 START DAY 118 AT 23 HOURS
 END DAY 120 AT 2 HOURS
 OUTPUT INTERVAL 1 MINUTES

TIME AZIMUTH ELEVATION RANGE
 YY DDD HH MM SS DEGREES DEGREES KM
 >>NO SUITABLE PASS FOUND<<
 NEW PASS LIMITS AND TIME OF INTEREST Y/N

LINES PER FRAMES

OBS SITE N38.7W120.7 ALT 1400 FT MSL

LOOK ANGLES FOR SALUT 6 10382
 EPOCH DAY 275 AT 9.86706816 HRS
 PERIOD 92.129 MINUTES
 INCLINATION 51.622 DEGREES
 START DAY 118 AT 23 HOURS
 END DAY 120 AT 2 HOURS
 OUTPUT INTERVAL 1 MINUTES

YY	DDD	HH	MM	SS	AZIMUTH DEGREES	ELEVATION DEGREES	RANGE KM
88	133	11	16	21	129.91	12.975	1068.8
88	133	11	17	21	106.691	11.196	1150.6
88	134	11	30	26	134.75	36.019	520.1
88	134	11	31	26	88.903	34.141	684.9
88	134	11	32	26	71.502	13.940	1022.6

APPLE DEALERS

GET FREE ADS FOR YOUR STORE ON COLOR TV!

How? Use our ADVERTISING SOFTWARE. You put it in the APPLE and generate colorful, dynamic ads on the screens of TV sets in your store. All you need to do is insert the sets of the ads, choose the desired typeface, and hit "return". APPLE will broadcast your ads to studio-shoppers, and in some instances all day long, without effort from you.

You can promote all types of merchandise with ADVERTISING SOFTWARE, not just APPLE computers!

Many of our retail shops will want to buy APPLE computers with ADVERTISING SOFTWARE from you, when they see how exciting your store looks. And companies with same. You can even sell the ADVERTISING SOFTWARE alone, prices and terms are as follows:

QUANTITY 1-10 Price: ABOVE QUANTITY 1-40% discount prepaid
95% discount net 30 days

The following programs are available:

HUMAN ALPHANUMERIC MESSAGE: 28 color, readable characters line, 4 lines/page, 3 pages of text. Characters "pull" into the screen at comfortably reading speed. When page fills, an instant device accepts. Messages can be made to repeat or freely on-screen at user option.

THE SCROLLING WONDER: 4 brief messages appear in APPLE appearing characters by "flashing" onto the screen from below. Messages enter in random sequence, with random left-right placement, and a random 50% of messages "flash". A multiple rainbow grand finale ends the program. Very good program to test at point of purchase.

GIANT LETTER: Brilliantly-colored letters, of full screen height, appear one at a time, in sequence, to spell out messages. Successive words have different colors. A running summary of letters in APPLE characters appears in the bottom 4 lines of the screen, as the giant letters are presented. Very good program for shop windows.

All 3 above on 1 cassette for \$45.00, on disk for \$50.00.

VARIABLE MESSAGE: 8 colorful characters, line = 4 lines/page = 3 pages of text. Characters & background can each be any of 16 colors. Background can change once as page changes, and can show colored "snowflakes". Messages can be repeated or frozen on screen. Extremely colorful and eye-catching on store windows and at trade-show exhibits.

On 1 cassette for \$45.00, on disk for \$50.00.

MULTI-MESSAGE with INTERLEAVED KALEIDOSCOPE/MULTI-MESSAGE with INTERLEAVED ABSTRACT ART: Up to 31 messages (same as HUMAN ALPHANUMERIC MESSAGE) can be run in sequence. Colorful, dynamic patterns (kaleidoscope or abstract art) can be overlaid between messages, for 0 to 40 minutes, at user option.

Both programs on 1 cassette for \$45.00, on DISK for \$50.00.

CONNECTICUT INFORMATION SYSTEMS CO.

218 Huntington Road, Bridgeport, CT 06608 (203) 579-0472

VISUAL INSTRUCTIONAL COMPUTER (V1.1)

A - 3 IC - 2 COMMAND → OUTPUT →
B - 0 Z - 0
C - 0 V - 0

MEMORY	1	2	3	4	5	6	7	8	9	STACK
00:	26	3	27	5	1	17	19	0	0	0
10:	0	0	0	0	0	0	0	0	0	0
20:	0	0	0	0	0	0	0	0	0	0
30:	0	0	0	0	0	0	0	0	0	0
40:	0	0	0	0	0	0	0	0	0	0
50:	0	0	0	0	0	0	0	0	0	0
60:	0	0	0	0	0	0	0	0	0	0
70:	0	0	0	0	0	0	0	0	0	0
80:	0	0	0	0	0	0	0	0	0	0
90:	0	0	0	0	0	0	0	0	0	0

VISUAL INSTRUCTIONAL COMPUTER TRS-80 Level II 16K

Carta Associates, Inc.
Education Products Division
640 Lancaster Avenue
Frazer, PA 19355

Attention! This one is important.

Many people buy a personal computer as one way of learning about microprocessors. Since every personal computer is controlled by a microprocessor, most people assume that the best way to learn about them is to learn assembly language or machine language programming for their personal computer.

Computers need programs in "machine language" codes. Computers do not "think" in BASIC. Basic programs must be translated into numerical codes before the computer can understand what to do. So to understand computers, you must learn about these codes and how they effect the computer's "thinkings" process.

Learning machine language is easier said than done. This is especially true since over 200 different computer machine languages exist. The TRS-80 has a microprocessor called the "Z80" while the PET and APPLE have a "6502" microprocessor. The codes and how they are used is totally different.

THE SOLUTION

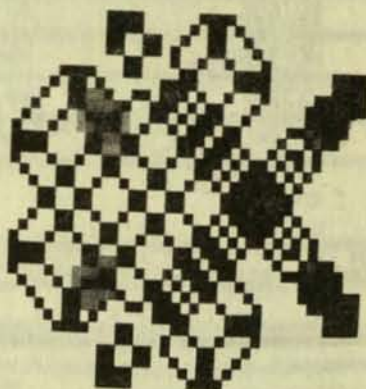
Carta has come up with a excellent idea. They created an imaginary, yet simple computer. Then they created a way of putting this imaginary computer on the TRS-80 computer's display screen for you to watch and use. Then finally, and most importantly, they wrote a complete manual to teach you all about their machine language computer. This simulation eliminates all the shock of binary arithmetic, multiple addressing modes, various I/O problems, etc.

If you bought a Level II to learn how computers work, then you must buy this program. It will help you learn the fundamentals.

One part of the manual pleases me most. It contains a very clear example of how to use the Visual Computer program. Even if you do not understand the first part of the manual, you can turn to the "Operating Instructions" and follow their very clear instructions to put a simple program in the computers memory and watch it run. A clearly presented example is worth a thousand pages of theory.

This is one of those programs that all schools should have. No computer literacy course is complete without it.

?



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FOOD FOR THE HEAD
TRS-80

Loweco Computer
1803 Rodney
Los Angeles, CA 90027

This was to be a review of a program that was advertised nationwide. Since I am interested in Health Food and Practical Programs, I wrote the author of the program for more information.

"Fools walk in where angels fear to tread". Without having learned what a TRS-80 computer is, much less having written the program, they advertised a program as being available for sale. Now they publically admit that the program has not been written. In addition they state in a form letter that they have sent out that they now believe the TRS-80 to be an almost useless machine.

I have picked out this program and these programmers because they are one of the few to admit that they never wrote the program they advertised. As you read through the software directory, remember that many other people have done the same. Before you order any program, check to see that it exists. If the program has been reviewed in this magazine, it probably exists.

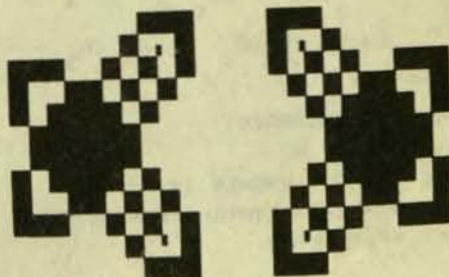
MANDALAS FOR THE CYBERNETIC AGE
TRS-80 Level II 16K

Loweco Computer
1803 Rodney
Los Angeles, CA 90027

Here is a program written by the author of "Food for the Head" (see opposite). It produces two types of seometrical patterns. The price is \$15.

Let me pause a moment to mention a magazine on a cassette called "CLOAD MAGAZINE". It costs \$3.50 per issue and less per issue when you subscribe. Each issue contains at least four programs. Every once in awhile CLOAD has a program to put a seometric pattern on the computer screen. However, most of the time CLOAD has much more interesting and useful programs for the TRS-80.

If you are still reading this review then ask yourself why should you pay \$15 for a program that is no better than a program costing about \$1. If you come up with an answer, let me know.



I WILL CHOOSE AN ALKENE FROM THIS LIST

CHAIN LENGTH	NAME
2	ETHENE
3	PROPENE
4	BUTENE
5	PENTENE
6	HEXENE
7	HEPTENE
8	OCTENE
9	NONENE
10	DECENE

SUBSTITUTED WITH THESE GROUPS:

BUTYL	CH ₂ CH ₂ CH ₂ CH ₃
PROPYL	CH ₂ CH ₂ CH ₃
ETHYL	CH ₂ CH ₃
METHYL	CH ₃
HYDROGEN	H

PRESS **ENTER** WHEN READY TO BEGIN.

NAMING ALKENE COMPOUNDS PET 8K

Dr. Richard F. Daley
425 Grove Avenue
Berrien Springs, MI 49103

Of the many types of chemistry, Organic Chemistry is one of the toughest. All college chemistry requires massive amounts of memorization. Organic Chemistry requires more than most. Part of what you have to learn is the names of the compounds. Another is the rules for naming compounds. This is not difficult if you can spend a month or so learning them. 10 percent of science majors do not make it through Organic Chemistry.

Every first-year college chemistry book on Organic Chemistry has a section on learning the rules for naming the alkene compounds. The whole chapter is usually only four pages long and is followed by about 15 examples. Actually, there are hundreds of different combinations so most students cannot rely on the text alone.

When I took Organic Chemistry, the professor was a important person in research. That is why he got to teach the beginning classes. He could not teach, but it was an easy job. So we learned little from him. (This is typical of most colleges so be forewarned.)

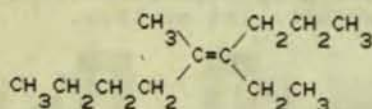
The student assistants were a mixture of good and bad. It was not luck. But there was always one very dedicated soul who held night sessions in the dormitories. He knew the subject and could teach. When the semester was half over, all of us students would begin hunting for help. We would hear rumors from a friend of a friend who heard from his roommate that there would be one of those night sessions. Without any announcement, the room would be packed. The students knew they needed help. Without it they would fail.

Dr. Daley is a Professor at Andrews University. He has written a number of college chemistry programs. Most of the programs are similar to the one you see in the photos. It drills the student on naming the various alkene compounds.

This program is designed to be used by the student after the professor lectures on alkenes. In about two hours the student will be able to master the subject. For students who need only a little help, the program contains a short tutorial.

As you can see, the computer method is much faster and more reliable than the midnight sessions. Most colleges are beginning to buy computers such as the PET. If your son or daughter is in college and taking Organic Chemistry, think seriously about buying these programs. You have probably invested lots of money on their education. Do not lose your investment.

PLEASE NAME THE FOLLOWING ALKENE. I ONLY KNOW IUPAC NOMENCLATURE. PLEASE ENCLOSE THE NAME WITH QUOTES ("").



? ""

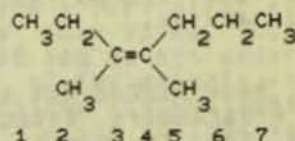
THAT IS INCORRECT!

WANT HELP? N

THE CORRECT ANSWER IS:

E-4-ETHYL-5-METHYL-4-NONENE

TRY ANOTHER? ■



? ""

THAT IS INCORRECT!

WANT HELP? N

THE CORRECT ANSWER IS:

Z-3,4-DIMETHYL-3-HEPTENE

TRY ANOTHER? ■

Instant Software

PRESENTA...

PROFESSORE

16K LEVEL II

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ALL RIGHTS RESERVED.

TEACHER

TRS-80 Level II 16K

Instant Software, Inc.
Peterborough, NH 03458

I am very interested in all "Teacher Authoring Languages". Hopefully, in future issues of this magazine, I will be able to bring you reviews of all of these programs.

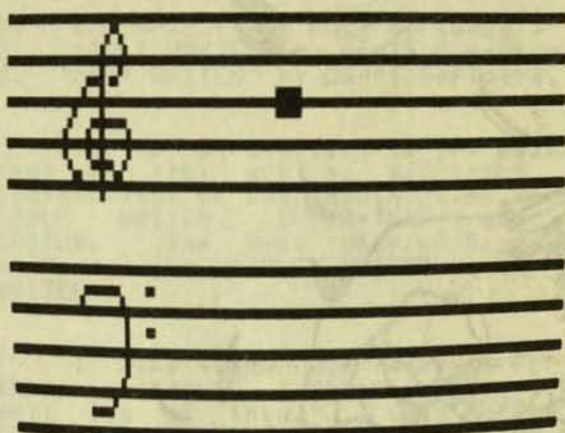
In the next issue, I will be reviewing "TEACHER". As a preview, here are some photos of the Italian version of this program.

PROFESSORE

I DATI PER QUESTO PROGRAMMA POSSONO ESSERE FORNITI DIRETTAMENTE
SULLA TASTIERA O RICHIAMATI DA UN NASTRO.

VUOI FORNIRE I DATI DA UN NASTRO? SI

PER RICHIAMARE I DATI DA UN NASTRO:
METTERE LA CASSETTA NEL REGISTRATORE.
PREMI IL TASTO 'PLAY'.
PREMI 'ENTER' SULLA TASTIERA.
?



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MUSIC READING

TRS-80 Level II 4K

Cove View Press
Box 637
Garberville, CA 95440

Here is an unusual program. It teaches the alphabetic names of the notes on the scale.

When you begin the program, it asks you how many notes you want each minute. Once you answer, the program begins drilling you on the different notes. First it shows you a note. Then in a few moments, it shows you the alphabetic representation of the note, ie., A, B, C, D, E, F, or G.

You do not interact with the program. It simply sets a pace for you. You continue as long as you wish. You may set the speed faster as you get better.



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WORD PROCESSING

An Overview

This is the second in a series of articles on word processing. The first article appeared in the Winter 1980 edition. It pointed out the tremendous difference between "word processing" and "text editing".

Simplified, the differences are that word processing is simple and easy to use for composing and printing documents. Text editors are very powerful but much more awkward to use. They are often written in Basic and are line-orientated, rather than being written in machine language and character-orientated as Word processing programs are.

The previous article also pointed out that every word processing program is totally different from any other word processing program. You must study both the application and the program capabilities before you buy any word processing program.

When we talk about "Word Processing" on a personal computer, we are referring to a computer program which transforms your computer into a fancy typewriter. This "fancy typewriter" stores the words that you type and will print them on command. This means you usually need a printer to use a word processing program. Since a good printer, such as NEC's Spinwriter, costs much more than the computer, word processing can be very expensive.

Word processors are popular in business. More and more offices are using them. Even in small cities like Placerville, California, all title companies have at least one word processing machine. Similarly, half the lawyers in town have a word processor in their office.

Most word processing programs are used to type correspondence or legal documents. Word processing provides for easy editing and automatic typing of documents. Just the amount of time saved by not having to proofread the second, third, fourth, and fifth editions of legal documents justifies the cost of a word processing machine.

The Ultimate Program

Word processing programs are much more important than just a fancy typing program. They are the "ultimate program" for the personal computer. I cannot stress this enough. You must discover for yourself the almost infinite uses of a good word processing program.

Often a word processing program is the most practical way to handle:

1. Small mailing lists
2. Simple record keeping
3. Personal memo pad
4. Recipe files
5. Tickler file
6. Personal data base
7. Automobile maintenance record

With a word processing program, all of the above tasks can be typed, corrected, located, and used faster and easier than with any other program. You have tremendous flexibility with a word processing program that you can never have with a special purpose program. Always try doing it with a word processing program before you try any other program.

Just think about it. With only one program you can do most of the things you bought your computer for.

LEVEL II

At the time I am writing this, Radio Shack's new word processing program has not reached their dealers. Even though it was announced almost 6 months ago, it took until now for Radio Shack to decide how to implement it.

The most important problems that Radio Shack faced in producing a word processing program were

1. the TRS-80 Keyboard does not have control buttons and
2. the screen does not have lower case letters

Radio Shack has finally decided not to produce a new keyboard at this time. They now offer an upper/lower case modification for the screen. This will be an option and not included on the standard TRS-80. They will not add any new buttons to the keyboard.

Currently, the most popular word processing program for the TRS-80 is THE ELECTRIC PENCIL by Michael Schroyer Software. This program can be used on a tape system or a disk system. It can be used without any modification to the keyboard for upper case letters only. To set lower case letters, you must modify your keyboard adding a new button as well as modify the display screen's memory. This is NOT compatible with the new upper/lower case modification from Radio Shack which does not modify the keyboard. Therefore, you can NOT use THE ELECTRIC PENCIL for upper/lower case editing without voiding the warranty on your TRS-80.

Of special note is the service offered by Brown Graphics for people who have THE ELECTRIC PENCIL. They claim that they will accept text on a disk and typeset it for you. Computerized typesetting for personal computers is the author's dream. Unfortunately, as I understand, you must pay \$50 to get more information on this service.

Other than THE ELECTRIC PENCIL and the (soon to be available) Radio Shack Program, I know of no other machine language word processing program which will work on the TRS-80 16K tape system.

Apple

More word processing programs are being written for the Apple than any

other computer. Three of them are written in machine language. They are

1. "SUPER-TEXT" by Muse Software
2. "APPLE WRITER" by Apple Computer
3. "EASY WRITER" by Cap't Software.

It is impossible to say which is best as they are so different. The Computerland of Sacramento rates them as APPLE WRITER, SUPER-TEXT, and EASY WRITER. The Byte Shop of Sacramento prefers the APPLE WRITER over EASY WRITER.

I have read the manuals for all three programs. However, I have used only two of them. I rate SUPER-TEXT first and APPLE WRITER second.

I am using Muse's SUPER-TEXT to write this article. All of the reviews are composed using SUPER-TEXT. The Software Directories are stored and updated using SUPER-TEXT. I keep my sales journal on SUPER-TEXT. All new subscriptions are kept on SUPER-TEXT. I can not live without SUPER-TEXT.

The distributors of EASY WRITER have announced a new version of their program. It will display 80 columns of letters in upper and lower case. As yet, this program has not been delivered to my local computer store. If you are thinking about setting EASY WRITER, you might wish to wait for the new version to become available.

APPLE WRITER is supported by Apple Company. This is a good reason to buy it. It is very simple and easy to learn with the help of their extensive manual.

For more information on Apple word processors, see the article "APPLE WRITER vs SUPER-TEXT" in this issue.

Currently, I am recommending that all high schools buy both APPLE WRITER and SUPER-TEXT. The school should offer word processing as part of second-year typing. Word processing is a very necessary part of a secretarial education. Word processing can be taught for far less money on the Apple than any other way. Not only is the Apple inexpensive, but it is the only computer offering a good variety of machine language word processing programs. For any course in word processing to be successful, at least two totally different types of word processing systems must be used. APPLE WRITER and SUPER-TEXT fill the bill perfectly.

Even if a school could afford to buy the leading word processing machines such as Wang, IBM, or Xerox, they probably could not afford to buy two. The cost of two word processors is about \$15,000 to \$25,000. By having an Apple with SUPER-TEXT and APPLE WRITER, a school can teach two totally different types of word processing for under \$3000.

The only short-coming of this approach is the lack of training manuals for teaching word processing. IBM, Wang, and the others have huge student manuals.

ATARI

As yet, there is only one word processing program for the Atari and I have not seen it. I recommend that the Model 800 be used rather than the Model 400 as high speed typing is impossible on the 400.

PET

There are over a dozen word processing programs for the PET. Commodore has the only two programs that I know of which are written completely in machine language. Both require hardware modification to run. (A new ROM chip must be put inside the computer.) From what I have seen, both of these word processing programs are far less useful than the word processing programs for the Apple. Therefore, I recommend that you buy an Apple computer rather than a PET for word processing.

(to be continued)

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BILLBOARD PET 8K

Zepher Software
PO Box 713
Bonita, CA 92002

In the last issue, I reviewed this program. I complained that it was very hard to look at because of all the streaking on the display. Since then I have learned that this is only a problem on the old 8K PETs. The program works perfectly on the new PETs.

TEXTCAST™

Turn your PET into a WORD PROCESSOR comparable to large systems for a fraction of the cost!

CREATE-REVIEW-EDIT FILES
ON TAPES OR DISKS

PRINT TEXT-LETTERS-FORMS-
TABLES

TEXTCAST FITS YOUR PET
SYSTEM, OLD AND NEW ROMS

CLEAR INSTRUCTIONS!

Prices: Tape plus manual, \$60.
Diskette plus manual, \$65.
Manual separately, \$20.

Write: Cognitive Products
P.O. Box 2592
CHAPEL HILL, N.C. 27514

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SOFTWARE for the APPLE II*

- ★ Designed by educators for educators
- ★ Field tested in schools
- ★ Real educational value
- ★ Low cost

Educators disk special \$19.95**
14 instructional programs

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instruction and drill on touch typing
5 programs, 19 text files

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a word-processing tool for preparing a
descriptive catalog of programs or other items

Apple PILOT \$25.00**
CAI Author Language interpreter —
by Earl Keyser

COOK'S COMPUTER COMPANY

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Marshalltown, Iowa 50158

Ask for our latest list of educational programs.

* APPLE II is a registered trademark of Apple Computer, Inc.
**Please add \$1 per order for shipping and handling.

DISK VOLUME 001
LAST ACCESS

```

1 @PRINT
2 R-SUPER-TEXT
3 REVIEW FORMAT
4 ART REQUEST
5 R-ZEPHER
6 R-PAYMAR
7 REVIEWS
8 CBI BACKUP
9 CBI AD FORMAT
10 PRINTER-START
11 R-WORDWATCH
12 R-LIFEINSURANCE
13 R-S FACTORY
14 HELP CHRIS
15
16 @MATH
17 R-ST US AW
18 R-H SPELLER
19 R-UTILITIES
20 R-NICOCOSM I
21 R-ADVERTISERS
22 R-U-DRAW
23 LETTERFORMAT
24 R-MANDALAS
25 -CLOCK
26 R-APPILOT
27 R-PFDC MUSIC
28 R-COMPUTER REC
29 AD RATES

```

ENTER FILE # >3

```

1 @MUSE @SOFTWARE
2 @VALLERIE @A. @ROCCO
3 OLD ADDRESS 7112 @DARLINGTON @DRIVEN
4 1330 @NORTH @CHARLES @STREET
5 @NEW-ADDRESS
6 @BALTIMORE, @MD 21234
7 @301 659-7212
8
9 @CASSETTES
10 @16K @U-DRAW 17 @95
11 @8K @APPEN @TEXT @EDITOR 17 @95
12 @8K @MUSIC @BOX 12 @95
13 @4K @SLIDE @SHOW 12 @95
14 @8K @ELECTRIC @CRAYON 17 @95
15 @32K @UNCLE @SAM'S @JIGSAW 12 @95
16 @5 GAME PROGRAMS
17
18 @DISK
19 @48K @DISK @SUPER-@TEXT 99 @95
20 @48K @DISK @MICRO @INFORMATION
21 @SYSTEM $99 @95
22 @48K @DISK @U-DRAW @IMI 39 @95

```

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SUPER-TEXT Apple II 48K Disk

The Muse Company
300 North Charles Street
Baltimore, MD 21201

Here is the word processing program that I use. It is the most comprehensive machine-language word processing programs for the Apple II and Apple II Plus.

A word processing program will convert your computer into a very fancy typewriter. You can compose a letter, revise it, and print it out letter perfect. For the average person, the advantage of a word processing program is that it speeds up writing letters. I have heard one Apple owner's wife exclaim, "This is the first time I have been able to keep up with my correspondence."

This review is an actual example of the printout from "Super-Text". Similarly, all of the software directories are composed and updated using Super-Text. (Do not blame Super-Text for the funny looking type style of my printer. A more expensive printer would have clearer type.)

"Word processing" means many things to many people. I have been using Word Processing equipment for almost ten years. I feel that I can handle any word processing program no matter how many bells and whistles it has. Therefore when I select a word processing program, I want a versatile, yet easy to use, program.

Super-Text has over 5 pages of options and control codes to enter, modify and print text. It is definitely not for the weak of heart. Yet, once you get over the initial shock of it, Super-Text is relatively easy to use and extremely idiot-proof.

I usually need about two or three weeks to become an "expert" on a new word processing machine. Super-Text

32 36 5 0 127 0

```

1 @SUPER-TEXT
2 @APPLE @II 48K @DISK
3
4 @THE @MUSE @COMPANY
5 @300 @N. @CHARLES @COMPANY
6 @BALTIMORE, @MD 21201
7
8 @41

```

HERE IS THE WORD PROCESSING PROGRAM THAT I USE. IT IS THE MOST COMPREHENSIVE MACHINE LANGUAGE WORD PROCESSING PROGRAMS FOR THE APPLE II AND APPLE II PLUS.

A WORD PROCESSING PROGRAM WILL CONVERT YOUR COMPUTER INTO A VERY FANCY TYPEWRITER. YOU CAN COMPOSE A LETTER, REVISE IT, AND PRINT IT OUT LETTER PERFECT. FOR THE AVERAGE PERSON, THE

FIND >SEX

@ACCOUNTING 1979

@SALES

#	DATE	SINGLE	BULK	ADVERT	MISC
03	01/10	4.00	0.00	0.00	0.00
04	01/11	0.00	0.00	0.00	0.00
05	01/11	0.00	0.00	0.00	0.00
06	01/11	0.00	0.00	0.00	0.00
07	01/11	0.00	0.00	0.00	0.00
08	01/11	0.00	0.00	0.00	0.00
09	01/11	0.00	0.00	0.00	0.00
10	01/11	0.00	0.00	0.00	0.00
11	01/11	0.00	0.00	0.00	0.00
12	01/11	0.00	0.00	0.00	0.00
13	01/11	0.00	0.00	0.00	0.00
14	01/11	0.00	0.00	0.00	0.00
15	01/11	0.00	0.00	0.00	0.00
16	01/11	0.00	0.00	0.00	0.00
17	01/11	0.00	0.00	0.00	0.00
18	01/11	0.00	0.00	0.00	0.00
19	01/11	0.00	0.00	0.00	0.00
20	01/11	0.00	0.00	0.00	0.00
21	01/11	0.00	0.00	0.00	0.00
22	01/11	0.00	0.00	0.00	0.00
23	01/11	0.00	0.00	0.00	0.00
24	01/11	0.00	0.00	0.00	0.00
25	01/11	0.00	0.00	0.00	0.00
26	01/11	0.00	0.00	0.00	0.00
27	01/11	0.00	0.00	0.00	0.00
28	01/11	0.00	0.00	0.00	0.00
29	01/11	0.00	0.00	0.00	0.00
30	01/11	0.00	0.00	0.00	0.00
31	01/11	0.00	0.00	0.00	0.00
32	01/11	0.00	0.00	0.00	0.00
33	01/11	0.00	0.00	0.00	0.00
34	01/11	0.00	0.00	0.00	0.00
35	01/11	0.00	0.00	0.00	0.00
36	01/11	0.00	0.00	0.00	0.00
37	01/11	0.00	0.00	0.00	0.00
38	01/11	0.00	0.00	0.00	0.00
39	01/11	0.00	0.00	0.00	0.00
40	01/11	0.00	0.00	0.00	0.00
41	01/11	0.00	0.00	0.00	0.00
42	01/11	0.00	0.00	0.00	0.00
43	01/11	0.00	0.00	0.00	0.00
44	01/11	0.00	0.00	0.00	0.00
45	01/11	0.00	0.00	0.00	0.00
46	01/11	0.00	0.00	0.00	0.00
47	01/11	0.00	0.00	0.00	0.00
48	01/11	0.00	0.00	0.00	0.00
49	01/11	0.00	0.00	0.00	0.00
50	01/11	0.00	0.00	0.00	0.00
51	01/11	0.00	0.00	0.00	0.00
52	01/11	0.00	0.00	0.00	0.00
53	01/11	0.00	0.00	0.00	0.00
54	01/11	0.00	0.00	0.00	0.00
55	01/11	0.00	0.00	0.00	0.00
56	01/11	0.00	0.00	0.00	0.00
57	01/11	0.00	0.00	0.00	0.00
58	01/11	0.00	0.00	0.00	0.00
59	01/11	0.00	0.00	0.00	0.00
60	01/11	0.00	0.00	0.00	0.00
61	01/11	0.00	0.00	0.00	0.00
62	01/11	0.00	0.00	0.00	0.00
63	01/11	0.00	0.00	0.00	0.00
64	01/11	0.00	0.00	0.00	0.00
65	01/11	0.00	0.00	0.00	0.00
66	01/11	0.00	0.00	0.00	0.00
67	01/11	0.00	0.00	0.00	0.00
68	01/11	0.00	0.00	0.00	0.00
69	01/11	0.00	0.00	0.00	0.00
70	01/11	0.00	0.00	0.00	0.00
71	01/11	0.00	0.00	0.00	0.00
72	01/11	0.00	0.00	0.00	0.00
73	01/11	0.00	0.00	0.00	0.00
74	01/11	0.00	0.00	0.00	0.00
75	01/11	0.00	0.00	0.00	0.00
76	01/11	0.00	0.00	0.00	0.00
77	01/11	0.00	0.00	0.00	0.00
78	01/11	0.00	0.00	0.00	0.00
79	01/11	0.00	0.00	0.00	0.00
80	01/11	0.00	0.00	0.00	0.00
81	01/11	0.00	0.00	0.00	0.00
82	01/11	0.00	0.00	0.00	0.00
83	01/11	0.00	0.00	0.00	0.00
84	01/11	0.00	0.00	0.00	0.00
85	01/11	0.00	0.00	0.00	0.00
86	01/11	0.00	0.00	0.00	0.00
87	01/11	0.00	0.00	0.00	0.00
88	01/11	0.00	0.00	0.00	0.00
89	01/11	0.00	0.00	0.00	0.00
90	01/11	0.00	0.00	0.00	0.00
91	01/11	0.00	0.00	0.00	0.00
92	01/11	0.00	0.00	0.00	0.00
93	01/11	0.00	0.00	0.00	0.00
94	01/11	0.00	0.00	0.00	0.00
95	01/11	0.00	0.00	0.00	0.00
96	01/11	0.00	0.00	0.00	0.00
97	01/11	0.00	0.00	0.00	0.00
98	01/11	0.00	0.00	0.00	0.00
99	01/11	0.00	0.00	0.00	0.00
100	01/11	0.00	0.00	0.00	0.00

01538 AUTOLINK=OFF THE KEY=OFF MATH

took me twice as long. Now, I am as fast as when I am using the Electric Pencil. Making corrections is the slowest part of using this program. At first I felt very restricted by the correction procedure. Now I hardly notice the extra keystrokes that Super-Text requires.

Fail-Safe

Super-Text is one of the "safest" programs ever written. With reasonable care, anyone using this program will never make an error that cannot be easily corrected.

"Who cares?", you say. The next time you are working at midnight, tired as can be, and trying like mad to beat a deadline, you will make a mistake. Either you accidentally hit the wrong key or you forget what you are supposed to do next. ZAPP! You have ruined everything. This never happens with Super-Text.

If you hit the wrong button, Super-Text allows you to stop and backup to where you were before you made the mistake. Usually, all you have to do is fail to answer the next question. Super-Text will automatically go back one step. Here are some examples.

1. If you accidentally ask to LOAD a file instead of SAVE a file, Super-Text asks, "Which file?" If you do not answer with a name, the program ignores your request to load a file. The same thing is true if you accidentally ask the program to SAVE a file.
2. Super-Text never erases a file when you load a new file. Therefore you never wipe out the current document unless you specifically ask it to.
3. When you SAVE a file, Super-Text shows you all the currently used file names and the name of the file used last. The program also gives each file a number for easy reference. You can type a number or give the file a new name. If you answer with any name other than the last used name, you are asked to confirm that the name you chose is correct.
4. The most dangerous error that you can make with any word processing program is accidentally erasing the document that you are currently working on. Super-Text is almost fool proof. If you accidentally hit the series of buttons to delete memory, the program asks you to type a "#" before it will finally erase the memory. This is not easy to hit accidentally. This key is not used for any other control function.

