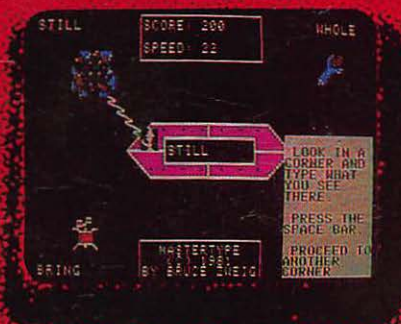


BY THE EDITORS OF CONSUMER GUIDE®
AND ROE R. ADAMS, III

THE BEST APPLE SOFTWARE

EDUCATIONAL · GAMES · BUSINESS
WORD PROCESSING
HOME & PERSONAL USE



DIRECT MAIL ASSOCIATES
143 BLOSSOM ST.
MURKIN, MA. 95129

DEAR MR. SMITH:

THANK YOU FOR THE SPEEDY RESPONSE TO OUR REQUEST FOR A 12-MONTH SPACE PLAN. WE APPRECIATE THE EFFORT INVOLVED IN THIS PROJECT.

WE HAVE SUBMITTED YOUR PROPOSAL TO A BRIEF ANALYSIS TO DETERMINE ITS COST-EFFECTIVENESS, AND THOUGH NOT YET COMPLETELY INTERESTED IN THE RESULTS, WE WOULD BE GLAD TO CAN DO SUCH STUDIES QUITE RAPIDLY ON OUR NEW COMPUTER SYSTEM. HERE'S WHAT WE WOULD DO:

BY THE EDITORS OF CONSUMER GUIDE®
AND ROE R. ADAMS, III

THE BEST
APPLE
SOFTWARE

EDUCATIONAL · GAMES · BUSINESS
WORD PROCESSING
HOME & PERSONAL USE

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INTRODUCTION

Apple II, II Plus, and IIe owners can choose from literally thousands of programs that can be used on their computers. Hundreds of new software programs come out every year. These products span a wide range of applications, from word processing to entertainment to education to business. With so many programs to choose from, how can computer owners find the ones that are right for their needs?

Choosing the right software has just been made easier with **The Best Apple Software**. Written by the Editors of Consumer Guide® and Apple software expert Roe R. Adams III, this is an essential book for owners of Apple computers. From accounting packages to adventure games, from music makers to math drills, this is the number one source of Apple software. Every review is clear, simple, and complete — written in language that anyone can understand. One quick reading will tell you what a program does, how it can help you, and why that particular program is better than competing products.

Each program has been rated on a scale of 1 to 10 by the leaders of Apple user groups (clubs of Apple computer owners) around the U.S. and Canada. These are people who have been using Apple software on a daily basis, so their ratings are based on real exper-

ience. Only the programs that received an average rating of 5.0 or better from these experienced users were included in **The Best Apple Software**.

Each software review describes the program's purpose and features, detailing its advantages as well as its disadvantages. The program is evaluated for ease of use, quality of both written and on-screen instructions, and overall performance. Also included is the basic information you'll need to purchase and use the program: price, publisher, software format(s) in which the program is available, and hardware requirements. A quick reference chart for each program gives an overall rating and summarizes key points in the evaluation.

For some types of programs, additional information is provided. If you're looking for an educational program or a game, for example, you need to know the level of difficulty. Therefore, we have included the approximate reading level required to use each educational program. For each arcade game and strategy game, we have indicated whether novice, intermediate, or expert game-playing skills are required to enjoy the game.

Consumer Guide® has a long tradition of helping consumers choose the best products to serve their needs, and **The Best Apple Software** con-

tinues in that tradition. Any program with a star by its name is considered a "best buy" — an exceptional value for the price.

The following information is included in every review:

DESCRIPTION: This is a concise description of what the program is or does. It tells you right away, before you read the review, whether this is a program you want to know more about.

SOLD BY: This is the name and address of a company that sells the program. It may not be the only source of that program (in fact, most of the software in this book is available through local computer stores), but it is the source to turn to if you're having trouble finding the program.

FOR: This tells you which Apple models the program runs on: the Apple II, II Plus, or IIe.

REQUIREMENTS: This tells you what extra hardware or software is required to run the program. Also included are optional accessories that can be used with the program.

PRICE AND FORMAT: The price listed here is only approximate; software prices can vary drastically from dealer to dealer. The format tells you whether the program comes in a cassette tape or a disk.

PROTECTION: This lets you know whether or not you can make a backup copy of the program; if it's a protected disk or tape, you can't. Many software companies have done something to their cassette tapes or disks to protect them from being copied.

WARRANTY: This tells you whether or not the program comes with a written warranty. Usually the warranty is on the media only, which means it covers only physical defects in the disk or tape.

USER GROUP RATING: This is the average of the ratings given by the Apple user groups for each software package. For a few of the programs, the user groups didn't supply a rating (usually because the program was too new). In these cases, we used an overall rating provided by our author and editors instead.

In addition to the user group rating, several other aspects of each program are also rated on a scale of 1 to 10. These extra ratings vary depending on the type of software reviewed, and include such aspects as documentation, performance, reliability, and ease of use. These ratings are explained in the legend on each page.

CHAPTER 1 WORD PROCESSING

These programs turn your computer into an electronic typewriter. Some of them are simple text editors. Others are full word processors that include many of the features found on large and expensive word processing systems. Also included in this chapter is a program that searches for spelling errors in the text and allows you to correct them.

There are several important features to look for in a word processing program for your Apple. Global editing commands like *search and replace* will save time when you need to edit your work. Full cursor control and extensive formatting ability allow you to make the text look exactly the way you want it to, and a large file size is necessary if you don't want individual documents to be limited to just a few pages. Another important feature is the ability to print to the screen in order to see text in final form before printing. For serious writers, the ability to expand the screen display to 80 columns is an important consideration.

The following special terms are used in this chapter:

block move Moving a section of text (as a unit) to a different location in a document.

formatting commands Commands that specify the layout of text when printed on hard

copy (such as margins, spacing, indenting, ending a page). *Embedded* formatting commands are inserted within text where you want the instructions to be carried out. In *continuous* formatting, text is formatted on the video display just as it will appear when printed.

global edits The ability to have a specified editing command (or string of commands) be carried out at all appropriate locations throughout a file.

horizontal scrolling The ability to shift a block of text horizontally in order to view more characters than can fit on the screen at one time.

report writer A program that generates a report using a designated format and existing data.

search and replace The ability to find a specified character, word, or string each time it appears in the text and replace it with another character, word, or string.

spelling checker A program that compares each word in a document to a built-in dictionary, then indicates and/or corrects possibly misspelled words.

text editor A simple program for editing text files. Usually, a number is displayed in front of each line of text, and lines must be referred to by number.

Description: simple word processor

Sold by: Apple Computer, Inc.
20525 Mariani Ave.
Cupertino, CA 95014
408/996-1010

For: Apple II Plus, IIe

Requirements: disk drive;
printer optional

Price and format: approx.
\$150 disk

Protected: yes

Warranty: 90 days

User group rating: 6.9

Performance: 7

Ease of use: 9

Reliability: 7

Documentation: 8

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Apple Writer is a powerful and versatile text editor that emulates many of the features of more advanced word processing programs. It can change the drudgery of editing to a simple chore.

All types of text can be edited and revised with this program. Corrections can be made for

single characters within a line (eliminating the need to retype an entire line for a minor change), and moving paragraphs is almost as simple as correcting typographical errors. All text is displayed in uppercase on the screen, but lowercase is supported for printing.

A tutorial text file introduces the first-time user to the features of *Apple Writer*. Of all its features, three in particular make it stand out from other text editors. The first is continuous formatting, which means you can type each paragraph as a single line in which the program automatically inserts carriage returns at the appropriate places. The second is search and replace. This option is available through two simple commands and allows you to replace all occurrences of a given word or string of characters with another word or string of characters. The third unique feature is a system recovery routine which protects the user from accidental loss of files.

Apple Writer is not designed for serious writing applications, but it is a versatile text editor that can double as a simple word processor.

WORD PROCESSING BANK STREET WRITER★

Description: text editor
Sold by: Broderbund Software
17 Paul Dr.
San Rafael, CA 94903
415/479-1170
For: Apple II, II Plus, IIe
Requirements: disk drive;
printer optional
Price and format: approx.
\$70 disk

Protected: yes
Warranty: yes

User group rating: 6.7
Performance: 9
Ease of use: 10
Reliability: 9
Documentation: 8

Key:

User group rating: Average of user group ratings
Performance: Rating of program's capabilities
Ease of use: How quickly the user can learn to use the program
Reliability: Consistency of results
Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Many word processing programs are advertised as being so simple that you'll be writing with them in a matter of minutes. *Bank Street Writer* is one such program, but with a little twist: you really will be writing with it in a matter of minutes. It doesn't include some of the fancy commands found in more expensive packages, but it can help you learn about word processing and get some work done at the same time.

When you start the program, it puts you in the WRITE mode. In this mode, you just start typing. Then, after you've entered some text, you can hit the ESC key and switch to EDIT mode. EDIT mode allows you to make changes in the text: insert words, delete words, change characters, and reorganize paragraphs. From EDIT mode, you can move to the TRANSFER mode. TRANSFER mode allows you to save and retrieve files, initialize disks, and print files.

Bank Street Writer doesn't allow fancy justification, hyphenation, file merging, or other advanced features, but it does allow anyone to turn out letters, memos, and homework assignments with ease. For those who are intimidated by word processing, *Bank Street Writer* is a good way to get started.

Description: word processor

Sold by: Artsci, Inc.

5547 Satsuma

North Hollywood, CA

91601

213/985-2922

For: Apple II, II Plus, IIe

Requirements: disk drive,
printer; 80-column card optional,
memory expansion card optional

Price and format: approx.
\$150 disk

Protected: yes

Warranty: 90 days

Overall rating: 8.0

Performance: 9

Ease of use: 5

Reliability: 6

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Magic Window is a simple and inexpensive word processor that allows you to format text up to 80 columns wide without requiring any expensive hardware. It uses the 40-column Apple screen to display a window on a full-width (80-column) page of text. By scrolling back and forth horizontally, it appears as if the typed page is moving across the screen.

Magic Window can also use high-resolution graphics to display a 70-column page with uppercase and lowercase letters. Either this or the window effect described above will allow you to see what a full-width printed page will look like before you print it.

Most of the common word processing commands are supported, and you can embed non-printing control characters in the text to take advantage of any fonts or special effects that your printer supports. The documentation and reference card help you to get started quickly.

The biggest drawback to *Magic Window* is that it won't move large blocks of text easily. Also, the file size is limited, although the addition of a 16K RAM card will help. The program is all loaded into memory at once, which gives it faster response but limits the amount of text that can be entered in one file.

WORD PROCESSING

PFS: REPORT

Description: report writer

Sold by: Software Publishing Corp.

1901 Landings Dr.
Mountain View, CA 94043
415/962-8911

For: Apple II, IIe

Requirements: two disk drives,
PFS: File; printer optional

Price and format: approx.
\$125 disk

Protected: yes

Warranty: 90 days

User group rating: 6.9

Performance: 7

Ease of use: 9

Reliability: 7

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

PFS: Report is a powerful report writer and formatter designed for use with the popular *PFS: File* (see separate review) database. Designed to incorporate features not included in *PFS: File*, *PFS: Report* enables the user to perform mathematical calculations between designated fields and to format printed reports. The program will sort alphanumeric data, with the use of two disk drives.

Learning and using *PFS: Report* is very easy. The command structure is identical with *PFS: File*. The documentation also conforms to the high standards of *PFS: File*. You can select from several print options and formats to display and print data, and specific print formats, once defined, can be saved to disk for later use. One useful feature is the ability to sum and relate tables of data. This enables you to create genuine applications with *PFS: Report*, something not possible in *PFS: File*.

The only faults with this generally excellent product are its relatively high cost (since it must be used in conjunction with *PFS: File*) and the two disk drive requirement for sorting data. *PFS: Report* enhances the value of *PFS: File*.

Description: word processor

Sold by: Hayden Software
Co.

600 Suffolk St.
Lowell, MA 01853
617/937-0200

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$150 disk

Protected: no

Warranty: 90 days

User group rating: 7.0

Performance: 10

Ease of use: 7

Reliability: 9

Documentation: 9

Key:

User group rating: Average of
user group ratings

Performance: Rating of program's
capabilities

Ease of use: How quickly the user
can learn to use the program

Reliability: Consistency of results

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

PIE: Writer is a full-featured word processor for home and business use. Unlike most word processors, *PIE: Writer* is an in-memory word processor, i.e., the entire program is loaded into RAM when it is running. This eliminates the long waits normally associated with disk programs. All the traditional features of word processing are fully supported, including right justification, proportional spacing, block moves, and search and replace. *PIE: Writer* formats text automatically, freeing you from constantly reformatting text while editing. However, it does not provide wordwrap in insert mode.

A HELP screen, with all the principal commands of text editing, is available. In addition, the program includes a disk-based, interactive tutorial, to assist beginners.

PIE: Writer includes a mail merge capability to generate mailing lists, personalized letters, and documents. The program also includes a built-in telecommunications capability to send documents from one computer system to another from within the word processor. All leading 80-column display cards are supported, and *PIE: Writer* can be further customized to support various hardware. As with all of Hayden's professional software, *PIE: Writer* is not copy protected.

WORD PROCESSING SCREENWRITER★

Description: word processor

Sold by: Sierra On-Line, Inc.
Sierra On-Line Bldg.
Coarsegold, CA 93614
209/683-6858

For: Apple II, II Plus, IIe

Requirements: disk drive;
printer optional

Price and format: approx.
\$130 disk

Protected: yes

Warranty: 90 days

User group rating: 6.7

Performance: 10

Ease of use: 10

Reliability: 9

Documentation: 10

Key:

User group rating: Average of
user group ratings

Performance: Rating of program's
capabilities

Ease of use: How quickly the user
can learn to use the program

Reliability: Consistency of results

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

ScreenWriter is a professional word processor that is easy enough for a beginner to understand. It has simple and straightforward commands.

There are two editing formats: INSERT mode and CHANGE mode. The INSERT mode allows you to insert text, moving other text forward. The CHANGE mode allows you to write over the old text, replacing it with new text. A single keystroke switches from one mode to the other.

One nice feature is that words or phrases can be assigned to certain keys. Then, when you need the desired word or phrase, you simply hit the appropriate key. This eliminates repetitious typing. Another good feature is generating form letters from a mailing list, with the option of personalizing any individual letter. Text centering, bold face, and underlining are all supported.

The cursor movement commands are extremely simple. A single keystroke can move the cursor one character, one word, one line, one page, or to the beginning or end of the file.

WORD PROCESSING

★ THE SENSIBLE SPELLER

Description: spelling checker

Sold by: Sensible Software
6619 Perham Dr.
W. Bloomfield, MI 48033
313/977-3869

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$125 disk

Protected: yes

Warranty: none

User group rating: 8.3

Performance: 10

Ease of use: 10

Reliability: 10

Documentation: 10

Key:

User group rating: Average of
user group ratings

Performance: Rating of program's
capabilities

Ease of use: How quickly the user
can learn to use the program

Reliability: Consistency of results

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

If you never won a spelling bee in grammar school and the dictionary is the most used book in your house, *The Sensible Speller* is for you. Designed to quickly identify all misspelled words from a word processor file, *The Sensible Speller* uses *The Random House Dictionary* (Concise Edition).

Misspelled words can be treated in three ways: they can be listed, printed, or marked within the text. Misspelled or unknown words are identified and displayed in the context in which they are used. User-defined words can be added to the dictionary as new words, with the use of two disk drives.

The Sensible Speller comes with a vocabulary of 45,000 words, and it can be expanded to 55,000 words. A supplementary dictionary contains the balance of the words in *The Random House Dictionary*. (The entire dictionary contains approximately 85,000 words.) Other interesting features of *The Sensible Speller* include the ability to readily generate copies and the ability to create an empty dictionary to be filled with specialty words or terms.

The Sensible Speller is a must for anyone who writes.

WORD PROCESSING THE WRITER★

Description: word processor
Sold by: Hayden Software Co.
600 Suffolk St.
Lowell, MA 01853
617/937-0200
For: Apple II, II Plus, IIe
Requirements: disk drive
Price and format: approx.
\$60 disk

Protected: no
Warranty: yes

Overall rating: 9.0
Performance: 9
Ease of use: 10
Reliability: 10
Documentation: 10

Key:

Overall rating: Summation of all ratings factors
Performance: Rating of program's capabilities
Ease of use: How quickly the user can learn to use the program
Reliability: Consistency of results
Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Writer was adapted from *PIE: Writer* (see separate review), a text editor also produced by Hayden. Like *PIE: Writer*, *The Writer* loads the entire program into memory at one time, so response is very quick.

Both 40- and 80-column displays are supported, and a mail merge capability allows the production of form letters. Documents can be transmitted over phone lines from within the program, and a HELP screen is always available at the touch of a key. To assist first-time users, an interactive tutorial is included on the disk.

The Writer is a fast, professional-quality word processor with many useful features.

Because there are many business programs available for them, the Apple II, II Plus, and IIe have become popular small-business computers. These programs include database managers, mailing list programs, electronic spreadsheets, report writers, and accounting packages.

Database managers are versatile programs that sort and organize information entered in the form of records. Each record contains roughly the amount of information that can be written on an index card. After you have entered all of the information you need to work with, the database manager program will selectively rearrange records or generate lists.

Mailing list programs are database managers designed specifically for use with lists of names and addresses. They allow you to sort a list and then print mailing labels.

Electronic spreadsheet programs are the electronic equivalents of an accountant's spreadsheet. They allow you to enter rows and columns of numeric information (usually dollar amounts) and then specify relationships between various rows or columns. If you change a value or a relationship (equation), the resulting changes in other parts of the spreadsheet will be shown immediately. This makes elec-

tronic spreadsheets valuable planning tools.

The following special terms are used in this chapter:

accounting package A program for recording and reporting the results of various types of financial transactions.

cell A location determined by a specific row and column on an electronic spreadsheet.

database manager A program that stores information that can be selectively rearranged to generate answers, lists, or reports.

electronic spreadsheet A program for budgeting or planning in which calculations are made and displayed in a column-and-row format.

field In a database, a section within a record that holds a particular type of information (such as name, zip code, price, etc.).

record In a database, a section within a file that holds all information relating to one member of the file (such as all information regarding a particular customer — name, address, etc.).

report writer or report generator A program that generates a report using a designated format and existing data.

BUSINESS BPI ACCOUNTING SYSTEM ★

Description: small business accounting package

Sold by: BPI Systems
3423 Guadalupe
Austin, TX 78705
512/454-2801

For: Apple II Plus, IIe

Requirements: disk drive;
printer optional

Price and format: approx.
\$395 disk

Protected: yes

Warranty: none

User group rating: 6.5

Performance: 9

Ease of use: 9

Reliability: 10

Documentation: 8

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

BPI Accounting System is a full-featured, comprehensive system for small business accounting. The various modules such as General Ledger and Accounts Receivable can be used separately or as part of a fully integrated accounting system. The documentation is superb and obviously written for the business user who has no prior experience with computers.

One unique and useful feature is the ability to queue commands (automatically execute a series of commands in the system). With the General Ledger package, the user can generate a profit and loss statement or balance sheet at any time. The BPI Accounts Receivable system includes invoicing and can be fully integrated with the General Ledger.

Due to the capacity limitations of Apple disk drives, the BPI system requires some disk-swapping. While some provision has been made to adjust file sizes, the system's capacity is generally limited. There is a provision for security codes to prevent unauthorized access to company records.

BPI Accounting System is a well-planned and comprehensive small business accounting system.

Description: database manager

Sold by: Ashton-Tate
 10150 W. Jefferson Blvd.
 Culver City, CA 90230
 213/204-5570

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.
 \$700 disk

Protected: yes

Warranty: 30 days

User group rating: 8.0

Performance: 9

Ease of use: 2

Reliability: 10

Documentation: 6

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

dBASE II is a sophisticated database that includes a programming language for developing customized applications that will run under the CP/M and MS/DOS operating systems. More complex than menu-driven hierarchical file handlers or database generators, *dBASE II* offers a degree of sophistication rivaling databases on mainframe computers.

dBASE II is a true relational database. Many applications are easier to design with relational databases than the alternative of using programming languages like BASIC or Pascal. You can use *dBASE II* to extract information from one application and use it to create a customized mailing list, presorted and selected according to any number criteria. With *dBASE II* you can also expand or modify applications after they have been written; you don't have to know from the beginning precisely what is needed in the final application. You are not locked into a specific application once data has been entered into the system.

The disadvantages of *dBASE II* are all the result of its considerable capability. File storage tends to require more disk space, and speed of access is slower than with other systems. Ease of use ranges from moderate to difficult, depending on the degree of customization required.

Although this program is very difficult to learn, it is worthwhile. *dBASE II* is not for the average user, but it will be appreciated by businesses with difficult database problems.

BUSINESS DB MASTER ★

Description: database manager

Sold by: Stoneware Inc.
50 Belvedere St.
San Rafael, CA 94901
415/454-6500

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$350 disk

Protected: yes

Warranty: lifetime

User group rating: 6.3

Performance: 10

Ease of use: 8

Reliability: 10

Documentation: 8

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

DB Master, a sophisticated hierarchical database for Apple II and Apple III computers, combines ease of use with powerful data entry and manipulation features.

Several features are incorporated into *DB Master* to make data entry quick and easy. Common data formats — social security numbers, telephone

numbers, and dates — can be selected as special fields. If selected, they automatically format data during entry. Information can be entered, stored, and selectively searched and sorted.

While the database portion of this program is the best available, the report-generating section is a labyrinth of menus. The powerful report writer is able to arrange data in virtually any format, but a detailed study of the manual is required before use.

With *DB Master*, applications are designed on a disk separate from the program disk. Data files are kept on a third disk. While it is possible to use the system with one disk drive, two disk drives are almost required, due to the necessary disk-swapping involved.

DB Master supports the Data Interchange Format (DIF) used to transfer information between many Apple II-based professional software programs. As many as three levels of password protection are available to insure security for important records.

Combining ease of use with a powerful report writer, *DB Master* offers considerable database management power for the home or small business computer user.

Description: architectural design aid

Sold by: Avant-Garde Creations

P.O. Box 30160
Eugene, OR 97403
503/345-3043

For: Apple II, II Plus, IIe

Requirements: disk drive, paddle controllers; printer optional

Price and format: approx. \$30 disk

Protected: no

Warranty: 30 days

Overall rating: 9.0

Performance: 8

Ease of use: 8

Reliability: 8

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

HI-RES ARCHITECTURAL DESIGN is a program which assists in making architectural or design plans. The program uses simple commands to design, store, and print floor plans. (Printing of floor plans may only be possible if you have a screen dump program, depending on what kind of printer you have.)

A labeling feature allows the placement of labels anywhere on the drawing, and dimensional calculations are automatically displayed at the bottom of the screen. The color of lines can be changed for more clarity after they've been drawn.

Seventy-six common shapes, like bathroom fixtures, doors, and stairs, are included in the program. These shapes can be placed anywhere on the screen and moved or rotated by simply pushing the correct key.

The shapes are not correctly proportioned, so the program cannot be used for final floor plans, but it is a useful aid nonetheless.

BUSINESS THE INCREDIBLE JACK★

Description: database manager, word processor, and calculator

Sold by: Business Solutions, Inc.

60 E. Main St.
Kings Park, NY 11754
516/269-1120

For: Apple II, II Plus, IIe

Requirements: 2 disk drives; printer optional

Price and format: approx. \$179 disk

Protected: yes

Warranty: 90 days

User group rating: 6.1

Performance: 9

Ease of use: 9

Reliability: 9

Documentation: 10

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Incredible JACK, from Business Solutions, Inc., is a word processor, a database manager, and a calculator in one integrated package. Until now, this type of package has only been available for the IBM Personal Computer.

The three different sections of *The Incredible JACK* all share the same basic command structure, making the system remarkably simple to learn and use. Another nice touch is the ability to take back your last command (with the ESC key) and undo whatever it did.

Disks can be formatted from within the system, which means that you won't lose hours of work when you try to save it and find that there isn't room on the currently logged disk. The calculator option allows you to create form documents with preset calculation routines, but it is not as versatile as true electronic spreadsheet programs. The biggest problem with *The Incredible JACK*, however, is that it requires the use of both disk drives.

This is a well designed, imaginative package for the Apple. The price is a little high, but when you compare it to the cost of buying a word processor, database manager, and electronic spreadsheet separately, it's a bargain.

Description: database manager

Sold by: Software Publishing Corp.

1901 Landings Dr.
 Mountain View, CA 94043
 415/962-8911

For: Apple II, II Plus, IIe

Requirements: disk drive; printer optional

Price and format: approx. \$125 disk

Protected: yes

Warranty: 90 days

User group rating: 8.8

Performance: 7

Ease of use: 7

Reliability: 8

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

PFS: File, the first part of the database system from Software Publishing, is a forms-oriented database for the Apple II and Apple III computers. This program is very useful for home users who need to have filing capabilities.

PFS: File brings some unique features to microcomputer data storage. *PFS: File* allows data fields to be any size, up to the available storage space. A simple address list can include detailed travel directions; a physician's appointment log can include detailed medical history. Information can be stored, retrieved, searched, and printed at will. There is a feature allowing additional blank pages to be appended to a particular file.

