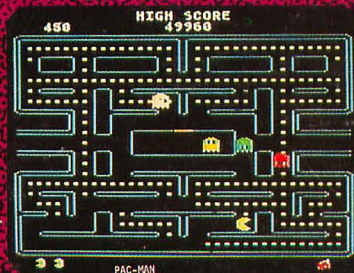
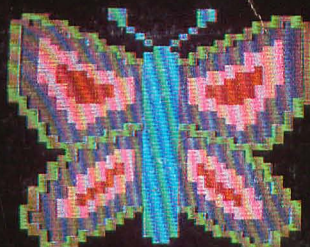


BY THE EDITORS OF CONSUMER GUIDE®

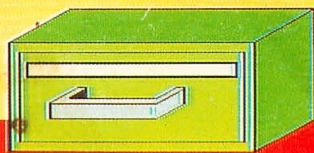
THE BEST ATARI SOFTWARE

EDUCATIONAL · GAMES · BUSINESS
WORD PROCESSING
HOME & PERSONAL USE



THE HOME FILING MANAGER
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REMOVE PROGRAM DISKETTE FROM DRIVE
PLACE DATA DISKETTE IN DRIVE 1
PRESS **ATARI** AFTER DISKETTE IS PUT I





BY THE EDITORS OF CONSUMER GUIDE®

**THE BEST
ATARI
SOFTWARE**

**EDUCATIONAL · GAMES · BUSINESS
WORD PROCESSING
HOME & PERSONAL USE**

**BEEKMAN HOUSE
New York**

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INTRODUCTION

Atari computer 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 Atari Software**. Written by the Editors of Consumer Guide® and Atari software expert Jim Bumpas, this is an essential book for owners of Atari computers. From accounting packages to adventure games, from music makers to math drills, this is the number one source of Atari 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 over 100 Atari user groups (clubs of Atari computer owners) around the U.S. and Canada. These are people who have been using Atari software on a daily basis, so their ratings are based on real experience. Only the programs that received an average rating of 5.0 or better

were included in **The Best Atari 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 to help you make direct comparisons between competing products. If you're looking for a word processing program, for example, you need to know how much text the program will be able to handle. Therefore, we have included file size as one of the ratings for word processing programs. Similar information is provided for database managers, terminal programs, and others.

Consumer Guide® has a long tradition of helping consumers choose the best products to serve their needs, and **The Best Atari Software** continues 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 Atari models the program runs on.

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 cartridge, 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. Although cartridges are not actually protected by the software companies, the average consumer does not have the expensive equipment needed to copy cartridges.

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, tape, or cartridge.

USER GROUP RATING: This is the average of the ratings given by the Atari 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 authors 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, ease of use, and graphics and sound. 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 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 ATARI. 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.

dot matrix printer A type of printer that forms characters by printing a grouping (mosaic) of small dots on the paper.

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 text file.

Justified margins Spacing of text to produce even, vertically aligned right and left margins.

print control characters

Characters that serve as commands that control the operation of the printer.

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.

Description: full word processor

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 16K RAM,
printer; program recorder or
disk drive optional

Price and format: approx.
\$100 cartridge

File size: limited by disk

Printers supported: any parallel printer

Compatible with: ATARI
word processing programs

Protection: cartridge

Warranty: 90 days

Overall rating: 8.7

Ease of use: 8

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This powerful, inexpensive, and fast word processor meets most text handling needs. With it, users can create letters and documents and store them on cassette or disk.

Major operations such as editing, saving and retrieving documents,

and printing are chosen from a simple menu. As with most word processors, *AtariWriter's* comprehensive editing commands allow skipping to the top or bottom of the document, cruising through text a screen at a time, or jumping to the beginning or end of a line. Blocks of words can be moved, deleted, or duplicated, and changes undone with a restore command. High-speed searching and replacing is possible, too. The only editing task not available with *AtariWriter* is the ability to type over text. (Old text must be deleted first, and new text inserted.)

The print mode allows many options, including an easy-to-use facility for such things as underlining, superscripting, and changing the shape of dot matrix characters. Centering text, right justification, margin adjustment, and double-column printing are among the printing functions available.

With some editing of print control characters, *AtariWriter's* files are interchangeable with those of *Text Wizard*, a less expensive word processor. *AtariWriter* text files also "talk to themselves" (can be sent or received with an acoustic modem without additional software), which is helpful for authors working jointly.

AtariWriter is fast becoming the most popular 40-column word processor for the ATARI because of its powerful capabilities and ease of use.

WORD PROCESSING BANK STREET WRITER

Description: simple word processor

Sold by: Broderbund Software, Inc.

17 Paul Dr.

San Rafael, CA 94903

415/479-1170

For: 400, 800, 1200XL

Requirements: 48K RAM, disk drive; printer optional

Price and format: approx. \$70 disk

File size: 1300 words

Printers supported: most dot matrix printers

Compatible with: *Text Wizard*

Protection: yes

Warranty: yes

Overall rating: 7.0

Ease of use: 8

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This easy-to-use, home-oriented word processor, written by Intentional Educations, Inc. and the Bank Street College of Education in New York, introduces beginning computer users to the power of word processing.

Bank Street Writer has all the writing and formatting options necessary to produce a document of moderate length, but it does not have the printer controls or formatting options found in more complicated word processors.

Document length is limited to approximately three printed pages, a limitation that can be circumvented by linking separate files to produce longer documents.

The program comes with an excellent manual and a demo program on the reverse side of the disk that teaches use of the writer. This is an interactive tutorial requiring responses from the user.

Bank Street Writer's best feature is its ease of use. Although of limited use as a real word processor, it has been tested extensively among young students and praised highly by educators for the introduction to computing and text processing that it provides.

WORD PROCESSING LETTER PERFECT

Description: full word processor

Sold by: LJK Enterprises
7852 Big Bend Blvd.
St. Louis, MO 63119
314/962-1855

For: 400, 800

Requirements: 16K RAM; disk drive optional, printer optional

Price and format: approx. \$100 cartridge or disk

File size: limited by disk

Printers supported: any parallel printer

Compatible with: *Data Perfect*, *Spell Perfect*

Protection: yes

Warranty: not written

Overall rating: 8.6

Ease of use: 7

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

Letter Perfect is a fast and powerful word processor with a storage capacity of more than 36,000 characters on a 48K computer. By eliminating key clicks it also provides a silent keyboard—a nice feature for those who work at home.

The program is menu driven and incorporates a large number of

disk utility and file management capabilities. Text block movement, deletion and insertion, and the usual character and line manipulations are provided. Search and replace functions are supported.

Printer controls take full advantage of most printers, although some may require the Printer Driver Building Program (available from the vendor). Document formatting is done before printing and can be changed as often as necessary. The program will not, however, perform double-column printing.

Letter Perfect is compatible with *Data Perfect* and *Spell Perfect*, but its disk files cannot be read by programs that do not use LJK's special disk format and operating system. A utility program available from LJK allows conversion between their format and ATARI DOS format.

Possibly the most powerful word processor available for the ATARI, *Letter Perfect* is also easy to use once mastered. Its user's manual is complete and extensive. Used in conjunction with a high-speed printer and special hardware to provide an 80-column display, this is a professional-quality word processor.

WORD PROCESSING SPELL WIZARD

Description: spelling checker

Sold by: Datasoft Inc.

9421 Winnetka Ave.

Chatsworth, CA 91311

213/701-5161

For: 400, 800, 1200XL

Requirements: 32K RAM, disk drive; printer optional

Price and format: approx. \$50 disk

File size: limited by disk

Printers supported: Epson

MX-80 and FX-80, Centronics 737

Compatible with: *Text Wizard*

Protection: yes

Warranty: 90 days

Overall rating: 8.1

Ease of use: 9

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

Working at a rate of 600 words per minute, *Spell Wizard* reads text and compares it with words in a dictionary. It works by flagging words not found in its dictionary (including misspellings) and displaying them one after another on the screen in inverse video. The dictionary recognizes over 33,000 words, and words may be added by the user.

For each word flagged, you have three choices: continue scanning (which means to accept the word as spelled), make the proper corrections if the word is misspelled, or search a dictionary for correct spelling. The search option brings up a prompt asking you to type in the word to be found. When you insert the dictionary disk, the screen either displays the correct spelling or reports that the word is not found. A wild-card search can be requested if only the first few letters of a word are known.

Corrected words can be saved and flagged words added to a user dictionary. As with all spelling checkers, searching takes time; thus you may want to create specialized dictionaries with different file names to avoid constantly switching disks. A hard copy of any dictionary can be printed for reference.

Among program constraints are that all proper nouns are automatically decapitalized and all possessives will be flagged under the assumption that most apostrophes are mistakes. Further, you are limited to 1000 flagged words per document. *Spell Wizard* can be used with *Text Wizard* (see separate review), but not with *Letter Perfect*, which uses a customized disk operating system.

Spell Wizard's clearly written documentation and user-friendly prompts make it easy to understand and use.

Description: full word processor

Sold by: Datasoft Inc.
9421 Winnetka Ave.
Chatsworth, CA 91311
213/701-5161

For: 400, 800

Requirements: 32K RAM, disk drive; interface optional, printer optional

Price and format: approx. \$50 disk

File size: 21,000 characters

Printers supported: Epson MX-80, Centronics 737, ATARI 825

Compatible with: *Spell Wizard*

Protection: yes

Warranty: 90 days

Overall rating: 7.8

Ease of use: 9

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This is the most inexpensive, full-function 40-column word processor available for the ATARI; it is also perhaps the most widely used.

Margin control allows for two-column printing by setting two right and left margins; spacing of characters and lines and length of form are controlled by embedded printer commands at any point in the text. In addition to standard Atari editing commands, *Text Wizard* uses page up, page down, top of file, bottom of file, and search and replace commands. Text can be deleted by character, line, and block. Two screens of text at a time can be marked for movement or duplication. A handy deletion technique not described in the manual is marking a block of text for a move and then not moving it.

Some of *Text Wizard's* special printing features can be used on unsupported printers and include centering text, blocking text to the right margin, running headers or footers, numbering or skipping pages, pausing to load sheet paper, and chaining multiple files together. On these unsupported printers, condensed, elongated, underlined, and subscripted or superscripted text may not work. Right justification is usually possible with most printers, but proportionately spaced characters can be right justified only with the supported printers. *Text Wizard* is an excellent buy.

CHAPTER 2 BUSINESS

Although the ATARI computers are not primarily for small business, there are many business programs available for them. These include database managers, mailing list programs, electronic spreadsheets, and accounting packages.

Database managers are versatile programs that sort and organize information. Information is 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 just what their name implies: the electronic equivalent 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 electronic 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. Spreadsheet capacity is measured by the total number of available cells (the number of rows multiplied by the number of columns).

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.).

file In a database, a full set of related information organized for a particular purpose.

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.).

Description: electronic spreadsheet

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 48K RAM, disk drive, BASIC cartridge, 80-column printer

Price and format: approx. \$150 disk

Protection: none

Warranty: 90 days

Overall rating: 6.9

Ease of use: 6

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

Designed for use in a small-business environment, *The Bookkeeper* requires some knowledge of bookkeeping principles. The system can also be used to keep track of personal finances. It maintains lists of customers and vendors by numerical index or alphabetical, balances checking accounts, and computes customer and vendor invoices.

A trial balance sheet can be displayed before the final version is

printed. Accounts payable and receivable listings show all deposits and checks. Records can be displayed in a general ledger, and hard copies of all displays can be produced on the printer. Checks can be listed on screen or by printer.

Up to 350 accounts can be included. The program manual suggests actual account names for applications such as home, medical/professional, dairy farm, and grocery business use. Up to 1000 distributions per month and 10 account distributions per journal entry can be calculated. Values to \$100 million can be calculated. Data is entered by screen pages, and users can verify data during input. Incorrect entries cannot be deleted but must be balanced by new entries. Checks and invoices, however, may be voided. When the program closes out a month, existing data is erased to prepare space for the next month.

The Bookkeeper's chief benefit is that it prints out reports that would otherwise have to be done by hand. As such, it can help a small business save on bookkeeping and accounting services.

BUSINESS DESK SET

Description: office manager

Sold by: The Programmers

Workshop

5230 Clark Ave. Suite 19

Lakewood, CA 90712

213/804-1475

For: all

Requirements: 48K RAM, disk
drive; printer optional

Price and format: approx.
\$29 disk

Protection: none

Warranty: 90 days

Overall rating: 6.2

Ease of use: 7

Documentation: 6

Key:

Overall rating: Summation of all
ratings factors

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

Documentation: Quality of printed
instructions

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

Desk Set is a three-part package that helps keep track of appointments and address lists; it includes a perpetual calendar as well as a letter-writing program. Though designed primarily for small business use, *Desk Set* can also be used in the home.

The appointment calendar will hold up to 15 appointments for each day, all of which can be displayed. You can move forward or backward through the days of the year to review appointments. Up to 400 appointments can be added or printed, and appointments can be deleted individually or in groups. Information is automatically saved on disk. The perpetual calendar can display any month of any year up to 9999 A.D.

The card file part of the package is a mailing list that manages up to 200 addresses per disk and allows printing of continuous lists, labels, and envelopes. Address files can be sorted or recalled or used by area code, zip code, or state.

A particularly attractive feature of *Desk Set* is *Letter Writer*, the third part of the package. This is a preformatted text editor that allows you to edit, print, save, and recall text files. It is very useful for informal correspondence and can be used with almost any printer.

For many small offices, *Desk Set* can serve as an electronic secretary.

Description: trend analysis program

Sold by: The Programmers Workshop
5230 Clark Ave. Suite 19
Lakewood, CA 90712
213/804-1475

For: all

Requirements: 32K RAM, disk drive; printer optional

Price and format: approx. \$29 disk

Protection: yes

Warranty: 90 days

Overall rating: 6.0

Ease of use: 6

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

As its name implies, *Forecaster* uses known information about past events to predict future results. It can forecast profits, costs, sales trends, test scores, or virtually any other recordable event. These events may even be hypotheses used to test different possibilities.

The program displays a table containing up to 14 columns of data. The first column contains data points, which can be dates, numbers, or any other method of dividing up the data. Independent variables can occupy up to 12 columns in the table. The last column, the dependent variable, is the one upon which the prediction will focus.

Forecaster creates a linear forecast and indicates its statistical validity by rating it excellent, good, fair, poor, or invalid. Ratings below good can still provide valuable information, and several forecasts can be generated based on the same information. Forecasts can be assigned filenames and saved to disk for later recall, and any forecast can be reviewed and edited.

As a tool for analyzing linear trends in sales and personnel performance, *Forecaster* is of particular value to small businesses, sales managers, and possibly teachers or trainers. The program is not difficult to use, and its menus and prompts lead users through its functions. It is enhanced by the use of color graphics.

BUSINESS **INVENTORY CONTROL SYSTEM (ICS 800)**

Description: parts inventory program

Sold by: Sierra Digital Research
100 Washington St., Suite 104
Reno, NV 89503
702/323-3856

For: 800

Requirements: 48K RAM, disk drive, 132-column printer

Price and format: approx.
\$135 disk

Protection: none

Warranty: none

Overall rating: 5.5

Ease of use: 6

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

Inventory Control System (ICS 800) is for people with little or no prior computer experience. Its documentation is complete and easy to understand, and it shows screen display diagrams that help you learn to use the program quickly. The program is written in BASIC, and simple text graphics are used to draw forms and menus on each screen.

With *ICS 800*, up to 500 inventory items can be listed on each data disk. Each inventory record can contain the price and part

number, description, and vendor's name, as well as the number of items received, used, and on hand. Each record also includes the number of items at which reordering should be triggered, a location code, and an average price for the item if lots were purchased at different prices. The screen also displays the current date and last update, together with the number of records on the disk and the number of the current record.

Records can be searched by individual record or part number. The program uses a hash-coding system for rapid random access to files. The contents of each record can be printed individually (by range or record numbers), or all records can be printed.

Four reports can be automatically created and printed. The inventory report shows record and part number, description and price, quantity on hand, number used, number received, the reorder level and sizes, the average price, and a code to identify the part's location. The second report prints information on only those items that have reached the reorder point. A vendor list is the third report, and it adds the vendor name to the inventory information. The fourth report, a price list, prints only price information.

You can master this program quickly and put it to work in any small business.

THE MONEY PROCESSOR

Description: financial database

Sold by: Luck Software

1160 Niblick Rd.

Paso Robles, CA 93446

805/238-2585

For: 400, 800, 1200XL

Requirements: 48K RAM, disk drive; printer optional

Price and format: approx. \$60 disk

Protection: yes

Warranty: 30 days

Overall rating: 6.5

Ease of use: 7

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

The Money Processor keeps track of credit accounts, checking accounts, savings accounts, cash funds, employee expense accounts, deductible items for tax returns, and budget items. Its chief virtue is that it can process large amounts of data quickly.

The Money Processor comes with an attractively produced manual that uses photographs of actual displays and diagrams of which keys do what. It lacks a solid introduction or broad overview of the program, making initial understanding of it more

difficult than necessary. A card-board template for the keyboard is provided to help you remember the functions of the keys.

Each type of account has its own worksheet format. Those for checking accounts provide for check numbers, dates, and check recipients, as well as for deposits, miscellaneous charges, and credit information. The program verifies account worksheets and translates them into statements, which are then filed to disk. Statements can be viewed but not changed without reentering them onto an account worksheet.

The character and line editing features of *The Money Processor* include the usual screen editing functions plus some unique additional features. If a character or line is deleted by mistake, the program permits the user to restore it. Data may either be moved or copied to different parts of a screen.

Any account worksheet or statement may be printed from the screen to a printer. Search functions work on words or phrases and logical combinations of phrases.

This is a very fast and powerful finance manager, but it may be too complex for most home applications.

BUSINESS PAYROLL SYSTEM

Description: payroll accounting program

Sold by: Miles Computing
7136 Haskell Ave., Suite 204
Van Nuys, CA 91406
213/994-6279

For: all

Requirements: 32K RAM, two disk drives, printer

Price and format: approx.
\$180 disk

Protection: yes

Warranty: 90 days

Overall rating: 6.4

Ease of use: 6

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

Payroll System is designed for use by a business of 50 or fewer employees. Those with more than 50 employees will require a separate data disk for each additional unit of 50. Menus, charts, and prompts move the user through the program's various functions. A user's manual provides specific instructions describing the use of these functions.

All necessary reports for maintaining payroll records are provided by the system, and

each report can be printed out. A potential problem for some businesses is that FICA wages are not stored on the data disk. A quarter-to-date total is maintained, which can provide a warning to be aware of the total maximum wage for FICA deductions.

The *Payroll System's* state tax table can cause some confusion. The manual does not clearly tell the user how to use either state tax percentages or a tax table provided by the state. The system will produce paychecks with the use of preprinted check forms. The user can also define a period of time and produce period-to-date reports.

The program does a good job of trapping user errors. When they occur, the program shows an error and returns the user to the main menu. The graphics are a big help here and elsewhere, as they make it easier to enter information in the form required by the program. *Payroll System* makes imaginative use of sound—with a warning noise when it receives incorrect input.

Once you set up the *Payroll System* and use it regularly, its many functions become clear and it is easy to use. It can save a small business some money by eliminating the time and paperwork required to maintain a payroll system manually.

Description: stock management

Sold by: ATARI Program Exchange
P.O. Box 3705
Santa Clara, CA 95055
800/538-1862 (in California
800/672-1850)

For: all

Requirements: 32K RAM, disk drive, BASIC cartridge; printer optional

Price and format: approx. \$25 disk

Protection: yes

Warranty: 30 days

Overall rating: 5.8

Ease of use: 6

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This record keeper for stock market transactions offers a menu for entering new transactions, correcting data, and listing current status and profit/loss figures for individual stocks. The program also displays profit/loss for specified years. For investors dealing with several different brokerage houses, *Stock Management* is particularly helpful at income tax time.

New transactions require entering the name of the stock, its symbol, and the type of transaction (bought, sold, dividend received, and so on). You also have to enter the date and exchange—NY, AM, OTC—the price or dividend, and quantity, plus the commission or miscellaneous charges.

A transaction list displays all the transactions on the disk. The current status request gives you the value of holdings both individually and totally.

With *Stock Management*, you can get a profit/loss statement for a specific stock by entering today's value. It then compares present holdings with previous purchases, including brokerage and miscellaneous fees, and shows either a profit or loss. The annual profit/loss statement consists only of stocks sold during the year, and breaks them down by long and short-term to assist in determining tax liability.

Although the documentation is only adequate and the program is somewhat complicated to learn to use, small investors may find it a handy aid to managing their portfolios.

BUSINESS SUPER MAILER PLUS

Description: database manager

Sold by: Royal Software
2160 W. 11th Ave.
Eugene, OR 97402
503/683-6620

For: all

Requirements: 48K RAM, disk drive; printer optional

Price and format: approx. \$50 disk

File type: random

Record size: 128 characters

Number of fields: 10

Field size: 25 characters

Compatible with: none

Protection: yes

Warranty: yes

Overall rating: 6.5

Ease of use: 7

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This small database manager can be used to keep records of many types of items. It maintains lists of people, addresses, and other relevant information, and can print this information on mailing labels.

The many subroutines built into *Super Mailer Plus* allow users great flexibility. Alphabetic sorting is available by city, state, country, or zip code and is done at well over 400 sorts per minute. Duplicates are automatically thrown out when encountered.

The program incorporates a state abbreviation file. If the program is used for other than names and addresses, field names can be redesignated. *Super Mailer Plus* displays menus and prompts on the screen for every function, and you can begin to use it without lengthy reading of documentation.

Few programs can match the speed of *Super Mailer Plus* for sorting data records. It's a valuable tool, particularly for a small business that you run at home.

Description: appointment scheduler

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 32K RAM, disk drive; printer optional

Price and format: approx.
\$30 disk

Protection: none

Warranty: 90 days

Overall rating: 5.5

Ease of use: 7

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This computerized appointment calendar stores up to 630 appointments per disk (or 1024 per disk with a 48K expansion). All appointments for the current day or a calendar with appointment dates marked can be displayed on the screen or printed.

Each appointment added to the record can show date, time, person, and type of appointment, as well as event, place, and comments. The first four—date, time, person, and type—are all key fields. You can use these to search through appointments to find the one you want. With *Timewise* you can update and delete your files or browse through them by examining a condensed list of all appointments based on key fields. File maintenance options include changing the current date or compressing the files, which means to delete all appointments up to a specified date.

This program is easy to understand and use, and there are many prompts to guide the user. *Timewise* supports wild-card searches and entries, and provides a way for adding one appointment for several days (the same appointment every Wednesday, for example). If you need to organize your time carefully, this is a useful program.

Description: electronic spreadsheet

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 32K RAM, disk drive; printer optional

Price and format: approx. \$200 disk

Protection: none

Warranty: 90 days

Overall rating: 8.9

Ease of use: 6

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

ATARI *VisiCalc*, the electronic spreadsheet used for problems commonly requiring a calculator, pencil, and sheet of paper, makes it easy to enter data and specify formulas for projecting financial situations.

This spreadsheet consists of 64 columns across (labeled alphabetically) and 256 rows down (labeled numerically), for a total of 16,384 cells. Each cell has its own address, such as A1, B25, or AA100, and can hold either

alphanumeric labels or values and formulas. The formula function allows you to interrelate the contents of cells or groups of cells based upon the mathematical formula specified. All of the Atari's mathematical functions are supported.

ATARI *VisiCalc* presents a screen "window" of the spreadsheet that displays 24 rows and a number of columns, depending on how wide you specify them to be (from three to 40 characters). As you move the cursor, the window moves around the spreadsheet. You can insert and delete columns and rows, and replicate the contents of one column or row to another. Custom features allow you to move formulas from one cell to another. The size of the usable worksheet is determined by available memory. Although the program itself uses only 27K, it is not recommended for machines with less than 48K.

VisiCalc is excellent for business applications such as balance sheets, and is particularly useful when projecting sales and profits or building scenarios for new business ventures. *VisiCalc*'s only major limitation is that spreadsheets print very slowly as all cells are checked before entries are sent to the printer.

This chapter includes a variety of programs for use at home. Some simply help you pursue personal interests, like making crossword puzzles or developing astrological charts. Most help you perform practical tasks in managing your home and your personal finances.

Home economics programs are not as plentiful and as popular as similar software for business. 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.

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.

The choice of software for running your home is a personal one that should be made carefully. As you read a particular review in this section, 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 repeat-

ing 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.

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.

card file A database designed specifically for handling records to simulate a file of index cards.

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.

mailing list A database designed specifically for handling lists of names and addresses.

Description: horoscope program

Sold by: Elcomp

Box 1194

Pomona, CA 91769

714/623-8314

For: all

Requirements: 48K RAM, program recorder or disk drive; ATARI interface optional, printer optional

Price and format: approx. \$30 cassette or disk

Protection: none

Warranty: not written

Overall rating: 5.0

Ease of use: 6

Documentation: 5

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This home entertainment program introduces users to astrology and requires no previous knowledge of this ancient craft. It creates horoscopes by responding to simple prompts, which may seem a bit obscure at first. They request the user's name and birthday, plus the hour, minute, and second of birth if known. Then you need to add city and state or country, together with the geographical coordinates and time zone,

which can be looked up in an almanac or atlas.

Then *Astrology* begins making its calculations and displaying houses (sections of the celestial sphere) on the screen and planetary positions in a separate chart. Aspects between the planets are displayed next, with an indication of the level of coincidence between them. Finally, the horoscope wheel is displayed, using a special set of astrological symbols. This wheel is impressive, with zodiac signs in a circle and planetary symbols printed in their correct locations. Planetary symbols are printed again (with their locations in degrees) in a column along the side of the wheel.

All charts can be printed, and the graphics wheel can be reproduced on an Epson dot matrix printer. As the disk is not protected and the coding is in BASIC, you can modify the program to print the wheel on another printer.

Though not complex enough for professionals, *Astrology* offers home users some amusement and possibly a bit of education.

Description: biorhythm calculation

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 8K RAM, program recorder, BASIC cartridge; printer optional

Price and format: approx. \$15 cassette

Protection: none

Warranty: 90 days

Overall rating: 5.1

Ease of use: 7

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

Biorhythm displays graphic representations of the emotional, intellectual, and physical cycles of an individual's life, based on the theory of biorhythms. While the program loads, an audio track plays instructions, which can also be printed as hard copy.

The computer prompts you to enter a birth date, and from this it calculates biorhythms for any chosen month and year and prints this on a 20-column chart. All dates used must fall between January 1, 1900 and December 31, 1999, so you won't be able to trace your great-great-grandfather's state of mind when he lost the family fortune in 1894.

The program does not accept false information or nonexistent dates, such as February 29 in a non-leap year. Nor will it display a biorhythm starting before the birth date given.