5. You can recover from accidentally hitting "RESET" or from a disk error. Depending on the model of Apple computer you have, the recovery sequence will probably be:

- A. RESET
- B. 3DOG
- C. CALL 4096

This recovers everything except the name of the last-used file.

Bad Points

One of the greatest weaknesses of Super-Text in comparison with programs such as Apple Writer is that Super-Text is normally ready to move the cursor whereas Apple Writer is normally ready for you to type. With Super-Text, you must specifically tell the program that you want to add information or to correct information.

Another weak point is that it is easier to retype a word than to correct it if the word to be corrected is not exactly the same size as the correction. Similarly, it normally requires five keystrokes to capitalize the first letter of a word if you forgot to do it when you first typed the text.

The Super-Text program disks cannot be copied. No back-up copy of the program can be made. If you do destroy your copy, you can get another from Muse.

Super-Text uses an old and modified DOS. You must use DOS to lock or delete text files. I do not have a copy of the old DOS manual so I hope I am doing it right. No instructions for the necessary DOS command are in the user's manual.

The program has an extremely annoying requirement. The last character in a file cannot be deleted. The least that could be done under this circumstance is to automatically change the last character to some non-printable character when you delete a document from the computer's memory.

Even though this program has everything but the kitchen sink, I still find features that I wish it had. One small example is a "required blank". This is a special space character which prevents two words from being separated by the automatic justification feature of Super-Text.

Note: Super-Text looks different when the Paymar Upper/Lower Case adapter is installed. I do not mind the changes that the Paymar makes because now I can see the difference between the spaces and the blanks. The photos were taken with the Paymar adapter installed.

The program bombs if a disk error (memory full) occurs. Even though you can easily recover from this problem, I still do not care for it.

The program is set up for use with California Computer Products' printer interface. It is not set up for Apple Company's serial interface. Instructions are given for figuring out how to set up the controlling parameters for any interface. However, do NOT expect your secretary to do it. This should be set up by your Apple dealer. The person who does this should be familiar with machine language. It is definitely not easy. More instructions from Muse would be helpful.

Super-text has one limitation using Apple's "intelligent" interface. The printer interface MUST be initialize every time you power up the Apple.

Advantages

I use Super-Text for my subscription mailing list. I type in all the information that I need for both the mailing list and my accountings. However, I give instructions to print only the name and address on the label. Also, once a quarter, I print out a complete subscriber list with the accountings information. I print one line per customer. To do this, I simply ask Super-Text to change all carriage returns in the name and address to "; ". Similarly, I ask Super-Text to eliminate all the control codes that keep the accounting information from being printed on the labels. Smooth, isn't it!

I maintain my sale journal with Super-Text. Super-Text has a math feature which will total columns of numbers. Though Super-Text is designed to handle a single column, if I am careful, I can automatically align and total four columns plus store a date and receipt number. To do this I automatically create "blank lines" for one month's sale receipts. The "blank line" has zeros (0.00) in all the columns with a blank for the date. Then for each sale, I just add the numbers where I need them. Since each sale usually has only one number, this is very fast. Then I ask Super-Text to automatically add all the columns. Try doing that with any other program!

To do the reviews for this magazine, I have a format already made up. I simply load the format and fill in the blanks and add my wise and witty comments at the bottom.

I maintain all the software directories using Super-Text. To do this, I type the name of each cassette or diskette and type the price with a right justify tab to keep the decimal points aligned in a column. It does not matter if the price is \$1.00 or \$1,000.00, the decimal points are in perfect alignment. The only problem I have had with my software directory is that only 20,000 characters can be kept in the computer's memory at one time. Also, I must use three diskettes to store the 16 files needed for the directories. Therefore, I must always sort the updates carefully before I begin the update process. If I did not, I would be swapping files and diskettes far too often to be practical.

Most of the above projects cannot be done with any other word processing program for the Apple. That is why I cannot live without Super-Text.

You might not set this program for your first word processing program. But, if you do a lot of word processing, you will eventually buy Super-Text.




```

*****
**                               **
**      APPLE WRITER 1.0        **
**                               **
**      PRINT MENU              **
**                               **
*****

```

YOU MAY CHOOSE FROM THE FOLLOWING -

```

<P> PRINT NEW DOCUMENT
<L> LOAD FILE FROM DISK
<C> CONTINUE PRINTING
<R> RETURN TO EDITOR
<Q> QUIT

```

SELECT █

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APPLE WRITER Apple II 48K Disk

Apple Computer, Inc.
10260 Bandley Drive
Cupertino, CA 95014

Apple Writer is a word processing package. It is written in machine language and comes with an extensive manual. Most importantly, it is backed by Apple Computer, Inc.


Apple Writer is one of the simplest word processing programs for the Apple. The manual that comes with the program is beginner-orientated. This combination makes Apple Writer a good choice for someone not familiar with word processing.






The Apple Writer program can be copied to create a back-up copy. Programs such as Super-Text cannot be copied.

***** WELCOME TO THE APPLE WRITER *****

THIS PROGRAM TREATS YOUR SCREEN LIKE A TYPEWRITER. YOU CAN TYPE, ERASE, MOVE WORDS AROUND, AND LOTS MORE.

THE BLINKING RECTANGLE IN THE UPPER LEFT HAND CORNER IS THE CURSOR.

FIND THE KEY MARKED  AND PRESS IT. WHEN THE FIRST TIME YOU DO THE CURSOR LOOKS LIKE THIS: █. THE SECOND TIME IT LOOKS LIKE THIS: █.

NOW PRESS  THE  KEYS. THE CURSOR WILL MOVE DOWN TO THE NEXT LOWER LINE. PRESS  UNTIL THE CURSOR REACHES THE BOTTOM OF THE SCREEN. IF THE CURSOR REVERTS TO █, PRESS THE  KEY TWICE. TO CONTINUE READING THIS, PRESS  UNTIL NEW TEXT APPEARS AT THE BOTTOM OF THE SCREEN.

I am reviewing version 1.0 of Apple Writer. In time, I hope that this program will be improved and refined. As the program stands, it does have some limitations and awkward moments.

1. Messages to the typist are often confusing. The term "NEW FILE" means the current document.
2. There are no tab or decimal tab as there is in Super-Text.
3. The typist must know DOS to use the program. There is no way of looking at the names of the documents already saved on disk except by asking Apple Writer to go into DOS and "CATALOG". Even this does not tell you which of the names are programs and which are text files. This is not a great problem unless you have to explain this to a secretary who has never seen a real, live DOS before.
4. The program often requires you to type "Q" and "CNTL-Q". This code means either to quit editing or to quit accepting text. These codes are given the name "QUIT". But, if the typist tells the program to "QUIT" by typing "Q" when finished printing a document, the program dies. Instead, the typist must type "R", meaning "return to menu". No program should ever be designed to use the same control code for two totally different reasons, especially if one reason is to wipe out everything.
5. The search and replace function does not recognize carriage returns. You cannot search for such things as the start of a new paragraph. You cannot automatically change all carriage returns to ";" or spaces.
6. The buttons on the keyboard used to move the cursor are not near the repeat key. You have to use two hands to use the movement keys with repeat.
7. This program does NOT work with the upper/lower case modification from Paymar. Many programs will not display upper/lower case letters but in the case of Apple Writer, it produces garbage on the screen for all the punctuation. I have the Paymar circuit installed in my Apple. It is just too much trouble to remove it. Therefore, the pictures show you what the screen looks like with upper and lower case.
8. The program helps you by remembering the name of the document that you are working on. The program is also designed to print the document. However, when you print anything, the program forgets what it was working on.

9. Apple Writer will split words on the computer display. In many other word processing programs, the last word on a line is moved automatically to the next line if the whole word will not fit on the line. This can be avoided by hitting the return button at the end of each line. This, however, is a problem if you ever want to print the document with justification or lines longer than 40 characters. It cannot be done.

This is one of the three machine language programs for the Apple II. Some of the computer stores rate this as the best easiest word processing program for the Apple.

For more information on word processing see the article "Word Processing Overview" in this issue.

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GIN!

YOUR TRS-80 CAN BE A TOUGH OPPONENT

GIN RUMMY 2.0 plays a strong game, good enough to challenge an expert player. Plays a full regulation game, keeps score to game level, allows rearrangement of player's hand, and changes strategy to counter its opponent's play. Hours of good card playing, a fascinating program, one you'll enjoy playing against and trying to beat.

MGR-1 \$14.95

CHECKBOOK PLUS solves the problem of monthly bank statement reconciliation. No cumbersome tape record keeping. Just do your checkbook once a month and let Checkbook Plus handle all the details and find the errors.

MCB-1 \$9.95

CALCULATOR PLUS is an on-screen or printing calculator, with chain and mixed calculations, memories for answer storage or calculations with constants. Item count and on-screen or printed review of long add-and-subtract operations. Optional dollar format.

MPC-1 \$9.95

CHECKBOOK PLUS and **CALCULATOR PLUS** both on one cassette.

MC-2 \$14.95

At your dealer or direct from

MANHATTAN SOFTWARE, INC.
P.O. Box 5200 Grand Central Station
New York City, New York 10017

Super-Text vs. Apple Writer

Many people have asked me to compare the two word processors. How nice it would be if you could look at a comparative chart or a list of features and choose the best program. You have no such luck!

It is impossible to compare programs of this complexity. A simple chart of features would be totally misleading. Programs of this complexity are complete systems. Each feature is designed to complement the rest of the program. If a feature is not in the program, then probably the program has another way to do the same thing. Here is an example to show you how comparisons are misleading and often confusing.

Both Super-Text and Apple Writer have a "find and replace" feature. But Super-Text has two codes "F" & "R" for "find" and "replace". Apple Writer has delimiters to indicate a "find" or a "replace". You use two delimiters for a "find" and three delimiters for a "replace". Both programs prompt you at the bottom of the page. Super-Text prompts you on a blank line reserved for this purpose. Apple Writer moves the page up a couple lines, wiping out the top lines of the page. If you are working at the top of the page, you can no longer see what you wanted to change. You must do it from memory. Super-Text shows you every place it changes. Apple Writer just says "DONE". You know instantly if you have the results you wanted from Super-Text. You have to search to find what has happened with Apple Writer. But this makes Apple Writer faster than Super-Text.

Super-Text cannot replace anything with a blank. You must always use a space or a non-printing control character. On the other hand, Apple Writer can always replace something with a blank.

Apple Writer cannot find or replace a carriage return. Super-Text can.

So which is better? How can you put this in a comparative chart? You must try the programs yourself and see which you like best.

PS. Just to add to the confusion, the only other machine language word processing program for the Apple, "Easy Writer", does not even have a global search and replace. Only the soon-to-be-released "Easy Writer 80" has this feature.


```

*****
WORD WEAVER 2.1
DISK BOOT
COPYRIGHT 1979
ALL RIGHTS RESERVED
HUELSDONK PRODUCTS
*****

```

```

RUN TEXT.IN (1)
RUN TEXT.OUT (2)
DISPLAY CATALOG (3)
WHICH?■

```

This text file will illustrate the use of the various functions of the WORD WEAVER 2.1 text processing system.

If you have questions about the use of these functions that are not answered in the written instructions, then you can look at the lines of this

text file by means of the TEXT.IN program.

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WORD WEAVER 2.1
Apple II 32K
with Applesoft ROM
and Upper/Lower Case Adapter

Huelsdonk Products
15703 Midvale No.
Seattle, WA 98133

Here is a text editing program written in Basic. The program requires the upper/lower case adapter for the video display. The program is mostly line-orientated and has some unusual printout capabilities. The program is relatively inexpensive and will work with as little as 32K of memory. The program comes with 16 pages of instructions.

Probably the most unique feature of this program is the unusual shaping which is possible with the printed text. This is done by the typist modifying the program by adding a series of DATA statements. These data statements specify the type of margins and their positions. You can create all sorts of exciting patterns with the printed text.

This program is designed for people who are programmers. A knowledge of BASIC is helpful in using the program and a knowledge of the Disk Operating System is required. The program is slower to use than any of the word processing programs written in machine language. It does have some added extra features which make it unique. Document file names are automatically suffixed for easy identification or automatic handling of large documents. Editing may be line by line or global. Automatic center justification of text is a standard option. Printed text can be automatically converted to upper case for printers which require this. File (document) names can be changed easily.

This program is unique and professionally written. Basically, it is slow to use and slightly inflexible. Other word processing programs are available that are either more powerful or easier to use. You can't go wrong with this program but you can easily do better. Therefore, I give it a qualified recommendation.

For more information about word processing, see the Word Processing Overview in this issue.

```

*****
WORD WEAVER 2.1
PART I: TEXT.IN
COPYRIGHT 1979
ALL RIGHTS RESERVED
HUELSDONK PRODUCTS
*****

```

```

START NEW FILE (1)
LOAD EXISTING FILE (2)
GLOBAL EDIT (3)
OR QUIT (4)
WHICH? ■

```

SUFFIX NUMBER (DEFAULTS TO 1):
LOADING SAMPLE.1

```

LIST TO: CRT (0)
          PRINTER (1)
          PRINTER (2)
OR: GLOBAL EDIT (3)
      NEXT SUFFIX (4)
      ANOTHER SUFFIX (5)
          QUIT (6)
          NEW FILE (7)
          CHANGE NAME (8)
          RUN TEXT.OUT (9)
          WHICH? ■

```


CHARLES MANN & ASSOCIATES
PERSONAL TEXT PROCESSOR

MASTER MENU

- | | |
|------------------------|--------|
| 1. LOAD TEXT FROM DISC | (LOAD) |
| 2. SAVE TEXT TO DISC | (SAVE) |
| 3. CHANGE/SET TABS | (TABS) |
| 4. ENTER/ADD TEXT | (ENTR) |
| 5. EDIT EXISTING TEXT | (EDIT) |
| 6. PRINT/DISPLAY DRAFT | (DRFT) |
| 7. PRINT FINAL COPY | (FINL) |
| 8. UTILITIES | (UTIL) |

CHARLES MANN & ASSOCIATES
PERSONAL TEXT PROCESSOR

EDIT MENU

- | | |
|---|----------------------------------|
| C | - CORRECT LINES |
| D | - DELETE LINES |
| E | - EXIT TO MASTER MENU |
| F | - FIND ALL STRING OCCURRENCES |
| I | - INSERT LINES |
| M | - MERGE LINES |
| R | - REPLACE ALL STRING OCCURRENCES |

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WORD PROCESSING
Apple II 32K Disk

Charles Mann
7594 San Remo Trail
Yucca Valley, CA 92284

This program is a text editor. It requires only 32K and will work with the upper/lower case modification for the computer display or it can work without it. The program comes on disk with 16 pages of instructions.

This is the "EDSEL" of word processing programs. It is both extremely elegant and very odd-ball.

Tremendous effort has gone into writing this program. In general, this is the easiest to understand and the most professionally written text editor program for the Apple. The programmer is a genius. However, for some unknown reason, the programmer decided to write the program in BASIC rather than machine language. This makes the program much slower to compose with than any character-orientated program.

The program is a series of computer memory overlays. The use of continual overlays requires that the program disk be inserted in a disk drive almost all the time. If you have a one disk system, the program will ask you to change disks every time you read or write a file.

The program is printer-orientated. Everything is based on producing a rough printed draft and making corrections based on this printed copy. This contrasts with the trend of the word processing industry to do all editing on the display screen at the current location of the flashing cursor.

The program has every available feature of a text editor. It is how these features are implemented that makes this program so weird. It is a useable program but far from the best. And since there are plenty of word processing programs for the Apple, I would not recommend this program unless you needed one or more of its unusual features.

For more information on word processing, see the article "Word Processing Overview".

CHARLES MANN & ASSOCIATES
PERSONAL TEXT PROCESSOR

UTILITIES MENU

- | |
|--------------------------------------|
| 1. LIST THE CATALOG |
| 2. LOCK/UNLOCK FILES |
| 3. MEMORY REMAINING |
| 4. DISC SPACE REMAINING |
| 5. CHANGE NUMBER OF DISK DRIVES |
| 6. CHANGE TO/FROM LOWER CASE DISPLAY |
| 7. RETURN TO MASTER MENU |

CHARLES MANN & ASSOCIATES
PERSONAL TEXT PROCESSOR

ARE MANY ERRORS IN THIS TEXT

WHICH YOU MAY EDIT USING THE

EDIT ROUTINES

OF THE PROGRAM.

BY EDITING BUT KEEP THIS FILE CALLED TE

HIT RETURN FOR MASTER MENU

COMMAND M
 FREE 200 LINES, 3039 CHRS
 COMMAND I
 THIS IS A SAMPLE OF THE TEXT EDITOR BY R
 OBERT W. BAKER.
 COMMAND T
 COMMAND H
 COMMAND T
 THIS IS A SAMPLE OF THE TEXT EDITOR BY
 COMMAND A
 COMMAND I
 Now, this is upper and lower case. ■

TYPE - NUMBER AND RETURN

1. INITIALIZATION
2. ENTER NEW CONTRACT
3. CLOSE AN EXISTING CONTRACT
4. CASH BALANCE
5. P/L STATEMENT
6. AMEND BALANCE
7. PRINT-OUT OF CONTRACTS
8. COLOR BAR GRAPH
9. EXIT PROGRAM

7■

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LINE EDITOR PET 8K

Robert Baker
 15 Windsor Drive
 Alco, NJ 08004

COMMODITY MARKET ANALYSIS APPLE II 32K

Mind Machine, Inc.
 31 Woodhollow Lane
 Huntington, NY 11743

In the Fall issue of this magazine, I reviewed Total Information System's Micro Text Editor. I recommended it because of the low price and the excellent workbook that comes with it. This was in spite of the fact that the program is written in Basic and is a text editor rather than a word processor.

This is another, similar text editor. It is also written in Basic and is very inexpensive. The manual is very brief but adequate.

If you are looking for a beginning word processing program for the smaller PETs, you cannot go wrong with this text editor.

This program keeps records for someone who trades in commodities. It is a very elementary system which is easy to use. The program does some error checking. The results of the program include a graph of earnings and a profit and balance total.

ENTRY FORMAT

TYPE: NAME (OF CONTRACT)
 MONTH (FIRST 3 LETTERS)
 DATE (2 DIGITS)

EXAMPLE: WHEAT SEP 80
 (1 SPACE BET. NAME/MO/YR)

NOTE: HIT 'RETURN' IF NO ENTRY

ENTER CONTRACT ?

Robert W. Baker. The program is simple yet contains a complete set of commands. I find it very easy to use but it still is limited by being written in Basic.

COMMAND: T
 Now, this is upper and lower case.

COMMAND: M
 FREE: 193 LINES, 2812 CHRS

COMMAND: F

FIND,

of

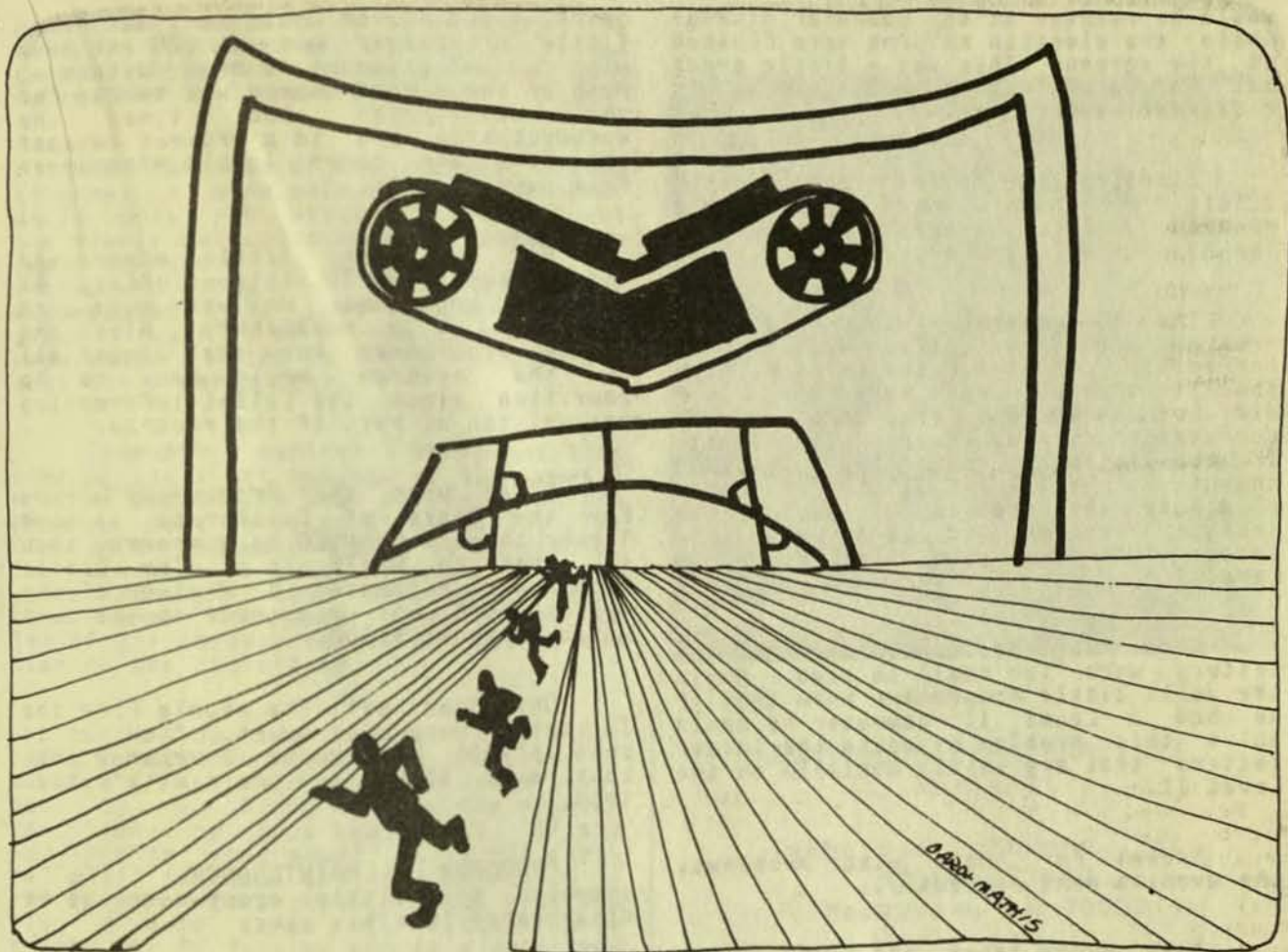
--- FOUND ---

set contains a complete set of commands
 COMMAND ■

CONTRACT - PINE-NUTS SEP 80

SHORT/LONG - SHORT
 NUMBER OF CONTRACTS - 100
 STATUS - CLOSED
 DATE PURCHASED - 1/3/80
 PURCHASE PRICE - \$100
 DATE SOLD - 10/1/79
 SELLING PRICE - \$500
 GROSS PROFIT - \$0
 GROSS LOSS - \$0
 COMMISSIONS - \$40
 FEE'S - \$135
 NET LOSS - \$175
 NET PROFIT - \$0

HIT ANY KEY FOR NEXT CONTRACT



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MAINTENANCE PROGRAMMING

The Hidden Cost

One upon a time in a far off land, there lived a happy little programmer. One day a friend at a local TV station asked him to write a program to handle the election returns in the next election. "Oh, Joy!", shouted the Jolly little programmer. "Now, I can do somethings useful on my Level I Radio Shack Computer.

Because the program would only be used once, the Jolly little programmer wrote a "quick and dirty" program. "Quick and dirty" means that the Jolly little programmer did not write an instruction manual or a description of what was inside the program. The program took so much room that the programmer could not even fit in a few notes to himself to remind him how the program worked. Therefore, there was absolutely no "documentation" on the program except in the Jolly little programmers head.

A TRS-80 Level I 4K computer would be set up at the city hall. A TV camera

would be pointed at the computer display while the election returns were flashed on the screen. This was a little crude but for a volunteer project, it was reasonably effective.

Election time rolled around and the little programmer had finished his program. It was a nice little program. The programmer was pleased.

The TV cameras turned on and the program worked perfectly. Well, almost perfectly. Most of the folks at home thought that all zeros were "8"s. They did not know that the zero on the computer's display has a slash in it. If the little programmer had a Level II computer, he knew that he could eliminate the problem by having the computer replace all zeros with the letter "O". But alas, this was only a Level I.

Also, someone complained that the letters were too small to read. Again the jolly little programmer knew that if he had a Level II computer he could solve this problem by using the larger letters that are easily available on the Level II.

Except for these minor problems, the evenings went perfectly.

Many moons later, the happy little programmer, who was now a publisher of a wonderful computer magazine, read a notice from "People's Software Exchange". They wanted people to donate programs to be mass-produced and sold at cost to new computer owners. Naturally, the happy little programmer thought that this was a wonderful idea. Surely, some people would like to see his election return program as it was a perfect demonstration program. The little programmer sent in the program, so now it is available on "Tape #2" for only \$5.95 from

People's Software
Computer Information Exchange
PO Box 158
San Luis Rey, CA 92068

Everyone was happy until one day another TV station came to the happy little programmer and said, "We just bought your program for \$5.95. We want you to change the program so we can run the next year's election. Therefore, we will be glad to pay you another \$5.95 if you will change the program to contain the new ballot."

A long time ago the jolly little programmer had worked for the State of California as a "Programmer's Helper". At that time the head programmer and

chief slave driver would rent our happy little programmer out at \$26 per hour with a 10% discount to good customers. Much of the rental charge was to pay for the secretaries who typed the documentation and to a project manager who kept our happy little programmer from running amok.

So our happy little programmer thought about the TV stations offer. By now the programmer was very busy with his work as a publisher. Also, the little programmer knew that almost all of the program would have to be rewritten since the ballot information was written as part of the program.

Often when the programmer worked for the State of California, it took longer to make **CHANGES** to a program than it took to **WRITE** it. The little programmer estimated a minimum of one week's work was required, so the cost would be about \$1000.

Oh, dear me! The people from the TV station were most upset. "How can it cost \$1,000 to change a program that cost only \$5.95 to begin with", they said.

"PROGRAM MAINTENANCE COST", answered the little programmer as he disappeared into his cave.

Everything was peaceful for awhile. But then it happened.

The happy little programmer received a copy of "Tape #5" from the People's Software Exchange for the TRS-80 Level II - 16K computer. There was his election return program. It had been converted to the Level II computer. But horrors of all horrors, it did not work as it was supposed to.

One of the major tasks of a maintenance programmer is to up-grade a program to a larger computer. Since there was no description of how the program worked and no program documentation, no one knew what all of the tricky little coding did. Therefore, when the program was converted to Level II using the Level I to Level II convert program from Radio Shack, the program did not work right.

For those of you who do not know, a good program in one computer language can NOT be converted to another language. A good Level I program uses the special features of the Level I Basic. None of the special features of Level I Basic are included in Level II Basic. To be converted to Level II, a good Level I program should be

completely rewritten to benefit from the special features of Level II. The special features are not converted with Radio Shack's Convert Program.

In the case of the election return program, a good maintenance programmer would cost you about \$2000 to convert the simple but undocumented program from one computer to another. If the programmer had a complete set of documentation, the cost would be half, since half of the maintenance programmer's time is spent figuring out what the program does.

Remember, earlier I mentioned that some of the short comings of the Level I program could have been corrected if the program were written in Level II. The "People's Software" Level II version of the election return program did not solve any of these problems. A good maintenance programmer should check to see if any changes should be made at the time of the conversion.

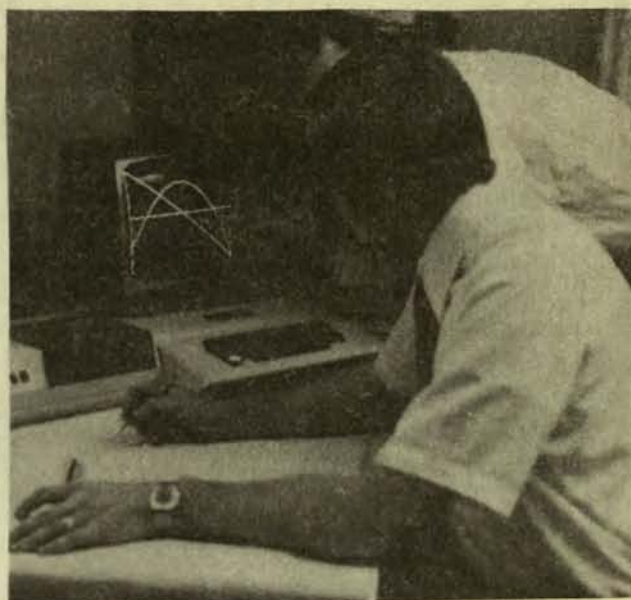
Also, do you remember that other radio station? Even with the Level II version of the program, they would still have to pay \$1000 to have the program rewritten for each new ballot. If the maintenance programmer is on his toes, he will see that the program should be rewritten and broken into two programs plus a data tape. The first program helps the TV station create a data tape for each ballot. Then the second program would read the data tape and then process and display the election returns. This way, the TV station would not need the expense of a maintenance programmer to change the ballot for every election.

Now you can see how sticky things can get. Just because you see a program that looks like it is what you need, STOP! Before you buy it, find out how much maintenance programming it will require to fit your application.

Also, now you see why IBM's program are so big. They try to have all the options built into the program rather than take the chance of needing maintenance programming.

So, remember our jolly little programmer. Like many programmers, his motives were pure. But now there is a program out there with his name on it that is in desperate need of maintenance programming.

Be sure that the programs that you buy are designed specifically for your computer. Make sure that they come with complete documentation. Else some day the cost of the maintenance programmer will set you.



CONTINUOUS BEAM ANALYSIS Apple II

Technical Software, Inc.
PO Box 73043
Metairie, LA 70033

Steve Johns and Dale Hunn, professional civil engineers, find Technical Software's Continuous Beam Analysis Program to be an invaluable aid in solving complex structural problems. This program computes shears and moments at the tenth points of each span for virtually any loading combination. Tedious, time consuming longhand moment distribution calculations are eliminated. Instead, information relative to each span is input by the use of simple data statements. Therefore, some programming knowledge is helpful. Computing time for the program averages 5 to 10 minutes, but is dependent on the number of spans and applied loads. Tabular output provides accurate results while the optional graphical output allows for visual checking. The program is frequently used by Mr. Johns and Mr. Hunn to analyze building members, bridges, equipment skids, etc.

(In the future issues, I will try to bring you examples of people using programs that they have bought. Mr. Hunn is president of Technical Software.)

ENTER INITIALIZATION MEMORY SIZE? 32400
 LOADING PROGRAM -
 SELECT BAUD RATE? 300
 ADD LINE FEED AFTER CARRIAGE RETURN (Y/N)? Y
 DOES YOUR PRINTER RECOGNIZE FORM FEEDS (Y/N)? N
 MAXIMUM ALLOWED PRINTER LINE LENGTH (25-250)? 80
 LINE LENGTH FOR EARLY LINE TERMINATION (20-250)? 75
 NUMBER OF NULLS (0-120)? 0
 TOTAL NUMBER OF LINES PER PAGE (0-120)? 60
 NUMBER OF LINES TO PRINT ON EACH PAGE? 58
 ECHO PRINTER TO SCREEN (Y/N)? Y
 ARE YOU USING DISK BASIC (Y/N)? N
 DO YOU WANT KEYBOARD DEBOUNCE (Y/N)? Y.

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TRS232 FORMATTER & TRS232 TRS-80 Level II 16K

Small Systems Software
 PO BOX 366
 Newbury Park, CA 91320

The TRS232 is a self-contained electronic circuit which can be attached to your Level II. It connects your computer to a serial printer such as an RS-232 Teletype, or in my case, a Decwriter IV. The program "TRS232 Formatter" is one of the optional programs designed to control the TRS232 circuit.

Before I begin the review, I will explain a few of the facts of life.

