

APPLE'S
MACINTOSH
A HANDS-ON REVIEW

FAMILY COMPUTING

\$1.95

**What's Going on in the Home Computer Market?
How To Protect Your Disks
Original Programs for ADAM, Apple, Atari,
Commodore 64 & VIC-20, IBM, TI, Timex and TRS-80**

NEW
**Health
and
Fitness
Software**



FAMILY COMPUTING™

FEATURES

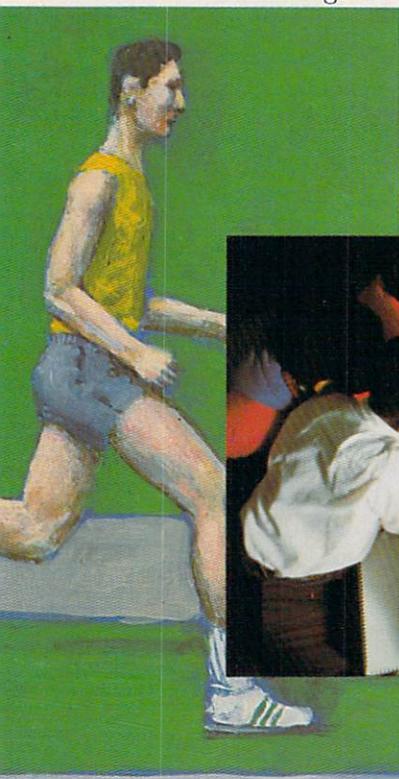
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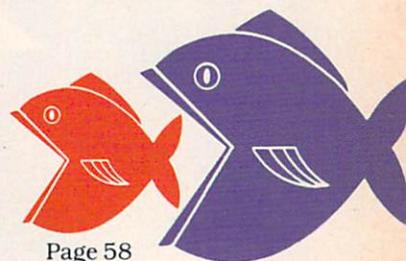
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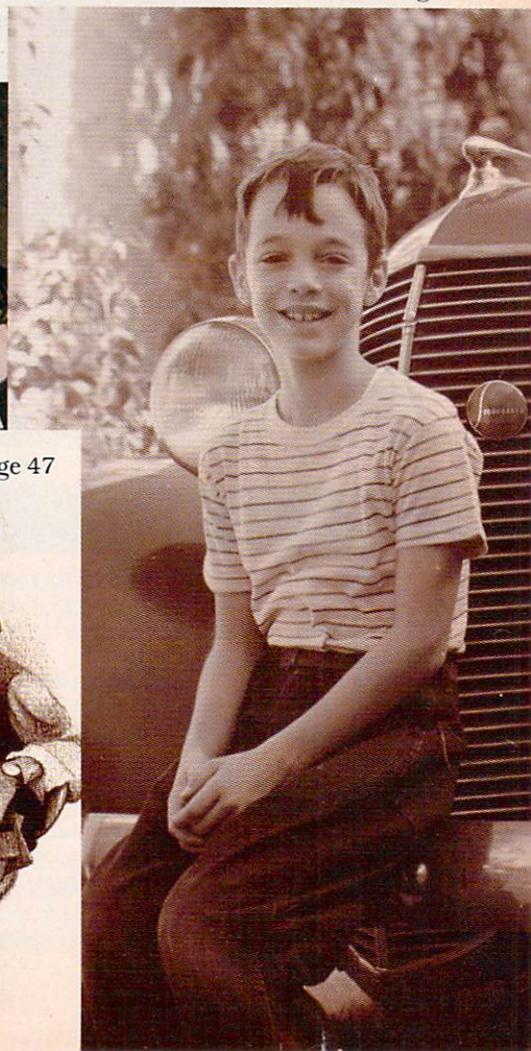
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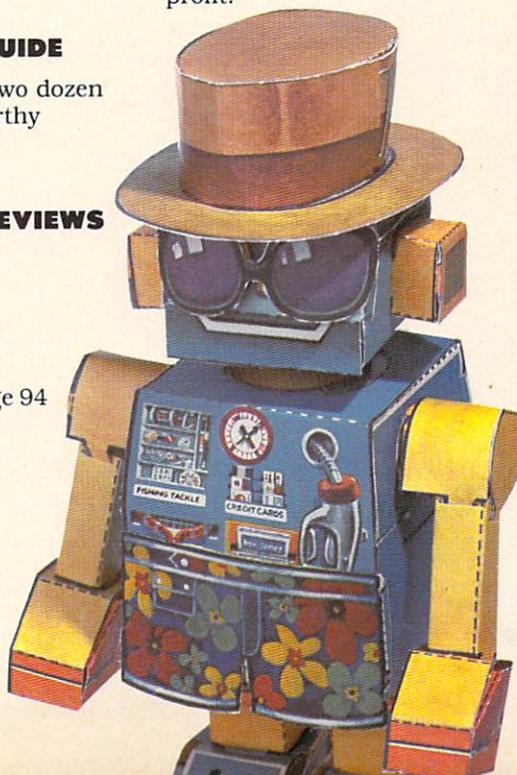
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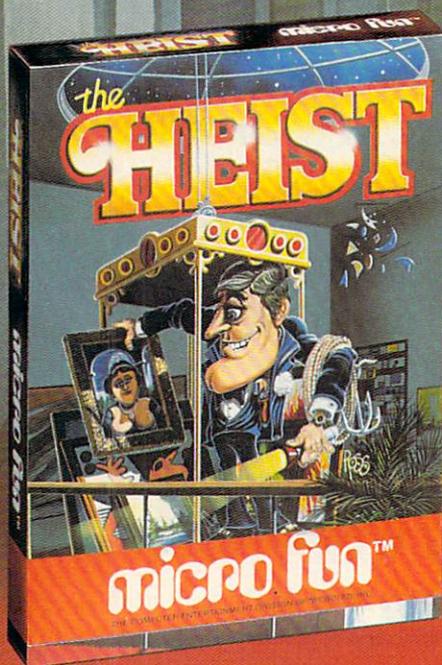
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Picture yourself as the world's greatest super-agent, Graham Crackers.