Standard column displays are supported on the Apple II Plus and IIe (80-column displays are available with the Apple III). Only one database is permitted per disk.

One drawback to the system is its inability to share information with other programs. In addition, no report writing or sorting capability exists within *PFS: File*. Another program, *PFS: Report* (see separate review), is required to sort data or generate formatted reports from data stored with *PFS: File*.

Because no previous knowledge or special skills are required, this is an excellent database for unconventional uses and simple professional applications.



Description: general ledger
Sold by: State of the Art, Inc.
3183-A Airway Ave.
Costa Mesa, CA 92626
714/850-0111

For: Apple II, II Plus, IIe
Requirements: two disk
drives, printer, 80-column
card

Price and format: approx.
\$400-600 disk

Protected: yes
Warranty: 90 days

User group rating: 6.8
Performance: 10
Ease of use: 9
Reliability: 10
Documentation: 10

Key:

User group rating: Average of
user group ratings
Performance: Rating of program's
capabilities
Ease of use: How quickly the user
can learn to use the program
Reliability: Consistency of results
Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

This accounting package is the most technologically advanced, practical business package available for the Apple. Eight modules make up the complete system. The General Ledger module is considered the heart of the system because it can be used alone or integrated with any of the other modules, such as Accounts Receivable, Sales Invoicing, and Accounts Payable.

General Ledger is based on a double entry accounting system. The program produces daily, weekly, or monthly reports, including the General Ledger Detail Report, Trial Balance, Income Statement, and Balance Sheet. It provides control reports that are necessary for a complete audit trail and requires that you print copies of all of them before updating permanent files. This results in a deluge of paper and can be annoying at times.

State of the Art General Ledger is ideally suited for a small business. Even when working with very large files, the requested information appears on the screen in a fraction of the time that other accounting programs take. Highly recommended for those who need a powerful accounting system.

Description: spreadsheet

Sold by: VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

For: Apple II, Ile

Requirements: disk drive;
printer optional

Price and format: approx.
\$250 disk

Protected: yes

Warranty: 90 days

User group rating: 7.8

Performance: 9

Ease of use: 9

Reliability: 10

Documentation: 8

Key:

User group rating: Average of
user group ratings

Performance: Rating of program's
capabilities

Ease of use: How quickly the user
can learn to use the program

Reliability: Consistency of results

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

VisiCalc (VISible CALCulator) is of immense use to anyone who does accounting, sales projections, budgeting, or economic modeling. In fact, anyone who works with figures will love *VisiCalc*.

The *VisiCalc* screen is a window on a 254-row by 64-column spreadsheet. The window can reveal different

parts of the spreadsheet on command. Each cell (intersection of a row and column) can be given an alphanumeric label or a numeric value for quick reference, and you can enter formulas to specify mathematical relationships between the various cells on the spreadsheet.

The real power of *VisiCalc* lies in its ability to vary assumptions in a model and then recalculate the new model in a matter of seconds. This "what if" ability makes sophisticated financial or business planning — previously confined to mainframe computers — a reality at a fraction of the price. Spreadsheets can be made to model everything from the stress analysis on a bridge to a profit and loss for the corner grocery store. *VisiCalc* supports a print function to reproduce the spreadsheet in hard copy.

VisiCalc has been revised and updated several times, mostly to reflect improvements that competitors have included in their programs. The current 3.3 version is still the best electronic spreadsheet available.

Description: data base manager

Sold by: VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

For: Apple II, Ile

Requirements: disk drive;
clock card optional

Price and format: approx.
\$250 disk

Protected: yes

Warranty: 90 days

User group rating: 6.2

Performance: 9

Ease of use: 6

Reliability: 10

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

VisiDex is designed for business people who do not need all the power of *VisiFile*. It is a simplified database designed to operate the way people do. In addition to a price and level of performance appropriate for home applications, *VisiDex* incorporates several unique features designed for personal data keeping, and it even tracks a daily calendar to help schedule events.

VisiDex is an unstructured database, permitting information to be stored and retrieved in a variety of forms. Extensive cross-referencing is available to assist in finding information anywhere in the system. The program uses a system of keywords, and it can list all of the information associated with a given keyword at any time. Simply type the keyword, and information from the entire file is instantly available.

VisiDex is easy to use, easy to learn, and serves well for both business and home uses. Like all time management software, this program requires constant use to be worthwhile.

Description: database manager

Sold by: VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

For: Apple II, Ile

Requirements: disk drive

Price and format: approx.
\$250 disk

Protected: yes

Warranty: 90 days

User group rating: 5.8

Performance: 8

Ease of use: 6

Reliability: 9

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

VisiFile is a full-featured electronic filing system used primarily for professional applications. Business information can be quickly and easily stored, retrieved, and organized, or displayed at the touch of a key. In addition, information (including mailing labels) can be searched, sorted, calculated, or printed at the user's command. One very

powerful feature of *VisiFile* not found in database systems costing considerably more is the ability to reformat or reorganize a file without reentering data. A powerful report-generator lets you design custom reports and forms.

With *VisiFile*, as with all the members of the VISI family, the user can pass information to other compatible products. Data from your *VisiFile* can be passed to *VisiCalc* (see separate review) for financial modeling and then graphed using *Visi-Plot* (see separate review) for a powerful visual display. *VisiFile* uses a command line similar to *VisiCalc* and is extensively documented. The extensive file compatibility with the VISI series is its best feature.

VisiFile is a fine program for the range of work it was designed to handle. The only problem is that it was designed as a light- to medium-range database — stronger than necessary for home recipe filing, but not strong enough for heavy-duty business.

BUSINESS VISI PLOT

Description: business graphics

Sold by: VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

For: Apple II, Ile

Requirements: disk drive;
printer optional

Price and format: approx.
\$200 disk

Protected: yes

Warranty: 90 days

User group rating: 7.0

Performance: 8

Ease of use: 8

Reliability: 10

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

VisiPlot is a sophisticated graphics program that lets you plot data points using the high-resolution color graphics capability of the Apple. The standard chart types can be selected from the command menu, and both the data points and the graphs themselves can be edited. Chart types include line charts, bar

charts, area graphs, high-low close graphs, x-y plots, and pie charts.

In addition to its powerful editing capabilities, *VisiPlot* lets you store data in two formats: as an array of data points or as a representation of the finished chart for later display or printing. The print option supports several popular dot-matrix printers with high-resolution graphics capabilities as well as color plotters and the IDS Prism color printer. *VisiPlot* even automatically scales graphs and allows multiple labels as well as movable titles. The program's utility is further enhanced by its DIF file compatibility, which allows the exchange of data between *VisiPlot* and other programs in the VISI series (e.g., *VisiDex* and *VisiCalc*).

Using *VisiPlot*, professional-quality color graphic presentations to enhance reports are available at a fraction of the time and effort previously required. Many home and educational uses have been found for this program, and it is an excellent adjunct to *VisiCalc*.

VisiPlot was the first plotting graphics package, and although newer programs have more bells and whistles, it still performs admirably.

Description: project planner

Sold by: VisiCorp
 2895 Zanker Rd.
 San Jose, CA 95134
 408/946-9000

For: Apple II, IIe

Requirements: disk drive;
 printer optional

Price and format: approx.
 \$300 disk

Protected: yes

Warranty: 90 days

Overall rating: 9.0

Performance: 9

Ease of use: 7

Reliability: 9

Documentation: 9

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

VisiSchedule, from VisiCorp, is a sophisticated project planner for professionals involved in tracking and scheduling complex projects from planning to completion. Manpower requirements, resource allocation, and cost ceilings can all be reliably tracked. As with VisiCorp's popular *VisiCalc* program (see separate review),

predictions can be made based on various assumptions.

VisiSchedule employs critical path analysis, which means that complex tasks are broken up into smaller critical tasks. These simpler tasks can then be more effectively managed and controlled. Each subtask and its associated deadlines are graphically represented in the overall project schedule, and the system automatically takes holidays and slack time into account when calculating manpower requirements.

The 40-column Apple display screen cannot display an entire schedule at once, but scrolling is used to move the screen window to any part of the schedule. Project milestones are shown on the schedule, and a complete copy including calendar time charts and summary reports can be displayed or printed.

VisiSchedule is fully compatible with all programs in the VISI series. It is an excellent planning and management tool for any business or organization working on a wide range of projects.

Home economics programs are not as plentiful and as popular as software for business and entertainment. They still meet a need, however. It may take less time to jot a grocery list on paper than it does to enter the items into your computer, but an accounting software package can take that grocery bill and help budget your family's finances over several months — and keep records for the Internal Revenue Service. The key to these programs is using them wisely, so that they serve your particular needs.

The number of programs available is limited, but they are useful. You'll find home finance and accounting packages, tax preparation programs, inventories, mailing lists, and recipe files. With careful planning you can use them to balance a checkbook, calculate mortgage payments, or itemize your personal possessions. Investors can gain a great deal from investment analysis — if only to protect themselves against losing more than usual to other investors already using computers.

The choice of software for running your home is a personal one that should be made carefully. As you look at software for home use, ask yourself if you would really take the time to turn on the computer and load the program described. Can it save you time by repeating a chore you dislike? Will it

perform enough calculations to make it worthwhile? When you've answered these questions, you've determined your home software needs.

Most home management and finance programs are of essentially the same types as those used in business, except that they are specifically adapted for home use. You might also want to take a look at the business programs reviewed in this book, since several of them could be applied to home finances and record keeping.

The following special terms are used in this chapter:

accounting package A program for recording and reporting the results of various types of financial transactions.

computerized magazine A magazine containing articles and programs that comes stored on disk or cassette, rather than on paper.

home financial planner An accounting program specifically designed for planning and recording personal finances.

income tax preparation program A program that tracks tax-related income and expenses and/or makes computations required for standard income tax forms.

HOME THE HOME ACCOUNTANT

Description: home financial planner

Sold by: Continental Software
11223 S. Hindry Ave.
Los Angeles, CA 90045
213/410-3977

For: Apple II Plus, IIe

Requirements: disk drive,
printer

Price and format: approx.
\$75 disk

Protected: yes

Warranty: 90 days

User group rating: 7.3

Performance: 9

Ease of use: 9

Reliability: 10

Documentation: 9

Key:

User group rating: Average of
user group ratings

Performance: Rating of program's
capabilities

Ease of use: How quickly the user
can learn to use the program

Reliability: Consistency of results

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

More than a simple checkbook-balancing program, *THE HOME ACCOUNTANT* is a complete financial planning tool for the personal computer user. *THE HOME ACCOUNTANT* will reconcile your checkbook and do a great deal more.

It can simultaneously maintain and reconcile up to five checkbooks, balance 100 budget categories, and prepare a personal balance sheet and a monthly income statement at any time.

Current or previous months' budgets can be compared to assist in financial planning. The system can record up to 1000 transactions per data disk and access additional data disks when necessary.

Should you grow tired of facts and figures, *THE HOME ACCOUNTANT* provides a high-resolution graphics output to display your personal financial condition. Only the lack of an optional 80-column display capability limits this excellent package. Combining ease of use with a powerful report-generating capability, *THE HOME ACCOUNTANT* is a must for serious personal financial planning.

HOME TAX PREPARER

Description: income tax preparation

Sold by: Howard Software Services
8008 Girard Ave., Suite 310
La Jolla, CA 92037
619/454-0121

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$250 disk

Protected: no

Warranty: 90 days

User group rating: 5.1

Performance: 10

Ease of use: 5

Reliability: 10

Documentation: 8

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Designed for use by both individuals and professionals, *TAX PREPARER* turns the Apple into a surprisingly sophisticated tax consultant. True "what if" analysis is available. The program's screen format closely resembles the familiar form 1040 format. All mathematical computations are performed automatically by the program. All

you have to do is fill in the blanks just as you would on the traditional paper form. But be forewarned that editing changes do not automatically recalculate totals.

TAX PREPARER calculates standard 1040 tax forms (including schedules A,B,C,D,E,F,G,R & RP, SE, and TC) and several forms (including 2106, 2210, 3468, 4562, 4726, 4797, and 5695). All forms and schedules including the standard 1040 can be saved and printed. You can examine several different tax strategies to determine the optimum tax plan for you.

Changes and additions can be made quickly, and errors and mistakes can be corrected just as quickly. Except for form 1040, the computer-generated printouts from *TAX PREPARER* can be submitted directly to the IRS. *TAX PREPARER* is even able to print on a standard form 1040 for submission to the IRS. Yearly tax updates are available from the publisher for a small fee.

Well designed and documented, *TAX PREPARER* is a helpful aid at tax time.

Description: computerized magazine

Sold by: Window, Inc.
469 Pleasant St.
Watertown, MA 02172
617/923-9147

For: Apple II, II Plus, IIe

Requirements: disk drive;
paddle controllers optional

Price and format: approx.
\$30 per disk

Protected: no

Warranty: 15 days

Overall rating: 10.0

Performance: not applicable

Ease of use: 7

Reliability: not applicable

Documentation: 9

WINDOW is a computer magazine that comes on disk. One edition of *WINDOW*, for example, provides the user with eight articles on the disk. In addition to an editorial giving permission to experiment and explore, the disk includes two reviews of other software packages, two games, one feature article with its related feature program, and a *VisiCalc* column that shows how *VisiCalc* can be used to write multiplication tables.

The first item on the menu is the editorial. Next are the games. *Wealth* is a Monopoly-type game in which you buy and sell real estate. The second game is *Tracer*, a

memory game. *Tracer* is an audiovisual form of the handheld Simon games that have been popular for several years.

There are also two software reviews on the disk. The review of *Geography Search* (by McGraw-Hill) shows excerpts from the program and describes its applications for classroom settings and individual use. The second review is of *Brodberbund's Dueling Digits*, an arcade-type math game that requires the player to balance equations. Game paddles are required to play the excerpts on this disk, but the reader can look at the board even if paddles aren't available.

The hottest item on this disk has to be the feature program, *Notebook*, a database program to keep track of just about anything. There is a brief description of what a database is. The disk allows the user to make a backup copy of the *Notebook* program. The feature article, *Adventurefile*, a crime-solving adventure, uses *Notebook* to keep track of the details of the case.

The subscription to *WINDOW* is somewhat expensive, but considering the usefulness of the database, the enjoyment of the games, and the information from the reviews, it's a good buy.

CHAPTER 4 EDUCATION

There has been a revolution in computer educational software. Until very recently, most educational programs were little more than text games. Recent releases, however, are much more sophisticated. They use the computer's graphics and sound capabilities to hold the student's interest and are available for almost any subject. These programs can be used to continue school instruction at home or to provide supplemental education on new subjects.

There are several different types of educational software. One of the simplest and most common is the **drill-and-practice program**. In this type of program, a variety of problems requiring the same basic skill are presented, and students must solve them as quickly and accurately as they can. The student must already understand the basic concepts.

Another type of program, the **tutorial**, is used to help students acquire new skills. These programs present new concepts one step at a time, and users can progress at any pace they feel comfortable with.

Although most of the software in this chapter is intended for children, there are also several programs that can be helpful for adults. Children and adults alike can benefit from programs that teach touch typing and computer literacy.

The following special terms are used in this chapter:

drill-and-practice program

A learning program that gives the student exercises or problems, assuming the student already understands the basic skills or concepts involved.

early-learning program A program for young children that teaches basic skills (such as letters, numbers, counting) and simple concepts (such as above, below, left, right).

learning game A learning program in which the student practices skills or learns concepts within the context of a game.

problem-solving or logic game A program in which the user must apply logic skills to solve a problem, mystery, or puzzle.

simulation A program in which the computer lets you imitate the experience of some real-life situation (such as flying an airplane or running a factory). You make choices as you try to perform the task, and the computer tells you what would happen if you made those choices in real life.

tutorial program A program that teaches a new skill or concept, going through the subject one step at a time (such as learning typing, a foreign language, or BASIC programming).

Description: math tutorial and drill

Sold by: EduWare Services Inc.

28035 Dorothy Dr.
Agoura, CA 91301
213/706-0661

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx. \$50 disk

Protected: yes

Warranty: 30 days

Overall rating: 7.0

Graphics and sound: 7

Difficulty: nonreaders

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Arithmetic Skills is designed to both teach and give practice in the four basic arithmetic operations (addition, subtraction, multiplication, and division).

For each operation, the child is shown several examples of how problems should be done and is then encouraged to work a problem. The problems are presented in increasing levels of difficulty. If the child

makes a mistake, the example/teaching process is repeated, and the child is given another problem to work independently.

One feature of this program is that the child or a parent can access the system setup to vary certain factors in the program. It is possible to change the amount of time allowed to answer each problem, the number of problems given before moving to the next level, and the number of examples given.

The screen display is clear, precise, and uncluttered. As one-digit addition problems are presented, the same number of apples are displayed alongside to help the child understand the concept of addition. Similar aids are used for the other operations. A hand with an extended index finger points to the part of the operation being worked on at the time. The top row of the computer keyboard (the row containing all the number keys) is displayed across the bottom of the screen.

This program does not include lively entertainment or arcade-style noises and displays. *Arithmetic Skills* uses a no-nonsense approach to improving computational skills.



EDUCATION

BATTLING BUGS AND CONCENTRATION

Description: math games

Sold by: Milliken Publishing
Co.

1100 Research Blvd.
St. Louis, MO 63132
314/991-4220

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 30 days

Overall rating: 5.0

Graphics and sound: 8

Difficulty: nonreaders

Documentation: 8

This package consists of one disk with two games: *Battling Bugs* and *Concentration*.

The support material looks very promising. The packaging is bright and colorful, and the user's guide includes several pencil-and-paper activities that can be done without a computer. Also included is a game card which can be marked with wax crayon or water-soluble marker and then erased.

The confusing directions for *Battling Bugs* dampen the initial enthusiasm for this package. (Instructions given are for the Atari version, not the Apple version, which causes fur-

ther confusion!) It is possible to figure out how to play *Battling Bugs* while using the computer.

The game consists of two columns of bugs advancing toward each other. Columns are of varying length with one column representing positive numbers and the other representing negative numbers. As the bugs collide, they are erased, and only those left unmatched continue. The player must pick an appropriate positive or negative number from the list at the top of the screen. The object of the game is to match the columns of bugs exactly so that all are obliterated and none reach the opposite goal line.

Concentration is easier to figure out. Underneath letter cards are fractions, given either in standard fraction form ($1/2$) or as colored blocks. The player must pick two letter cards and state whether the fractions found there are equal. Points are awarded for correct responses. If equal fractions are uncovered, the player may continue that turn.

The "manager" for this software allows the child, parent, or teacher to view the results of all games played and all attempts made.

Description: arcade-style math drill

Sold by: Softsmith Corp.—
The Software Guild
1431 Doolittle Dr.
San Leandro, CA 94577
800/341-4000

For: Apple II, II Plus, IIe
Requirements: disk drive
Price and format: approx.
\$25 disk

Protected: yes
Warranty: 30 days

Overall rating: 7.0
Graphics and sound: 6
Difficulty: beginning readers
Documentation: 5

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

In *The Big Math Attack*, a rocket ship moves across the screen and drops bombs that look suspiciously like mathematical equations (like $8 + 1$ or $9 + 3$). The user must defend the city graphically represented on the screen by typing in correct answers to the equations. If the child answers correctly before an equation lands

on the city, the city is saved. If the answer is not correct, the equation and correct answer are printed in large digits on the screen.

The score is kept at the bottom of the screen. The faster the equation is destroyed, the more points the user scores. As more equations are answered correctly, the speed of the falling equations increases. If an equation hits the city, it is scored as a landing. Five landings or 5000 points scored, whichever happens first, ends the game.

The operation used in the equations (addition, subtraction, multiplication, or division) and the level of difficulty can be set before each round begins. The game's sound effects can also be turned off.

The game offers practice in the four basic mathematical operations and will appeal to primary school children. One concern is the large point total required (5000) to end a game. The time required to reach a score that high may make the game tiresome to young players. However, the package seems reasonably priced and error-free.



EDUCATION BUMBLE PLOT

Description: elementary geometry

Sold by: The Learning Company

445 Middlefield Rd.,
Suite 170

Menlo Park, CA 94025
415/328-5410

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 90 days

User group rating: 6.9

Graphics and sound: 10

Difficulty: beginning readers

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Bumble Plot contains five activities that give the student practice using positive and negative numbers, number lines, and number grids. The games included are Trap and Guess, Bumblebug, Hidden Treasure, Bumble Art, and Roadblock.

Trap and Guess requires the user to find a number on a number line.

Bumblebug is a dot that jumps from intersection to intersection on a five-line number grid. The object of Bumblebug is to limit the bug's room to move by positioning traps on the grid. To place a trap, the user must give horizontal and vertical coordinates. The Bumblebug continues to move. Whenever it jumps into one of the traps, the user wins.

Hidden Treasure and Bumble Art are also played on a number grid. In Hidden Treasure, the user tries to find the treasure by guessing points on the grid. Hints are given after each incorrect guess. In Bumble Art the user identifies points that are shown on a grid. When the user identifies points by the correct coordinates, a picture is drawn from dot to dot. Users can make their own pictures by naming points on the grid.

Roadblock is the most challenging of the five activities. A bank robber (represented by a flashing dot) is trying to escape, and the user tries to trap the robber by moving roadblocks on the number grid. This is a complicated game, and the directions given on the screen could be clearer.

This software package is a good one. Numbers and letters are large and easy to read. Directions for most of the activities are simple and clear. Only minimal keyboard skills are needed.

Description: graph reading and number skills practice

Sold by: The Learning Company

445 Middlefield Rd.,
Suite 170

Menlo Park, CA 94025
415/328-5410

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 90 days

User group rating: 7.1

Graphics and sound: 9

Difficulty: beginning readers

Documentation: 8

Bumble Games is a series of six colorful games for children aged four to ten. The numbers and letters are large and easy to read. The six games are Find Your Number, Find the Bumble, Butterfly Hunt, Visit from Space, Tic Tac Toe, and Bumble Dots.

The object of each game is to find something hidden in the screen display. In Find Your Number, the child is presented with a number line (either horizontal or vertical) and asked to find a number. Clues to the number's location are given both with words (such as "the number is greater than 2") and with arrows pointing in the correct direction.

In Find the Bumble, Butterfly Hunt, and Visit from Space, something is hidden in a grid. The child picks number pairs (like 2,2) or letter and number pairs (like A,2) to identify points on the grid. After each guess, clues for the next guess are given with both arrows and words.

Tic Tac Toe presents an enlarged Tic Tac Toe board, and contestants identify intersections by using number coordinates. Four points in a straight line win a game. The cat claims all games in which there is no winner.

Bumble Dots is probably the most creative game in the package. Once again, a grid is presented, but this one is a larger, 10x10 grid. Points on the grid are illuminated. When the child correctly identifies the point, a line is drawn connecting the dots. In this manner, pictures are created. You can make your own pictures, using up to nine dots, by choosing the proper option and giving coordinates. A friend can then draw the same newly created picture by identifying the right dots.

This software was carefully constructed with youngsters in mind. It is well-conceived, colorful, neatly packaged, and entertaining.

EDUCATION

COMPUTER LITERACY INTRODUCTION— PLATO EDUCATIONAL SOFTWARE

Description: basic computer information

Sold by: Control Data Publishing Co.

P.O. Box 261127
San Diego, CA 92126
800/233-3784 (in California
800/233-3785)

For: Apple II Plus, IIe

Requirements: disk drive,
joystick

Price and format: approx.
\$50 disk

Protected: yes

Warranty: yes

Overall rating: 8.0

Graphics and sound: 7

Difficulty: intermediate
readers

Documentation: 10

This package of computer literacy activities is a good introduction for anyone with no prior computer knowledge. It presents six easy-to-understand and easy-to-use lessons that introduce concepts of computer uses, computer limitations, the nature of computers, the history of computers, and the effect computers have on our lives.

The structure and content of the lessons are impressive. Concrete, specific examples are given with simple but effective

graphics and sound displays. There is not a lot of activity on the screen with this package. Screen activity is used to inform, rather than entertain.

The package is especially good for the "computer-anxious" or "machine-anxious" person. The activities are low-key and easy to understand. Students who have played a lot of video games or who have used computers at school probably already understand a lot of the concepts presented in this package.

The activities supplied in the accompanying booklet are good. So is the glossary of computer terms. Permission to copy the booklet is granted for educational purposes only. The quizzes and historical summaries are helpful for anyone studying computer literacy.

Because this package will probably be used only once by each family member, there are other software packages that will compete more strongly for the family's software dollar. If money is no object, if uneasiness about computers needs to be overcome, or if there are many potential users (as in a school or club), this software is a good investment.

Description: crossword puzzle maker

Sold by: Softsmith Corp.—
 The Software Guild
 1431 Doolittle Dr.
 San Leandro, CA 94577
 800/341-4000

For: Apple II, II Plus, IIe

Requirements: disk drive;
 printer optional

Price and format: approx.
 \$50 disk

Protected: yes

Warranty: 30 days

Overall rating: 5.0

Graphics and sound: 6

Difficulty: intermediate
 readers

Documentation: 6

Key:

Overall rating: Summation of all
 ratings factors

Graphics and sound: Quality and
 aesthetics of each

Difficulty: The reading level
 required to use the program

Documentation: Quality of
 printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

This package is for crossword puzzle fans. It allows the user to make puzzles that range in difficulty from the extremely simple to the elaborate.