1. Printers can be very expensive.
2. Connecting a printer to a Level II can be very expensive.

If you are looking for a printer for the Level II, I recommend the "Quick Printer II". It costs \$219 and is the least expensive printer on the market. It is upper/lower case and uses a metal-coated paper. The printer plugs directly into the back of the Level II. It can also be connected to any standard RS-232 interface if and only if the RS-232 interface understands the signal "Ready to Receive". (I can not use it with my Apple Intelligent Serial Interface.) The printouts from the printer can be Xeroxed easily and clearly.

Personally, I feel this is the best bargain on the market today. However, the printer does have some limitations. The paper can only be bought from Radio Shack. The paper is only 32 characters wide.

If you want a larger printer, you have a great selection to choose from. All are expensive. Most require an RS-232 interface. The Level II does not have this electrical circuit built in so you must do either of the following:

1. Buy the expansion interface and the RS-232 interface card. This is very expensive.
2. Get the TRS-232 from Small Systems Software. This is very inexpensive.

or

Naturally, when I wanted to connect my new printer to my Level II, I got the TRS-232. This circuit comes with a program which makes it work with the Level II.

I also got the program, TRS232 Formatter. In the photo, you can see the various options of the Formatter program. You load it before you load your regular program.

I highly recommend the printer interface and the Formatter program.

TRS-80 Model I and II quality software

DATA BASE MANAGER IBM-IV \$69

You can use it to maintain a data base & produce reports without any programming. Define file parameters & report formats on-line. Features key random access, fast multi-key sort, field arith, label generator, audit log. MOD-II version with more than 50 enhancements \$199.

ACCOUNTS RECEIVABLE ACCT-III \$69

One or more drives. Order entry calculates sales tax, shipping, amount for multiple items. Credit checking, aging, sales analysis, invoices, statements and reports. As opposed to most other A/R, ours can be used by doctors, store managers, etc. MOD-II version \$149.

WORD PROCESSOR 16K \$39, 32K \$49, MOD-II \$49

First word processor specifically designed for the TRS-80 that uses disk storage for text. Written in BASIC. No special hardware and text limit. Use for letters, manuals & reports. 32K version features upper/lower case without hardware change and multiple input text files.

MAILING LIST advanced MAIL-V \$59

Fast sort by any field. Multiple labels and reports. 4-digit selection code, new zip code ext., screen input, live keyboard, powerful report writer. MOD-II \$99.

INVENTORY INV-V \$99

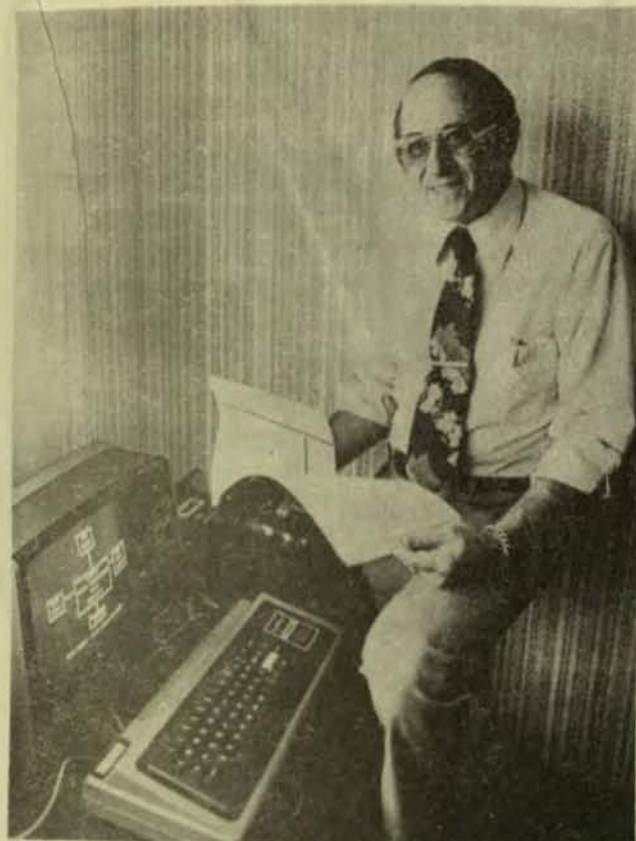
9-digit alphanumeric key for fast key random access. Reports include order info, performance summary, etc. Calculate E.O.Q. Powerful report writer. MOD-II \$149.

All programs are on-line, interactive, random access, virtually bug free, documented and delivered on disks. MOD-I requires 32K, DOS. We challenge all software vendors to offer low cost manuals so you can compare and avoid those high-priced undocumented, 'on-memory' programs. Send \$5 for a MOD-I manual and \$10 for MOD-II.

MOD-II programs are extensively modified, guaranteed to run with 1 year newsletter & updates. 10% off for ordering more than 1 MOD-II programs.

MICRO ARCHITECT

96 Dothan St., Arlington, MA 02174



"I use the Simplified Bookkeeping Program at the end of the year to do ALL the adding of ALL pages in my ledger for ALL months for ALL 12 columns! Not only does this save time, but it is far more accurate than trying to "balance" 12 columns."

"I use the Monthly Gross Profit Summary once a month. It takes about 5 minutes to print out a report that used to take about 20 minutes - and the program does ALL calculations."

"The Size/Price Comparison is used every 4 months when prices change to update a chart showing the Price/Percentage advantage of buying the larger size of products that come in more than one size - 58 such comparisons on last price list!"

"All these programs come on a single cassette, with documentation, for Level II 16K - no disk or printer required, but printer option is provided in three programs."

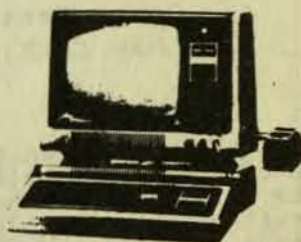
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AMWAY PRODUCTS DISTRIBUTORS PROGRAMS TRS-80 Level II 16K

Blechman Enterprises
7217 Bernadine Ave.
Canoga Park, CA 91307

Blechman Enterprises

AMWAY PRODUCTS DISTRIBUTORS PROGRAMS



USING A STANDARD LEVEL II 16K
RADIO SHACK TRS-80 MICROCOMPUTER.
THESE SIMPLE-TO-USE PROGRAMS
DON'T NEED A DISK OR PRINTER!!!

Fred Blechman writes, "As an Emerald Direct distributor I have a rather large and far-flung organization of over 260 distributors in my personal group. I work with about 30 distributors personally, and they place about 100 orders a month through my warehouse. I check each of these orders personally with my Order Verification Program, which keeps all prices for over 250 items in memory. A typical order that would take 10 minutes to check "by hand" (using the price list and a calculator) takes about 1 minute with this program. Therefore, over 16 hours of work has been reduced to less than two hours per month with the computer. I check orders twice a week."

"The Distributor Record Program, used monthly, allows me to print out for my group leaders a summary of their distributors, including their individual renewal status. Before the computer program, this was so difficult to do I just never did it! Now, it takes about 20 minutes each month."

(1) ORDER VERIFICATION PROGRAM: ENTER THE QUANTITY, C OR E (FOR CASE OR EACH) AND THE STOCK NUMBER. ALMOST 300 OF THE MOST-USED PRODUCTS ARE HELD IN MEMORY WITH PRICES. THE COMPUTER FINDS THE PRICES, MULTIPLIES THEM BY THE QUANTITY AND DISPLAYS THE PV,BV,COST & RETAIL IN THE ORDER FORMAT ENTER 0., AND ALL COLUMNS ARE TOTALLED, WITH THE TAX AND HANDLING THEN ADDED FOR A GRAND TOTAL. NON-TAXABLE ITEMS ARE AUTOMATICALLY DEDUCTED FROM THE TAX. YOU CAN MAKE CHANGES, OR REVIEW THE PRICES THAT YOU HAVE SCROLLED UP OFF THE SCREEN. TOO!! PRINTER OPTION IN PROGRAM

(2) SIMPLIFIED BOOKKEEPING: THIS PROGRAM WILL NOT REPLACE YOUR EXPENSE LEDGER, BUT IT WILL ADD TWELVE COLUMNS AT ONCE, AND GIVE YOU PAGE TOTALS, MONTH TOTALS AND GRAND TOTALS!

(3) DISTRIBUTOR ORGANIZATION: ALPHABETICALLY LISTS ALL YOUR DISTRIBUTORS, OR ALL IN ANY GROUP, OR ALL SPONSORED BY ANY ONE, OR SPONSOR AND GROUP OF ANY DISTRIBUTOR. INDICATES AND LISTS NON-RENEWED SORTS 2 LEVELS DOWN FROM ANY DISTRIBUTOR. PRINTER OPTION IN PROGRAM.

(4) MONTHLY GROSS PROFIT SUMMARY: DOES ALL CALCULATIONS. DISPLAYS RESULTS IN LINE NUMBERS CORRESPONDING TO THE SA-434 FORM. PRINTER OPTION IN PROGRAM.

\$24.95 POSTPAID USA ON CASSETTE, WITH DOCUMENTATION.
ORDER VERIFICATION PRICE UPDATE CASSETTE JAN/MAY/SEPT \$10
(CA RESIDENTS ADD 6% SALES TAX)

FREE BONUS: "BUY LARGER SIZE & SAVE" (\$ & %) PROGRAM.

BLECHMAN ENTERPRISES 7217 BERNADINE AVE., CANOGA PARK, CA 91307
PHONE: (213) 346-7024

7 ENTRIES
CHECK ENTRIES ON SCREEN (Y/N)?

1.95
22.89
15.95
35
18.5
6.67
7.95

(A)NOTHER CALCULATION
(P)RINT CALCULATION
(R)ETURN TO MENU

TYPE IN YOUR CHOICE: █

7 ENTRIES
CHECK ENTRIES ON SCREEN (Y/N)?

MEMORY TABLE

M 1 .975
FROG
M 2 8
SEX
M 3 3.95
INTEREST
M 4 8
M 5 8

(E)NTER A MEMORY
(C)LEAR A MEMORY
(A)LL MEMORIES CLEAR
(S)UBTOTAL TO A MEMORY
(N)EW TITLE FOR A MEMORY
(M)EMORY TO SUBTOTAL
(U)SE A MEMORY AS A CONSTANT
(P)RINT MEMORIES
(R)ETURN TO MENU

MEMORY FIGURE? .99997
MEMORY TITLE ? ERROR 1.

RETAINED SUBTOTAL: 100.91

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CALCULATOR-PLUS TRS-80 Level II 16K

Manhattan Software, Inc.
PO Box 5200
Grand Central Station
New York, NY 10017

This program turns the TRS-80 into a calculator. The program is controlled by a series of "menus". You can add and subtract up to 101 numbers. After you have entered the numbers, you can check them to see if you entered them correctly. If not, you can return to the main menu and start all over again.

Similarly, you can also select to multiply. If you select this option, you can do a multiplication problem. You are given the option of printing the calculation, doing another calculation, or returning to the main menu. The same is true for division problems.

The program has 5 memory locations. The memory option has its own menu of options. Names can be given to the different memory locations.

I guess that once you are familiar with this program, it is not as slow as it first seems. Look carefully at the photos and see if you want to go through all these steps just to do some calculations.

MULTIPLICATION

SUBTOTAL: \$100.91
MULTIPLIED BY? 95

(A)NOTHER CALCULATION
(P)RINT CALCULATION
(R)ETURN TO MENU

THE ANSWER IS: \$9,586.45

TYPE IN YOUR CHOICE: █

ENTER FIGURES, PRESS 'ENTER'
THEN 'ENTER' ALONE FOR TOTAL

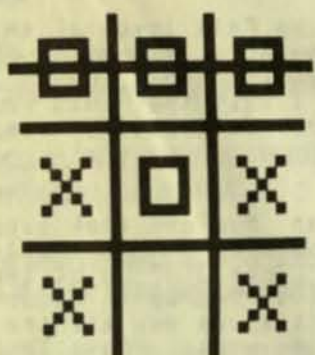
? 1.95
? 22.89
? 15.95
? 35.00
? 18.50
? 6.67
? 7.95
?

100.91 TOTAL

7 ENTRIES
CHECK ENTRIES ON SCREEN (Y/N)?

TIC-TAC-TOE

YES



NO

GOTCHA!! I WIN!!
WOULD YOU LIKE TO TRY AGAIN?

LIGHT-PEN

TRS-80 with Tape Recorder

Practical Applications
1313 Laurel Street, Suite 15
San Carlos, CA 94070

"Just point to what you want."

A light pen makes "pointing" possible for your Level II. You no longer have to type on the keyboard to talk to your computer. Now, you just point and the computer understands.

A light pen looks like a ball point pen. If you are using a computer program which is designed to be used with a light pen, the program can tell where you are pointing on the screen. To work properly, the computer program must flash white dots for you to point at.

There are a couple reasons for buying a light pen:

1. Often, it is faster to use a light pen than to use the keyboard.
2. Less errors are made using a light pen than the keyboard.
3. Children find it much easier to use the light pen. This allows for preschool education.

There are a couple reasons **NOT** to buy a light pen:

1. There are still too few programs which use the light pen. Without programs designed specifically for the light pen, your light pen will be useless.
2. This particular light pen must use the tape recorder as an amplifier. This means you must disconnect the tape recorder's AUX plus and adjust the volume. To load the next program you must readjust the volume. This is not easy for pre-schoolers.

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UNUSUAL Computer Programs

1. **WORLD'S SMALLEST CASINO**
Display, play 8 casino games at one time!
2. **WILD & CRAZY LETTERS**
Different and nuttier each time you "write" one!
3. **STATE MAP**
Draws map of your favorite State on screen. State guessing game too! Specify state desired.
4. **ZODIAC SIGN**
Horoscope sign "carved" on the screen, as though from block of marble. Excellent modern art treatment. Indicate your birthdate.

\$2.00
each
postpaid

All programs
recorded TWICE
on high quality
data CASSETTES.
Limit one of
each, please, at
this price.

PAUL'S ELECTRIC COMPUTER
POB 42831, Las Vegas, NV 89104

CLONE 3.0 - MUMFORD MICRO SYSTEMS

ENTER YOUR CHOICE....

- 1 = LOAD A SYSTEM TAPE
- 2 = LOAD A DATA TAPE
- 3 = DUMP EITHER TYPE OF TAPE

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CLONE 3.0
TRS-80 Level II 16K
Mumford Micro Systems
Box 435
Summerland, CA 93067

OK LEVEL1

```
120>HFG6*7#68*H*262*720 0000*2*(U890)0H*A IMIC
121>12 KA 010 010 000 000 000 000 000 000 000 000
122>12 KA 010 010 000 000 000 000 000 000 000 000
123>12 KA 010 010 000 000 000 000 000 000 000 000
124>12 KA 010 010 000 000 000 000 000 000 000 000
125>12 KA 010 010 000 000 000 000 000 000 000 000
126>12 KA 010 010 000 000 000 000 000 000 000 000
127>12 KA 010 010 000 000 000 000 000 000 000 000
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199>12 KA 010 010 000 000 000 000 000 000 000 000
200>12 KA 010 010 000 000 000 000 000 000 000 000
```

In the Fall issue of this magazine, I recommended TRcopy. This program copies Radio Shack Level II computer tapes. I said that this program is the best tape duplication program on the market.

Bryan Mumford took exception to my recommendation. He feels that his program "Clone 3.0" is at least as good. He says his program is clear and easy to use and it gives you all the information you could want. About TRcopy, he says that it may have good documentation, but does it justify the price, which is quite high?

Clone is designed to read a SYSTEMS program or a data file and reproduce it. The program does not verify the program or data file. The program does not verify the copy. The program shows the characters on the screen as they are read into the computer. Blank characters are shown as blanks and graphic characters are shown as graphic characters.

On the other hand, TRcopy can verify both the original and the copy of programs or data files. TRcopy will copy Basic programs as well as systems tapes and data files. It shows the characters plus the hexadecimal value for each character. Therefore you can see which graphic or which blank characters are being printed.

I feel that TRcopy is much easier to use for beginners. The messages are much clearer with TRcopy. Similarly, the printed instructions to the user are much easier to follow.

The only advantage that I have found for Clone is that it handles multiple data files better than TRcopy. TRcopy does not check for the end of a data file. Therefore, it does not recognize the sync characters of the next data file.

Except for the easier handling of multiple data files and the lower price, Clone comes out second best in comparison with TRcopy.

INSURANCE PLANNING

EXAMPLE CONTINUED:

THE EARNINGS FROM THE CASH VALUE ($6,000 \times .06 = 360$)
COULD BUY APPROXIMATELY 90,000 OF DECREASING TERM.

OR IN THIS EXAMPLE 39,000 OF DECREASING TERM COULD BE
OBTAINED FOR APPROXIMATELY 160 PER YEAR.

BOTH OF THESE ALTERNATIVES WOULD ALLOW THE CASH VALUE
AMOUNT (6,000) TO BE PUT IN THE BANK IMMEDIATELY.

ANOTHER ALTERNATIVE WOULD BE TO USE THE EXISTING YEARLY
COST (1,560) AND BUY APPROXIMATELY 390,000 OF TERM.
ENTER TO CONTINUE? _



PERSONAL SAVINGS PLANNING II LIFE INSURANCE TRS-80 Level II 16K

Murnane and Associates
1056 Metro Circle
Palo Alto, CA 94303

This program is an informative
lecture on life insurance. I believe
the program can be classified as either
a self improvement program or a
financial program. Look at the photos
to get a better feel for what it does.

Much of the program could have been
produced in a textbook. Very little of
the computer's math ability or
programmed learning features are used in
this program. The unusual nature of the
program is what makes it interesting.

INSURANCE PLANNING

ANALYSIS OF EXISTING PERMANENT POLICIES:

TAKE EXISTING POLICIES AND WRITE DOWN THE FOLLOWING:

1. FACE (ORIGINAL) AMOUNT OF ALL PERMANENT POLICIES.
 2. TOTAL (CURRENT) CASH SURRENDER VALUE OF POLICIES.
 3. SUBTRACT 1 - 2 (FACE AMOUNT MINUS CASH SURRENDER VALUE.)
(THIS IS THE AMOUNT OF DEATH PROTECTION YOU HAVE)
 4. MULTIPLY CASH SURRENDER VALUE TIMES .06.
(.06 IS AMOUNT YOU COULD EARN ON THIS MONEY IN A BANK)
 5. ADD UP ALL YOUR YEARLY PREMIUMS
 6. ADD 4 AND 5 (CASH VALUE \times .06 PLUS YEAR YEARLY PREMIUMS.)
(THIS IS THE TRUE COST OF YOUR DEATH PROTECTION)
- ENTER TO CONTINUE? _

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ACCOUNTS RECEIVABLE SYSTEM TRS-80 Level II 32K Disk

Nepenthe Programs
3014 Biss Court
National City, CA 92050

by
Will Hasenbuch

Senorita Edna P. Rodriguez C., an
Accounts Clerk for Greitzer Brokers, San
Ysidro, California, uses the TRS-80 and
the Accounts Receivable System from
Nepenthe Programs in daily accounts
maintenance. Greitzer Brokers maintains
approximately 350 active accounts and
processes approximately 1000 transactions
(invoices & payments) per month.

This particular software system was
selected because of its versatility and
ability to handle large transaction
volume differences between customers.
Senorita Rodriguez, an Accounting Major
at Universidad Autonoma de Baja in
Tijuana, Mexico, is confident that the
microcomputer will become as useful a
tool to the accountant of the future as
the adding machine has been in the past.

DO PUSHUPS AND SETUPS. COMPLETE AT LEAST 15 OF EACH.

YOU HAVE 2 MINUTES

(START) TIME 2 : 0
 <<<<< STOP >>>>>
 DO YOU WANT TO CHECK YOUR PULSE?
 FIND YOUR PULSE BEAT THEN PUSH RETURN. BEGIN COUNTING ON 3.
 1 2 3 COUNT
 < STOP > ENTER YOUR COUNT. (0 FOR RECOUNT) 30 -

COACH
 TRS-80 Level II 16K

Coach
 Dana Henderson III
 3137 Lariat Drive
 Garland, Texas 75042

COACH is a Physical Fitness program. It leads you through an exercise program. The computer program has its own clock so the program can calculate your pulse rate. It also times the length of each exercise.

The cassette comes with an exercise record sheet for you to record your daily results. No other printed instructions come with the program.

The program has its limitations. It needs a bit of polish. Some of the messages are confusing. One message says that you are to exercise for 6 minutes and also says that you have 2 minutes to do it in. Now that's hustling!

Often the computer asks you questions which are to be answered with a "YES" or "NO". The computer does not check to see if you have made a mistake. If you type "NO", the program immediately assumes you typed "YES". The program does not tell you what it thinks you typed.

The current version of this program uses only half the memory of the computer. There is lots of room for expansion and cleaning up the program. The author is a good programmer. In time, I expect this program will be much better.

LOWER CASE FOR THE APPLE

Dan Paymar
 Box A-133, C.S. 6800
 Costa Mesa, CA 92627

This is NOT a program but a piece of equipment to be installed in your Apple. In this issue, I am reviewing "Word Weaver" by Huelsdonk Products. This is a word processing program which uses upper and lower case. Therefore, I need some way of producing lower case letters on my display screen.

Normally, I do not review equipment but there are some things about this product that you should be aware of.

First, it plugs in with no modification to your Apple. Well, that is misleading. The location of the socket is almost impossible to work on without removing the case. Otherwise you will bend a pin or two.

Even if you are not familiar with electronics, you can usually insert chips into your Apple. But, if you do not know what a "89" means, you will probably remove the wrong 74LS194. The only chip whose number is easily visible with the case still in place is the wrong one. Be sure to look at the picture on the yellow sheet rather than rely on the instruction sheet.

Many programs do not work or are confusing with the upper/lower case option installed. APPLE WRITER does not work with this modification. Similarly Appilot produces some confusing messages with this modification installed. The upper case version of SUPER-TEXT is effected but I personally like the results. All blank areas have a little symbol in them. This way I can see the difference between spaces and blanks.

Because of the location of the socket directly under the keyboard, you can NOT remove this circuit every time you want to run any of these programs.

Other than that, it works great!

MUSE

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U-DRAW II Apple II 32K Disk

The Muse Software Company
330 North Charles Street
Baltimore, Maryland 21201

U-DRAW II is a high resolution graphics editor with disk input/output for storage of finished drawings. You can create a figure and then rotate, expand, contract, or move it anywhere on the screen with a few simple keystrokes. In addition to the interactive drawing mode, U-DRAW also has an elementary animation language which allows logic control of figure drawings and/or movement. U-DRAW also includes a powerful shape table editor that allows you to quickly create and edit multi-figure shape tables for use in your Applesoft programs.

This program is packed with features and options. Tremendous effort has gone into this program. It is professionally written. Yet, I do not find it useful or entertaining. I believe that only computer programmers will find it useful. The animation is limited to moving the entire contents of the screen. That is, you cannot animate an arm or a leg of a person on the display. You can only move the whole body. Also, the program will not show a sequence of scenes. The program cannot produce hard copies of drawings so the program has limited value in engineering drawings. If anyone is using this program regularly, I want to know what you do with it.

R
SHAPES CURRENTLY IN TABLE 00000

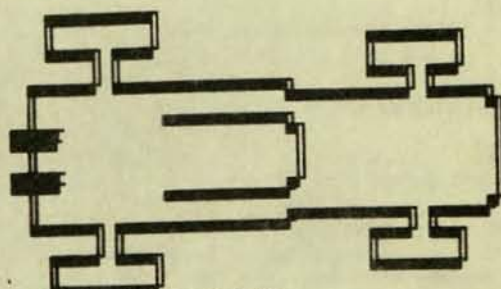
** OPTIONS **

CLEAR THE SHAPE TABLE BUFFER 'C'
INPUT A SHAPE TABLE 'I'
SAVE A SHAPE TABLE 'S'
ADD A FIGURE TO SHAPE TABLE 'A'
REPLACE FIGURE IN SHAPE TABLE 'R'
PLOT A FIGURE FROM SHAPE TABLE 'P'
** PLOT CLEARS THE SHAPE BUFFER **
EXIT THE SHAPE TABLE EDITOR 'E'
ENTER OPTION: C I S A R P OR E

```

0002 W FIGURE
0002 X FIGURE
0002 Y FIGURE
0002 Z FIGURE
0002 N1 FIGURE
0002 N2 FIGURE
0002 N3 FIGURE
0002 N4 FIGURE
0002 N5 FIGURE
0002 N6 FIGURE
0002 N7 FIGURE
0002 N8 FIGURE
0002 N9 FIGURE
* 0002 UDEX1
  
```

A FIGURE F
THE ENTIRE SCREEN S
OR A MOVE PROGRAM M
ANSWER 'F', 'S' OR 'M'
OR 'C' FOR CATALOG



ENTER ROTATION >+1
ENTER ROTATION >+1
ENTER X COORD >+3
ENTER Y COORD >#

TO: 415-489-5253 AM AY HOME. GEORGE+
MSG # 4 7 CHARS

MODE? (N=NO, I=IMMED, D=DEFER, Q=QUERY)
D
TIME (HHMM)? 2330

21:12:08

LIST OF COMMANDS:

ENTER
KILL #
MSG MODE FOR #
RETR #
SUMMARY #
UNLOAD
EXIT
LIST OF COMMANDS

21:13:13

PAN POB
(communications program)
PET BK with Modem

People's Computer Company
1263 El Camino Real
Box E
Menlo Park, CA 94025

Do you want to send messages to other PETs when the telephone rates are the lowest? PAN can do this for you. Once you connect your PET to a TNW Corporation's TNW488 modem and a Data Access Device, the Pan program turns your PET into a communications machine.

In the photo, you can see the options of PAN. The program is a complete system for composing, sending, and receiving messages. The messages can be sent immediately, later, or on demand from the receiver.

This program and the idea of automatic transmission of messages via a personal computer is a great step into the unknown. If you are the least bit interested in this field, you will find this program interesting. More information is available in Dr. Dobbs' Journal.

PAN, and the idea behind it, have some great obstacles. First, you might be wondering if this type of communication is practical. The cost of the Modem is not cheap. And second, the computer itself is not the cheapest form of communication.

An obvious question is why send a message over the phone to another person via a computer when you can pick up the phone and call that person yourself. I can understand this if you have a long document such as an article for publication. My assistant editor could send me the drafts over the phone each night. But PAN requires that the messages be short. In this case, a message-answering machine would do just as well.

Pan does not really save much on long distance calls late at night. Since the messages must be short for Pan, the savings are just not there.

Pan allows for communication with non-Pan devices. Yet a simple phone call is just as easy.

Really, the whole thing boils down to two thoughts:

1. Pan is an interesting experiment which is well worth examining.
2. Pan does not conform to our daily lives and daily activities.

In time, this idea might be practical. For now, it is just for experimenters.

*** DUPLIK *** (V.02) ***

(C) 1979 INSTANT SOFTWARE, INC (P)

CASSETTE PROGRAM DUPLICATOR FOR TRS-80 LEVEL 1 OR 2

POSSIBLE ORDERS :

- R = READ (START AT BEG. BUFFER)
- W = WRITE BUFFER ON CASSETTE
- C = CHECK (START AT BEG. BUFFER)
- RF = READ FOLLOW (ADD IN BUFFER)
- CF = CHECK FOLLOW. IN BUFFER
- L = RETURN TO LEVEL DEF
- B = RETURN TO BASIC
- #CASSETTE LEVEL 1 OR 2 ?

accept only two programs of the same type.

Another important point, the manual is a little confusing. The manual says that when you verify a program or data file, only the check sums are compared. In another place, the manual says that in verifying a program, it compares the tape with memory. These are two totally different things and give totally different results.

In addition to the tape copy program, this cassette comes with a renumber program. Therefore this \$7.95 cassette is definitely a bargain. I just wish the manual was a little clearer.

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TRS-80 UTILITIES TRS-80 Level II 16K

Instant Software
Peterborough, NH 03458

In another review, I compared TRCOPY with Clone 3. Both of these programs display what is on any cassette tape. Both will produce copies of one or more programs. Both programs are what I call complete tape copy programs. Both are expensive with TRCOPY being extremely expensive. Both programs are billed as the ultimate tape copying programs.

Yet, here is a tape copy program that does a few things that these other programs do not. Also this is probably the least expensive tape copy program available. Best of all, it is easy to use and very useful. If you are looking for an easy to understand and inexpensive tape copy program, this is it.

Besides making copies of a single program, this program will merge two programs into a single load. I have not figured out how it works. The manual says that any two programs can be merged into one loading block. Yet, it does not say how it works. Does this mean that it will load a program written in basic and a machine language program and still keep the internal pointers correct? Apparently not. It seems to

TRS-80 Software

MONITOR #3 \$39.95

Disassembler; ASCII and hex displays; memory move, search, verify, and modify; read and write object tapes; hex arithmetic; object code relocater; unload programs from TRSDOS memory areas to disk; symbolic tapes; more.

MONITOR #4 \$49.95

Adds: save and read disk files; direct input & output of disk sectors; send, receive, or talk to another computer via the RS-232C interface; symbolic disassembly on disk.

SMART TERMINAL \$49.95

Complete system for using the TRS 80 as a terminal to a time-sharing computer. Complete set of CONTROL keys, including BREAK. Automatic transmission from memory. Load and save files on tape or disk.

PACK/UNPACK \$24.95

Increase disk file capacity by 33% with NO NEW HARDWARE. Applies only to string data. Ideal for mailing lists, telephone files, etc.

HOME BUDGET (32K, disk) \$49.95

Keeps track of your checkbook, income, and monthly bills. Computes monthly and year-to-date summaries.

MAILING LIST (32K, disk) \$69.95

Over 1000 names on a single diskette! Add, change, find name, alphabetic or zip sort, print labels or master list.

SMALL BUSINESS ACCOUNTING (32K, disk) \$49.95

Handles income, expenditures, and payroll for a business of up to 16 employees. Daily, monthly, and year-to-date totals. Designed after Dome Bookkeeping Journal #612.

CONSULTING, ADVICE, DEVELOPMENT OF CUSTOM SOFTWARE TO SUIT YOUR NEEDS.

HOWE SOFTWARE
14 LEXINGTON ROAD
NEW CITY, NEW YORK 10956

MUSIC TRANSPOSITION

THIS PROGRAM TRANSPOSES MUSIC BETWEEN ANY TWO KEYS YOU SELECT. NOTES ARE REPRESENTED BY THEIR LETTER NAMES FOLLOWED BY A # TO INDICATE A SHARP, A / TO INDICATE A FLAT, OR JUST A SPACE TO INDICATE A NATURAL. A LINE OF NOTES CAN BE ENTERED WITH SPACES SEPARATING THE NOTES - FOR EXAMPLE: A B C# D B C# A. IF AN INVALID NOTE IS ENTERED, SUCH AS F WHEN IN THE KEY OF F#, AN ERROR WILL BE INDICATED AND ALL NOTES FOLLOWING THE ERROR WILL BE IGNORED.

PRESS ENTER TO CONTINUE

FLOWERING HOUSEPLANTS

THIS PROGRAM PROVIDES A QUICK REFERENCE GUIDE TO THE CARE OF OVER 200 POPULAR FLOWERING HOUSEPLANTS. THE PROGRAM SERVES TWO FUNCTIONS:

- 1) YOU MAY ENTER THE NAME OF A PLANT. THE PROGRAM WILL DESCRIBE THE IDEAL GROWING CONDITIONS.
- 2) YOU MAY DESCRIBE THE GROWING CONDITIONS. THE PROGRAM WILL PROVIDE A LIST OF PLANTS THAT SUIT THE CONDITIONS.

PRESS ENTER TO CONTINUE.

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MICROCOSM I
TRS-80 Level II 16K

Basics & Beyond
Box 10
Amawalk, NY 10501

This is a series of 30 programs on two cassettes. The cost is \$20. The programs on the first cassette are games while the programs on the second tape are educational, diagnostic, and programs for the home.

The programs are reasonably well written. Whoever designed the programs left a lot undone. Even on the serious programs the goal of the programs are rather trivial. The program to convert a piece of music from one scale to another is a good example. You type in the key of the music you have and the key of the music you want. Then the computer asks you to type in the notes. The program allows you to do it as a series of notes separated by spaces. In the instructions, the computer sternly tells you never to type in bad notes. Yet, the computer never tells you what they are. There is plenty of room to show them on the display and plenty of room in the computer's memory to provide this help.