You must go undercover and sneak into an enormous art museum. Incredibly, it's a front for an international terrorist organization!

Your secret mission is to heist all the artwork in search of a classified microfilm. If you don't carry it off in time, the world is doomed!

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tortuous way through the deadly rooms. Test your cunning against overwhelming odds!

Chilling suspense and unknown terrors await you behind every door. You must evade man-eating robots, monstrous stompers, sweeper drones and tons of falling boxes — and make death-defying leaps from moving platforms.

Only your artful handling of this dangerous assignment can save the world from destruction!

For Apple II & IIe, IBM PC & jr, Atari, Commodore 64, ColecoVision & Adam.

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micro fun

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LETTERS

IN DEFENSE OF ADAM

I would like to comment on your article about the ADAM computer (*January 1984 issue*). First, the digital data drive has 500K storage capacity, not 256K. Also, I read an article in a local newspaper that noted the same problem with the screen display—a wavering picture that caused all the words to blur. They solved the problem by changing the 15-foot cable connecting the television to the computer with a quality 1½ foot cable—and got an excellent picture. It seems the original cable acted like an antenna (high loss)!

In conclusion, I would like to thank you for printing programs for the ADAM. As far as I know, you are the first. Keep up the good work!

TOM TISBY
San Leandro, CA

EDITOR'S NOTE: *With two digital data drives the ADAM has 500K storage capacity. However, only one drive is currently available, limiting capacity to 256K.*

Your review of the ADAM computer was clear, concise, and to the point. However, I feel that writing "the

startling noise level . . . extremely slow . . . seems susceptible to breakdown . . . etc." is going way out on a limb.

After all, what can one expect in a low-cost printer? One cannot buy top-of-the-line for bottom price.

My point is this: When a statement is made such as "light construction" or "extremely slow," please state what you are comparing it to.

GEORGE M. KNOCHER
Lakewood, CO

99'ERS—HERE TO STAY

Thank you for your invitation to your wonderful magazine. I have received the January issue, and I am very pleased with it. I am happy about the inclusion of programs for the TI-99/4A. Not many magazines include much for the 99'er enthusiast, maybe for fear that when Texas Instruments dropped their home computer line the 99'ers would fade into oblivion. Not so! We are here to stay, thanks to the International 99/4A Users' Group. Well, back to reading your wonderful magazine.

STEVE COLTEY
Mayfield, KY

COMPUTER COVERAGE

Thanks for "Better Safe Than Sorry" (*February 1984*), and for focusing on the growing importance of computer insurance. We'd like to add, since other insurance companies were identified, that SAFEWARE coverage is underwritten by Fireman's Fund Insurance Company. Also, SAFEWARE, The Insurance Agency Inc., is no longer connected with Columbia National General Agency. We've separated in order to specialize in computers. Thanks also for featuring our clients, the Hemmings of Pasadena.

DAVID K. JOHNSTON,
Chief Operating Officer
SAFEWARE
Columbus, OH

A PRIZE FOR ALL SEASONS

Thank you for a very timely magazine. FAMILY COMPUTING has fit many of our needs at opportune times. My first grader, Jenny, needed a costume for the school's Homecoming Parade, and your costume (*October 1983 issue*) was the perfect choice. The Homecoming Parade was rained out but she wore it for the Hallow-

AN ORDINARY DISK
CAN TAKE YOUR
BUSINESS AND
ZAR NOUC BO
NOO ZINE PAC.

COMPUTING CLINIC

CHOOSING A VIDEO DISPLAY/ THREE QUESTIONS ABOUT ADAM/ SETTING UP A BULLETIN BOARD

BY WALTER KOETKE

How do I attach a color monitor to my Coleco ADAM computer? And, is it safe to use fanfold paper with the printer, which doesn't have a tractor-feed mechanism? Finally, what book or magazine do you recommend as a source of programs for the ADAM?

RICHARD PITERA
Fall River, MA

You can attach a color monitor to your ADAM by simply connecting the video cable to the video jack on the monitor. However, you won't get any sound from the monitor, as you do from a TV. To get sound, you can modify a 5-pin video cable, according to Coleco. Or, you might want to have a cable specially made by an electronics shop, and use the auxiliary video jack.