Your own biorhythms can be useful to know, and a program like this can provide a lot of fun at gatherings of family and friends.

HOME CROSSWORD MAGIC

Description: crossword puzzle maker

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

For: 800

Requirements: 40K RAM, disk drive; graphics printer optional

Price and format: approx. \$50 disk

Protection: yes
Warranty: 90 days

Overall rating: 6.9
Ease of use: 8
Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This program automatically creates crossword puzzles, which can be customized for the education and entertainment of the whole family. You need only provide words and clues; the program does everything else.

Input for *Crossword Magic* is by keyboard, but the program is menu driven with prompts appearing on the screen. A simple puzzle takes just a few minutes to make. The program sizes the puzzle as it adds each word, and you can actually see the puzzle grow on the screen. The program is like a word processor designed especially for puzzles.

The resulting puzzles can be saved and recalled, edited, or deleted. Puzzles can be played on the screen or printed out. These printed puzzles are very attractive, and each little box is numbered with the title appearing at the top and clues appearing at the bottom. Solid boxes are actually checkerboards made up of smaller boxes.

Crossword Magic permits great flexibility. Users can concentrate on a specific vocabulary level or subject area. As an interesting and entertaining way to develop vocabulary, this program can be used by parents and children working together. With it, you can even create individualized crossword puzzles to give as gifts.

Description: simple database manager

Sold by: Amulet

Box 25612

Garfield Heights, OH 44125

216/475-7766

For: 400, 800, 1200XL

Requirements: 24K RAM, disk drive; printer optional

Price and format: approx.

\$25 disk

Protection: none

Warranty: yes

Overall rating: 5.3

Ease of use: 7

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

The unique feature of this simplified database program is its ability to save and manipulate drawings as well as text. These drawings are made by using the special character set included in the package.

Electronic Notebook is menu driven and provides for flexible data management. Users can create, save, recall, update, search, and print files and can request the disk directory to be displayed.

Data files are saved in the order entered and searched using a keyword string. Browsing is possible by paging through either complete data files or just the portions requested by search commands. All files can be printed, but a graphics printer is required in order to make use of the program's drawing capabilities.

While *Electronic Notebook* does not provide an easy way to delete data files, it does offer a flexible means for the storage and management of data and drawings.

HOME FINANCIAL WIZARD

Description: checkbook accounting program

Sold by: Computari
10944 North May Ave.
Oklahoma City, OK 73120
405/751-7925

For: all

Requirements: 24K RAM, disk drive; printer optional

Price and format: approx. \$60 disk

Protection: yes

Warranty: 90 days

Overall rating: 7.5

Ease of use: 7

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

A general checking account management and budgeting program for home use, *Financial Wizard* sounds a warning when errors occur and tells the user how to properly rectify them.

The screen displays a graphics template with a cursor at the location for the entry required. Boxes provide for entry of date, payee, budget category in which the money is spent, and amount.

The program identifies the last check number written and asks if

it is correct. If not, you can make the correction. If a check has been voided, the program automatically progresses to the next check number in sequence.

Checks and deposits may be searched for and displayed by day, month, or a range of dates. Search parameters include budget category, check number, payee (or payees beginning with certain letters), or dollar amount. A bar chart displays expenditures in all budget categories, or in one category for up to 12 months. Users can also design their own custom budget categories.

Financial Wizard prints reports of any information charted on the bar graphs, and users can print checks with preprinted forms. An audit utility summarizes expenses, deposits, and each month's ending balance.

The documentation is also nicely done. *Financial Wizard's* power and ease of use make it an excellent choice for home use.

HOME THE HOME ACCOUNTANT

Description: accounting package

Sold by: Continental Software
11223 S. Hindry Ave.
Los Angeles, CA 90045
213/417-8031

For: 400, 800, 1200XL

Requirements: 48K RAM, disk drive, 132-column printer; second disk drive optional

Price and format: approx. \$75 disk

Protection: yes

Warranty: yes

Overall rating: 7.4

Ease of use: 6

Documentation: 8

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

As the most widely sold home accounting package for any personal computer, *The Home Accountant* has become so popular it has even been adopted by some small businesses, although it is not recommended for commercial use.

The program is flexible enough to create one or more simple accounting systems using all or only a few of its many features. For the novice, it can be used just to keep track of a check-

book. More experienced users can have it keep track of all cash, checks, credit accounts, assets, liabilities, income, and expenses in the home.

The Home Accountant makes up to 50 user-definable budget categories available and flags items for use on tax returns. Single or multiple transactions can be recalled by any combination of date, number, payee, amount, budget category, or a user memo. Up to five automatic monthly transactions per checkbook are allowed, and a procedure for quick reconciliation of statements is provided.

With specially formatted check forms, you can print checks. You can also print reports of a year's budget or actual activity, as well as balance sheets, net worth statements, income and expense summaries, as well as activity comparisons of these summaries.

For any budget category, bar graphs compare budget and actual expenses. Line graphs show actual expenditures in up to three categories per graph, plotting each category in a different color. A trend analysis graph can be used to show historical trends in any category.

With its friendly menu-driven prompts and color graphics, *The Home Accountant* is a program your home needs will not easily outgrow.



Description: card file

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM, disk drive; printer optional

Price and format: approx.

\$50 for 2 disks

Protection: yes

Warranty: 90 days

Overall rating: 7.3

Ease of use: 8

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This is a computerized card file simple enough to be used by children as well as adults. Once loaded, a menu appears with the following options: LOOK at first card, FETCH a card by title, MARK and look at cards by phrase, PREPARE and format a disk, SWITCH data disks, and QUIT.

The Home Filing Manager's first option brings an index card to the screen, and this is where most of your data entry will occur. The card is 18 lines deep, and has a menu displayed along the top. ADDing puts information onto the card, which can then be saved in alphabetical order based on its first line.

Each prompt is self-explanatory, and the program provides the text processing, filing, sorting, and recalling functions necessary to manage a simple card file.

Description: family budget planner

Sold by: Creative Software
230 E. Caribbean Dr.
Sunnyvale, CA 94089
408/745-1655

For: 400, 800

Requirements: 32K RAM, program recorder or disk drive; printer optional

Price and format: approx.
\$35 cassette, \$40 disk

Protection: yes

Warranty: 90 days

Overall rating: 5.8

Ease of use: 6

Documentation: 5

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This very reasonably priced program for keeping track of family finances allows you to record, change, and delete income and expense items in 15 categories. *Household Finance* can recall data and display monthly or yearly totals in all categories. It offers a graph of family spending on screen and provides a budgeting function to aid your financial planning. Taxable income and expenditures can be flagged, and all files can be printed to the screen or a printer.

This is a well-prompted menu-driven program. When files are called or created, the cursor indicates the field, and an underline following the cursor indicates the number of letters allowed in each entry. Mistakes are corrected by either typing over or using the change or delete options in the program menu.

Household Finance has two parts. The first allows creation of financial files and includes read data, review all, change, delete, print, and save functions. The second part, which allows manipulation of data files, includes read, summarize expenses, summarize a category, make or change budget, and summarize functions.

This program offers a good introduction to computerized record keeping.

HOME MAILING LIST

Description: mailing list program

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 24K RAM, program recorder, BASIC cartridge; printer optional

Price and format: approx. \$25 cassette

Protection: none

Warranty: 90 days

Overall rating: 5.2

Ease of use: 7

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This program handles not only simple mailing lists but lists of other items as well. Users can load files, add new records, edit, delete, sort, save, and print information.

MAILING LIST will display either all or part of a data file, although it is somewhat tedious and slow when searching for records. Records can be changed and updated or totally removed from the file. The program will also sort, but like searching, this is very slow. Each record can contain ten fields of information, and field labels can be redefined. Data files can also be sent to a printer.

This is one of the few mailing list programs available on cassette. Although *MAILING LIST* provides an inexpensive way to keep track of names, addresses, phone numbers, and greeting card lists, it manipulates this data very slowly. If you need to maintain complex mailing lists, print address labels, or have rapid access to your data, you should consider a disk-based mailing list program.

HOME PERSONAL FINANCE AND RECORD KEEPING

Description: home accounting program

Sold by: Scitor Corporation
256 Gibraltar Dr. Suite B7
Sunnyvale, CA 94089
408/730-0400

For: 800, 1200XL

Requirements: 48K RAM, disk drive; printer optional

Price and format: approx. \$79 for 2 disks

Protection: none

Warranty: yes

Overall rating: 6.6

Ease of use: 6

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

Useful for either small-business or home record keeping, *Personal Finance and Record Keeping* is a powerful and versatile database program. It comes packaged on two disks and permits user modifications, but it is not recommended for the novice.

The program is accompanied by 80 pages of detailed documentation and tutorials; however, newcomers to computing or to accounting procedures will find both the manual and the program somewhat overwhelming. Some ease of use was sacrificed for versatility and user control in *Personal Finance*, but determined users can wade through the definition and control files by carefully following the examples provided. Once files have been created, weekly or monthly entry of data is quite easy.

Other characteristics include the ability to define categories as well as add to them as the need arises. The user can track expenses, create a budget file, generate either high-resolution plots or colored bar charts of monthly totals, and produce a monthly report that can be sent to a printer. The program can also be interfaced with *VisiCalc* (see separate review) files.

HOME TRANSITS

Description: astrology
program

Sold by: Matrix Software
315 Marion Ave.
Big Rapids, MI 49307
616/796-2483

For: 400, 800

Requirements: 24K RAM, disk
drive

Price and format: approx.
\$30 disk

Protection: none

Warranty: not written

Overall rating: 6.0

Ease of use: 6

Documentation: 4

Key:

Overall rating: Summation of all
ratings factors

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

Documentation: Quality of printed
instructions

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

Unlike other astrology programs, *Transits* can be used as a professional tool by practicing astrologers. It offers a very high degree of accuracy and many options not commonly available, but it is no more complicated to use than most other astrology programs.

With *Transits*, the user can generate birth charts quickly for persons born any time between 1900 and 2000 anywhere in the world and still maintain accuracy to just a few minutes. Earlier

dates can also be worked, but with diminished accuracy.

Once birth data is entered, a chart is displayed on the left of the screen as a list of positions. This is later used to hand-draw the wheel onto paper. *Transits'* power lies in its ability to progress the chart for any given date or calculate transits for any time. Both are analysis techniques widely used by astrologers to project basic birth chart information backward or forward in time.

Transits also makes it possible to compare one person's chart to another. It provides a complete list of all aspects existing between the natal planets of the two persons. Some believe this gives insight into the dynamics of interrelationships, powerful tools for astrological interpretation.

Transits transcends home entertainment and can be used in the serious pursuit and application of astrology.

Over the last year, 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, speed reading, and foreign languages.

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.

interactive storytelling program

A program in which the user takes part in a story by manipulating the graphics for the story or by determining certain events in the story.

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

problem-solving 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 or conversational French).

EDUCATION ATARI SPEED READING

Description: speed reading course

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 16K RAM, program recorder, BASIC cartridge, joystick

Price and format: approx.
\$75 for 5 cassettes

Protection: none

Warranty: 90 days

User group rating: 5.8

Documentation: 7

Graphics and sound: none

Difficulty: adult

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Designed for the adult or older student user, *ATARI Speed Reading* offers a well-documented and organized course. Covering a wide range of speed reading techniques, it stresses comprehension and retention of information, while developing speed and eye coordination.

The package includes five cassette tapes and a notebook of working materials and reading selections. The course is divided into eight units covering a wide range of topics and interests, which keeps the material from becoming dull. According to the manual, the best results are achieved by studying two units per week over a one month period.

The user begins by taking a pre-test to determine initial reading speed. Each unit presents lessons developed around techniques that build on skills acquired in previous lessons. Users are introduced to timed reading, paced reading, and phrase reading. Vocabulary retention is developed through phrase defining and word grouping, reading by thought groups, skimming, and scanning.

ATARI Speed Reading charts your progress through the course, and its manual also includes suggestions for maintaining your reading speed later and offers advice on what to review to help you do so.

Description: typing tutor

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM, program recorder, BASIC cartridge

Price and format: approx. \$25 for 2 cassettes

Protection: none

Warranty: 90 days

User group rating: 6.1

Documentation: 6

Graphics and sound: none

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Diagnosing individual needs is the real strength of *ATARI Touch Typing*. With several levels of drills and individualized lessons, the program is a tutor for beginner and experienced typists alike.

Two cassette tapes contain beginning, intermediate, and advanced typing drills. The first introduces correct fingering by showing a keyboard on the screen. Finger drills present groups of three characters for practice on various keys. Intermediate level drills display sentences containing letters the student needs to practice. Advanced level drills present six-line paragraphs from typical correspondence to increase speed.

ATARI Touch Typing will calculate your speed and evaluate your errors. Then it provides individualized lessons that concentrate practice on whatever letters you tend to miss most often.

A brief manual describes each of the programs and offers an illustrated session on each level. It includes a bibliography as well.

Even experienced typists will benefit from working on their computer-identified weaknesses. Whatever your typing ability, you'll find that *ATARI Touch Typing* can help you improve.

EDUCATION **BALLOON BANDIT**

Description: math drill

Sold by: Orange Cherry Media
7 Delano Dr.
Bedford Hills, NY 10507
914/666-8434

For: 400, 800, 1200XL

Requirements: 16K RAM (program recorder) or 24K RAM (disk drive); joystick optional

Price and format: approx.
\$25 cassette, \$30 disk

Protection: yes

Warranty: lifetime

User group rating: 6.0

Documentation: 5

Graphics and sound: 6

Difficulty: beginning readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

BALLOON BANDIT is a combination math drill and word guessing game for children (ages six to twelve) that provides four difficulty levels, each of which presents random problems.

After solving a problem correctly, the user gets to shoot at a balloon, with either a joystick or the keyboard. As each balloon breaks, a letter or star is revealed and the user tries to guess the hidden word. If the word is not guessed correctly, a new problem is displayed. If the guess is correct, there is a winner and the game starts all over again. Scoring is based on the number of problems answered correctly, total balloons shot, and balloons and stars remaining.

BALLOON BANDIT's major weakness is that the problem sequences are not structured. Rather than focusing on a particular problem area, the user works with a wide range of problems using a variety of math and word operations. But the game does make a math drill more fun than solving the same problems with paper and pencil.

Description: arithmetic game
Sold by: Orange Cherry Media
7 Delano Dr.

Bedford Hills, NY 10507
914/666-8434

For: 400, 800, 1200XL

Requirements: 16K RAM (program recorder) or 24K RAM (disk drive); joystick optional

Price and format: approx.
\$25 cassette, \$30 disk

Protection: yes

Warranty: lifetime

User group rating: 5.5

Documentation: 4

Graphics and sound: 5

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

BANKER'S RUN is an arcade-style learning game that teaches children to handle money. The player is the banker; he or she is visited by a depositor wanting to make a withdrawal. The player uses the arrow keys to move through nine bank vaults searching for and finding coins as needed. The object of the game is to pick up the exact amount of change before time runs out.

The several levels of play determine the maximum amount to be withdrawn, which can range from 33 cents to 99 cents. The game is interesting for elementary grade children; younger ones will need help with the instructions and the concept at first, but they will catch on quickly. Addition skills are required.

The documentation is simple and easy to use. It fully explains the object and operation of the game, and also gives some strategy tips.

EDUCATION COLLEGE BOARD SAT

Description: test preparation

Sold by: Krell Software

1320 Stony Brook Rd.

Stony Brook, NY 11790

516/751-5139

For: 800, 1200XL

Requirements: 48K RAM, disk drive

Price and format: approx.

\$300 for 10 disks

Protection: yes

Warranty: yes

User group rating: 6.5

Documentation: 8

Graphics and sound: none

Difficulty: high school students

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

College Board SAT is essentially an electronic workbook to help students prepare for the Scholastic Aptitude Tests. It offers immediate responses to questions, explains correct answers, and allows students to chart their progress in math and vocabulary skills.

The package contains ten disks and a booklet. Although the documentation tells how to run the program, it was originally written for Apple users. An insert is provided for Atari owners, but there can be some confusion for new users not yet familiar with their ATARI computers. The booklet also includes reading selections, mathematical diagrams, and sample worksheets which illustrate the contents of each section of the series.

Six learning areas are covered in this package. There are three disks for math, two for vocabulary, and one for word relationships. There are also three disks for standard written English; reading comprehension and sentence completion share a disk.

The program is done entirely in text; no use is made of the computer's graphics and sound capabilities. As an interactive package, *College Board SAT* offers immediate response and keeps track of how well the student is doing. For these reasons, some students find this preferable to a printed workbook.

Description: language tutor

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM, program recorder, BASIC cartridge

Price and format: approx. \$60 for 5 cassettes

Protection: none

Warranty: 90 days

User group rating: 6.4

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

With a workbook and five audio and data file cassettes, this program teaches survival French for the traveler. As a computerized phrase book, the program focuses solely on conversational French, not grammar. Most of the material presented on the audio cassette recorder is simultaneously written out on the monitor screen, along with a colorful graphics display. Some exercises appear on the monitor only and require the user to select correct responses or form new phrases. Additional exercises in the workbook provide more practice after lessons are completed.

Conversational French includes exercises in how to say greetings, make requests, and ask for directions or the correct time. Other exercises concentrate on French words for objects, expressions of likes and dislikes, questions about locations, and inquiries about what people are doing.

Important strengths of the program are the spoken French on the cassettes and the user's ability to set the pace of a lesson. However, you can start a lesson only at the beginning of a cassette, and you cannot skip to a particular section. No explanations regarding the structure of the language are given. *Conversational French* is one of a series of language programs for travelers available from Atari. Similar programs teach German, Italian, and Spanish.

EDUCATION COUNTER

Description: language and number game

Sold by: ATARI Program Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 16K RAM (cassette) or 24K RAM (disk), program recorder or disk drive, BASIC cartridge; joystick or paddle controllers optional

Price and format: approx. \$30 cassette or disk

Protection: yes

Warranty: 30 days

User group rating: 5.8

Documentation: 5

Graphics and sound: 6

Difficulty: nonreaders

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

With colorful graphics and enchanting musical tunes, *Counter* offers a unique way of teaching young children to count to 15 in either English, Spanish, French, or German.

The program has two parts. In the first, the computer displays objects and then counts for the child. In the second part, it is the child's turn. The computer displays the objects and the child counts by using the keyboard or joystick to enter the correct number of items seen. All commands are made on the keyboard, but a joystick or paddle controllers can be substituted.

A menu allows *Counter* to run in any of the four languages. This exposure to different languages plus enticing music and graphics combine to make an interesting program. It not only helps children learn to count, but offers some amusement and enrichment as well.

Description: government simulation

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 16K RAM, program recorder, BASIC cartridge

Price and format: approx. \$15 cassette

Protection: none

Warranty: 90 days

User group rating: 5.3

Documentation: 5

Graphics and sound: none

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Energy Czar, a challenging simulation game, is appropriate for older students or adults and takes some time to master and understand. As *Energy Czar*, the player controls energy resources and their use and must determine an energy policy for a five-year term of office.

Five graphs showing policy options can be viewed and altered as desired. These display prices, taxes, deaths, supply, usage, and an overall index of the state of the economy and energy for a particular year of office. The player can enact legislation or quit the job at the beginning of any year. If the player chooses legislation, the computer calculates the effects of these acts and displays them along with a public opinion poll that evaluates the player's performance in office. If the poll results in ratings of less than 20 percent, the player loses his job and the game is over. An overall rating of 75 percent or more results in the *Energy Czar* being declared a national hero in addition to being allowed to continue in office for another five-year term.

Supplied on cassette tape, *Energy Czar* includes a booklet that explains the game, gives hints on winning, and provides general background information about energy and the economy. It is an excellent educational tool for studying the interrelationship of ecology and economy.

EDUCATION FACEMAKER

Description: educational game

Sold by: Spinnaker Software Corp.

215 First St.

Cambridge, MA 02142

617/868-4700

For: all

Requirements: 8K RAM (cartridge) or 48K RAM (disk); disk drive optional

Price and format: approx. \$40 cartridge, \$35 disk

Protection: yes

Warranty: 30 days

User group rating: 7.0

Documentation: 7

Graphics and sound: 7

Difficulty: nonreaders

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Though targeted toward children four to twelve years old, *FACEMAKER* is entertaining enough for adults to use as an icebreaker party game.

In this educational game, you assemble a face from a menu of different features, such as eyes, noses, mouths, and tongues. There are eight choices for each detail. After constructing a face, you can create various expressions; a combination of winks, smiles, and frowns can be put together with wiggling ears, crying eyes, or a stuck-out tongue. Delays can be inserted between various facial movements in order to create an emphasis of expression.

FACEMAKER also includes a game in which the child must figure out the sequence of movements in the facial features used by the program. Beginning with one movement, the child types a key he or she believes corresponds to the movement. If incorrect, the face sticks out its tongue and the child gets another turn.

This software is designed to teach children to use the computer. *FACEMAKER* also helps improve memory, concentration, and creativity, and it achieves this in a most entertaining manner. This is a delightful program for children and is well worth the price.

Description: organization skills game

Sold by: Sunburst Communications

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

For: 800XL, 1200XL, 1400XL, 1450XL

Requirements: 16K RAM, disk drive

Price and format: approx. \$50 disk

Protection: yes

Warranty: lifetime

User group rating: 7.0

Documentation: 8

Graphics and sound: 7

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

The Factory challenges students to produce a computer-specified product using a variety of machines. Students must correctly organize the machines into an assembly line. If the product comes off the line without a flaw, the computer specifies another product to be made. Otherwise the student can try again. For practice, there is a separate program that demonstrates all the actions of the various machines. Another program allows students to set up a factory of their own design.

Packaged in a vinyl three-ringed binder, *The Factory* includes an excellent teacher's guide and sample worksheets. The program is autoloading and uses the BASIC cartridge.

The Factory is an excellent educational program for fourth through ninth graders. Due to its high quality, it may also be suitable for older children. This is a wonderful and highly recommended program for acquainting students with the logic of organization.



EDUCATION

GALAXY MATH FACTS GAME

Description: math drill and practice

Sold by: Random House School Division

400 Hahn Rd.

Westminster, MD 21157

800/638-6460

For: 400, 800

Requirements: 48K RAM, disk drive; printer optional

Price and format: approx. \$174 for 7 disks

Protection: yes

Warranty: 90 days

User group rating: 7.8

Documentation: 8

Graphics and sound: 7

Difficulty: beginning to intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

This seven-disk series of math drill-and-practice programs puts the student in control of a spaceship attempting to return to Earth. The ship is fueled, stocked, and armed according to how well the student answers the math problems.

Once the spaceship takes off, it must ward off attacking Klingons, pass through a dense star field, evade a black hole, and occasionally refuel. The outcome of the mission depends on how well and how fast the student answers the problems. Each program has six levels of difficulty and four speed levels. A chart that records student progress can be copied on a printer.

The manual provides a complete breakdown of the difficulty levels and their corresponding grade levels. Examples of the screen graphics are included to help explain game strategy and flow.

Galaxy Math Facts Game is for drill and practice. Students should know which concept is being practiced before using the program so they start at the proper level. These drills are suitable for use by students with a third-grade reading level, but younger students can use them with some help from parents. The math concepts developed are intended for students in the second through ninth grades. Although written primarily for classroom use, the programs are also good for home use.

Description: math skills game
Sold by: Random House School
Division
400 Hahn Rd.
Westminster, MD 21157
800/638-6460
For: 400, 800
Requirements: 48K RAM, disk
drive
Price and format: approx.
\$174 for 6 disks

Protection: yes
Warranty: 90 days

User group rating: 8.0
Documentation: 8
Graphics and sound: 7
Difficulty: intermediate readers

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: The reading level
required to use the program

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

This package helps develop math skills for children in the third grade and above. It contains six disks covering basic facts, place value, fractions, rounding and estimating, decimals, and integers.

Grand Prix presents math drills in a scenario of preparing for driving an auto race. The user chooses the level of difficulty and then proceeds to the pit to prepare the car for the race. Fuel, tires, engine repairs, and oil are obtained by correctly answering math problems. Once the car is ready, the user runs the race using the arrow keys for controls.

As the race progresses, users are allowed, and occasionally required, to return to the pit for additional supplies. At the pit stop, users must again give correct answers to problems presented. They are also allowed to recover from crashes by answering two problems correctly.

Grand Prix provides an entertaining way to present a large variety of elementary math problems. With the car race scenario, the problems seem to be more a game than a drill.

EDUCATION JUGGLES' RAINBOW

Description: keyboard familiarization

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 16K RAM, program recorder or disk drive

Price and format: approx. \$30 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.2

Documentation: 6

Graphics and sound: 7

Difficulty: nonreaders

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

This playable and colorful program is so easy to operate that it enchants young children and parents alike. By touching almost any key, a child can produce a colorful graphics display with *Juggles' Rainbow*.

The lessons on four menu options ask the child to discriminate between parts of the keyboard. Cardboard dividers to place on the keyboard are included. As an example, a parent can prompt the child to use only the left hand on the left side of the keyboard and the right hand on the right side. Lesson speed and the extent of written assistance required is adjustable.

One of the menu's options requires knowledge of left, right, above, and below. Since some educators feel the simultaneous introduction of these four concepts might be confusing, parents should watch their child's progress on this lesson carefully. Both verbal and graphic prompts are provided, but the written instructions exceed the reading ability of many young children. Parental assistance will probably be necessary.

Young children enjoy playing these colorful games. *Juggles' Rainbow* offers a pleasant way for parents to share computer time with children up to the age of six.

Description: number and character exercise

Sold by: Spinnaker Software Corp.

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

For: all

Requirements: 8K RAM (cartridge) or 48K RAM (disk), joystick; disk drive optional

Price and format: approx. \$30 cartridge or disk

Protection: yes

Warranty: 30 days

User group rating: 7.2

Documentation: 7

Graphics and sound: 7

Difficulty: beginning readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

KINDERCOMP is an exceptional example of computer software for children ages five to eight. The first three selections—called Draw, Scribble, and Name—give children the opportunity to experience and manipulate the computer's sound, color, and graphics capabilities.

Draw enables children to draw lines, change background colors, fill in enclosed areas, and change colors with a joystick and single-letter or number commands.

The last three selections—Sequence, Letters, and Match—teach number sequence and prereading skills. Sequence presents five numbers on the screen, and the child must select the next logical one. Letters provide practice in matching lowercase and uppercase letters. Match offers practice in fine discrimination by requiring children to match up some rather complicated patterns.

The accompanying manual is clear, concise, and accurate, and designed to be used by young children with beginning reading skills. However, since many children able to use *KINDERCOMP* won't have the requisite reading ability, parental assistance may be necessary.

Children are enchanted with these fun, colorful, and creative games. *KINDERCOMP* is highly recommended.