Similarly, the other programs are equally superficial. The programs are a nice introduction but they lack enough substance to be used over and over again. Look at the photos and see what you think.

METRIC CONVERSION

UNITS - DISTANCE

ENGLISH

METRIC

- 1) INCHES
- 2) FEET
- 3) YARDS
- 4) MILES

- 5) CENTIMETERS
- 6) METERS
- 7) KILOMETERS

CONVERT FROM: INCHES

TO: KILOMETERS

ENTER VALUE (Q TO QUIT)?

6 INCHES EQUALS 1.524E-04 KILOMETERS

PRESS ENTER TO SELECT THE ITEM AT THE ARROW. USE THE ↑ AND ↓ KEYS TO MOVE THE ARROW TO THE ITEM YOU WANT. IF THE ITEM YOU WANT IS NOT SHOWN, PRESS 'Q'.

INGREDIENT	AMOUNT	CALORIES
FLOUR, ALL PURPOSE	1 CUP	400
FLOUR, BISCUIT	4 OZ.	400
→ FLOUR, BUCKWHEAT	1 CUP	350
FLOUR, CAKE	1 CUP	380
FLOUR, DARK RYE	1 CUP	410
FLOUR, LIGHT RYE	1 CUP	440
FLOUR, WHEAT	1 CUP	400
FLOUR, WHITE	1 CUP	400



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AIRCRAFT MAINTENANCE SYSTEM TRS-80 Level II 32K Disk

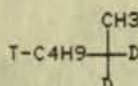
Nepenthe Programs
3014 Bissas Court
National City, CA 92050

by
Will Hasenbuch

Mr. Jerry McCann, owner of Icarus
tion, Browns Field, San Diego,
ornia, uses his TRS-80
computer as a daily part of his
copter maintenance business.
des the customary applications of
ntory control and payroll
eration. Mr. McCann's computer
rially assists the maintenance
vity. Using the Aircraft
tenance System developed by Nepenthe
rams, Mr. McCann quickly determines
immediate and future requirements
component overhaul or replacement.
System's ability to forecast
irements into the future is a major
fit in both the computation of
kings levels of spare parts and to
st owners in the buy-sell decisions
their aircraft.

Jerry McCann's operation is much
far-flung than most. He services
Tuna Fleet choppers. While the
copters are "out", he will get radio
ases telling him how many hours have
flown and, using the TRS-80, he is
to quickly respond with what
onent repairs are necessary. Also,
returning helicopter pilots will
ahead when they are returning with
current hours. Jerry can then
ss his spare parts situation and
the necessary equipment on hand.

BOB, CONSIDER THE FOLLOWING MOLECULE



IS C1 CHIRAL? Y
INCORRECT! IT IS ACHIRAL.
DO YOU WISH TO TRY ANOTHER?

STEREOCHEMISTRY PET 8K

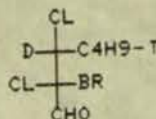
Dr. Richard F. Daley
425 Grove Avenue
Berrien Springs, MI 49103

This program is for college
students who have already covered
stereochemistry and are already familiar
with the concept of chirality and Fisher
type projections. This program is not a
learning tool but rather a check to see
that the student is ready for the exam
on this subject.

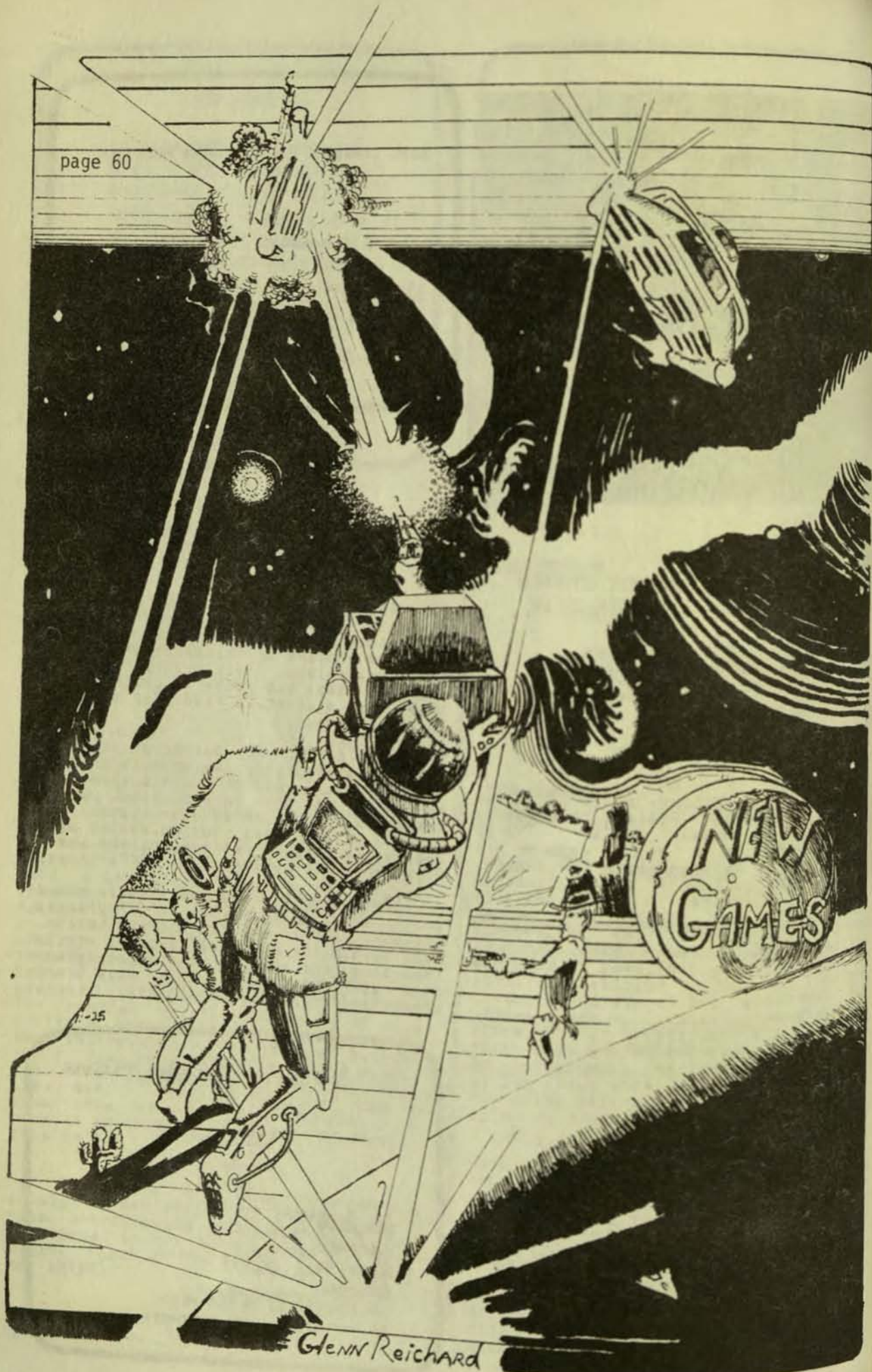
For those of you who do not know
what stereochemistry is, here is a brief
description. All of organic chemistry
is based on the carbon atom. Since
carbon atoms are three-dimensional, you
cannot assume that two molecules with
the same formula will react the same.
Stereochemistry shows these differences.

For health food nuts, this means
that there may be real differences
between natural and synthetic vitamins.
Even though the chemical formulas may be
the same, the shape of the molecule may
be different. This is why
stereochemistry is so important.

BOB, CONSIDER THE FOLLOWING MOLECULE



IS C1 CHIRAL? Y
IS C2 CHIRAL? Y
IS C1 R OR S? R
IS C2 R OR S? R
IS THE COMPOUND MESO? Y
INCORRECT! IT IS NOT MESO.
DO YOU WISH TO TRY ANOTHER?



Glenn Reichard

GAME REVIEW

The Marin Computer Center has completed over 500 reviews of games for the Apple, TRS-80, and PET. Their reviews, combined with reviews from our readers, are tabulated and printed on the next pages of this magazine.

Of all the new games reviewed, three stand out. The Apple versions of Scott Adams' ADVENTURE were reviewed and rated just as good as the TRS-80 versions. TEMPLE OF APSHI was very well liked by almost all the reviewers. And SubLogic's AIR FLIGHT SIMULATOR is the most unusual and interesting program of the season. These programs will be classics. All Apple owners will want them.

The games are reviewed using a GAME REVIEW SHEET. Write for free copies. You, too, can help!

This Game Evaluation sheet was developed by the Marin Computer Center. Once the reviews are done, I combine the results and sort the list by overall value. Then I print the results using Small Systems Software's TRS232 Interface.

The meanings of the different columns are:

1. Level of Challenge
2. Level of Interest
3. Ease of Use
4. Originality and Creativity
5. Educational Value
6. Program Polish
7. Program Documentation
8. Special Features
9. Overall Value

The Marin Computer Center feels that the Game Reviews can be grouped into the following categories based on Overall Value.

- 10 - 9 Excellent
8 - 7 Good
6 - 4 Average
3 - 1 Poor

Below are the best rated programs. If you are looking for some same programs to buy, start with these. See the following pages for the rest of the same reviews.

For more information on the work of the Marin Computer Center, contact David Fox at (415) 472-2650 or visit the Marin Computer Center, Oakview School Library, 70 Skyview Terrace, Room 301, San Rafael, CA 94903.

Ns		Source	# 1 2 3 4 5 6 7 8 9									
Name												
APPLE	ESCAPE	MUSE	2	9	165	8	10	5	9	7	10	10
LEVEL II	ADVENTURE - ANY OF THE SERIES	ADVENTURE INTERNATIONAL	3	10	500	10	10	8	10	10	9	10
APPLE	ADVENTURE (DISK)	ADVENTURE INTERNATIONAL	3	10	500	10	10	8	10	10	9	10
LEVEL II	ANDROID NIM WITH SOUND	80 - US JOURNAL	3	9	130	10	9	6	8	9	10	10
LEVEL II	SANTA PARAVIA AND FIUMACCIO	INSTANT SOFTWARE	3	7	150	9	10	4	8	8	10	9
LEVEL II	SNAKE EGGS	80 - US JOURNAL	2	10	450	9	9	8	7	6	8	8
PET	CURSOR #8	CURSOR MAGAZINE	4	9	412	9	9	7	8	8	8	8
PET	DUNGEON OF DEATH	INSTANT SOFTWARE	2	10	300	8	10	8	8	8	8	8
APPLE	AIR FLIGHT SIMULATOR	SUBLOGIC	3	8	75	9	8	3	8	6	8	8
APPLE	SUPER STARWARS	PROGRAMMA INTERNATIONAL	3	10	240	9	8	8	8	9	10	8
LEVEL II	PENTOMINOES	PROGRAMMA INTERNATIONAL	2	7	30	8	9	2	10	10	10	8
LEVEL II	SHOOTING GALLERY - BULLSEYE	Q2 PROGRAM LIBRARY	1	7	30	8	9	7	8	8	8	8
LEVEL I	DESTROY ALL SUBS	INSTANT SOFTWARE	1	7	30	8	9	7	8	8	8	8
LEVEL I	RAT TRAP	INSTANT SOFTWARE	1	7	20	8	10	9	8	8	8	8
PET	SNOOPY - GRAPHIC GAMES I	CREATIVE COMPUTING	2	8	127	8	5	5	8	8	8	8
APPLE	GLOBAL WAR	MUSE	1	8	120	8	9	7	10	8	8	8
LEVEL II	WIN 21	DISCOVERY BAY SOFTWARE	1	9	240	9	8	8	8	8	4	8
APPLE	ADVENTURE (DISK)	RAINBOW COMPUTING	1	1	240	10	8	6	10	7	10	9
APPLE	MUSIC KALEIDOSCOPE	SOFTAPE	1	8	150	9	9	8	10	8	9	9
APPLE	TRILOGY	INSTANT SOFTWARE										

Game Review

	Name	Source	#	1	2	3	4	5	6	7	8	9
APPLE	HARLORDS	SPEAKEASY SOFTWARE	4	8	225	6	8	7	6	7	5	8
APPLE	NINES - OUTWIT II	G2 PROGRAM LIBRARY	3	7	50	8	8	7	8	7	5	8
APPLE	TOWERS OF TIBET	G2 PROGRAM LIBRARY	3	7	43	8	8	8	8	8	8	8
APPLE	TEMPLE OF APSHI	AUTOMATED SIMULATIONS	6	7	353	5	8	4	8	8	8	8
APPLE	FOOTBALL	HOME COMPUTER CENTER	2	8	135	7	8	6	7	8	10	8
APPLE	ADVENTURE	CONFLICT CONTROL	2	8	600	8	8	8	8	8	8	8
PET	TANKTICS	PLEIADES GAME CO.	3	8	140	5	8	8	7	8	3	8
PET	HANGMAN - PLAYGRAMS	REICH ENGINEERING	3	7	35	8	10	7	8	8	8	8
PET	BREAKOUT	PETWARE	3	8	76	7	8	5	8	8	8	8
APPLE	PHASER ZAP	PROGRAMMA INTERNATIONAL	3	7	50	8	7	3	8	8	8	8
APPLE	CONCENTRATION - OUTWIT II	G2 PROGRAM LIBRARY	4	8	45	8	7	7	8	8	8	8
APPLE	FASTGAMMON - REVISED	QUALITY SOFTWARE	4	8	135	8	7	8	8	7	10	8
APPLE	ALIEN INVADERS	PROGRAMMA INTERNATIONAL	4	8	80	8	8	2	8	2	8	8
APPLE	LINE OF FIVE - OUTWIT II	G2 PROGRAM LIBRARY	2	8	45	8	8	2	8	8	8	8
LEVEL II	SPACE ACE - BULLSEYE	G2 PROGRAM LIBRARY	3	7	40	7	7	1	8	8	8	8
APPLE	BALLISTICS - CONFRONTATION	G2 PROGRAM LIBRARY	2	7	30	10	8	8	10	10	8	8
PET	SEAWOLF	CREATIVE SOFTWARE	2	8	20	8	8	2	10	10	10	8
PET	BREAKOUT	CREATIVE SOFTWARE	1	8	30	7	8	2	10	10	10	8
PET	TRAPSHOOT	CREATIVE SOFTWARE	2	7	30	8	8	4	8	8	8	8
APPLE	GOLF	INSTANT SOFTWARE	5	8	80	7	8	7	8	8	8	8
PET	TREX X	INSTANT SOFTWARE	3	7	250	7	7	5	8	8	8	8
PET	CHECKERS	INSTANT SOFTWARE	1	7	45	8	8	7	10	8	8	8
PET	ROULETTE - CASINO II	INSTANT SOFTWARE	1	6	15	8	8	5	10	8	8	8
PET	DARTS - GRAPHIC GAMES	CREATIVE COMPUTING	1	7	20	7	8	8	7	4	8	8
LEVEL II	NO TRUMP BRIDGE	INSTANT SOFTWARE	1	10	180	8	8	5	10	8	8	8
LEVEL II	DRAW POKER	INSTANT SOFTWARE	1	8	180	8	5	4	8	8	5	8
PET	MIMIC	INSTANT SOFTWARE	5	8	144	8	7	8	8	8	8	8
LEVEL II	STATES - DECEMBER 78	CLOAD MAGAZINE	2	8	157	8	8	10	8	8	8	8
LEVEL II	REACTION TEST	CLOAD MAGAZINE	1	4	5	10	5	7	7	8	8	8
APPLE	3-D DOCKING	PROGRAMMA INTERNATIONAL	3	8	42	8	8	3	8	7	8	8
APPLE	MAGIC SQUARES	PROGRAMMA INTERNATIONAL	3	8	58	8	8	6	8	7	8	8
APPLE	BLOCKADE	PROGRAMMA INTERNATIONAL	2	8	30	8	8	4	8	8	8	8
APPLE	SUPER DUNGEON	PROGRAMMA INTERNATIONAL	1	7	60	10	8	2	8	10	7	8
APPLE	BATTLESTAR I	PROGRAMMA INTERNATIONAL	5	8	144	8	8	3	7	7	8	8
APPLE	BREAKTHRU	PROGRAMMA INTERNATIONAL	3	8	140	8	7	2	8	8	8	8
LEVEL II	SPACE (DISK)	RAINBOW COMPUTING	1	7	120	8	8	8	8	8	8	8
APPLE	REAL TIME LUNAR LANDER	PETER FREY	1	7	50	8	5	1	8	7	5	8
APPLE	DUNGEON	SYNERGISTIC SOFTWARE	1	7	60	8	6	2	4	7	8	8
APPLE	WILDERNESS CAMPAIGN	SYNERGISTIC SOFTWARE	1	7	60	8	6	2	4	7	8	8
APPLE	MIMIC	INSTANT SOFTWARE	1	8	10	10	7	10	10	10	10	8
APPLE	FRUSTRATION	PROGRAMMA INTERNATIONAL	4	8	82	8	5	5	8	7	8	8
LEVEL II	TANK WAR	MUSE	3	6	31	8	8	2	8	8	7	8
LEVEL II	BOWLING	INSTANT SOFTWARE	3	7	20	7	7	7	8	7	8	8
PET	SHARKS - PLAYGRAMS	REICH ENGINEERING	3	8	35	6	7	2	8	7	6	7
PET	SERIES I	ADP SYSTEMS	3	8	180	7	7	5	8	8	7	7
LEVEL II	INVASION ORION	AUTOMATED SIMULATIONS	3	8	150	8	8	2	8	8	7	7
APPLE	CANTER DOWNS	PROGRAMMA INTERNATIONAL	3	5	28	8	7	3	8	8	8	7
APPLE	LASER BLAST	PROGRAMMA INTERNATIONAL	3	8	85	8	8	3	8	8	8	7
PET	MAXIT	HARRY SAIL	2	7	45	8	8	8	8	8	7	7
LEVEL II	FASTGAMMON	QUALITY SOFTWARE	2	7	45	8	8	6	7	8	5	7
APPLE	FASTGAMMON	QUALITY SOFTWARE	2	7	45	8	8	6	7	8	5	7
PET	CURSOR #10	CURSOR MAGAZINE	2	7	75	8	8	6	6	8	4	7
PET	CANNONBALL	SOF TOUCH	2	6	120	8	8	5	8	8	8	7
LEVEL II	AIR FLIGHT SIMULATOR	INSTANT SOFTWARE	4	8	118	8	8	4	8	8	8	7
LEVEL II	SKETCH - DECEMBER 78	CLOAD MAGAZINE	2	8	188	8	8	5	8	7	8	7
APPLE	LEAPFROG	PROGRAMMA INTERNATIONAL	2	5	155	8	8	3	8	8	8	7
APPLE	STARSHIP ORION	AUTOMATED SIMULATIONS	2	7	32	10	8	8	8	8	8	7
LEVEL II	WORDO	MICRO FANTASTIC PROGRAMMING	3	7	150	5	8	5	8	6	7	7
APPLE	DEPTH CHARGE	PROGRAMMA INTERNATIONAL	3	8	150	8	7	8	8	8	8	7
APPLE	FRAME-UP - OUTWIT II	G2 PROGRAM LIBRARY	3	8	31	8	7	5	8	7	8	7
APPLE	SPACE WAR	DEVICE ORIENTATED GAMES	4	8	35	8	8	7	8	8	7	7
PET	SLOT MACHINE - PLAYGRAMS	REICH ENGINEERING	4	7	82	5	8	2	8	6	7	7
PET	TANGLE	INSTANT SOFTWARE	5	2	31	7	8	2	8	8	8	7
LEVEL I	CAR RACE	INSTANT SOFTWARE	4	4	13	8	4	3	7	8	7	7
PET	BLACKJACK - CASINO II	INSTANT SOFTWARE	1	5	15	7	8	3	8	8	7	7
PET	CRAPS - CASINO II	INSTANT SOFTWARE	1	5	20	8	7	6	8	7	6	7
LEVEL II	TANK - SEARCH AND CAPTURE	ADVANCED GRAPHICS	1	5	5	7	8	3	8	8	7	7
APPLE	ROCKET PILOT - SPACE GAMES	CREATIVE COMPUTING	5	8	18	8	7	3	7	8	7	7
APPLE	SAUCER INVASION - SPACE GAMES	CREATIVE COMPUTING	1	8	30	8	7	7	7	7	7	7
PET	CHASE - GRAPHIC GAMES	CREATIVE COMPUTING	1	8	30	8	7	6	7	6	7	7
PET	ESCAPE - GRAPHIC GAMES	CREATIVE COMPUTING	1	8	20	7	6	3	8	8	7	7
PET	FOOTBALL	PETWARE	1	7	36	7	7	8	8	6	7	7
PET	LEM - GRAPHIC GAMES 2	CREATIVE COMPUTING	2	5	20	8	8	10	7	8	7	7
APPLE	UNCLE SAM'S JIGSAW	MUSE	1	6	30	7	7	7	8	7	8	7
LEVEL II	STUD POKER	INSTANT SOFTWARE	3	8	85	8	8	10	8	7	8	7
LEVEL II	ESP - JANUARY 79	CLOAD MAGAZINE	1	8	120	7	8	2	8	8	5	7
LEVEL II	STOCK EXCHANGE	MICRO FANTASTIC PROGRAMMING	2	8	102	8	10	6	8	8	8	7
APPLE	FOOTBALL	PROGRAMMA INTERNATIONAL	1	8	45	8	7	5	8	8	5	7
APPLE	COUNTRY DRIVER	PROGRAMMA INTERNATIONAL	1	5	5	10	7	5	8	8	5	7
APPLE	PLANETS	PROGRAMMA INTERNATIONAL	2	6	10	8	7	4	6	6	6	7
APPLE	QUARTERHORSE RACE	PROGRAMMA INTERNATIONAL	2	1	35	10	3	8	5	3	5	7
PET	BATTER UP	HAYDEN BOOK COMPANY	3	2	43	8	8	3	8	7	8	7
PET	MAYDAY	HAYDEN BOOK COMPANY	1	8	90	10	8	8	8	8	8	7
APPLE	REAL TIME STAR TREK	HAYDEN BOOK COMPANY	1	10	60	8	8	7	8	8	8	7
PET	US MAP	WARREN SWAN	1	10	120	8	8	1	7	7	7	7
LEVEL II	GALACTIC EMPIRE	CREATIVE COMPUTING	1	5	45	4	7	8	7	7	7	7
LEVEL II	GALACTIC TRADER	BRODERBUND SOFTWARE	1	7	120	5	5	1	8	7	5	7
PET	FLYING PLEASANT (DEMO I)	INSTANT SOFTWARE	1	7	100	8	8	4	8	5	6	7
PET	SITTING DUCKS (DEMO I)	INSTANT SOFTWARE	1	5	100	7	8	5	5	10	8	7
LEVEL II	BIOCURVE	HAYDEN BOOK COMPANY	1	2	5	5	5	5	8	10	6	7
LEVEL II	BACKGAMMON	HAYDEN BOOK COMPANY	1	5	30	8	5	7	8	8	7	7
APPLE	OTHELLO III	MAD HATTER SOFTWARE	1	5	60	8	5	1	4	7	5	7
APPLE	BOWLING	INSTANT SOFTWARE	1	8	80	7	5	8	8	3	5	7
			1	7	75	8	7	6	7	8	8	7

Game Review

	Name	Source	#	1	2	3	4	5	6	7	8	9
APPLE	FOOL'S SPOOL	PROGRAMMA INTERNATIONAL	3	8	125	6	8	8	5	5	3	6
APPLE	KALEIDOSCOPE - DISK BASED	PROGRAMMA INTERNATIONAL	3	5	83	7	7	4	7	7	7	6
APPLE	PIRATES	PROGRAMMA INTERNATIONAL	3	6	16	8	7	3	8	7	6	6
APPLE	SCRAMBLE	PROGRAMMA INTERNATIONAL	3	8	80	8	8	8	7	6	6	6
PET	CURSOR #11	CURSOR MAGAZINE	2	7	112	8	7	7	8	8	6	6
LEVEL II	CORPORATIONS - FEBRUARY 78	CLOUD MAGAZINE	2	9	90	8	8	8	8	8	2	6
LEVEL II	LUNAR LANDER	INTERACTIVE MICROWARE	2	8	37	8	6	3	7	7	6	6
APPLE	ALIEN ENCOUNTERS	PROGRAMMA INTERNATIONAL	4	6	27	6	7	2	7	8	7	6
APPLE	SUPER OTHELLO	PROGRAMMA INTERNATIONAL	2	6	75	8	6	5	7	1	8	6
APPLE	SPEEDWAY	PROGRAMMA INTERNATIONAL	4	6	29	6	6	2	7	5	7	6
APPLE	ACK-ACK	PROGRAMMA INTERNATIONAL	4	7	8	7	6	3	6	6	8	6
APPLE	GUNSLINGER - CONFRONTATION	G2 PROGRAM LIBRARY	3	6	18	10	8	3	8	8	9	6
PET	BLOCKADE	SMITH BUSINESS SERVICES	3	8	25	6	6	2	6	3	8	6
APPLE	APPLE ALLEY	PROGRAMMA INTERNATIONAL	3	6	21	8	6	2	7	2	7	6
APPLE	GUN FIGHT	PROGRAMMA INTERNATIONAL	3	7	30	10	7	1	8	7	8	6
APPLE	ECHO	PROGRAMMA INTERNATIONAL	3	8	43	8	6	6	6	6	5	6
APPLE	GUIDED MISSELS	PROGRAMMA INTERNATIONAL	3	7	56	8	6	1	8	5	8	6
PET	TRAP	CREATIVE SOFTWARE	1	6	15	7	7	5	8	7	7	6
PET	ENTERPRISE NCC	BRENT KLINCCH	3	5	23	7	4	2	8	7	6	6
APPLE	HIRES BOXING	PROGRAMMA INTERNATIONAL	3	8	48	8	8	1	7	8	8	6
APPLE	UFO	PROGRAMMA INTERNATIONAL	4	7	48	8	5	2	6	5	7	6
APPLE	SUB COMMAND	PROGRAMMA INTERNATIONAL	2	5	5	8	6	3	7	7	7	6
PET	CALENDAR 1.2 A	WARREN SWAN	1	1	60	8	8	8	9	10	5	6
PET	TREK	DAD'S RELIABLE SOFTWARE	1	9	120	6	6	1	6	7	5	6
LEVEL II	SKETCHPAD	HAYDEN BOOK COMPANY	1	4	15	6	5	4	5	7	5	6
LEVEL II	TANK COMMAND	BRODERBUND SOFTWARE	2	7	80	8	7	2	7	7	6	6
APPLE	COMMANDO (SAHARA WARRIORS)	INSTANT SOFTWARE	3	5	28	6	6	3	6	7	6	6
LEVEL II	GIN RUMMY 2.0	MANHATTAN SOFTWARE	1	6	30	7	5	2	5	2	3	6
PET	MASTERMIND	DR. DALEY	4	6	11	4	3	5	7	6	6	5
APPLE	LUNAR LANDER	PROGRAMMA INTERNATIONAL	3	5	15	8	4	4	7	7	6	5
APPLE	MATCH WITS	PROGRAMMA INTERNATIONAL	3	6	16	8	5	6	7	6	6	5
APPLE	RETREAT	PROGRAMMA INTERNATIONAL	3	6	10	6	6	3	7	6	7	5
APPLE	FRENCH FOREIGN LEGION	INSTANT SOFTWARE	3	7	26	5	7	4	6	6	7	5
LEVEL I	GUNBOATS	INSTANT SOFTWARE	2	6	25	7	6	3	7	7	8	5
PET	ASTROID BELT	PETWARE	2	6	7	6	5	3	7	7	6	5
PET	PENNY ARCADE	INSTANT SOFTWARE	4	4	85	7	7	3	8	8	6	5
LEVEL II	NYM - JANUARY 78	CLOUD MAGAZINE	2	5	64	8	3	2	6	5	8	5
LEVEL II	POWERS - FEBRUARY 78	CLOUD MAGAZINE	2	6	15	6	3	4	5	8	4	5
APPLE	LASER BATTLES	PROGRAMMA INTERNATIONAL	2	2	10	8	3	2	5	5	6	5
APPLE	GALACTIC BATTLE	PROGRAMMA INTERNATIONAL	3	5	23	5	5	2	5	7	6	5
PET	STARTREK	SMITH BUSINESS SERVICES	4	6	23	5	2	4	5	5	2	5
APPLE	SAUCER WAR	PROGRAMMA INTERNATIONAL	4	6	17	7	5	2	5	3	8	5
PET	SPACE LASER - CONFRONTATION	G2 PROGRAM LIBRARY	2	5	10	8	2	1	7	8	8	5
APPLE	LIFE	CREATIVE SOFTWARE	1	2	10	8	7	5	9	10	9	5
APPLE	STARWARS - SPACE GAMES	CREATIVE COMPUTING	1	6	15	7	5	3	5	6	5	5
PET	3-D TIC TAC TOE	SOFT TOUCH	1	7	10	8	7	5	7	7	6	5
PET	MASTERMIND	PETWARE	1	7	30	5	7	7	8	7	7	5
LEVEL II	BALL BOX	MICRO LOGIC	1	1	5	8	8	3	8	2	8	5
LEVEL II	SPACE TREK IV	INSTANT SOFTWARE	1	6	180	5	8	4	8	9	2	5
LEVEL II	OIL TYCOON	INSTANT SOFTWARE	1	6	60	8	7	2	8	8	4	5
LEVEL II	ROAD RALLY - JANUARY 78	CLOUD MAGAZINE	2	5	7	3	5	1	4	7	7	5
APPLE	LASER TURRET	PROGRAMMA INTERNATIONAL	4	5	8	6	5	2	4	6	5	5
APPLE	TAROT CARDS	PROGRAMMA INTERNATIONAL	3	1	51	8	6	2	6	9	1	5
APPLE	SUB VIEW	PROGRAMMA INTERNATIONAL	3	4	8	8	6	1	7	7	6	5
APPLE	ATOMIC CASINO	PROGRAMMA INTERNATIONAL	1	6	15	3	7	6	5	8	5	5
APPLE	ASSIST IT	PROGRAMMA INTERNATIONAL	1	6	30	6	7	6	3	7	5	5
PET	'DA HANDLER	DAD'S RELIABLE SOFTWARE	1	7	30	8	5	1	7	7	7	5
PET	BOMBER	DAD'S RELIABLE SOFTWARE	1	8	45	7	6	1	7	10	7	5
LEVEL II	MIMIC	SOFTAPE	2	6	15	8	8	5	7	7	8	5
PET	OTHULLO	INSTANT SOFTWARE	2	5	12	5	5	6	5	7	6	5
APPLE	GALACTIC BLOCKADE RUNNER	TOM GUILICI	1	10	60	4	5	6	3	3	3	5
PET	SUPER TRAP	MAD HATTER SOFTWARE	1	7	50	7	7	4	6	3	3	5
PET	FOOTBALL	INSTANT SOFTWARE	4	3	8	4	4	2	6	7	5	4
APPLE	FLYBATTER	PETWARE	4	5	55	8	7	4	6	5	7	4
PET	ANTI-AIRCRAFT	PROGRAMMA INTERNATIONAL	4	6	11	7	7	2	7	7	8	4
APPLE	AIRCRAFT INSTRUMENT SIMULATOR	PETWARE	3	6	8	8	8	2	7	8	7	4
LEVEL II	WHEREAMI	SOFT ONE	3	3	15	6	7	4	6	1	8	4
APPLE	MOTORCROSS	MICRO FANTASTIC PROGRAMMING	3	4	9	4	5	2	7	8	5	4
APPLE	I-CHING	PROGRAMMA INTERNATIONAL	3	3	7	8	7	1	7	8	6	4
LEVEL II	LUNAR LANDER	PROGRAMMA INTERNATIONAL	3	1	3	9	6	2	6	5	4	4
PET	DUNGEON EXPLORER	MEANS + IMAGINATION	3	5	30	10	4	2	8	6	7	4
PET	ARTILLERY - GRAPHIC GAMES 2	M. D. KIRIAZIES	2	6	35	9	7	1	5	7	3	4
LEVEL II	GOMOKU	CREATIVE COMPUTING	2	7	8	4	6	2	6	7	5	4
APPLE	LUNAR SCAPE	DISCOVERY BAY SOFTWARE	2	7	8	7	3	6	6	4	6	4
APPLE	CONEY ISLAND	PROGRAMMA INTERNATIONAL	4	5	4	8	1	1	6	7	7	4
LEVEL II	GALACTIC REVOLUTION	PROGRAMMA INTERNATIONAL	2	6	16	4	5	1	5	3	5	4
LEVEL II	MAZE - 80	BRODERBUND SOFTWARE	3	5	46	5	3	2	8	8	7	4
APPLE	INTERCEPTER	ADVANCED GRAPHICS	3	5	9	7	6	1	7	8	6	4
PET	BACCARAT	PROGRAMMA INTERNATIONAL	1	7	5	8	6	7	8	7	8	4
LEVEL I	ANTI AIRCRAFT	INSTANT SOFTWARE	1	5	5	7	6	2	8	7	7	4
LEVEL II	INTERMEDIATE LUNAR LANDER	INSTANT SOFTWARE	1	7	10	7	4	4	8	8	3	4
LEVEL II	BASIC LUNAR LANDER	INSTANT SOFTWARE	1	7	10	7	4	4	8	8	4	4
PET	SWEEP - GRAPHIC GAMES	INSTANT SOFTWARE	1	5	10	6	5	5	5	5	5	4
PET	GUBIC	CREATIVE COMPUTING	3	6	140	7	4	4	4	4	3	4
PET	CHECKERS - GRAPHIC GAMES 2	INSTANT SOFTWARE	1	4	30	5	4	6	5	6	4	4
PET	NUCLEAR REACTION - GRAPHIC	CREATIVE COMPUTING	2	6	17	5	6	4	5	5	3	4
APPLE	SPACE WAR	CREATIVE COMPUTING	3	6	5	1	5	3	4	5	5	4
PET	ACTION PACK	PROGRAMMA INTERNATIONAL	1	6	5	7	6	1	7	7	8	4
LEVEL II	DEND II	CAP ELECTRONICS	1	4	5	6	4	4	7	8	5	4
APPLE	SONGS IN THE KEY OF APPLE	INSTANT SOFTWARE	3	1	4	6	6	5	4	5	4	4
LEVEL II	FOREST RANGER	HAYDEN BOOK COMPANY	1	4	2	9	3	5	6	4	2	4
LEVEL II	RAMROD PATROL	R. SALENGER	3	6	42	6	6	1	8	7	5	3
PET	GOMOKU	INSTANT SOFTWARE	4	7	107	5	4	5	4	4	3	3
APPLE	SUB DETECT	INSTANT SOFTWARE	2	7	17	4	4	5	5	2	6	3
APPLE	COLOR STAR TREK	PROGRAMMA INTERNATIONAL	2	3	5	8	4	3	4	5	3	3
PET	BLACK BOX	PROGRAMMA INTERNATIONAL	3	5	10	5	6	5	6	8	7	3
LEVEL I	TREK II	DR. DALEY	1	4	5	8	2	2	8	8	8	3
LEVEL II	BOMBER	INSTANT SOFTWARE	1	7	5	9	6	3	8	9	9	3
APPLE	COLOR - DECEMBER 78	INSTANT SOFTWARE	2	3	5	6	8	5	6	7	4	3
APPLE	CROSS CHASE	CLOUD MAGAZINE	2	7	7	4	4	2	4	4	6	3
PET	WIPE OFF	PROGRAMMA INTERNATIONAL	1	5	13	9	5	1	7	7	6	3
APPLE	SWEET-PING	PROGRAMMA INTERNATIONAL	5	1	8	7	5	1	5	5	5	2
LEVEL II	STAR DODGERS	NICO SYSTEMS SOFTWARE	2	3	5	8	3	1	4	5	4	2
LEVEL II	KLINGON CAPTURE	PROGRAMMA INTERNATIONAL	2	5	152	7	3	1	5	8	3	2
LEVEL II	BATTLEGRID	INSTANT SOFTWARE	1	7	5	4	7	1	5	3	6	2
LEVEL II	GRIDIRON	INTERACTIVE MICROWARE	1	2	5	8	2	5	2	5	5	2
APPLE	TIE FIGHTER	HAYDEN BOOK COMPANY	2	5	152	8	1	1	6	9	8	1
APPLE	CAMERA OBSCURE	INSTANT SOFTWARE	2	4	5	2	7	1	4	4	3	1
		PROGRAMMA INTERNATIONAL										