The user can either set the number of vertical and horizontal boxes desired or simply give the computer the words and let the machine set the size of the puzzle display. If a word given does not fit in the puzzle at the moment, the computer holds the word and finds space for it later. After all words are entered, then clues are entered. The puzzle can be saved on the maker disk or a storage disk, or can be printed out as hard copy.

Trying to play the puzzle on screen may present problems. The procedure for on-screen play of a puzzle is not adequately explained in the documentation.

EDUCATION CROSSWORD MAGIC 2.0 ★

Description: crossword puzzle maker

Sold by: L & S Computerware
1008 Stewart Dr.
Sunnyvale, CA 94086
408/738-3416

For: Apple II Plus, IIe

Requirements: disk drive;
printer optional

Price and format: approx.
\$50 disk

Protected: yes

Warranty: 90 days

User group rating: 7.8

Graphics and sound: 9

Difficulty: intermediate
readers

Documentation: 7

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: The reading level
required to use the program

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Crossword Magic 2.0 uses high-resolution graphics to display a crossword puzzle that you create with your own words and imagination. Words and clues are entered using simple keyboard commands. The newly created puzzle can be saved on a storage disk for later use. When the puzzle is recalled, it is displayed with

dazzling screen graphics as a full-size crossword puzzle. The puzzle can be played directly on the screen from the keyboard, or it can be printed out using a graphics printer. The printout of the puzzle is large and easy to read. A smaller version of the puzzle with the answers filled in can also be produced.

Teachers who use crossword puzzles as teaching tools can prepare enough puzzles in one evening to keep students busy for weeks. Creating puzzles is as simple as typing in the word and watching the computer interconnect it with the other words you've chosen. If you're not happy with the way the puzzle looks, you can have the machine show you other possibilities using a simple keyboard command. With just as much ease and speed, you can type in clues as the program prompts you with all the horizontal and vertical words. These clues can be printed handsomely under the blank puzzle.

Crossword Magic 2.0 can be used even more dramatically as a learning tool by letting children program their own puzzles and clues.

EDUCATION
DELTA DRAWING LEARNING
★ **PROGRAM**



Description: computer graphics
Sold by: Spinnaker Software Corp.
215 First St.
Cambridge, MA 02142
617/868-4700
For: Apple II Plus, IIe
Requirements: disk drive; printer optional
Price and format: approx. \$50 disk

Protected: yes
Warranty: 30 days

User group rating: 7.6
Graphics and sound: 10
Difficulty: nonreaders
Documentation: 9

Delta Drawing is a graphics program for children. Children just think it's a fun way to draw, but at the same time, they are learning something about programming.

The Delta cursor will move only at the user's command, but when it moves, it can draw! Learning the commands for moving the cursor is easiest when using the Delta Drawing Command Summary card included in the package. This card quickly tells how to draw, move without drawing, turn, erase, select color, and fill a shape.

In addition to the Delta Drawing Command Summary card, several other practical items are included. There are seven other cards with sample programs and pictures for the user to try, directions on saving programs to a separate disk, and many other useful tidbits of information. The plastic-coated cards should stand up well to use by children.

Delta Drawing is a great first program for children, but the whole family can share in the fun. It is easy to learn. Very little reading or typing is required to produce impressive pictures. Pictures created with *Delta Drawing* can be simple and direct or complex and subtle, depending on the artist's style and patience.

When creating with *Delta Drawing*, a person can be systematic and logical or randomly rambunctious. The systematic artist will also learn some problem-solving skills along the way — such as how to organize a task first and then execute it step-by-step.

This package would be a welcome addition to any family's software library. One warning about the printers: pictures can be printed only if the Grappler interface card (or another equivalent piece of hardware) is in the printer.



EDUCATION DEMOLITION DIVISION

Description: arcade-style arithmetic game

Sold by: Developmental Learning Materials

One DLM Park
Allen, TX 75002
800/527-4747

For: Apple II, IIe

Requirements: disk drive; paddle controllers optional

Price and format: approx. \$34 disk

Protected: yes

Warranty: 6 months

User group rating: 7.0

Graphics and sound: 8

Difficulty: nonreaders

Documentation: 9

This software package appears to be designed for school use, but it can be used at home by those willing to invest some time.

Demolition Division uses a game format to teach division facts for the digits 0 to 9. The game can be played using either game paddles or the keyboard, but it's easier with the paddles.

Five tanks are displayed on the left of the screen. Each tank carries a division problem whose quotient is a one-digit number. On the right side of the screen are five cannons, each protected by a brick wall. Beside one cannon is a one-

digit number. When this number is the correct answer for the problem on the opposite tank, the user can destroy the oncoming tank by pressing the spacebar to fire the cannon. If the tank hits the cannon before the cannon hits the tank, then that round ends.

Only the cannon beside which the number is displayed can be fired. To move to a higher or lower cannon, the user must press the arrow keys. To change the number, the user types the number desired. If the number shown is too large, the cannon shell will fly over the tank. If the number is too small, the shell will fall short of the tank.

The required manipulation of the arrow keys, number keys, and the spacebar makes playing the game somewhat difficult. To some children, this could prove challenging; to others, frustrating. The software does include a section that allows the user to control the skill level (or speed), problem range (range of quotients), and playing time.

The materials in the package include a 16-page teacher's manual, student record sheet, progress chart, improvement strategy chart, nine worksheets, and a package of division flashcards. The manual spells out an entire ten-step student program.

EDUCATION EARLY GAMES FOR YOUNG CHILDREN



Description: preschool activities

Sold by: Counterpoint Software, Inc.

4005 W. 65th St.
Minneapolis, MN 55435
800/328-1223

For: Apple II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$30 disk

Protected: yes

Warranty: 30 days

User group rating: 7.3

Graphics and sound: 7

Difficulty: nonreaders

Documentation: 5

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Early Games For Young Children contains nine games for preschoolers. The software is designed so that children can use the programs with little assistance from adults.

The nine games include Match Numbers, Match Letters, Count, Alphabet, Add, Subtract, Compare Shapes, Names, and Draw.

In Match Letters and Match Numbers, a letter or number is displayed on the screen. The child must match the letter or number on the screen with the correct key on the keyboard. In Add and Subtract, groups of blocks are used to present addition and subtraction problems.

Count displays a number of blocks on the screen which the child must count. The child presses the matching number key on the keyboard. Alphabet asks the child to tell which letter comes next in the alphabet and offers help if the answer is wrong. Compare Shapes displays four shapes, one of which is different. The child must identify the different shape.

Names and Draw are more complicated. Names asks an adult (or the child) to enter a name. Then the child must type in that name. After the child types in the correct letters, the computer displays the name in enlarged letters. Draw allows a child to draw lines on the screen simply by touching any key.

These activities are repetitious. A child plays the game but never receives any payoff. On the positive side is the large number of activities. With nine different games, there is plenty to keep a young child occupied.

EDUCATION ERNIE'S QUIZ★

Description: early-learning games

Sold by: Apple Computer, Inc.
20525 Mariani Ave.
Cupertino, CA 95014
408/996-1010

For: Apple II Plus, IIe

Requirements: disk drive,
paddle controllers

Price and format: approx.
\$50 disk

Protected: yes

Warranty: 90 days

User group rating: 5.9

Graphics and sound: 10

Difficulty: beginning readers

Documentation: 10

Ernie's Quiz contains four programs for children aged four to seven. The first program, called *Guess Who*, shows low-resolution representations of nine *Sesame Street* characters. The object is to guess the identity of the characters as quickly as possible. The characters are moderately difficult to spot — enough to be fun. Spelling a character's name perfectly isn't required to get credit for a correct answer.

Jelly Beans is a counting game. A random number of jelly beans appear in a glass canister. The object is to count them correctly. It's not so hard if the child counts carefully.

Face-It may be the best game on the disk. It requires game paddles. With *Face-It*, the child can create some of the funniest faces ever seen. Parts can be added or changed; faces can be made happy or sad. It doesn't require lots of skill, but it's very entertaining.

The last program is *Ernie's Quiz*, and it seems like Ernie wrote the hints. In this game, the child is given three clues to guess which Muppet is being described. The game is very patient. Faithful *Sesame Street* followers have a decided advantage over non-fans.

In all of these programs, there is quiet fun. The child can develop learning skills like counting, relating parts to wholes, and making deductions from clues. Fortunately, the fun of the programs is what the child notices most.

The booklet that comes with these games gives very clear, concise directions. A nice surprise is the assorted activities included that can be played when the computer is turned off. These activities relate in some way to the concepts presented in the computer games.

This package is a good introduction to family computing. Children who watch *Sesame Street* will have an edge over their parents.

Description: early-learning games

Sold by: Spinnaker Software Corp.

215 First St.
Cambridge, MA 02142
617/868-4700

For: Apple II Plus, IIe

Requirements: disk drive

Price and format: approx. \$35 disk

Protected: yes

Warranty: 30 days

User group rating: 6.0

Graphics and sound: 9

Difficulty: nonreaders

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

FaceMaker includes three activities. The first is similar to the Mr. Potato Head game. The child is presented with a large variety of facial features. The child chooses features by pressing the spacebar and the return key. After each choice, the face and its new features are displayed on the screen.

The second activity lets the child animate the face by using the letters W, F, S, C, T, and E (for wink, frown, smile, cry, stick out tongue, and wiggle ears). Each motion is accompanied by its own sound. By entering several commands, the child actually builds a small program. A dash may be inserted between commands for a momentary pause in the execution of that program.

In the third activity in *FaceMaker*, a face displayed on the screen makes a series of movements. The child is challenged to reproduce the same motions in the same order by typing the correct sequence of keys (again, using the letters W, F, S, C, T, and E). This activity helps develop memory skills.

FaceMaker is colorful and fun. It is also a valuable learning tool. This is a worthwhile software package for children.

EDUCATION THE FACTORY

Description: factory simulation

Sold by: Sunburst Communications

39 Washington Ave.
Pleasantville, NY 10570
914/769-5030

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$49 disk

Protected: yes

Warranty: lifetime

Overall rating: 6.0

Graphics and sound: 8

Difficulty: intermediate
readers

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Factory is a game for learning strategies of problem-solving. It requires the user to analyze a process, work backwards, and determine a sequence.

The user first experiments with what the three different machines in the factory can do. The graphic representations of the machines are good, and

the machines move as you would expect them to. One machine punches holes, one rotates the product, and one paints stripes.

In the Build a Factory section, the user can create a product by calling on the machines to work in different combinations. There is even an option for letting a friend try to duplicate the first user's product.

In the third level, Make a Product, the user tries to duplicate a product made by the program. There are three difficulty levels: easy, medium, and hard. The user must analyze the steps and the order of the steps necessary to produce this product in order to duplicate the process. This kind of thinking is certainly one of the components of good problem-solving skills.

A set of materials is included with the program. There are several suggestions for using the software, a recap of the instructions, and some ideas for classroom uses. A Factory Product Sheet helps the user keep up with the machines necessary to produce the desired product.

This program gives the user some practice with the concepts involved in manufacturing a product. It also lets the user play with old products and create new ones.

Description: logic puzzles
Sold by: The Learning Company
 545 Middlefield Rd.,
 Suite 170
 Menlo Park, CA 94025
 415/328-5410
For: Apple II, II Plus, IIe
Requirements: disk drive;
 joystick optional
Price and format: approx.
 \$45 disk

Protected: yes
Warranty: 90 days

User group rating: 7.9
Graphics and sound: 10
Difficulty: beginning readers
Documentation: 10

Key:

User group rating: Average of user group ratings
Graphics and sound: Quality and aesthetics of each
Difficulty: The reading level required to use the program
Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Gertrude's Puzzles is a series of logic puzzles. Before the games begin, the child is given plenty of practice with picking up things, moving things, and dropping them.

To solve the puzzles, the child must recognize the differences and similarities in colors and shapes of puzzle pieces. In some of the puzzles, the child

must concentrate on finding similarities. In others, the child must find one and only one difference. In still others, the child must find one difference for some puzzle parts and two differences for other parts. *Gertrude* helps the child in some rooms by showing which parts are in the wrong places. The parts that are misplaced fall out of their incorrect places.

In some of the games, visual hints to the puzzle solution are given. In other games, the hints are only verbal rules. All the puzzles are fun to solve, and the prize for solving an easy puzzle is just as good as the prize for solving a difficult one. A correct solution to a puzzle means a visit from *Gertrude*. She brings the winner a treasure and then deposits it in the Treasure Room. Winning 12 prizes gives the user the distinguished title of Master Puzzler.

The user's manual for *Gertrude's Puzzles* is very clear and easy to understand. A map of all the rooms in *Gertrude's Puzzles* shows the user how to navigate from room to room. (This will probably be more useful to adults who aren't usually as eager to investigate on their own!)

Description: adventure-style logic game

Sold by: The Learning Company

545 Middlefield Rd.,
Suite 170

Menlo Park, CA 94025
415/328-5410

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick optional

Price and format: approx.
\$45 disk

Protected: yes

Warranty: 90 days

User group rating: 7.6

Graphics and sound: 10

Difficulty: beginning readers

Documentation: 9

Gertrude's Secrets is an adventure-type game and much more. The child maneuvers through rooms in Gertrude's world by using four keys on the keyboard. By using the spacebar, the child can pick up or release an object. A complete map of Gertrude's world is included in the user's manual.

The child first maneuvers through some rooms which give directions and practice in how to move around and pick up objects. The next stop is Gertrude's Room. The child picks up Gertrude (a goose) and carries her to any room the child chooses. In the rooms are various puzzles. Puzzles are

classified as loops, trains, or arrays. After entering a room, the user releases Gertrude.

Gertrude flies away and then returns with the pieces for the puzzle.

In the room adjoining the puzzle is a room showing a similar puzzle pattern and its solution. In the next adjoining room is a verbal explanation of how to work the puzzle. The child must pick up a piece of the puzzle and place it in the proper box. If the puzzle piece is incorrectly placed, it will fall out of the box.

Once the puzzle is solved, Gertrude brings a piece of the treasure for the child. When Gertrude is picked up, the treasure automatically goes to the Treasure Room. After solving six puzzles, the child becomes a Secret Master and gets a "special message."

This game has two other intriguing aspects. In the New Puzzle Piece Room the user may choose a different shape to use in the puzzles. The Shape-Edit room allows the user to change any piece of the puzzle by erasing or drawing parts of the puzzle piece.

This package is well written. It offers a challenge to the child's sense of logic and gives just enough clues to make it workable. The graphics are pleasing and colorful. In short, this is an excellent package for children.

EDUCATION THE GREAT MAINE TO CALIFORNIA RACE

Description: geography game

Sold by: Hayden Software Co.

600 Suffolk St.

Lowell, MA 01853

617/937-0200

For: Apple II Plus, IIe

Requirements: disk drive

Price and format: approx.

\$30 disk

Protected: yes

Warranty: 90 days

Overall rating: 7.0

Graphics and sound: 7

Difficulty: intermediate
readers

Documentation: 6

Key:

Overall rating: Summation of all
ratings factors

Graphics and sound: Quality and
aesthetics of each

Difficulty: The reading level
required to use the program

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

which state to enter next. To help in these choices, a full map of the United States is included in the instruction manual. On random occasions, a player may be asked a bonus question about Hawaii or Alaska. A correct answer in this case moves the lucky player ahead one entire state.

If an opponent is not readily at hand, you can play against the computer. While the computer never gives an incorrect answer to a question, neither does it get a chance to answer bonus questions. For this reason, it is possible for a mere human to thrash the computer soundly! In any case, the first one to California wins.

The graphics of this package are acceptable and sound is kept to a minimum. Questions are all of a geographical nature (rivers, capitals, state birds and flowers, and so on).

The Great Maine to California Race is a competition between two race cars crossing the lower 48 states of the United States. In order to cross a state, the user must answer a number of multiple-choice questions on geography. Correct answers move the racer ahead, but incorrect answers move the racer backwards. From time to time, each contestant must choose

EDUCATION JUGGLES RAINBOW

Description: early-learning game

Sold by: The Learning Company
545 Middlefield Rd.,
Suite 170
Menlo Park, CA 94025
415/328-5410

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$30 disk

Protected: yes

Warranty: 90 days

User group rating: 7.0

Graphics and sound: 10

Difficulty: nonreaders

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Juggles is a clown who teaches youngsters about ABOVE and BELOW and LEFT and RIGHT. Juggles is very patient, giving the child lots of practice on each directional concept before any "testing" is done. If the child makes two mistakes during the checkup portion, Juggles moves the child back to the practice section. No comments are made

about the switch back to more practice; it just happens.

To simplify the computer keyboard, there are two card-board strips in each package. The long one fits across the keyboard to separate ABOVE and BELOW. The short one goes up and down on the keyboard to separate LEFT and RIGHT. Any key in the correct quadrant (except the spacebar) is an acceptable response. The spacebar moves the child on to the next game or activity.

A page labeled "Just for Adults" explains the purpose of the disk: to help children prepare for school. Concepts presented include relating horizontal to vertical planes; eye tracking left to right; shape and pattern development; discriminating b,p,d, and q; spatial awareness; matching colors; recognizing opposites; words as directions; counting; and symmetry. These concepts are sometimes difficult to present to children. Juggles does it easily and with lots of fun.

A parent or older child should show a three-year-old how to use this package the first time. After that, young children will be able to use it on their own.

Description: computer introduction

Sold by: Muse Software
 347 N. Charles St.
 Baltimore, MD 21201
 301/659-7212

For: Apple II Plus

Requirements: disk drive

Price and format: approx.
 \$35 disk

Protected: yes

Warranty: yes

User group rating: 6.8

Graphics and sound: 9

Difficulty: novice

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Know Your Apple helps a brand new Apple computer user begin understanding the machine. This is not an introduction to computer programming, but rather a setup instruction course. No prior computer knowledge is required. Clear, high-resolution pictures display the many parts of an Apple. The area under discussion flashes for easy recognition.

The keyboard and all of its functions are described. Every important part of the computer is highlighted and clearly explained. The two best sections of this program deal with the inside of the Apple and the mystery of the disk drives. The owner is guided in the proper placement of different internal boards, the place to plug in the joystick, and even the correct location for a lowercase adapter. The section about disk drives clearly explains how to operate the drives. It also explains how to format a disk and how to record data.

Packaged in the shape of a miniature Apple computer, *Know Your Apple* includes a manual that is simple, clear-cut, and printed in large type for nonstrain reading. It also contains a five-step photo outline for the initial setup of the hardware.

New users of the Apple will find this program an invaluable tool for understanding the care of an Apple computer. More importantly, *Know Your Apple* demystifies the machine so the average nontechnical person can enjoy using the computer.

EDUCATION MASTERTYPE

Description: typing tutor game
Sold by: Scarborough Systems, Inc.
25 N. Broadway
Tarrytown, NY 10591
914/332-4545
For: Apple II, II Plus, IIe
Requirements: disk drive
Price and format: approx. \$40 disk

Protected: yes
Warranty: 30 days

User group rating: 8.1
Graphics and sound: 7
Difficulty: intermediate readers
Documentation: 6

MasterType takes a novice typist through 18 different typing lessons using a game format. The object of the program is to improve typing speed and accuracy. After brief instructions are presented on the screen, the game begins. The user's command ship appears in the center of the screen. From each corner of the screen come attacking missiles. The object is to type the letters or words displayed in the corners of the screen before the missile from that word hits the command ship. Pressing the spacebar after correctly typing each word destroys the incoming missile. The words displayed in the corners are only letters in the beginning level, but things rap-

idly begin to get more difficult. Difficulty factors include using the shift key in combination with other keys.

Both score and speed are tracked by the computer, and messages are printed out giving the user the results after several waves of missiles or after three hits.

The game aspect of the program is challenging and entertaining, but the instructions need improvement. More guided practice should be given to the user before each game segment begins. Instruction is given only by a page of text displayed on the screen. This important teaching function of the software could be done more creatively and in more depth.

An interesting and valuable aspect of this software is that it allows users to write their own lessons and store them either on the master disk or a blank disk. It should be noted here that the master disk is not write-protected, so care should be taken to avoid accidental erasure.

This software package is enjoyable and, if approached seriously and diligently, should lead to improved typing skills.

EDUCATION METEOR MULTIPLICATION

Description: arithmetic game

Sold by: Developmental

Learning Materials

One DLM Park

Allen, TX 75002

800/527-4747

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.

\$34 disk

Protected: yes

Warranty: 6 months

User group rating: 6.4

Graphics and sound: 8

Difficulty: intermediate
readers

Documentation: 9

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: The reading level
required to use the program

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Meteor Multiplication is a multiplication drill package that combines the challenge of an arcade game with practice in the basic multiplication facts. It comes with lots of non-computer materials to help parents and teachers monitor the progress of a learner or a group of learners.

The user commands the space saucer in the center of the

screen. Meteors are approaching from the edges of the screen. The user must destroy the burning rocks before the saucer is hit. To destroy a meteor, the user must match the number in the space saucer (answer) to the equation on the meteor (problem) and hit the spacebar. The number can be changed by typing in a different number from the keyboard. The direction of the shot can be changed by hitting the left and right arrow keys.

If the user destroys all of the meteors on the screen before the runtime of this game is up, more meteors take their places. After each run of the game, the user's score is displayed (in terms of hits and misses), along with the high score of the session.

Although the disk includes only this one game, if a child needs independent practice in multiplication facts, and if the parent wants the non-computer materials provided with the software to assist the instruction, this software package should be considered. It disguises what might be considered monotonous drill as an exciting and fast-moving game.

Description: early-learning games

Sold by: Apple Computer, Inc.
20525 Mariani Ave.
Cupertino, CA 95014
408/996-1010

For: Apple II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$50 disk

Protected: yes

Warranty: 90 days

Overall rating: 9.0

Graphics and sound: 9

Difficulty: nonreaders

Documentation: 10

Mix and Match is a software package created by Children's Television Workshop (CTW) and Apple Computer. The stars of this package are Jim Henson's Muppet characters.

In *Mix and Match*, (the first activity and the title of the entire package), six Muppet characters are displayed. The user can build characters by putting together different tops, middles, and bottoms (such as Oscar's head, Ernie's body, Big Bird's feet). The computer then gives a name to the new character.

In *Animal*, the user teaches the computer facts about animals. The computer stores these new facts in its memory and uses them to formulate new questions. The game shows a child

how a computer's memory stores more as the child gives it more and more information.

Layer Cake presents a cake of up to six layers on a plate that is too small. Two empty plates are beside the cake. The object is to move the cake to a large plate one layer at a time. At no time can a large layer be placed on a smaller one. The user must logically figure out the moves. The computer counts the number of moves taken. The child chooses the size of the cake (from three to six layers).

Raise the Flag is a letter and word guessing game. At the bottom of the screen all the letters of the alphabet are displayed. At the top of the screen are flagpoles with a flag raiser standing beside them. The object of the game is to guess a word from a list of food words or nature words. Users can also make up their own word lists. Seven incorrect guesses are allowed. If a letter guessed is in the word, the flag raiser raises that letter on the correct flagpole.

The user's guide contains many activities that reinforce the concepts presented in the computer games.

Description: early-learning game

Sold by: The Learning Company
545 Middlefield Rd.,
Suite 170
Menlo Park, CA 94025
415/328-5410

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx. \$40 disk

Protected: yes

Warranty: 90 days

User group rating: 5.3

Graphics and sound: 10

Difficulty: beginning readers

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Moptown Parade is a game for six- to ten-year-olds that helps them recognize the differences between similar-looking objects. The objects used are all Moppets, cute little creatures that come in a variety of sizes, colors, and shapes.

There are four traits that the child must look for in each Moppet: (1) whether it is tall or

short; (2) whether it is fat or thin; (3) whether it is red or blue; and (4) whether it is a Gribbit or a Bibbit. Bibbits have big feet and big noses but no tails, while Gribbits have little feet, no noses, and tails.

Seven different games are included in *Moptown Parade*, each one requiring the child to compare the differences between various Moppets. In *Make My Twin*, for example, one Moppet is displayed on the screen and the child must generate another identical one by answering four questions about the displayed Moppet. If incorrect answers are given, the program will help the child answer correctly.

The seven games get progressively more interesting and difficult, each one building on the basic concepts of same and different. Only a few keys are used in the responses, and the graphics are easy to recognize and understand. A simple reward is always given for a correct answer. *Moptown Parade* is a simple game that is very appropriate for young children.



EDUCATION READING SKILLS

Description: reading tutorial

Sold by: Softsmith Corp.—

The Software Guild

1431 Doolittle Dr.

San Leandro, CA 94577

800/341-4000

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.

\$30 disk

Protected: yes

Warranty: 30 days

Overall rating: 8.0

Graphics and sound: 7

Difficulty: intermediate
readers

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Reading Skills is a reading tutorial program that can be customized for any reading skill level. It consists of four sections to help readers with (1) letter recognition, (2) word recognition, (3) synonyms and antonyms, and (4) sentence comprehension.

In the letter recognition section of the program, three letters

are briefly displayed on the screen and then erased. The user then attempts to type the same three letters on the keyboard. The second section of the program is just like the first, but with words displayed instead of letters.

In the third section, a word is displayed along with four other words below it. The screen is then erased, and the user must enter either a synonym or antonym for the first word, choosing from among the four words below it.

The fourth option is a question-and-answer game. A sentence is flashed on the screen, and then a question is presented; the answer to the question will be a word from the sentence.