EDUCATION LEMONADE

Description: business simulation

Sold by: ATARI Program Exchange
P.O. Box 3705
Santa Clara, CA 95055
800/538-1862 (in California
800/672-1850)

For: all

Requirements: 16K RAM, program recorder or disk drive

Price and format: approx. \$18 cassette or disk

Protection: yes

Warranty: 30 days

User group rating: 6.0

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate readers

Key:

User group ratings: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Lemonade simulates the operation of a small business. The object is to make as much money as possible by deciding how many glasses of lemonade to make, how many advertising signs to buy, and how much to charge per glass. By using assets wisely, the user can avoid bankruptcy. Other events built into the program—such as heat waves, inflation, and road work—affect sales.

The user's manual develops applications for social studies, math, and vocabulary enhancement. All commands are given through the keyboard.

As *Lemonade* is designed as an individual activity, it's appropriate for use at home.

Description: interactive
children's story

Sold by: Amulet
Box 25612
Garfield Heights, OH 44125
216/475-7766

For: 400, 800, 1200XL

Requirements: 16K RAM (cas-
sette) or 24K RAM (disk), pro-
gram recorder or disk drive,
joystick

Price and format: approx.
\$20 cassette, \$25 disk

Protection: yes

Warranty: yes

User group rating: 5.2

Documentation: 5

Graphics and sound: 7

Difficulty: nonreaders

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: The reading level
required to use the program

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

MAGIC STORYBOOK combines recorded music and a female voice to present the story of The Three Little Pigs, accompanied by colorful, animated graphics. An entertaining and educational program for children of all ages, it invites user interaction by stopping at strategic points in the story to request that Wasco the Wolf be moved across the screen to a designated spot.

The program comes with colorful packaging, clear instructions, and a line drawing of the three pigs and Wasco for children to color. A printed version of the story is included for adults. One problem worth noting is that the sound track may be out of sync with the program when it is rerun. You have to figure out by trial and error that the recorder must be properly cued before pressing START on the keyboard in order to get sound and program running together again.

The narrator's voice seems to lack some presence and clarity, but the graphics are colorful and clever, although possibly too detailed and cluttered for a small child's eyes.

MAGIC STORYBOOK is more entertaining than educational. The child learns only the story of The Three Little Pigs and the timing of the joystick responses. But for children up to five years of age, this is a delightful introduction to computing.

EDUCATION MASTERTYPE

Description: typing tutor

Sold by: Scarborough Systems Inc.

25 N. Broadway
Tarrytown, NY 10591
914/332-4545

For: all

Requirements: 16K RAM (cartridge) or 32K RAM (disk), disk drive optional, printer optional

Price and format: approx. \$40 cartridge or disk

Protection: yes

Warranty: 30 days

User group rating: 7.9

Documentation: 7

Graphics and sound: 7

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Mastertype uses a game environment to teach typing skills on the keyboard. The player defends a space station located in the center of the screen. Words, letters, numbers, and symbols are evil characters that approach the station from the screen's edge and threaten its existence until the user removes them by hitting the proper key on the keyboard.

There is a good variety of lessons with different word sizes and skill levels. With some of the options, the player can even develop individualized lessons. The computer scores performance in speed and accuracy.

The screen uses colorful graphics for the display, and the keys typed are printed at the bottom. Sound marks the completion of a typed sequence and indicates whether a response is correct or wrong. If a group of characters approaches the space station too closely before they are typed correctly on the keyboard, the space station will be damaged but not destroyed. It takes several such accidents to end the game.

With *Mastertype*, users can see their typing speed increase as they compete against their own prior score.

Description: math drill

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 16K RAM (cassette) or 24K RAM (disk), program recorder or disk drive, BASIC cartridge

Price and format: approx. \$18 cassette or disk

Protection: yes

Warranty: 30 days

User group rating: 6.0

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

This educational game for two players uses the traditional tic-tac-toe format to sharpen a child's basic math skills. All input on *Mathematic-Tac-Toe* is with the keyboard.

Players solve computer-generated problems that concentrate on the four basic math functions—addition, subtraction, multiplication, and division. Fifteen levels of difficulty and fifteen different time limits are available to provide challenges for different skill levels.

In each round, the player selects a spot from the tic-tac-toe grid and then solves the given problem. A correct response puts the player's symbol on the grid.

Mathematic-Tac-Toe offers an amusing way for sharpening the grade-school student's basic computational ability.

EDUCATION M-SS-NG L-NKS

Description: language skills game

Sold by: Sunburst Communications

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

For: 800XL, 1200XL, 1400XL, 1450XL

Requirements: 48K RAM, disk drive

Price and format: approx. \$50 for 2 disks

Protection: yes

Warranty: lifetime

User group rating: 7.0

Documentation: 8

Graphics and sound: none

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

M-SS-NG L-NKS (for “missing links”) is a program about language. Lessons are provided on two disks, which are purchased separately. The first, called *Young People’s Literature*, uses nine excerpts from famous children’s stories, such as Laura Ingalls Wilder’s *Little House in the Big Woods* and George Seldon’s *The Cricket in Times Square*. The second, *MicroEncyclopedia*, offers a variety of reading selections on subjects of interest to children.

The lessons’ object is to fill in the missing links in the words from the various literary passages given. The lessons range in complexity from simply omitting all vowels to displaying only the author’s name and the book’s title. This can challenge even the best intellects.

The game is designed for one or two players, or teams, and all commands are entered through the keyboard. Players can have up to five tries on each letter, or they can move to a different letter or back to one previously skipped (using the arrow keys). After the limit of guesses is up, the computer supplies an answer. At game’s end, the computer scores each player’s performance.

Although it is written mainly for grade school students and the reading material is juvenile, *M-SS-NG L-NKS* can reach adult levels of complexity.

Description: alphabet study

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 32K RAM, disk drive, BASIC cartridge

Price and format: approx.

\$35 disk

Protection: yes

Warranty: 90 days

User group rating: 8.2

Documentation: 6

Graphics and sound: 7

Difficulty: nonreaders

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

My First Alphabet will help preschool and kindergarten children identify capital letters and numbers from zero to nine. Each drill takes about 15 minutes.

The program is flexible, and children need no assistance to use it. Input is simple since keys not required to make responses are deactivated. The child is in control of the program, and this helps motivate learning.

The graphics, color, and screen formatting are exciting and extremely attractive. Animation and still graphics keep the child's interest, even though the program does not use a game format. Each letter is accompanied by a picture and several words beginning with that letter. These additional words can be used to supplement an alphabetizing activity. Numbers are accompanied by cups and clown faces for the child to count. The sound is good and not distracting.

To progress the child must match the letter or number with the corresponding one on the keyboard. The program does not present or pair uppercase and lowercase letters.

The program provides model lessons for parents' use, and the Select a Picture feature can be used to teach letter and number correspondence. *My First Alphabet* provides good matching tasks for children able to locate letters and numbers on the keyboard.

EDUCATION NUMBER BLAST

Description: math drill

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 16K RAM (cassette) or 24K RAM (disk), program recorder or disk drive, BASIC cartridge, joystick

Price and format: approx.

\$18 cassette or disk

Protection: yes

Warranty: 30 days

User group rating: 6.6

Documentation: 6

Graphics and sound: 6

Difficulty: beginning readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

This excellent math drill in game form is for one or two players of elementary school age. Single players can use *Number Blast* to learn and polish skills in three kinds of addition or three kinds of multiplication problems. The program for two players is a contest of skill and speed. This is a great way to practice math facts, and the timed version is very popular in the classroom.

As a math problem appears on the screen, each player uses the joystick to be first to blast it with the right answer. Points are scored for each correct answer and lost for incorrect ones. A new problem appears on the screen whether or not the preceding answer was correct.

Joystick maneuvers and speed are explained clearly in both the documentation and the program itself. Pressing number seven on the keyboard, for instance, produces a diagram showing how the joystick works.

Number Blast is an easy-to-use and challenging math game that reinforces basic math skills in an entertaining fashion.

Description: problem-solving game

Sold by: Sunburst Communications

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

For: 800XL, 1200XL, 1400XL, 1450XL

Requirements: 32K RAM, disk drive

Price and format: approx. \$50 disk

Protection: yes

Warranty: lifetime

User group rating: 8.0

Documentation: 8

Graphics and sound: 7

Difficulty: beginning readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Combining charming graphics and a unique approach to problem-solving exercises, *The Pond* is an amusing educational package of three programs. Its visual delightfulness will appeal to adults, while its ease of use makes it foolproof for young children. The program autoloads and all instructions are entered with the arrow keys and the return key.

The first program contains instructions, the second is a practice program, and the third a game that allows no practice. *The Pond* is played by moving a frog around on lily pads and discovering the pattern of hops required to cross the pond.

The object of the game is to recognize the frog's patterns, which can range from a two-step hop (two over, three down) to a four-step hop (five right, one down, four left, two up). The patterns of the lily pads range from Farmer Jane's Ponds (simple, with no distractors) to Twister Ponds (four-step patterns with many distractors). The animation of the frog is delightful, including his rewarding wink when safely guided across the pond.

The Pond offers an excellent set of problem-solving exercises appropriate for children from the second grade up.

EDUCATION RHYMES & RIDDLES

Description: word puzzles

Sold by: Spinnaker Software Corp.

215 First St.

Cambridge, MA 02142

617/868-4700

For: all

Requirements: 48K RAM, disk drive

Price and format: approx. \$30 disk

Protection: yes

Warranty: 30 days

User group rating: 6.9

Documentation: 7

Graphics and sound: 7

Difficulty: beginning readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Rhymes & Riddles is a series of word puzzles for younger readers. Players must solve the puzzles one letter at a time. After several incorrect guesses have been entered, the solution is displayed.

One lesson presents riddles with entertaining answers, in a large enough selection to keep students at the keyboard for a long time. Another displays blanks to fill with letters; with the blanks filled in, the finished lines turn out to be hidden nursery rhymes. A third lesson presents a line to a song. As in the other, blank letters are filled in on the line; but after the line is completed, the computer plays the music that accompanies the line. The song's next line is displayed until the tune is completed.

Rhymes & Riddles rewards successful progress not only by playing the song, but with graphic displays of the content. Successful solution of the riddles produces images such as a flight of jet planes racing across the screen.

These word games provide excellent exercises in deductive reasoning and spelling for younger readers. With them, older children can learn about the frequency distribution of letters in the English language.

EDUCATION SAMMY THE SEA SERPENT

Description: interactive children's story

Sold by: Program Design Inc.
95 E. Putnam Ave.
Greenwich, CT 06830
203/661-8799

For: all

Requirements: 16K RAM (cassette) or 32K RAM (disk), program recorder or disk drive, joystick

Price and format: approx.
\$19 cassette, \$24 disk

Protection: yes

Warranty: lifetime

User group rating: 6.0

Documentation: 5

Graphics and sound: 6

Difficulty: nonreaders

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

This interactive storytelling program lets a preschool child join the story by helping Sammy find his way back to the sea.

On side one of the disk, a gentle voice introduces Sammy the Sea Serpent and describes his family and interests. The narrator explains how to use the joystick to move Sammy, giving the child the opportunity to help Sammy get around. Once the child has mastered the joystick, the story continues.

The child helps Sammy crawl through pipes, find his way out of both a garden and a maze, make his way through a forest, climb a wall, and eat bugs to regain strength.

The second side of the disk contains more Sammy games, one in which Sammy works through mazes. Through these games, preschoolers learn to associate movement on the screen with the movement of the joystick. In another game, Sammy catches bugs that help him grow bigger. If a child is too slow in reaching the bug, it moves, and the child must change direction to catch it. After playing a game, the screen returns to a game menu.

Description: software exchange

Sold by: San Mateo County
Office of Education
333 Main St.
Redwood City, CA 94063
415/363-5472

For: 400, 800

Requirements: 8K RAM, disk drive

Price and format: approx.
\$10 (each) disk

Protection: none

Warranty: 30 days

User group rating: 7.0

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

SOFTSWAP is an educational software exchange whose purpose is the proliferation of programs created by the San Mateo County (California) Office of Education. Software titles are listed in *The Computing Teacher*, and are available from the Microcomputer Center in San Mateo County by mail. This is a nonprofit service that encourages users to copy disks for sharing with others as long as this is done without charge.

The *SOFTSWAP* disks described below cover a wide range of educational activities, from the development of concentration skills to math and language arts, and are good examples of what *SOFTSWAP* has to offer.

In *Pak Jana*, the student controls the movements of a dancing figure using a simple animation programming language. In *Attribute Boxes*, the student learns deductive reasoning. *Oregon Trail* simulates a pioneer wagon train journey across the country, and *Volcano* simulates the survival tactics needed to escape an erupting volcano. In *Multiplication Bingo*, the student is drilled in multiplication tables, and the correct answers fill in a bingo card.

Each disk contains several programs and is well worth the investment.

Description: astronomy lesson

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 40K RAM, disk drive, BASIC cartridge

Price and format: approx.

\$25 disk

Protection: yes

Warranty: 30 days

User group rating: 6.7

Documentation: 7

Graphics and sound: 6

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

This star-map generator enables you to view the night sky over any part of the earth. It also helps you locate faint objects in the sky and quizzes you on your knowledge of the constellations.

Starware displays a detailed star map from any place on Earth at any time in this century. You enter the date and time and your location, plus the direction (north, south, east, west, or zenith) you intend to look. In about five minutes, the program draws a full quarter of the sky, indicating by size the magnitude or brightness of each star. *Starware* can display the daytime sky as well, with clearly visible stars. If the sun is present on the map, the background color is changed from black to blue.

You can call up lines on the screen that connect the stars to make constellations. Any one of 66 constellations can be isolated and displayed individually by entering a three-letter code. The program also helps you locate newly discovered comets when their positions are published.

The manual includes a table of locations and a bibliography for beginning astronomers. *Starware* provides useful aids for the practicing stargazer, as well as hours of entertainment. For families with a developing interest in astronomy, this program offers valuable guidance.

EDUCATION STATES & CAPITALS

Description: geography lesson

Sold by: ATARI, Inc.

1312 Crossman Rd.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM, program recorder, BASIC cartridge

Price and format: approx. \$15 cassette

Protection: none

Warranty: 90 days

User group rating: 6.9

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Designed to test and strengthen a student's knowledge of the United States, *States & Capitals* begins by drawing an outline map and then randomly selecting one of the states. The user then types the name of that state and its capital indicated by a flashing dot.

Although spelling must usually be accurate, the program will sometimes accept slight variations. For example, it accepts Pennsylvannia but retypes it Pennsylvania. It rejects such goofs as Utat for Utah, however.

If a student is unsure about the name of a state or capital, he or she can simply press the Return key, and the computer will give the correct name. In fact, continuously pressing Return without typing a name offers a way to move through the entire program to learn the names.

Once a state and its capital have been identified, they are redrawn in the same color as the rest of the map, and a new state is highlighted. The student continues until all 50 states have been named. The computer keeps two scores, one for the number of correct states and another for the number of correct capitals.

Description: sentence construction

Sold by: Spinnaker Software Corp.
215 First St.
Cambridge, MA 02142
617/868-4700

For: all

Requirements: 8K RAM (cartridge) or 48K RAM (disk); disk drive optional

Price and format: approx. \$40 cartridge, \$35 disk

Protection: yes

Warranty: 30 days

User group rating: 6.5

Documentation: 6

Graphics and sound: 6

Difficulty: beginning readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

STORY MACHINE is a wonderful program idea, but it fails to meet its objective. Though designed for young readers ages five to nine, the vocabulary and presentation are so limited that the program is better suited for preschoolers.

The graphics used are enchanting, but the number of figures that can appear on the screen is severely limited. The short sentences that can be constructed and the animation produced may be delightful for the very young, but will not much interest grade school children.

If you are looking for software to fascinate a preschooler or to give a beginning reader an opportunity to see simple sentences in action, this software is ideal. If the program's dictionary were increased and the graphics reworked so the illustrations were not so restricting, however, this could be a more useful program.

EDUCATION SURVIVAL MATH

Description: math story problems

Sold by: Sunburst Communications

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

For: 800XL, 1200XL, 1400XL, 1450XL

Requirements: 16K RAM, disk drive

Price and format: approx. \$50 disk

Protection: yes

Warranty: lifetime

User group rating: 7.0

Documentation: 8

Graphics and sound: 6

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

Survival Math, a package of four programs, presents real-life mathematical problems for students in junior and senior high school. Input is through the keyboard, and the lessons are in the form of games for one or more.

In Travel Agent Contest, the player is an assistant travel agent

competing against other agents to make out the best travel plan within a given budget and time limit. The plan includes such things as travel, food, and entertainment. The top-rated agent wins and receives a promotion.

In Smart Shopper Marathon, the player is a shopper racing up and down the aisles of a variety store, trying to get the best bargains before the store closes. A player has only five minutes in the store, so quick figuring and estimation are necessary.

In Hot Dog Stand, the player and friends organize and run a hot dog stand at a local football stadium. The goal is to raise \$3000, so the stand must be carefully managed. Weather and a homecoming game, along with other events, affect the business.

The most complicated of the *Survival Math* programs is Foreman's Assistant, in which the player must plan and build a playroom in a limited amount of time with leftover materials and a strict budget.

By presenting math problems in real-life situations, these programs offer meaningful drills that capitalize on the game aspects of computing. *Survival Math* includes a good manual and adequate use of graphics.

Description: arithmetic game

Sold by: Sunburst Communications

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

For: 800XL, 1200XL, 1400XL,
1450XL

Requirements: 16K RAM, disk
drive

Price and format: approx.
\$50 disk

Protection: yes

Warranty: lifetime

User group rating: 7.0

Documentation: 7

Graphics and sound: 6

Difficulty: beginning readers

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: The reading level
required to use the program

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

This entertaining math program won the 1983 AtariStar Award for programming excellence.

Teasers by Tobbs provides practice in addition and multiplication and offers six levels of difficulty, from fourth grade to adult. Up to four students can play, or teams can be formed for group problem solving.

Tobbs is a funny little character who introduces players to the math puzzles. Tobbs lets players know if they are wrong, gives clues if help is needed, and enthusiastically rewards players when the solution is found.

Problems are presented on a three-by-three grid with some numbers missing. Players use logic to decide which number or numbers belong in the empty boxes, providing practice both in math and logic.

The accompanying manual suggests that players should be free to experiment in solving the puzzles. *Teasers by Tobbs* is not only instructional, but offers enough amusement to be played as a group game.



EDUCATION

THREE R MATH HOME SYSTEM

Description: math drill

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850

For: all

Requirements: 40K RAM, disk drive, BASIC cartridge; printer optional

Price and format: approx. \$25 disk

Protection: yes

Warranty: 30 days

User group rating: 6.8

Documentation: 6

Graphics and sound: 6

Difficulty: beginning readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

With 101 skill levels, this basic math drill and practice program is flexible enough to meet the needs of students five to thirteen years old.

Three R Math Home System begins by asking a parent or teacher to select a password that will determine the type of problem and its difficulty level, the length of time the problem is to remain on the screen, and the number of problems to be worked. Requiring a password from parents not only allows them to determine the precise level and type of problem needed, but encourages their involvement.

To begin, the student types in a name and the password. *Three R Math Home System* displays appropriate problems in a flash card manner and gives positive rewards and encouragements as they are completed. Finished sessions are summarized and a printout can be requested.

Three R Math Home System comes in one version for the home and another for the classroom. They are essentially the same except the classroom system has a grade book feature for teachers.

Parents can use this program effectively to drill their children in basic mathematics. Children will enjoy the drill as their ability to solve the problems improves.

Description: language skills program
Sold by: Random House School Division
 400 Hahn Road
 Westminster, MD 21157
 800/638-6460
For: 400, 800
Requirements: 48K RAM, disk drive
Price and format: approx. \$174 for 10 disks

Protection: yes
Warranty: 90 days

User group rating: 8.0
Documentation: 8
Graphics and sound: none
Difficulty: intermediate readers

Key:

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

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

Designed for children in fourth grade and above, *Word Focus* offers an interesting and challenging approach to word attack and spelling skills.

The package contains ten disks that cover the following areas of language arts development: dictionary skills, word recognition, compound words, vowel recognition, recognition of specific letters and letter sequences, phonogram recognition, fixation, and syllable skills.

Word Focus includes a notebook that explains the package in detail and demonstrates each disk. It describes the approach used and offers a recording system and word lists.

Game-type activities are used to present instructional material. A typical example of the nonviolent games included is Syllable Countdown, in which correct answers allow a robot to fuel a rocket. The player can then choose to see a computer simulation of the rocket landing on the moon. Two other disks, Syllable Attack and Word Smasher, may be objectionable because of their arcade qualities, but they do hold the child's interest in word attack skills.

Word Focus is one of the most complete and entertaining language arts programs available for the ATARI.

Description: spelling game

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 40K RAM, disk drive, BASIC cartridge, joystick

Price and format: approx.

\$25 disk

Protection: yes

Warranty: 30 days

User group rating: 6.0

Documentation: 6

Graphics and sound: 5

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

In *Wordgo*, players compete against the high score. It can be played by one or two players and is for students 12 years of age and older. The screen shows 16 boxes containing a word ending. Players must mark four squares in a row, horizontally, vertically, or diagonally.

When the screen displays a consonant blend (two or three

sounds blended together such as "scr" or "bl"), the player has 30 seconds to combine the letters with any of the endings in boxes to form a proper word. A correct choice is displayed and scored. Players are not penalized for incorrect choices but the timer continues counting down. Players choosing to pass when a proper combination exists, lose points. If no combination exists, a passing player gains points, and another blend is displayed.

Strategy is important because if the player completes two or three rows at the same time, the winning score, normally doubled, is doubled again for two complete rows and a third time for three complete rows. Players must try to choose endings in strategic places to set up such possibilities. Players can check a word's meaning by accessing a dictionary file on the disk.

Wordgo is more for recreation than education, but players do learn the various pronunciations of blends and become aware of the correct spelling of unusual as well as familiar words. The dictionary definitions generally offer a new slant on the words created. *Wordgo* demands quick thinking and strategy.

Description: vocabulary builder

Sold by: Tronix Publishing, Inc.
8295 S. La Cienega Blvd.
Inglewood, CA 90301
213/215-0529

For: all

Requirements: 32K RAM, program recorder or disk drive, BASIC cartridge

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 5.5

Documentation: 6

Graphics and sound: none

Difficulty: intermediate readers

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: The reading level required to use the program

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

This is a vocabulary game that offers words simple enough for a nine-year-old child, yet works quickly enough for an adult. In *WORDRACE*, the screen displays one word and six short definitions as a clock counts down from 600 points. If a player chooses the correct definition, his or her score is increased by the number of points remaining on the clock and play passes to the next player. If the choice is incorrect, the player loses that many points. After all of the words have been used, the player with the highest score is the winner.

Players choose the words on which they are tested from a 2000-word dictionary, and three levels of skill are offered. At the beginner level, the words—such as convert, hazard, and dare—are fairly common. The regular level is challenging, with words like sycophant, connotation, and turgid. At the challenge level, *WORDRACE* becomes a different kind of game. Few people know the words in this section, so most players must deduce their meanings.

WORDRACE comes with a brief written description of setup, and more word disks have been promised for the future. They will be a welcome addition to this program that is both a vocabulary builder and an amusing game.

CHAPTER 5 NETWORKING

Communications is one of the fastest growing areas of computer technology. New networks are being started almost every day, and the Atari computer owner can easily gain access to most of them by using one of the terminal programs reviewed in this chapter. 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.

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 baud rate for each of the terminal programs in this chapter is listed below price and format.

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, to compensate for differences in rates of data flow.

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.

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 the 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: Jim Steinbrecher
37220 Tricia Dr.
Sterling Heights, MI 48077
313/978-2208

For: 400, 800, 1200XL

Requirements: 24K RAM, program recorder or disk drive, ATARI 850 interface, modem; printer optional

Price and format: approx. \$15 cassette or disk

Baud rate: 300

Ports used: #1

Protection: public domain

Warranty: public domain

Overall rating: 7.1

Ease of use: 8

Documentation: 1

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This public domain terminal program offers features not found on other free software. Identified as *Amodem*, it is often found in a user group library.

The author has made good use of color to indicate when the 23K file buffer is open or when files are being received and sent over the phone. The program does not offer user control over program parameters such as the baud rate to change transmission speeds. One feature has resulted in its being described as the most powerful free terminal program available: *Atari Modem 4.0* permits communication with CP/M systems that use the "Christensen XMODEM protocol." Thus binary files (machine language programs) and tokenized programs can be received and sent.

As with most public domain software, the documentation is skimpy. But user group members can often obtain such programs at no cost, and other members are usually happy to give advice. *Atari Modem 4.0* is easy to use and even beginners can get it working with a little experimentation.

NETWORKING COMMBAT

Description: networking strategy game

Sold by: Adventure International

Box 3435
Longwood, FL 32750
305/862-6917

For: 400, 800, 1200XL

Requirements: 24K RAM, program recorder or disk drive, two complete computer systems (including modems or modem eliminator cables with ATARI 850 interfaces)

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

Baud rate: 300

Ports used: serial

Protection: none

Warranty: 1 year

Overall rating: 5.9

Ease of use: 7

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

Commbat is a complex game played between two computer systems using telecommunications. It can be played between any ATARI, Apple, or TRS-80 computers.

The game is set in a future universe where a galactic peace

force compels belligerent interests to fight their wars within an impenetrable combat reservation. Each side is provided with equal, though archaic, weaponry.

The map is an 80 × 80 grid. The tanks, bases, decoys, and mines are drawn with text characters rather than with a custom character set. There is no sound. The command console displays only friendly units and enemy units that move within the detect range of the friendly units. A message flashes whenever a tank is under attack, and the screen flickers when a unit in combat is damaged. The opponent's activities are unknown unless detected on the map by a friendly unit. The player who destroys the enemy command base is the winner.

Game documentation includes a description of custom-made cables that allow computers at the same location to communicate without a modem. The program supports all common baud rates from 300 to 9600, but rates higher than 6000 might pose problems. One copy of *Commbat* includes disks and cassettes compatible with all three systems (Apple, ATARI, and TRS-80). Backup copies are easy to make. This is a fascinating program for geographically separated players who enjoy strategy games with hidden movement.

Description: terminal program

Sold by: Microbits Peripheral
Products

225 W. 3rd St.
Albany, OR 97321
503/967-9075

For: all

Requirements: 32K RAM;
printer optional

Price and format: approx.
\$150 cartridge

Baud rate: 100–600

Ports used: #4

Protection: cartridge

Warranty: 1 year

Overall rating: 7.0

Ease of use: 8

Documentation: 7

Key:

Overall rating: Summation of all
ratings factors

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

Documentation: Quality of printed
instructions

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

MPP Smart Terminal provides as many as ten dynamically allocated buffers for reading or writing disk files. These allow you to store many files of different sizes to memory without reading or writing on disk while the telephone is on-line. This feature can be a real benefit when you are using bulletin boards that automatically shut off if there is no input within a minute.