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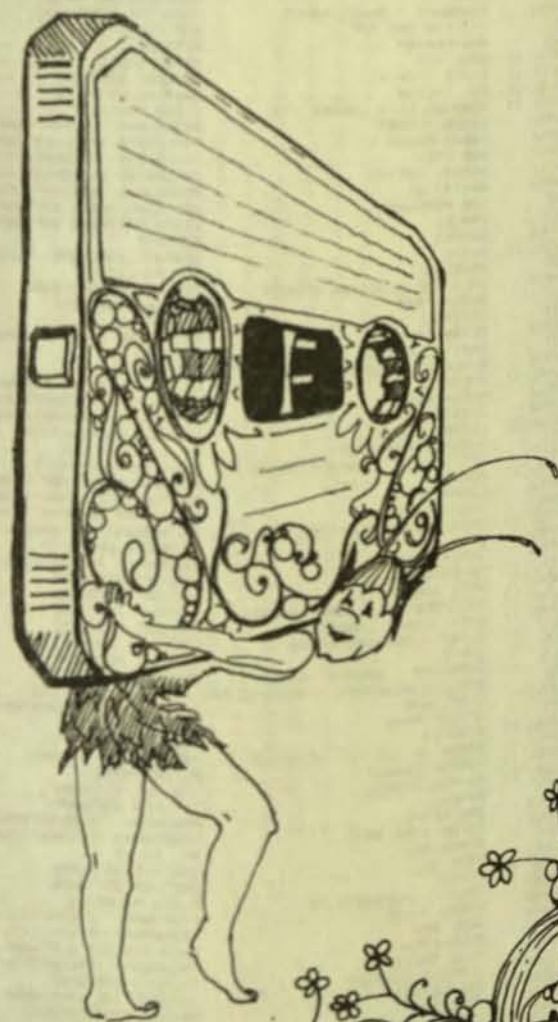
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Software Directory



Atari



Finding computer programs for a new computer is hard for two reasons. First, because it takes a while for them to be developed. Second, it is hard to know where to look for them. I estimate that I have found only half of the programs currently available for the Atari computers.

When possible, each program is preceded by the following abbreviation to help you in your selection.

CART = Cartridge
ESCP = Education System Cassette Program
BASIC = Basic Program Cassette

Adventure International
Scott Adams
Box 3435
Lanswood, FL 32750

(Adventure will be ready in the summer.)

Atari
1265 Borrasas
PO Box 427
Sunnyvale, Ca 94088
(408) 745-2200
(408) 745-2820 customer service
(800) 538-8547 toll free

CART Education System Master	\$24.99
CART Atari Basic	59.95
CART Assembler/Editor	59.95
CART Basketball (Joystick)	39.99
CART Video Ease tm (Joystick)	39.99
CART Super Breakout tm (paddle)	39.99
CART Music Composer	59.99
CART Computer Chess	39.99
CART 3-D Tic-tac-toe	39.99
CART Star Raider	59.95
CART Personal Finance	59.95

ATARI TALK-AND-TEACH (tm) EDUCATION SYSTEM

ESCP U.S. Government	\$29.99
ESCP U.S. History	29.99
ESCP Supervisory Skills	29.99
ESCP World History (Western)	29.99
ESCP Basic Sociology	29.99
ESCP Counseling Procedures	29.99
ESCP Principles of Accounting	29.99
ESCP Physics	29.99
ESCP Great Classics (English)	29.99
ESCP Business Communications	29.99
ESCP Basic Psychology	29.99
ESCP Effective Writing	29.99
ESCP Auto Mechanics	29.99
ESCP Principles of Economics	29.99
ESCP Spellings	29.99
ESCP Basic Electricity	29.99
ESCP Basic Algebra	29.99
ESCP An Invitation To Programming	24.95

(BASIC Systems Cassettes Require Basic Cartridges)

BASIC Introduction to Programming	\$19.95
BASIC Kingdom	14.95
BASIC Lemonade	14.95
BASIC Baseball	14.95
BASIC Blackjack	14.95
BASIC Museum	14.95
BASIC Biography	14.95
BASIC Hangman	14.95
BASIC Atari Demo Tape Kit	19.95

Compute
Tape Exchange
Atari Tape
PO Box 3118
Greensboro, NC 27403

Dorsett Educational Systems, Inc.
Goldsky Airport
Box 1226
Norman, OK 73070
(405) 288-2300

ESCP Reading Comprehension Level AB	\$39.95
ESCP Business Communications Course	39.95
ESCP Reading Comprehension Level CD	39.95
ESCP Great Classics	39.95
ESCP Intro to Counseling	39.95
ESCP Economics	39.95
ESCP Effective Writing	39.95
ESCP United States Government	39.95
ESCP United States History	39.95
ESCP World History	39.95
ESCP Auto Mechanics	39.95
ESCP Carpentry	39.95
ESCP Mathematics For Electronics	39.95
ESCP Mathematics (mf) Fractions	39.95
ESCP Mathematics (mm) Geometry	39.95
ESCP Mathematics (mm) Measurements	39.95
ESCP Mathematics (mn) Number Ops	39.95
ESCP Mathematics (mp) Percent Decimal	39.95
ESCP Mathematics (mr) Reading Probs	39.95
ESCP General Shop Practice	39.95
ESCP Construction	39.95
ESCP Digital Electronic	39.95
ESCP Industrial Solid-State Elect	39.95
ESCP Philosophy	39.95
ESCP Introduction To Sociology	39.95
ESCP Spellings	39.95
ESCP Statistics	39.95
ESCP Supervisory Practices	39.95
ESCP Vocabulary	39.95
ESCP Physics	39.95
ESCP Basic Psychology	39.95
ESCP Basic Electricity	39.95
ESCP Spanish Phrases-16 Programs	39.95
ESCP Accounting - 16 Programs	39.95

(Each of these lessons series of programs is available now or in the near future. All of these courses consist of 16 programs. All require the Atari Educational Cartridge and BK of memory. For more information, call Lloyd G. Dorsett at (405) 321-0000.)

Duo Quon Fok Lok Sow
371 Broome Street
New York, NY 10013
(212) 431-3298

Word Processing Program

Eastern House Software
3238 Linda Drive
Winston-Salem, NC 27108

Jack Hatfield Co.
2895 Bedford Ave.
Placerville, CA 95667
(916) 828-3351

BASIC Disassembler 16K \$39.00

(Add \$1 For SH; This program is From Japan. Currently Hatfield is the only US distributor of it that I know of.)

Imase Computer Products, Inc.
615 Academy Drive
Northbrook, IL 60062

All Star Baseball
Wall Street Challenge
Mind Master
Stratim Pack I
Stratim Pack II
Skill Builder
Tournament Brick Bat
Wildcatting

IRIDIS Magazine

Box 550
Oleta, Ca 93017
(805) 867-0805
BASIC Bi-Monthly Magazine 3 Cassettes \$25.00
BASIC Sample Copy (Calif Res. 5X) 9.95
(\$50.00 US & Canada. For disk version add \$2/issue. Foreign Add \$1.25/tape.)

Kemco, Ltd.
R. W. Brown
PO Box 270278
Tampa, FL 33688
(813) 826-3180

BASIC Bookkeeping	49.95
BASIC Math & Engineering	9.95
BASIC Advanced Business	9.95
BASIC General Purpose	9.95
BASIC Experimentors	9.95
BASIC General Ledger	9.95

(Same books also available)

Matrix Software
315 Marion
Bix Rapids, MI 49307

(This company has produced much astrology software for the other computers. They should have a quantity of programs when this goes to press.)

PFDC Software/Recreational Programs
3500 Garden Oaks #128
Alabam, LA 70114
(504) 362-4881

BASIC QuadraFlake, Mondrian, etc.	\$19.95
BASIC Planetary Landings, Battleship	19.95
BASIC Tunnel Out, Supermind	19.95
BASIC Music Composer/Editor w/Book	19.95
BASIC Turtle Race (2-player/animated)	19.95
BASIC Trivia (Animated/sound) Word	19.95
BASIC Columbia the Gem of The Ocean	19.95

(Available From Your Local Computer Dealer Or Write Us Directly. We Pay P&H on Prepaid. COD OK)

Programma International, Inc.
3400 Wilshire Boulevard
Los Angeles, CA 90010
(213) 364-0578

BASIC Chase	6.95
BASIC Connect 4	5.95
BASIC Fleet	5.95
BASIC Lander	5.95
BASIC Letters	6.95
BASIC Reverse	6.95
BASIC Startrak	6.95
BASIC Time Clock	5.95
BASIC Zap	6.95

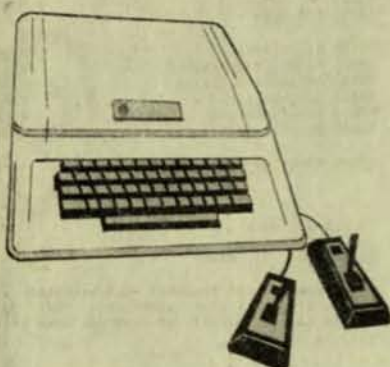
Seabee's Computing
Tim Hays (aka 15)
456 Granite Avenue
Monrovia, CA
(213) 359-8092

BASIC 3-D Graphics Package 29.95

(Add \$1.50 For SH)



Atari



Note: The new format for this directory uses the following codes

ASR = AppleSoft ROM is required
AS = AppleSoft is required
INT = Integer Basic is required
ML = Machine language
16K = Minimum or recommended memory
DISK = Disk drive required

(Always contact the manufacturer before ordering any computer programs. Additional hardware or software is required to run some programs. The differences between the Apple II, the Apple Plus, and Apple Pascal make it advisable to always check before ordering.)

THIS DIRECTORY IS PRINTED ON A DECHWITER 34 AND THE ENTIRE APPLE SOFTWARE DIRECTORY IS MAINTAINED ON A 48K APPLE USING

MUSE'S
SUPER - TEXT
WORD PROCESSING PROGRAM.

Game programs are not listed in this section. See the Game Review section for a list of names.

Hardware Software
PO Box 28305
Milwaukee, WI 53213

ASR 16K Micro Tax I \$25.00
ASR 16K Micro Tax II 35.00
ASR 16K Micro Tax III 50.00

A.I.D.S., Inc.
Artificial Intelligence Design Specialists
301 Balboa
San Francisco, CA 94118
(415) 221-8500

INT 16K Bankline & Custom Business Packages - Credit Evaluation

AJA Software
PO Box 2528
Orange, CA
(714) 774-1270

INT 16K Various Games at \$5.95 Each
INT 16K Basic Tutorial 5.95
INT 16K Budget Plan 5.95
INT 16K Stock Market Analysis 5.95
INT 32K Disk Business Systems 35.00

American Avicultural Art & Science
Kunihiko Tanaka
3288 Watson Road
Saint Louis, MO 63128
(314) 845-4431

INT 16K Aviculturist Magazine V 1, # 1 \$10.00

Andent
1000 North Avenue
Maukman, IL 60085
(312) 244-0292

3 GAME PROGRAMS

Andromeda Computer Systems
PO Box 18144
Greensboro, NC 27410

ML 1K Cursor Pilot \$5.95
INT 32K Disk Data Handler 49.95
ASR 32K Typewriter - graphics 24.95
ASR 16K Hires Utility Pack 14.95

Apple Computer, Inc.
10250 Sandler Drive
Cupertino, CA 95014

INT 16K Checkbook \$20.00
INT 16K Color Demo 7.50
ASR 16K AppleSoft II/F.P. Demo 20.00
INT 16K Hi Res Graphics 7.50
INT 16K Ram Test 7.50
INT 16K Apple II Capabilities Demo 20.00
INT 16K Finance I 25.00
INT 16K Dataviewer/Telepage 7.50
INT 16K Dow Jones Stock Quote Report Service 50.00
INT 16K Disk Utility Pack 25.00
ASR 48K The Controller \$25.00
INT 16K Apple Post-mailing List System 49.00
INT 32K Disk Bowling Program 15.00
ASR 48K Disk The Cashier 250.00
INT 16K Bowling Program Tape 15.00
PAS 48K Disk Pascal 485.00
5 GAME PROGRAMS

Apple Software Bank
INT 32K Disk Volume 1 \$10.00
INT 32K Disk Volume 2 10.00
INT 32K Disk Volume 3 10.00
ASC 32K Disk Volume 4 10.00
ASC 32K Disk Volume 5 10.00

(\$10 Per Volume + Disk)

The Apple Core
103 Horizon 14
723-14th Street NW
Calgary, Alberta
Canada T2N 2A4

1 GAME PROGRAM

Apple Orchard
131 Highland
Vacaville, CA 95688
(707) 488-8055

ASR 32K Volume 1 - Magazine/Year \$15.00

Apple Pi Library
Terry N. Farley
12318 East Bates Circle
Aurora, CO 80014
(303) 750-5814

(Over 2,300 public domain programs for trade at either Colorado School of Mines meetings or by mail with other groups and individuals via disc, cassette, or listing.)

ARESCO
The Rainbow Magazine
PO Box 1142
Columbia, MD 21044
(301) 730-5186

INT 16K ASM/ED Full Documentation \$29.95
INT 16K Data Base Management 7.95
INT 16K Disk Data Base Management 12.95

(Guaranteed to load and run, replacement or refund upon request. Delivery from stock. MC/VISA/Check/M.O. No Billings.)

Aukland Associates
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(314) 991-4220

ASR 32K Math Sequence (Grades 1-6) \$200.00
ASR 32K DISK Math Sequences + Manager 300.00

Mind Machine, Inc.
31 Woodhollow Lane
Huntington, NY 11743

ASR 32K DISK Commodity File \$18.95
ASR 32K DISK Restaurant Evaluator 18.95
ASR 32K DISK Stock Market Option Acct 18.95

(Add \$2.00 for S&H, Check or Money Order)

Minnesota Educational Computing Consortium
MECC Publications
2520 Broadway Drive
Lauderdale, MN 55113
(612) 376-1118

ASR 32K Curves (Aesthetics), VI-VI \$30.00
ASR 32K Elementary Language Arts 30.00
ASR 32K Elementary School, Vol.1 Ver.1 30.00
ASR 32K Elementary School, Vol.2 Ver.1 30.00
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ASR 32K Music Theory, Vol.1 (MN only) 30.00
ASR 32K Music Theory, Vol.2 (MN only) 30.00
ASR 32K PILOT Author Language, Vol. 1 30.00
ASR 32K Middle School/Jr. High School 30.00
ASR 32K Programming Aides, Volume 1 30.00
ASR 32K Secondary School Math, Vol.1 30.00

(Catalog is \$1; Date of this listing 1/15/80; Listing Updated Semi-annually)

C. W. Moser
3239 Linda Drive
Winston-Salem, NC 27106

ASR 32K 6502 Macro Assembler & Text Editor \$49.95

(Send SASE FOR Details)

Mountain Hardware, Inc.
300 Harvey West Blvd.
Santa Cruz, CA 95080
(408) 429-8600

ASR 32K DISK Clock Demo \$20.00
ASR 32K DISK Supertalker Demo 20.00
ASR 32K DISK Romulus + Demo 20.00
ASR 32K DISK Intel/K-10 Demo 20.00
ASR 32K DISK Rowriter Demo 20.00

Multi-Media Video, Inc.
3350 Scott Boulevard, Bldg 21
Santa Clara, CA 95051
(408) 727-1733

ASR 32K Arabic/English Apple OS \$2850.00

Multi-Systems Data, Inc.
Trans-Data Co.
PO Box 520353
Miami, FL 33152
(305) 442-1313

INT 16K DISK Label Print \$10.00
INT 16K Learning Basic (20 lessons) 28.95
INT 32K DISK Learning Basic (") 48.95
INT 16K Memory Builder 13.50
ASR 32K DISK File Management System 80.00
ASR 32K DISK Mailing List System 80.00

(Full catalog \$1. Add \$2 for shipping.)

Muse Software
330 North Charles Street
Baltimore, MD 21234
(301) 658-7212

ML 16K U-Draw cassettes 17.95
INT 8K Appen Text Editor 17.95
ML 8K Music Box 12.95
INT 4K Slide Show 12.95
ML 8K Electric Craven 17.95
ASR 32K Uncle Sam's Jigsaw 12.95
5 game programs

disk 88.95
ML 48K DISK Super-Text \$89.95
ML 48K DISK Micro Information System 39.95
INT 48K DISK U-draw II 38.95
INT 48K DISK Three Mile Island 38.95
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INT 32K DISK Dr. Memory 49.95
ASR 48K DISK Address Book 49.95

(VISA/MC Welcome, MD Residents Add 5% Tax!
\$1.00 Postage - Catalog Available - Dealer
Inquiries Welcome)

Omi Plotting Package
P. S. Truax
237 Star Route
Santa Barbara, CA 93105

ASR 32K Omi Plotting Package \$24.00

Optimized Systems Software
Shepardson Microsystems, Inc.
20823 Stevens Creek Blvd. Bldg. C4-H
Cupertino, CA 95014
(408) 257-8800

ML 48K DISK OS + File Manager \$24.95
ML 48K DISK OS + FM + Basic 49.95
ML 48K DISK OS + FM + ASM 89.95
ML 48K DISK OS + FM + Basic + ASM

(Add \$2 For S&H; VISA/MC welcome)

New Ware
8525 Park Drive
Omaha, NE 68127
(402) 339-7350

ASR 32K Mailing List

(See Compu Max)

Peripherals Unlimited, Inc.
2833 East 28th Street
Suite 522
Signal Hill, CA 90808
(213) 595-8858

ASR 32K Text Editor/HP-Lower Case \$59.95
ASR 32K Mailings List-very Fast 39.95
ASR 32K Form Letter 2 24.95
ASR 32K Memo Calendar Diary 29.95
ASR 32K DISK Single Disk Copy 19.95
ASR 32K DISK Express Dos Read/Write 24.95
ASR 32K Bulletin Board For Micromodem II 49.95

(Micromodem II is a trademark of DC Hares Inc. All of the above For Disk II WITH AppleSoft. For more details, please write or call.)

Perry's Computer Systems
133 Brenda Street
Milton, FL 32570

ML 77K Auto Apple Boot 39.00

Personal Software
592 Weddell Drive
Sunnyvale, CA 94086
(408) 745-7841

ASR 32K DISK Visi Calc \$89.50
ASR 32K DISK Data Management System 74.95
ASR 32K Microchess 2.0 19.95
ASR 32K VitaFacts Growing Up 19.95
ASR 32K VitaFacts Heart Attacks 19.95
ASR 32K VitaFacts Talking about Sex 19.95
ASR 32K VitaFacts Drinking & Drugs 19.95
ASR 32K VitaFacts Birth Control 19.95
ASR 32K VitaFacts Blood Pressure 19.95

PFSC Software
2500 Garden Oaks #128
Arlington, LA 70114
(504) 362-4881

ASR 32K Calibration(adv. Play Head) \$16.95

(Available from your local computer dealer - or write us directly. We war P&H on prepaid. COD OK)

Powersoft
PO Box 157
Pittman, NJ 08071
(609) 589-3500

ASR 32K Address File Generator \$19.95
ASR 32K Super Checkbook 19.95
ASR 32K Function Graphs & Transform 14.95
ASR 32K Memory Dump 7.45
ASR 32K Program Unload 7.45
ASR 32K File Editor 24.95
ASR 32K Assembler 24.95
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ASR 32K Basic Statistical 9.95
ASR 32K Electrical Engineering I 9.95
ASR 32K Statistics I 14.95
ASR 32K Vector Analysis 9.95

(Add \$1.00 For S&H)

Practical Applications
1313 Laurel Street
San Carlos, CA 94070
(415) 592-6833

ASR 32K Payroll w Osborne Book \$89.95
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Precision Decision Marketing
PO Box 50231
Falo Alto, CA 94303

ASR 32K Shuffler-Dealer And Greening \$28.99
ASR 32K Plus Answering I Club 4.99
ASR 32K Plus Other Answers 14.99
ASR 32K Plus Precision Rebirds 11.99

(Also Available on Diskette)

Program Design, Inc.
Carol Klitzner
11 Idar Court
Greenwich, CT 06830

INT 16K Preschool IQ Builder \$14.95
ASR 16K Star-By-Star Proa. Course 44.95
ASR 16K DISK Star-By-Star 54.95
INT 16K IQ Builder: Vocabulary 1 14.95
INT 16K IQ Builder: Vocabulary 2 14.95
INT 16K IQ Builder: Number Series 14.95
INT 16K IQ Builder: Analogies 14.95
INT 16K Memory Builder - 8 up 14.95
INT 16K Story Builder Grammar 14.95
ASR 16K Code Breaker-writing Skills 14.95
ASR 24K Microcrossword 14.95
ASR 16K Spelling Builder 18.50
ASR 16K Astro Word Search-geography 14.95
ASR 16K Astro search: Spanish vocab. 14.95
ASR 16K Astro Search: French Vocab. 14.95
ASR 16K Astro Search: Trivia 14.95
ASR 16K Word Skills I: Prefixes 14.95
ASR 16K Reading Comprehension - 8 up 14.95

(5% S&H, \$1 MIN. VISA/MC Accepted)

PRG
The Program of the Month Corp.
237 Central Park West
New York, NY 10024
(212) 787-1526

ASR 48K AZFP Function Plotter \$34.95
ASR 48K DISK AZFP Function Plotter 48.95
ASR 48K DISK 3D Simulation 95.95

(Write for List of Dealers)

Programma International, Inc.
3400 Wilshire Boulevard
Los Angeles, CA 90010
(213) 384-0578

ASR 32K DISK Active Filters \$24.95
ASR 32K Algebra I 15.95
ASR 48K DISK APMAIL 19.95
ASR 32K Forth 24.95
ASR 32K DISK Forth 49.95
ASR 32K PIE 2.0 29.95
ASR 32K DISK PIE 2.0 24.95
ASR 32K DISK Trivia Box 19.95
ASR 32K DISK Asm/65 Editor Assembler 69.95
ASR 48K DISK Audio Engineer 29.95
ASR 32K Business & Finance 19.95
ASR 16K Database 15.95
ASR 48K DISK Apple Checkbook 24.95
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INT 16K Color Orsman - Hires 6.85
ASR 32K DISK Compu-read 24.95
ASR 48K DISK Database 29.95
ASR 48K DISK Database Mailer 29.95
ASR 16K Home Accounting 15.95
ASR 32K DISK Home Accounting 19.95
ASR 32K H Text 24.95
ASR 24K I Ching 15.95
ASR 32K DISK I Ching 19.95
ASR 32K Income Tax 19.95
ASR 48K DISK Index File 29.95
ASR 32K DISK Pascal (Tmr) 49.95
ASR 16K Perpetual Calendar 9.95
ASR 48K DISK Personal Inventory Profile 19.95
ASR 48K DISK Pilot 24.95
ASR 16K Power Editor 15.95
ASR 48K DISK Reality Package 59.95
ASR 48K DISK Securities Charting 79.95
ASR 16K State Capitals 9.95
ASR 32K DISK Talking Disk 18.95
ASR 24K DISK 3-D Animation 24.95
ASR 16K 3-D Docking 15.95

(Prices do not include postage)

Programmers Software Exchange
PO Box 198
2110 North 2nd Street
Caret, AR 72023

ML 16K 5502 Macro Assembler/Text Ed. \$100.00
ASR 48K Text Writer (Pro Systems) 50.00
ASR 32K 25 Best Selling Programs 25.00
ASR 32K Aircraft IFR Simulator 19.95
ASR 32K Mailings Label Manager 25.00
ASR 32K Management Sr Goal Tutor 50.00
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ASR 32K Artillery Duel 10.00
ASR 32K Horse Code Send And Receive 10.00
ASR 32K Amortization Schedule Printer 30.00
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ASR 32K Read/Write In ASCII 5.00

PLUS GAME PROGRAMS
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ASR 32K Acid-base Chemistry Package \$100.00
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ASR 32K Atomic Structure Package 100.00
ASR 32K Fundamentals Skills For Chem 100.00
ASR 32K Chemistry / Computer Package 100.00
ASR 32K Introductory Package 25.00

Harry L. Pruetz
708 Coadwell Street
Yakum, TX 77895

INT 16K Tabular 4-Way Number Convert \$4.95
INT 16K Agenda 7.50
INT 16K Shape Builder 7.50
ML 2.5K Intester Basic Floating Pt. 8.95

Puget Sound Program Library Exchange
8710 Sully Drive, N.W.
Drumhwa, WA 98502
(206) 866-1500

INT 16K Programmer's Workshop Intester Version 9.13 \$6.50
ASR 32K Library Pak 1b 6.00
ASR 32K Library Pak 2 6.00
ASR 32K Library Pak 3 6.00
ASR 32K Library Pak 4 6.00
ASR 32K Library Pak 5 6.00
ASR 32K Intester Basic Tutorial Programs 17.50
ASR 32K DISK Antrype 17.00
ASR 32K DISK Anmail Disk V 2.0 20.00
ASR 32K DISK Pak 34 (Library Pak 34) 15.00
ASR 32K DISK Pak 32 (Library Pak 32) 15.00
ASR 32K DISK Diskpak 5 11.00
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ASR 32K High Resolution Text Generator/Editor 18.50
ASR 32K Program Live Editor 20.00
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ASR 32K DISK Call-Apple Anthology Vol. 1 11.00
Jan-June '78
ASR 32K Wozpak Program 12.50

(Members Only - 1980 Membership: \$10.00 Dues \$15)

Bill Pumphrey
488 Ema Road, #1310
Honolulu, HI 96815

AS 16K Color & Deluxe Bar Graph \$7.85
ASR 16K Deluxe & Line Bar Graph 7.85

(Any Two Tapes Shipped First Class For \$12.50)

Prager Programming
PO Box 3078
Scottsdale, AZ 85257

ASR 32K Scribe-2 \$49.00
ASR 32K DISK Data Management System 49.00
ASR 32K Unistable-Basic 29.00
ASR 32K DISK Binary File Copy 19.00
ASR 32K Deflections 10.00

Quality Software
8860 Reseda Blvd., Suite 103
Reseda, CA 91335

2 NAME PROGRAM

Rainbow Computing, Inc.
8718 Reseda Blvd.
Northridge, CA 91324
(213) 349-5560

INT 16K Cassette Inventory \$35.00
ASR 32K DISK Inventory 40.00
ASR 32K DISK Data Base 20.00
INT 16K Hi-res Life, Simulation 10.00
ASR 32K DISK Filemaster 34.95
INT 16K Circuit Logic Development Aid 10.00
INT 16K Horse Code Trainer 10.00
INT 16K Polar Plot 14.95
ASR 32K DISK Shape Scaler 99.50
ASR 32K Write-On Word Proc.