You should have no problem using fanfold paper with the printer; it works fine for other users I've heard from. And, Coleco has announced it will be selling (the date is uncertain) a tractor-feed mechanism to hold fanfold paper.

FAMILY COMPUTING, the first magazine to publish programs for the ADAM, will continue to do so. And, as an ADAM owner, you are entitled to a one-year free subscription to ADAM FAMILY COMPUTING, which premieres in June. Just make sure you've filled out and returned your warranty card to Coleco.

Do you think I should buy a monitor or a TV to use with my computer?

R. LLOYD
Gary, IN

If you don't have a TV available at home, and need to buy a video display, by all means purchase a moni-

WALTER KOETKE was the first to introduce computers to U.S. public schools, linking the Lexington, Massachusetts, system to a mainframe in 1964. He has written for Creative Computing and Microcomputing magazines, and frequently lectures about computers to parents and educators.

tor. The cost of a monitor is comparable to that of a TV, and the resolution is generally much better.

If your applications require color, then you can consider either an RGB (Red-Green-Blue) monitor or a standard composite-color monitor. Although the RGB monitor produces a superior color image, I doubt whether that image justifies its cost for most home uses. Generally, RGB monitors are twice as expensive as composite-color monitors.

If your applications include a significant amount of text-oriented tasks, such as word processing or spreadsheet work, then you will be better off with a monochrome (one-color) monitor. Unlike color monitors, which are usually limited to 40-column text displays, monochrome monitors can display 80 columns of text. I suggest a green- or amber-on-black monochrome monitor. Both seem easier on the eyes than a white-on-black monitor.

Two notes of caution as you shop for monitors. If at all possible, try the monitor you're considering with your computer, or one just like it, before you buy. Many monitors work well with some brands but not with others; and many work well with a 40-column display but become illegible with an 80-column display. Second, in my opinion, price is not a very reliable indicator of monitor quality. Some of the lower-priced units seem to perform better than the higher-priced brands.

If you were to start a bulletin-board system, would that mean you couldn't turn off your computer or play any games?

JEFF SPEIDEL,
 Fargo, ND

For a bulletin-board system you need a computer with a disk drive (two drives is almost a necessity), 48K or more RAM, an auto-answer modem to connect your computer to the telephone line, and a program that will operate the system for you. You should definitely assume that while the bulletin board is available to oth-

ers, you can't use your computer for anything else. Depending on the program you use, you may not even be able to use your own bulletin board without calling your computer from another computer. There are, of course, computers that let you do several tasks at the same time, but these are not inexpensive microcomputers intended for home use.

You can certainly stop the bulletin-board program whenever you choose, and then use your computer to play games or whatever else suits your fancy.

Before investing the time and money required to start a bulletin-board system, I suggest you use some of those that are already available. First, become familiar with one of the major information services, such as CompuServe or The Source. Second, try as many local bulletin boards as you can. This experience will give you a good feeling for which features are most important to you when you select your software.