Presently this program can be used only with the Microbits modem, which plugs into the #4 joystick port in the front of the ATARI.

The transmission rate with *MPP Smart Terminal* can be varied from 100 to 600 baud, although accuracy tends to drop off at higher speeds. The program also permits direct dumping from the modem to the printer, a useful feature when reviewing text.

MPP Smart Terminal offers 15 menu-driven options and provides screen color changes to cue the user when a function is operating. Menu commands require a single keystroke for execution.

This program is exceptionally easy to use and comes with a useful instruction manual.

Description: terminal program

Sold by: Datasoft Inc.

9421 Winnetka Ave.

Chatsworth, CA 91311

213/701-5161

For: 400, 800

Requirements: 32K RAM, disk drive, interface, modem; printer optional

Price and format: approx.

\$50 disk

Baud rate: 300–9600

Ports used: #1

Protection: yes

Warranty: 90 days

Overall rating: 7.5

Ease of use: 8

Documentation: 7

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

This very complete telecommunications program for the ATARI is not only easy to use but easy to understand. *Tele-Talk* includes a clock feature that keeps track of elapsed time and automatically computes the time spent in dollars, which is helpful with services such as CompuServe or The Source.

A bar graph indicates the status of the memory buffer, and data received over the phone can be saved to a disk or printed when the buffer is full. Uploading (sending a file to another computer) and downloading (receiving a file) are fully supported. The display screen can be split so a user can type in a transmission while data is still being received and displayed on the other half of the screen. This is useful for CB-type networks where a group of users communicate simultaneously.

Baud rate is selectable from 300 to 9600, although recommended settings range from 300 to 1200. Input and output parity can be checked to ensure that nothing is lost or garbled during transmission.

Tele-Talk was written specifically for the ATARI. It's a good and practical telecommunication program that requires little training or special knowledge to operate.

Description: terminal program
Sold by: Tronix Publishing, Inc.
8295 S. La Cienega Blvd.
Inglewood, CA 90301
213/215-0529

For: all

Requirements: 32K RAM, disk
drive, modem; printer optional

Price and format: approx.
\$40 disk

Baud rate: 50–9600

Ports used: serial

Protection: yes

Warranty: 90 days

Overall rating: 7.2

Ease of use: 8

Documentation: 8

Key:

Overall rating: Summation of all
ratings factors

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

Documentation: Quality of printed
instructions

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

TeleTari is advertised as “the friendly terminal program,” and beginners to the world of telecommunications will find it uncomplicated and easy to use indeed.

With this telecommunications program, you can connect your computer to The Source, CompuServe, Dow Jones Data Retrieval Service, MicroNet, Telenet, Dialog, and national or local bulletin boards. With friends, you can send each other programs in BASIC, source code, or machine language, and text files such as electronic mail. With *TeleTari*, you can use your computer as a simple terminal to connect with a large time-sharing system. This enables you to work in FORTRAN, COBOL, APL, and other languages requiring larger computer support.

TeleTari automatically opens a buffer that holds up to 20,000 characters and can be emptied at any time with a two-stroke command. The number of characters available in the buffer is displayed with one keystroke and is the most precise way to keep track of buffer condition.

The manual lists hundreds of public access (no fee) bulletin boards. *TeleTari* provides the power and flexibility needed by sophisticated users, yet its simplicity allows beginners to get started right away.

NETWORKING T.H.E. SMART TERMINAL

Description: terminal program

Sold by: Binary Corp.

3237 Woodward Ave.

Berkley, MI 48072

313/548-0533

For: all

Requirements: 16K RAM, program recorder or disk drive, ATARI interface, modem; printer optional

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

Baud rate: 45.5-9600

Ports used: #1

Protection: none

Warranty: media only

Overall rating: 7.6

Ease of use: 6

Documentation: 6

Key:

Overall rating: Summation of all ratings factors

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

Documentation: Quality of printed instructions

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

T.H.E. Smart Terminal is one of the few programs that enable an ATARI 400 with only 16K RAM to do telecommunicating. The program is powerful and sophisticated, with multiple buffers that optimize available memory and can be opened and closed by the user.

The main menu should be understood before using *T.H.E. Smart Terminal*. Users can switch between the telecommunications terminal program and Atari's disk operating system, and they are able to undertake various file maintenance procedures without erasing data contained in the program's buffers. Terminal configuration characteristics can also be changed at any time.

Several functions of the program are not displayed on any menu but are described in the manual, and some of these require multiple keystrokes. Beginners are cautioned to study carefully the 22-page manual before trying to use *T.H.E. Smart Terminal*. It's among the most powerful and flexible terminal programs available for ATARI computers, but it requires some previous knowledge of telecommunications.

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

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.

Simulations of board games like chess and Othello are also included in this chapter, along with sports games, card 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 situation.

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 ARCHON★

Description: chess-type simulation

Sold by: Electronic Arts
2755 Campus Dr.
San Mateo, CA 94403
415/571-7171

For: 400, 800, 1200XL

Requirements: 32K RAM, disk drive, joystick

Price and format: approx. \$40 disk

Protection: yes

Warranty: 90 days

User group rating: 8.8

Documentation: 8

Graphics and sound: 9

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Archon adds a new dimension to the traditional chess match. Also known as *The Light and the Dark*, this game combines graphics and strategy for one or two players. The battle is waged for control of the light or dark area of the screen.

The pieces represent dragons, trolls, goblins, and other creatures endowed with special fighting abilities. The most powerful are the Wizard (Light) and the Sorceress (Dark). They can cast spells to revive, heal, and exchange. Using the spells properly decides a game's outcome.

The light and dark areas of the board change during the game and are important to strategy. When opposing pieces try to occupy the same square, the board disappears, and the two characters appear in a combat arena to battle for control of the territory. Instant victory is awarded to the player who occupies five power points at once on the altered chess board.

Archon is a subtle and unique game that requires a clear head and quick reflexes.

Description: baseball simulation

Sold by: Inhome Software
2485 Dunwin Dr. #8
Mississauga, ONT L5L 1T1
CANADA
416/828-0775

For: all

Requirements: 16K RAM,
joystick

Price and format: approx.
\$19 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 6.5

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Music greets players at the start of a game in *Baseball*, and the viewing perspective of the diamond is from behind and above home plate. You control nearly all aspects of the game in this computer program.

Pitches can be fast or slow, inside or outside, or a combination of these. The player activates a particular fielder to chase the ball, but throwing to bases is not automatic. If a fielder is moved out of the line of the throw, the ball cannot be caught.

To bat, you have to wait to fire the button until the ball reaches the plate. Runners are controlled separately and may take leads off the bases. After a point of no return, you lose control as they steal the next base. Squeeze plays are not possible, but the ability to control more than one runner makes up for this.

Home runs are celebrated by background music. The display is clear and colorful, and after a home run the screen scrolls past the outfield to the scoreboard in the stands. All action in this two-player game is controlled by joystick.

STRATEGY GAMES BASKETBALL

Description: basketball simulation

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 8K RAM,
joystick

Price and format: approx.
\$35 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 5.5

Documentation: 5

Graphics and sound: 6

Difficulty: expert

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

A full team of five players is not available to either side in *Basketball*, but the demanding sport makes a fast-paced and colorful video game.

As many as four people can participate in this computerized match. The screen displays a court with baskets at each end, and the floor is clearly marked with a midline and keys. At the top are the clock and scoreboard. Teams of two compete at once, with the computer controlling any figure not backed up by a human player.

A player can dribble the ball downcourt, pass, intercept, and shoot baskets. Proper positioning and sufficient force are necessary to sink a shot. To pass the ball, both teammates must press the fire buttons of their joysticks. Shots can be blocked and the ball stolen by touching an opponent.

STRATEGY GAMES

BATTLE FOR NORMANDY

Description: war game

Sold by: Strategic Simulations Inc.

883 Stierlin Rd., Building A200
Mountain View, CA 94043
415/964-1353

For: all

Requirements: 32K RAM, program recorder or disk drive, BASIC cartridge, joystick

Price and format: approx. \$40 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.3

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Battle For Normandy is a computer simulation of the 1944 D-Day invasion of Europe. The program can be tailored to a large number of war game situations, since you can artificially set leadership ratings, supply, replacements, and transportation factors to change historical fact.

Small American flags, German swastikas, and British Commonwealth symbols represent fighting units. Rivers, fields, villages, swamps, and the heavy "bocage" hedges of Normandy appear on the map. The Allies land on the beaches and fight their way inland. A text window at the bottom of the screen gives helpful identification.

Land combat and naval bombardment can be incorporated into most scenarios. The computer calculates battle results and may require one side to retreat while permitting the other to advance into vacated territory.

One or two players use the joystick to scroll across two screens of the map area. Action commands and requests are entered from the keyboard. The computer acts as the German defense in the one-player option.

Nearly every war game enthusiast has mapped this important campaign manually on a board. With *Battle For Normandy*, the invasion may now be fought by computer.

STRATEGY GAMES

BLACKJACK TUTOR★

Description: blackjack simulation

Sold by: ATARI Program Exchange
P.O. Box 3705
Santa Clara, CA 95055
800/538-1862 (in California
800/672-1850)

For: all

Requirements: 16K RAM (cassette) or 24K RAM (disk), program recorder or disk drive, BASIC cartridge

Price and format: approx. \$25 cassette or disk

Protection: yes

Warranty: 30 days

User group rating: 6.3

Documentation: 8

Graphics and sound: 6

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Blackjack Tutor is not only a game, it is an entertaining tutorial as well. Common blackjack procedures such as splitting pairs, doubling down, and insuring hands against a dealer's ace are included in the program.

The player has many options in this game. First, the dealer can draw from as many as eight decks. Overall strategy (or no strategy at all) is the choice of the player. On request, the computer plays a demonstration game against itself, an option that includes ratio and card count or percentage of winnings displays. The game can be slowed for easier observation.

Bets are placed in whole numbers from one to 1000, and shuffling frequency, the number of decks, and chosen strategy can change during play. The computer suggests a bet upon request. Card counts and percentages of winnings are displayed. A player can also surrender his hand to save half a bet.

The game of blackjack, two betting strategies, and the program are explained in 20 pages of documentation. In the bibliography the author refers to two books which closely depict the system and strategies used in *Blackjack Tutor*. This program is for serious students of the game.

Description: bridge simulation

Sold by: Dynacomp, Inc.

1427 Monroe Ave.

Rochester, NY 14618

716/442-8960

For: all

Requirements: 48K RAM, disk drive

Price and format: approx.

\$30 disk

Protection: none

Warranty: yes

User group rating: 6.1

Documentation: 6

Graphics and sound: 2

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

The *Bridge Master* program will deal 100,000 different bridge hands at random. Each is numbered for easy reference, and a player can opt for either side. The computer keeps score and saves it on a disk file. The menu displays the last hand played, so the hands can be played in sequence over any period of time.

The display is entirely text, and input is only by keyboard. Four positions are listed on the screen as they would appear around a table. The program provides for preemptive openings as well as the Blackwood and Stayman conventions. *Bridge Master* also recognizes demand bids and jump-shift responses.

Dynacomp claims the program sometimes makes "dumb plays," but it shows no favoritism for a player's opponents or partner. A player's high card may be trumped, or an opponent's loser set up.

Because winning is not very difficult, *Bridge Master* makes a player look good while offering good practice games.

STRATEGY GAMES CHECKERS 2.1

Description: checkers simulation

Sold by: Odesta Corp.
3186 Doolittle Dr.
Northbrook, IL 60062
800/323-5423 (in Illinois
312/498-5615)

For: all

Requirements: 32K RAM, disk drive; joystick or game paddles optional

Price and format: approx. \$50 disk

Protection: yes

Warranty: 90 days

User group rating: 7.1

Documentation: 9

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

When played on a board, checkers was a simple game. The program *Checkers 2.1*, however, offers a menu of variations and a manual of more than 40 pages. In spite of the variety, this computer version is no more difficult than the original board game.

The program offers 16 skill levels, and you can play the computer or another person. After the third level, the time required for each move doubles. If the computer takes too much time, a play can be forced.

On request, the computer suggests a move, but the manual cautions that such advice is not always perfect, though not deliberately misleading. The program also evaluates performance and shows a score; negative numbers indicate a winning total.

Game options include Give Away Checkers and a Checkers Movie, which replays a completed match. Fifty-eight numbered parameters (listed in six pages of documentation) can be altered to create new games with the program.

Description: chess simulation

Sold by: Odesta Corp.

3186 Doolittle Dr.

Northbrook, IL 60062

800/323-5423 (in Illinois

312/498-5615)

For: all

Requirements: 48K RAM, disk drive; game paddles optional

Price and format: approx.

\$70 disk

Protection: yes

Warranty: 90 days

User group rating: 8.0

Documentation: 9

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

The board display of the excellent *Chess* program is similar to illustrations commonly seen in newspaper columns. Pieces are graphically clear, and the right and bottom perimeters of the board display menu selections that light up as the player's cursor passes over them. Nearly 30 menu items can be selected.

The player can switch sides at any time to see how the computer will play its way out of a difficult situation. Blind play options include using the same symbol to represent all pieces, or invisible men on one or both sides. A Features Dictionary in the instruction manual is devoted to the many menu items and features of the program.

There are 17 skill levels available, including one for postal play and another to solve mating problems. Some levels limit the program's capacity to plan future moves, and the HALT command forces the computer to move.

This version is easier to use than a physical chess set because all moves are made by simply twisting the paddle knob and pushing the fire button. The program itself challenges not only novices but experienced players as well.

STRATEGY GAMES COMBAT LEADER★

Description: battle simulation

Sold by: Strategic Simulations Inc.

883 Stierlin Rd., Building A200
Mountain View, CA 94043
415/964-1353

For: all

Requirements: 48K RAM, program recorder or disk drive, joystick

Price and format: approx. \$40 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 9.5

Documentation: 9

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

In *Combat Leader* you command a squad, platoon, or an entire military company and must reach a specific objective defined by the program. Enemy units and other friendly troops are controlled by the computer.

A menu offers seven game scenarios and also allows the player to build a combat scenario from scratch. In planning a battle, you can specify the type and density of terrain, the number of various types of units, vehicle speed and armor, weapon firepower, and speed of game play.

An appendix at the back of the manual lists characteristic weapons from several countries and periods beginning with World War II, so you can design combat scenes using specific types of arms. The sounds from different arms vary, and flashes appear on the screen when shots are fired.

The six other scenarios on the program include novice and intermediate exercises and four specific tasks: reconnaissance, mobile defense, assault, and taking and holding a position. The pace of the action varies.

The excellent graphics in *Combat Leader* appear on an olive drab grid map that scrolls across more than three screens of terrain. The map is controlled by joystick, and units and commands are given using the keyboard.

STRATEGY GAMES CRISIS MOUNTAIN

Description: graphic adventure

Sold by: Microlab

2699 Skokie Valley Hwy.

Highland Park, IL 60035

312/433-7550

For: all

Requirements: 40K RAM, disk drive, joystick

Price and format: approx.

\$35 disk

Protection: yes

Warranty: not written

User group rating: 7.6

Documentation: 7

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

The idea behind *Crisis Mountain* is elementary. Terrorists have placed several time bombs in the mountain, and you must enter mine tunnels and shafts to defuse them before they explode.

The terrorists fled in such a hurry that they left their digging tools inside the mountain. If you find the tools quickly, excavation proceeds. Without the tools you have to use your hands. The work is more and more difficult the farther you dig into the mountain, and there are no rewards until the task is completed.

The graphics of *Crisis Mountain* are well done, particularly the display of a ghost flying off the top of the screen. It's a race against time to find the bombs and tools.

STRATEGY GAMES DARK CRYSTAL

Description: graphic adventure

Sold by: Sierra On-Line
Sierra On-Line Building
Coarsegold, CA 93614
209/683-6858

For: all

Requirements: 48K RAM, disk drive

Price and format: approx.
\$40 disk

Protection: yes

Warranty: 90 days

User group rating: 7.2

Documentation: 8

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

A graphic adventure, *Dark Crystal* is based upon the motion picture of the same name. Your character is Jen, the last known survivor of the Gelfling race, and your quest is to repair the damaged crystal.

Almost a thousand years ago, the strange UrSkeks came to Jen's world and used the power of the crystal in a heroic attempt to remove evil from themselves. The project failed, the UrSkeks changed into evil Skeksis, and the crystal was damaged.

Prophecy holds that the crystal can only be healed by a Gelfling hand. Jen must find Aughra, who holds the missing piece, then travel to repair the crystal. This is not easy because the Skeksis hold the crystal itself, and it is guarded by incredibly strong (but slow-witted) crab creatures.

The graphics in *Dark Crystal* are excellent. The game uses both sides of three disks and draws a picture frame for each action scene. Clearly written documentation tells the story that sets the scene for Jen's quest, a story that follows the film very closely.

Description: text adventure

Sold by: Infocom, Inc.

55 Wheeler St.

Cambridge, MA 02138

617/492-1031

For: all

Requirements: 32K RAM, disk drive

Price and format: approx.

\$50 disk

Protection: yes

Warranty: 60 days

User group rating: 8.3

Documentation: 9

Graphics and sound: none

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

You are the chief of detectives in *Deadline*, and your task is to investigate the unexpected demise of well-known industrialist and philanthropist Marshall Robner.

This ingenious and complex text adventure includes a dossier of fragmentary clues, a lawyer's letter, a police memo, a lab report, a medical report, a photo of the scene of the crime, and printed testimony from several witnesses. As a final whimsical touch, a plastic bag holding the alleged murder weapon is included with the software.

The Inspector's Casebook details the basic procedures and investigating options of the program. With a vocabulary of 600 words you explore the Robner mansion, interrogate witnesses, examine objects closely, ask for further laboratory analyses, and ultimately accuse and arrest a suspect.

You have 12 hours to establish means, motives, and opportunity beyond a reasonable doubt. Unfounded accusations along the way can be hazardous, and a jury ultimately determines if you have sufficient evidence to make a case.

This sophisticated program is extraordinarily absorbing and intricate. The unsolved mystery is a compelling intellectual challenge.

STRATEGY GAMES

EASTERN FRONT (1941)★

Description: war game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM,
joystick; program recorder
optional, disk drive optional

Price and format: approx.
\$45 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 7.6

Documentation: 7

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Eastern Front (1941) is a strategy simulation of conditions on the Russian/German front in World War II. Actual troop and strength data has been carefully researched and is graphically presented to the player. The game begins on the Eastern Front in June 1941. The player commands the German army, controlling troop and supply movement and engaging in

week-by-week battles as the war continues.

Nearly 20 scrolling screens hold a colorful map showing land from Finland to the Black Sea and from Poland to the Urals. This map details terrain conditions, as well as military camps and activities. Troops appear as square blocks, and infantry, armor, cavalry, and air groups are identified. Input is almost entirely by joystick. Troops and other units are moved by positioning a cursor over the site, pressing the fire button, and moving the cursor to the destination.

As the battle progresses, the map changes to show the fall weather conditions. The rivers freeze in the winter, and the entire map remains an icy white until the advent of spring.

A great deal of programming reduced the complexity of *Eastern Front (1941)* to the 16K memory of an Atari cartridge. This program is used as a teaching example because it neatly illustrates the good use of character graphics and fine scrolling techniques.

Description: graphic adventure

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California)

800/672-1850)

For: all

Requirements: 48K RAM, disk drive, joystick

Price and format: approx. \$30 disk

Protection: yes

Warranty: 30 days

User group rating: 9.0

Documentation: 6

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

In *Excalibur* you are young King Arthur. The magician Merlin has foretold that you will reign forever in a peaceful land, but to fulfill this you have to unite the 16 kingdoms of England. The task begins at home in Camelot.

The castle contains five rooms that you may explore, experimenting with different actions and objects. Some moves advance your quest, while others work in favor of your rivals for control of England.

Winning the kingdom involves many tasks. You can attack other kings or offer them tribute. Taxes must be levied. The size of the army can be adjusted to meet your requirements. At your request, Merlin casts spells on rival kings to change their attitudes, or brings plague or pestilence upon the enemies.

Many changing screens and maps make *Excalibur* a well-constructed game. The manual holds Merlin's lengthy (70-page) tale of the art of kingship. You must deduce the rules of the game from this story. Game action does not pause while you consider a move, but an Intermission command is available. A game in progress can be saved on the disk.

To do well at *Excalibur*, you have to draw deeply upon your faculties of analysis and common sense.

STRATEGY GAMES **GALAHAD AND THE HOLY GRAIL★**

Description: graphic adventure

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 32K RAM, disk drive, joystick

Price and format: approx. \$30 disk

Protection: yes

Warranty: 30 days

User group rating: 7.9

Documentation: 7

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Galahad and the Holy Grail is a graphic adventure that puts you on the quest of the famous Holy Grail. The kingdom you travel through appears in several screens of colorful terrain scrolling smoothly across the screen. Evil creatures abound, and the land is traversed by way of pathways and bridges.

The journey begins at a chapel. Elusive keys must be found to unlock magic doors to castle passages leading to the grail. A few secret pathways let you bypass the doors.

Your defense consists of a magic sword that materializes in your hand when an enemy knight appears. Sound effects signal the appearance of a monster and the loss of one of your lives. A dragon roars when the quest is completed.

Galahad and the Holy Grail gives you an unlimited number of lives to reach your goal. Mazes, traps, and other game problems must be solved with symbols because no text appears on the screen. This excellent game combines arcade graphics and action with a problem-solving adventure.

Description: graphic adventure

Sold by: Artworx

150 N. Main St.

Fairport, NY 14450

716/425-2833

For: 400, 800, 1200XL

Requirements: 40K RAM, disk drive, joystick

Price and format: approx.

\$28 disk

Protection: yes

Warranty: 90 days

User group rating: 6.1

Documentation: 5

Graphics and sound: 6

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Gwendolyn is an adventure set in the fantasy land of Hillsborough. The player is King Maracus, descendant of the House of Stevius. He has chosen his bride, Gwendolyn of Beni, and a wedding is planned. But the curse of the House of Stevius takes effect, and an army of dwarfs abducts Gwendolyn, taking her to the Troll Joel.

Maracus has sworn to rescue his bride. He takes three things on his quest: a compass, a suit of armor, and a list of items to help him find Gwendolyn.

Though simple in format, the graphics of this game are very good. You must search each screen carefully for the objects you need, then remember to draw a map. Any object used in the wrong spot is destroyed, so good memory is necessary. The joystick moves you from screen to screen, gathers objects, reads the score, and saves an unfinished game.

Gwendolyn is a progressive adventure, and it gets harder as the action unfolds. Some adventure gaming experience is recommended before attempting this game.

STRATEGY GAMES KNIGHTS OF THE DESERT

Description: war game

Sold by: Strategic Simulations Inc.

883 Stierlin Rd., Building A200
Mountain View, CA 94043
415/964-1353

For: all

Requirements: 40K RAM, program recorder or disk drive, BASIC cartridge, joystick

Price and format: approx. \$40 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.4

Documentation: 7

Graphics and sound: 6

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Knights of the Desert is a war game simulation of combat in North Africa during World War II. A detailed three-color map displays territory from Libya to Egypt and shows sandy desert, hills, mountains, towns, and the fortress at Tobruk. Commonwealth combat forces are green, and Axis forces are yellow. Both joystick and keyboard inputs are used to scroll across the map.

Information windows at the top of the screen display airpower capacity, replacements available (for both sides), supply points, and sea lift capability. Along the bottom of the screen are menu prompts and more information about units and their strength.

The computer commands the Axis forces in the one-player option. *Knights of the Desert* is a very difficult simulation that can take many hours to play, but its complexity is the attraction. A game situation can be saved to disk at any time.

With many variations and a two-player option, *Knights of the Desert* is popular among strategy enthusiasts.

Description: battle simulation
Sold by: Microcomputer Games
Div. of The Avalon Hill Game
Co.

4517 Hartford Rd.
Baltimore, MD 21214
301/254-5300

For: 400, 800, 1200XL

Requirements: 16K RAM (cas-
sette) or 32K RAM (disk), pro-
gram recorder or disk drive,
joystick

Price and format: approx.
\$35 cassette, \$40 disk

Protection: none
Warranty: not written

User group rating: 6.8

Documentation: 7

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Legionnaire is similar to *Eastern Front* (see separate review), an earlier strategy classic by the same author, Chris Crawford. One player fashions fighting forces of cavalry and foot soldiers, but for each legion mustered, the computer counters with two barbarian hordes on the field.

Orders are given to the Roman legions with the joystick. A detailed scrolling map is enhanced by topographical lines indicating elevation. The armies continue to do battle while moves are being planned and executed. With all this action going on, the player is limited to commanding no more than ten legions.

Barbarian forces are always comprised of equal amounts of cavalry and foot soldiers. The hordes of any one tribe are equal in strength. The difficulty of the battle depends on the number of legions mustered by the player and the type of barbarian tribe chosen. At the higher levels, barbarians will be easier to beat if the player chooses a smaller number of legions.

This game is an exciting combination of strategy and tactics supported by excellent graphics and sound.



STRATEGY GAMES M.U.L.E.★

Description: economic simulation

Sold by: Electronic Arts
2755 Campus Dr.
San Mateo, CA 94403
415/571-7171

For: 400, 800, 1200XL

Requirements: 48K RAM, disk drive; joystick or game pad-dles optional

Price and format: approx. \$40 disk

Protection: yes

Warranty: 90 days

User group rating: 8.3

Documentation: 8

Graphics and sound: 7

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

M.U.L.E. melds economics and entertainment in an innovative and challenging program. The letters of the title stand for Multiple Use Labor Element, a type of robot mule used to start a new colony on the planet Irata.

As many as four players can be transported to the new world where they each are issued a plot of land and a mule. The mules can be used to mine ore, grow crops, or produce energy. Players sell their products to one another or to the general store, and buy supplies with the profits. Production continues for 12 months, when the player with the most accumulated wealth wins.

The screen displays production graphs in brilliant colors, and a delightful background melody enlivens play. Good strategy is an important key to enjoying this game.

STRATEGY GAMES

★ MURDER ON THE ZINDERNEUF

Description: graphic adventure

Sold by: Electronic Arts

2755 Campus Dr.

San Mateo, CA 94403

415/571-7171

For: 400, 800, 1200XL

Requirements: 32K RAM, disk drive, joystick

Price and format: approx.
\$40 disk

Protection: yes

Warranty: 90 days

User group rating: 8.6

Documentation: 9

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

The logic game *Murder on the Zinderneuf* is loosely based on the popular board game Clue. You are a detective who must solve a murder mystery aboard the zeppelin Zinderneuf. The task has to be accomplished in 12 hours, or the murderer goes free.