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Lon Rater Software
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1 same program

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2045 Manhattan Avenue
Hermosa Beach, CA 90254
(213) 372-8418

ASR 32K DISK Property Management Sys \$225.00
ASR 32K DISK REAP Rental Expense Ana 125.00
ASR 32K DISK RIIP Rental Info & Income
Trackings Prorm 125.00
INT 16K Tax Free Exchange Model 30.00
INT 16K Income Property Cashflow/Leverage 30.00
INT 16K Construction Cost/Profit Ana 30.00
INT 16K Home Purchase Analysis 30.00
INT 16K Apt Loan Analysis 30.00

(REAP & RIIP available in disk versions for \$5.00 extra. CA add 8% tax)

Gerald H. Rivers
PO Box 833
Madison Heights, MI 48071

ASR 32K TXT/ED 2.0 \$85.00

RTR Software, Inc.
PO Box 12351
El Paso, TX 79912

INT 16K Stock Market System \$78.95
INT 16K Stock Data - Per Stock 8.95

San Francisco Applecore
attn: The Librarian
Box 4816
San Francisco, CA 94101

ASR 32K DISK Disk Of The Month \$7.50
asl 32K Library #1 of 20 diskettes 150.00

(You must be a member. Application \$15.
Library list \$1.00 + SASE w/ 1.00 postage)

Sat Trak International
Computerland Of Colorado Springs
4543 Templeton Gal Road
Colorado Springs, CO 80908
(303) 574-4150

ASR 32K Satellite Tracking \$28.95
(Add \$10 For Disk)

S-C Software
Bob Sander-cederlof
PO Box 5537
Richardson, TX 75080

INT 12K S-C Assembler II \$25.00
ML 24K DISK S-C Assembler II 35.00

Soelbi Publications
PO Box 3133
Milford, CT 06460

ASR 16K DISK PIN-Personal Info Man \$24.95

School District Of Philadelphia
Henry R. Altschuler, CIA
Instructional Systems
5th & Luzerne Streets, 5th Floor
Philadelphia, PA 19140

INT 16K Angle Measurement \$10.00
INT 16K Area Of Triangles 10.00
INT 16K Bar Graph 10.00
INT 16K Biophysics 10.00
INT 16K Circle Area 10.00
INT 16K Circle Graph 10.00
INT 16K Factor Patterns 10.00
INT 16K Math Literacy Test 10.00
INT 16K Numberline 10.00
INT 16K Value Of Pi Using Monte Carlo 10.00
INT 16K Plot 10.00
INT 16K Polygons 10.00
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INT 16K Simultaneous Linear Equations 10.00
INT 16K Speed Drill 10.00
INT 16K Trajectory 10.00

(Plus HP programs converted to the apple)

Sensible Software
PO Box 2385
Dearborn, MI 48123

AS- 16K Applesoft program optimizer \$18.95
AS- 16K Structured Applesoft basic 24.95
ML 32K DISK Super Disk Copy 18.95
INT & AS- games also available

Services Unique, Inc.
2441 Rolling View Drive
Darwin, Ohio 45431

ASR 32K DISK Text Editor \$16.95
ASR 32K DISK 1040 Income Tax-1979 18.95
ASR 32K DISK Report - Text Processor 18.95
ASR 32K DISK Report & edit 34.28
INT 16K DISK Program utilities 11.95

(Some program shipped on cassette. \$5 extra
for disk for those not already on disk. Add
\$1.25 for shipping.)

M. D. Skinas
16266 Warfarer Lane
Huntington Beach, CA 91649
INT 16K Biophysics \$14.50

1 same program

(Add \$5 For Diskette)

W. S. Skeen
Rt. 1, N'brook Amer Road
Hornbrook, CA 96044

AS- 4K Sidereal Time \$5.00
AS- 4K R.A.-Planets 7.50
AS- 4K Azimuth/Elevation 5.00
AS- 4K Ham Radio 10.00
AS- 4K Biophysics 5.00

Softsson
PO Box 7746
Morristown, NJ 07960

INT 16K Little Tricks \$14.95
INT 16K Scroll Control 9.95
INT 16K Altair Estimator 9.95
INT 16K Penetration 9.95
INT 16K Form-It-Out 14.95
INT 16K Track & Sector List 24.95
INT 16K My ABC'S 14.95
INT 16K New I Can Rhyme 14.95

(Also available on disk)

Softouch
PO Box 511
Leominster, MA 01453

ASR 32K DISK Disk Management System \$18.95

Software Software Exchange
10758 Vanuven Street
North Hollywood, CA 91605
(213) 985-5763

INT 16K Appletalk (Voice Response) \$15.95
INT 16K Electronic Index Card File 18.95
ASR 32K DISK Best Of Bisher 38.95
INT 16K Talking Calculator 12.95
INT 16K Apple-It's-her 18.95
INT 16K Tic-tac-talker, Spectrum Analysis 18.95
INT 16K Forte 18.95
INT 16K Screen Machine 48.95
INT 16K Talking Cal: color 18.95
C name programs 12.95

Soft-one
315 Dominion Drive
Newport News, VA 23602

ASR 48K DISK Blood Chemistry Diagnosis \$150.00

Software Concepts
Jeffrey Gold
Box 1112
Cupertino, CA 95014

INT 24K Text Processing System \$56.00
INT 32K Household Finance Program 40.99

Software Factory
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Anoka, MN 55303

ASR 32K DISK Basic Math Skill Games \$24.95
ASR 32K DISK Millikin Simulation 14.95
ASR 32K DISK Titration Simulation 14.95
ASR 32K DISK Spellings I-Spellings Demo 24.95
ASR 32K DISK Spellings II-Spellings Demo 24.95
ASR 32K Intra 16 Microcomputers S prog
ASR 32K Word Problems S programs

(Spellings requires tape activation. See
BASE for details)

The Software Factory
PO Box 804
Chatsworth, CA 91311

ASR 32K Asterapple - astroids \$15.00
INT 16K Babbly 15.00
one name program

Software Technology For Computers
PO Box 428
Belmont, MA 02178

ASR 48K DISK Info File Organizer \$100.00
ASR 48K DISK Mailbox List Program 34.95

Southeastern Software
7270 Culpepper Drive
New Orleans, LA 70128

INT 16K Demo & Sample Newsletter \$2.45

Southwestern Data Systems
Romer Warner
PO Box 582-8P
Santee, CA 92071
(714) 562-3670

INT 16K Applesoft - Duo \$24.95
INT 16K Roger's Easel 18.95
INT 16K Programmer's Utility Pack 18.95

(Send For Free Info.)

Breakaway Software Ltd.
471 Richmond Road
Ottawa, Ontario
Canada K2J 0G3
(613) 728-4655

INT 16K Financial Analysis 18.95
INT 16K Transactional Analysis 18.95
5 name programs

Sterling Swift Publishing Co.
PO Box 188
Ranchos, TX 78652
(512) 444-7570

AAI 16K Microcomputer workshop
4 cassette tapes
2 diskettes

Barker Stone
117 Fremont Street
San Francisco, CA
(415) 346-1582

INT 16K Micro Memo

Stoneware
Microcomputer Software
PO Box 7218
Berkeley, CA 94707
(415) 348-3763

AS- 48K DISK Micro Memo
1 name program

Straw-Into-Gold
5533 College Avenue
Oakland, CA 94618

ASR 32K DISK Video Loan
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Published quarterly for \$12 per year by Robert Purser, PO Box 466, El Dorado, CA 95623

Strickly Software
18720 Hawthorne Blvd.
Lauderdale, CA 90260
(213) 371-7144

INT 16K General Ledger \$149.95
INT 16K Accounts Payable 99.95
INT 16K A/R - Automatic Invoicing 124.85
INT 16K Modular Business System 300.00
INT 16K Payroll
INT 16K Inventory

(MC & VISA)

sub LOGIC
PO Box V
Savory, IL 61874
(217) 359-8482

ASR 16K 3D Graphics Load & Go Package \$30.00
ML 16K Animation Package A2-3K1 45.00
ML 32K DISK Animation Package A2-3DI 55.00
ML 16K Flight Simulator FSI 25.00

(Add \$1.75 For first class postage vs 1.25
for UPS)

Synthetic Software
3221 - 120th Avenue SE
Bellevue, WA 98006

ASR 32K DISK Higher Graphics 25.00
ASR 48K DISK Mailing List Database 40.00
ASR 48K DISK Modifiable Database 49.50
ASR 48K Modifier Module 1 15.00
ASR 48K Modifier Module 2 15.00
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2812 Artesia Blvd. Suite B
Rendona Beach, CA 90278
(213) 374-4471

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ASR 22K Pro Football 21.95
ASR 35K College Football 21.95
ASR 16K The Platter 14.95
ASR 16K Forecaster 16.95
ASR 16K The Forecaster II 21.95
ASR 32K DISK Mailing List 29.95
ASR 16K Multiple Regression Analysis 24.95
ASR 16K Hires Graphic Printer 21.95
ASR 16K Hires Playground 24.95
ASR 16K Mandala Supreme 16.95
ASR 32K TXT/ED 2.0 Word Processor 79.95
ASR 16K Matrix Invert 13.95

Talos Systems, Inc.
7418 East Main Drive
Scottsdale, AZ 85260
(602) 948-8540

INT 16K Software/Mini-Kit-izer \$49.95

Teach Yourself By Computer Software
40 Stuyvesant Manor
Geneseo, NY 14454
(716) 243-3005

INT 16K Mind-Memory Improvement step 1 \$24.95
INT 16K Mind-Memory Improvement step 2 29.95
ASR 16K Individual Study Center 39.95
ASR 16K Data Tapes For ISC each 4.95

(MC/VISA accepted. All tapes guaranteed. P&H
1.50)

Technical Software, Inc.
PO Box 72043
Metairie, LA 70033

ASR 8K Triangles Solutions 15.00
ASR 16K Matrix Inversion & Algebra 17.50
ASR 16K Amortization & Investment 17.50
ASR 16K Louisiana Soup/Bombs Recipes 25.00
ASR 32K Matrix Anal. of Cont. beams 249.95
ASR 32K Planner Surveying Package 49.95

Telephone Software Connection
PO Box 8548
Torrance, CA 90504

TMC
4814 Rainford Court
St. Louis, MO 63128
(314) 882-5306

ASR 32K Register \$39.95
INT 16K Clock 18 9.95
ASR 32K Clock 14.95
ASR 32K DISK Billing Package 59.95
ASR 48K Periodical Listings 39.95
ASR 48K DISK Periodical Library 59.95
ASR 48K DISK Stamp Dealer Manual 79.95
ASR 48K DISK Coin Dealer Manual 79.95
plus various names

(programs available on disk for \$5 extra
unless already on disk.)

Trans-Data Co.
see Multi-Systems Data Inc.

L. Van Auery
3581 El Lado Drive
Glendale, Ca 91208

INT 16K States & Capitals \$8.00

U Asked 4 It
Stuart Fraser
8405 Appella Drive
Baltimore, MD 21208

Unidata, Inc.
John Phillips
3025 Hilltop
Ann Arbor, MI 48103

ASR 48K DISK E-Z Graf \$24.95

Westfarmers
Westralian Farmers Co-Operative Limited
588 Wellington Street
Perth, Western Australia 6000
GPO Box M 878
Perth, WESTERN Australia 6001
312-0191

INT 16K Farm Management Systems

West Coast Consultants
1775 Lincoln Blvd.
Tracy, CA 95376

INT 16K 32K Program for Hiplot Plotter \$50.00
INT 16K 16K Subroutines For Hiplot Plotter 75.00

Williamsville Publishing Co.
PO Box 250
Fredonia, NY 14063

INT 16K Book Library Cross-reference \$19.95
INT 16K Record Library Cross-reference 19.95
INT 16K Malm II-BASIC In Latin 19.95
INT 16K Checkbook Program 19.95
INT 16K Word-pace Processor

(Add \$1.50 For S&H)

Wipe Owl Workshop
1188 Avenida De Las Palmas
Livermore, CA 94550

INT 16K Wordsmith Game \$10.00
INT 16K Secret Writing Cryptography 12.00
INT 16K Personal Expense Record

World Institute For Computer Assisted
Teaching
J. Olin Campbell

INT 16K Mathematics System
INT 16K Prepared Reading
INT 16K English Courses
INT 16K Math Help

525 Video
930 F Street, NW #810
Washington, D.C.

INT 4K Color Package \$6.95
INT 16K Color Package 10.95
INT 16K Graphics Editor 13.95
(\$1.00 S&H)

The 6502 Program Exchange
2820 West Moana
Reno, NV 89508

ML 32K XPLD (Experimental Language) \$49.50
ML 32K XPLD With User's Manual 66.00
ML 16K FCLGSE - FOCAL 27.50
ML 16K FCLGSE W/MINI & User's Manual 49.50
ML 16K MEMDIAG - Diagnostic 33.00

(Most programs available on disk for \$6
extra)



TRS-80

Note: The new format for this directory uses the following codes.

DOS = Requires TRS DOS
LII = Requires Level II
2&D = Requires Level II or TRS DOS
ML = Machine language
16K = Minimum or recommended memory

(Always contact the manufacturer before ordering any computer programs. Additional hardware or software is required to run some programs. This list does not contain Level I programs or Model II programs.)

THIS DIRECTORY IS PRINTED ON A DECWRITER 34 AND THE ENTIRE RADIO SHACK SOFTWARE DIRECTORY IS MAINTAINED ON A 48K APPLE WITH ONE DISK DRIVE USING MUSE'S

SUPER - TEXT
WORD PROCESSING PROGRAM.

Game programs are not listed in this section. See the same review section for a list of names.

Hardvark Software
PO Box 26505
Milwaukee, WI 53213

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Hicksville, NY 11801

LII 16K Real Estate Appraisal & Anal \$48.95

Metaron
Box 800
Amherst, MA 01002

one NAME PROGRAM

MOFA
Mervin G. Faulkner Associates
11 Mill Street
Hillsdale, Ontario
Canada 101 1v0

DOS 32K General Ledger \$200.00
DOS 32K Accounts Payable (Cheques) 150.00
DOS 32K Accounts Receivable (Invoice) 150.00
DOS 32K Payroll 200.00
DOS 32K Inventory 175.00
DOS 32K Mailings System 150.00
DOS 32K Filing System 150.00
DOS 32K Diskette Directory 58.95
DOS 32K Sort (Index) 58.95
DOS 32K Pen Pal II 28.95
DOS 32K Frezzer Inventory 28.95
DOS 32K Computer Cookbook 28.95
DOS 32K Warrant Inventory 28.95
DOS 32K Date Search 14.95
LII 16K Financial Budget 21.95

Micro Applications Group
7300 Coldus Avenue
Van Nuys, CA 91406
(213) 881-8076

DOS 32K Massam III - Requires CP/M \$145.00
DOS 32K Massam II - Requires CP/M 89.00
DOS 32K Massam I - Requires CP/M 75.00

(User guide is \$15)

Micro Architect, Inc.
Tony Pow
96 Dothan Street
Arlington, MA 02174

LII 16K IDM-1, Cassette Data Base Man \$20.00
LII 16K INV-1, Inventory Management 20.00
LII 4K Finance-1, Stock and Bank Acct 15.00
LII 16K WORD-1, Word Processor 28.00
LII 4K STAT-1, Statistics Package 10.00
DOS 16K MAIL-III, A Mailing System 35.00
DOS 32K WORD-III, A Diskette-based WP 38.00
LII 1K SORT-1, A Sorting Utility 1K 10.00
LII 1K KEY-1, A Key-access Utility 10.00
LII 4K SALE-1, Sales Analysis 4K 10.00
LII 4K BANK-1, A Check Balance 4K 10.00
LII 4K STOCK-1, Stock Information 4K 10.00
LII 16K UTIL-1, Sort-1, Key-1 18.00
DOS 16K INV-III, A Disk Based Inv. Sys 38.00
DOS 1K KEY-III, Data Access Util. 18.00
DOS 32K Account Receivable 88.00
2&D 16K CALC, Check Deposit Calc 20.00
DOS 32K IDM-IV, A Diskette Data Base 89.00
DOS 32K WORD-IV, A Word Processor 48.00
DOS 32K MAIL-V, A Advanced Mailing 58.00
DOS 32K INV-IV, An Inventory System 48.00
DOS 32K INV-V Inventory \$98.00

Microbiotic Computings, Inc.
6515 Ross Avenue SE
Albuquerque, NM 87108

2&D 4K Renumber (spec. size) \$20.00
LII 4K RAM Test 10.00

Micro Data Systems
7275 Meath Way
No. Highlands, CA 95860

LII 16K Package 1 15.85
LII 16K Package 2 15.85
LII 16K Package 3 11.85
LII 16K Package 4 14.85
LII 16K Graphics Master 18.85
LII 16K DMS 18.85
LII 16K SYSGEN 35.85
LII 16K Nord's Disassembler 44.85

(Postage \$1)

Micro Decision Systems
Allen F. Downard
3008 Redwood Ave.
Lakeland, FL 33803

DOS 32K Census Checker \$45.00

Micro-Fantastic Programming
PO Box 2307
Grand Central Station, NY 10017

4 same programs

Micro-Futures Trading Co.
PO Box 1603
Galea, CA 93017
(805) 888-7109

LII 16K Commodities Futures \$75.00
LII 16K Stock Market Analysis 75.00
DOS 32K Commodities Futures 150.00
DOS 32K Stock Market Analysis 150.00

(Commodity data files also available; add \$2.50 for S&H; Foreign orders add 5%; CA add 8%)

Micro Gnome
Pineside Computing, Inc.
5843 Montgomery Road
Elkridge, MD 21227
(301) 798-4165

LII 16K CAIWARE-CAI Authoring System \$24.95
LII 16K Super CAIWARE 44.95

Micro-Kever
Box K
Kingsport, TN 37662

LII 16K Morse Code with Send/Receive Hardware \$39.95

Micro Learningware
PO Box 2134
N. Mankato, MN 56001
(507) 387-1648

LII 16K German Package I 14.95
LII 16K German Package II 14.95
LII 16K German Package III 14.95
LII 16K Business Package I 14.95
LII 16K Business Package II 14.95
LII 16K Business Package III 14.95
LII 16K History & Geography Package 14.95
LII 16K Educational Package I 14.95
LII 16K Educational Package II 14.95
LII 16K Elementary Math Package I 14.95
LII 16K Elementary Math Package II 14.95
5 same programs

Micro Management Systems
Radio Shack Dealer - Mini Mall
Downtown Shopping Center
Cairo, GA 31728
(812) 377-7120

DOS 32K General Ledger 1.1.s \$250.00
DOS 32K General Ledger 1.2.s 350.00
DOS 32K Inventory 1.0.s 175.00
DOS 32K Inventory 1.1.s 200.00
DOS 32K Inventory 1.0.r 350.00
DOS 32K Auto Mail 1.0.r 350.00

Micro Matrix
PO Box 538
Pacific, CA 94044

LII 16K Photo Point Light Pen/Software \$18.95

Micron, Inc.
10045 Waterford Drive
Ellicott City, MD 21043
(301) 461-2721

DOS 32K Smart Terminal \$79.95
DOS 32K Disk Spooler 38.95
DOS 32K Display + 49.95

MicroPhase Systems
11223 East 45 Street So. #314
Tulsa, OK 74145

DOS 48K Autoscribe \$88.95
LII 16K Stock Market Charting 49.95
LII 16K Stock Market Data Tapes 5.95

MicroPhy Programs
2048 Ford Street
Brooklyn, NY 11228
(212) 646-0140

(MicroPhy has a large amount of educational software too voluminous to list here. Most of there software is available for the PET. Some has been reviewed in past issues of this magazine. I suggest that all educators write for there catalog.)

Micropi
George Gerhold
2445 North Mueset
Lummi Island, WA 98262

DOS 32K Common Pilot \$195.00
DOS 32K Introduction to Common Pilot 100.00
DOS 32K Significant Figures & Sci Not 75.00
DOS 32K Quantitative Analysis Lab Sim 150.00

(All CAI in common PILOT)

Microsoft Consumer Products
10800 Northeast Eighth, suite 818
Bellevue, WA 98004
(206) 454-1315

LII 16K Level III Basic \$48.95
LII 16K Typing Tutor 14.95
LII 16K Editor/Assembler 28.95
1 same program

(add \$ for S&H)

Microware
PO Box 47
Blacksburg, VA 24060

LII 16K Inventory Control \$8.95
LII 16K Mailing List 8.95
DOS 32K RS-232 Telecommunications Sys 49.50

Middle Tenn. Computing
Route 2, Box 138A
Lawrenceburg, TN 38464

DOS 32K Disk Sort \$20.00

Miller Microcomputer Services
61 Lake Shore Road
Natick, MA 01780
(617) 853-8136

DOS 32K Small Business Bookkeeping (Uses
Dome Manual) \$25.00
DOS 32K Forth Language (Virtual Memory) +
Primer 78.95
DOS 32K Forth Language - Tape Version +
Primer 58.95

(Add \$2.00 shipping/handling; Mass. order add 5% sales tax)

Milliken Publishing Co.
Chuck Eisenberg
830 Bancroft Way
Berkeley, CA 94710
(415) 348-2805

LII 16K Some Common Basic Programs-78 \$15.00

(For documentation order Some Common Basic Programs book for \$12.50)

P & H Linguistics, Inc.
36 Bay State Road
Boston, MA 02215
(617) 288-4888

DOS 32K French Translation, TLS-50+ \$40.00

D. Palmer
815 Kr Avenue
Lynn Haven, FL 32444

LII 16K Music Generation \$9.95

Pansophic Software
1730 West Vrain Street
Tulsa, OK 74127
(918) 224-4260

DOS 48K Debbyware DMS \$80.00
DOS 32K Superlist 30.00
DOS 32K Superprint 15.00

Parasitic Engineering
Box 8314
Albany, CA 94706
(415) 527-8134

DOS 32K CP/M For B* Disks \$995.00

Patient Care Data Systems
418 North Main Street
Penn Yan, NY 14527
(315) 538-3734

(Small systems medical office programs)

Paul's Electronic Casino
PO Box 42831
Las Vegas, NV 89104

LII 16K 400-Year Day Calculator 4.00
LII 16K Blackjack '21' Strategy 7.00
LII 16K Chinese Calendar 4.00
LII 16K Gambling Systems (test) 7.00
LII 16K Horoscope 5.00
LII 16K Life Cycle 4.00
LII 16K Life Expectancy Test 5.00
LII 16K Limerics #1 5.00
LII 16K Make a Calendar 5.00
LII 16K Name Game 4.00
LII 16K Oracle 5.00
LII 16K Palm Reader 5.00
LII 16K PI to 1000 Place 2.00
LII 16K Secret Code Maker 4.00
LII 16K State Map (specify) 3.00
LII 16K Wild and Crazy Letters 4.00
LII 16K World's Smallest Casino 2.00
LII 16K Yenta 5.00
LII 16K Zodiac Sign (specify) 2.00
same programs

(some program available in printer versions
for \$1 more. Free Catalog on Request)

Person Data Company
211 North Kirby
Barton, TX 75042
(214) 272-3421

LII 16K Microdos For Level II Basic \$29.95

The Peripheral People
PO Box 524
Merced Island, MA 08040

DOS 32K Mailroom Plus \$75.00
DOS 32K Minimail \$50.00
DOS 32K Forelet For Minimail \$35.00
DOS 32K The Electric Secretary 75.00
LII 16K Sir Echo For printer 10.00
DOS 32K Autoboot 15.00
DOS 32K Diskert 10.00
LII 32K Telefax 20.00

(Over/Lower case conversion info. free)

Charles L. Perrin
5001 East Faunier, #1138
Nichita, KS 67218
(316) 685-0528

240 16K 32K 48K Soft Key Generator \$10.00

Personal Computer Services
1515 Andrews Drive
Las Cruces, NM 88001

LII 16K BASIC3 \$24.95
LII 16K MLCOPY 14.95
LII 16K DRONL 14.95

Personal Software
592 Wedell Drive
Sunnyvale, CA 94086
(408) 745-7841

DOS 32K Coe Data Management System \$74.95
LII 16K Microchess 1.5 19.95
LII 16K Electric Paintbrush 14.95
LII 16K Vita Facts 18.95
LII 16K Growing Up 18.95
LII 16K Teenage Drinking and Drums 18.95
LII 16K Your Blood Pressure 18.95
LII 16K Talking about Sex 18.95
LII 16K Heart Attacks 18.95
LII 16K Birth Control 18.95

Gene Perkins
5224 Winfred
Ft. Worth, TX 76133

LII 16K Rename Basic Program Variables 9.95
DOS 32K Pascal Compiler-Integer Subset 30.00
LII 16K Sort Demo - Animated Sorting 9.95
DOS 32K Algebraic Multiplication Practice 4.95
DOS 32K Diskbase - Complete Storage Info 9.95
DOS 32K Print BASIC Files w/name format 6.95

(Specify System Configuration)

Chris Petersen
1227 Ashwood Lane
San Jose, CA 95132

LII 16K Keyboard Debounce Patch \$5.00

PSIC Software/recreational Programs
2090 Garden Oaks, #128
Halters, LA 70114
(504) 382-4881

LII 16K Music Composer/Editor (w/instr) 14.95
LII 16K Trivia/Animated/Am Radio Sound 14.95
LII 16K Columbia The Gem of The Ocean (animated/sound) 14.95
LII 16K Calibration (adj. play head) 9.95

name programs
Available from your local computer dealer -
write us directly, we pay P&H on
reprints. COD OK.)

Box 80
Box 2177
Richardson, TX 75080

LII 4K Strip Disc & Concentration 8.95
LII 16K Adult Games III with Sound 14.95
LII 16K 80 - Love, Adult Tennis 12.95
LII 16K Sound Machine with Organ 12.95

Padosoft
8 Smith Street
Wellesley, MA 02181

LII 4K Spacewar \$15.00

Practical Applications
Jeff Lasman
1313 Laurel Street, Suite 15
San Carlos, CA 94070
(415) 582-8633

LII 16K Biorhythm \$5.00
LII 16K Bouling Allier 5.00
LII 16K Calendar (Printer Required) 5.00
DOS 48K File-it (In Memory Data Base) 24.95
DOS 32K Mail-list II (1000 Names) 49.95
LII 16K Light Pen / sample program 24.95
DOS 48K Practical Pilot/Basic Trans 49.95
DOS 32K Bootstrap - From DOS to Basic 15.95
DOS 32K Osborne Parrell/OSborne Book 89.95
DOS 32K Osborne AP with Book 89.95
DOS 32K Osborne AR with Book 89.95
DOS 32K Osborne DL with Book 89.95
DOS 32K Supersort - Machine Language 18.95
DOS 32K Formfill 24.95
DOS 32K Command Performance 28.95

(MC/VISA Accepted - Dealer discounts available)

Precision People
87 Grassy Lake Estates
Archer, FL 32818
(804) 485-9246

LII 16K SPARK-80 K-B Math Package \$1,495.00
DOS 32K SPARK-80 K-B Math Package 1,695.00

(These consist of 122 cassettes or diskettes)

Program Design Inc.
Carol Klitzner
11 Idar Court
Greenwich, CT 06830
(203) 661-8798

LII 16K Preschool 10 Builder \$14.95
LII 16K Star & Star Programming Course \$44.95
LII 16K 10 Builder: Vocabulary 1 14.95
LII 16K 10 Builder: Vocabulary 2 14.95
LII 16K 10 Builder: Analogies 14.95
LII 16K 10 Builder: Number Series 14.95
LII 16K Memory Builder: Concentration 14.95
LII 16K Story Builder/Word Master-B Un 14.95
LII 16K Graph Builder-graph reading 18.95
LII 16K Sealline Builder-HS & adult 14.95
LII 16K Minicrossword--Puzzles 14.95
LII 16K Astro Word Search: Geography 14.95
LII 16K Word Search: Spanish--Vocab. 14.95
LII 16K Astro Search: French--Vocab. 14.95
LII 16K Reading Comprehension--B up 14.95
LII 16K Astro Quotes--trivia 14.95

(35 S & H. \$1 Min. VISA/MC Accepted)

The Program Manager
Chet Behrman
PO Box 45
Inglefield, IN 47618
(812) 867-3524

LII 4K Budget 2 - Home Budget System 5.50
240 4K Weatherstat-Store Weather Data 4.50
240 4K Cycle 8 - Biorhythm Messages 7.75
240 4K DateX2 - Days Between Dates 4.90
240 4K Menu3 - Menu Planner 6.75
240 16K Tree2 General File & Display 6.75
DOS 16K Tree2 General Random File 24.00
DOS 16K Tree2 Rental Property Records 49.00
DOS 32K From Rental Property Records 3.75
240 4K Chicken Super - Cash Register 4.90
LII 16K Club - Club Records and Dues 4.90
240 16K Derris - Home Asset Depreciation 4.90
240 4K Net - Fictitious Personal Net Worth 3.75
LII 16K Check - Personal Check Rem 4.90
DOS 32K Slide Index - Random Retrieval 9.75
DOS 32K Selfers - For Country Club Use 49.00
DOS 32K MFG - Manufacturing Inventory 49.00
DOS 32K Invent - Retail Inventory 49.00
DOS 32K Accounts Receivable Record 49.00
DOS 32K Accounts Payable Record 49.00
DOS 32K Union Membership Files 49.00
DOS 32K Church Records 49.00
DOS 32K Single-entry Bookkeeping 49.00
DOS 32K Rental Reservation System 9.75
DOS 32K Newspaper Route File 24.00
LII 16K Single-entry Bookkeeping

(Minimum Order \$9. Disk programs shipped on cassette or \$7 additional shipped on disk.)

Programs International, Inc.
3400 Wilshire Boulevard
Los Angeles, CA 90010
(213) 384-0579

DOS 32K Anysoft3 32K \$29.95
LII 16K Arithmetic 16K 8.95
DOS 32K Dm/5 32K 48.95
DOS 32K Dir 32K 15.95
LII 16K Double 16K 8.95
LII 16K D.O.F. 9.95
LII 16K Fifteen Numbers 16K 8.95
LII 16K Keyboard 16K 8.95
LII 16K Machine to Basic 16K 8.95
LII 16K Mailings List 16K 9.95
LII 16K File Text Editor 16K 19.95
DOS 32K Timeline-rs232 32K 24.95
LII 16K Trs-80 Forth 16K 34.95
plus many names

(Prices Do Not Include Postage)

PRS
The Program of The Month Corp
257 Central Park West
New York NY 10024
(212) 787-1528

LII 16K MicroFile-Data File Management \$44.95
DOS 16K MicroFile-Data File Management 58.95
LII 16K Core-Co-Resident Systems Mon. 28.95
DOS 16K Core-Co-Resident Systems Mon. 34.95

(Write For List of Dealers)

Programs for Learning, Inc.
PO Box 854
New Milford, CT 06776

LII 16K Acid-Base Chemistry Package \$100.00
LII 16K Atomic Structure Package 100.00
LII 16K Fundamentals Skills For General Chemistry 100.00
LII 16K Chemistry with a Computer PK. 100.00
LII 16K Chemical Equilibrium Package 100.00
LII 16K Introductory Package - 4 proc. 25.00

(Each package contains from 9 to 12 programs. A brochure is available on request. Individual Programs \$20.)

Project Local
200 Nahatan Street
Westwood, MA 02090

LII 16K Biology I \$17.95
LII 16K Biology II 17.95
LII 16K Business I 14.95
LII 16K Ecology I 17.95
LII 16K Elementary I 10.95
LII 16K Elementary II 9.95
LII 16K Mathematics I 8.95
LII 16K Physics I 14.95
LII 16K Potpourri 15.95
LII 16K Social Studies I 17.95

(Anyone interested in educational software, send SASE for info.)

Nick Pupillo, Jr.
2147 North 73rd Avenue
Elmhurst Park, IL 60635

DOS 32K Service Station Invoicing \$39.00

Quality Education Designs
(see Activity Resources Co. Inc)

Quality Software
6680 Reseda Blvd., Suite 103
Reseda, CA 91335

Quant Systems
PO Box 628
Charlestown, SC 29402

DOS 32K Multiple Regression 2.0 \$45.00
DOS 32K Factor Analysis - ML 59.00
DOS 32K Integer Programming - Machine Language 49.00
DOS 32K Mixed-Integer Programming 29.95
LII 16K Multiple Regression 1.0 29.95
LII 16K Linear Programming 29.95
LII 16K 0-1 Programming 29.95
LII 16K Heuristic Line Balancing 29.95
LII 16K Transportation Algorithms 9.95
LII 16K Statistics Pack 39.95
LII 16K Eigenvalue/Eigenvector

Questar Software
PO Box 723
Mishawaka, IN 46720

one game program

J. Guistgaard
715 South Alder Street
Port Angeles, WA 98562

one game program

Elm M. Raabe
600 W. Main, Apt 107
Arlington, TX 76013
(817) 274-4588

LII 16K Payroll System \$95.00

Racet Computers
702 Palmdale
Dunsmuir, CA 95825
(714) 637-5015

LII 16K General Subroutine Facilities \$24.95
DOS 32K Sequential Disk Sort Merge 34.95
LII 16K Copy Systems Tapes 1.00
2AD 16K Time Series Analysis 14.95
DOS 32K Command Processor - Auto Boot 14.95
2AD 16K Infinite Basic - 70 New CNDs 19.95
2AD 16K Infinite Business 49.95
2AD 16K REMODEL-Renumber, Move, Delete 29.95
2AD 16K REMODEL-PROLOAD-adds Cas Merge 24.95
2AD 16K Infinite Business 28.95
DOS 32K Disk Sort Merge 75.00

(Specify memory size for DOS and REMODEL.)