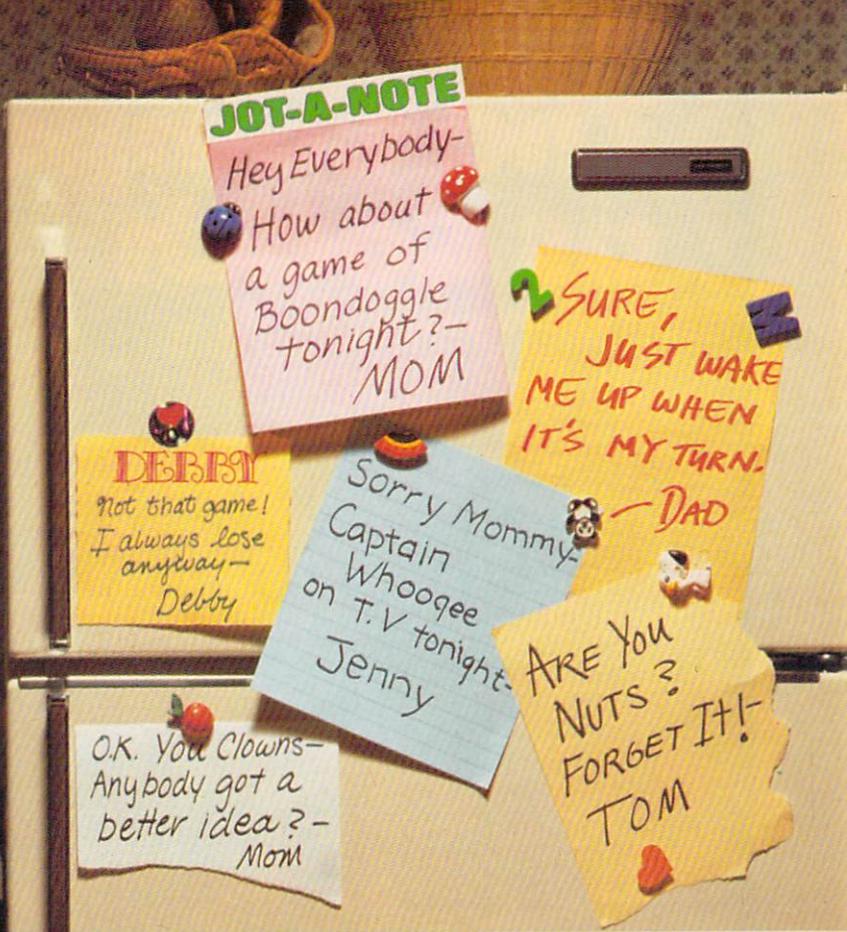
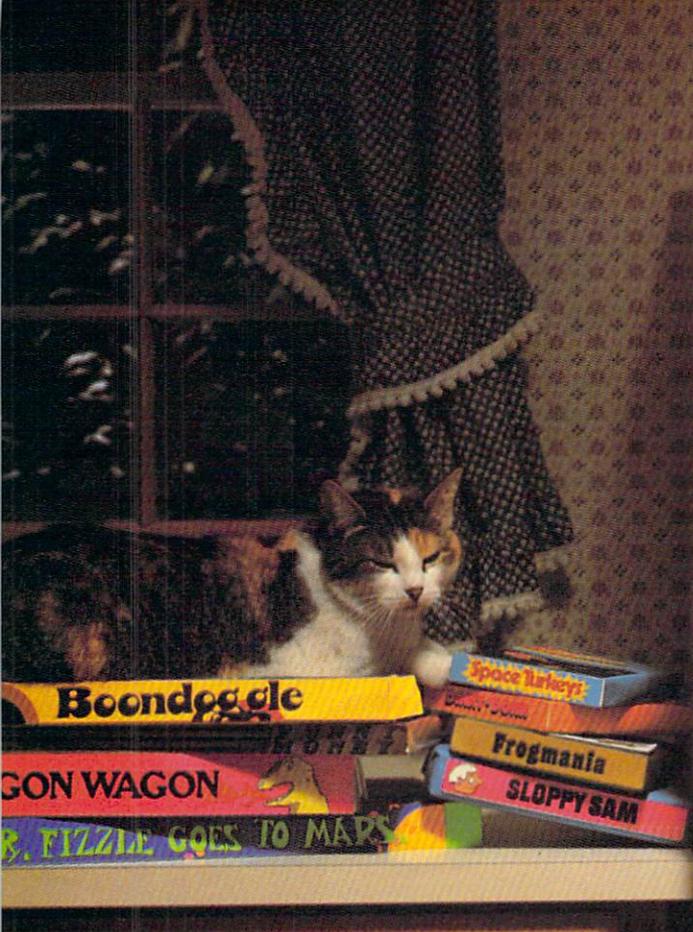
A third source of information is a local computer users' group. Within a local users' group there is likely to be a great deal of bulletin-board experience that will be willingly shared.

How come a game that requires only 16K memory for a cassette version can sometimes require 32K for a disk version? What's the difference?

ROBERT BILGER,
Kenosha, WI

When you turn on a 16K cassette-based microcomputer, you usually have almost the full 16K of RAM available to you. However, when you turn on a 32K disk-based microcomputer, a large portion of RAM is used for the DOS (Disk Operating System).

For example, on a 48K TRS-80 Model III you would have 48,000 memory locations available if you only used cassette. However, only 38,000 memory locations would be available if you were using a TRS-80 disk program on the same computer. **FC**



If getting the whole family together is a real challenge, maybe you need games that really challenge the whole family.

Ever notice how a little fun with the family can be a little hard to arrange?

Well, now there's a solution—Spinnaker's Family Learning Games. A whole family of great games that make getting the family together seem like child's play. And make "family fun" really seem like fun again. What's more, they'll even help your kids develop some very important skills.

What makes our Family Learning Games so special? Well, for one thing they're

designed to challenge and excite everyone in the family, from grade schoolers to grownups. Their unique combination of chance and strategy makes them perfect for young players, yet challenging enough that everyone will want to play them again and again.

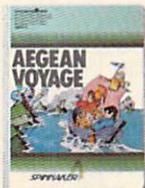
But what makes our Family Learning Games even more unique is how they help kids learn—about problem solving, strategizing, spelling, even Greek mythology. That's

quite a bit more than they'd learn from a typical board game (if you could even get them to play a typical board game).

So next time you want to get everybody together, don't get discouraged—get Spinnaker's Family Learning Games.

You'll find the biggest challenge in family fun won't be on the refrigerator. It'll be on the computer.

Spinnaker games are available for ColecoVision® and for Coleco Adam,™ Commodore 64™ and Atari® home computers.