You can choose to be one of 8 different detectives, and the murderer is to be found among 15 suspects. The detective moves through passages and rooms aboard the zeppelin, searching for clues. Suspects can be questioned in a pushy or friendly manner. Naming the wrong suspect affects your overall rating.

The joystick is used for all commands. Documentation includes detailed descriptions of each suspect and detective, as well as a drawing of the Zinderneuf's interior. The many possible combinations of detectives and victims make each game different, so *Murder on the Zinderneuf* does not lose its appeal after one crime is solved.

STRATEGY GAMES

ODIN

Description: Othello simulation

Sold by: Odesta Corp.
3186 Doolittle Dr.
Northbrook, IL 60062
800/323-5423 (in Illinois
312/498-5615)

For: all

Requirements: 48K RAM, disk drive; game paddles optional

Price and format: approx. \$50 disk

Protection: yes

Warranty: 90 days

User group rating: 7.5

Documentation: 8

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Odin is one of the best computer versions of Othello. Play follows the regulations and rules of the United States Othello Association.

A number of features make *Odin* the best of the Othello games. New board positions can be created, and a game can be changed in progress. The computer displays the move a player should make, and the computer can be forced to move a marker. As many as eight moves can be rescinded in order to explore another strategy, and a record of all moves made in a game is available.

For one or two players, *Odin* can be played simply by rotating the game paddles until a chosen command is highlighted by the cursor. The left and right arrow keys also move a marker. All but the lowest of 15 skill levels use a preprogrammed selection of opening moves. Beginning at the fourth level, the computer begins to look ahead before moving.

The highest level is designed for tournament play, and moves must be completed within 25 minutes. As the difficulty increases, so does the time required for the computer to plan a move; one level gives the program as long as four hours to act.

Extensive documentation includes a history of Othello and a discussion of game strategy.

STRATEGY GAMES

★ OPERATION WHIRLWIND

Description: battle simulation

Sold by: Broderbund Software, Inc.

17 Paul Dr.

San Rafael, CA 94903

415/479-1170

For: all

Requirements: 48K RAM, disk drive, joystick

Price and format: approx. \$40 disk

Protection: yes

Warranty: lifetime

User group rating: 7.5

Documentation: 8

Graphics and sound: 9

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Operation Whirlwind puts you in command of a World War II German battalion. Your task is to drive 15 kilometers past Russian lines to capture and hold a town. An artillery battery, platoons of infantry, and light and heavy tanks make up your force.

Enemy units, hidden at the beginning of the conflict, are controlled by the computer. You can see these troops only when they move or fire on your units. Your troops can sustain damage during battle, but a major hindrance is large craters in the roads, caused by Russian artillery fire.

A counterattack on your flank may spoil the pace of your advance. Each of your units has its own characteristic movement, speed, fire power, and weapon range. You use a joystick to target fire and move units.

The progress of your mission is evaluated at the end of each turn so you can keep track of your position, and the game's current status can be saved to disk at any time. The map in *Operation Whirlwind* is excellent and scrolls across nearly eight screens.

STRATEGY GAMES PHARAOH'S CURSE

Description: graphic adventure

Sold by: Synapse Software

5221 Central Ave.

Richmond, CA 94804

415/527-7751

For: all

Requirements: 32K RAM, program recorder or disk drive, joystick

Price and format: approx.

\$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 7.7

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Pharaoh's Curse is fast, blending arcade action with the problem solving of a good adventure game. You must avoid traps, explore a maze of rooms, and gather treasure, while fighting for your life against an irate pharaoh and a rampaging mummy.

Each room is displayed on a full screen, and some will cost you many lives. Luckily, you have many to spare, since you gain a life whenever you collect a treasure.

Keys open locked doors and secret tunnels. The pharaoh and the mummy may pop in and attack at any time. You can banish them for a moment by shooting back, but they're never gone for long. A flying creature will grab you suddenly and carry you through several rooms or back to the entrance of the tombs. You may be spirited away from certain death only to find yourself far from the treasure.

Skill levels are set at the key-board, and when a game is successfully completed, you earn part of a password worth several levels of game play. Higher levels are faster, and the pharaoh appears more frequently.

Pharaoh's Curse is challenging and lifelike with plenty of action and lots of surprises. A seasoned arcade player may find it easy to play, but the graphics and innovations of this program provide good entertainment.

STRATEGY GAMES

★PINBALL CONSTRUCTION SET

Description: pinball game design and simulation

Sold by: Electronic Arts
2755 Campus Dr.
San Mateo, CA 94403
415/571-7171

For: 400, 800, 1200XL

Requirements: 48K RAM, disk drive, joystick

Price and format: approx. \$40 disk

Protection: yes

Warranty: 90 days

User group rating: 9.2

Documentation: 9

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Written by Bill Budge, author of the early pinball classic *Raster Blaster*, this is a popular game with pinball fans. As its title implies, *Pinball Construction Set* lets you design and construct original pinball games and play them.

The program includes five demonstration games that can be played as they are or customized. You should view the

demonstrations before attempting to create original games because the demonstrations are full of ideas for designing and building your own.

As you construct an original game, the screen shows an empty playfield on the left and pinball parts on the right. A paintbrush, jars of paint, and various tools are available. A joystick-controlled hand on the screen builds the game. When the hand touches and moves a flipper, for example, the flipper can be placed on any part of the screen.

The paintbrush and paint jars are used to change colors, and a magnifying glass lets you draw or color very small items. You can test the pinball machine as you are building it, and you can control gravity, bounce, kick, elasticity, and game speed.

Pinball Construction Set will provide special entertainment to creative players who enjoy designing their own games. For others, it remains by itself a great pinball simulation.

STRATEGY GAMES QS REVERSI

Description: Othello simulation

Sold by: Quality Software
21601 Marilla St.
Chatsworth, CA 91311
213/709-1721

For: 400, 800

Requirements: 48K RAM, disk drive

Price and format: approx.
\$30 disk

Protection: yes

Warranty: not written

User group rating: 6.6

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

QS Reversi is a computer version of the popular board game Othello. You and the computer (or a human opponent) take turns placing markers on an 8×8 grid. The idea is to trap your opponent's pieces between two of yours. Then the opposing player tries to steal some of your pieces the same way. The exchange continues until all the squares are filled. A dozen skill levels are available.

QS Reversi is played entirely with keyboard input, and bad moves may be taken back to explore alternative strategies. Scoring information is listed in a text window at the bottom. Colors may be changed by the player. Handicaps are created by giving away the corners of the board.

For postal play, all the moves made during a game can be saved and listed on the screen. A tournament option asks the player to find all legal moves.

Description: power plant simulation

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 24K RAM, program recorder, BASIC cartridge, joystick

Price and format: approx. \$25 cassette

Protection: yes
Warranty: 90 days

User group rating: 5.9
Documentation: 9
Graphics and sound: 8
Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Scram simulates the operation of a nuclear power generating plant. An animated screen shows plumbing connecting the reactor core to a generating turbine, a cooling tower, and various reservoirs and pumps. Fluid actually seems to move through the pipes, and the temperature level at several points around the system is shown. The number of kilowatts of power produced is displayed at the top of the turbine.

The joystick opens and closes valves, turns pumps on and off, raises and lowers the reactor core rods, and repairs damage. A text window displays the score, the difficulty level, and how many repair crews are available.

At every difficulty level except the lowest, an accident is bound to happen. A distinct noise indicates earthquake damage, and the temperature readouts show which pump or valve needs repair. Repair crews are limited, and each can be used only once because of radiation exposure.

In addition to describing game rules, the documentation provides an explanation of nuclear power and core meltdowns. With expertise and advanced knowledge of the system, you're able to produce more electricity and advance to higher levels of game play.

STRATEGY GAMES SHAMUS: CASE II

Description: graphic adventure

Sold by: Synapse Software

5221 Central Ave.

Richmond, CA 94804

415/527-7751

For: all

Requirements: 32K RAM, program recorder or disk drive, joystick

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 8.0

Documentation: 6

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

In *Shamus: Case II*, you are a famous detective on assignment to penetrate The Shadow's underwater fortress, detonate a bomb, and return safely home. Ladders and passages lead to various chambers where you find clues and help. Pits in the floor are hazards and The Shadow himself may swoop down at any time to attack.

The game begins with snakes slithering at your feet. Perilous spiked pits must be avoided at all cost. You have to find an elevator to reach the lower depths of the fortress and destroy creatures there, then survive a series of quick pinball-type dangers before proceeding to an adventure game format. You can check your progress there on a computer-drawn map.

Shamus: Case II is a difficult game, and success does not come easily. The pace of the game is quickened at three difficulty levels above Novice. The absence of different rewards at these higher levels is a minor design flaw.

The *Shamus* series of games is the first of its kind to combine arcade action with adventuring. The author has done a good job in programming both graphics and sound.

STRATEGY GAMES

SNOOPER TROOPS

CASE #1 AND CASE #2

Description: detective game

Sold by: Spinnaker Software Corp.

215 First St.

Cambridge, MA 02142

617/868-4700

For: all

Requirements: 48K RAM, disk drive

Price and format: approx. \$45 disk

Protection: yes

Warranty: 30 days

User group rating: 7.0

Documentation: 7

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

SNOOPER TROOPS is a popular and challenging detective game for a wide range of ages. Its documentation is presented as an investigator's notebook used to organize and classify information acquired during the game.

Although it is designed for grade school children, *SNOOPER TROOPS* is difficult enough to be interesting to adults and adolescents. The player is not required to solve the case in one sitting, a feature that helps children learn to develop stamina.

SNOOPER TROOPS lets the player choose which agent he or she wishes to be. The player uses the keyboard to move through graphic displays, such as going into a phone booth or taking a "snoopshot." With the keyboard, the player hunts for clues by displaying a list of suspects and special messages, recalling old clue files, or accusing a suspect. The player is prompted and encouraged to use the notebook throughout the investigation.

STRATEGY GAMES SPY'S DEMISE

Description: graphic adventure

Sold by: Penguin Software

P.O. Box 311

Geneva, IL 60134

312/232-1984

For: 400, 800, 1200XL

Requirements: 32K RAM, program recorder or disk drive; joystick or game paddles optional

Price and format: approx. \$20 cassette or disk

Protection: yes

Warranty: 60 days

User group rating: 6.9

Documentation: 7

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

In *Spy's Demise*, you are trying to steal a secret coded message from the Russian embassy. A part of the message is hidden on the top floor of each building in the embassy compound, and you must reach each location without being seen. Once you've successfully collected all the parts of the message, you're faced with the problem of deciphering it.

Guards ride up and down elevators looking for intruders. With careful timing, you can avoid them. You are unarmed, and you lose one of your five lives if you're caught.

Movement is very smooth in *Spy's Demise*, and the graphics are impressive. It is a good test of your dexterity and your ability to quickly plan strategy and decipher simple codes.

STRATEGY GAMES

STARBOWL FOOTBALL

Description: football simulation

Sold by: Gamestar, Inc.
1302 State St.
Santa Barbara, CA 93101
805/963-3487

For: all

Requirements: 24K RAM, program recorder or disk drive, joystick

Price and format: approx. \$32 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 7.0

Documentation: 7

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

One or two players can enjoy the excitement and flavor of a real football game in *Starbowl Football*, without risking serious injury. A field scrolling over five screens covers the entire 100 yards. There are six players per team. Penalties, time-outs, punts, field goals, and extra points are included in the program.

The plays are programmed using the joystick. Each team has five players on the line and one in the backfield. For the defense, each end is programmed separately, and the three middle players are programmed as one. You have total control of the safety and can use him to rush, double-cover, or try for an interception.

The offensive ends are programmed for a pass pattern. You press the red button to designate a receiver, and then program a pass pattern. The other receiver is used as a decoy. The offensive line is programmed for an end run, a middle run, or pass protection.

The hardest part of this game is catching passes. You must press the joystick button exactly when the ball reaches the receiver. Beginners will probably complete only ten percent of all passes, but this figure will increase with practice.

Sports fans will find the play action in *Starbowl Football* very satisfying.

STRATEGY GAMES STARCROSS

Description: text adventure

Sold by: Infocom, Inc.

55 Wheeler St.

Cambridge, MA 02138

617/492-1031

For: all

Requirements: 32K RAM, disk drive

Price and format: approx.
\$40 disk

Protection: yes

Warranty: 60 days

User group rating: 8.2

Documentation: 9

Graphics and sound: 5

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

This is Infocom's first attempt at a science-fiction adventure, and it is very well executed. As *Starcross* begins, you command a small one-man space survey ship looking for unexplored asteroids to mine. The ship's mass detector signals an alarm, but what it has found is not typical. It is an ancient alien artifact. The purpose of the game is to figure out why the artifact is there and decide what should be done with it.

This text game's large vocabulary of more than 600 words lets you talk to the computer in full sentences and multiple commands. This makes it easier to concentrate on the story line of *Starcross*.

STRATEGY GAMES

★ STAR LEAGUE BASEBALL

Description: baseball simulation

Sold by: Gamestar, Inc.
1302 State St.
Santa Barbara, CA 93101
805/963-3487

For: all

Requirements: 32K RAM, program recorder or disk drive, joystick

Price and format: approx. \$32 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 8.3

Documentation: 8

Graphics and sound: 9

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Star League Baseball has the feel of a real ball game. The music and graphics are marvelous. A flag waves above the scoreboard as the National Anthem hails the beginning of the game.

In this game for one or two players, teams are composed of either heavy hitters or those with good batting averages. Starting pitchers can specialize in fastballs or curves. A knuckle ball relief pitcher can be used after the eighth inning begins. Batters may bunt or swing away, and fly balls are followed by a shadow on the ground. The pitchers each have eight different throws in their repertoires.

When a ball is hit, the nearest fielder is activated automatically. Move the joystick to catch the ball, throw it, or tag a runner. Fly balls can be caught with a little practice. The lead runner is completely under your control between pitches, and stealing is a high art in this game.

Adding to the excitement, sports trivia, attendance figures, and major league scores are displayed between innings. Organ fanfares play when the bases are loaded and when runners are in scoring position. Crowd noises respond to the action on the field. *Star League Baseball* is a winner.

STRATEGY GAMES STRANGE ODYSSEY

Description: graphic adventure

Sold by: Adventure International

Box 3435

Longwood, FL 32750

305/862-6917

For: 400, 800

Requirements: 24K RAM, program recorder or disk drive

Price and format: approx.

\$20 cassette, \$40 disk

Protection: yes

Warranty: 1 year

User group rating: 6.0

Documentation: 5

Graphics and sound: 5

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Strange Odyssey is the sixth in the Scott Adams series of graphic adventure sagas. It begins in the control room of a scout ship on a small planetoid. The ship's energy crystals are exhausted and the access hatch is stuck. You need to explore the planetoid for repair parts for your ship.

The program recognizes a vocabulary of approximately 120 words which are listed in a book of hints, available for about \$8 more from Adventure International. Without this book you will die repeatedly as you try to discover how to stay alive. With or without the supplementary book, however, *Strange Odyssey* is very challenging.

The cassette version of *Strange Odyssey* is a text-only adventure, but the disk has good graphics detail and the displays are colorful and fanciful. This challenging program will provide many hours of enjoyment.

Description: graphic adventure

Sold by: Sierra On-Line
Sierra On-Line Building
Coarsegold, CA 93614
209/683-6858

For: all

Requirements: 48K RAM, disk drive

Price and format: approx.
\$60 for 2 disks

Protection: yes

Warranty: 90 days

User group rating: 8.1

Documentation: 6

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Ultima II lets you create your own character to explore a science-fiction world of time doors, space travel, and magic. A Minax controls the universe, and your mission is to end her rule.

The action takes place in five time zones. Each period is depicted geographically and may contain towns, villages, a castle, a dungeon, or a tower to explore. Towns, villages, and castles are safe places holding clues, keys, weapons, armor, magic items, food, and transportation. You move about on foot until a horse, frigate, airplane, or space-ship is available. Space travel transports you to any other planet in the solar system.

You gain experience, points, objects, and gold primarily by battling enemy creatures. These creatures attack mindlessly, and the combat sequences in this game lack variety.

All input commands are by keyboard and two disks are supplied with the game (one for Earth location graphics, another for planets). You must provide a separate disk for each character you create.

This program's design reflects a great deal of imagination, and it allows welcome flexibility of movement and action.

STRATEGY GAMES VC

Description: battle simulation
Sold by: Microcomputer Games
Div. of The Avalon Hill Game
Co.

4517 Harford Rd.
Baltimore, MD 21214
301/254-5300

For: 400, 800

Requirements: 32K RAM (cas-
sette) or 48K RAM (disk), pro-
gram recorder or disk drive,
joystick

Price and format: approx.
\$20 cassette, \$25 disk

Protection: none

Warranty: not written

User group rating: 5.3

Documentation: 5

Graphics and sound: 6

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

An abstract simulation of the Vietnam War, VC depicts the political and military struggles of that conflict. On the program's map, conical pyramids represent villages. A helicopter and a gun indicate a U.S. air cavalry battalion and an artillery regiment. Flags identify South Vietnamese (ARVN), Viet Cong (VC), and

North Vietnamese (NVA) positions.

Friendly villages appear in blue; neutral or unknown villages are yellow. The yellow villages may change color as ARVN battalions move among them. Meanwhile, the VC are recruiting units from the yellow villages. When the game begins, the number of NVA units equals the difficulty level.

Except for setting difficulty levels (five are available), all player input is by joystick. The air battalion can move into any empty space on the map. The artillery is fixed in place, but can shoot at anything. All other units can move into adjacent spaces.

A text window gives unit identification and displays data about the number of battalions and neutral and friendly villages.

At the lowest difficulty levels, you can win the war just by charging ahead, shooting up the enemy, and converting villages. At the fourth and fifth levels, more complicated strategies are needed to win. Although very easy to play, VC is not a simple game.

Description: graphic adventure

Sold by: Synapse Software
 5221 Central Ave.
 Richmond, CA 94804
 415/527-7751

For: all

Requirements: 32K RAM, program recorder or disk drive, joystick

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 8.0

Documentation: 7

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

There are seven levels of caverns in *Zeppelin*, holding more than 250 rooms to explore. You are a pilot out to destroy the Timelord's base, hidden in the caverns. Points are scored by destroying obstacles such as balloons, enemy zeppelins, and falling rocks en route. Barriers, laser gates, buildings, and towers make travel difficult. TNT markers can be picked up and deposited in a room containing a plunger. Shooting the plunger blows a passage to the next level of the caverns.

As many as four people can play *Zeppelin* at once. The first player is always the pilot, while the others control guns and armament.

Zeppelin was designed by William Mataga, author of the *Shamus* game series, and the programs are somewhat similar. At higher levels, the action is fast and furious, and the game may seem impossible to complete. Level seven is the easiest, but few players will ever get past level three.

STRATEGY GAMES ZORK I, II, III

Description: text adventure

Sold by: Infocom, Inc.

55 Wheeler St.

Cambridge, MA 02138

617/492-1031

For: all

Requirements: 32K RAM, disk drive

Price and format: approx. \$40 (each) disk

Protection: yes

Warranty: 60 days

User group rating: 8.4

Documentation: 8

Graphics and sound: none

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

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

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.

Zork II takes you to meet the Wizard of Frobozz, and *Zork III* is set in the deepest regions of the Underground Empire. While the Zork games are available as a series, each is a complete adventure in itself.

Fans of popular board games such as *Dungeons and Dragons* will enjoy this tale of heroes, monsters, and maidens. The series presents adventurers with increasingly difficult and perplexing challenges.

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 Atari versions of coin-op hits are spectacular nonetheless.

In addition to copies of arcade classics, this chapter includes games written specifically for home computers. *Miner 2049'er*, *Fort Apocalypse*, and *Choplifter* are three of the most popular.

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 *Zaxxon* and *Submarine Commander* 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:

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

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

maze game A game in which the player moves a figure through a network of passages on the screen (such as *Pac-Man*).

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

trackball A game control device on which a rotating ball moves a cursor (or other figure) in all directions on the screen.

ARCADE GAMES **ASTRO CHASE**

Description: space game

Sold by: Parker Brothers

P.O. Box 1012

Beverly, MA 01915

617/927-7600

For: 400, 800, 1200XL

Requirements: 16K RAM,
joystick

Price and format: approx.
\$40 cartridge

Protection: cartridge

Warranty: 180 days

User group rating: 6.4

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

As commander of a defending spaceship, you must save the Earth from invading aliens in *Astro Chase*. Your task is to find megamines the enemy has aimed at the planet. Megamines are slow, but difficult to discover and destroy, and nothing will turn them from their destructive course toward Earth. A single hit can be fatal.

Patrolling alien ships attack in groups of one, two, or three, and prevent you from destroying mines. Some shoot missiles, and others fly through planets to ram you. Orange shield stations appear at various locations to recharge your ship with energy.

The graphics in *Astro Chase* are of the highest quality. The hero rides in cars, walks about, and is beamed up to his ship while saluting, waving, and even scratching his head. Good music plays in the background.

Astro Chase was written by Fernando Herrera, winner of the first AtariStar Award for his program *My First Alphabet*.

Description: driving simulation

Sold by: Gamestar, Inc.

1302 State St.

Santa Barbara, CA 93101

805/963-3487

For: all

Requirements: 16K RAM, program recorder or disk drive, joystick

Price and format: approx. \$32 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 5.8

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Baja Buggies is a racetrack driving game in which you must pass all competitors and finish in the top six. If you do this, you can add your score to a cumulative scoring record on the program. Mail a photo of the screen showing a sixth-place or better finish to the manufacturer, and you can join Gamestar's special club of fast racers.

The game screen shows the track ahead, mountains, and a cloud-filled sky scrolling past. There may be as many as four cars on the road at one time, each colored differently.

The joystick steers left and right, and the fire button works as a brake. Acceleration is automatic, letting you reach a top speed of about 70 m.p.h. If you decelerate too rapidly, cars coming from behind (some unseen) might crash into you.

Your speed is shown by a bar graph speedometer at the bottom of the screen. A radar display indicates your position relative to the leaders, who are hard to overcome. You'll spend some time trying before you finish in the top six.

ARCADE GAMES BLUE MAX

Description: shoot-em-up

Sold by: Synapse Software
5221 Central Ave.
Richmond, CA 94804
415/527-7751

For: all

Requirements: 32K RAM, program recorder or disk drive, joystick

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 9.2

Documentation: 7

Graphics and sound: 9

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Blue Max is a popular action game that puts you in the cockpit of a vintage biplane at a military airfield. You fly through barrages of anti-aircraft fire and numerous dogfights to reach an enemy city to bomb targets designated by headquarters. Points are scored en route for downing enemy aircraft and for demolishing bridges, ships, trucks, tanks, and buildings.

You can guide the biplane left and right and control altitude from flight level zero to 105. There are machine guns for strafing and bombs for dropping, and at low altitudes you might crash into trees, bridges, buildings, or the ground.

Action scrolls diagonally, and some skill is required to line up targets for bombing and strafing. Alarms flash if you fly too low or if enemy planes are near. When a friendly landing field appears, you can land for refueling, repairs, and more ammunition. Crosswinds make the final approach and touchdown difficult.

Blue Max is an exciting game full of fast action, with excellent graphics and sound.

ARCADE GAMES

CAVERNS OF MARS

Description: space game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM,
joystick

Price and format: approx.
\$35 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 7.0

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

In *Caverns of Mars* you command a ship descending into a large cavern beneath the surface of Mars. Collisions with cavern walls, enemy ships, and force fields must be avoided to reach an underground city. After dodging around buildings, you have to set a time bomb in the heart of the city and then escape to the surface before the explosion.

You can begin this game at any point of descent. Joystick control lets you slow or speed the ship's progress for greater flexibility in lining up targets to shoot. Your ship moves continuously down the tunnel, meeting hazards en route and gaining points.

Caverns of Mars is a simple game requiring quick hand-eye coordination and very little imagination.

ARCADE GAMES **CHOPLIFTER**

Description: rescue/
shoot-em-up game

Sold by: Broderbund
Software, Inc.

17 Paul Dr.

San Rafael, CA 94903

415/479-1170

For: all

Requirements: 16K RAM,
joystick; disk drive optional

Price and format: approx.
\$45 cartridge, \$35 disk

Protection: yes

Warranty: lifetime

User group rating: 7.9

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

You are a helicopter rescue pilot in *Choplifter*, a classic shoot-em-up game with good graphics.

The action begins as a group of Americans are taken hostage by a hostile nation and held captive in four cabins, each of which lodges 16 people. You have an unlimited amount of time to complete the rescue mission, but only three helicopters are available. As your chopper approaches the first cabin of prisoners, they can be seen waving frantically while enemy tanks, F-15 jets, and drones try to shoot your craft. Hostages must be picked up (a maximum of 16 at a time) and carried to a friendly base just across the border. During firefights, be careful that you don't shoot any hostages.

The sound effects in *Choplifter* leave something to be desired, but the graphics are great. Some colors are a bit strange, but they combine for a very appealing screen display. Since there is only one level of difficulty, the challenge depends on how many people are rescued. *Choplifter's* popularity is well deserved.

Description: shoot-em-up

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

For: all

Requirements: 16K RAM; disk
 drive optional, joystick
 optional

Price and format: approx.
 \$35 cartridge, \$30 disk

Protection: yes

Warranty: 90 days

User group rating: 8.4

Documentation: 8

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of
 user group ratings

Documentation: Quality of printed
 instructions

Graphics and sound: Quality and
 aesthetics of each

Difficulty: How much skill is
 required to enjoy the game

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

Evil aliens are invading a city in *Crossfire*. At each of 42 street corners, multicolored creatures blast lasers at you, but when you return fire, they don't die. Your enemies can mutate into strange creatures as many as four times during a game.

You have to stop at a street corner in order to shoot an alien. Aim and fire by pushing the joystick in the direction of your shot and pressing the button. It takes some practice to become accurate.

Another concern is your ammunition. A tinkling sound will warn you when the supply is low, and you must maneuver across a blinking diamond on the screen to load another 30 bullets.

Points are awarded according to the number of aliens shot, and the targets in the center of the city are worth more. You gain an extra life for each 10,000 points.

The fast action of *Crossfire* and its high resolution multicolor aliens make it one of the best arcade games for ATARI computers.

ARCADE GAMES DIG DUG

Description: digging game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM,
joystick

Price and format: approx.
\$45 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 6.4

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

In this copy of the arcade game *Dig Dug*, you excavate a series of tunnels through underground caverns and rocks. Along the way you are terrorized by fire-breathing dragons (Fygars) and monster tomatoes (Pookas).

The top of the screen shows the score, the number of lives left, and a little red flower in the ground for each board cleared. You eliminate Fygars and Pookas by pumping them full of air or ambushing them under rocks. If you wait too long to attack, the monsters turn into ghosts and pass through solid ground to other tunnels where they materialize again. The last surviving monster in each board gives up the chase and tries to escape.