U. F. Racine
2520 S.E. Alexander Drive
Topeka, Kansas 66605

6 game programs

Radio Shack
Dept. TRS-80
One Tandy Center
Ft. Worth, TX 76102

LII 16K 28-1502 In-memory Information \$19.95
LII 16K 28-1503 Mailing List 19.95
DOS 32K 28-1551 Mailing List 39.95
DOS 32K 28-1552 General Ledger 99.95
LII 16K 28-1801 Microchess 19.95
LII 16K 28-2001 T-800 Cassette 14.95
LII 16K 28-2002 Editor/Assembler 29.95
LII 16K 28-2004 Level II Renumber 8.95
LII 16K 28-1803 Budget Management 19.95
LII 16K 28-1704 Double Precision Sub. 9.95
LII 16K 28-1705 Advance Statistical Analysis 39.95
LII 16K 28-2005 Level II Basic Crs I 14.95
LII 16K 28-2006 Level II Basic Crs II 19.95
DOS 32K 28-1558 Business Mailing List 99.95
DOS 32K 28-1553 Inventory Control I 99.95
DOS 32K 28-1559 Man Inventory Control 199.95
DOS 32K 28-1554 Accounts Payable 149.95
DOS 32K 28-1555 Accounts Receivable 149.95
DOS 32K 28-1560 Fixed Asset Accounting 79.95
DOS 32K 28-1561 Time Accounting Pack 199.95
DOS 32K 28-1556 Disk Payroll 199.95
LII 16K 28-1504 Payroll Level II 49.95
LII 16K 28-1571 Real Estate, Vol. I 29.95
LII 16K 28-1572 Real Estate, Vol. II 29.95
LII 16K 28-1573 Real Estate, Vol. III 29.95
LII 16K 28-1574 Real Estate, Vol. IV 29.95
LII 16K 28-1575 Real Estate, Vol. V 29.95
LII 16K 28-1576 Real Estate, Vol. VI 29.95
LII 16K 28-1705 Advanced Statistical A 39.95
LII 16K 28-1557 Concrete Take-off 199.95
DOS 32K 28-1563 Word Processing Disk 99.95
LII 16K 28-1505 Word Processing Cass 69.95
DOS 32K 28-2201 Fortran 99.95
DOS 32K 28-2202 Disk Editor/Assembler 99.95
LII 16K 28-1713 Teacher Aide 29.95
LII 16K 28-1708 Basic Computer Lit 100.00
LII 16K 28-1801 Micro Movie 8.95
LII 16K 28-1146 R232 Communications 29.95
plus game programs

(Note: Fort Worth Office Does Not Accept Mail Orders. Order Through Your Local Radio Shack Store.)

Real-Life Simulations
Gary Stishan
3107 Ridge Road
Warren, OH 44484

DOS 32K Bowling League Statistics \$34.95
LII 16K Stock Market Data Base/Stock 5.00

(Plus a wide variety of programs; Send for price list)

Realty Software Company
2045 Manhattan Avenue
Hermosa Beach, CA 90254
(213) 372-9419

LII 16K REAP & RIIP Rental Package \$125.00
DOS 32K REAP & RIIP Rental Package 225.00
LII 16K REAP Rental Expense Analysis 75.00
DOS 32K REAP Rental Expense Analysis 125.00
LII 16K RIIP Rental Info&In. Trackings 75.00
DOS 32K RIIP Rental Info&In. Trackings 125.00
LII 16K Tax Free Exchange Model 30.00
LII 16K In. Property CashFlow/Leverage 30.00
LII 16K Construction Cost/Profit Anal. 30.00
LII 16K Home Purchase Analysis 30.00
LII 16K APR Loan Analysis 30.00

Jerry Reisman Electronics
3530 Timmons Lane, #155
Houston, TX 77027
(713) 621-8429

(Free catalog)

Phil Reitz
122 Emlencroft Road
Westfield, NJ 07080

LII 16K Horoscope: Planets/Cusps/Asc \$15.00
LII 16K above + Solar Returns, printer 20.00
LII 16K above + Secondary Progressions 25.00
LII 16K Ernster: Aspects/Midpoints 10.00
LII 16K Family Budget by Allocation 10.00

REMSOFT, Inc.
571 E. 185 Street
Euclid, Ohio 44119
(216) 531-1338

LII 16K Intro to Assembly Language 69.95

F. L. Roark
Route 3, Box 53
Salem, VA 24153

LII 16K Alphabetic Punch Card for Knitting Looms
LII 16K LLIST/LPRINT for GE-T300 Pr. \$24.95
15.95

Mark Robertson
5472 S.W. Alser, #B-11
Beaverton, OR 97005

LII 16K Systems Monitor \$10.00

RTG Data Systems
1003 Wilshire Blvd., Suite 202
Santa Monica, CA 90401
(213) 451-3682

LII 16K SLIC Language \$50.00

(Requires 16K)

RTR Software, Inc.
PO Box 12351
El Paso, TX 79912

DOS 32K Stock Market System \$79.95
DOS 32K Stock Market Data 9.95

Rupert Corporation
Rupert Lons
6701 Simms Street
Hollywood, Florida 33024

Santa Pan
David Nicholson
33 Rosemount Avenue
Westmount, 217
Quebec, Canada
(514) 832-8116

DOS 32K Listed Stock Option

Jay Scott Salinger
5312 Blossfield Drive
Midland, MI 48640
(313) 631-4135

LII 16K Flash Cards. Any Age 5.00
3 game programs

Steven Sanders
47-12 Jaxon Avenue
Great Neck, NY 11020

one game program

Sat Trak International
Computerland of Colorado Springs
4543 Tewksleton Gap Road
Colorado Springs, CO 80909
(303) 574-4150

LII 16K Satellite Trackings \$29.95

(Add \$10 For Disk)

Sawyer Software
Michael W. Sawyer
201 Morley Road
Dexter, MD 21541
(314) 824-7811

LII 16K Accounting Pack #1 \$25.00
LII 16K Accounting Pack #2 45.00
LII 16K Business Analysis 30.00
LII 16K Payroll 30.00
LII 16K Payroll-Printer 45.00
DOS 32K General Ledger 125.00
DOS 32K Payroll 125.00

Duane Sarier
854 Eads Court
Newport News, VA 23663

LII 16K High Memory Operating System \$14.95

(Specify 16K, 32K, Or 48K)

Soelbi Publications
PO Box 3133
Milford, CT 06460

DOS 32K Personal Info Management \$24.95

G. W. Scheil
1838 Bushman Drive, #118
Kansas City, MO 64110

2 game programs

Michael Shraver Software, Inc.
1253 Vista Superba Drive
Glendale, CA 91205
(213) 856-1563

LII 16K Electric Pencil - Word Proc \$100.00
DOS 32K Electric Pencil - Word Proc 150.00

D. Schroeder
5327 West Tierra Buena Lane
Glendale, AZ 85306

2 game programs

Richard Shafer
3880 Windsor
Cleveland Heights, OH 44121

LII 16K Keep Track Of Your Credit Cards \$2.75

Soft 80
PO Box 184
Waban, MA 02188

DOB 48K TeleFile / Dial \$19.95

Solartek
PO Box 288
Guilderland, NY 12084

2&D 16K Sunstar Program \$49.00
2&D 16K SUNSIM 1 - Calc Solar Energy 49.00

Sam Solomon
2817 Lubbock
Ft. Worth, TX 76108
(817) 926-3140

LII 2K Single-step & Relocat Obj. C. \$19.50
LII 16K Disassembler Creates EDTASM T. 23.50

(Manual included: list extra: BASE For specs.)

Southern Software
PO Box 39
Eastleigh, Hants
England SO5 5WQ

ML 4K Fast Graphics \$9.95
ML 4K Dynamic Load Of Program Gen 8.95
ML 4K Renumber Basic Programs 11.95
ML 4K Full Screen Hex Dump 7.95
ML 4K Program Cross-reference 11.95
ML 4K Symbolic Dump 5.95
ML 4K Debug Z80 Programs 23.95
ML 4K Prepare Systems Tapes 9.95
LII 16K BASIC Compiler 44.95

(All programs self relocating. Add \$1 For Airmail Postage)

Southern States Systems
Thomas D. Mack
PO Box 152
Stafford, VA 22654
(301) 827-2068

LII 16K SCBP-1 20 Financial Programs \$12.50
LII 16K SCBP-2 22 Math Programs From 0 12.50
LII 16K SCBP-3 20 Statistical Programs 12.50
LII 16K P-1 Personal Property Inv 12.50

Sparky
2318 Harvard Avenue
Ft. Meyers, FL 33807

one same program

Sneakers Software Ltd.
Brian Beninger
741 Richmond Road
Ottawa, Ontario
Canada K2A 0G3
(613) 728-4655

BS Lab
Steve Lorindy
PO Box 223
Aurora, Ohio 44202

LII 16K Tape Cop: Backup Program \$10.75
(Specify Memory Size)

Russ I. Starkov
855 Eisenhower Avenue
Jasper, IN 47546
(812) 482-1016

ONE GAME PROGRAM

Sterling Swift Publishing Co.
PO Box 188
Manchaca, TX 78652
(512) 444-7570

LII 16K 4 Cassette Tapes \$40.00
LII 16K 2 Diskettes 50.00

(Microcomputer Workbook TRS-80 \$3.95)

Stratavens Company
Box 786
Taylor, MI 48190

War Games (somebody's hope.)

Stordivant & Dunn, Inc.
Box 277
Conway, NH 03818

DOS 32K General Ledger \$175.00

Don Strons
10 Seneca Parkside
Buffalo, NY 14210

LII 16K BlackJack Card Counting System \$19.95

subLOGIC
PO Box V
Savoy, IL 61874
(217) 359-8482

LII 16K Load and Go 3d Graphic Package \$30.00

(Includes 3D graphics programming book. Add 1.25 for UPS: \$1.75 FIRST CLASS.)

Supersoft
PO Box 1628
Champaign, IL 61820
(217) 334-7596

LII 16K Tiny Pascal \$40.00
LII 16K Client Record System 250.00

John B. Sweeney
1 Victor Drive
Albany, NY 12203

LII 16K Disassembler In Basic 16K \$4.00

Synneristic Solar, Inc.
PO Box 580585
Miami, FL 33158

one same program

T & M Computing
TMC
4914 Rainford Court
St. Louis, MO 63128

one same program

Michael Tannenbaum
42 Bulaire Road
East Rockaway, NY 11518

one same program

Taranto & Associates, Inc.
4136 Redwood Hwy, Suite 2
PO Box 5073
San Rafael, CA 94903

DOS 32K Osborne's Accounts Payable \$99.95
DOS 32K Osborne's Accounts Receivable 99.95
DOS 32K Osborne's General Ledger 99.95
DOS 32K Osborne's Payroll 99.95
DOS 32K Inventory Control 99.95
DOS 32K Generalized Disk Sort 49.95
DOS 32K Word Processing 19.95
DOS 32K General Ledger With Cash J 149.95
DOS 32K Invoicing 99.95

(Add \$3.50 For S & H)

Tarzac Computer Products
Box 10203
Norfolk, VA 23513

DOS 32K Medical Record Information \$85.00

Taylor
PO Box 1180
Plattsburgh, NY 12901

LII 16K Annuities \$10.95
LII 16K Elec Pak 1-Filter Design 20.00
LII 16K Elec Pak 2-attenuators 20.00
LII 16K Elec Pak 3-standard Formulae 30.00
LII 16K Math Pak 1-tris, Inverse, Loss 20.00
LII 16K Math Pak 2-primes, Factorials, Roots 20.00
LII 16K Math Pak 3-Hyperbolic & Inverse Func. 20.00
LII 16K Math Pak 4-sigma & Bessel 25.00
LII 16K Math Pak 5-curve Fitting 30.00
LII 16K Math Pak 6-metric Vs. English 20.00
LII 16K Stat Pak 1-moments, Kurtosis, Skew 20.00
LII 16K Econ Pak 1-est. Building Costs 25.00
same programs

(Add \$1 For Postage & Handling)

TCS
PO Box 10281
Norfolk, UVA 23513

LII 16K Nude Calendar Girl For Printer \$10.00
LII 16K 12/24 Month Barograph Subroutine 5.00
LII 16K Bowling Average 5.00

Teach Yourself By Computer Software
40 Sturgesant Manor
Geneseo, NY 14454
(716) 243-3005

LII 16K Mind - Memory Improvement Course, Step 1 \$24.95
LII 16K Mind - Memory Improvement Course, Step 2 28.95
LII 16K Individual Study Center-6 Act 39.95
LII 16K Many Subject Data Tapes For Study Center 4.95

(MC/VISA, tapes guaranteed. \$1.50 P&H)

Tels Remote Systems
Box 11554
La Mesa, CA 92041

LII 32K Database \$49.99

(Requires Apparatus TRS-DOS)

Kirk Thomas
1718 Castlerock
Houston, TX 77090

LII 16K Metal Building Estimating 149.95
LII 16K Metal Building Erection 24.95

two same programs
(send check or money order)

Tiny-C Associates
Box 288
Malden, NJ 07733
(201) 871-2286

LII 16K Tiny-C Language 16K \$30.00

(Add \$40 For manual: MC & VISA)

Tri-Data Systems
Highway 31 W
Whitthouder, TN 37188
(615) 872-4373

LII 16K List All Variables and References \$5.95

(MC & Visa)

TRS-80 Computing
Computer Information Exchange, Inc.
Box 158
San Luis Rey, CA 92068
(714) 757-4848

LII 16K Common Basic Programs - T. Osborne \$7.50
Book 15.00
LII 16K Tiny Pascal - In Basic 7.50
LII 16K Tape #3 - 28 Assorted Programs 23.00
ML 16K Tiny Pascal

(Add \$.50 postage & handling: CA add tax)

J. L. Trudsen
Route 5
Kittanning, PA 16201

200 NAME PROGRAMS

Upper Case
2011 Silver Court East
Orland, IL 61801
(312) 364-4382

LII 16K Asaphone - English To Phonetic \$45.00
LII 16K Asaphone - Talking Terminal 145.00
LII 16K Asaphone - Talking Terminal 145.00

Bill Vitelli
4308 White Plains Road
Brooklyn, NY 10468

LII 16K Business Invoice Program \$28.85
3 NAME PROGRAMS

V R Data
777 Henderson Blvd.
Falcon Heights Industrial Park
Falcon Heights, PA 16032

LII 16K Diamondville Software \$24.85

Ed Marshauer
PO Box 438
Cathart, NJ 07725

LII 16K Instant Keyboard Graphics R \$12.85

WOODNY
Box 88
Dousless, KS 67028

LII 16K Horse Code \$20.00

Web Associates
PO Box 80-P
Memphis, CA 91018

LII/DOE TSHORT, 32 1-KEY BASIC Cmd \$9.85
LII/DOE TSHORT, Greatly Enhanced 28.85
DOE 32K TBASE, 5 part Data Base Mgr. 28.85

(TSHORT is low memory resident. File all? CA
add 51)

West Coast Consultants
1775 Lincoln Blvd.
Tracy, CA 95376

LII 16K 32K Program For Hewlett Plotter \$5.00
LII 16K 16K Subroutines For Hewlett Plotter 75.00

Williamsville Publishing Co.
PO Box 250
Fredonia, NY 14023

LII 16K APL - Style Calculator \$9.95
LII 16K CAT - English Grammar Course 9.95
LII 16K CAT - Math: Chance Course 9.95

(add \$1.50 Per S&H)

Bob Wilson
PO Box 687
Empire, CA 95318

LII 16K General Learning Program, Etc. \$8.50

Wise Owl Workshop
1188 Avenida De Las Palmas
Livermore, CA 94550

LII 16K Flash Cards \$10.00
LII 16K Secret Writing Cryptography Program 12.00

(Price include shipping! CA residents add
8-1/2% sales tax)

Wolf & Associates
PO Box 8073
La Crescenta, CA 91214

ML The Verifier \$14.95
ML Visible Memory 5.85

World Institute For Computer Assisted
Teaching
J. Olin Campbell
address unknown

DOE 32K Mathematics System
DOE 32K Prepared Reading
DOE 32K English Courses
DOE 32K Math Help

C. Zalnerunas
3034 West Columbus Avenue
Chicago, IL 60652

LII 16K Alphanumeric Graphics Signboard \$4.50
LII 16K Stock Option Strategies 8.95
LII 16K Stock Market Charting 4.50
2 NAME PROGRAMS

Antonio Zamora
3878 Buelah Road
Columbus, OH 43224

LII 16K Data Base \$10.00
DOS 32K Data Base 10.00

Z Systems
144A General Berry Drive
Bayside, NY 11358

DOS 32K Payroll \$50.00
DOS 32K Memorizer 50.00
DOS 32K Order Tracker 50.00

Zumwalt
135 East State
Meriden, ID 83842

one NAME PROGRAM

3G Command, Inc
Route 3, Box 28A
Gaston, OR 97118

LII 16K Horse Race System 19.85

The 80 US Journal
3838 South Warner Street
Tacoma, WA 98408

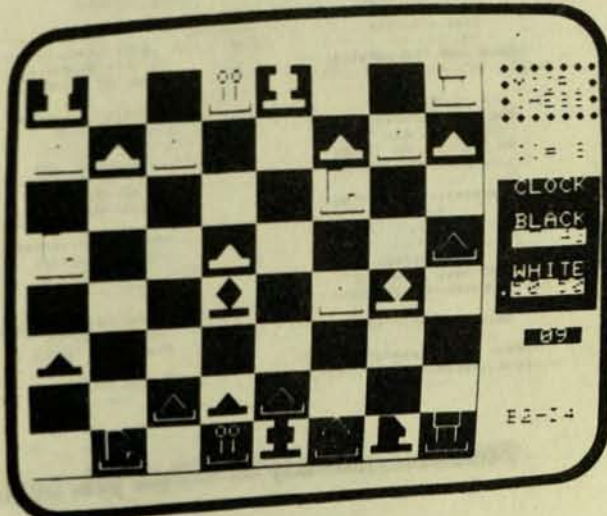
LII 16K Android Nim, Original Version \$9.85
LII 16K Android Nim With Sound 14.85
LII 16K Snake Eggs With Sound 14.85
LII 16K Lifetwo With Sound 14.85
LII 16K Cubes 14.85
LII 16K Beemur With Sound 14.85
LII 16K Tru-80 Opera With Sound 9.85
many NAME PROGRAMS

Published quarterly for \$12 per year by Robert Purser, PO Box 466, El Dorado, CA 95623

NEWBOARD
PET 8K

Compucraft
974 Apokula Place
Kailua, HI 96734

If you do not like the looks of the
chessboard used by Microchess, simply
load this program over it. It will give
you a much better looking and easier to
use chessboard.





This is a list of PET software vendors. The comments are my own and not that of the manufacturers.

Always contact the manufacturer before ordering any computer programs. Additional hardware or software is required to run some programs.

THIS DIRECTORY IS PRINTED ON A DECWRITER 34 AND THE ENTIRE APPLE SOFTWARE DIRECTORY IS MAINTAINED ON A 48K APPLE II

MUSE'S
SUPER - TEXT
WORD PROCESSING PROGRAM.

Abacus Software
PO Box 7211
Grand Rapids, MI 49510

game programs
(Send SASE for catalog)

Abbott Educational Software
Richard A. Brown
334 Westwood Avenue
East Longwood, MA 01028

1 educational program

A B Computers
115 E. Stump Road
Montgomeryville, PA 18936
(215) 688-8386

game programs
(Send SASE for catalog)

Acadiana Software Co.
Route 3, Box 778
St. Martin, PA 70582
(318) 365-3802

2 educational programs

ADP Systems
95 West 100 South
Loman, UT 84321

a series of programs

(This is a reasonable well written series.)

Adventure International
Scott Adams
Box 3435
Lonswood, FL 32750
(305) 862-6817

2 game programs

(Scott Adams has produced some of the best adventure games for the TRS-80. The PET versions require 24K)

Alderaan
PO Box 1243
South Pasadena, CA 91030

(I very much like their "MAY 1941" military/history simulation.)

Allen Computer Products
PO Box 2283
Livonia, MI 48151

2 misc. programs

Applications Research Company
13450 Robledo Road
Los Altos Hills, CA 94022

1 business programs
1 misc. programs

Aresco
PO Box 1142
Columbia, MD 21044

mostly game programs

Aukland Associates
2818 East 19th Avenue
Spokane, WA 99203

1 business programs?

(Has anyone evaluated this program? If so, I would like to print your comments.)

Automated Simulations
P.O. Box 4232
Mountain View, CA 94040

5 game programs

A+ Software
William Stenzler

many educational programs

Robert Baker
15 Windsor Drive
Atco, NJ 08004

1 text editor

Bell-Comm
317 Elm Street
Helena, AR 72342

1 education programs

John R. Best
Rd #3, Box 123
Jackson, NJ 08527

1 education programs
1 misc. programs

Biosystems Research Inc.
PO Box 160272
Miami, FL 33118

1 game programs

Romer Bracht
803 - 11th Street
Rapid City, SD 57701

1 misc. programs

Harry H. Briley
PO Box 2813
Livermore, CA 94550
(415) 455-8139

business programs
game programs
education programs

Dr. William M. Butler
Department Of Chemistry
University Of Michigan
Ann Arbor, MI 48109
(313) 763-2008

4 education programs

(These programs are some of the best chemistry simulation programs. Versions for the larger PET will be sold through Conduit.)

CAP Electronics
1884 Shulman Avenue
San Jose, CA 95124
(408) 371-4120

or after 4/1/80

8482 Hillwood Lane
Tucson, AZ 85715
(602) 296-4878

3 game programs
1 misc. programs

(These programs are for their Soundware system which adds sound to the PET.)

CGRS Microtech
PO Box 368
Southampton, PA 18966

Channel Data Systems
5960 Mandarin Avenue
Goleta, CA 93017

4 game programs
2 accounting programs
4 misc. programs

Cloud Cletion
2424 - 34th Street, S.E.
Washington, D.C. 20020

5 business programs

Cognitive Products
PO Box 2582
Chapel Hill, NC 27514

2 multiple regression programs
4 word processing programs

(An interesting series of programs reviewed in the Winter 1980 issue.)

Cognitive Electronic Laboratory
PO Box 615
New Braunfels, TX 78130

3-D software

Conduit
PO Box 388
Iowa City, Iowa 52244
(319) 353-5789

education programs

(this looks like an interesting series of simulations in physics, chemistry and biology. Many of these programs will be reviewed in the next issue.)

CNC
Connecticut Microcomputer
150 Pesono Road, Room 7
Brookfield, CT 06804

1 word processing program

(The main advantage of the word processing program is that it works with CNC's printer interface.)

Commodore Pet (tm)
(PET is the Trademark of Commodore International, Ltd.)
Commodore Systems
3330 Scott
Santa Clara, CA 95054

(The repair dept. phone number is (408) 727-2260.)

Competitive Software
James Mendenhall
21630 Maple Glen Drive
Edwardsburg, MI 48112

mostly game programs

Compucraft Corp.
874 Apokula Place
Kailua, Hawaii 96734
(808) 262-7182

1 game program
2 misc. programs

send SASE for details

Compuart Corp.
270 Third Street
Cambridge, MA 02142
(617) 491-2700

(an interesting terminal package. Write for full catalog.)

Compu Max Associates, Inc.
305 Hamilton Avenue
Palo Alto, CA 94301
(415) 321-2881

4 accounting programs

Compu-Quale
6914 Bernuist Avenue
Canosa Park, CA 91307
(213) 348-3682

1 game programs

Compu-Think
3260 Alpine Road
Menlo Park, CA 94025
(415) 854-2577

programs for their disk

Computer Assisted Bible Study
Larry E. Ellison
19 Huntington Lane
Willimboro, NJ 08046

3 bible games

The Computer Bus
PO Box 397F
Grand River, OH 44045

game programs

The Computer Factory
485 Lexington Avenue
New York, NY 10017
(212) 687-5001

(a large variety of programs)

- Computers One**
1314 South King Street
Suite 1156
Honolulu, HI 96814
(808) 538-7735
- 5 accounting programs**
- Computer May**
PO Box 7006
Madison, WI 53707
- 1 game programs**
- Conley Graphics**
211 Purdue Avenue
Lexington, CA 94708
- high res graphics**
- Contract Management Systems**
PO Box 212
Chantilly, VA 22021
- 4 game programs**
2 education programs
- Cooper Computers**
Box 18082
Clarks, MO 63105
(314) 532-4485
- real time control**
- Creative Computing Software**
PO Box 788-M
Morristown, NJ 07960
(800) 831-8112
in NJ (201) 540-0445
- write for free catalog**
- (This company is part of Creative Computing Magazine which is currently the best educational computer magazine.)**
- Creative Intrinsics**
PO Box 3883
Orange, California 92665
(714) 637-1320
- game programs**
- Creative Software**
PO Box 4030
Mountain View, CA 94040
- game programs**
1 word processing program
- Cursor Magazine**
Ron Jeffries, Publisher
PO Box 550
Goleta, CA 93017
(805) 867-0905
- (This is a magazine on a cassette for direct loading into your computer. The price is only \$7.95 per issue and \$33 per year. I particularly like issue number #12. Buy it!)**
- Doc's Reliable Software**
H. W. Whitlock
1614 Norman Way
Madison, WI 53705
- game programs**
- Dr. Daley**
425 Grove Avenue
Berrien Springs, MI 48103
(616) 471-5514
(Sun-Thurs. Noon to 5pm Est)
- name series**
business programs
accounting programs
education programs
misc. programs
- (The college Chemistry programs are very worth while. See the reviews in this issue.)**
- John De Fiere**
Rd #2
Lebanon, NJ 08833
education programs
- Dillithium Press**
PO Box 92
Forest Grove, OR 97116
(503) 357-7192
- 6 series of program**
- Distinctive Interiors**
Richard C. Preston
6278 Sw 18th Street
Miami, FL 33144
- 3 game programs**
2 education programs
- (Their Mill Game is a revival of an unusual game from European Middle Ages.)**
- Free catalog**
- Carol Donagan**
84 Christy Road
Battle Creek, MI 49015
- checkers**
- Eastern House Software**
3238 Linda Drive
Winston-Salem, NC 27106
- utility programs**
- Electric Corp.**
2830 Walnut Hill Lane
Dallas, TX 75228
(214) 358-1307
- game programs**
- Educational Activities, Inc.**
1837 Grand Avenue
Baldwin, NY 11510
(516) 223-4686
(800) 845-3736
- educational programs**
- Elcom Publishing, Inc.**
3873-L Schaefer Avenue, Suite L
Chino, CA 91710
- Monitor ROM**
- Fantasy Games Software**
PO Box 1883
Madison, WI 53701
- game programs**
- (Their games have been highly rated by other magazines.)**
- Jack Fleck**
4072 Skyring Drive
Ogden, UT 84403
- 1 horse code program**
- Andr Fraley**
1753 York Road
Reading, PA 19610
- name programs**
- G M Computers, Ltd.**
Tony Winter
21 B Dryden Chambers
118 Oxford Street
London, WI UK
- business programs**
- H. Geller Computer Systems**
Department CC
PO Box 350
New York, NY 10040
- 6 series of programs**
- Gillaspie and Associates**
11628 Riverside Drive
North Hollywood, CA 91602
- game programs**
- Gomers & Kane**
7 Gateview Court
San Francisco, CA 94116
- 1 Pilot interpreter**
- Hahl Craft**
Aerilecraft Division
E. Hahlbeck
5908 Sugar Bush Lane
Greendale, WI 53129
- Ball Bearing Engineering programs**
- Hayden Book Company, Inc.**
50 Essex Street
Rochelle Park, NJ 07662
(201) 843-0550
- a variety of programs**
- Home Computer Centre**
6101 Young Street
Willowdale, Ontario
Canada, M2M 3M2
(416) 222-1166
- Kurt Husbner**
1266 Valle Vista
Fullerton, CA 92631
- name trade**
- Robert G. Huenemann**
625 Shelter Creek Lane #135
San Bruno, CA 94066
(415) 952-6865
- (Free programs for IFR approach Simulation & tape test. Send tape and SASE.)**
- HJW Electronics**
1425 Maple Street
San Mateo, CA 94402
- programs for Petula**
- Innovation**
PO Box 1317
Los Altos, CA 94022
- Instant Software, Inc.**
Peterborough, NH 03458
(603) 824-7286
- 15 game programs**
2 home business
1 business programs
4 electronics program
2 application programs
1 demo program
- (Write or free catalog from Nan McCarthy in the Catalog Dept.. See same review section for same evaluation.)**
- The Institute For Public Program Analysis**
230 South Bemiston, Suite 814
St. Louis, MO 63105
(314) 862-8272
- International Technical Systems, Inc.**
PO Box 264
Woodbridge, VA 22194
(Richmond Va Sales & service)
(804) 282-9708
- Jamewtown Small Computer Systems**
2508 Valley Forge Drive
Madison, WI 53719
- 1 business programs**
- J.K. Johnson**
9304 Emory Grove Road
Baltimore, Md 20760
- 3 game programs**
8080 simulator
- Don Ketchum**
313 Van Ness Avenue
Upland, CA 91786
(714) 982-5052
- 1 utility program**
- Knitting Machine News & Views**
Alles Hutchinson, Publisher
315 Hamill Road
Verona, PA 15147
- 3 knitting loom programs**
(For subscribers only)
- Lexington Public Schools**
Curriculum Resource Center
Ms. Beth T. Lowd
8 Philip Road
Lexington, MA 02173
(617) 862-7500 X247
- (a large number of educational programs, most of which are games)**
- Ed Lichten**
35080 Quaker Way
Farmington Hills, MI 48018
- 10 game programs**
1 accounting program
1 misc. programs
- (Send SASE For catalog)**
- Macrotronics, Inc.**
1125 N. Golden State Blvd.
Suite G
Turlock, CA 95380
(209) 643-8888 or 677-2888
- HAM radio programs**
1 misc program
- (Send SASE for catalog)**

Mad Hatter Software
Tim Guinlan
900 Salem Road
Dracut, MA 01826
(617) 682-8131

4 name programs

(Send for catalog. Programs from other manufacturers also available.)

M. H. Major
A To Z, Inc.
300 Guaranty Bank Plaza
Corpus Christi, TX 78475

1 accounting programs

(Send SASE for catalog)

Matrix Magazine
A Magazine For the
Professional Astrologer
Michael Erlwine
315 Marion
Bia Rapids, MI 49307

5 education programs
40 astrology programs

(Send \$1.00 for catalog)

(Some of these programs have been reviewed in this magazine. They are very unusual and very practical. Their catalog is very extensive so it is definitely worth while.)

Howard McLay
25623 Pennie
Dearborn Heights, MI 48125

5 name programs
1 accounting programs
2 misc. programs

(Send SASE for catalog)

Merlan Scientific Ltd.
247 Armstrong Ave., Unit 6
Georgetown, Ontario
Canada L7G 4XG
(416) 877-0171
(416) 846-0846

13 highschool physics

(Write for free catalog)

University Of Michigan
center For Research On
Learning & Teaching
Karl L. Zinn
108 East Madison Street
Ann Arbor, MI 48104

education programs

(Send SASE for catalog)

Micro Computer Industries Ltd.
1520 E. Mulberry
Suite 240
Fort Collins, Co. 80524
(303) 221-1955

3 business programs

(write for more information)

Micro-Ed
Box 24136
Minneapolis, MN 55424

educational software

Micro Learningware
PO Box 2134
N. Mankato, MN 56001
(507) 387-1649

10 education series

(write for free catalog)

Microphs Programs
2048 Ford Street
Brooklyn, NY 11228
(212) 646-0140

120 education programs

(The programs are for Junior high and high school. I particularly like the physics, Chem, and Math programs. I am not too excited by the vocabulary programs. In this issue, I review one of the chemistry programs. All parents and educators should write for their catalog.)

Micro Software Systems
Rex Busdiecker
PO Box 1442
Woodbridge, Va 22193

1 accounting programs
1 education programs
4 misc. programs

(Some of their programs have received outstanding reviews in this magazine. Others have not.)

Milliken Publishing Company
1100 Research Blvd.
St. Louis, MO 63132
(314) 991-4220

1 educational series of programs

(I want to get some user feedback on this series.)