In any of the sections, correct answers speed up the process and incorrect answers slow it down. In addition, even more flexibility is provided by the System Generator option, which allows the display times and number of questions to be changed. The System Generator can also be used to add new words and sentences to the program. *Reading Skills* is a versatile educational program.

Description: logic game
Sold by: The Learning Company
 545 Middlefield Rd.,
 Suite 170
 Menlo Park, CA 94025
 415/328-5410

For: Apple II, II Plus, IIe
Requirements: disk drive;
 joystick optional
Price and format: approx.
 \$50 disk

Protected: yes
Warranty: 90 days

User group rating: 7.5
Graphics and sound: 10
Difficulty: beginning readers
Documentation: 10

Key:

User group rating: Average of user group ratings
Graphics and sound: Quality and aesthetics of each
Difficulty: The reading level required to use the program
Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Rocky's Boots is an educational game that introduces the concepts of electricity and computer logic at a very basic level. It is completely user-controlled, i.e., the user determines what will happen in the game.

Rocky is a raccoon who will do a special dance for anyone who can score 24 points in one of his games. To score points, the user must build a machine that will kick certain objects out of a line of objects parading across the screen. A set of parts is available for building the machine, and each individual part is introduced and explained before building begins.

Practice time is available while the user is constructing the machine. This gives the user a chance to experiment without penalties and develop a complete understanding of the parts used in the machine. The parts include AND gates, OR gates, NAND gates, and NOR gates, which are all basic components of electrical logic circuits.

The best feature of *Rocky's Boots* is that the user is always in control. Also, the practice sessions encourage independent learning and help children develop confidence in their ideas. *Rocky's Boots* is a unique and valuable educational program.

EDUCATION SPELLING AND READING PRIMER ★

Description: reading comprehension drill

Sold by: EduWare Services Inc.

28035 Dorothy Dr.
Agoura, CA 91301
213/706-0661

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx. \$40 disk

Protected: yes

Warranty: 30 days

Overall rating: 9.0

Graphics and sound: 10

Difficulty: beginning readers

Documentation: 10

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Spelling and Reading Primer is exactly what the name implies: a spelling bee, with a simple reading comprehension section. It is intended for young children, but the difficulty can be adjusted for older children.

The spelling section works in two ways, as a tutorial or as a drill. The reading primer section requires the user to match displayed words with one of three pictures. The graphics are excellent.

The best feature of *Spelling and Reading Primer* is the option called the Learning Manager. This allows a parent or teacher to choose the units (groups of words with similar difficulty and characteristics) to be presented and the number and length of the trials. Then, when the child uses the disk, it will be tailor-made.

At the beginning of the program, a flower is drawn and a bee starts printing the logo. Unfortunately, the bee draws half of the words from right to left, which can be confusing for children with reading and writing directionality problems.

Spelling and Reading Primer is a good package, worthy of recommendation to teachers and parents alike.

Description: counting tutorial

Sold by: Weekly Reader

Family Software

245 Long Hill Rd.

Middletown, CT 06457

203/347-7251

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.

\$40 disk

Protected: yes

Warranty: 90 days

User group rating: 7.3

Graphics and sound: 10

Difficulty: nonreaders

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Stickybear Numbers is a program that helps youngsters learn about numbers and counting. It shows the relationship between the symbols for numbers and the value of numbers.

A number is displayed on the screen along with a group of many birds, planes, balls, trucks, or other easily recognizable objects. The user can then choose to count forward or backward. As the number on the screen changes, so will the number of objects. This introduces the concepts of more and less, although the symbols and words for these concepts are not presented.

The graphics for the various objects are very good, and there seems to be an endless supply of pictures to count; a young user could sit counting for hours without becoming bored. Another nice effect is that when the numeral 0 is displayed, *Stickybear* is sometimes shown licking a spoon or licking his chops.

There are no complicated menus to read or choices to make, so even very young children can use it without help. If you have children that are just starting to learn to count, this is an excellent program for them to use.

EDUCATION TIC TAC SHOW

Description: game show simulation

Sold by: Computer Advanced Ideas
1442-A Walnut St., Suite 341
Berkeley, CA 94709
415/526-9100

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 1 year

Overall rating: 10.0

Graphics and sound: 9

Difficulty: intermediate
readers

Documentation: 10

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions


Excellent: 8-10; Good: 5-7; Poor: under 5

Tic Tac Show is an educational game based on the television game show *Tic Tac Dough*. One or two can play, although it is more enjoyable with two players.

The screen displays a large tic-tac-toe board with each of the nine squares numbered. A moderator named Carol is seated at a desk next to the board. The players choose one of 14 different categories of questions, and then the questions alternate between the two players.

For each correct answer, the player gets to choose a square to be filled in. Three squares in a row wins the game. An incorrect answer gives that square to the opposing player, who then is presented with a different question.

The best feature of this program is the ability to add new categories of questions or modify existing questions. The program can thus be made easy enough or challenging enough for any player. Questions that pertain to a specific area of study can even be used. Because of this customizing feature, however, the disk is not write-protected. This means that you can accidentally erase the program itself, so care must be taken when adding new categories.

Tic Tac Show is a fun and versatile educational program. 

Description: verb usage drill

Sold by: Developmental

Learning Materials

One DLM Park

Allen, TX 75002

800/527-4747

For: Apple II, Ile

Requirements: disk drive

Price and format: approx.

\$34 disk

Protected: yes

Warranty: 6 months

Overall rating: 9.0

Graphics and sound: 8

Difficulty: intermediate
 readers

Documentation: 10

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Verb Viper is a game that teaches children to use the correct verb tense in sentences. The program provides a subject, and the child must select the proper verb from several choices.

When the game starts, a viper appears at the top of the left side of the screen, and a group of four caves, stacked one on top of another, is shown to

the right. Below the viper is displayed the subject part of a sentence. Various verbs come out of the lowest cave and move past the viper's tongue; the child must hit the spacebar when the correct verb is at the tip of the viper's tongue. A correctly timed response causes the verb to be eaten by the viper, and the user scores a point. If the correct verb comes out, but the child doesn't hit the spacebar, the verb bounces off the viper's tongue and the child must try again the next time it appears.

After five correct responses, the difficulty increases. The viper's neck grows longer, and the verbs come out of the second cave instead of the first. This means that the verbs are not on the screen for as long a time before passing the viper's tongue, and the child must choose the correct one more quickly. The difficulty steadily increases until verbs are coming out of the top cave.

Verb Viper helps children learn proper sentence construction and is fun at the same time. It is intended for six- to ten-year-olds.

CHAPTER 5 NETWORKING

Communications is one of the fastest growing areas of computer technology. New networks are being started almost every day, and the Apple owner can easily gain access to most of them by using a terminal program. The latest stock reports, movie reviews, and airline schedules are available, along with up-to-the-minute news and weather. You can even shop by catalog or read sections of the *New York Times*, *World Book Encyclopedia*, the Bible, or the latest congressional legislation. The Source and CompuServe are the two most popular information services, but there are now many others as well. You can also get information and communicate with other computer owners through private bulletin board systems.

To take advantage of these services, you need a terminal program and a modem. Modems for personal computers usually have a fixed baud rate (the rate at which information is transmitted and received), and the terminal program must operate at the same baud rate.

The following special terms are used in this chapter:

baud rate The speed at which data is transmitted (in bits per second) either between two computers or between a computer and a peripheral.

buffer Any device that temporarily stores information during data transfer, either to delay the time of transmission or reception, or to compensate for differences in rates of data flow between devices.

bulletin board system A private network that lets users send and receive electronic messages and exchange computer programs by modem.

download In networking, to transfer a computer program into your own system from another computer.

duplex A method of communicating between two devices. In *full duplex*, data can be transmitted and received simultaneously. In *half duplex*, data can be sent in only one direction at a time.

modem A device that converts computer data into audible signals and also converts audible signals back into computer data, so that information can be sent from computer to computer over telephone lines.

terminal program A communications program that allows your computer to exchange information with other computers through a modem.

upload In networking, to transfer a computer program from your own system to another computer.

Description: terminal program

Sold by: Southeastern Software

7743 Briarwood Dr.
New Orleans, LA 70128
504/246-7937

For: Apple II, II Plus, IIe

Requirements: disk drive, modem

Price and format: approx. \$65 disk

Protected: no

Warranty: not written

User group rating: 7.3

Performance: 10

Ease of use: 9

Reliability: 10

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

DATA CAPTURE 4.0 doesn't do everything that a communications program can do, but what it does it does very well. It lets you communicate with any other computer that transmits and receives asynchronous serial data, which includes almost every computer of interest to Apple computer users. All of the program options are available from a single menu, making *DATA CAPTURE 4.0* very easy to use.

After you have configured the program properly, it will place you in Enter mode whenever you start running it. In this mode, you can enter text into a capture buffer and then save it or transmit it. If you're hooked up to another computer, any data you receive will also be entered into the capture buffer (hence the name of the program).

In addition to the main menu, there is a simple set-up menu that you can use to change specifications like the baud rate (110 or 300), the duplex setting (full or half), and the capture buffer status (on or off).

DATA CAPTURE 4.0 is a simple, elegant terminal program that can be learned in about half an hour. It takes the confusion out of computer telecommunications and is very highly recommended for Apple owners with no previous experience in this area.

NETWORKING VISILINK

Description: financial information service

Sold by: VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

For: Apple II, Ile

Requirements: disk drive, modem

Price and format: approx. \$250 disk

Protected: yes

Warranty: 90 days

Overall rating: 10.0

Performance: 8

Ease of use: 9

Reliability: 10

Documentation: 10

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

gional sales analysis for a product, or the economic model for a progressive recession in non-election years.

Data Resources, Inc. provides the sophisticated business and financial data forecasting, which can be downloaded and used with *VisiCalc*. Everything from GNP projections to estimated labor costs are available to assist in strategic business planning.

With *VisiLink*, you need a modem to transfer information over ordinary telephone lines. Information is provided through Data Resource Data-Kits, separate templates, or models designed for *VisiCalc*. They are purchased through DRI and received over the telephone.

You can integrate your own private data with the *VisiLink* system to create a powerful financial planning tool. In addition, *VisiLink* supports integration with VisiCorp's entire VISI series (including *VisiPlot/Trend*) and several databases.

VisiLink combines the power of a mainframe computer database with the efficiency of a desktop computer and a spreadsheet program. A complete selection of economic information from local, regional, and national sources is available through *VisiLink*. The information offered includes such things as the past 20 years' re-

There are hundreds of strategy and adventure games available for the Apple, and this chapter reviews the best of them.

Many classic adventure games are included. Adventure games come in two types: text adventures and graphic adventures. In text adventure games, a written description of each scene is provided. In graphic adventures, a computer rendition of each scene is displayed on the screen, usually with a brief description below it. Both types require you to enter text commands (short phrases in English) to progress to the next scene.

Also included in this chapter are simulations of pinball, card games, and board games like chess, along with sports games and tactical games.

The following special terms are used in this chapter:

graphic adventure A game in which the adventurer's experiences are shown in graphic displays.

role-playing game An adventure game in which the players assume the roles of characters in the adventure. The characters develop various qualities over a long period of play.

simulation A game in which the computer lets you imitate the experience of some real-life

situation or lets you imitate the play of a board game, card game, or sport.

tactical game A game that challenges logic and thinking skills.

text adventure A game in which the adventurer's experiences are described in text only (rather than pictured through graphics).

STRATEGY GAMES

ALI BABA AND THE FORTY THIEVES

Description: graphic adventure

Sold by: Quality Software
21601 Marilla St.
Chatsworth, CA 91311
213/344-6599

For: Apple II, II Plus, IIe

Requirements: disk drive;
paddle controllers optional

Price and format: approx.
\$33 disk

Protected: yes

Warranty: 90 days

User group rating: 6.8

Graphics and sound: 10

Difficulty: novice

Documentation: 9

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Ali Baba and the Forty Thieves is fashioned from the traditional Arabian Night stories. It is a high-resolution color, role-playing adventure game. The player assumes the character of Ali Baba.

Ali and the thieves are trying to rescue Princess Buddir Al-Buddor, the kidnapped daughter of the sultan. The obstacles they must overcome include magical swords, bandits, and more than 100 monsters. Chests full of gold, guarded by monsters, are hidden throughout the playing areas. During the game, the computer plays the delightful music of *Scherazade*. One of the places the music is heard is at a mystical rune holding a secret message. Ali Baba must escape before the runes explode.

The program's author has included a challenge for nonviolence in this game: Ali can rescue the princess without ever striking any person or monster. If this is accomplished, the screen flashes "Congratulations!" The nonviolent theme of this introductory level game makes it very good for children. It's also suitable for large groups since each player can assume the identity of one of the forty thieves.

STRATEGY GAMES

BENEATH APPLE MANOR- ★ Special Edition

Description: graphic adventure

Sold by: Quality Software
21601 Marilla St.
Chatsworth, CA 91311
213/344-6599

For: Apple II, II Plus

Requirements: disk drive

Price and format: approx.
\$30 disk

Protected: yes

Warranty: 90 days

User group rating: 6.8

Graphics and sound: 10

Difficulty: novice

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Beneath Apple Manor is a solitaire fantasy-adventure game. One of the best, it was originally produced in low-resolution graphics. This special edition has high-resolution graphics, and improved playing features including faster play, more magical items, and better graphics.

The game is about the Apple family. After years of terroriz-

ing the neighborhood, the family has passed away, and the old manor house is now empty. Rumors tell of an underground dungeon where the family left behind the magical focus of their power and your goal in the quest: a large golden apple of unknown potential.

The player begins with four characteristics: strength, intelligence, dexterity, and body. These determine the player's capabilities. Trading experience points gained by killing monsters and finding treasures in the maze increase totals in each category. Death is not permanent in *Beneath Apple Manor*. A character may be resurrected, but only to the last recorded characteristics. Whenever your character leaves the dungeon to trade experience points, re-equip, or to go to a deeper level, the option of purchasing a brain scan is available. A brain scan is a saved game.

The program's documentation is excellent. Playing instructions are clear and concise, and the manual contains tips for advanced players, lists of commands, and characteristics of each monster.

STRATEGY GAMES

BERMUDA RACE

Description: sailing simulation

Sold by: Howard W. Sams & Co., Inc.
4300 W. 62nd St.
Indianapolis, IN 46268
800/428-7267

For: Apple II, II Plus, IIe

Requirements: disk drive, joystick or paddle controllers, BASIC

Price and format: approx. \$30 disk

Protected: yes

Warranty: 30 days

User group rating: 7.0

Graphics and sound: 7

Difficulty: intermediate

Documentation: 6

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Bermuda Race is a highly detailed simulation of the annual 600-mile yacht race from Newport to Bermuda. This is not an arcade game, but one that tests your sailing skills. You command an open ocean racing boat patterned after the 1982 record-breaking Nirvana. You can race against another player or try to beat the current game record.

This simulation includes a highly detailed tutorial to introduce dedicated landlubbers to such concepts as luff, leach, and adjusting the centerboard. You learn how to tack into the wind, decide on your next heading, lower or raise the centerboard, and rig the proper amount of sail for varying sea conditions.

To complete the atmosphere, unforeseen accidents and unpredictable weather can (as in real life) thwart the best laid plans. As you review your current status, you input new commands through the keyboard or with controllers. This all takes a long time and could bore all but ardent racing fans.

The graphics displays in *Bermuda Race* are superb, with several high-resolution, on-screen navigation charts. This excellent simulation combines a unique theme with a high degree of realism.

Description: graphic adventure

Sold by: MUSE (Micro User Software Exchange) Company

347 N. Charles St.
 Baltimore, MD 21201
 301/659-7212

For: Apple II Plus, IIe

Requirements: disk drive; joystick or paddle controllers optional

Price and format: approx. \$30 disk

Protected: yes

Warranty: yes

User group rating: 7.3

Graphics and sound: 9

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Castle Wolfenstein combines the challenge and excitement of an adventure with the fast pace of an arcade game. Using text, high-resolution graphics, and even sound effects mimicking German voices, *Castle Wolfenstein* is a minor classic among computer games.

The setting is an ancient German castle pressed into service by the Nazis as a maximum security prison for Allied prisoners of war. A dying captive hands you a gun and bullets, and requests you to escape from the stronghold with the secret plans for Operation Rhinegold.

As in traditional adventures, you move through rooms finding various items necessary for survival and escape. Army guards and the dreaded SS patrol the escape-proof fortress. Game commands are through the keyboard, game paddles, or joystick. Unlike in most adventure games, in *Castle Wolfenstein* you have to quickly aim and shoot your pistol, arcade-style, to survive the desperate quest.

With each new game the castle is redrawn to offer a different set of challenges. Should you escape alive, there's greater difficulty in subsequent games. *Castle Wolfenstein* is first-rate entertainment.

STRATEGY GAMES CAVERNS OF FREITAG

Description: fantasy adventure

Sold by: MUSE (Micro User Software Exchange) Company

347 N. Charles St.
Baltimore, MD 21201
301/659-7212

For: Apple II, IIe

Requirements: disk drive

Price and format: approx. \$30 disk

Protected: yes

Warranty: yes

Overall rating: 8.0

Graphics and sound: 8

Difficulty: intermediate

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Freitag is a dragon who lives in the caves of the Enchanted Isles. Freitag likes to eat tough adventurers, so he subjects you to a dazzling array of monsters and traps in *Caverns of Freitag*. In this sword and sorcery fantasy game, you are a Thechu warrior trying to free the isles from the dragon's reign of terror. You have only a sword and a bow to defend yourself against monster hordes of electric moths, serpents, flamebats, burbleblorts, invisoids, wizards, griffins, and deceptive mimics.

The game controls in *Caverns of Freitag* take quite a few minutes to master. Movement and fighting is quite complicated, and a high degree of finger coordination is necessary. The biggest flaw of this challenge is the absence of a save game or pause feature. With no stopping point until the end of the game, only the hardest of adventurers will be able to finish.

Slaying the dragon at the end of the caverns does not finish the game. The weary player must then fight all the way back to the inn. Unlike usual adventures, this game can be replayed over and over again.

STRATEGY GAMES

CAVES OF OLYMPUS

Description: space adventure
Sold by: Howard W. Sams &
Co., Inc.

4300 W. 62nd St.
Indianapolis, IN 46268
800/428-7267

For: Apple II, II Plus, IIe
Requirements: disk drive;
joystick or paddle controllers
optional

Price and format: approx.
\$30 disk

Protected: yes
Warranty: 90 days

Overall rating: 8.0
Graphics and sound: 6
Difficulty: intermediate
Documentation: 7

Key:

Overall rating: Summation of all
ratings factors

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The high-resolution, graphic space adventure *Caves of Olympus* will keep you on the edge of your seat. Olympus is a planet at the center of an empire ruled by a Vario-500 robot named Anson Argyris. The planet is being invaded by Larens trying to conquer the empire, and the palace's defenses have broken. A secret ship hidden in the treacherous caves below the palace is the only means of escape.

The player is Anson Argyris, an egg-shaped robot 50 centimeters tall. Anson may be disguised by different masks that let it pass for a human. The pitfalls and traps are so numerous that even the best adventurer needs many attempts to solve this difficult puzzle. A variety of fierce robot guards, aliens, and pursuing Larens are frequently met in the caves. (The aliens are described as unsuccessful adventurers trapped in the maze.)

Caves of Olympus is one of the most difficult science-fiction adventures. It is definitely not for novices. The puzzles are sometimes unnecessarily obscure. The graphics are weak, but several sequences have special visual effects, and the atmosphere is enhanced by frequent sound effects.

STRATEGY GAMES CHESS 7.0

Description: chess simulation

Sold by: Odesta Corp.

3186 Doolittle Dr.
Northbrook, IL 60062
312/498-5615

For: Apple II, II Plus, IIe

Requirements: disk drive;
paddle controllers optional

Price and format: approx.
\$70 disk

Protected: yes

Warranty: 90 days

User group rating: 8.9

Graphics and sound: 7

Difficulty: novice

Documentation: 9

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Chess 7.0 is the Apple computer version of the classic game of chess. Written by Larry Atkin, one of the programmers of the first mainframe chess games, *Chess 7.0* plays a convincing match and incorporates several advantages.

Chess 7.0 will suggest a possible move for its human opponent, play one or both sides of a game, and even allow a player to rescind a move. Example moves or problems can be recreated using the change option, and games in progress may be saved to disk.

With eight levels of difficulty and a mode to let the computer study a position indefinitely, the program challenges chess lovers of various skill levels. Not the strongest chess program available for the Apple II, *Chess 7.0* plays a convincing game nonetheless. Like human players, *Chess 7.0* thinks during an opponent's turn as well as its own and makes few obvious blunders.

The cursor-directed movement system of *Chess 7.0* is easy to learn, but it may quickly become repetitious. Good documentation includes game play and rules, a short history of the game, and some free advice. *Chess 7.0* plays first-rate chess.

Description: combat simulation

Sold by: Adventure International

P.O. Box 3435
 Longwood, FL 32750
 305/862-6917

For: Apple II, II Plus, IIe

Requirements: program recorder or disk drive, two complete computer systems (including modems), joystick

Price and format: approx. \$50 cassette or disk

Protected: yes

Warranty: 1 year

User group rating: 6.0

Graphics and sound: 5

Difficulty: intermediate

Documentation: 4

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Commbat is a unique game of strategic conflict, with the speed and excitement of an arcade game. If that isn't enough, *Commbat* is designed for play between two modem-equipped computers! At last — telegaming on your Apple II or any similarly equipped Atari or TRS-80 computer.

The setting is a combat zone complete with remote-controlled tanks, rockets, lasers, land mines, and decoys. Even reconnaissance aircraft are available for daring runs over enemy lines. Various weapons have different ranges and capabilities, while the pressure of your opponent's attacks constitutes fast-paced excitement. Should it be necessary, the ultimate weapon, a nuclear tipped ICBM, is at both players' disposal. Find the enemy's base, destroy it, and victory is yours.

The only limiting factors are the availability of another human opponent and the rapidly escalating cost of the phone connection during play. The game's major drawbacks are its totally inadequate manual (a couple of uninformative pages) and the primitive graphics. It's not the fault of the game, however, that the graphics are so poor. Transmitting high-resolution color graphics over the telephone is expensive.

With limited information, a hidden enemy, and real time operation, *Commbat* offers a challenging strategic game between any two players on the planet.

STRATEGY GAMES COMPUTER AMBUSH★

Description: combat simulation

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043
415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$60 disk

Protected: yes

Warranty: 30 days

User group rating: 5.9

Graphics and sound: 7

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Computer Ambush is a richly detailed simulation of squad-level combat in World War II. The setting is a ruined village somewhere in France in 1944. Two squads, one German and the other American, fight for the village and set elaborate ambushes to foil the enemy.

Each member of the squad is a complete individual with unique capabilities, strengths,

and weaknesses. Your task as squad leader is to command your troops shrewdly, making the most of their talents and the opportunities that come your way. *Computer Ambush* accurately simulates the problems of command and control. The ability to command individual squad members decreases with distance.

Reminiscent of the classic board game *Squad Leader*, *Computer Ambush* calculates line of sight and line of fire for all combatants. All the crucial factors — terrain, stamina, and weapon ranges — are accurately modeled. During combat, weapons can be exchanged between squad members.

The game is for one or two players. The computer commands the German Squad in the solitaire mode. The save game feature is really necessary since the program takes quite a bit of time to complete. The fast-paced, highly detailed simulation is first-rate excitement on the computer.

STRATEGY GAMES

★ COMPUTER QUARTERBACK

Description: football simulation

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043
415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive, paddle controllers

Price and format: approx. \$40 disk

Protected: yes

Warranty: 30 days

User group rating: 6.5

Graphics and sound: 4

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Computer Quarterback presents simulated football action on a semi-pro or professional level. Each game is played in four quarters, ranging from five to 15 minutes of real time apiece. Players simultaneously select grid plays using the game paddles.

In the professional mode you're given a set amount of

money with which to draft a team of 22 players. The price of a position determines its quality of play. You have to budget wisely; spending more on one position means you have less for the others. The pro scenario gives you 36 offensive and 32 defensive plays. Unfortunately, the plays are set and can't be changed. Each *Computer Quarterback* player can number the plays on the field according to his or her own code system.

The computer will supply occasional penalties, sometimes at very inopportune times. Each team's first-half statistics are displayed during intermission, and you'll find a team gains and improves its execution as time passes.

The weakest part of *Computer Quarterback* is its graphics presentation of plays. The screen shows little more than a representation of the ball on the field with appropriate 10-yard markers.

If you like the tactical side of football and are not looking for flashy graphics, *Computer Quarterback* is a thoroughly enjoyable and realistic football game.

STRATEGY GAMES COSMIC BALANCE

Description: space battle adventure

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043
415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 30 days

User group rating: 5.3

Graphics and sound: 9

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Cosmic Balance not only tests your sense of battle strategy but gives you a chance to design your own ships for surviving in space.

You can create space ships from one of six classes and then arrange them into a fleet of as many as four. You have to fit as much offensive and defensive capability as possible into the hull (depending on the ship's class), as well as proper living space for the crew. The documentation offers good advice for shipbuilding: Make sure you can run if you can't fight or fight if you can't run.

Offensive weapons include lasers, photon torpedoes, and disrupters, as well as robot fighters and smart missiles with long-range destructive powers. Shields and armor can be deployed defensively.