If a ghost disappears, you have all the time you need to dig out the entire cavern. You progress to the next level by dropping a rock on Dig Dug when he is alone on the screen.

Points are awarded for digging, killing monsters and ghosts, and collecting prizes. Extra lives are earned at various point levels.

Dig Dug moves slowly enough that a child can manipulate the joystick and enjoy the game, but the action is faster at the higher levels.

ARCADE GAMES

DONKEY KONG

Description: ladder game
Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all
Requirements: 16K RAM,
joystick
Price and format: approx.
\$50 cartridge

Protection: cartridge
Warranty: 90 days

User group rating: 7.9
Documentation: 6
Graphics and sound: 8
Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Your goal in *Donkey Kong* is to reach the top of the screen, where a fearful ape holds your girlfriend captive. You play the role of Mario, a fearless plumber. There are four different screens in this ladder game and a variety of dangers along the way.

In the first screen, Kong rolls barrels down ramps at Mario. Avoid being wiped out by jumping or climbing on a ladder when barrels are present. Mario can also smash barrels with his hammer for points. The next screen is a series of platforms held together by rivets. Mario must run or jump over all of them to reach his girlfriend while guarding against deadly fireballs. Screen three is a network of ladders and springboards. The last hazards to be overcome, in screen four, are platforms and conveyor belts carrying cement tubs. Move quickly to the top while dodging fireballs.

The graphics in *Donkey Kong* are multicolor and accented by many sound effects. There are options for one or two players, and several difficulty settings. This is the classic running and jumping game popular in video arcades.

ARCADE GAMES **DRELBS**

Description: rescue

Sold by: Synapse Software
5221 Central Ave.
Richmond, CA 94804
415/527-7751

For: all

Requirements: 16K RAM (cassette) or 32K RAM (disk), program recorder or disk drive, joystick

Price and format: approx.
\$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 7.5

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Drelbs is an unusual game in which you must free enslaved creatures and learn the secret of a mystery lady. The game board, or flip grid, is composed of squares. You must close it off by flipping its sides shut to reach the place of darkness where the Drelbs are captive. The grid, however, is inhabited by evil Trollaboars who also flip gates but cannot close squares. It is possible to trap evil Trollaboars inside the squares.

When you have closed as many squares as possible and have survived attacks by Trollaboars, jump through a window to rescue the Drelbs. The darkness is patrolled by Gorgolytes who will toss you back onto the flip grid if they find you.

Help is available from two sources. Hearts appear at random and, when touched, freeze the Trollaboars. From time to time, diamonds open the window to the darkness hiding the Drelbs. You can earn a bonus by kissing the mystery lady in the dark corridor or by freeing all the Drelbs.

ARCADE GAMES E.T.™ PHONE HOME!

Description: graphic adventure game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM,
joystick

Price and format: approx.
\$50 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 6.9

Documentation: 7

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Based on a popular science-fiction movie, *E.T.™ Phone Home!* is a modified maze game. You play the role of young Elliott, who must collect all the parts needed to build a special radiotelephone. A stranded alien (affectionately known as "E.T.") can use this phone to notify his crewmates aboard a visiting spaceship that he needs to be rescued.

The game begins with a picture of E.T. and the parts that must be collected to construct the phone. Elliott then appears in front of his house on a mazelike city map. The missing phone parts are invisible, and each is hidden in more than one place in the maze. Parts can be traced by a special sound, or E.T. can give Elliott hints. Relying on E.T., however, uses up his valuable energy supply. When Elliott is very near the part, it becomes visible and you can pick it up with the joystick and carry it home. Both Elliott and E.T. must avoid scientists and agents who will take the phone parts to keep the alien from returning to his ship.

The theme and level of difficulty in this action adventure game make it appropriate for younger children.

ARCADE GAMES **FINAL FLIGHT!**

Description: flight simulation
Sold by: MMG Micro Software
Box 131
Marlboro, NJ 07746
201/431-3472

For: all

Requirements: 24K RAM, program recorder or disk drive, joystick

Price and format: approx.
\$30 cassette or disk

Protection: yes
Warranty: 90 days

User group rating: 5.8
Documentation: 7
Graphics and sound: 6
Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

The opening screen in *Final Flight* shows a distant runway against a field of green and a sky of blue. Instruments below the windscreen display altitude, pitch, vertical speed, and remaining distance to the runway. Propeller pitch is normal, brakes are off, and flaps are up. You are on final approach for landing.

As you attempt to park your craft safely in this simulation, you'll soon discover that landing an airplane is a complex maneuver. If your altitude drops, you crash into a building. Other aircraft may take off directly in your path, forcing you to begin again.

There are four difficulty levels that increase fuel consumption, raise your stall speed, and decrease the maximum descent speed. Level four includes crosswinds to blow the plane off course. You can fly with your instruments only, with no instruments at all, or in the fog.

Thirteen pages of documentation explain the operation of *Final Flight* in a comfortable and colloquial style. All input is by joystick except the options at the beginning.

This simulator is not a substitute for the real thing, but it does test skills needed to land a plane, particularly the ability to integrate a great deal of data into an action situation.

Description: jumping game

Sold by: Sierra On-Line

Sierra On-Line Bldg.

Coarsegold, CA 93614

209/683-6858

For: all

Requirements: 16K RAM, disk drive; joystick optional

Price and format: approx.

\$35 disk

Protection: yes

Warranty: 90 days

User group rating: 7.8

Documentation: 7

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

In the action game *Frogger*, you are a frog trying to hop across a highway and river to reach safety. Speeding automobiles and other hazards make the trip dangerous, but there are five burrows at the top of the screen offering refuge. Time is of the essence—your score depends on how fast you get across. A thermometerlike scale at the bottom of the screen keeps track of time. When it runs out, you die. But you are given five frog lives since the highway and the river are so treacherous.

You cross the river by jumping on logs, turtles, and other objects in the current. If you miss and fall in, you perish. Get all five of your frog lives to the opposite bank, and the game shifts to a more difficult level with faster race cars and fewer objects in the river.

This is a one-player game with a fast or slow option. The musical background consists of an excellent calliope sound that can be turned off and on. *Frogger's* graphics are very well executed and, with no loss of satisfaction, you can save a lot of quarters by playing this popular arcade game at home.

ARCADE GAMES FORT APOCALYPSE

Description: rescue

Sold by: Synapse Software

5221 Central Ave.

Richmond, CA 94804

415/527-7751

For: all

Requirements: 32K RAM, program recorder or disk drive, joystick

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 7.8

Documentation: 6

Graphics and sound: 8

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Fort Apocalypse is a fast-paced arcade game. You control a helicopter and are assigned the difficult tasks of rescuing human prisoners stranded in the Kralthan caverns, destroying Fort Apocalypse, and returning to safety. The caverns are guarded by self-propelled mines, Kralthan tanks, laser turrets, robo-copters, and other menacing obstacles. Two levels of caverns protect Fort Apocalypse, and you must blast into caves while avoiding the fort's defenses and closely monitoring your fuel supply.

To rescue prisoners, maneuver the helicopter close to them and let them climb aboard. Touching the cave or the Kralthan defenses destroys the helicopter, and the only safe places in the caverns are designated landing pads and fuel depots.

The graphics in *Fort Apocalypse* are high resolution images with excellent color. The screen is divided into two parts: the lower section holds the action, and the upper section of text displays the score, fuel level, and the long-range Navatron scanner.

Fort Apocalypse is one of the most playable arcade games for the ATARI home computer.

ARCADE GAMES

JEEPERS CREEPERS

Description: maze game

Sold by: Quality Software
21601 Marilla St.
Chatsworth, CA 91311
213/709-1721

For: 400, 800

Requirements: 32K RAM, disk
drive, joystick

Price and format: approx.
\$30 disk

Protection: yes

Warranty: 90 days

User group rating: 5.0

Documentation: 5

Graphics and sound: 5

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Jeepers Creepers is a good name for this fast arcade-like game. As a bug running through four different mazes, your goal is to avoid the three stinging wasps that are closely following you.

As you evade the wasps, you fill in parts of the maze so you can jump to release wasp-eating beetles. Occasionally a special square emits a super beetle that eats all the wasps it can reach.

You fill the maze by drawing a line around the squares and rectangles in the maze as it moves. After all the rectangles are completed, you progress to the next maze, and the wasps become fiercer. To escape, use the joystick to jump to a random place on the maze. You have only two jumps, but extras can be earned by drawing a line around squares with the word JUMP in them.

The action in *Jeepers Creepers* is superb, and the sound effects and graphics make it a good game for any age group, even young children.

ARCADE GAMES JUMBO JET PILOT

Description: flight simulation

Sold by: THORN EMI

Video, Inc.

1370 Avenue of the Americas

New York, NY 10019

212/977-8990

For: 400, 800, 1200XL

Requirements: 16K RAM,

joystick

Price and format: approx.

\$45 cartridge

Protection: cartridge

Warranty: none

User group rating: 5.1

Documentation: 5

Graphics and sound: 6

Difficulty: expert

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Jumbo Jet Pilot is not like arcade games that flash past in a matter of seconds. The factors involved in controlling any vehicle in flight are complex and inter-related, so playing this game might last an hour or two.

Much attention has been given to detail here. The jumbo jet flies ponderously, and reaction times and physical factors closely mirror reality. Controls have been simplified and the flight deck pared to a minimum, but there are enough features to simulate the real thing.

The game begins with a parked 747 to be taxied to the runway. It may take as long as 15 minutes to get airborne since the craft is not fast on the ground. Once in the air, you must land. The computer gives warnings when the craft is being stressed, and the game can be paused indefinitely, a helpful feature when the next move isn't immediately apparent.

The slow pace of this simulation prevents it from challenging a player's reflexes, but *Jumbo Jet Pilot* does reproduce the sense of piloting a heavy transport.

Description: tracing game
Sold by: Tronix Publishing, Inc.
8295 S. La Cienega Blvd.
Inglewood, CA 90301
213/215-0529

For: 800, 1200XL

Requirements: 16K RAM, program recorder or disk drive, joystick

Price and format: approx. \$30 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.2

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Played on a grid, *Kid Grid* is intended for young children. Several monsters chase you as you trace the lines of the grid to mark off individual squares. When each square is outlined, it changes color and yields points.

The fire button on the joystick stuns the monsters briefly, but it can only be used a limited number of times. A menu lets you modify how often the stun feature can be used.

One shortcoming of the program is slow joystick response. This is not much of a hindrance for adults who can anticipate the monsters' movements, but children may find it a problem. The difficulty increases after each grid is completed, until all lives are lost.

ARCADE GAMES **MINER 2049'ER**

Description: ladder game

Sold by: Big Five Software
Box 9078-185
Van Nuys, CA 91409
213/782-6861

For: all

Requirements: 16K RAM,
joystick

Price and format: approx.
\$50 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 7.7

Documentation: 7

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Bounty Bob is the hero of *Miner 2049'er*, a running, jumping, and climbing game for one or more players. Bob is trapped in the caverns of a uranium mine, and he must step on each and every brick of the structure in order to complete a screen. He earns extra points by grabbing bonus items, such as shovels and empty martini glasses that appear from time to time. To complicate matters, radiation monsters are intent on destroying this space-age excavator.

You can direct Bob to walk back and forth, climb up or down, and jump short distances. The monsters are more restricted and predictable in their movements and can travel only short distances on their platforms.

Each screen is a separate station in the mine and must be cleared within a time limit. A danger signal warns when time is running short.

The ten different stations in the mine present various levels of challenge. At the end of each game, winners can enter their names on the high score list in the program.

ARCADE GAMES

MISSILE COMMAND

Description: defense game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 8K RAM,
joystick

Price and format: approx.
\$35 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 6.6

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Missile Command is a heroic attempt to defend six cities against waves of attacking ICBMs, MIRVs, and smart bombs raining destruction amidst a roaring cacophony of explosive sound. A missile base that targets and destroys hostile weapons is your sole defense.

Scoring is based upon the intensity of the assault wave defeated and the number of cities and defensive missiles remaining on the screen. Bonus cities replace destroyed ones for every 10,000 points scored. It is very difficult to defend the two cities at the extreme sides of the screen, a situation that gives the player the heartless choice of sacrificing one to save the other.

This is a very fast and aggressive arcade game demanding intense concentration and good reflexes. A somewhat frustrating struggle at times, *Missile Command* is not recommended for gentler folk.

ARCADE GAMES MR. COOL

Description: theme game

Sold by: Sierra On-Line

Sierra On-Line Bldg.

Coarsegold, CA 93614

209/683-6858

For: all

Requirements: 16K RAM,
joystick

Price and format: approx.
\$35 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 6.3

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

In *Mr. Cool*, the main character is an ice cube with the task of cooling off a series of hot plates before he melts. He moves down the screen, touching each burner in turn.

To score points, you must touch all the plates on a screen within a limited time. A mistake can plunge Mr. Cool into the flames at the bottom of the screen. As the game progresses, additional hazards appear. Hot Springs hop after Mr. Cool, threatening to melt him. Once these monsters travel down the screen, however, they don't resume the chase. Fireballs attack Mr. Cool from the side of the screen.

Mr. Cool responds well to movement of the joystick. Bright colors add to the expertly drawn graphics, and the sound is a good complement to the smooth action.

This is not a violent game; you are not required to kill any monsters. The simple theme of cooling hot plates and the challenge of developing strategies to avoid the monsters make *Mr. Cool* an enjoyable game for the whole family.

Description: theme game

Sold by: Synapse Software

5221 Central Ave.

Richmond, CA 94804

415/527-7751

For: all

Requirements: 32K RAM, program recorder or disk drive, joystick

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 7.7

Documentation: 6

Graphics and sound: 9

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

You are a wizard in *Necromancer*, growing magical trees on a plot of enchanted land. Pesky little ogres run back and forth through your nursery, and nasty spiders attack the trees and cause them to cry out in pain. Your magic can restore the trees to health, destroy the ogres, and banish the spiders.

If you have kept the ogres and spiders at bay, and the trees are full grown, the game action moves into the Stone Vaults where spider eggs hatch. With your magic, you can use the trees to smash through the vault and eliminate the eggs. Every few seconds, however, large hands grab at you and the trees. You must avoid being caught to proceed. Finally you reach a graveyard where tombstones turn into spiders and other ghoulish creatures. Few players survive this difficult and complex place.

Necromancer makes excellent use of sounds and graphics and has a certain magic of its own. The wizard's enchanted wisp seems to have a mind of its own and produces an interesting and pleasing sound.

ARCADE GAMES NIGHT MISSION PINBALL

Description: pinball simulation

Sold by: subLOGIC Corp.

713 Edgebrook Dr.

Champaign, IL 61820

800/637-4983

For: all

Requirements: 32K RAM, program recorder or disk drive; joystick optional

Price and format: approx. \$30 cassette or disk

Protection: yes

Warranty: 6 months

User group rating: 7.9

Documentation: 7

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Night Mission Pinball is a computer pinball game with customizing options. The player is initially presented with an extremely detailed pinball board with a World War II bombing motif. The board looks like it might have come from a flight officers' club at an old-time airbase. To play, you must insert a quarter by pressing Q on the keyboard. You can use either a joystick or the keyboard to activate the flippers.

Unusual sound is the outstanding feature of this game. The tones all emanate from the small on-board console speaker that normally generates key click sounds. While not as elegant as the sound produced by the special microprocessor built into ATARI computers, the results from this little speaker are amazing.

When a game is over you can modify most of the characteristics of *Night Mission Pinball*, customizing the speed and kick of the ball, its travel, and even the sounds. Documentation is devoted almost entirely to descriptions of these customizing features. Changes can be saved on disk for later play.

Night Mission Pinball is an excellent execution of the classic pinball game and is enjoyed by players and nostalgia buffs alike.

Description: maze game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM,
joystick

Price and format: approx.
\$45 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 7.8

Documentation: 7

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Pac-Man is the most famous (and most imitated) arcade game ever created. Several versions have been released by Atari and numerous similar look-alike games have been offered by other manufacturers. The versions vary somewhat among themselves, but the essentials are the same.

Pac-Man is a round, yellow character who (under the direction of the player) grazes through a maze, eating dots as he goes. Four hungry ghosts chase *Pac-Man*, and they have him for dinner if they can catch him. The game ends when *Pac-Man* has been caught three times.

Pac-Man is not always a helpless victim because he can eat power dots on the screen for energy to kill his pursuers. Each dot eaten by *Pac-Man* adds to the score, and extra points are awarded for devouring ghosts and nabbing occasional bonus prizes.

Pac-Man is a very simple but challenging test of hand-eye coordination. Some rudimentary strategy planning is required. Of all video games, this is the most popular; *Pac-Man* has gobbled up many hundreds of thousands of quarters in arcades.

ARCADE GAMES **PICNIC PARANOIA**

Description: theme game

Sold by: Synapse Software
5221 Central Ave.
Richmond, CA 94804
415/527-7751

For: all

Requirements: 16K RAM, program recorder or disk drive, joystick

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 5.8

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

In *Picnic Paranoia* you protect four picnic blankets threatened by swarms of hungry ants. The ants steal pies, watermelons, and other clever graphic representations of food. A little "Flight of the Bumblebee" music plays when the title is displayed.

You are armed with a swatter (controlled by the joystick), but it reaches onto only a part of each blanket. You can't step on a blanket, but there is a walkway between them to let you reach all the ants. Food stolen by the ants can be returned to the picnic if you catch it before it leaves the screen.

Spiders criss-cross the screen laying a network of webs. You cannot walk through webs, but you can clear them with the swatter. Touching a spider paralyzes you for a few seconds. A more dangerous stinging insect will put you out of the game.

A little practice is necessary to successfully push the food back onto the blanket since aiming the swatter is not automatic. Young children enjoy this game, however, because of its music and graphics. The skill required to save the food before it crawls off the screen makes *Picnic Paranoia* a challenge for the rest of the family as well.

Description: theme game

Sold by: Utopia Software

58 Millay Rd.

Morganville, NJ 07751

201/536-1191

For: all

Requirements: 16K RAM, program recorder or disk drive, joystick or trackball

Price and format: approx.

\$30 cassette or disk

Protection: yes

Warranty: not written

User group rating: 6.6

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

In *Pinhead* you control a clown riding a unicycle, popping balloons on his sharply pointed head. Pinhead moves horizontally across the screen, controlled by the joystick.

After the first screen is cleared, balloons have to be stacked on Pinhead's head before they will pop. These stacks are worth bonus points. On the third screen, balloons arc onto the screen instead of falling vertically downward. You have to estimate the arc of descent to catch these balloons. Increasing difficulty is signalled by the number of blue balloons on the screen.

The joystick action in *Pinhead* is very smooth and easily mastered by a youngster. This family game is an unusually good exercise in hand-eye coordination.

ARCADE GAMES **POLE POSITION**

Description: driving game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM,
joystick

Price and format: approx.
\$50 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 8.4

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Good sound, graphics, and joystick response combine for an authentic feeling of Formula One auto racing in *Pole Position*. The object is to drive around a race track fast enough to qualify for the next lap. Your score, time, and speed appear at the top of the screen, and music plays at the start and finish as blimps tow banners before the warning lights count down.

You must complete a qualifying lap to earn one of eight starting positions on the track. The number of additional laps to run depends on how fast each previous one is completed. The various difficulty levels use the same track in spite of different names such as "Indianapolis" and "Malibu Grand Prix." At higher levels, more cars are on the track, and quicker response is necessary.

The joystick steers and shifts gears (between high and low), and the fire button acts as an accelerator. A horn beeps to tell you when a car on the track has been passed. Collisions with other cars and billboards result in massive fireballs and delay the race by a few seconds. If you oversteer, the tires screech around turns as the track unrolls to reveal mountains, a forest, and clouds scrolling past.

A copy of the popular arcade game, *Pole Position* will keep you glued to the edge of your seat for many hours.

Description: character game

Sold by: Datasoft Inc.

9421 Winnetka Ave.

Chatsworth, CA 91311

213/701-5161

For: 400, 600, 800, 1200XL

Requirements: 16K RAM, program recorder or disk drive, joystick

Price and format: approx. \$30 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 7.0

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

A mother pig struggles to protect her youngsters from wolves in *Pooyan*. Mama rides in a basket along the side of a cliff, shooting arrows at the balloons that keep the wolves in the air. The wolves retaliate by throwing acorns to knock her out of her basket. To distract attention from her piglets, Mama also tosses raw meat to the wolves. Wolves who lose their balloons or jump too far to reach the meat, tumble head over heels to the bottom of the cliff.

After all the wolves have appeared, the scene shifts to the wolves' lair. Here the wolves hop on their balloons and sail to the top of the cliff to push a rock down on the mother pig. If the mother survives these attacks, two bonuses are awarded. The first is more meat to throw to the wolves; the second is a chance to earn additional points by shooting strawberries.

This game appeals to children, but surviving the second bonus screen is a challenge adults will enjoy as well.

ARCADE GAMES PREPPIE!

Description: theme game

Sold by: Adventure

International

Box 3435

Longwood, FL 32750

305/862-6917

For: 400, 800, 1200XL

Requirements: 16K RAM, program recorder or disk drive, joystick

Price and format: approx.

\$30 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 7.3

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Preppie! is a tongue-in-cheek, contemporary version of the popular arcade game *Frogger*. The hero is named Wadsworth Overcash and appears in traditional Bermuda shorts, topsiders, and a shirt with an alligator on it.

Overcash is maneuvered past golf carts and lawn mowers racing across the fairway at the local country club to collect golf balls. At advanced levels, you have to cross a lake as well, by springing from boat to boat.

Music from the 1920s is played in an extremely delightful manner, and the clever use of color makes this a visually interesting game. In design and presentation, *Preppie!* is well executed.

Description: theme game

Sold by: Adventure

International

Box 3435

Longwood, FL 32750

305/862-6917

For: 400, 800, 1200XL

Requirements: 16K RAM, program recorder or disk drive, joystick

Price and format: approx.

\$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 6.4

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Preppie! II is the sequel to *Preppie!* (see separate review). The main character is being hazed in his fraternity house and must paint the top and bottom of the house pink, as well as the street outside. He faces giant frogs while covering the house and must avoid speeding cars in the street. Four delightful tunes serenade you as you perform this task.

A magic cloak hides you from frogs and cars, and, when properly used, the swinging doors of the fraternity house also provide a sanctuary. The doors, in fact, are part of the key strategy to winning at *Preppie! II*.

With increasing difficulty levels, the color of the paint and the patterns on the wall of the frat house change. The speed of the cars and frogs increases as well.

The idea behind *Preppie! II* is extremely simple. The colors are cute, and the graphic formation of the various characters is technically well done.

ARCADE GAMES **SEA DRAGON**

Description: shoot-em-up

Sold by: Adventure

International

Box 3435

Longwood, FL 32750

305/862-6917

For: 400, 800, 1200XL

Requirements: 16K RAM, program recorder or disk drive, joystick

Price and format: approx.

\$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 6.7

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

In *Sea Dragon* you control a nuclear submarine armed with an unlimited supply of torpedoes. You have to travel through six different realms to reach and destroy the Master Mine. Completing the mission is worth 10,000 points and lets you advance to the next difficulty level. The game consists of 32 scrolling screens.

The joystick directs the submarine's movement, and the button fires a torpedo. An air gauge at the bottom of the display changes from green to yellow, then later to red, as oxygen is consumed. When all the air is depleted, the submarine explodes. To replenish its air supply, the submarine must surface.

The mines in the first realm rest on the ocean floor but can rise to the surface at any time. This is followed by a huge underwater cave filled with mines and little guns firing deadly beams of energy. The third realm holds a fleet of lethal surface ships, and the fourth realm is a network of tunnels and caves filled with more lasers and mines. The fifth realm has strategically placed mines, walls with small passages, and falling stalactites. The last realm is a small one with the usual mines. At the far end of this realm, rotating shields hide the Master Mine.

Explosions, sonar pings, and torpedo launches add to the interesting sound effects of *Sea Dragon*.

ARCADE GAMES

SHADOW WORLD

Description: shoot-em-up
Sold by: Synapse Software
5221 Central Ave.
Richmond, CA 94804
415/527-7751

For: all

Requirements: 32K RAM, program recorder or disk drive, joystick

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 7.0

Documentation: 6

Graphics and sound: 7

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Shadow World is not the usual shoot-em-up combat. This brisk arcade-type game allows two people to play cooperatively.

The object of the game is to keep Rigellian crystal ships from landing colonizers on Jantor, a Terran mining colony. Five Hornet interceptors and three smart bombs provide your defense. If the enemy lands successfully, the smart bombs can destroy invaders from Rigellian colonies.

Landed enemy colonizers must be destroyed with a nugget of tricasmium you collect from a lake bed. Touch this against the enemy colonizer to seal and vaporize it.

Each successful round of play brings a new wave of Rigellian ships and an additional Hornet interceptor. The top of the screen displays the number of crystal pods available, the amount of Rigellian invader colonies still active, and your remaining lives.

When two players work in concert, a split screen lets each one move individually. If both are playing in the same combat area, the action shows on both screens.

This is a good game for two players since they do not have to alternate taking turns.

ARCADE GAMES SKY BLAZER

Description: shoot-em-up

Sold by: Broderbund

Software, Inc.

17 Paul Dr.

San Rafael, CA 94903

415/479-1170

For: all

Requirements: 32K RAM, disk drive, joystick

Price and format: approx. \$32 disk

Protection: yes

Warranty: lifetime

User group rating: 6.0

Documentation: 6

Graphics and sound: 7

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

As a pilot in *Sky Blazer*, you are presented with five attack missions. The first is to destroy a radar installation. You drop bombs at low altitude and fire laser cannons at higher levels. This mission gives you the chance to become familiar with the handling of your aircraft and its weapons.

Your second task is to eliminate a tank. This is difficult because enemy planes are attacking the *Sky Blazer*. Your laser cannons can down the enemy aircraft, but each shot uses valuable fuel. Replenishments are dropped from a supply airplane flying at high altitude. You must catch the supply parachute while in flight.

The next target is an ICBM base. The difficulty of this level depends on the number of replacement ships you have left. Beware of the heat-seeking balloon released by the enemy.

In the fourth mission you must bomb another tank. This time, however, the tank defends itself with its own heat-seeking missiles.

Your last mission is to bomb enemy headquarters. Reaching and destroying this target will keep your attention for a long time. There is good play value in *Sky Blazer*.

Description: shoot-em-up

Sold by: MicroProse

Software, Inc.

10616 Beaver Dam Rd.

Hunt Valley, MD 21030

301/667-1151

For: 400, 800

Requirements: 32K RAM (cassette) or 48K RAM (disk), program recorder or disk drive, joystick; second joystick optional

Price and format: approx.