Minnesota Micro Systems
514 Cedar Avenue
Minneapolis, Minn. 55454
(612) 338-5804

2 name programs

(Send SASE for catalog)

MMCHI Software
PO Box 13207
Columbia, Ohio 43213

1 accounting programs

(Send SASE for catalog)

D. Mortimer
Herbstrasse 35
8031 Puccheim
West Germany

1 misc. programs

(Send SASE for catalog)

C. W. Moser
3238 Linda Drive
Winston-salem, NC 27106

1 misc. programs

(Send SASE for catalog)

Mounts View Public Schools
Sharon Conlan
2859 North Hamline Avenue
St. Paul, MN 55113

30 name programs

(Send SASE for catalog)

National Artificial Intelligence
Laboratory
Mail
Box F

Mobile, Al 36601
(205) 433-5529

1 name programs
4 misc. programs

(Send SASE for catalog)

N ational Coordinating Center
For Curriculum Development
College of Engineering and
Applied Science
State University of New York at
Stoner Brook
Stoner Brook, NY 11794

15 educational programs

(Some of the more unusual education programs have come from there. Write for their brochure.)

NEECO
New England Electronics Company
679 Highland Avenue
Needham, Mass. 02194
(617) 448-1760

name programs
accounting programs
business programs
education programs
misc. programs

(Send for their catalog)

O. Nelson
2232 Oden Court
St. Paul, MN 55118
(612) 738-1080

4 name programs
1 accounting programs
3 business programs
2 misc. programs

(Send SASE for catalog)

N U Energy Systems
28825 Sovereign Drive
Rancho Palos Verdes, CA 90274

name programs

(Send SASE for catalog)

Osborne/McGraw-Hill, Inc.
630 Bancroft Way
Berkeley, CA 94710
(415) 548-2805

financial programs
mathematical programs
statistical programs

Palo Alto ICs
Nestor Systems, Inc
4309 Sherman Avenue
Palo Alto, CA 94306
(415) 327-0125

Programmers's Toolkit

PCNET
People's Computer Co.
1263 El Camino Real
Box E
Menlo Park, CA 94025
(415) 323-3111

(See review of PAN in this issue)

Peninsula School Project
Katie Thornburn
Peninsula School
Peninsula Way
Menlo Park, CA 94025

education programs

(Send SASE for catalog)

R. W. Pershing
873 North Monroe
Kenia, Ohio 45385

eucher

Personal Software
392 Meddell Drive
Sunnyvale, CA 94086
(408) 745-7841

(Send SASE for catalog)

Pet Library
Jacksonville Area Pet Society
c/o R. Grokett
401 Monument Rd., #123
Jacksonville, FL 32211
(904) 725-0435

31 name programs
6 accounting programs
6 business programs
10 education programs
18 misc. programs

(1.50 per program, add \$1.00 for cassette & postage)

P.S. Software House
Marketing And Research Co.
PO Box 866
Mishawaka, IN 46544

name programs

Pelleft Ltd.
5 Vicarage Road
Edmonton
Birmingham, England
B15 3E1
tel 021-454-5348
Telex 339396

name programs
accounting programs
business programs
education programs
misc. programs

(England probably has more PETs than the USA. This is one of the better software vendors of England. Write for their catalog. Some of their programs are very good.)

Pet User Group
PO Box 371
Montgomeryville, PA 18936

inexpensive program

(Send SASE)

Petware
Peter Ruetz
368 Albion Avenue
Woodside, CA 94062

name programs

Petware Vienna
Inn. Samboschek
Esterhazy, 12
a-1060 Austria

1 utility program

PFDC Software
3500 Garden Oaks #128
Arlington, LA 70114

calibration tape

Pleasures Game Co.
Chris Crawford
3603 Cosmic Way
Freemont, CA 94536

military status camps

(This is the company that brought us the first military simulation game played on a board. Currently they offer the unusual game, "Lionnaire" where the hex board appears on the screen.)

Saurer Software
Michael W. Saurer
201 Norley Road
Dexter, MD 20841
(301) 624-7611

1 game programs
4 accounting programs
12 business programs

(Send for free catalog)

Steve Shaw
PO Box 1707
Tampa, FL 33601

(Send SASE for catalog)

Silver Bird Software
Pat Miller
3481 East Avenue
Rochester, NY 14618

2 game programs
3 educational programs

(Send SASE for catalog)

Small System Services, Inc.
800 Spring Garden Street
Greensboro, NC 27403

Softbrew
Jerry Brinson
PO Box 30117A
Indianapolis, IN 46250

1 game program

Softside Software
305 Riverside Drive
New York, NY 10025
(212) 866-8058

8 game programs

(Send SASE for catalog)

Soft Stuff
Wheaton Music, Inc.
2503 Kennels Avenue
Wheaton, MD 20802
(301) 948-1113

The Software Factory
515 Park Street
Anoka, MN 55303

(Their educational programs are some of the best I have seen. Be sure you write for more information on these programs.)

The Software Shoppe
c/o Meyer, Art. 504
8851 Fontainebleau Blvd.
Miami, FL 33172

(Send SASE for catalog)

Soft-Touch
Edward K. Crossman
Box 422
Laramie, WY 82021
(801) 752-2067

10 game programs
1 business programs (FD)
1 education programs

(Send SASE for catalog)

SpeakEasy Software Ltd.
Box 1270
Kemptville, Ontario
Canada, M2M 3W2
(613) 258-2451

(Send SASE for catalog)

Sphinx (a Pet Users Group)
C/o Milton Lee
1348 Rudman Road
Walnut Creek, CA 94598

(Various programs for members)

Tom Stever
Star Route
Gering, NE 68341

2 educational programs

Suncoast Microsystems
Joe Spatafora & Hale Prinsale
1870 Sailfish Road
St. Petersburg, FL 33707
(813) 345-8364

(Send SASE for catalog)

Warren D. Swan Software
15933 S. Grove Avenue
Oak Forest, IL 60452
(312) 687-4876

5 game programs
4 math programs
3 system utilities
10 graphic programs

(Write for FREE catalog)

Teachers' Pet
Glenn Fisher
1517 Holly Street
Berkeley, CA 94703

3 educational program
(grades 5-6)

Technical Hardware, Inc.
PO Box 3608
Fullerton, CA 92634

(Send SASE for catalog)

Total Information Services
PO Box 92
Los Alamos, NM 87544

2 word processing programs
6 business programs

(Send SASE for catalog)

Tycon Associates
68 Velma Avenue
Pittsfield, MA 01201

6 game programs
8 education programs
1 misc. program

(Send SASE for catalog)

United Software of America
750 Third Avenue
New York, NY 10017

a variety of programs

West Coast Consultants
1775 Lincoln Blvd.
Tracy, CA 95376

plotter programs

(Send SASE for catalog)

World Institute For
Computer Assisted Teaching
J. Olin Campbell
address unknown

educational programs

X And Y Enterprise
PO Box 796
Huntsville, Alabama 35804
(205) 534-0177

Plotting Programs

(Send SASE for catalog)

Zephyr Software
PO Box 713
Bonita, CA 920

1 billboard program

ZZYP Data Processing
2313 Morningside
Bryan, TX 77801
(713) 822-3208

8 game programs

Tom Guilici
2928 Holy Cross Lane
Garland, TX 75042

game programs

Program
Richard Mansfield
PO Box 461
Phillipsburg, PA 16868
(814) 342-1871

(Does anyone know if this is still alive?)

Program Design Inc.
Carol Klitzner
11 Ider Court
Greenwich, CT 06830

education programs

(I have reviewed some of their programs, namely those written by John Victor. They are very good.)

Programs International, Inc.
3400 Wilshire Blvd.
Los Angeles, CA 90010
(213) 384-0578

(This company offers the largest selection of programs that I know of. Write for their catalog.)

Programs For Learning
PO Box 354
New Milford, CT 06776

education programs

(See the review in this issue.)

Project Local
200 Nehalem Street
Westwood, MA 02090

education programs

(Send SASE for catalog)

Quant Systems
PO Box 828
Charleston, SC 29402

(Send SASE for catalog)

Reich Engineering
635 Greenwich Drive
Santa Clara, CA 95051

(They have 3 game programs on the cassette that is highly rated by the Marin Computer Center.)

Mark Robertson
5472 S.W. Almer, Apt. B-11
Beaverton, OR 97005

(system monitor)

D. J. Romain, PE
405 Reflection Road
Apple Valley, MN 55124

1 real estate program

Walter Rychlewski
803 Spruce
Liberty, MO 64080

Harry Seal
810 Garland Drive
Palo Alto, CA 94303

GUIDE TO COMPUTERS (Continued From Back Cover)

Any personal computer such as the Apple, the Atari, the Level II TRS-80, or the PET is NOT a scaled-down IBM-type computer. Do not compare a personal computer with a big computer. This is like comparing a Mac Truck with a VW Beetle just because they both have engines and wheels. All computers can add two and two. But everything else is totally different.

Personal computers are designed specifically for the home, not for the business office. Contrary to all the manufacturer's claims, personal computers are NOT designed for traditional accounting applications.

Would you go on a picnic in a Mac Truck? Would you haul a herd of cattle in a VW Beetle? Sure, you can do it, but you would be crazy to try! So do not try doing the traditional business accounting applications on a personal computer.

I estimate that 80% of all personal computers were bought with the idea of eventually doing the accounting in a small business. Yet, in almost all cases, this has not happened. If you are looking for a business computer, look at TRS-80 MODEL II, Datapoint, or IBM.

The size and speed of the memory storage limits personal computers. Even though the internal memory is very fast, it is too small for many traditional computer jobs. Even more important, the cassette memory storage and diskette memory storage are too small and too slow.

Here is "Purser's First Law of Personal Computers":

ANY TASK WHICH IS PRACTICAL ON A LARGE COMPUTER WILL NOT BE PRACTICAL ON A PERSONAL COMPUTER.

Therefore, be careful of any computer salesman who says otherwise.

Another reason that a personal computer is not practical for most traditional computer tasks is the fact that a big computer program can NEVER be squeezed into a personal computer. A computer program to do accounts receivable takes just as many computer instructions on a personal computer as on a large computer. Never believe any

salesman who says that he has an accounting program that does what the big computers do. It just can not be done. Something must be missing!

Since personal computers are so unique, it will take a few years to see what they do best. Keep reading this magazine. I will bring you reviews of the most useful and unique applications I can find.

COMPUTER PROGRAMS

Without good computer programs, your computer is useless. Unless you want to learn computer programming, you will spend about \$1000 on computer programs. GULP!

Even if you do learn computer programming, you will be happier with professionally-written programs on tape or disk. It takes about 3 to 5 years of practice for a beginning programmer to become proficient.

To understand the value of a personal computer program, you must understand what a personal computer is. Computers such as the TRS-80, Apple, Atari, and PET are very versatile and flexible pieces of machinery. By themselves, these computers do nothing. It is the computer program that makes the computer come alive. The computer takes on the identity of the computer program.

If you load a word processing program into a computer, the computer will turn into a word processor. (Word processors are very popular machines in business offices.) In fact, Radio Shack now sells a "Word Processing Machine" which is actually their personal computer with a word processing program.

Similarly, you can put an aircraft flight simulation program into your computer and it becomes a flight simulator like those used in flight training.

If you want to design weaving patterns for your loom, you simply put a weaving program into your computer, and it becomes an imaginary loom.

If you want to be entertained, try a program such as "Android Nim" or "Beewary" and your computer becomes a Penny Arcade. If you like more of a challenge, try playing "Chess".

I know five general reasons for buying a computer.

1. To play games.
2. To help in other hobbies
3. To educate and stimulate kids
4. To learn about computers
5. To use in business

1. Games

Personal computer games, if they are good, provide a type of entertainment not available anywhere else. To find the best games, see the Game Review section.

2. Hobbies

People with hobbies such as weaving, knitting, slow scan TV, Ham radio, satellite watching, guitar playing, photography, and bird watching can now buy programs to help them enjoy their hobby. As yet, the list of useful programs for hobbies is very small. In time more programs will be available.

3. Education

Educating the kids is not a bad reason for buying a computer. Programs for education are slowly becoming available. A brief analysis of what is happening in education is covered in another article in this issue.

4. Programming

Even though I do not recommend computer programming, a personal computer is an excellent way to learn about computers. Many programs are being written to help you learn about computers and how to program them..

5. Business

Even though I do not recommend the use of a personal computer for accounting, there are plenty of non-accounting functions that completely justify a small computer. Word processing is the best example of this.

PROGRAMS FOR SCHOOLS

Here is a list of programs that every school should buy.

APPLE PROGRAMS

1. Muse's Super-Text
2. Apple Writer or Easy Writer
3. Apple Pilot or Appilot
4. Softape's Forte
5. Programmers Software Exchange's Aircraft Simulation

6. Muse's Three Mile Island Simulation
7. Bohannon's Weaver
8. Aviculturist Magazine
9. Galfo's Slow Scan TV Package
10. Sarson Chess or Microchess
11. Whatsit?
12. Sat Trak's Satellite Tracking
13. SubLogic's Flight Simulator

LEVEL II PROGRAMS

1. Solartek's Sunsim
2. The Electric Pencil or Superscript
3. CLOAD Magazine
4. Baker's Spell-Bound
5. Advanced Graphics' Spelling Bee or Instant Software's Spelling Bee
6. MicroGnome's CAIWARE
7. Carta's Master Lesson Program
8. Carta's Lesson Builder
9. Creative Computing's Ecology Simulation Programs
10. Data/Print's TRCOPY
11. Small Systems Software's Level I for Level II Basic
12. 80-US's Android Nim
13. 80-US's Snake Eggs
14. 80-US's Beewary
15. Scott Adams' Adventure
16. Carta's Visual Instructional Computer.
17. Program Design's Spelling Builder
18. PFDC's Music Composer
19. Hayden's Sarson II

Optional

1. Matrix's Koch Natal Package
2. Micro-Futures' Commodity Market Analyst

PET PROGRAMS

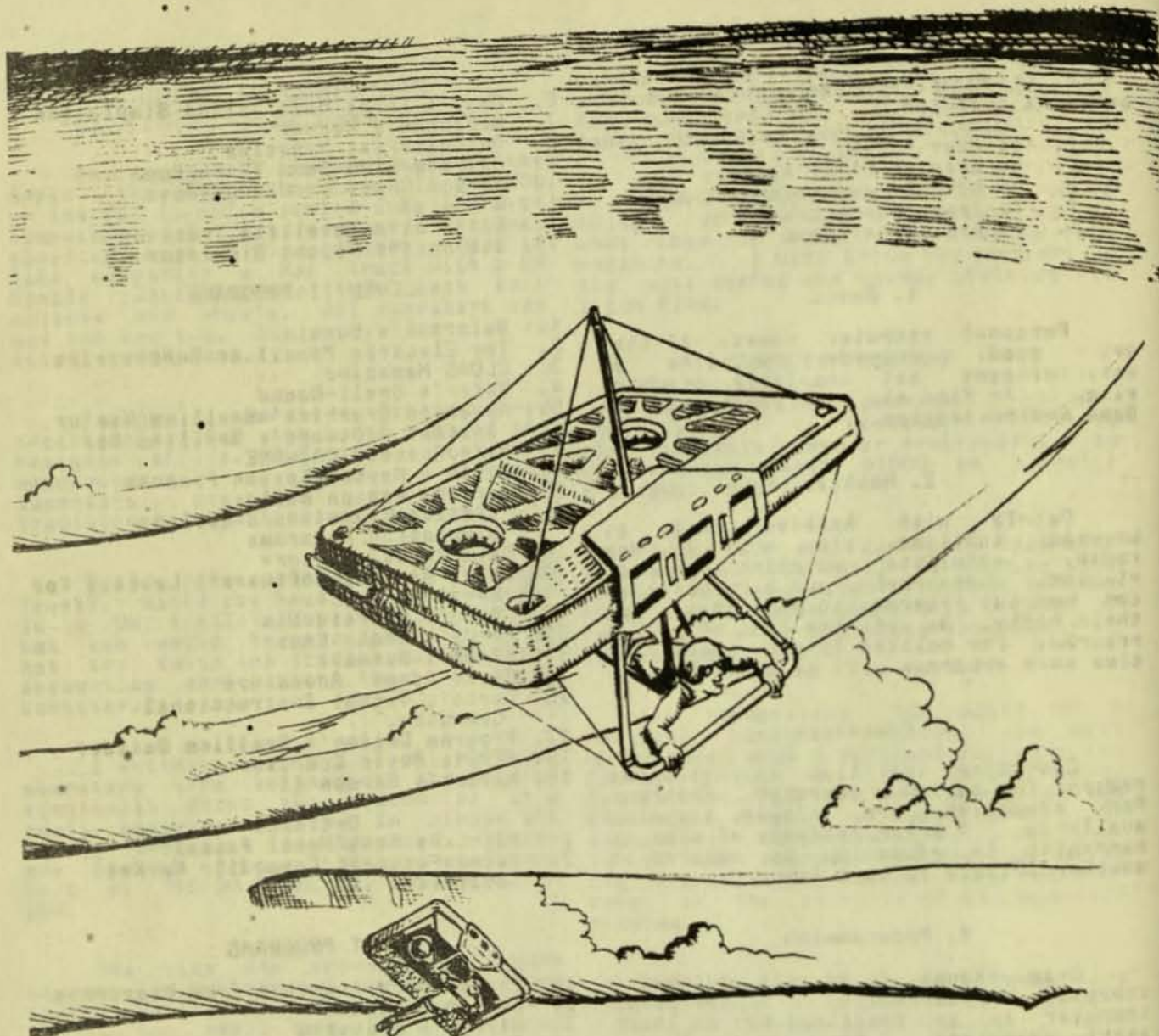
1. The science programs from Microphys
2. Cursor Magazine
3. Hayden's Crossbow
4. The college chemistry programs from Dr. Daley
5. The college chemistry programs from Dr. Butler
6. Pleiades' Lesionnaire
7. Aldeeran's May 1941
8. Distictive Interiors' Mill Game
9. Software Factory's education programs
10. Petsoft's Photo Series
11. Personal Software's Microchess

ATARI

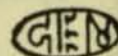
I am still formulating a list of programs for the Atari. It is just too early to say.

THE BIG FOUR

You should buy only the computer with the most computer programs. Currently, there are a dozen different personal computers for sale. However, only the three or four best selling computers will have enough computer programs to justify buying the computer.



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Please make checks payable to: Robert Purser, Post Box 466, El Dorado, CA 95623

When a computer sells well, people write programs for it. Once programs are available for a computer, people buy the computer. This is very similar to the question of who came first, the chicken or the egg.

Currently, the TRS-80 Level II 16K has the most computer programs available for it. It sells the best.

The Apple computer is second in software and sales in the USA.

Commodore's PET sells well in Europe and Japan. The PET was once first in sales in the USA. However, Commodore's share of the home computer market has probably dropped to 5th behind Atari and Texas Instruments. Since the PET was once in first place, it has a large number of programs available for it. However, because of the rapid drop in its share of the USA market, very few new computer programs are being written for it. In the winter issue of this magazine, I printed a complete list of PET software. This list will probably still be valid for another year.

I believe that Atari is third in sales in the United States. However, it is so new that the amount of software available for it is nil. Wait 6 months and this will change (and so will everything else, too).

Never even consider the TRS-80 Model I, Level I Computer.

Never, ever, consider an Apple tape system.

Except for schools, amusement parks, machine shops, etc., buy a Model 800 Atari rather than the Model 400. You will be happier with the regular keyboard rather than the touch keyboard. Always get a tape recorder even if you are getting a disk system. Unless you plan to use the Dorsett education tapes, you will not need the education cartridge.

Only buy 16K or larger memory. For the Apple computer, only buy 48K.

One computer that you should be aware of is Texas Instruments personal computer. I do NOT recommend it. Texas Instruments is a exceptional company. It is the leader in consumer electronics. However, they missed the boat on their first personal computer. Wait for their second or third computer. By that time, they will have a better idea of what to do.

WARNING

Personal computers are not perfect. In fact, with the exception of the original PET, these personal computers are not designed for the average consumer. Before you buy your computer, you probably want to know the bad points of the different computers. So, here they are:

The TRS-80 Model I, Level II computer is a mass of wires with a computer at one end. It was designed as many separate components with electric cable to connect them. Having many separate components makes repair much easier but is a pain the rest of the time.

The weakest link of the Level II computer is the difficulty of loading programs via tape. The electrical circuit designed to correct this problem has still not been incorporated into the TRS-80. You must ask for it. And even with the tape-read circuit installed, loading tape is still a problem. The volume of the tape recorder must still be adjusted for some tapes. If problems occur, there is no way of determining what the problem is. You must modify the tape recorder to listen to tape as it is being loaded or use an AM radio to "hear" what the computer is doing.

The PET has one button which will start the tape-loading process and then runs the program. No such luck with the Radio Shack or the Apple. Children will have an easier time running a PET. The Atari is easy to use if you have a cartridge program. But since most programs will be on tape, the Atari is no better than the others.

The second worst feature of the Model I computer is the keyboard. The Level II will often produce multiple characters from a single keystroke. This can be partially overcome with special computer programs. However, the double characters are really a symptom of a poor quality keyboard. This can cause problems in an office where the computer is used regularly for word processing. The shift buttons are used so frequently that they will need regular cleaning. The keyboard is just not designed for heavy use.

The Apple computer was designed by computer programmers for other programmers. To operate the Apple computer, you must learn some computer programming. For people who have a disk drive, you must learn "3DOG". Apple Plus owners should learn "CALL -151".

A problem with the so-called "Apple Computer" is that there are actually 3 different Apple computers. Even if you have both Applesoft and Integer Basic built in, the Apple II and the Apple Plus have enough differences to require you to contact every software manufacturer to see if their programs will work on your computer. The same goes for the Pascal system. Apple Company makes these different computers to give you greater flexibility. Actually, it ends up limiting the amount of software you can use. Yes, you can modify the programs, but did you buy your computer to use it or to program it?

One short-coming of the Apple is the tape recorder system. Never buy an Apple tape system. Always buy a disk drive when you buy your Apple. The computer cannot turn off the tape recorder as the PET, Atari, or TRS-80 can. Therefore, most data storage is impractical on the Apple tape system.

I recommend a tape system for the Level II TRS-80. The high cost of expanding the TRS-80 beyond 16K Level II makes the larger system as expensive as an Apple. If you want a disk system, you might as well go with an Apple.

I love the original PET. The old PET with the small keyboard was the best little machine on the market for kids and school. Everything was built in and the keyboard was very sturdy. This style of the PET is still available on a 90 day order but cannot be bought with the educational discount.

The only problem with the PET is that it comes from Commodore, Ltd. Commodore brought us the first hand held calculator and the first mass-produced personal computer. They have taken the best selling computer for consumers and made it number 5th (according to my calculations) in the US. They did this in part by making very drastic changes in the PET's controlling Read Only Memory program (ROM). Most of the software available for the PET will work only work on the old (version 2) PET. Commodore is now up to version 5. You must check with the computer programs manufacturer to see if his programs will run on your PET.

The TRS-80 has another disadvantage. It lacks upper and lower case letters. There are modification available from many sources, including Radio Shack. However, Level II does not automatically come with this option. This has put a tremendous limit on capabilities of the TRS-80. The effect

of this is quickly seen by noticing that there are over three times as many top-notch (machine language) word processing programs for the Apple as for the TRS-80. For more information on word processing, read the article on word processing in this issue.

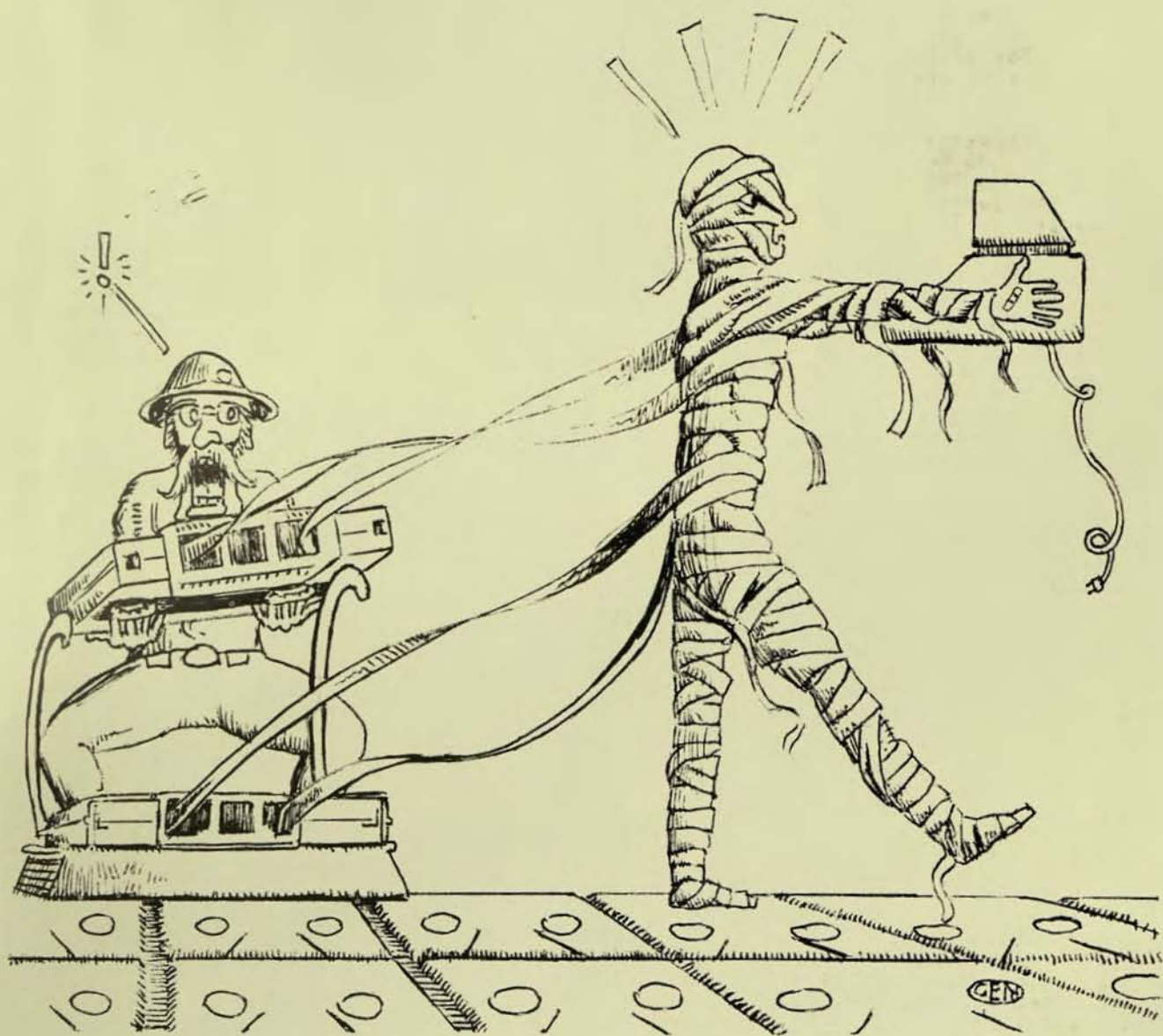
The Atari is the new kid on the block. If you have been reading my articles in past issues, you know that I judge a computer by its software and not by how powerful the computer is. Already companies who have made their reputation selling quality software for the PET, TRS-80, and Apple are promising to produce Atari software.

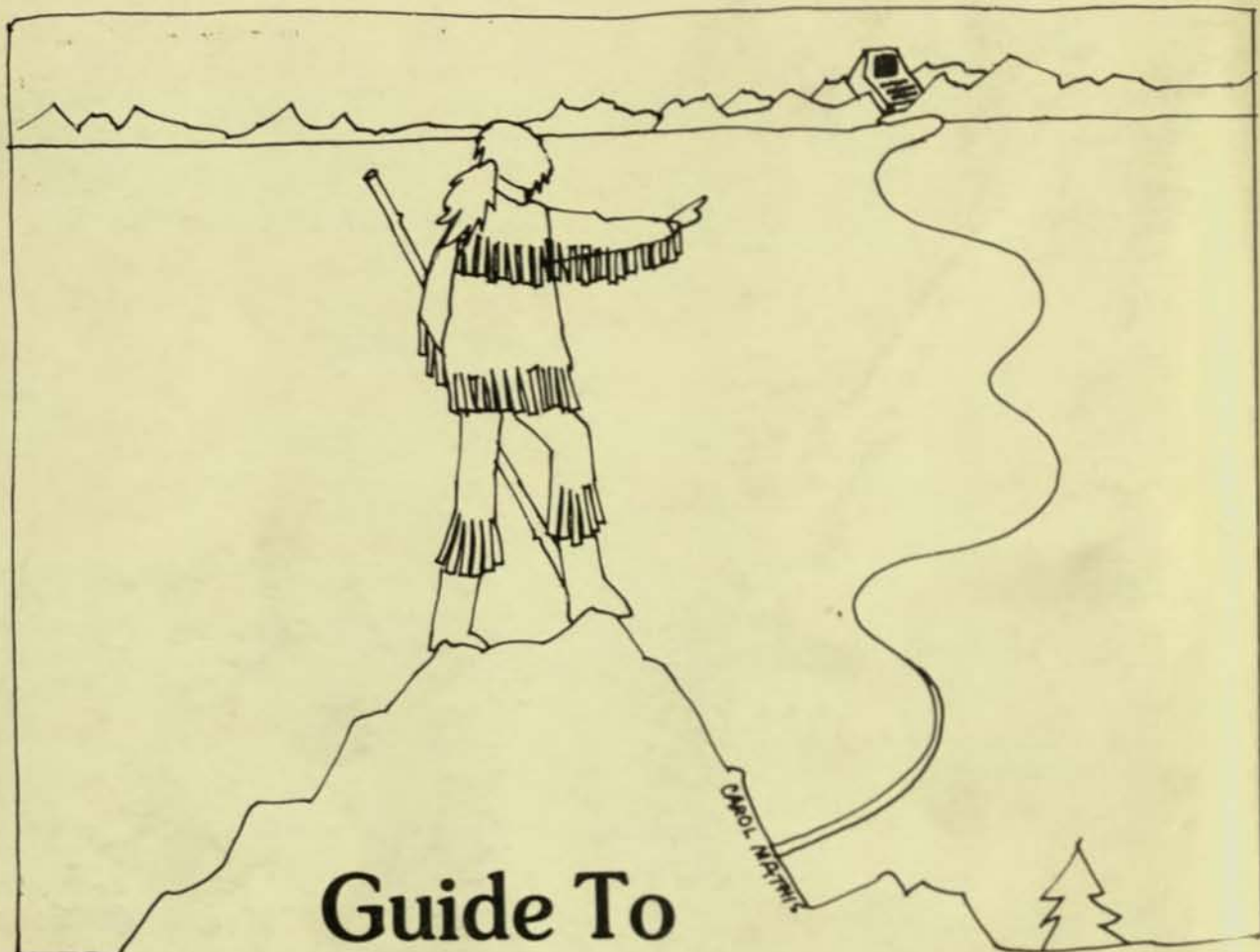
The total amount of computer software for all personal computers is still a drop in the bucket. We still do not have a computer program that designs a knitting pattern for a woman's sweater. There is no computer program that calculates the Rhythm Method of birth control. Both of these programs are possible and practical. Yet, these and many other useful programs have not been written.

BUY IT TODAY

But despite all these problems, you should immediately run out and buy a computer. Waiting for a better computer to hit the market is a endless wait. There will always be a better and cheaper computer coming out next month. Just remember, it will take one year for a good supply of software to appear for any new computer.

Personal computers are unique, interesting, and fun. If you do not have one, you are missing something special.





Guide To Computers

Before you buy a computer, here's what you should know:

1. Personal computers are completely different from the big computers like IBM, NCR, UNIVAC, etc.
2. You must buy many good and well-written computer programs to make your personal computer useful and practical.
3. Currently, there are only four computers that you should consider for your first computer.
4. There is no ideal computer and there will never be one.
5. No matter what computer you buy, it will be an antique in 3 years or less.

If you understand these points then you can safely choose your first computer. You will be spending a lot of money and you will want your money's worth. So, I will go over these points in detail.

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