It's New! AEGEAN VOYAGE.™

Where do monsters lurk? And which islands have treasures to behold? Heed the oracle's words, for only his clues can lead you to riches and a safe return. **Ages 8 - Adult.**



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It's a wildly exciting crossword game where everyone has to think fast. More words will help you win—but don't get caught with leftover letters!
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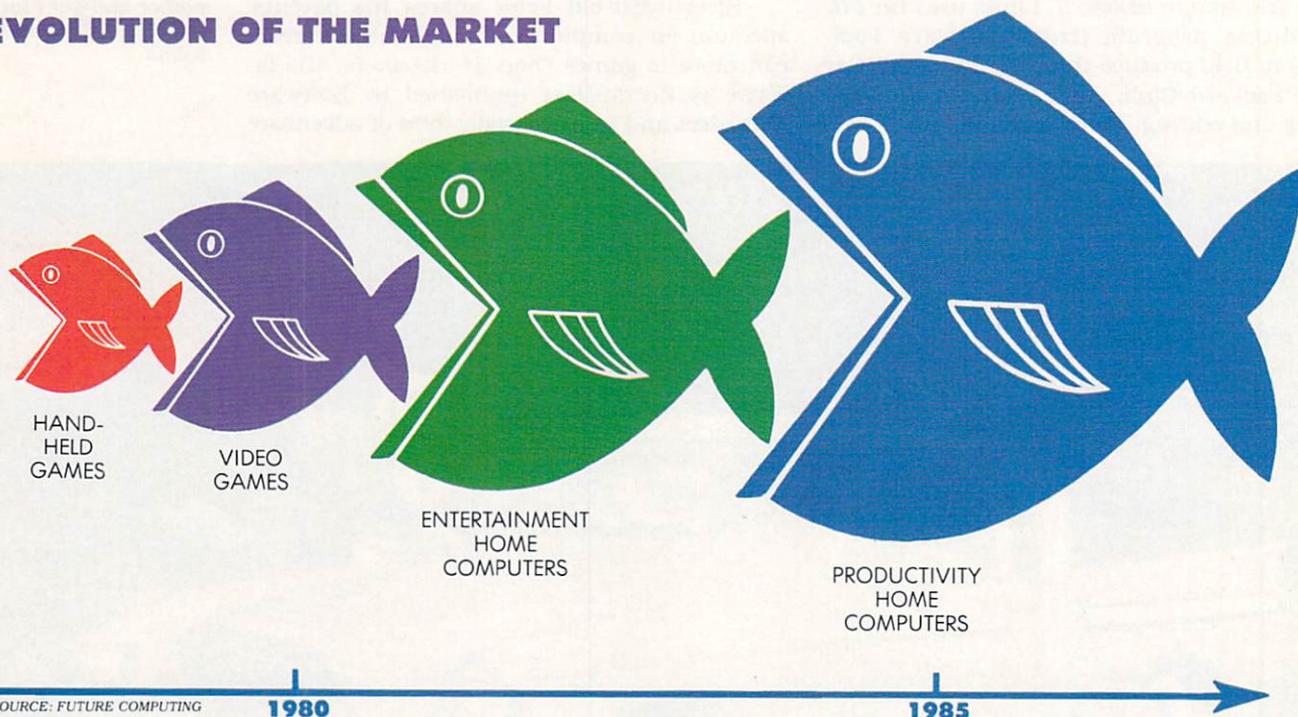
Cartridges for: ColecoVision, Coleco Adam, Atari and Commodore 64.

FISHING FOR A COMPUTER?

HERE'S AN OVERVIEW OF MAJOR MARKET TRENDS TO MAKE YOU A SMARTER SHOPPER

BY NICK SULLIVAN

EVOLUTION OF THE MARKET



SOURCE: FUTURE COMPUTING

1980

1985

When thinking about which computer to buy for home use, several brands often pop to mind. The only way to differentiate between them is by personal preference for the overall feel, and "anyone's guess" as to the manufacturer's stability and long-term support. But with an understanding of what's going on in the industry, you might be able to turn a wild guess into an informed one.

The most prevalent industry trends reflect new consumer trends. Computer buyers were once hobbyists, hackers, and businesses. Now, parents, children, teachers, artists, and independent business people are buying or thinking of buying computers. To sell to these new shoppers, manufacturers have made marketing a number one priority. Besides spending more on advertising, it means making computers easier to use and more productive, and supplying complete, ready-to-go systems.

1983

Last year was a wild one in the home computer industry,

characterized by price cuts, heavy losses at several companies, and the demise of others. These events largely overshadowed the sale of four million home computers, which brought the number of computers in U.S. households to an estimated 7.6 million.

Price Cuts. Timex—treating computers like watches—lowered the price of its Timex 1000 to under \$100, a new low in the industry. During last Christmas' selling season, it could be found for under \$30. Texas Instruments followed suit. The price on its TI-99/4A, which once sold for \$750, was lowered to under \$100—and finally to \$50 when TI discontinued the model and unloaded remaining inventory. The Commodore 64, which was introduced in 1982 at \$595, was selling for less than \$200 by mid-summer of 1983.

Apple, Radio Shack (for Models III and 4), and IBM held their prices at lofty levels, thus splitting the market and giving it two opposite poles: "High end" and "low end." There was nothing in the middle.

Heavy Losses. The ram-

nant price-cutting spurred sales, but had a quick and negative effect on the profits of some companies. Texas Instruments and Timex were so hard hit they both dropped out of the home computer business—TI in October, 1983, and Timex the following February. Atari, which didn't cut prices as drastically as some others, lost over \$500 million for the year.