\$30 cassette or disk

Protection: yes

Warranty: 30 days

User group rating: 7.3

Documentation: 5

Graphics and sound: 6

Difficulty: expert

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Target cross hairs are at the center of each screen in *Spitfire Ace*, and you control either a high-performance Spitfire or a sluggish bomber. Enemy aircraft appear in three dimensions as they turn and maneuver, and your engine races during a dive and strains when climbing. You can almost feel the heavy G-forces as the horizon and sun slide around while you bank your aircraft during a dogfight.

Only ten of the fourteen scenarios listed in the manual seem to be available on this program, but these do not differ very much from each other. A window at the bottom of the screen displays air speed, altitude, and engine power and includes a rearview mirror. In the two-joystick version, one controller moves the rudder, elevators, and guns, while the other throttles and bails you out of the plane. As many as four players can take turns flying.

Tracers lead you toward your target as machine guns roar, and successful hits glow red on the screen. Without practice you may often find your craft in a spin. If your Spitfire is hit, you can bail out or attempt a crash landing.

The end of each combat scene is accompanied by one of two tunes, depending on whether you've scored a victory or crashed.

ARCADE GAMES STAR RAIDERS

Description: space game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California)

800/672-1404)

For: all

Requirements: 8K RAM,
joystick

Price and format: approx.
\$45 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 9.1

Documentation: 7

Graphics and sound: 9

Difficulty: expert

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Star Raiders is a space war game that demands planning and strategy to defeat alien fleets attacking friendly starbases. The game presents a first person view of combat and a realistic three-dimensional perspective.

The joystick controls flight direction, and the button fires missiles. Single keystrokes activate shields to reduce damage from enemy fire and turn on combat computers for accuracy. Cross hairs on the screen give forward and aft views during combat, while a small radar screen shows the relative position of elusive enemy targets. A text window at the bottom of the screen reads out relative distance and bearing to the nearest target, as well as energy and damage information.

You can view a long-range scan of your sector or a galactic map showing threats to friendly starbases. Combat damage, however, may cause any of these systems to malfunction. Damage is repaired and your ship refueled by docking at a starbase.

Traveling from sector to sector uses hyperwarp. At the novice level, hyperwarp is computer controlled, but at higher skill levels the target cross hairs remain centered on the screen.

This was one of the first games written specifically for the 400/800 computer by Atari, and it remains highly rated by users.

ARCADE GAMES

SUBMARINE COMMANDER

Description: shoot-em-up

Sold by: THORN EMI

Video, Inc.

1370 Avenue of the Americas

New York, NY 10019

212/977-8990

For: 400, 800, 1200XL

Requirements: 16K RAM,
joystick

Price and format: approx.
\$45 cartridge

Protection: cartridge

Warranty: none

User group rating: 5.8

Documentation: 6

Graphics and sound: 7

Difficulty: expert

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Computer generated convoys work their way across the Mediterranean Sea while avoiding interception in *Submarine Commander*. As captain of an attacking submarine, you must study the chart and plot to block their course.

Your instruments include a compass, depth sounder, sonar (that profiles the seabed), and gauges for fuel, torpedoes, air, and battery charge. Sound and gun flashes seen in the periscope warn that the convoy escort has discovered your position. Damage by depth charges or gunfire can be repaired, but if the sub is sunk, the screen shows water flooding the instrument display.

When a convoy is within range, you can use the joystick to raise the sub to periscope level so you can aim the torpedoes. Running on the surface uses fuel and exposes the sub to enemy gunfire. Traveling submerged depletes air and the battery charge, which forces you to the surface.

The joystick controls bow planes and rudder, and the fire button launches torpedoes. Other game functions operate from single keys on the keyboard. Strategic planning combines with arcade-style combat to produce an exciting game in *Submarine Commander*.

ARCADE GAMES SUPER BREAKOUT

Description: bouncing game

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 8K RAM, game
paddles

Price and format: approx.
\$35 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 6.7

Documentation: 6

Graphics and sound: 6

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

Super Breakout represents the highest evolution of *Pong*, the game that began the video game industry. As many as eight players can take turns bouncing white balls in four versions of this court game.

The first variation presents eight rows of bricks on the upper half of the screen. Points are scored each time the ball hits a brick and erases it. The higher bricks are worth the most points. When a hole is punched through the wall, the ball rebounds like crazy, removing several bricks and scoring many points.

In another version, the wall of bricks marches down the screen. Yet another version provides the player with two paddles (one on top of the other) and two balls to knock out twice as many bricks as long as both balls are in play.

A final version shows two cavities in the wall of bricks, each containing a bouncing ball. When a path is opened to a cavity, its ball comes rushing out to provide a great deal of fast action.

The colors in *Super Breakout* are bright, and with practice the ball's speed and direction can be controlled. This is one of the oldest arcade games and remains very popular.

Description: shoot-em-up
Sold by: Synapse Software
 5221 Central Ave.
 Richmond, CA 94804
 415/527-7751

For: all

Requirements: 16K RAM (cassette) or 32K RAM (disk), program recorder or disk drive, joystick

Price and format: approx. \$35 cassette or disk

Protection: yes

Warranty: 1 year

User group rating: 6.2

Documentation: 7

Graphics and sound: 6

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

While only an average one-player space game, *Survivor* is an excellent two, three, or four-player challenge. Success depends on a cooperative effort among the participants.

The players control a star cruiser with front, rear, and side guns, while the enemy has four space fortresses bristling with guns, spread across four screens.

Scrolling from screen to screen is controlled by the players. To complicate matters, asteroids and enemy ships must be avoided or destroyed.

When two people play *Survivor*, the first controls the ship and the second fires the guns. With three players, the second controls the front guns, and the third controls the rear guns. A fourth player controls the speed of the ship.

This is one of the few games available that rewards cooperative effort among players.

ARCADE GAMES WAYOUT

Description: maze game

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

For: 400, 800, 1200XL

Requirements: 32K RAM, disk
drive, joystick or game
paddles

Price and format: approx.
\$40 disk

Protection: yes

Warranty: 30 days

User group rating: 7.9

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of
user group ratings

Documentation: Quality of printed
instructions

Graphics and sound: Quality and
aesthetics of each

Difficulty: How much skill is
required to enjoy the game

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

A game for the whole family, *Wayout* has enough subtleties to keep adults interested but is simple enough for small children. The screen presents a unique, three-dimensional view from the inside of a maze. Walls and hallways lead away from the player and sweep past as you move. As you turn, the walls and doors pass across the screen in either direction. The motion is extremely smooth and natural.

Your goal is to escape from the maze. You begin in its center, and a compass indicates the direction you move. A handy map of your route helps you avoid retracing steps.

Inside the maze dwells an annoying Cleptangle who likes to play tag. It will steal your map and compass, but these items can be retrieved. The Cleptangle always announces its presence by playing a little tune, and the screen displays a color bar to indicate when it's near.

The game is a lot of fun, and the quality of the programming is truly inventive and expert.

Description: shoot-em-up

Sold by: Datasoft Inc.
 9421 Winnetka Ave.
 Chatsworth, CA 91311
 213/701-5161

For: 400, 600, 800, 1200XL

Requirements: 16K RAM, program recorder or disk drive, joystick

Price and format: approx.
 \$40 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 7.2

Documentation: 6

Graphics and sound: 8

Difficulty: intermediate

Key:

User group rating: Average of user group ratings

Documentation: Quality of printed instructions

Graphics and sound: Quality and aesthetics of each

Difficulty: How much skill is required to enjoy the game

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

Scrolling, realistic, three-dimensional graphics provide the background for *Zaxxon*. In this game you fly an attack aircraft through space in a quest to destroy Zaxxon the Robot.

The joystick guides your aircraft up, down, left, and right, while the button launches destructive missiles. Targets include missiles rising from holes in the ground, enemy aircraft, and gun emplacements firing deadly beams. Most targets return fire, but fuel barrels are harmless and supply you with necessary fuel.

After flying over a high wall, you meet the first enemy asteroid. It is covered with fuel barrels and radar towers and is defended by a deadly energy shield with a small opening through which you must fly. After the first asteroid, you battle as many as 20 fighter aircraft in outer space.

In space, a second asteroid appears. There are more than half a dozen shields here with small openings at varying heights. Flying through these requires very precise maneuvering. At the end of this asteroid is the Zaxxon Robot itself. To vanquish the robot, fire six rounds at the robot before it has a chance to launch a defensive missile.

Zaxxon promises to be as popular on the home computer as it has been in the video arcades.

This chapter covers a wide range of software, from programming languages 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 them.

The ATARI computers have very powerful and sophisticated graphics capabilities, and understanding how these graphics work takes quite a bit of time and effort. Luckily, the character editor and graphics aid programs in this chapter will allow you to take advantage of these capabilities right away.

Several different programming languages are included in this chapter: BASIC, PILOT, Logo, Microsoft BASIC, Pascal, Action!, and LISP. BASIC is the most common for beginning programmers, but PILOT and Logo are also very easy to learn. The other languages are for more experienced 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.

character editor or **character generator** A program that allows you to modify existing characters or to design new letters and special characters of your own.

compiler A program that translates high-level language (source program) into machine language (object program).

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.

operating system The software that runs the system and performs operations necessary to control all other software functions.

player-missile graphics Graphics displays that can pass over pictures and text displayed on the screen without changing them.

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

"ABC" A BASIC COMPILER

Description: BASIC compiler

Sold by: Monarch Data
Systems Inc.

Box 207

Cochituate, MA 01778

617/877-3457

For: all

Requirements: 40K RAM, disk
drive

Price and format: approx.
\$70 disk

Protection: yes

Warranty: 90 days

User group rating: 6.9

Ease of use: 7

Documentation: 7

Key:

User group rating: Average of
user group ratings

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

Documentation: Quality of printed
instructions

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

"ABC" A BASIC Compiler can increase running speeds of BASIC programs by four to ten times. The compiler also decreases the amount of memory required to run large programs.

"ABC" is easy to use: load it into memory and then insert the disk containing the BASIC program to be compiled. "ABC" takes over from there. No disk swapping or multiple passes are required.

The manual is well written. It contains good examples, and the information is easy to follow and understand. Several BASIC statements cannot appear on programs to be compiled with "ABC," but these are unsupported statements not commonly used. The manual gives suggestions on overcoming this limitation, though you may have to rely on advanced programming knowledge of your own.

"ABC" is simple enough to be used by novice programmers. It will make programs written in BASIC run much faster, without requiring you to learn another programming language.

PROGRAMMING AIDS **ACTION!**

Description: structured language

Sold by: Optimized Systems Software

1173 Saratoga-Sunnyvale Rd.
San Jose, CA 95129
408/446-3099

For: all

Requirements: 16K RAM

Price and format: approx.
\$99 cartridge

Protection: cartridge

Warranty: media only

User group rating: 8.6

Ease of use: 7

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

A versatile structured language, *Action!* incorporates features found in Pascal, C, and ALGOL. It operates at assembly language speeds (about 100 times faster than BASIC).

Action!'s powerful editor types and lists programs. Two scrolling text windows display a 38-column screen with a line length of more than 120 characters. Special commands allow quick scrolling to a desired program location, moving and copying text, and finding and replacing strings.

In *Action!*, as in other structured languages, the user begins programming by declaring variables, constants, and format. Extensive bit-manipulation commands are available, and procedure and function commands extend the language as needed. A module command is available for managing large programs. Records can be manipulated within specified fields.

The manual includes instructions for translating BASIC programs to *Action!* A programmer's disk with utilities and examples is available to facilitate player-missile, floating point, and dynamic memory routines.

Action!'s execution speed approaches that of machine language, while its simplicity is more like BASIC's. Its special design maximizes the ATARI's capabilities.

PROGRAMMING AIDS

★ ADVANCED MUSICSYSTEM

Description: music composition

Sold by: ATARI Program Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 32K RAM, disk drive, BASIC cartridge; paddle controllers optional; stereo cable optional

Price and format: approx. \$30 disk

Protection: yes

Warranty: 30 days

User group rating: 8.4

Ease of use: 8

Documentation: 8

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

This set of programs (which includes demos) allows users familiar with musical notation to write original music or copy the works of masters.

Advanced Musicsystem has the ability to use 5½ octaves around middle C, and the dynamics or volume of each note can be tailored to various needs.

Once meter and key signatures are specified, notes are entered into the composition using values for each note (A through G), accidentals (sharp, flat, or natural), time, and coloration. Built-in logical default values automatically enter some of this information. As each note is entered, it can be heard through either a television or stereo speaker and is displayed on the screen. Mistakes can be easily corrected.

A repeat command on *Advanced Musicsystem* replicates notes and measures, and parts of a piece may be saved separately and later merged. Paddle controllers vary tempo from very slow to 2000 notes per second while playing. The screen displays a piano keyboard, and the keys change color according to the notes played. It lets you set timing marks to synchronize voices using an external tape deck.

Although the *Advanced Musicsystem* doesn't allow you to duplicate the sounds of particular instruments, it does make excellent use of the Atari's composing capabilities.

PROGRAMMING AIDS THE ARCADE MACHINE

Description: game creator

Sold by: Broderbund
Software, Inc.

17 Paul Dr.
San Rafael, CA 94903
415/479-1170

For: all

Requirements: 48K RAM, disk
drive, joystick

Price and format: approx.
\$60 disk

Protection: yes

Warranty: lifetime

User group rating: 8.6

Ease of use: 8

Documentation: 9

Key:

User group rating: Average of
user group ratings

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

Documentation: Quality of printed
instructions

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

Aspiring video game designers will find *The Arcade Machine* a welcome vehicle for trying out creative ideas. One- or two-player games on a single-screen format can be created, edited, and produced on disk.

A test game demonstrates this program's capabilities and lets you begin, almost immediately, developing ideas into games. Four complete games produced with *The Arcade Machine* are included on the back side of the disk.

Animated shapes for game elements are available in 3 sizes and 16 colors. Separate editing modules specify movement, music and sound effects, and play options and skill levels. Another module creates playing backgrounds, and a customized title page displays the designer's name in lights. Creating an original game might take several hours, but work in progress can be saved.

The 80-page manual included with this program was designed as a tutorial. It includes a glossary of terms, a summary of commands, and graph paper for preliminary designs.

Besides offering a diversion, *The Arcade Machine* provides a chance for those persons with no knowledge of programming to put creativity to work at the computer keyboard.

Description: programming language

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: 400, 800, 1200XL

Requirements: 16K RAM

Price and format: approx.
\$50 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 7.8

Ease of use: 8

Documentation: 6

Key:

User group rating: Average of
user group ratings

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

Documentation: Quality of printed
instructions

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

ATARI BASIC is the most widely used language for the ATARI computer. Occupying only 8K of computer memory, it is a very powerful language.

Atari users have developed various programming techniques to overcome BASIC's slow execution speed. The language does not allow string arrays, but *ATARI BASIC* strings have the advantage that they can be any length (up to memory limits) and manipulating them is very fast and efficient. *ATARI BASIC* provides syntax checking in order to detect many errors as they are made.

When editing a program, always save it before trying a test run if you've included POKE or machine language calls. The reason for this is that an error on your part might lock up the computer, and your program will be lost.

ATARI BASIC is the recommended programming language for systems with 24K or less memory. While far from perfect, *ATARI BASIC* is a prerequisite for Atari owners.

PROGRAMMING AIDS ATARI LOGO

Description: graphics language

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 16K RAM; program recorder or disk drive optional, printer optional

Price and format: approx. \$100 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 7.6

Ease of use: 8

Documentation: 8

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

ATARI Logo is the newest programming language offered for the ATARI computer. Logo is a subset of LISP, and was developed to help children acquire creative thinking processes. Because it has user-definable commands, list-handling capabilities, and recursion (the ability to define a problem in terms of itself), modules of Logo can be used independently or in combination to demonstrate complex concepts.

ATARI Logo is very similar to the Logo used by other computers and offers enhanced graphics capabilities. Logo turtle graphics are easy to learn, and *ATARI Logo* allows up to four turtles at once. Speed control, a collision register, and a choice of 127 colors are also provided.

The list-handling ability of Logo makes linguistic-type programming available as well as the beginnings of programs that "learn." It allows the manipulation of symbolic or complex data structures without encoding them in mathematical terms or strings.

The package includes a cartridge and two booklets. One booklet assumes no prior computer experience and teaches programming through the use of turtle graphics. It is interesting enough to hold the attention of those already acquainted with other languages, who will progress through it quickly. The other booklet is a detailed summary of Logo commands and is basically a reference book.

Logo is a programming language for those interested in developing imaginative, complicated programming, or those interested in learning to use the languages of artificial intelligence.

PROGRAMMING AIDS

ATARI MICROSOFT BASIC II

Description: programming language

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 32K RAM, disk drive; printer optional

Price and format: approx.
\$90 for cartridge and disk

Protection: cartridge

Warranty: 90 days

User group rating: 7.5

Ease of use: 8

Documentation: 8

This improved version of *ATARI Microsoft BASIC* is for the user who has done just about everything ATARI BASIC has to offer. *ATARI Microsoft BASIC II* offers advanced programming techniques and a faster BASIC without requiring you to learn an entirely new programming language. And since *ATARI Microsoft BASIC II* uses an interpreter format instead of the operating system ROM, it is very fast.

Commands that *ATARI Microsoft BASIC II* adds to the familiar ATARI BASIC vocabulary include LINE INPUT, PRINT USING, DEFINE, MID\$, LEFT\$, RIGHT\$, OPTION, PLM, PLM1, PLM2, CHR1, CHR2, INKEY\$, RENUM,

DELETE, AUTO, MOVE, and several others. Numbers can be handled in single or double precision or in hexadecimal.

Player-missile graphics can be programmed easily with special commands (OPTION BASE, OPTION PLM, OPTION CHR, and OPTION RESERVE) which allocate memory for player-missiles and character sets. Those commands combined with the SOUND and TIMES commands give you a lot of power and flexibility for game design.

Debugging is made simple, and debugging tools are available on the extension disk. The commands TRON and TROFF can run a single line at a time to search out errors which can be printed out in long form. RENUM, DELETE, AUTO, and VERIFY commands help in converting programs written in Microsoft BASIC on other computers to run on the ATARI computer. If debugging commands are not needed, the cartridge can be used without the extension disk.

This language is for programmers who want to add more power to their programs without learning a new language. People who want to use Microsoft BASIC programs from other computers on their ATARI computers will find *ATARI Microsoft BASIC II* is the best language for bridging the gap.

PROGRAMMING AIDS ATARI PASCAL LANGUAGE SYSTEM

Description: structured language

Sold by: ATARI Program Exchange
P.O. Box 3705
Santa Clara, CA 95055
800/538-1862

For: all

Requirements: 48K RAM, 2 disk drives, program editor; printer optional

Price and format: approx. \$50 disk

Protection: none

Warranty: 30 days

User group rating: 5.5

Ease of use: 5

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

This custom Pascal programming language was developed from that used on mainframe systems and includes routines similar to *ATARI BASIC* routines. The *ATARI Pascal Language System* takes advantage of special Pascal features including string processing, external files, bitwise manipulation of numbers, and the use of pointers.

Source code must be generated using a program editor such as

the *ATARI Program-Text Editor* (available from ATARI Program Exchange), but any text editor that generates a pure ATASCII text file can be used. A program editor is not included in the language package.

Pascal source code is compiled, during which operation syntax and other errors are checked. The compiled code with error messages can be displayed on the screen or sent to a printer. Errors must be corrected before the code can be linked into an executable file. For beginning Pascal programmers this may mean some frustration and re-editing until they become familiar with the system. Compilation speed is very slow.

The user's manual is a guide to program development rather than a tutorial on the Pascal programming language. There are very few programs written for the ATARI computer in Pascal, but advanced users seeking to experience something of the more rigorous requirements of mainframe or large system programming will find this version helpful.

Description: BASIC programming aid

Sold by: MMG Micro Software
Box 131
Marlboro, NJ 07746
201/431-3472

For: all

Requirements: 16K RAM, disk drive; printer optional

Price and format: approx.
\$35 disk

Protection: yes

Warranty: lifetime

User group rating: 7.6

Ease of use: 8

Documentation: 7

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

BASIC COMMANDER helps develop programs in ATARI BASIC. With it, you can list, save, enter, load, rename, delete, lock, unlock, format, and run files with single keystrokes. The program is easy to use since it loads simply from disk with the ATARI BASIC installed in the computer. It uses only 4K of memory and does not interfere with normal running of the programs. Automatic line numbering, renumbering, and block delete are included in the utility functions.

The CTRL key combinations with A, B, and C are reserved as programmable function keys. A statement of up to 36 characters can be programmed to print on the screen by a two-keystroke command. These function keys can be strung together for a combined length of 108 characters.

A HELP FILE command lets you look up the meaning of forgotten commands.

PROGRAMMING AIDS BASIC COMPILER

Description: BASIC programming aid

Sold by: Datasoft Inc
9421 Winnetka Ave.
Chatsworth, CA 91311
213/701-5161

For: 400, 800

Requirements: 32K RAM, disk drive; printer optional

Price and format: approx.
\$80 disk

Protection: yes

Warranty: 90 days

User group rating: 6.5

Ease of use: 6

Documentation: 7

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

The Datasoft *Basic Compiler* is for BASIC programmers who want their BASIC programs to run faster. It converts BASIC programs into machine language. The file is then merged with a run-time package of the compiler.

The program has two run-time options. The floating point package includes all of the mathematical functions available through BASIC. The fixed point package eliminates mathematical niceties and substitutes speed.

The run-time package takes quite a bit of disk space (about 34 sectors), and a small program will show significant growth when compiled. Larger programs show a smaller ratio of increase. You cannot use named labels for GOSUB and GOTO commands, and dynamic dimensioning of strings or arrays is not possible. Many BASIC reserved words such as ENTER or LOAD do not function within a compiled program.

Compiled programs run five to twenty times faster than BASIC, depending on the package used and the amount to be printed. Calculations and memory manipulations are speeded up dramatically, but screens full of data will not print any faster.

The *Basic Compiler* is useful for speeding up BASIC programs, and you do not need to know another language to use it. The program won't boot in a 64K system, and it won't run with a Newall Fast Chip installed. The documentation included is useful.

Description: BASIC programming aid
Sold by: MMG Micro Software
Box 131
Marlboro, NJ 07746
201/431-3472

For: all
Requirements: 24K RAM, disk drive; printer optional
Price and format: approx. \$35 disk

Protection: yes
Warranty: lifetime

User group rating: 7.2
Ease of use: 7
Documentation: 7

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

BASIC Debugger loads into RAM along with your BASIC program and provides several utilities to help in debugging. It has auxiliary and split screens to let you do calculations, write new lines and subroutines, keep lists of variables, and view two separate areas of your program at the same time. It does this while displaying a list of the program on the primary screen. Either window may be scrolled up or down.

The trace function is *BASIC Debugger's* most useful tool. It lets you step through a program line by line, looking either at line numbers as they are executed or the text of a whole line. The values of up to five variables can be traced and listed until a variable reaches a given value. And the program will cross-reference all variables with every line number in which they appear.

BASIC Debugger itself is free of known bugs, but it will not trace through some commands and may not do some conditional traces.

PROGRAMMING AIDS BASIC/XA★

Description: BASIC programmer's aid

Sold by: ATARI Program Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 16K RAM (cassette) or 24K RAM (disk), program recorder or disk drive, BASIC cartridge; printer optional

Price and format: approx. \$30 cassette or disk

Protection: none

Warranty: 30 days

User group rating: 6.7

Ease of use: 6

Documentation: 8

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

BASIC/XA provides a set of development tools for serious programmers using ATARI BASIC.

Load *BASIC/XA* into memory and type in or load a program being developed. *BASIC/XA* gives you increased editing power.

You can list all the variables being used in an object program so that one name change of any variable will change its name in every line of the program automatically. The values and dimension lengths of the variables can be listed. A cross-reference of variables and all line numbers in which they appear can be shown, which lets you trace the logic of a program. Each list can be displayed to the screen or printed. *BASIC/XA* provides fast automatic renumbering and deletion of lines. Syntax errors that are missed by ATARI BASIC can be detected.

BASIC/XA is highly recommended to programmers to produce cleaner program listings and reduce debugging time.

PROGRAMMING AIDS

DEEP BLUE C COMPILER

Description: C language compiler

Sold by: ATARI Program Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California
800/672-1850)

For: all

Requirements: 48K RAM, disk drive, text editor

Price and format: approx.
\$40 disk

Protection: none

Warranty: 30 days

User group rating: 6.5

Ease of use: 7

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Deep Blue C Compiler is an implementation of the C programming language originally developed in the early 1970s at Bell Labs. The language has gained tremendous popularity among advanced programmers in the last few years because of its portability, compact code, and great flexibility.

Deep Blue C Compiler contains a large function library with spe-

cialized functions for ATARI I/O, player-missile graphics, sound, and memory access. The Unix operating system is written almost entirely in C, and many of the functions included in *Deep Blue C Compiler* are patterned after functions in Unix.

Unfortunately *Deep Blue C Compiler* has several limitations. The use of structures, multidimensional arrays, and floating point operations is not supported. However, the function library can be expanded to include user-defined machine language routines from the *ATARI Macro Assembler* (which can be used to correct these inadequacies).

Like many small system compilers, *Deep Blue C Compiler* allows the development of large programs by using a program linker. Source programs are compiled separately, then linked together with the necessary system routines. Compile time can be quite lengthy depending upon the length of the source program. This can be very tiresome, but it does create programs that run close to machine speed.

PROGRAMMING AIDS DISKED

Description: utility program

Sold by: Amulet

Box 25612

Garfield Heights, OH 44125

216/475-7766

For: 400, 800, 1200XL

Requirements: 32K RAM, disk drive; printer optional

Price and format: approx. \$50 disk

Protection: none

Warranty: lifetime

User group rating: 7.3

Ease of use: 7

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

DISKED is a set of disk utility programs to let you manipulate the contents of disk files by editing individual sectors. It also allows disassembly of sectors using the virtual addressing system. This is very handy in program modification.

The DUPED program copies any sector or block of sectors to another place on the disk or from one disk to another. You can also insert new file numbers automatically, pack and unpack sector data, and transfer data between files and blocks of sectors.

DSKBOOT and CSBOOT let you transfer between sector blocks and ATARI format cassettes. You can print a map of sector usage with the DSKMAP program, differentiating between empty sectors, error sectors, and sectors containing nonzero data. RECOVER allows you to rebuild the variable name table of programs that have intentionally been rendered unlistable. The new variable names are arbitrary but consistent.

Other programs in *DISKED* retrieve deleted disk files, configure the RS-232 port, dump screens, and perform simple word processing.

Documentation is very complete and contains information relating to techniques used on some exotic disk operations.