Once your fleet is complete, the next concern is your tactical ability. Pre-set battle scenarios use specific classes of ships, or you can dogfight with any combination of two ships. The fighting sequences move along rather quickly and are broken up into 15 movements per turn. The victory objectives are reasonable and the computer is a serious opponent in the solitaire mode. *Cosmic Balance* is a good, tactical space battle.

Description: space battle adventure

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
 Mountain View, CA 94043
 415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.

\$40 disk

Protected: yes

Warranty: 90 days

User group rating: 6.0

Graphics and sound: 8

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Your goal in *Cosmic Balance II* is to become master of the galaxy at some distant future date. The complexities of interstellar economies and trade play a decisive factor in this challenging game of empire building. You must allocate vital resources for starship construction, exploration, colonization, and industrialization.

War between Earth and her colony worlds is a grim fact of life in this game. Star fleets and entire worlds are subject to attack from alien enemies. You can design your own battle fleet, including various types of starships, from simple one-man fighters or huge colonial transporters.

The interactive factors of empire building make *Cosmic Balance II* a complicated challenge. This accounts for the many on-screen menus required to play the game. The graphic detail in *Cosmic Balance II* is rich and varied, and the game is suitable for intermediate players.

STRATEGY GAMES CRITICAL MASS★

Description: timed graphic adventure

Sold by: Sirius Software, Inc.
10364 Rockingham Dr.
Sacramento, CA 95827
916/366-1195

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 30 days

User group rating: 6.8

Graphics and sound: 9

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Critical Mass is a high-resolution graphic adventure about the evil Count Stuportino and his henchmen. In his quest for revenge, the Count has hidden thermonuclear devices in five of the world's major cities. The devices are set to detonate in five days; your goal is to find the Count and defuse the bombs.

Animation, challenging puzzles, and short arcade sequences are plentiful. Every action in the game — walking, riding in a taxi, sailing a boat, or flying — is timed. No adjustments are made for traffic jams, airport delays, or time zone changes. The clock looms over every scene, reminding the player of the impending disaster.

Critical Mass sets a fast and furious pace at the onset. You begin by stepping into an elevator on the 47th floor. Say the secret word, and the elevator begins its descent. The elevator soon starts to drop, however, and you must rely on your imagination to escape the impending crash.

Special effects make *Critical Mass* a constant source of challenge and delight. It is a good blend of animation and arcade action with a traditional graphic adventure.

STRATEGY GAMES

★ CRUSH, CRUMBLE, & CHOMP

Description: role-playing fantasy

Sold by: Epyx, Inc.

1043 Kiel Ct.

Sunnyvale, CA 94089

408/745-0700

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.

\$30 disk

In *Crush, Crumble, & Chomp*, you assume the identity of a science-fiction monster bent on destruction. As one of six feature creatures on the program (i.e., Godzilla), or a combination of all of them, your goal is to destroy as much property as possible before the authorities stop your rampage.

Protected: yes

Warranty: 30 days

User group rating: 5.0

Graphics and sound: 8

Difficulty: novice

Documentation: 9

To maintain your strength you must eat frequently. Since the setting is one of four major cities of the world, numerous autos, buses, and terror-stricken crowds provide edible fare. The monster is always vanquished, so your score depends on the amount of destruction you cause and how long you can stay alive.

The graphics are fair, and there is no real animation because all moving objects jump from frame to frame in response to single keyboard input. The documentation is excellent and fun to read. *Crush, Crumble, & Chomp* is an interesting concept that could have used better execution.

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

STRATEGY GAMES CYBORG ★

Description: science-fiction
adventure

Sold by: Sentient Software
Inc.

P.O. Box 4929
Aspen, CO 81612
303/925-9293

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$35 disk

Protected: yes

Warranty: 90 days

User group rating: 6.3

Graphics and sound: none

Difficulty: intermediate

Documentation: 6

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

In this dynamic, science-fiction
adventure game, you wake up
in a park somewhere, aware
that something is wrong, but
you're not quite sure what it
is. Suddenly you realize you're
half human and half machine
— a cyborg.

The goal in *Cyborg* is to figure
out how to repair yourself and
regain your memory. Your two
main problems are that you
need food and energy, and
that you don't remember a
thing about yourself.

Cyborg is completely in text,
with all the action logically
presented. The problems can
be solved with just a little
thought. Your mechanical half
does its best to meet your
needs, but the major problems
are left for you to solve. Most
commands are easily under-
stood by the computer. There
is a brief, low-resolution
graphics, arcade game toward
the end of the program that
must be completed to reach
the solution.

Cyborg was written by Mi-
chael Berlyn, a science-fiction
author, and it reads like a
novel. The adventure retains its
appeal even after the puzzle
has been solved, because *Cy-
borg* can be played time and
time again just to collect one
more unit of energy or extra
food.

Description: detective mystery

Sold by: Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
617/492-1031

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.
\$50 disk

Protected: yes

Warranty: 90 days

User group rating: 8.5

Graphics and sound: none

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Deadline, the first mystery in Infocom's innovative series of text adventures for the serious player, uses advanced technology to recreate the complicated scene of a murder investigation. There are several possible solutions to this whodunnit, some better than others. People and events can (and do) move and act independently of each other, and unlike more traditional adventures, the protagonist (a.k.a. the player) doesn't have to do anything.

You're a hard-boiled detective assigned to solve the mysterious death of Mr. Charles Rabner. All the evidence points to a suicide, but there is suspicion of murder, and many possible suspects. You have 24 hours to solve the crime. Should you not find the culprits, they may find you.

The program's sophisticated parsing techniques let it accept full sentences rather than limited two-word commands. The text holds richly detailed descriptions of events and people, which remove the need for graphic displays. Unfortunately, there are not enough help features, nor does the manual adequately prepare you for this new approach to computer adventure games. Many people are initially both enthralled and frustrated by *Deadline*.

STRATEGY GAMES DECATHLON ★

Description: sports simulation

Sold by: Microsoft Corp.

10700 Northup Way
Bellevue, WA 98004
206/828-8088

For: Apple II, II Plus, IIe

Requirements: disk drive;
paddle controllers optional

Price and format: approx.
\$30 disk

Protected: yes

Warranty: 90 days

User group rating: 8.0

Graphics and sound: 9

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Decathlon from Microsoft combines a challenging game of skill and concentration with a unique theme. A two-day and ten-game athletic contest makes up the decathlon. Each participant is represented by a fully animated, high-resolution graphic character. As many as six players can be paced individually through the ten events.

Players compete through the characters, testing their coordination and response time. Before the contest, players are allowed to practice any of the events. As in the actual Olympics, performance is rated in all ten events. Points are awarded, and the highest total wins the game. Lacking a save game feature, play continues for approximately one hour.

Decathlon's animated characters are controlled through the keyboard or with game paddles. The graphics display is smooth and detailed. Despite its seeming ease, this game demands considerable hand-eye coordination.

STRATEGY GAMES

DNIEPER RIVER LINE

Description: battle simulation

Sold by: Microcomputer

Games, Inc.

4517 Harford Rd.

Baltimore, MD 21214

301/254-5300

For: Apple II, II Plus, IIe

Requirements: program recorder or disk drive

Price and format: approx.

\$25 cassette, \$30 disk

Protected: no

Warranty: yes

Overall rating: 8.0

Graphics and sound: 7

Difficulty: novice

Documentation: 4

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Dnieper River Line is the combination of a traditional board game and electronic capabilities. The game is played on a 8" x 11", full-color map with 240 playing counters, and your opponent is the computer in this battle simulation.

You command the German army entrenched against the Russian army advance at the close of World War II. Your

goal is to protect six possible objective squares against the coming Russians. The Russians, played by the computer, secretly decide on two primary targets and a secondary one.

You must maintain a flexible front line so you can rapidly shift troops as the Russian attack pattern becomes clear. Several complications — enemy air attacks, artillery barrages, local guerilla attacks, and para-trooper raids — affect your strategy.

Each playing piece is identified by number, movement points, and attack, defensive, and armor strength. The units are easily recognized by their shapes. The game has four levels of play, two different scenario beginnings, a meeting engagement, and a strategic offensive. The Russian offensive strategy is selected at random by the computer.

Each game is not very long; play typically lasts only eight to 12 turns. The Russians win when they gain control of at least two of their objectives. This is a good game for beginners. There is a lot of action, yet it is not overwhelming.

STRATEGY GAMES

EMPIRE I: WORLD BUILDERS

Description: science-fiction
adventure

Sold by: EduWare Services,
Inc.

28035 Dorothy Dr.
Agoura Hills, CA 91301
213/706-0661

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$33 disk

Protected: yes

Warranty: 30 days

User group rating: 6.2

Graphics and sound: 7

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The first volume of a fantasy role-playing trilogy, *Empire I: World Builders* is based on a familiar science-fiction theme — settling the earth's colonies in the galaxy. In this opening episode you have the option of taking on the role of a cleric, a farmer, or a miner in the first colonial wave. Embarking from earth in a starship, you encounter different planets along your flight path. They vary in atmosphere, amount of water, and geological distributions.

You select when and where to land, depending on your occupation. Each role has different tasks to perform, so a wise choice is imperative. (If you're a miner, it is foolish to try to settle on a planet immersed in water.)

The basic necessities for survival are supplied by the earth's government. You must build on these and amass power or wealth. The worlds you encounter are in different stages of cultural development, and you must complete a specific task in each culture. If you're successful, you'll be ready to start the second episode, *Interstellar Sharks*.

The concept of *World Builders* is very appealing, but this game was programmed in BASIC and is slow-moving.

STRATEGY GAMES

EMPIRE II: INTERSTELLAR SHARKS

Description: science-fiction adventure

Sold by: EduWare Services, Inc.

28035 Dorothy Dr.
Agoura Hills, CA 91301
213/706-0661

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx. \$33 disk

Protected: yes

Warranty: 30 days

User group rating: 6.0

Graphics and sound: 9

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The second game in the *Empire* trilogy (see separate review of *Empire I*), *Interstellar Sharks* is a science-fiction role-playing game. You can assume the identity of a businessman, a diplomat, or a spaceship pilot. The businessman works for an imperial monopoly. He may buy stocks, negotiate a labor dispute, or engage in industrial sabotage. The diplomat receives assignments at his em-

bassy and might carry a diplomatic pouch between the colonies. The pilot must buy supplies for his entire spacecraft.

The game begins at the space station, where new characters are generated. Old characters are retired in cryonic sleep between games. The goal of the game is to reach the imperial planet Triskelion, surrounded by an enormous force field. Nine other planets offer different surprises and challenges.

To travel between planets, you need to get a passport, buy a ticket, and clear customs. While it is possible to win the game without using illegal activities, the game stresses ingenuity in breaking the law. If you're caught doing something illegal, your options include bribing the police, negotiating a release, or escaping.

The vocabulary in this game is extensive: 180 words are used. But though *Interstellar Sharks* is richly detailed with colorful, high-resolution graphics, it is a very slow game.

STRATEGY GAMES FLIGHT SIMULATOR★

Description: airplane simulation

Sold by: subLOGIC Corporation

713 Edgebrook Dr.
Champaign, IL 61820
217/359-8482

For: Apple II, II Plus, IIe

Requirements: program recorder or disk drive; joystick optional

Price and format: approx. \$25 cassette, \$34 disk

Protected: yes

Warranty: 6 months

User group rating: 7.4

Graphics and sound: 7

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Flight Simulator is a breathtaking, real-time simulation of a single engine airplane the player can pilot from takeoff to landing. Your view from the cockpit is fully three-dimensional, complete with plains, mountains, and airstrips.

The high-resolution instrument panel is designed to be consistent with FAA visual flight requirements — even a stall indicator has been thoughtfully provided. Using either a joystick or the keyboard, you actually seem to be flying this accurate model of a real plane.

The *Flight Simulator* is modeled after a Piper Cub, but you can choose to dogfight in a World War I Sopwith Camel. This option sets you against a whole flight of German aces determined to add you to their long list of victims. Your mission is to bomb and destroy the enemy fuel dump behind the lines. A convincing crash sequence adds to the realism.

The animation and graphic displays are fast and exciting, while the sensation of piloting your own plane is absolutely convincing. This program is a must for flying enthusiasts.

Description: government simulation

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043
415/964-1353

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 30 days

User group rating: 6.0

Graphics and sound: 8

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Geopolitique 1990 is a strategic role-playing simulation of a modern world conflict. It is primarily text-oriented with low-resolution graphics and supporting game charts. Though a fascinating concept, game play tends to be non-plausible.

In this one-player game, you assume the identity of the president of the United States. As the leader of the free world, you are pitted against the Soviet Politburo in the form of the computer. You establish economic, political, and military agreements with countries of your choice. Economic and military priorities of the United States are established year by year.

During the course of the game, random and unpredictable events shape history and alter the best intentions. Both the United States and the Soviet Union have the option of waging limited war against smaller nations, taking diplomatic and economic costs into consideration. Should the balance of power break down during this geopolitical phase, you can flip the disk and play *Geowar*.

Even the restrictive effects of wartime mobilization on national economies have been represented in this simulation. Fleets and armies are mobilized, militarily equipped, and transported to the global war fronts.

STRATEGY GAMES GERMANY 1985 ★

Description: battle simulation

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043
415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$60 disk

Protected: yes

Warranty: 30 days

User group rating: 6.3

Graphics and sound: 8

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Germany 1985, the first in Strategic Simulations' *When Superpowers Collide* series, is a detailed simulation of a possible Soviet-American conflict somewhere in the southern sector of West Germany. This divisional/brigade-level simulation incorporates the concept of unit integrity, accurately mirroring command and control problems during combat. Various Soviet and American units are available, including infantry paratroops, air cavalry, armor, and artillery.

This game can be played by one or two people. The graphics alternate between a high-resolution strategic overview of the entire display and a scrolling tactical screen. Despite the inherent complexity of the game, commands have been simplified and offer an excellent movement system.

Unit movements are charted by geographical coordinates and cursor positioning. Two scenarios are included on the program: Advance to Contact and the Explosive Invasion. Factors such as variable terrain, unit deployment, combat effectiveness, and morale are incorporated into this superb operational level simulation.

STRATEGY GAMES

★ GUADALCANAL CAMPAIGN

Description: battle simulation

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043
415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$60 disk

Protected: yes

Warranty: 30 days

User group rating: 5.6

Graphics and sound: 5

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Guadalcanal Campaign is an operational level simulation of the epic World War II battle for the island of Guadalcanal. This unique game program faithfully presents every ship, plane, and military unit of the historic battle.

The game concentrates on naval task forces. Combat ships support landing operations or engage in strategic operations against the enemy fleet. Con-

siderable attention has been given to details such as Japan's relatively greater prowess in nighttime naval fighting during the period. *Guadalcanal Campaign* is a game of logistics and supply for the novice to intermediate wargamer. Both the Japanese and American forces are at the end of long and uncertain supply lines.

Despite the complexity of the simulation, this game is among the simplest to learn and play. There is no detailed handling of land combat. In the two-player version, the computer acts as administrator; when one person plays, the computer takes the Japanese role. Because game play may extend for more than 50 hours, a save game feature is provided. Graphics are in low-resolution color with accompanying charts and tables.

A real innovation in strategic computer games, *Guadalcanal Campaign* combines first class excitement with real playability in computer wargaming.

STRATEGY GAMES HI-RES COMPUTER GOLF 2 ★

Description: golf simulation

Sold by: Avant-Garde Creations, Inc.

P.O. Box 30160

Eugene, OR 97403

503/345-3043

For: Apple II, II Plus, IIe

Requirements: disk drive, joystick or paddle controllers

Price and format: approx.

\$35 disk

Protected: yes

Warranty: 30 days

User group rating: 7.5

Graphics and sound: 7

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Hi-Res Computer Golf 2 (Pro Courses Series) is for armchair duffers who love to watch the sport on Sunday afternoon television. It contains a practice session and a beginner's course on one side of the disk, and the first in a series of three 18-hole pro courses on the other. The three courses featured on this program are an Atlanta Course, Hotrock, and Glass Mountain.

The program simulates actual playing conditions and presents the decisions a golfer must make at each hole. Even the wind's direction and strength are important factors. Each hole may require up to three screens to show its entire layout.

An auto-swing option is available to ensure a perfect swing each time. This lets the golfer who has trouble hitting the ball concentrate on strategy instead. For those who do golf, the game's simulated golf stroke is marvelous; it really gives you the feel of swinging a club and striking a ball.

A few defects occasionally arise in the program. Close fairway shots seem to go out of bounds too often at the last moment, resulting in a two-stroke penalty. Also, a disturbing number of lip-hanging putts occur during an 18-hole round.

Hi-Res Computer Golf 2 is challenging and diverse. The combination of strategy and physical coordination required is unlike any other computer sport.

STRATEGY GAMES

★ KNIGHTS OF THE DESERT

Description: battle simulation

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043
415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 30 days

User group rating: 6.3

Graphics and sound: 8

Difficulty: novice

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Knights of the Desert recreates the World War II campaign for Africa in a divisional/brigade-level simulation.

Severe logistical restraints are placed on the generally superior German forces in *Knights of the Desert*. Terrain, morale, combat strength, and supplies combine to influence the outcome of combat. The simulation is surprisingly detailed. Should the German player fail to guard his vital supply lines, the legendary Desert Rats strike without warning. Personnel from broken troops can be used to replace losses from line units.

Players can select the complete two-year campaign scenario or one of the shorter games. The game can be played alone, with the computer acting as the British 8th Army, or by two people, with the computer administering. Games can be saved to disk and resumed later. The screen display is in color, high-resolution graphics showing the North African coast in hexagonal grid format.

Several difficulty levels are available to accommodate skill levels from novice to experienced. There is a disparity between the opponents; the British side is less challenging.

Knights of the Desert is an excellent war game for the Apple.

STRATEGY GAMES

LABYRINTH OF CRETE ★

Description: graphic adventure

Sold by: Adventure International

P.O. Box 3435
Longwood, FL 32750
305/862-6917

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$30 disk

Protected: yes

Warranty: 1 year

Overall rating: 8.0

Graphics and sound: 6

Difficulty: intermediate

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Labyrinth of Crete is a graphics-enhanced adventure game. A unique feature of this program allows the player to control two characters at the same time. The characters can act independently of each other, or they can cooperate to accomplish a task. This is a major breakthrough in computer games.

Labyrinth of Crete is set in ancient Greece. Hercules is to help Jason recover the Golden Fleece from the heart of the maze. The heroes must overcome multi-headed hydras, powerful titans, the three-headed dog Cerberus, and even the Olympian gods. Some of the gods help, while others hinder the adventurers' struggle.

A working knowledge of Greek mythology is helpful in solving this puzzle. The game teaches you to coordinate the actions of both characters, Hercules and Jason, a difficult maneuver at first.

As an experiment in combining graphics and text, this game fails. The occasional graphics are very sketchy and haphazard. Most of the puzzles, though, are quite tough. You'll have to set aside a large block of time to finish this three-level game.

Description: adventure game

Sold by: Ultrasoft, Inc.
 4020 148th Ave. N.E.
 Redmond, WA 98052
 206/392-2317

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
 \$40 disk

Protected: yes

Warranty: 1 year

User group rating: 7.0

Graphics and sound: 10

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Mask of the Sun whisks you away to the Aztec empire of Mexico to find a valuable artifact with mystical powers. The motive for your quest is not simple greed, as in most adventure games, but a matter of survival. You have been cursed to a slow death by meddling with the mask's powers without fully researching it. The mask has been stolen from you, and you have to recover it to remove the curse. The only thing keeping you alive is a number of medicinal tablets you must take periodically. You are accompanied in the search by a student of a famed Mexican archaeologist.

The dangers are many in *The Mask of the Sun*, but the personal rewards are huge, and the search retains its interest. Helping out immensely in this adventure are a multi-object parser, fine graphics, and Ultravision animation effects. Two pyramids challenge your mapping skill, and the intriguing puzzles are well done.

One of the better adventure games available, *The Mask of the Sun* is a fine addition to any collection.

STRATEGY GAMES MYSTERY HOUSE ★

Description: mystery adventure

Sold by: Sierra On-Line, Inc.
Sierra On-Line Bldg.
Coarsegold, CA 93614
209/683-6858

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$20 disk

Protected: yes

Warranty: 90 days

User group rating: 5.5

Graphics and sound: 7

Difficulty: novice

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Mystery House is one of the best high-resolution graphics adventures available. It is a challenging and captivating puzzle, presented entirely in black and white.

The theme is a classic, straight from the Hollywood thrillers of the 1940s. Having been summoned to an eerie Victorian house, you and members of the household search for missing jewels. As you split up, you find mysterious messages and clues. Each room holds its own dangers and opportunities. The chills begin as the treasure hunters are discovered dead, one by one. A murderer is on the loose!

While trying to solve the mystery of the missing jewels, you realize the biggest problem may be staying alive. A save game feature lets a game in progress be saved to disk. The difficulty factor is moderate, with several first-rate brain twisters.

Mystery House is excellent entertainment for novice to intermediate players. It's recommended for a dark and stormy night.

Description: battle simulation
Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
 Mountain View, CA 94043
 415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
 \$60 disk

Protected: yes

Warranty: 30 days

User group rating: 6.7

Graphics and sound: 8

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

North Atlantic '86 presents a unique twist to the simulation of a hypothetical future Soviet-American conflict. The date is 1986, and the Soviet Union has won a war in Europe.

From new bases in Germany and Norway, the Soviet navy and air force plan to invade Greenland while maintaining a blockade on the British Isles. The remnants of British and American armed forces must keep Britain supplied. The game system is identical to the one developed for *Guadalcanal Campaign* (see separate review).

The sheer scope of this 100-hour program is awesome. Strategic demands on the Allied forces give the game a unique feel, and contemporary weaponry requires military tactics very different from those of World War II. A defect of this game is the lack of definite resolution for land-based combat — the basic unit of play is the naval task force. Ships, aircraft, and infantry units are deployed and given missions to perform.

The attention to detail is superb. Modern Soviet, British, and American ships and aircraft are carefully listed and mathematically modeled. *North Atlantic '86* is a superior military simulation with a unique and challenging background.

STRATEGY GAMES

ODYSSEY: THE COMPLETE ADVENTURE ★

Description: role-playing fantasy

Sold by: Synergistic Software
830 North Riverside Dr.
Renton, WA 98055
206/226-3216

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$30 disk

Protected: yes

Warranty: not written

User group rating: 6.9

Graphics and sound: 7

Difficulty: novice

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Similar to Synergistic Software's earlier *Wilderness Campaign*, *Odyssey* is a fantasy role-playing game. The object is for you to lead a party of warriors across an unfamiliar island. There you find treasure, magic spells, friends, and foes.

Somewhere in this mythical world is a magic orb, the goal of your quest. One outstanding feature of this game is the element of discovery. You must complete the colorful high-resolution map of the islands, filling in the blanks with details from your explorations. The world of *Odyssey* includes towns, a marketplace, dungeons, and temples. You even have to sail a boat between the islands in the mythical Sargalo Sea.

The color high-resolution graphic display is well done. Limited animation is used. The game is easy enough for beginners, and a random event generator makes replaying the game worthwhile.

Description: board game simulation

Sold by: Penguin Software
830 Fourth Ave.
Geneva, IL 60134
312/232-1984

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$20 disk

Protected: yes

Warranty: 60 days

User group rating: 6.5

Graphics and sound: 9

Difficulty: novice

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Pensate is a new game in the tradition of checkers, chess and Othello. In *Pensate*, however, the computer is a necessary participant.

The object of the game is simple: you must move your piece from one side of the board to the other. To accomplish this, you go up, down, left, or right. The computer has from four to 24 of its own pieces on the board through which you must maneuver. With every turn you take, the computer moves all of its pieces.

You must enter at least two (and as many as four) moves before the computer shifts the pieces around. In order to get across, you have to anticipate where the machine's pieces will be after each move and avoid making contact.

A chart is included which explains how each piece moves in response to your maneuvers. A two-player option has players crossing the board from opposite sides. The first one across wins the round. *Pensate* is destined to become a classic strategy game.

STRATEGY GAMES

PINBALL CONSTRUCTION SET ★

Description: pinball game design and simulation

Sold by: BudgeCo
428 Pala Ave.
Piedmont, CA 94611
415/658-8141

For: Apple II, II Plus, IIe

Requirements: disk drive, two-button joystick

Price and format: approx. \$40 disk

Protected: yes

Warranty: lifetime

User group rating: 8.0

Graphics and sound: 10

Difficulty: novice

Documentation: 5

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Pinball Construction Set from BudgeCo is something new in computer games. This program lets the player without programming experience design, construct, and save computerized high-resolution color pinball games. *Pinball Construction Set* is remarkably sophisticated, demonstrating features usually seen on more advanced computers.

The game designer chooses stock parts (bumpers, flippers, traps, etc.) from an option screen, using the joystick as a graphic editing tool. The selected parts are then moved to the appropriate place in the pinball machine. Scoring rules and game play capabilities are implemented with a wiring kit. All design options are represented by icons which the player selects via joystick, a magnifying glass for graphic editing, a hammer to make shape changes, or a paint brush to add color. Every variable including gravity, time, elasticity, and bounce can be tailored at the player's whim.

A player's design can be saved to disk during or after completion. A program can be recalled for further design or testing and, of course, finally played.

Description: government simulation

Sold by: Strategic Simulations, Inc.