By the end of 1983, the lineup looked like this: Commodore was batting lead off in the low end, with an estimated 35 percent share of the market. In the high end, IBM's PC and Apple's IIe—each with about a 20 percent share—were vying for the cleanup spot.

1984

Another year, another market. The primary focus has switched from price-cutting to price stabilization. Atari took a strong stand on the downward price spiral by actually raising the cost of its new 600XL and 800XL models. Surprisingly, the only price-cutting to date has come from the high end, where Apple dropped the price of its IIe.

Several other changes in the climate may prove more significant in the long run. These include widespread management changes at major computer companies, a new technique of "bundling" products, and the emergence of a "middle ground" price-wise.

The Package-Goods Challenge. To lead them into the mass market, two leading computer companies have brought in marketing talent from package-goods companies. Atari, founded by Nolan Bushnell, who went on to start Pizza Time Theatre, brought in James Morgan from Philip Morris as chief executive officer. Apple, founded by "two kids in a garage"—Steve Jobs and Steve Wozniak—lured John Sculley from PepsiCo to lead the company's battle against IBM and its push into the home market.

Marketing upstages innovation. Old pros replacing young entrepreneurs and founding fathers is a symptom of marketing's new importance in the industry. Innovative new products used to be the driving force. But now, most compa-

nies are filling out their product lines—or bringing out “look-alikes” of successful ideas. The mad rush to literally “copy” the successful IBM PC epitomizes this wide-ranging trend. And, instead of just selling to hobbyists and hackers—which was the case just a few years ago—many microcomputer manufacturers are trying to sell to the mass market. This includes Apple and IBM, which have until now concentrated on the business market. The end result is that marketing, and especially advertising, is increasingly important to success.

Computer companies spent \$380 million on advertising in 1983, an increase of 75 percent over 1982, and that is expected to increase another 90 percent in 1984, according to industry estimates. More TV advertising can be expected, too, partly because the retailers are demanding it. Last Christmas, many ordered large shipments of new computers that didn't arrive. These retailers are now wary of wild new product promises, and say they won't give shelf space to products that aren't supported with heavy advertising.

More for your money. While computer prices aren't being “slashed” this year, in many ways the consumer is getting more for the dollar. Last year many manufacturers sold the computer/keyboard unit as a stand-alone, at “come-on” prices. Consumers then found they had to pay as much or more to buy a disk drive, monitor, and printer—to make the computer truly useful. Now, computers are more often being sold as part of a complete system, bundled with peripherals and even software. This makes buying a computer a less complicated enterprise; and, it makes the computer a ready-made productivity tool. It gives consumers more of a reason to buy.

This is not a totally new idea. Kaypro—which markets a transportable computer—has long been selling a complete system (for \$1,595) that includes well over \$1,000 worth of software. But such bundling is new for computer marketers targeting the home market. It began when Coleco announced its ADAM—a complete computer system, with built-in word processing and a printer—last June.

The Middle Ground. Coleco's ADAM, selling for about \$750, foreshadowed the emergence of a major new pricing segment—the middle ground.

This \$500 to \$1,000 category was further reinforced when IBM introduced its PCjr, selling for \$669 or \$1,295, depending on the model. And it should be solidified with Apple's new computer (not yet announced at press time), which is expected to sell in the \$700–\$900 range, according to trade sources. Because of the initial interest in ADAM, and the brand-name strength of Apple and IBM, analysts expect this middle ground to become the fastest-growing segment, and perhaps even the nucleus, of the market.

APPLE

The Apple II line, which started in 1977 and was largely responsible for popularizing microcomputers, is still going strong. More software is available for Apple IIs than for any other computer, and it's well distributed among the business, home, and education categories. Apple's new Macintosh (see review) indicates the company is still as innovative as it was in the early days. Founders Steve Jobs (chairman) and Steve Wozniak (principal engineer) are still there, and with ex-Pepsi marketer John Sculley as president, are taking on IBM as if it were Coca-Cola. They're convinced there's an Apple generation to back up their challenge.

ATARI

Atari's got a great computer, as Alan Alda will tell you. Very few could make a case otherwise. Atari thinks enough of its product to have raised prices despite slow sales. Software designers love the Atari's color and sound capabilities. And Atari owners are fanatics when in defense of “their” machine.

The company has suffered from mismanagement, and a misread of the market. They felt that the video-game boom would carry them longer than it did, while other companies concentrated on turning their computers into educational, home productivity, and business tools. The result: life-threatening losses in 1983.

Now, with Philip Morris' James Morgan as chief executive officer, Atari is taking the same tack, and adding spreadsheet and word-processing programs to its large (over 2,000), but game-heavy, software base. Atari is selling a \$760 word-processing package—which includes the 600XL, a printer, and AtariWriter. Its new Atari Learning Systems division is developing educational soft-

ware. And, under the trademark ATARISOFT, the company is translating its popular software for other computer brands. Atari appears to be healing internal wounds and making a comeback, but still faces stiff competition.