Description: disk patcher

Sold by: Adventure

International

Box 3435

Longwood, FL 32750

305/862-6917

For: 400, 800, 1200XL

Requirements: 32K RAM, disk
drive; second disk drive
optional, printer optional

Price and format: approx.

\$50 disk

Protection: yes

Warranty: 1 year

User group rating: 7.8

Ease of use: 8

Documentation: 7

Key:

User group rating: Average of
user group ratings

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

Documentation: Quality of printed
instructions

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

DISKEY contains a number of utilities to let you recover information from damaged disks. With it, you can directly examine (and print) the contents of any sector of a disk in hex and ASCII form. Unreadable sectors are listed by the program.

Users who have never seen the "inside" of a disk before will find these programs to be an explorer's passport to unknown territory.

PROGRAMMING AIDS DOS MOD

Description: operating system enhancement

Sold by: Eclipse Software
1058 Marigold Ct.
Sunnyvale, CA 94086
408/246-8325

For: all

Requirements: 16K RAM, disk drive

Price and format: approx.
\$35 disk

Protection: none

Warranty: 90 days

User group rating: 5.8

Ease of use: 8

Documentation: 5

Key:

User group ratings: Average of user group ratings

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

Documentation: Quality of printed instructions

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

DOS MOD is a modification and enhancement of ATARI DOS 2.0. It fixes 11 bugs in ATARI DOS 2.0, provides several new options, and increases the power of many of the standard DOS commands. These options include running a program without specifying an address, creating complex DOS commands that can be executed with single keystrokes, and reading and changing memory bytes without a language cartridge.

The most valuable modification for the beginner is menu presentation. The menu is displayed only when necessary so all commands used can be traced, and the full screen can be used. Improvements have been made to the copy, rename, delete, and memory save commands.

DOS MOD works on all ATARI computers and is suitable for either beginning or advanced programmers.

Description: operating system

Sold by: Optimized Systems
Software

1173 Saratoga-Sunnyvale Rd.
San Jose, CA 95129
408/446-3099

For: all

Requirements: 48K RAM, disk
drive

Price and format: approx.
\$30 disk

Protection: yes

Warranty: media only

User group rating: 8.1

Ease of use: 8

Documentation: 8

Key:

User group rating: Average of
user group ratings

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

Documentation: Quality of printed
instructions

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

DOS-XL is a disk operating system included free with the purchase of any Optimized Systems Software product. The program has some unique and useful features. It is compatible with either single density or double density disk drives without modification and is completely compatible with ATARI DOS 2.0.

While ATARI DOS uses a second menu program, *DOS-XL* uses its console processor (CP) to call DOS. The most common DOS commands are directly available from the CP: erase file, protect and unprotect file, save memory to file, load file to memory, directory, car (to run cartridge), rename file, and run. CP is always immediately available but takes very little space in memory. All other usual DOS commands including initializing new disks, copy, duplicate, and a host of special utilities are loaded in small modules. The help utility provides a menu for commands.

Documentation for this package is excellent and describes the "Version 4," a method of handling virtually any disk drive. The documentation should be studied carefully in order to take full advantage of this disk operating system.

DOS-XL can become a valuable adjunct to your computer system, particularly if you have a third-party double density disk drive.

PROGRAMMING AIDS GRAPHICS MASTER

Description: graphics aid

Sold by: Datasoft Inc.

9421 Winnetka Ave.

Chatsworth, CA 91311

213/701-5161

For: 400, 800

Requirements: 40K RAM, disk drive, joystick; printer optional

Price and format: approx.

\$35 disk

Protection: yes

Warranty: 90 days

User group rating: 7.8

Ease of use: 7

Documentation: 8

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Graphics Master is a powerful design program. It can do business charts, architectural designs and layouts, electrical circuit design, computer art, and title pages for programs. Two high resolution screens are loaded separately with pictures or symbols. Users draw on either screen, move images from one screen to the other, and label designs with the standard Atari character set or a custom set.

A palette of 50 colors and patterns is available. It is possible to grab a portion of a screen via a special window, and then move and manipulate it. You can zoom, invert, rotate, skew, shift, underlay, overlay, and mirror the image in the window.

Images from *Graphics Master* are easily saved for later editing. The program also has printing capabilities. The documentation is adequate, and it will help you get started. Proficiency takes practice, but even the program's author admits he has not discovered all of its potential. With some imagination and artistic talent, you get a lot of help and enjoyment from this program.

Description: sound generator

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 24K RAM, disk drive, BASIC cartridge, joystick or paddle controllers

Price and format: approx.
\$25 disk

Protection: none

Warranty: 30 days

User group rating: 5.2

Ease of use: 6

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

The sound effects generator *Insomnia* uses any or all of the four voices available on the ATARI. Sounds are created in machine language by using the joystick or paddle controllers.

The screen display is a group of three graphs showing frequency, volume, and distortion. Indicators show which voice is being used and the duration of the sound being produced. The tone can last from 1/60th of a second to 4 seconds in length.

The graphs and sounds are changed one parameter at a time, using the joystick or paddle controllers. As the changes are entered, new sounds are heard. It's best to rough out the sound with the paddle controller, then fine-tune it with the joystick.

Insomnia's manual shows how to play any or all of the voices with a few simple keystrokes. Saving the sound effects or inserting them into a BASIC program is simple.

If you want to write games or do other experimental programming, you will find this a good tool for creating sound effects.

PROGRAMMING AIDS INSTEDIT

Description: character editor

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 16K RAM (cassette) or 24K RAM (disk), program recorder or disk drive, BASIC cartridge, joystick

Price and format: approx.

\$25 cassette or disk

Protection: none

Warranty: 30 days

User group rating: 7.3

Ease of use: 5

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Instedit is a character generator for designing letters and special characters. It provides an 8×8 grid that is used to shape or modify characters, and users may edit, save, load, or write an entire set of 128 characters.

Instedit can either modify existing Atari characters or create new ones. Characters can be turned upside down, reversed to a mirror image, or rotated through 90-degree turns.

The cursor arrows position the character within the grid, and the joystick fire button places or removes a block of color. The original character and its Atari code number are displayed at all times. The lower half of the screen maintains a display of characters in the new set, and a four-line window displays the new character in five different modes. A memo pad mode permits users to print strings of characters and combine characters to build larger ones. This mode supports the Antic modes not available in BASIC.

Much of the input is by joystick, making the program easy to use. Intermediate to advanced programmers will find *Instedit* a very helpful graphics utility.

Description: structured language

Sold by: Datasoft Inc.
9421 Winnetka Ave.
Chatsworth, CA 91311
213/701-5161

For: 400, 800

Requirements: 48K RAM, disk drive; printer optional

Price and format: approx.
\$100 disk

Protection: yes

Warranty: 90 days

User group rating: 5.5

Ease of use: 6

Documentation: 7

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

LISP, a forerunner of Logo and one of the most popular languages used in artificial intelligence studies, is a list processing language. *INTER-LISP* is a subset of the standard INTERLISP dialect of LISP; it includes graphic and sound routines designed specifically for the ATARI computer.

An 86-page manual clearly and succinctly describes the commands available, but makes no attempt to teach LISP. However, included with the software is a copy of *LISP* (a book by Winston and Horn)—an excellent introduction to the language.

The disk contains four demonstration programs, a powerful editor, a file containing utility programs, a simulation of MAC-LISP (another popular dialect of LISP), and a file called CLISP, which converts algebraic expressions to prefix notations as used by *INTER-LISP*.

You can immediately recognize LISP by its extensive use of parentheses which must close each list. A list may be a set of atoms (wordlike objects) or other lists (groups of atoms). Although LISP is not a fast language, it is powerful for evaluating and manipulating symbolic expressions.

INTER-LISP is a programmer's choice for creating relational databases and for education uses where intelligent programming is required rather than speed.

PROGRAMMING AIDS MAC/65

Description: macro assembler

Sold by: Optimized Systems
Software

1173 Saratoga-Sunnyvale Rd.
San Jose, CA 95129
408/446-3099

For: all

Requirements: 16K RAM

Price and format: approx.
\$100 cartridge

Protection: cartridge

Warranty: media only

User group rating: 7.8

Ease of use: 8

Documentation: 8

Key:

User group rating: Average of
user group ratings

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

Documentation: Quality of printed
instructions

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

MAC/65 is a full-function disk-based macro assembler for the ATARI computer. Macros are routines which can be called when the assembler encounters their label source code.

MAC/65 is upwardly compatible with *ATARI Assembler Editor* and *OSS-EASMD*. It features syntax checking on entry in the editor mode (a great help to novice assembly language programmers), and entry of a source code is tokenized to save space in memory and disk source files. The editor also supports a text mode for non-assembly language files. The assembly is very fast.

The software comes with OSS-DOS 2.0, a separate debugger, an example program, and a set of I/O macros. While *MAC/65* itself does not have a debugging mode, it does allow you to load binary files, display memory, change memory, and save binary files. A handy feature is a decimal/hex, hex/decimal conversion command.

The powerful companion program *BUG/65* allows binary file read and write, read and write disk sector(s), and disassembly, and has a mini assembler with labeling capability. The debugger itself can be relocated anywhere in memory to prevent conflicts with software, and *BUG/65* supports relocatable assemblers.

This is an excellent package with many valuable features for the assembly programmer.

Description: graphics aid

Sold by: ATARI Program

Exchange

P.O. Box 3705

Santa Clara, CA 95055

800/538-1862 (in California

800/672-1850)

For: all

Requirements: 32K RAM, disk drive, BASIC cartridge; joystick optional, character set editor (e.g. *Instedit*) optional

Price and format: approx.

\$25 disk

Protection: none

Warranty: 30 days

User group rating: 6.6

Ease of use: 5

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Mapmaker permits BASIC programmers to create multiscreen playfields for games. The package includes a sample map and one character set containing terrain features to populate an original map created by the user.

The program is menu driven and automatically loads terrain characters. If more than one character set is present on the disk, the menu asks for a selection. With a character set editor such as *Instedit* (see separate review), users can customize features for the map. Maps can also be saved to disk.

Playfield dimensions must be set, and the user is limited by available memory. Depending on memory availability, maps can vary from 22 to 128 characters wide (even numbers only) and from 13 to 255 characters high. The joystick or arrow keys move the cursor, and the cursor's *x* and *y* coordinates are displayed on the screen. A terrain feature is placed on the map by typing the key to which that character shape is assigned. Color, hue, and intensity can all be changed.

The documentation is complete enough to understand mapmaking on the ATARI computer. Character sets and color registers are also discussed, and the assembly listing of a fine scrolling program is included to aid advanced programmers.

PROGRAMMING AIDS MICRO PAINTER

Description: graphics aid

Sold by: Datasoft Inc.

9421 Winnetka Ave.

Chatsworth, CA 91311

213/701-5161

For: 400, 800

Requirements: 48K RAM, disk
drive, joystick

Price and format: approx.
\$35 disk

Protection: yes

Warranty: 90 days

User group rating: 8.1

Ease of use: 8

Documentation: 8

Key:

User group rating: Average of
user group ratings

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

Documentation: Quality of printed
instructions

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

Micro Painter is an easy-to-use, fast, and versatile graphics program. The cursor can be used to draw lines and fill shapes, and guiding the cursor to the color bar at the top of the screen lets you choose from four colors or patterns. Patterns include solid shapes, horizontal or vertical stripes, and checkered designs.

In the rubberband mode, *Micro Painter* can instantly draw a line between any two points, and in the magnifying mode a block of small dots on the screen is enlarged for easier viewing.

Highly detailed and colorful pictures can be created with *Micro Painter*. Using it in conjunction with *Graphics Master* (see separate review), you can incorporate pictures into your own programs.

PROGRAMMING AIDS MONKEY WRENCH II

Description: BASIC programmer's aid

Sold by: Eastern House
3239 Linda Dr.
Winston-Salem, NC 27106
919/924-2889

For: 800

Requirements: 48K RAM

Price and format: approx.
\$60 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 7.1

Ease of use: 8

Documentation: 7

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Monkey Wrench II expands the power of ATARI BASIC by providing 18 additional commands (which may not, however, be called from within a program). A resident machine language monitor provides 16 commands to communicate directly with the ATARI's CPU (Central Processing Unit). Advanced programmers gain direct access to memory and program registers.

Monkey Wrench II uses the right cartridge slot and initializes itself when you turn on the computer.

Lines can be numbered or renumbered automatically, but symbolic references (such as `DELAY = 200`, `GOSUB DELAY`) are not renumbered. Whole blocks of BASIC coding can be deleted, moved, or replaced very easily and quickly. *Monkey Wrench II* can find strings in a program and list each line containing the string; an exchange function replaces the string wherever it occurs with a new one defined by the user.

The program offers a utility to convert numbers between decimal and hexadecimal forms. A thorough but time-consuming memory test can search for defective RAM. The variable name table and the current values of the variables can be printed, and a disk directory can be read without leaving the program.

Monkey Wrench II performs its job unobtrusively and dependably for programmers who do a great deal of work in ATARI BASIC.

PROGRAMMING AIDS MUSIC BOX

Description: music aid

Sold by: Program Design Inc.

95 E. Putnam Ave.

Greenwich, CT 06830

203/661-8799

For: all

Requirements: 32K RAM, disk drive, BASIC cartridge, ATARI *Music Composer* cartridge; joystick optional, printer optional

Price and format: approx. \$30 disk

Protection: none

Warranty: lifetime

User group rating: 6.2

Ease of use: 6

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Music Box is a group of programs designed to be used with the ATARI *Music Composer* cartridge (see separate review). Little expertise is required to use it.

One program, *Colorgan*, turns the screen into a colorful organ with intensities changing to the music. Another, *Playtest*, is a demonstration of vertical blank interrupts. While the music is playing, a user can hit the break key, type the new command, and write programs or modify the existing one.

Music Box includes a graphics display of a musical staff. You can move the cursor up and down the staff with the joystick or the arrow keys, and the appropriate note sounds while the letter name of a note is displayed. A decompose command prints out a copy of *Music Composer* files, handy for debugging and for sharing the compositions with others.

PROGRAMMING AIDS

MUSIC COMPOSER

Description: music aid

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 8K RAM; program recorder or disk drive optional

Price and format: approx. \$40 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 6.7

Ease of use: 7

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Music Composer is a cartridge-based program that allows partial use of the ATARI computer's sound functions. The strong point of this program is its simplicity. Children can quickly learn to use *Music Composer* with little help.

Data entries consist of three basic parts: the note (A to G), the octave (three to five), and the timing. For more complex songs, notes can be tied or dotted. An arrange option allows entry of a single part to be used several times throughout a composition.

Music Composer also checks measures for length, sounds the notes and prints them on a staff as they are entered, and prompts from the screen menu. Compositions can be saved to disk or tape.

A major limitation of the program is its range. Notes lower than the C below middle C are not available. Otherwise *Music Composer* is a good program for beginners.

PROGRAMMING AIDS **PAINT**

Description: drawing program

Sold by: ATARI, Inc.

1312 Crossman Ave.

Sunnyvale, CA 94086

800/538-8543 (in California

800/672-1404)

For: all

Requirements: 48K RAM, disk drive, joystick; printer optional

Price and format: approx.

\$40 disk

Protection: yes

Warranty: 90 days

User group rating: 8.2

Ease of use: 8

Documentation: 8

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

PAINT lets you create computer art and drawings using a joystick to move a cursor paintbrush. By combining brush sizes and shapes, 81 different strokes can be used. The screen has nine paint pots along the bottom from which to choose colors, and the image can be magnified. Painting is accomplished by choosing color, brush stroke, and location.

The documentation for *PAINT* is excellent. Each option is well explained, and the manual includes a general history of art, along with examples of computer graphics and an idea shop to encourage creativity.

If you want to create computer art, you will not only enjoy this program, but will find it invaluable.

Description: authoring language

Sold by: ATARI, Inc.
1312 Crossman Ave.
Sunnyvale, CA 94086
800/538-8543 (in California
800/672-1404)

For: all

Requirements: 8K RAM; program recorder or disk drive optional, printer optional

Price and format: approx. \$80 cartridge

Protection: cartridge

Warranty: 90 days

User group rating: 7.5

Ease of use: 9

Documentation: 8

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

PILOT is a very powerful and readily understood programming language particularly useful to parents, teachers, and students in a school or learning environment. *PILOT* (which stands for Programmed Inquiry, Learning or Teaching) simplifies the transfer of school materials such as teachers' texts from the traditional to a computer format.

PILOT can be used as a stepping-stone to learning BASIC

because the languages have similar structures. *PILOT* offers automatic numbering and renumbering options not available in ATARI BASIC. Self-descriptive and simple word commands add to the ease of programming in *PILOT*. The JUMP and JUMP ON MATCH commands, especially, allow complicated programs to be written with many fewer lines of programming code than is possible in most computer languages.

The Turtle Graphics package included in *PILOT* provides access to the powerful graphics capabilities of ATARI computers. Creating complicated visual displays with *PILOT* is easier and more efficient than with ATARI BASIC, and the repeat command allows colorful visual displays using only a few program lines. Cartesian mapping functions with *x* and *y* coordinates make this language an excellent choice for teaching the computer graphics principles used in most other programming languages and in general mathematics. You can easily create sounds and sound effects with *PILOT*.

PILOT's simplified syntax makes it an ideal first computer language.

PROGRAMMING AIDS PM ANIMATOR

Description: graphics aid

Sold by: Tronix Publishing, Inc.
8295 S. La Cienega Blvd.
Inglewood, CA 90301
213/215-0529

For: all

Requirements: 32K RAM, disk drive

Price and format: approx.
\$45 disk

Protection: yes

Warranty: 90 days

User group rating: 8.0

Ease of use: 8

Documentation: 9

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Eight demonstration programs and a tutorial are included in *pm Animator*, a tool for programming player-missile graphics in BASIC.

An editor is available for creating player-missile graphics. Because these images can be created in differing sequences, they can even be reviewed for animation like the frames of a movie film. Images can be saved in disk files and combined or separated to create the exact sequences desired.

The program also includes machine language subroutines implemented from BASIC. Knowledge of machine language programming is not necessary to use these routines, but they are included so they can be merged with a user's program. These subroutines can speed up slow BASIC programs.

Understanding the manual and tutorial is important to make full use of this program. Some knowledge of BASIC programming is required.

PROGRAMMING AIDS

SOFTWARE AUTOMATIC MOUTH (S.A.M.)

Description: voice synthesizer

Sold by: Tronix Publishing, Inc.
8295 S. La Cienega Blvd.
Inglewood, CA 90301
213/215-0529

For: all

Requirements: 32K RAM, disk drive

Price and format: approx.
\$60 disk

Protection: yes

Warranty: 90 days

User group rating: 7.4

Ease of use: 6

Documentation: 8

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

The *Software Automatic Mouth* is the only voice synthesizer available for the ATARI computer that does not require special hardware devices. With S.A.M., programmers can add speech to their programs. You can type English words on the keyboard and have S.A.M. speak them, using about 450 rules to convert the words into the special phonetic language used by the program. The documentation and manual supplied with S.A.M. describe these rules.

Although S.A.M. sounds more like a computer than a human being, it does produce recognizable words. Children in particular seem to enjoy the novelty of this speech. The software blanks the display screen while S.A.M. is talking, so programs must be written with this constraint in mind.

PROGRAMMING AIDS

TRICKY TUTORIAL #1 DISPLAY LIST

Description: display list tutorial

Sold by: Educational Software Inc.

4565 Cherryvale Ave.

Soquel, CA 95073

408/476-4901

For: 400, 800, 1200XL

Requirements: 16K RAM (program recorder) or 32K RAM (disk drive), BASIC cartridge

Price and format: approx. \$20 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.6

Ease of use: 6

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Though a difficult subject, display lists are essential to understanding Atari graphics. A display list defines the text or graphics format of a screen display. Using a hands-on approach, *Display List* teaches programmers to create custom display lists.

The package uses 11 examples. At first glance, the accompanying documentation looks rather meager but when used with the examples, it proves to have been well-selected. Display lists are introduced by showing changes in data. One routine is a particularly effective teaching tool. It presents a listing of the display list as the program passes through different graphics modes. Another routine provides a chart showing the position of each graphics mode, the numbers to poke, the operating system mode number, the number of lines of each mode requested, and the number of lines of pixels filled on the screen. Information on this chart can be placed in another example to create a customized display list, whether or not the user understands the technical information presented.

This tutorial program is an excellent learning tool for beginners as well as more advanced BASIC programmers.

PROGRAMMING AIDS

TRICKY TUTORIAL #2 SCROLLING

Description: scrolling tutorial

Sold by: Educational Software Inc.

4565 Cherryvale Ave.

Soquel, CA 95073

408/476-4901

For: 400, 800, 1200XL

Requirements: 16K RAM (program recorder) or 32K RAM (disk drive), BASIC cartridge, joystick

Price and format: approx. \$20 cassette or disk

This is an introductory tutorial on the techniques of scrolling, and it goes hand in hand with *Tricky Tutorial #1 Display List* (see separate review). Scrolling can be visualized using two stacked pieces of paper, the bottom sheet containing words and pictures and the top sheet blank, but with a screen-shaped hole cut in it. Scrolling moves the screen window across the data displayed behind it.

Protection: yes

Warranty: 90 days

User group rating: 6.2

Ease of use: 7

Documentation: 6

The documentation for *Scrolling* is good, but it may leave beginning users dangling. Users need not understand the technical information in order to customize their own program, however. This tutorial is particularly suitable for beginning programmers who want to create games using maps and terrain presentations.

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

PROGRAMMING AIDS TRICKY TUTORIAL #3 PAGE FLIPPING

Description: graphics tutorial

Sold by: Educational Software Inc.

4565 Cherryvale Ave.

Soquel, CA 95073

408/476-4901

For: 400, 800, 1200XL

Requirements: 16K RAM (cassette) or 32K RAM (disk), program recorder or disk drive, BASIC cartridge

Price and format: approx. \$20 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.7

Ease of use: 7

Documentation: 6

Page Flipping is a tutorial program that teaches beginning users a common technique for animation and fast screen data presentation. In computer lingo, page flipping is the ability to store and retrieve screens of information (text and/or graphics). Graphics need not be slowly drawn but can be instantly displayed using these techniques.

Many examples are provided that lead a user step-by-step through the procedures for programming both graphics and text pages. With *Page Flipping*, programmers will learn quickly to create interesting and often spectacular displays.

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

PROGRAMMING AIDS

TRICKY TUTORIAL #5

PLAYER/MISSILE GRAPHICS

Description: graphics tutorial

Sold by: Educational Software Inc.

4565 Cherryvale Ave.

Soquel, CA 95073

408/476-4901

For: 400, 800, 1200XL

Requirements: 16K RAM (cassette) or 32K RAM (disk), program recorder or disk drive, BASIC cartridge

Price and format: approx. \$30 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.8

Ease of use: 7

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Player/Missile Graphics is a user-friendly program that teaches the fundamentals of player-missile graphics programming techniques. A player-missile is a graphics display that can pass over pictures and text without changing any data displayed on the screen. The tutorial for this program is written with the beginner in mind, and it includes 14 demonstrations that follow in a logical order.

Program listings let users experiment with each example. A simple game teaches important points to be mastered in designing a game that uses player-missile graphics extensively. Both a player-missile editor and a playfield editor are included. One routine easily converts players to data statements so they can be incorporated into programs.

Player/Missile Graphics gives beginning programmers a comprehensive and understandable tutorial in this important graphics and animation technique.

PROGRAMMING AIDS TRICKY TUTORIAL #6 SOUND & MUSIC

Description: music aid

Sold by: Educational Software Inc.

4565 Cherryvale Ave.

Soquel, CA 95073

408/476-4901

For: 400, 800, 1200XL

Requirements: 16K RAM (cassette) or 32K RAM (disk), program recorder or disk drive, BASIC cartridge; printer optional

Price and format: approx. \$30 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.3

Ease of use: 6

Documentation: 6

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

This tutorial is a collection of BASIC programs designed to teach beginning programmers how to use the Atari's sound capabilities. Some knowledge of music is required to make full use of *Sound & Music*.

The tutorial starts with a demonstration of each part of the sound command. The effects of changing volume and the program's attack and decay feature are presented. Use of attack and decay eliminates the flat sound from compositions and adds expression. It is also very useful for creating sound effects.

All of the lessons are brought together in a program called DoeRayMe. This lesson, based on a song from *The Sound of Music*, combines chords, notes, attack and decay, and a screen display.

This tutorial also includes a program for writing sing-alongs. A 20-key piano lets you compose tunes one note at a time. These can be edited and saved to disk.

All the programs are written in BASIC and can be listed to the screen or printer for study or modification. This tutorial is an excellent value, as some of the programs included in it are sold separately for as much as this single program costs.

PROGRAMMING AIDS

MEMORY MAP TUTORIAL #11

Description: memory map tutorial

Sold by: Educational Software Inc.

4565 Cherryvale Ave.

Soquel, CA 95073

408/476-4901

For: 400, 800, 1200XL

Requirements: 16K RAM (cassette) or 32K RAM (disk), program recorder or disk drive, BASIC cartridge

Price and format: approx. \$30 cassette or disk

Protection: yes

Warranty: 90 days

User group rating: 6.8

Ease of use: 8

Documentation: 7

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Memory Map is one of the most useful of Educational Software's Tricky Tutorial series. It assumes that you are familiar with ATARI BASIC and want to learn more. It teaches the functions of the most important memory locations in the ATARI computer. This lesson covers 33 memory locations, and each location is described by examples both in text and with screen displays.

The manual is well-written, informative, easy-to-understand, and humorous.

PROGRAMMING AIDS

ULTRA DISASSEMBLER

Description: machine language disassembler

Sold by: Adventure International

Box 3435
Longwood, FL 32750
305/862-6917

For: 400, 800, 1200XL

Requirements: 32K RAM, disk drive; printer optional

Price and format: approx. \$50 disk

Protection: none

Warranty: 1 year

User group rating: 6.8

Ease of use: 7

Documentation: 7

Key:

User group rating: Average of user group ratings

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

Documentation: Quality of printed instructions

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

Ultra Disassembler decodes a machine language program and lists it in a readable format. This is the first Atari disassembler that can be used with any assembler. With it, you can decode a program, call an assembly listing, make changes, and run the program as often as you like. Standard Atari labels (or equates) are automatically attached to operating system memory locations, making it much easier to understand what is happening. Disassembled code begins with a list of these equates.

The program can also disassemble object code from binary load files, specified sectors on a disk, or memory. Included is a utility program that allows the code to be used by other assemblers. Although not mentioned in the documentation, the reverse side of the disk contains the complete source code of the program.

This is an outstanding program of great value to advanced programmers.



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From word processing to recipe files, from financial spreadsheets to adventure games, THE BEST ATARI SOFTWARE is the book that separates the useful from the useless, the easy from the difficult, the bargain from the rip-off.

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