883 Stierlin Rd., Bldg. A-200
 Mountain View, CA 94043
 415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
 \$40 disk

Protected: yes

Warranty: 30 days

User group rating: 5.7

Graphics and sound: 7

Difficulty: novice

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

President Elect is a simulation of the race for the presidency of the United States. Primarily a strategy game for one to three players, the simulation reenacts the sociological, political, and economic state of the union during any of the presidential election campaigns since 1964 and lets you create a 1984 scenario. By selecting different candidates from the historical figures available, or by creating your own political figures, you can trace the intriguing "what ifs" of history.

As campaign manager, you allocate funds, select media coverage, respond to a debate challenge, and tour the country's critical states "pressing the flesh." Should the burden of campaign organization prove too great, your Apple will even manage the details for you. After your hard work is finished, it's on to election night and facing the voters' decision.

While providing a unique strategic conflict setting, *President Elect* suffers from tedium. After all the parameters have been selected, you must endure repetitive allocation of time, resources, and effort each turn. Graphic displays are limited and painfully slow, but *President Elect* is an interesting simulation for all political types.

STRATEGY GAMES PRISONER 2 ★

Description: graphic adventure

Sold by: EduWare Services, Inc.

28035 Dorothy Dr.
Agoura Hills, CA 91301
213/706-0661

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx. \$33 disk

Protected: yes

Warranty: 30 days

User group rating: 6.9

Graphics and sound: 8

Difficulty: expert

Documentation: 5

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

EduWare's game of psychological adventure is based on the classic BBC television spy thriller. A graphic adventure with a unique theme, *Prisoner 2* is designed for experienced and dedicated adventurers. The text is highly challenging.

You assume the role of a retired secret agent abducted and imprisoned on a bizarre island with other captives. Your mysterious kidnappers attempt to break your will through subtle and not so subtle psychological techniques.

The distinction between fantasy and reality narrows as you delve into this sinister and challenging game. *Prisoner 2's* greatest asset, however, may be its only fault: the mental torture employs highly aggravating graphic displays, and the sound effects create an air of considerable tension as well as realism.

Prisoner 2 is as much a test of endurance as reasoning. Determining friends and foes is quite a challenge. Your enemies conspire to thwart any escape plans. Combining a rich mixture of deceit, treachery, and uncertainty, *Prisoner 2* is an adventure and a psychological thriller.

Description: card game simulation

Sold by: Quality Software
 21601 Marilla St.
 Chatsworth, CA 91311
 213/344-6599

For: Apple II, II Plus

Requirements: disk drive

Price and format: approx.
 \$40 disk

Protected: yes

Warranty: 90 days

User group rating: 7.4

Graphics and sound: 9

Difficulty: novice

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Pro Poker is an excellent simulation of professional poker. Five Card Draw and Jacks or Better can be played by as many as eight people at once. Computer opponents are available, but they are experts who never make mistakes. These electronic cardsharks can bluff, and they try to determine your style in order to improve the odds of beating you.

A fun teaching tool, *Pro Poker* is based on California poker club rules. The Kibitz mode gives helpful advice and explanations on each hand. Another feature lets the computer play all cards facing up, so you can watch and study the techniques of other players.

The program deals an incredible 300 hands per hour. The high-resolution graphics are superb. One defect of *Pro Poker* is the absence of sound. The game is so lifelike that it is disconcerting not to hear the shuffle of the cards. The program automatically organizes the hands for easier reading.

This is an excellent way to learn or sharpen existing poker skills.

STRATEGY GAMES THE QUEST

Description: graphic adventure

Sold by: Penguin Software
830 Fourth Ave.
Geneva, IL 60134
312/232-1984

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$20 disk

Protected: yes

Warranty: 60 days

User group rating: 6.8

Graphics and sound: 9

Difficulty: novice

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Quest is a fantasy high-resolution adventure game. The game is about the medieval kingdom of Balema and its king, Galt the First. The player is an advisor to the king, helping the champion Gorn slay a dragon.

Supplies must be purchased before leaving the castle. There are glens, waterfalls, swamps, lakes, and labyrinthian caves to overcome in this adventure. The kingdom has many strange inhabitants, and you'll have to deal with bandits, skeletons, snakes, goblins, seers, traders, and a Sphinx.

Mapping is essential because you may die of thirst, although water abounds in most areas. Beware of things that seem harmless, and people who offer directions. A woman wearing traditional chain mail is willing to help — for a fee.

Most of the puzzles have more than one solution, so the amateur adventurer does not get too frustrated.

Description: battle simulation
Sold by: Strategic Simulations,
Inc.

883 Stierlin Rd., Bldg. A-200
Mountain View, CA 94043
415/964-1353

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$35 disk

Protected: yes

Warranty: 30 days

User group rating: 5.8

Graphics and sound: 8

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

RDF 1985 is the second in the *When Superpowers Collide* series from Strategic Simulations, Inc. This game recreates a Soviet-American conflict over the strategic oil fields of the Saudi Arabian peninsula. The United States has dispatched its Rapid Deployment Force (RDF) to stem a Soviet invasion of the area.

The game system used in *RDF 1985* is similar to the one in *Germany 1985* (see separate review). The rule book from *Germany 1985* is necessary to play this one. Action takes place at the divisional/brigade-level and units can appear in one of several combat modes. The simulation in this program for one or two players accurately models the tactics and weaponry of contemporary conflicts.

The graphic system is a highly detailed 28×39 hexagonal grid, only a part of which is shown at any time. *RDF 1985* uses scrolling to support the large overall setting. The rules and regulations must be studied very carefully, because they are not clear.

Factors such as terrain, fatigue, reinforcements, and tactical air-strikes are all represented in this challenging game of future combat. This is a first-rate simulation.

STRATEGY GAMES RENDEZVOUS ★

Description: space shuttle simulation

Sold by: EduWare Services, Inc.

28035 Dorothy Dr.
Agoura Hills, CA 91301
213/706-0661

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick optional

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 30 days

User group rating: 7.2

Graphics and sound: 9

Difficulty: expert

Documentation: 5

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Rendezvous is a space-age simulation of piloting a space shuttle from the launching pad to its distant destination. Once in the air, you have to achieve the correct height and orbital velocity to rendezvous with a space station orbiting at 2000 miles above the earth.

Your Apple helps you considerably to achieve this goal, but much trial and error is necessary to find a suitable course. Once in the general area of the space station, you have to maneuver close to it with your steering rockets. As you near the station, your final task is to locate the port and dock your ship.

Radar helps with the course corrections, and a direction indicator locates the station if you lose sight of it. The documentation claims that these aids are unnecessary, and the ship can be flown in by the seat of your pants. Good luck!

A ship in space can move independently in the three translational axes (x, y, z), and it is very easy to move off course. This excellent simulation will challenge you for days. It is also superb for school studies. The three-dimensional graphics of *Rendezvous* are innovative and game play requires real time decisions.

Description: chess simulation

Sold by: Hayden Software
 Company

600 Suffolk St.
 Lowell, MA 01853
 800/343-1218

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
 \$35 disk

Protected: yes

Warranty: yes

User group rating: 7.8

Graphics and sound: 7

Difficulty: novice

Documentation: 9

Key:

User group rating: Average of
 user group ratings

Graphics and sound: Quality and
 aesthetics of each

Difficulty: How much skill is re-
 quired to enjoy the game

Documentation: Quality of
 printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Sargon II is a tough computer chess opponent that plays almost too well. Moves are presented in standard chess notation, and the board can be set up to replay previous games or to explore chess problems. There's even a mode in which *Sargon II* will gently suggest your best move. Should all else fail, you can trade places with the computer during a game.

You select one of six difficulty levels. Each provides more challenges through longer play. If your attention wanders, the program beeps after it completes a move. During game play, a complete listing of current and past moves is available.

A serious defect of this program is the inability to save a game in progress. But *Sargon II* is a forgiving opponent and lets you take back moves. The program employs an extensive opening book and supports *en passant* and castling.

STRATEGY GAMES SPITFIRE SIMULATOR★

Description: flying simulation

Sold by: Mind Systems Corp.
Box 506
North Hampton, MA 01061
413/586-6463

For: Apple II, II Plus, IIe

Requirements: disk drive,
paddle controllers or joystick

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 90 days

User group rating: 6.4

Graphics and sound: 6

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

This program lets you fly a Spitfire Fighter, the most famous plane of World War II. The plane is easy to control in *Spitfire Simulator*, and has characteristics different from those in other flight simulation programs. The Spitfire is very powerful and accelerates even while climbing. It is heavy and very difficult to pull out of a dive, but aerobatics are easy and performing loops, rolls, and even flying upside down is a snap. The documentation is excellent and clearly explains the necessary information in a light, informal style.

Besides the joy of learning to fly, this simulation lets you engage in dogfights. You can close in on and fire at eight three-dimensional targets. These are representations of German aircraft. They don't return fire, however, so a totally realistic dogfight situation is not possible.

The game comes with two ground scenes. During the fighting mode you see only the target and the horizon, so you have to keep an eye on the altimeter to avoid a crash. The cycle speed is at times slow, such as when you corner an enemy. Overall, *Spitfire Simulator* is fun to play and difficult to master.

Description: text adventure

Sold by: Infocom, Inc.

55 Wheeler St.

Cambridge, MA 02138

617/492-1031

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.

\$50 disk

Protected: yes

Warranty: 90 days

User group rating: 7.2

Graphics and sound: none

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Suspended gives you the chance to control six independent robots as you try to save a planet from destruction. You operate as the central intelligence of the planet Contra. The planet's control center automatically handles everything that happens on the planet's surface, because you've been placed in suspended animation, to be awakened only in the event of a disaster. Every time you make a move to fix the computers, people die on the planet's surface. Your goal is to fix the computers, through the robots, in the shortest possible time, causing the fewest possible deaths.

The unique challenge of *Suspended* is controlling the robots. Each has a different personality, and you must direct them independently and collectively. Every robot has only one sense (such as sight), and you rely on them for news from the control complex.

The details of your command appear in the documentation, as a series of memos from government officials. The game is completely in text. You'll find yourself playing *Suspended* again and again, trying to beat your previous score.

Description: battle simulation

Sold by: Avalon Hill

4517 Harford Rd.

Baltimore, MD 21214

301/254-5300

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.

\$40 disk

Protected: yes

Warranty: lifetime

User group rating: 6.0

Graphics and sound: 9

Difficulty: novice

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Tac is a game of World War II armored combat for one or two players or teams. The principle armored vehicles of Great Britain, Germany, the Soviet Union, and the United States have been faithfully reproduced on the program.

Fighting vehicles include the U.S. Sherman Tank, the feared German Tiger, and the awesome Soviet T34. Each is rated according to firepower, armor, speed, and gun traverse. The varying thickness of armor on a particular vehicle as well as the angle of shell impact are included in the design.

The game begins on a stylized European battlefield which includes a forested area. Range, accuracy, and tracking timing are taken into consideration. The results of combat are determined by the computer.

Tac's graphic display is excellent, with each tank appearing in high-resolution color graphics with appropriate sound effects. Bursts of highly explosive shells liven play. Hidden movement, improved positions, smoke mortars, mine fields, and support infantry make *Tac* a superb tactical simulation.

Description: graphic adventure

Sold by: Sierra On-Line, Inc.
Sierra On-Line Bldg.
Coarsegold, CA 93614
209/683-6858

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$100 (6 disks)

Protected: yes

Warranty: 90 days

User group rating: 6.2

Graphics and sound: 10

Difficulty: expert

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Time Zone is a high-resolution adventure game opus on 12 disk sides. Dubbed the world's first "Microepic," it was written by Roberta Williams over a 14-month period. The 1200 high-resolution pictures are contained in 39 separate scenarios, covering historic events from 400 million BC to 4082 AD. Expert adventurers will be challenged by the complexity of the game.

Each scenario is a puzzle. Some are dead ends, but most yield a treasure or tool when solved. These prizes are used in other zones to collect more items. The last time zone depicts an invasion of the alien planet of Neburon. To succeed in this attack, you need a completed set of items from history.

The hefty price of *Time Zone* reflects an average solution time of more than six months of constant playing. Accurate mapping skills are required for advancement, and the many scenarios let you skip to another if you get stuck. Unlike other adventure games, puzzle solutions do not depend on exact wording. The game recognizes several alternatives for most situations.

For challenge and complexity, *Time Zone* is the ultimate adventure game.

STRATEGY GAMES TRANSYLVANIA★

Description: graphic adventure

Sold by: Penguin Software
830 Fourth Ave.
Geneva, IL 60134
312/232-1984

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$20 disk

Protected: yes

Warranty: 60 days

User group rating: 6.3

Graphics and sound: 9

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Penguin Software's first adventure game takes place in the eerie landscape of its name-sake. In *Transylvania*, you must rescue the heroine from the evil clutches of a vampire before the midnight witching hour. There are numerous creatures to overcome. The countryside, village, and an apparently abandoned castle are your playfields. The puzzles are enjoyable, mapping is important, and the keyboard controls interactive functions.

The native residents of Transylvania, especially the werewolf, are tough and offer a thorough challenge. Fans of old horror movies will have a definite advantage in playing the game. You almost expect Boris Karloff to appear in some of the scenes.

Strong points of this program are its graphics and its reasonable price. The display is colorful, crisp, and clear. Its haunting quality lends itself perfectly to the atmosphere.

STRATEGY GAMES 
**ULTIMA II REVENGE OF THE
★ ENCHANTRESS**

Description: role-playing game

Sold by: Sierra On-Line, Inc.
Sierra On-Line Bldg.
Coarsegold, CA 93614
209/683-6858

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$60 disk

Protected: yes

Warranty: 90 days

User group rating: 8.4

Graphics and sound: 9

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Ultima II Revenge of the Enchantress is a three-sided, high-resolution, fantasy role-playing game in the famous *Ultima* series. Having just killed the evil wizard Mondain in *Ultima I*, you face his evil apprentice, Minax. The apprentice has become the master and is trying to destroy the world of the future.

You must battle Minax through different time periods, until you find her heavily guarded castle. Special weapons and magical devices are at your command, but she is very tricky and will try to slip through your fingers.

The excellent graphics in *Revenge of the Enchantress* far surpass those in *Ultima I*. Ocean water moves in wave-like motion, and towns, villages, and castles abound in colorful, high-resolution detail. Famous people from the micro-computer industry appear in cameos everywhere.

As in *Ultima I*, you choose the character's race and class. This is a role-playing game, so developing and educating your character is important. A large, full-color, cloth map of the earth comes with the game. It shows the placement and paths of the shifting time gates you'll need to study to travel in time. *Ultima II* will provide many weeks of delightful playing for all age groups.

**ULYSSES AND THE GOLDEN FLEECE ★**

Description: graphic adventure

Sold by: Sierra On-Line, Inc.
Sierra On-Line Bldg.
Coarsegold, CA 93614
209/683-6858

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$33 disk

Protected: yes

Warranty: 90 days

User group rating: 6.5

Graphics and sound: 8

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Ulysses and the Golden Fleece lets you journey back to the days of ancient Greece to take up the quest of the Golden Fleece. You've been personally chosen by the king for the task, and you must assemble a crew, outfit a ship, and begin the search. An assortment of wild creatures await you as you begin sailing the Aegean sea. If you recover the Fleece, you face new dangers as you return home.

Mapping is quite important in this adventure. The graphics meet Sierra On-Line's usual high standard. Games can be saved, so there's no need to try completing this epic tale in one sitting. Most adventure lovers will enjoy *Ulysses and the Golden Fleece*.

Description: detective mystery

Sold by: Infocom, Inc.
 55 Wheeler St.
 Cambridge, MA 02138
 617/492-1031

For: Apple II, Ile

Requirements: disk drive

Price and format: approx.
 \$50 disk

Protected: yes

Warranty: 90 days

User group rating: 7.6

Graphics and sound: none

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Witness is another in Infocom's line of interactive fiction. This text adventure leads you through a good detective yarn, with you as the sleuth. There has been a murder, threats have been made against the husband of the deceased, and you have 12 hours to solve the mystery. Your decisions affect the outcome of the game.

There are a number of critical branching points in the program, and choosing the wrong alternative can lead to a disaster.

As in *Deadline* (see separate review), the actions of the suspects vary during the game. What they do depends on you. Timing is crucial, so if you are in the wrong place at a certain point, you will miss an important clue.

Detective story buffs and fans of good mind puzzles will enjoy *The Witness*.

STRATEGY GAMES WIZARDRY II: KNIGHT OF DIAMONDS★

Description: fantasy adventure

Sold by: SIR-TECH SOFTWARE
6 Main St.
Ogdensburg, NY 13669
315/393-6633

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$35 disk

Protected: yes

Warranty: 30 days

User group rating: 8.4

Graphics and sound: 8

Difficulty: intermediate

Documentation: 6

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The second game in the *Wizardry* trilogy, *Knight of Diamonds*, is a high-level, fantasy role-playing adventure. It's a natural sequel to the *Proving Ground of the Mad Overlord*, the first in the series. New characters cannot be developed in *Knight of Diamonds*; they must be transferred from the 13th level of *Proving Ground*. You need expert capabilities for selecting characters, buying equipment, and establishing the fighting order. *Knight of Diamonds* is not for beginners.

Some of the new and clever monsters are Medusa Lizards, Dragon Flies, Hatamotos, Raven Lords, and the Creeping Coins. The best new creatures are the No-See-Um Swarms, hardy gnats that travel in groups and are almost immune to magic spells.

Knight of Diamonds has a six-level dungeon with individual quests and objectives on each level. The plunders of all the quests are necessary to complete the final challenge on the sixth level. Success hinges on accurate dungeon maps. No new spells were added to this scenario, but the effects of several of the old ones have been altered. For those bold enough to enter the dungeons of *Knight of Diamonds* and win the Staff of Gnilda, the reward is great.

STRATEGY GAMES
WIZARDRY III: LEGACY OF
★ LLYLGAMYN

Description: fantasy adventure

Sold by: SIR-TECH SOFTWARE
6 Main St.
Ogdensburg, NY 13669
315/393-6633

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 30 days

User group rating: 8.2

Graphics and sound: 10

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Legacy of Llylgamyn is a fantasy role-playing game. The story is linked to the two previous *Wizardry* scenarios, *Proving Ground of the Mad Overlord* and *Knight of Diamonds* (see separate review). Descendents of the original heroes are completing their apprenticeships in adventure training. The task of obtaining

an ancient mystical orb falls on the new adventurers.

The Rite of Passage, a mystical ceremony, confers ancestral title, honors, skills, and talents upon the descendents. Each novice adventurer receives 500 gold pieces to purchase supplies at Boltec's Trading Post. There are many puzzles, riddles, and special items throughout the adventure. Accurate maps yield valuable clues for solving this difficult six-level scenario. The third level is one of the hardest mapping tasks of any of the *Wizardry* games.

The new graphics system used for *Legacy of Llylgamyn* is called Window *Wizardry*, and it achieves true full-screen dungeon perspective. Information windows overlay the dungeon image. There are large, high-resolution graphic images of many new monsters. But Window *Wizardry* extracts a price; the pace of the game has been slowed down. Movement through the dungeon is slightly delayed.

This intermediate level game is often quite difficult to solve, but *Legacy of Llylgamyn* is a delightful fantasy for the entire family to enjoy.

STRATEGY GAMES

ZORK I, II, III ★

Description: text adventures

Sold by: Infocom, Inc.

55 Wheeler St.

Cambridge, MA 02138

617/492-1031

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.

\$40 disk

Protected: yes

Warranty: 90 days

User group rating: 7.8

Graphics and sound: none

Difficulty: intermediate

Documentation: 10

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The *Zork* series of games are pure text adventures. Each places you in a situation where you must accomplish some task. But they don't tell you what the task is. You have to figure out what to do, and then proceed with the quest.

Zork I is called "The Great Underground Empire." You begin in front of an old house and must recover 20 treasures. Fast thieves and trolls with vicious weapons impede your progress. Slippery rugs and hidden trapdoors confound the quest and can be deadly. Points are awarded for recovering treasure and performing acts of bravery.

"The Wizard of Frobozz" continues where *Zork I* leaves off in the dungeon. This part of the trilogy is much harder; your skills are constantly tested. Obvious solutions are rarely correct. All of this is in preparation for the supreme test of *Zork III*, set in the deepest regions of the Underground Empire.

The *Zork* adventures were the first text games to use vocabularies of more than 600 words. Compound commands and commands in common English are understood by the program.

Arcade-style games are the most popular form of computer software, consistently outselling all other categories. Home computers can't reproduce the graphics and play action of many arcade games, but some of the Apple versions of coin-op hits are spectacular nonetheless.

In addition to copies of arcade classics, this chapter includes games written specifically for home computers, like the popular *CHOPLIFTER!* and *Apple Panic*.

Because many arcade games are abstract and unusual, it's hard to give them an accurate two- or three-word description. Games as diverse as *Bandits* and *Zaxxon* are included under shoot-em-ups, for example. In this chapter, therefore, you have to read the review if you really want to know what a game is like. The brief descriptions just break the chapter into rough categories.

The following special terms are used in this chapter:

ladder game A game in which the player uses ladders (or other means) to move a figure around the screen to reach a goal.

maze game A game in which the player moves a figure through a network of passages on the screen.

paddle controllers Game control devices on which a rotating dial moves a cursor (or other figure) in only two directions on the screen.

pause feature A feature built into some games that allows the player to temporarily stop the action in order to rest or plan strategy.

pinball simulation A video game that represents a traditional arcade pinball game on the screen.

shoot-em-up or **shoot-out** A game in which the player shoots at a variety of targets to score points.

Description: shoot-em-up

Sold by: Broderbund Software, Inc.

17 Paul Dr.

San Rafael, CA 94903

415/479-1170

For: Apple II, II Plus, IIe

Requirements: disk drive, joystick or paddle controllers

Price and format: approx. \$35 disk

Protected: yes

Warranty: none

User group rating: 6.8

Graphics and sound: 10

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

In *A.E.*, an arcade game with incredible three-dimensional graphics, your goal is to rid the galaxy of some crazed robots. The robots are actually pollution control devices, which swoop and soar like the Bolshoi Ballet. *A.E.* is the Japanese abbreviation for stingray (which is what the robots' ships look like). These robotic fish attack in waves of six, fly-

ing in, out, and behind objects in the landscape with reckless abandon. The illusion of three-dimensionality is best when the robots are flying behind buildings and planets. The effect is uncanny.

There are eight different scenes in *A.E.* corresponding to eight levels of difficulty. Each scene is progressively farther out into space from Earth as the aliens are driven back to their home nebula. To successfully complete a level, three waves of six ships must be destroyed. If any of the aliens get your ship, then the level must be completely restarted. One really fun feature is that the robot waves always start with the robots in a long snaky chain. If you are quick, rapid machine gun fire aimed at the head of the chain will destroy all the robots.

The excellent graphics of *A.E.* transform the stingray shapes from small specks in the distance to graceful flyers in the foreground. Even the chain explosions are choreographed. This game requires thought and timing, not simply reflexes.

Description: ladder game

Sold by: Broderbund Software, Inc.

17 Paul Dr.

San Rafael, CA 94903

415/479-1170

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx. \$30 disk

Protected: yes

Warranty: none

User group rating: 7.0

Graphics and sound: 8

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The object of *Apple Panic* is to exterminate pesky critters in the form of apples, butterflies, and green masks. The setting is the inside of a building consisting of five levels connected by ladders. The keyboard controls a well-animated figure that runs around digging holes in the floor. After the hole is dug, the apples should fall into it and get stuck. The next task is to kill them with your shovel and send them through the hole to their destruction on a lower level.

Points are earned for eliminating each critter, but if you kill all of them on one screen you get a big bonus. Each screen is timed, and if you don't kill all the varmints you lose your man. There are three men to each game. The creatures on each new level are more difficult to catch and kill.

Generally the game plays well, but occasionally an apple falls into a repetitive movement loop and becomes impossible to kill. *Apple Panic* continues to be an arcade classic for Apple computers.

Description: maze adventure

Sold by: DATAMOST, INC.

8943 Fullbright Ave.

Chatsworth, CA 91311

213/709-1202

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.

\$40 disk

Protected: yes

Warranty: not written

User group rating: 9.9

Graphics and sound: 8

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

In *Aztec*, an action maze game with an adventure story line, you embark into a previously lost Aztec temple. A priceless golden idol, a mad archaeologist, hidden traps, and dangerous creatures are lurking in the underground pyramid.

Each of the eight floors holds eight rooms, and each room can have three levels. Every foray into the pyramid generates a different floor plan. Lurking in the pyramid are spi-

ders, snakes, scorpions, jaguars, and assorted dangerous fauna.

The mad archaeologist, whose trail you have tracked to this desolate location, has set a number of sneaky traps to waylay anyone eluding or defeating these dangers. In the temple's deep, Aztec warriors, skilled in hand-to-hand combat, guard its rooms and the treasure. The goal is to find the golden idol and return alive. You will also uncover chests throughout the pyramid, containing weapons, bullets, or dynamite.

The maze itself is not too difficult. The graphics are intriguing but somewhat sloppy at times. The strong point of the game is the animation. Options include walking, running, crawling, or climbing. When fighting you can lunge, parry, slash, and shoot.

This game is a cross between *Swashbuckler*, written by the same author, and *Castle Wolfenstein* (see reviews for both games). *Aztec* is an enjoyable challenge for those with good hand-eye coordination and a thirst for high action.