COLECO

Primarily a toy company, Coleco cut its teeth in the electronics field with its popular ColecoVision video-game machine. Now it has moved into the computer market with ADAM, the complete computer system. While Coleco is known as a marketing-driven company, its recent agreement with Honeywell to set up a nationwide network of service centers indicates it will support ADAM owners well beyond the initial sale. Except for ColecoVision game cartridges, however, which run on the ADAM, there is still very little software available.

Wall Street analysts speculate that development and production costs on the ADAM have put Coleco in a cash-flow bind, but President Arnold Greenberg has repeatedly denied this.

COMMODORE

Commodore has sold over two million VIC-20s and over one million Commodore 64s. Its revenue's hit the billion-dollar mark in 1983. Commodore is also a big software company—it claims to have sold over \$100 million worth in 1983. Because of this, some analysts think that Commodore is trying to execute the age-old razor-and-blade strategy: Selling computers cheaply, and then going to market with software to run on those computers.

But Commodore has a few hurdles to clear. Jack Tramiel, who founded the company in 1958, recently resigned, leaving questions about future directions. And two new computers that Commodore previewed at a trade show, the 264 and 364, received a lukewarm reception from both retailers and the press. Commodore now says it will delay bringing them to market indefinitely. Another thorn in the company's side is the reported high rate of returns from dealers and owners who are complaining about defective computers and disk drives. *The Wall Street Journal* said late last year that the return rate on computers was up to 30 percent. Commodore will have to improve its quality control to maintain long-term credibility as a manufacturer.

For all this, Commodore is a

profitable and stable company with a secure position in the market, and a product (the 64) that offers good value for the price.

IBM

After silently watching Apple's and Radio Shack's success at selling personal computers to businesses, IBM finally entered the market in 1982 with its IBM PC. In a mere two years that product has become an industry standard, and spawned a host of look-alike computers. In fact, some observers think that the IBM standard will bring the Japanese into the market. It gives them an established model to copy and improve upon.

Meanwhile, IBM is using the PC as the flagship of an expanding line. IBM has added the PCjr, PC XT, and a Portable PC, and is well on its way to becoming the General Motors of the computer industry. You generally pay a little more for an IBM computer than you would for an equivalent model from another company—but you're assured of service and software support. And IBM's not going to go out of business.

RADIO SHACK

Radio Shack has products at both the low end (TRS-80 Color Computer 2) and high end (TRS-80 Models III, 4, 12, 16, and 2000) of the market. The Color Computer is primarily a home entertainment computer, while the others are designed more for business use than entertainment. The latest entry, the Model 2000, uses the MS-DOS operating system, which allows it to run much of the software developed for the IBM PC. Finally, the Model 100, a portable “lap” computer, was probably the most innovative product introduced in 1983.

The virtues of Radio Shack are its wide distribution and excellent support and service. All its computers are supported with a wide line of peripherals and software; and with more than 8,000 Radio Shack outlets worldwide, you can be sure service is close at hand. For those living in rural areas without many computer stores, this is a real plus.

LOOKING AHEAD

For more brand-specific information, look for “Buyer's Guide to the Leading Computer Brands,” “Buyer's Guide to Portable Computers,” and “Shopping Do's and Don'ts,” in upcoming issues. **FC**

PHONE COST MONITOR

BY JOEY LATIMER

Is the pleasure of talking long distance to your grandfather across the country marred by your worries of how much the call is costing? *Phone Cost Monitor* translates minutes into cents, right as you talk! You can also use it as a timer, and have your computer warn you when you've reached the total amount of money you wish to spend, or the length of time you wish to talk. (Note: The program can only give you an approximate cost since billing standards vary from state to state.)

Before using the program, first call your local operator and find out the length of the initial period (often one or three minutes), the cost of the initial period, and the cost of each minute thereafter. Be sure to explain where you are calling from and to, and what day of the week (including holidays) and time of day you intend to make the call. (This program won't work for calls that start and end during different rate periods.) To stop the program once you've completed the call, press any key. Type RUN, press RETURN or ENTER, and the program will start again.

ADAM, Apple, Atari, IBM PCjr, TI-99/4A, and TRS-80



Color Computer owners should note that the last number in line 670 fine-tunes the computer's timer. This number varies from computer to computer because some brands run faster than others. In addition, the timing of your computer may be slightly different from ours. Before actually using the program, you should first run at least a three-minute test against a clock to see if it times you for exactly three minutes (if you have the patience, a longer test period is recommended). If the program is running fast or slow, increase or decrease the number in line 670, starting first with a change of five.