Description: shoot-em-up
Sold by: Sirius Software, Inc.
 10364 Rockingham Dr.
 Sacramento, CA 95827
 961/366-1195

For: Apple II, II Plus, IIe
Requirements: disk drive;
 joystick or paddle controllers
 optional

Price and format: approx.
 \$35 disk

Protected: yes
Warranty: 30 days

User group rating: 7.0
Graphics and sound: 9
Difficulty: intermediate
Documentation: 8

Key:

User group rating: Average of
 user group ratings
Graphics and sound: Quality and
 aesthetics of each
Difficulty: How much skill is re-
 quired to enjoy the game
Documentation: Quality of
 printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

One of the all-time arcade fa-
 vorites for Apple computers, *Bandits* offers clean, crisp
 graphics, smooth lively anima-
 tion, and responsive playabil-
 ity. The game is basically a
 shoot-em-up, and your mission
 is to protect your supplies of
 fruit from multiple screens of
 thieves, while avoiding de-
 struction yourself.

The bandits are clever and be-
 come more wiley as you ad-
 vance levels. Your offensive
 weapon is a vertically oriented,
 forward firing laser, and your
 sole defense is a limited num-
 ber of time shields. Unfortu-
 nately, the shields get used up
 quickly, but they can be re-
 charged periodically. Points are
 totalled for each fruit remain-
 ing on the screen and for en-
 emy ships destroyed. Bonus
 ships are periodically awarded
 for longevity.

Control is by keyboard, joy-
 stick, or paddles. A lively and
 challenging arcade game,
Bandits appeals to all ages.

Description: combat simulation

Sold by: DATAMOST, INC.
8943 Fullbright Ave.
Chatsworth, CA 91311
213/709-1202

For: Apple II, II Plus, IIe

Requirements: disk drive;
paddle controllers optional

Price and format: approx.
\$40 disk

Protected: yes

Warranty: not written

User group rating: 6.6

Graphics and sound: 9

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The first head-to-head combat game for the Apple, *Bilestoad* is incredibly barbaric. Appearing in the future, you assume the role of a gladiator, pitted against the computer or a human foe. Your object is to travel and successfully fight through 39 levels of 49-island battlegrounds. You are equipped with armor, shield, and sword.

You can choose to be either the underdog or the strongman of the contest. Victory conditions vary for each. The ultimate goal for both is based on territorial defense; however, the underdog must not kill or severely injure his opponent in the process. The strongman scores more points if he is victorious. As victories pile up, the player advances to the next level.

There are a number of different squares on the screen that may or may not be beneficial to either player depending on the assumed role. Mapping is important since all the islands are different.

The graphics and animation are well done, though quite bloody once combat is engaged. Moving your character, however, is limited since the keyboard is not equipped with enough character keys for good control. As in many two-player keyboard-based games, the procedure can be awkward. If you enjoy the tactics of hand-to-hand combat and don't mind a little bloodletting, *Bilestoad* is an exhilarating experience.

Description: ladder game

Sold by: Datasoft, Inc.

9421 Winnetka Ave.

Chatsworth, CA 91311

213/701-5161

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick optional

Price and format: approx.
\$25 disk

Protected: yes

Warranty: 90 days

User group rating: 5.0

Graphics and sound: 6

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Canyon Climber is a challenging game for dedicated arcade game players. With a minimum amount of graphics, the program demands a high level of split-second, eye-hand coordination.

In the first screen, you must place dynamite at the ends of four different bridges, on four different levels, and then proceed to activate the detonator. You also must avoid the mountain goats scurrying back and forth, quite willing to push you off a level given half a chance. The second screen places you on a hillside, dodging deadly arrows.

You can jump over the goats, but this is a difficult maneuver. Their movement is almost too fast, and the images are not distinct. Your character is little more than a stick figure, as are the goats. The sound effects are nice, but even the early screens of the game are difficult.

The basic premise of *Canyon Climber* is solid. It is recommended for players who enjoy quick action.

ARCADE GAMES **CHOPLIFTER!** ★

Description: rescue game

Sold by: Broderbund Software, Inc.

17 Paul Dr.

San Rafael, CA 94903

415/479-1170

For: Apple II, II Plus, IIe

Requirements: disk drive,
two-button joystick

Price and format: approx.
\$35 disk

Protected: yes

Warranty: yes

User group rating: 8.2

Graphics and sound: 10

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

CHOPLIFTER! is a classic among arcade-style entertainment programs. It is a must for players of every stripe. The theme is highly imaginative, while the graphics rival those on authentic arcade machines.

The Bungling Empire has seized 64 hostages. Your three helicopters attempt to free them, while avoiding tanks, jet fighters, and drone air mines. When the chopper sets next to the barracks, the prisoners run toward it in an incredible animation sequence. If you're not fortunate enough to avoid one of the enemy's rockets, the rescue helicopter explodes in a colorful ball of flame. With each full complement of rescued hostages safely delivered to friendly territory, you advance one level of difficulty.

The helicopter's flight is convincing, and the craft is capable of short backward jogs. Difficult landing speeds must be mastered to avoid a crash. If the rescue mission succeeds, the hostages give you a warm farewell wave. Then they scramble out of the helicopter and head toward the embassy.

A superb job of programming, *CHOPLIFTER!* is an arcade game that remains entertaining play after play.

ARCADE GAMES

CRISIS MOUNTAIN

Description: ladder game

Sold by: Microlab

2699 Skokie Valley Rd.
Highland Park, IL 60035
312/433-7550

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.
\$35 disk

Protected: yes

Warranty: yes

User group rating: 6.9

Graphics and sound: 9

Difficulty: novice

Documentation: 7

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Your mission in *Crisis Mountain* is to race through caves, seeking a nuclear bomb in order to save the mountain. To succeed, you have to defuse two bombs, avoid being hit by rolling boulders as big as you are, and keep from falling into a lava pit before time runs out.

If you manage to defuse both bombs, you begin a bonus run. During the extra play, you earn points for grabbing star-like objects and just for staying alive.

Dying is not immediate in *Crisis Mountain*, as it is in other games. A boulder doesn't kill you when it hits; you're merely weakened, and soon you can no longer stand and must crawl on your hands and knees.

The graphics are nothing less than superb with a very realistic character playing your part. The sound leaves a little to be desired, but it is adequate. Any game player, young or old, can enjoy this game and become addicted to it. The action at higher levels is intense enough for expert players.

ARCADE GAMES CROSSFIRE

Description: shoot-em-up
Sold by: Sierra On-Line, Inc.

Sierra On-Line Bldg.
Coarsegold, CA 93614
209/683-6858

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick optional

Price and format: approx.
\$30 disk

Protected: yes

Warranty: 90 days

User group rating: 6.5

Graphics and sound: 9

Difficulty: expert

Documentation: 8

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Crossfire is one tough arcade game. You are surrounded and trapped inside a city, and your only chance to survive is to kill as many of the aliens as you can. The aliens approach you from all sides—some even wait in ambush for a good shot. Your laser charge is limited, and the recharger is on the other side of town. You have to concentrate or you'll wind up caught in the crossfire.

This extremely challenging arcade game requires very good hand-eye coordination. One hand on the keyboard moves you in four directions around the screen, while you fire lasers in four directions with the other. Enemy missiles are slow and easily avoided when they're coming from only one direction. If you're caught in crossfire, however, there is no place to hide.

As you kill off the aliens, the remainder start moving faster. They are somewhat intelligent and head for your position while constantly firing. You get a certain number of shots per ship, and this decreases with each screen of aliens you clear. To reload your laser, you must move over a flashing pattern that appears as far from you as possible on the screen. The graphics are smooth, and the aliens are somewhat cute. If you like a real challenge, this game is for you.

Description: flight simulation

Sold by: TSR, Inc.

P.O. Box 756

Lake Geneva, WI 53147

414/248-3625

For: Apple II, II Plus

Requirements: disk drive

Price and format: approx.

\$25 disk

Protected: yes

Warranty: 90 days

Overall rating: 6.0

Graphics and sound: 8

Difficulty: intermediate

Documentation: 4

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Dawn Patrol simulates the airplane dogfights of World War I. This program is for people who enjoy flying or who would like to experience the feel of flying. There is also an element of arcade action through aerial combat.

The pilot can fly many different WWI era planes. The goal is to outfly and destroy the clever enemy planes. You try to shoot down enough of the enemy to qualify for the ex-

alted status of Ace, but the computer is a tough German foe. For each allied plane, the keyboard controls the throttle, rudder pedals, a simulated control stick, and the main machine guns.

This is also the main drawback of the program: the game's designers failed to allow for joystick control. It is impossible to get a feel for flight without a joystick. There is, however, a full cockpit of gauges, and instruments are displayed at the bottom of the screen. You can even turn your head to get surrounding views.

Dawn Patrol is basically a flight simulator. First you learn how to take off and land a plane. Then you are ready to try warfare. The dogfights are quite realistic and add depth to the program. Luckily there is a novice dogfight mode for new fliers to practice while the enemy planes do not fire back.

ARCADE GAMES EVOLUTION

Description: varied game screens

Sold by: Sydney Development Corp.

103 Fourth Ave.
Ottawa, Ontario
Canada K1S 2L1
604/734-8822

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick optional

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 90 days

User group rating: 5.0

Graphics and sound: 6

Difficulty: novice

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

In *Evolution*, an arcade game with an unusual theme, you begin life as an amoeba. All you have to do is eat some tasty DNA cells without becoming lunch for assorted spores, microbes, and antibodies. If you survive that level, you become a lowly tadpole. By eating just three wa-

ter flies, you advance from tadpole to the exalted level of rodent. Once you're a rodent, you get to snack on assorted cheeses. But be on the lookout for the snakes.

Evolution is an amazing gaming universe; instead of shooting creatures, you use a dung pile to kill them! Having eliminated the snake, you become a dam-building beaver. While building the dam, you have to keep a sharp eye out for alligators. When you finish the dam, you climb the evolutionary ladder to ape. You are a rare orange gorilla in the African jungles. Thieving monkeys are after your three oranges, and your only defense is a well-aimed coconut. Should you survive this far, you get your reward and become a human being. Then begins the hardest level: the future. Keep a good grip on your laser pistol—genetic mutants are loose.

Evolution has a novel theme for a computer arcade game. It is both entertaining and educational. The game suffers from a lack of balance—the beginning games are very easy, while the last is incredibly hard. Only a few of the games are at a level that you will enjoy.

Description: jumping game

Sold by: Sierra On-Line, Inc.
Sierra On-Line Bldg.
Coarsegold, CA 93614
209/683-6858

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick optional

Price and format: approx.
\$35 disk

Protected: yes

Warranty: 90 days

User group rating: 6.0

Graphics and sound: 4

Difficulty: intermediate

Documentation: 7

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Although an extremely popular arcade game, *Frogger* for Apple computers is a disappointment. *Frogger* challenges you to maneuver a frog up the screen, across a highway, and over a swiftly moving stream to safety on the opposite shore. Dangers along the way include three lanes of speeding traffic on the highway and unpredictable logs spanning the stream.

There are five frogs per game and five nesting spots to be filled per screen. Snakes and alligators add difficulty later. Extra points are scored for reaching a nest holding a fly or another frog.

The keyboard control is responsive, and game play is generally smooth. The major drawbacks are the weak graphics and sound. This is due primarily to the limitation of the hardware.

ARCADE GAMES

HARD HAT MACK

Description: ladder game

Sold by: Electronic Arts
2755 Campus Dr.
San Mateo, CA 94403
415/571-7171

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick optional

Price and format: approx.
\$35 disk

Protected: yes

Warranty: 90 days

User group rating: 7.2

Graphics and sound: 9

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

In *Hard Hat Mack*, Mack is a construction worker. His labors include placing girders for a skyscraper, gathering tool boxes, and feeding metal blocks to a rivet. All this must be accomplished while avoiding vandals, OSHA inspectors, and a wayward rivet bouncing around the screen. Stammers, live wires, and rivet machines try to eat Mack as he goes about his business.

Mack can run, jump, and pick up objects in order to finish his job. Elevators and springboards move him from one level to another. Occasional bonus objects increase the drama and add to point totals. The key to survival in this fast-paced game may be perpetual motion.

Hard Hat Mack is a challenging game to play. Bonus men are earned only after 7000 points are reached. The graphics are excellent, well done, and clear. Game play is smooth and the animation is very clever. The game's flaw is originality—there's nothing new in *Hard Hat Mack*. Although the difficulty factor is high, *Hard Hat Mack* is fun to play. You'll enjoy this game for a long time.

Description: shoot-em-up
Sold by: Sierra On-Line, Inc.
 Sierra On-Line Bldg.
 Coarsegold, CA 93614
 209/683-6858

For: Apple II, II Plus, IIe
Requirements: disk drive;
 joystick optional
Price and format: approx.
 \$30 disk

Protected: yes
Warranty: 90 days

User group rating: 6.6
Graphics and sound: 9
Difficulty: novice
Documentation: 6

Key:

User group rating: Average of
 user group ratings
Graphics and sound: Quality and
 aesthetics of each
Difficulty: How much skill is re-
 quired to enjoy the game
Documentation: Quality of
 printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Marauder is actually two games in one. You can play them separately (meeting various levels of difficulty in each), or consecutively for prolonged entertainment.

In the first, you are piloting a ship trying to destroy the defensive weapons of a military installation. You can fire downward only, and you can speed up for short periods to avoid enemy weapons.

Recharging takes some time, so you have to plan your shots. Once you have destroyed all the weapons, you pass through the hole where the fireball launcher was. In the complete game, you continue to the next part, otherwise you merely proceed to the next level.

Once past the hole, you have infiltrated the installations and must reach the nuclear reactor to cause a chain reaction. You have to return to your ship before the reactor explodes.

Part one of *Marauder* is quite well done and rather easy to play. The second part is interesting but demands precise joystick control. It is nearly impossible with the keyboard.

ARCADE GAMES **MINER 2049ER** ★

Description: ladder game

Sold by: Micro Lab, Inc.

2699 Skokie Valley Rd.
Highland Park, IL 60035
312/433-7550

For: Apple II, IIe

Requirements: disk drive,
joystick

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 30 days

User group rating: 7.7

Graphics and sound: 9

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The first good *Donkey Kong*-type game for the Apple, *Miner 2049er* offers ten levels of play, good graphics, and smooth action. You must maneuver a miner, Bounty Bob, through a cavern of ramps, platforms, catwalks, ladders, and slides.

The object is to walk over each section of floor space within an allotted time period, which decreases for each successive level. Besides the time limitations, there are deadly monsters lurking on each level. Picking multicolored apples along the way gives you the power to deactivate the monsters. Other obstacles include a nuclear waste bin and a fire pit.

Good hand-eye coordination is a must in this game, and a joystick is preferable to keyboard control. Points are scored for killing the monsters and for each section of floor tiles cleared. For one or two players, *Miner 2049er* is the best game of this type available.

ARCADE GAMES

★ NIGHT MISSION PINBALL

Description: pinball simulation

Sold by: subLOGIC Corporation

713 Edgebrook Dr.
Champaign, IL 61820
800/637-4983

For: Apple II, II Plus, IIe

Requirements: disk drive;
paddle controllers optional

Price and format: approx.
\$35 disk

Protected: yes

Warranty: 6 months

User group rating: 7.3

Graphics and sound: 9

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Night Mission Pinball is a well-written and thoroughly entertaining game. The game's theme is supposed to be a bombing mission, but as in any arcade pinball machine, this has no real bearing on play.

The graphics in *Night Mission Pinball* are well done, and the ball's animation is superb and quite realistic. The flippers are well animated and responsive, and the bumpers run true, although a few of the point scoring lights are not clearly delineated. Several ball wells discharge when all are filled, allowing four balls to be played simultaneously. Each game begins with five balls and an easy or hard option.

The major innovation of this game is its ability to preset the values of 25 playing variables. Ball speed, bumper pressure, balls per game, gravity, flipper strength, and bumper activation are among the programmable options.

An outstanding game, *Night Mission Pinball* offers hours of challenge for even the best pinball wizards. The game even requires you to drop in a quarter (via the keyboard) before you can play!

ARCADE GAMES **SAMMY LIGHTFOOT**

Description: jumping game

Sold by: Sierra On-Line, Inc.
Sierra On-Line Bldg.
Coarsegold, CA 93614
209/683-6858

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick or paddle controllers
optional

Price and format: approx.
\$30 disk

Protected: yes

Warranty: 90 days

User group rating: 7.8

Graphics and sound: 9

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

SAMMY Lightfoot, from Sierra On-Line, Inc., is a first rate, arcade-quality game for Apple computers. The game employs some slapstick-style action, but the violence content is minimal. *SAMMY Lightfoot* is a good choice for children and excellent entertainment for the whole family.

Sammy has auditioned for the big top at the circus, and your task is to maneuver him through a very demanding performance. The act begins on the trampoline, but be careful—there are no nets. Sammy has to jump chasms and learn to swing on a trapeze. Bouncing balls and a crazed pumpkin add to the confusion on the screen.

Sammy is controlled with a joystick or from the keyboard. With a choice of difficulty levels and three scenarios, *SAMMY Lightfoot* is fun for the whole family.

Description: bombing simulation

Sold by: Broderbund Software, Inc.

17 Paul Dr.
 San Rafael, CA 94903
 415/479-1170

For: Apple II, II Plus, IIe

Requirements: disk drive;
 joystick optional

Price and format: approx.
 \$32 disk

Protected: yes

Warranty: none

User group rating: 6.3

Graphics and sound: 9

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of
 user group ratings

Graphics and sound: Quality and
 aesthetics of each

Difficulty: How much skill is re-
 quired to enjoy the game

Documentation: Quality of
 printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Sky Blazer is one of the best arcade games available for the Apple. The object is to successfully complete four bombing missions of increasingly greater difficulty. Offensive weapons include a laser and a maximum of 30 bombs.

Each mission's objective (i.e., destroy the radar) is clearly labeled. The tricky part is that you can't fire the laser while the bomb bay doors are open, and you can't bomb if they are closed. They only open at the lowest of altitudes. It's tough going since the enemy's artillery includes jets, blimps, balloon bombs, and guided missiles.

You must periodically replenish bombs and fuel in midair. Hitting strategic objectives (buildings, fuel tanks, and oil wells) adds points to your score. A bombed tree, however, subtracts from your total.

The graphics are crisp, clear, and smooth. Control is by joystick or keyboard, with vertical and horizontal range of motion. Keyboard control is noticeably less responsive than that of a joystick.

ARCADE GAMES SNACK ATTACK ★

Description: maze chase

Sold by: DATAMOST, INC.

8943 Fullbright Ave.

Chatsworth, CA 91311

213/709-1202

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick optional

Price and format: approx.
\$30 disk

Protected: yes

Warranty: not written

User group rating: 5.9

Graphics and sound: 9

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Snack Attack, from DATA-MOST, INC. is an arcade-style game very similar to *Pac-Man*. The little yellow creature is gone, however, and replacing it is a voracious whale. The whale eats dots in the maze to gain points. The maze is inhabited by whale-hating ghosts, spirits of long departed whalers who must be avoided at all costs.

Graphics are in high-resolution, and appropriate sound effects accompany the game. Game play begins rather slowly but quickly picks up.

A joystick option further enhances play. One unique feature is a series of doors that lets the whale and ghosts move to different parts of the maze. As you advance to higher difficulty levels, the maze is redrawn.

While this is an interesting and playable elaboration of the *Pac-Man* theme, *Snack Attack* suffers from a lack of originality.

Description: shoot-em-up
Sold by: Sirius Software, Inc.
 10364 Rockingham Dr.
 Sacramento, CA 95827
 916/366-1195

For: Apple II, II Plus, IIe
Requirements: disk drive;
 paddle controllers optional
Price and format: approx.
 \$30 disk

Protected: yes
Warranty: 30 days

User group rating: 5.9
Graphics and sound: 8
Difficulty: intermediate
Documentation: 6

Key:

User group rating: Average of
 user group ratings
Graphics and sound: Quality and
 aesthetics of each
Difficulty: How much skill is re-
 quired to enjoy the game
Documentation: Quality of
 printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

At first the popular arcade game of *Sneakers* seems to pit you against hideous monsters and horrible villains. But *Sneakers* is actually a sedate, pleasant, and addictive alien shoot-em-up.

Beginning with five ships, you are fighting a variety of enemies, and you must use a different strategy for each type. Figuring out just when to shoot them is an important part of *Sneakers*. Once past the first five rounds, you have to fly through an asteroid field. Succeed, and you get to do the whole thing over again, this time with an additional ship.

If you survive the first five rounds using only one ship, you earn bonus points. After that you're on your own. A sharp whistle warns you when your last ship is on the screen. The scene that replaces a ship after you have been killed is amusing and nicely done.

The graphics are clean, and there is minimal flicker in the animation. The sound, from the warning bell to the death knell, is helpful and adds much to the game. *Sneakers* is fun to play and fun to continue playing. Its primary appeal is the challenge of beating one round, only to plot new strategy for the next.

ARCADE GAMES SPACE VIKINGS ★

Description: flight simulator

Sold by: subLOGIC Coporation

713 Edgebrook Dr.
Champaign, IL 61820
800/637-4983

For: Apple II Plus

Requirements: disk drive,
joystick or paddle controllers

Price and format: approx.
\$50 disk

Protected: yes

Warranty: 6 months

Overall rating: 8.0

Graphics and sound: 10

Difficulty: expert

Documentation: 3

Key:

Overall rating: Summation of all ratings factors

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Space Vikings combines a best-selling flight simulator with the challenge of a strategy game. Three-dimensional combat simulations provide the excitement and visual effects of a good arcade game.

You are the commander of a federation starship with several major decisions to make. Your task is to secure 20 different star systems without being destroyed. Outfitting and maintaining the starship is your responsibility, and scarce resources have to be carefully allocated. Scouts determine the technology level of nearby solar systems.

Unfortunately, you are left to your own devices. The manual is so skimpy, it is useless. An expert player will be able to determine the correct procedures, but *Space Vikings* may prove impossible for novices.

Once outfitted, the starship flies through hyperspace and begins a long approach to the first planet. Planetary approaches are slow and too much time is spent waiting for action. The thrill of flying a spaceship pales rapidly in empty space, but for the dedicated game player, *Space Vikings* is one of the best challenges available.

Description: space maze

Sold by: SIR-TECH
SOFTWARE

6 Main St.

Ogdensburg, NY 13669

315/393-6633

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$35 disk

Protected: yes

Warranty: 30 days

User group rating: 6.1

Graphics and sound: 9

Difficulty: intermediate

Documentation: 9

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Star Maze is an 18-color, high-resolution, arcade game with multi-directional scrolling. The object of the game is to recover nine powerful jewels from a large maze of huge colored marshmallows as aliens chase your spaceship.

Your spaceship is equipped with unlimited auto-fire shots and an antimatter bomb. There are nine types of aliens to overcome. After the jewels are recovered, you must return to the mothership for refueling. Controlling your speed and direction through the maze is very difficult, and running out of fuel is the most common reason for losing. The title of Ace is reserved for anyone who recovers the nine jewels and completes 16 mazes.

A severe drawback to the game is the absence of a level indicator, but *Star Maze* is fun for players with a highly developed sense of maneuverability and speed control.

ARCADE GAMES SWASHBUCKLER ★

Description: ladder game

Sold by: DATAMOST, INC.

8943 Fullbright Ave.

Chatsworth, CA 91311

213/709-1202

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.

\$30 disk

Protected: yes

Warranty: not written

User group rating: 6.1

Graphics and sound: 10

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of user group ratings

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Swashbuckler is a rare arcade-style game that breaks new ground and sets standards for playing. The theme has all the excitement and novelty of an old Errol Flynn movie.

Armed with a trusty sword, you are a swashbuckler of yore aboard a rotting, ghostly pirate ship. The ship is inhabited by a strange crew of pirates, venomous snakes, and killer rats. Fortunately, you have three lives. A surprisingly complex set of movements (parry, lunge, or thrust) can be used to ward off your opponents. All of these movements are keyboard controlled.

You need true dexterity to win at this game. With each victory you ascend into ever higher and more challenging decks of the pirate ship. Battling new and more devious horrors, you finally reach the top deck.

The high-resolution graphics are superb, while the animation is smooth and convincing. High scores are saved to disk in true arcade fashion. Varying levels of difficulty, surprising challenges at each level, and excellent graphics make *Swashbuckler* a must.

Description: shoot-em-up
Sold by: Sierra On-Line, Inc.
 Sierra On-Line Bldg.
 Coarsegold, CA 93614
 209/683-6858

For: Apple II, II Plus, IIe
Requirements: disk drive;
 joystick or paddle controllers
 optional

Price and format: approx.
 \$30 disk

Protected: yes
Warranty: 90 days

User group rating: 6.4
Graphics and sound: 8
Difficulty: intermediate
Documentation: 7

Key:

User group rating: Average of
 user group ratings

Graphics and sound: Quality and
 aesthetics of each

Difficulty: How much skill is re-
 quired to enjoy the game

Documentation: Quality of
 printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Threshold is a shoot-em-up space game. You're commanding the E.F.S. *Threshold* and must clear the galaxy's trade-ways of pirating fleets. Equipped with a time-slowng hyperwarp drive and Delta class lasers, you face screen after screen of enemy ships.

Don't be overconfident, however—there are some liabilities. The lasers tend to overheat so you have to watch the temperature gauge as well as your energy expenditure. If the lasers overheat you have to wait for them to cool; you are a semi-sitting duck as you retrieve your sole offensive capability. Even worse, the warp drive can be used only once per ship.

Threshold is basically an invaders-type game with a clever twist. It uses good graphics, smooth animation, and challenging action. Ship control is equally responsive with paddle or keyboard.

ARCADE GAMES **WAVY NAVY** ★

Description: shoot-em-up

Sold by: Sirius Software, Inc.
10364 Rockingham Dr.
Sacramento, CA 95827
916/366-1195

For: Apple II, II Plus, IIe

Requirements: disk drive;
joystick or paddle controllers
optional

Price and format: approx.
\$35 disk

Protected: yes

Warranty: 30 days

User group rating: 5.5

Graphics and sound: 10

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Wavy Navy is a very wild game, one of the most addictive available. You command a battleship on the high seas during incredibly rough weather. Rolling across the screen like a giant rollercoaster are 30-foot waves.

Your enemy does not have these problems. He is sending a rather diverse air force against you. The kamikaze fighters fly straight for a while, then dive at your ship. There are dive bombers and squads of helicopter gunboats flying down and machine guns spraying fire at you. Long-range bombers periodically appear and saturate the air with bombs. Then the enemy starts launching guided missiles that skim the top of each wave, forcing your ship down into the trough.

Promotions and demotions come rapidly in this game. A novice who survives all eight levels of the beginner mode rises immediately from galley slave to admiral. Veteran players (in the expert mode) can earn the ultimate prize for completing the tenth level—the presidency of the United States.

Wavy Navy can be played by as many as four players at once, which makes it a good family activity on a rainy day. *Wavy Navy* is a great arcade game, appealing to all age groups.

Description: maze game
Sold by: Sirius Software, Inc.
 10364 Rockingham Dr.
 Sacramento, CA 95827
 916/366-1195

For: Apple II, II Plus, IIe
Requirements: disk drive;
 joystick or paddle controllers
 optional

Price and format: approx.
 \$40 disk

Protected: yes
Warranty: 30 days

User group rating: 5.7
Graphics and sound: 7
Difficulty: expert
Documentation: 7

Key:

User group rating: Average of
 user group ratings
Graphics and sound: Quality and
 aesthetics of each
Difficulty: How much skill is re-
 quired to enjoy the game
Documentation: Quality of
 printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Wayout has 26 three-dimensional mazes. You start out with nothing but a compass and a mapmaker that draws the maze (section by section) as you proceed through it. A banshee wind is constantly blowing you off course, and a thieving Cleptangle follows you around, stealing your compass and mapmaker. You have to retrieve them to continue.

This is a good game if you have a lot of patience and enjoy a real challenge. *Wayout* can be played by keyboard, paddles, Apple joystick, or (if you have a joyport) an Atari-type joystick.

For those without nerves of steel, there is a pause option, and the games can be saved. Any of the 26 mazes can be selected to play. This is quite a game for expert players.

Description: shoot-em-up

Sold by: Datasoft, Inc.

9421 Winnetka Ave.
Chatsworth, CA 91311
213/701-5161

For: Apple II, II Plus, IIe

Requirements: disk drive,
joystick

Price and format: approx.
\$40 disk

Protected: yes

Warranty: 90 days

User group rating: 8.0

Graphics and sound: 9

Difficulty: intermediate

Documentation: 8

Key:

User group rating: Average of
user group ratings

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is re-
quired to enjoy the game

Documentation: Quality of
printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Zaxxon's initial popularity in the arcades stemmed from its superior graphic presentation. Datasoft's version, although probably not completely satisfactory to a diehard player, recreates the game's true essence at home. The real charm of this program is its attempt to simulate three-dimensional action.

The game is a challenging shoot-em-up. The object is to fly your fighter over and around the walls of a hostile camp and dodge or destroy missiles and anti-aircraft batteries while zapping as many fuel tanks as possible.

Destroying fuel tanks replenishes your own supply. A full tank is a necessity, since your next mission is to outer space. If you succeed in challenging the deadly space fighters there, you go for another run through the encampment.

The third section is very tricky. The few breaks in the walls are protected by force fields, and you must fly at exactly the right height to pass under them. After this you finally face the giant, rocket-launching Zaxxon Robot.

This is the approved computer version of the popular arcade game. Getting used to the perspective is quite a challenge.

This chapter covers a wide range of software, from programming aids to graphics and sound aids to utility programs. Most of these programs are of interest only to experienced programmers, but some—particularly the graphics and sound programs—are entertaining and simple enough that beginners will enjoy experimenting with them.

In addition to BASIC programming aids, the Logo programming language is included in this chapter. BASIC is the most common language for beginning programmers, but Logo is also very easy to learn.

Also included is a macro assembler to aid assembly language programmers.

The following special terms are used in this chapter:

assembler A computer program that translates assembly language instructions (symbolic source code) into machine language instructions (binary object code).

assembly language A programming language consisting of symbolic codes that represent binary machine instructions and addresses.

font editor A program that lets the user create and save entire character sets for use in other programs.

machine language The language at its lowest level (in binary form) into which all data and programs must ultimately be translated before the computer can execute instructions.

macro A user-defined command or code in assembly language programming.

monitor Software that allows the programmer to check the step-by-step operation of a program.

operating system The software that runs the system and performs operations necessary to control all other software functions.

utility program A program that performs operations on files (such as transferring files from one storage medium to another, making copies of files, or reorganizing the sequence of files).

PROGRAMMING AIDS

APPLE MECHANIC★

Description: utility package

Sold by: Beagle Brothers

4315 Sierra Vista
San Diego, CA 92103
619/296-6400

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$30 disk

Protected: no

Warranty: lifetime

Overall rating: 8.0

Performance: 8

Ease of use: 9

Reliability: 9

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Like other Beagle Brothers software packages, *APPLE Mechanic* is more than it appears to be. In fact, it is probably the largest collection of software and educational literature for the Apple that is available in one package. *APPLE Mechanic* includes graphics utilities, disk utilities, and a free chart of important Apple memory locations and subroutine calls.

The main focus of the disk is a series of programs for printing high-resolution text on the Apple screen. Using a program called XTYPER, text can easily be generated on a blank page, or a high-resolution picture produced by another program. Other options include adding lettering to graphs and creating title pages for your own programs.

One of the programs included in *APPLE Mechanic* allows you to examine any track or sector on a 16-sector disk and then modify individual bytes in the track. This is a handy feature for patching corrupted disks.

Several important and useful programming techniques, like displaying and flipping high-resolution pages, are explained in the extensive documentation. An enclosed tip book gives pointers about using many of the Apple computer's fascinating capabilities. *APPLE Mechanic* is an entertaining way to learn about your Apple.

Description: BASIC programmer's aid

Sold by: Adventure International

P.O. Box 3435
Longwood, FL 32750
305/862-6917

For: Apple II, IIe

Requirements: disk drive

Price and format: approx.
\$30 disk

Protected: no

Warranty: 1 year

User group rating: 6.0

Performance: 10

Ease of use: 9

Reliability: 10

Documentation: 8

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Apple Spice is a powerful enhancement to Apple Floating Point BASIC. The serious Apple programmer will find it is a superb utility, supplying all the missing capabilities in Apple's version of BASIC.

One of the commands that *Apple Spice* adds to Applesoft BASIC is Print Using, a common function in most BASICs used for formatting numeric output. This is especially helpful in financial applications. *Apple Spice* provides an IF-THEN-ELSE function to jump or bypass a section of program code. In addition, IF-THEN-ELSE statements can be used in succession, to direct logic flow in program execution.

To round out the package's capability, a powerful string search function has been included. This supplants the limited capability of Applesoft. Finally, screen-handling has been greatly improved by the addition of wordwrap during screen formatting. Combining three of the most popular features in BASIC programming, *Apple Spice* is a best buy, and it maintains full compatibility with Applesoft BASIC. A superb utility.

PROGRAMMING AIDS BAG OF TRICKS★

Description: disk utility
Sold by: Quality Software
21601 Marilla St.
Chatsworth, CA 91311
213/709-1721
For: Apple II, II Plus, IIe
Requirements: disk drive
Price and format: approx.
\$40 disk

Protected: yes
Warranty: 90 days

User group rating: 8.4
Performance: 9
Ease of use: 7
Reliability: 9
Documentation: 9

Key:

User group rating: Average of user group ratings
Performance: Rating of program's capabilities
Ease of use: How quickly the user can learn to use the program
Reliability: Consistency of results
Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Bag of Tricks is from the same people who wrote *Beneath Apple DOS*, the best book available about the Apple Disk Operating System. It is a powerful software toolbox that is useful to beginners as well as advanced users.

The package consists of four utilities: INIT, FIXCAT, TRAX, and ZAP. The first two, INIT and FIXCAT, are very simple to use and allow the user to resurrect deleted or lost files, reconstruct the disk catalog (directory), selectively reinitialize tracks on a disk, and more. The other two utilities, TRAX and ZAP, are very powerful but require a more complete understanding of Apple DOS. TRAX reads and analyzes data directly from a disk, and ZAP is a sophisticated disk editor that allows you to examine individual tracks and sectors, search for specified data on a disk, and make changes.

Every Apple user who keeps important data or programs on disks should have a copy of *Bag of Tricks*. It will pay for itself the first time that it helps you save a lost file or disk.

PROGRAMMING AIDS

★THE COMPLETE GRAPHICS SYSTEM

Description: graphic programming aid

Sold by: Penguin Software
P. O. Box 311
Geneva, IL 60134
312/232-1984

For: Apple II, II Plus, IIe

Requirements: disk drive;
paddle controllers optional

Price and format: approx.
\$80 disk

Protected: no

Warranty: not written

User group rating: 8.0

Performance: 10

Ease of use: 10

Reliability: 10

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Complete Graphics System is a professional-quality utility for graphics programmers. It allows the user to create designs or character fonts which can then be edited or saved to disk. It also has a three-dimensional graphics capability.

Keyboard commands are used to draw images, although the Apple II game paddles can also be used if desired. Figures can be drawn freehand and then filled in with over 100 different colors and shades. Images are stored in high-resolution color shape tables that can be used by other programs.

The 3D graphics module will create and edit three-dimensional images. Once an image has been defined, it can easily be rotated to be viewed from any angle. Images can even be scaled to look larger, for inspection of details.

A font editor is also available. It provides the ability to create and save entire character sets for use in other programs.

Complete Graphics System is a must for both serious and novice Apple II graphics programmers. Although the keyboard is a little awkward for creating and editing images, the capabilities provided by this package are worth the trouble.

PROGRAMMING AIDS COMPOSER'S ASSISTANT ★

Description: music programming aid

Sold by: Syntauri Corp.
4962 El Camino, Suite 112
Los Altos, CA 94022
415/966-1273

For: Apple II Plus, IIe

Requirements: disk drive,
Syntauri computer music system;
printer optional

Price and format: approx.
\$400 disk

Protected: yes

Warranty: 90 days

User group rating: 5.5

Performance: 10

Ease of use: 9

Reliability: 10

Documentation: 10

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Composer's Assistant is a program to aid musicians who are already using the Syntauri music synthesizer with their Apple computer. The program provides the ability to create and edit musical scores and then print them on a dot-matrix printer.

After the user selects a tempo, the metronome inside the Apple begins. If a long score is planned, two disks may be necessary. The notes are entered one at a time and appear on the score as the appropriate characters. Groups of eighth or sixteenth notes are not tied together by a bar, and all note stems point up, but other than that the score looks very much like traditional music notation.

Composer's Assistant is an excellent aid for aspiring composers and songwriters. It will print professional-looking musical manuscript with very little trouble.

Description: utility package

Sold by: Central Point Software, Inc.

P.O. Box 19730-203
Portland, OR 97219
503/244-5782

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$20 disk

Protected: no

Warranty: yes

Overall rating: 10.0

Performance: 10

Ease of use: 9

Reliability: 9

Documentation: 10

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Filer is a collection of very useful programming tools. Programmers will appreciate a feature which allows the disk's boot program to be altered.

The diagnostic program checks the working condition of your disk drive and controller card.

The speed of drives can be calibrated within factory tolerances, which is important because many protected programs are particularly sensitive to disk drive speeds. A disk can be checked to detect any bad sectors on it before the user saves data to a defective disk and loses it. Some of the other utilities include file locking and unlocking, deleting, and copying.

The most useful part of this package is the fast copy utility, which is one of the fastest copy programs available. *The Filer* will copy any nonprotected Apple disk in under 40 seconds with two drives. For those who have written their own programs and need to make many copies in a short time, this is the best program to use.

The price makes *The Filer* a definite best buy — not many top programs sell for only \$20. At this price, every serious programmer will want to have a copy, and all Apple owners should have it for occasional programming problems.

PROGRAMMING AIDS THE INSPECTOR★

Description: disk utility
Sold by: Omega Microware,
Inc.
222 S. Riverside Plaza
Chicago, IL 60606
312/648-4844
For: Apple II, II Plus, IIe
Requirements: disk drive
Price and format: approx.
\$60 disk

Protected: no
Warranty: none

Overall rating: 10.0
Performance: 10
Ease of use: 9
Reliability: 10
Documentation: 7

Key:

Overall rating: Summation of all ratings factors
Performance: Rating of program's capabilities
Ease of use: How quickly the user can learn to use the program
Reliability: Consistency of results
Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Inspector is a utility for investigating the contents of a disk. To use it effectively, the user must know how Apple disks are formatted, and understand the basic concepts of sectors, tracks, and records.

Free (empty) sectors on a disk can be located, and the disk can be searched for a specific set of characters. Data can be read as either bytes (8 bits) or nibbles (4 bits). It is possible to load a sector into memory and edit it, and the user can even define which page of memory is to be used for a buffer. Incremental reading and writing is supported, which allows you to step through sectors and pages in memory.

All commands are single keystrokes, except the write command. Most disk utilities use a W for the write command, but *The Inspector* uses CTRL/W, to prevent accidental loss of data if you bump the W key. User-defined commands can also be used.

Like *Bag of Tricks* (see separate review), *The Inspector* allows you to resurrect a file if you accidentally delete it. This capability alone is worth the price of a disk utility.

PROGRAMMING AIDS

★ MASTER DIAGNOSTICS + PLUS

Description: hardware diagnostic test

Sold by: Nikrom Technical Products, Inc.
25 Prospect St.
Leominster, MA 01453
617/537-9970

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx. \$75 disk

Protected: yes

Warranty: lifetime

User group rating: 5.1

Performance: 9

Ease of use: 8

Reliability: 10

Documentation: 10

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Master Diagnostics + Plus is a set of programs that tests the hardware of your Apple computer. It identifies chips that need to be replaced and performs a variety of common diagnostic tests. It is most useful to those who enjoy working on the hardware themselves, but anyone can use it to check

for bad memory chips or other simple problems.

Both the RAM memory and ROM memory are tested, along with the plug-in boards and modem. The disk drives can be checked for proper rotation speed and alignment, and the drift of a joystick can be measured. Monitors can be checked for yoke alignment and high- and low-resolution color alignment. A total of 27 diagnostic tests are included.

The *Master Diagnostics + Plus* package also comes with a bottle of CRT cleaner, a bottle of computer housing cleaner, two cleaning disks (for the disk drive heads), and special chamois-tipped cleaning wands. These wands are lint- and static-free and are bent at an angle that allows easy access to the inside of the computer.

The manual is extensive and clearly written, without much technical jargon. The only things missing in the package are tests for a 16K added memory card or disk drive card. Every do-it-yourself Apple owner should have a copy of *Master Diagnostics + Plus*.

PROGRAMMING AIDS METATRAK★

Description: music programmer's aid

Sold by: Syntauri Corp.
4962 El Camino, Suite 112
Los Altos, CA 94022
415/966-1273

For: Apple II Plus, IIe

Requirements: disk drive,
Syntauri computer music system

Price and format: approx.
\$180 disk

Protected: yes

Warranty: 90 days

User group rating: 7.0

Performance: 10

Ease of use: 5

Reliability: 10

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Metatrak is a valuable program for professional musicians and those who enjoy experimenting with sound. It brings the basic concept of multitrack recording to the home.

The usual way in which music is recorded is for a musician to go to a recording studio

where, with multitrack tape recorders, musical tracks can be recorded one at a time. This procedure enables small groups to record very complex pieces of music that would normally require many players. Unfortunately, recording studio time is expensive, and many musicians cannot afford the experimental time needed to develop a new sound.

This software works with the highly popular AlphaSyntauri digital synthesizer, a full-sized keyboard that connects to the Apple via a plug-in board. The Apple is the synthesizer. With the AlphaPlus operating system, the sound waveform, envelope, and pitch pattern can all be defined accurately. The musician controls everything from the Alpha keyboard, while selecting functions from the menu-driven Apple program.

As many as ten different tone colors are available at any one time, and tone color selection is almost instantaneous. Any of the tone colors can be assigned to each of the 16 possible recording tracks. Other features of *Metatrak* include a built-in programmable metronome, microtonal tuning, and programmable keyboard splitting.

This is a must program for serious musicians.

Description: music programming aid

Sold by: subLOGIC Corporation

713 Edgebrook Dr.
Champaign, IL 61820
217/359-8482

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx. \$40 disk

Protected: yes

Warranty: 6 months

User group rating: 5.0

Performance: 8

Ease of use: 9

Reliability: 9

Documentation: 6

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Music Maker is a program that gives nonprogrammers the ability to play simple melodies through the Apple computer's speaker. You just type in the individual notes of the tune, and the program will put it all together and play it.

As each note is entered, it is numbered. These numbers are automatically altered when additions or changes are made. Tempo can be changed at any point within the tune, but the key can only be changed at the beginning or end.

The well-written instruction manual includes a complete glossary of musical terms for those without musical experience. Also explained in the manual are the song file formats for Applesoft, Integer BASIC, and machine language.

A light show option, dubbed *The Kaleidoscopic Maestro*, displays colors that pulsate to the beat of the music. Options for saving songs on cassette tape or playing them through your stereo are also provided. *Music Maker* is a delightful introduction to computer music that the whole family will enjoy.

PROGRAMMING AIDS

ORCA/M★

Description: macro assembler

Sold by: Hayden Software Co.
600 Suffolk St.
Lowell, MA 01853
617/937-0200

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$150 disk

Protected: no

Warranty: 90 days

Overall rating: 10.0

Performance: 10

Ease of use: 10

Reliability: 10

Documentation: 9

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Orca/M is a full-featured macro assembler for assembly language programming on the Apple II, II Plus, or IIe. It includes a powerful macro language and almost 200 commonly used macros that have been predefined. Some of these macros actually expand the capability of Apple DOS (Disk Operating System).

Orca/M uses its own operating system, which is DOS-compatible and very powerful. A link editor is provided, which combines code from relocatable object modules with any routine from the *Orca/M* macro library. A screen editor and a command monitor round out the package's capabilities.

Orca/M is modeled after systems used on mainframe computers; it includes many program development capabilities that are not normally available in microcomputers. It supports several popular 80-column cards, a clock calendar, and multiple disk drives.

The system is designed to be adaptable to new hardware and software as it becomes available, and the source code is included so that users can add custom features and options. *Orca/M* is a clearly superior product.

PROGRAMMING AIDS

★THE ROUTINE MACHINE

Description: utility package

Sold by: Southwestern Data Systems

10761-E Woodside Ave.

Santee, CA 92071

619/562-3670

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.
\$65 disk

Protected: yes

Warranty: 30 days

User group rating: 7.2

Performance: 9

Ease of use: 7

Reliability: 10

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

The Routine Machine is an excellent collection of machine language subroutines that can be used in Applesoft BASIC programs. It provides additional capabilities for BASIC programmers.

The package comes with a comprehensive manual and one double-sided disk. The front side of the disk contains

the main program and associated modules, and the back side contains several demonstration programs that illustrate possible uses for the routines.

Many Logo commands are supported by *The Routine Machine*, so that BASIC programmers can include turtle graphics in their programs. SET, PENUP, PENDOWN, TURN, MOVE, CHORD, FIND, and ARC are all available. The recursive features of Logo are not supported, however, so the programmer must either write that logic into the BASIC portion of the program or settle for simple graphics.

The routines are all relatively small, so that they don't take too much available memory away from the BASIC program they're used with. They average around 256 bytes, with the largest being a little over 1K (1024 bytes). Only those routines that are used in the program need to be loaded into memory, and once they're appended to your program you won't need to load *The Routine Machine* again.

PROGRAMMING AIDS

THE TERRAPIN LOGO LANGUAGE FOR THE APPLE II

Description: simple graphics language

Sold by: Terrapin, Inc.

380 Green St.

Cambridge, MA 02139

617/492-8816

For: Apple II, II Plus, IIe

Requirements: disk drive

Price and format: approx.

\$150 disk

Protected: yes

Warranty: 90 days

Overall rating: 10.0

Performance: 7

Ease of use: 8

Reliability: 9

Documentation: 10

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Terrapin Logo is a programming language designed for learners. While it was originally designed for children by Seymour Papert at M.I.T., anyone who wants to learn programming can benefit from Logo.

The best-known feature of Logo is its graphics capabilities. A small triangular "turtle" is displayed on the screen, and the user tells it where to move, with commands like FORWARD, BACK, LEFT, and RIGHT. As the turtle moves, it leaves a line in its path; this is how the user draws figures.

Once the turtle has learned a set of moves, called a procedure, the turtle can then use that procedure to create (under the user's supervision) more complicated procedures. This building of procedures upon procedures (called recursion) is the key to making Logo a good tool for learning problem-solving skills. By breaking problems down into small parts, even complex programming problems can be solved quickly and easily.

Terrapin Logo comes with an excellent tutorial and excellent documentation. Although it is more expensive than other languages for the Apple, it is a good buy for beginners and children who want to see what programming is all about.

Description: disk utility package

Sold by: Omega Microware, Inc.

222 S. Riverside Plaza
Chicago, IL 60606
312/648-1944

For: Apple II, II Plus, IIe

Requirements: disk drive, *The Inspector* (see separate review)

Price and format: approx. \$50 disk

Protected: no

Warranty: none

Overall rating: 10.0

Performance: 9

Ease of use: 9

Reliability: 10

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

WATSON is an auxiliary utility that adds several useful capabilities to *The Inspector* (see separate review). It cannot be used alone; *The Inspector* must already be loaded into your computer's memory before you can use *WATSON*.

Twelve special functions are included. One of the most useful is the ability to reconstruct the VTOC (Volume Table Of Contents) for a damaged disk.

WATSON can then rebuild the entire Track Bit Map from the catalog track. Another function can be used to remove the DOS from tracks 1 and 2 of a disk, thereby freeing space for additional files. One feature that programmers will appreciate is called the File Follower. It can be used to scan a file automatically sector by sector. Also included is a program for quick conversion between hexadecimal and ASCII notation.

The capabilities of *WATSON* are very useful to programmers and experienced users. It is a good program to buy if you are already using *The Inspector*.

PROGRAMMING AIDS WIZIPRINT ★

Description: Wizardry game utility

Sold by: SIR-TECH Software
6 Main St.
Ogdensburg, NY 13669
315/393-6633

For: Apple II, II Plus, IIe

Requirements: disk drive, printer

Price and format: approx. \$25 disk

Protected: yes

Warranty: 30 days

User group rating: 6.8

Performance: 7

Ease of use: 8

Reliability: 7

Documentation: 9

Key:

User group rating: Average of user group ratings

Performance: Rating of program's capabilities

Ease of use: How quickly the user can learn to use the program

Reliability: Consistency of results

Documentation: Quality of printed instructions

Excellent: 8-10; Good: 5-7; Poor: under 5

Wiziprint is a utility disk that can be used with any of the three Wizardry adventure games for the Apple: *Proving Ground of the Mad Overlord*, *Knight of Diamonds*, or *Legacy of Llylgamyn* (see separate reviews). It provides the ability to print out information about the characters in the game.

Users can choose to see statistics for the members of their party or the entire roster. The following information is provided for each character: attributes, total experience points, accumulated gold, items brought into the dungeon, names of magic spells, and the number of spells allowed for each level.

Wiziprint can help you save time in formulating a party at Gilgamesh's Tavern, because you can check the roster without disbanding the party to return to the Training Ground. You can also use it as an aid in making decisions, because the statistics can be updated while your party passes through the dungeon. A third possible use is as a permanent record of your accomplishments; if you have friends who play Wizardry games, you can compare honors, rewards, and discoveries on your *Wiziprint* printouts.

For Wizardry enthusiasts, *Wiziprint* is a very useful utility. If you play any of the Wizardry games, you'll want a copy of it.

THE BEST APPLE SOFTWARE

From word processing to recipe files, from financial spreadsheets to adventure games, **THE BEST APPLE SOFTWARE** is the book that separates the useful from the useless, the easy from the difficult, the bargain from the rip-off.

Written and evaluated by key Apple experts—with help from Apple Users' Groups and the Editors of **CONSUMER GUIDE**®.

THE BEST APPLE SOFTWARE is the essential reference to your software needs.



	NOV	DEC	TOTAL
MONTH			
SALARY	2500.00	2500.00	30000.00
OTHER			
INCOME	2500.00	2500.00	30000.00
FOOD	400.00	400.00	4500.00
RENT	350.00	350.00	4200.00
REC	100.00	100.00	1200.00
TAXES	1000.00	1000.00	12000.00
ENTERTAIN	100.00	100.00	1200.00
MISC	100.00	100.00	1200.00
CAR	300.00	300.00	3600.00
EXPENSES	2460.00	2470.00	28775.00
REMAINDER	40.00	30.00	1225.00