ADAM/Phone Cost Monitor

```

70 HOME
80 PRINT "TELEPHONE COST MONITOR"
90 PRINT
100 PRINT "Do you want to know ..."
110 PRINT
120 PRINT "(1) When a certain amount of"
130 PRINT "money has been spent?"
140 PRINT "(2) When a given amount of"
150 PRINT "time has elapsed?"
160 PRINT "(3) Total charges for a call?"
180 PRINT
190 PRINT "Please enter number";
200 GET s$
    
```

```

220 IF s$ < "1" OR s$ > "3" THEN 200
240 HOME
250 PRINT "What is the initial charge for"
260 PRINT "this call?"
270 PRINT
280 PRINT "(Example: $?.59)"
290 PRINT
300 INPUT "$ "; ft
310 PRINT
320 INPUT "For how many minutes?"; bg
350 HOME
360 PRINT "How much for each minute"
370 PRINT "afterward?"
380 PRINT
390 INPUT "$ "; aa
400 HOME
410 ON VAL(s$) GOTO 420,470,510
420 PRINT "What do you want to spend"
430 PRINT "on this call?"
440 PRINT
450 INPUT "$ "; sp
460 GOTO 510
470 PRINT "How many minutes do you want"
480 PRINT "to talk?"
490 PRINT
500 INPUT "Minutes:"; tm
510 HOME
520 PRINT "Press <RETURN> when the other"
530 PRINT "party answers the phone."
550 GET a$
560 IF a$ <> CHR$(13) THEN 550
600 HOME
610 k = PEEK(64885)
620 co = ft
630 PRINT "-----"
640 PRINT "MONEY          ELAPSED TIME"
650 PRINT "SPENT           MINS.--SECS."
660 PRINT "-----"
670 FOR x = 1 TO 920
680 NEXT x
690 sec = sec + 1
700 IF sec > 59 THEN min = min + 1
710 IF sec > 59 THEN sec = 0
730 IF min >= bg AND sec = 1 THEN co = co + aa
780 VTAB 5
790 HTAB 0
800 PRINT co;" ";
810 VTAB 5
820 HTAB 11
830 PRINT min;" ";
840 VTAB 5
850 HTAB 18
860 PRINT sec;" "
870 IF (s$ = "1" AND co >= sp) OR (s$ = "2" AND min >=
tm) THEN 910
880 IF PEEK(64885) <> k THEN 1110
900 GOTO 670
910 HOME
920 IF s$ = "1" THEN PRINT "YOUR MONEY IS SPENT!"
930 IF s$ = "2" THEN PRINT "TIME'S UP!"
1100 END
1110 PRINT "STOPPED."
1120 END
    
```

Apple/Phone Cost Monitor

```

70 HOME
80 PRINT "TELEPHONE COST MONITOR"
90 PRINT
100 PRINT "DO YOU WANT TO KNOW ..."
110 PRINT
120 PRINT "(1) WHEN A CERTAIN AMOUNT OF MONEY"
130 PRINT "HAS BEEN SPENT?"
140 PRINT "(2) WHEN A GIVEN AMOUNT OF TIME"
150 PRINT "HAS ELAPSED?"
    
```

BEGINNER PROGRAMS

```

410 ON VAL(S$) GOTO 420,470,510
420 PRINT "WHAT DO YOU WANT TO"
430 PRINT "SPEND ON THIS CALL?"
440 PRINT
450 INPUT "$";SP
460 GOTO 510
470 PRINT "HOW MANY MINUTES"
480 PRINT "DO YOU WANT TO TALK?"
490 PRINT
500 INPUT "MINUTES:";TM
510 PRINT CHR$(147)
520 PRINT "PRESS <RETURN> WHEN"
530 PRINT "THE OTHER PARTY"
540 PRINT "ANSWERS THE PHONE."
550 GET AS
560 IF AS <> CHR$(13) THEN 550
570 TIMES$ = "000000"
600 PRINT CHR$(147)
620 CO = FT
630 PRINT "-----"
640 PRINT "MONEY      ELAPSED TIME"
650 PRINT "SPENT      MINS.--SECS."
660 PRINT "-----"
670 MIN = VAL(MID$(TIMES$,3,2))+VAL(LEFT$(TIMES$,2))*60
680 SEC = VAL(RIGHT$(TIMES$,2))
730 IF FL = 0 AND MIN >= BG AND SEC = 1 THEN CO = CO+,
T
760 IF SEC = 1 THEN FL = 1
770 IF SEC <> 1 THEN FL = 0
780 PRINT CHR$(19),TAB(110);CO;
790 PRINT CHR$(19),TAB(120);MIN;
800 PRINT CHR$(19),TAB(127);RIGHT$(TIMES$,2)
840 IF (S$ = "1" AND CO >= SP) OR (S$ = "2" AND MIN >=
TM) THEN 910
880 GET AS
890 IF AS <> "" THEN 1110
900 GOTO 670
910 PRINT CHR$(147)
920 IF S$ = "1" THEN PRINT "YOUR MONEY IS SPENT!"
930 IF S$ = "2" THEN PRINT "TIME'S UP!"
960 PRINT
970 PRINT "PRESS ANY KEY TO"
980 PRINT "SILENCE THE ALARM AND END THE PROGRAM."
990 POKE 36878,101
1000 POKE 36874,215
1010 POKE 36874,241
1020 FOR DE = 1 TO 100
1030 NEXT DE
1040 POKE 36874,0
1080 GET AS
1090 IF AS = "" THEN 1000
1110 PRINT "STOPPED."
1120 END

```

MODIFICATION

TRS-80 Model 4/Phone Cost Monitor

Use the Model III version, with the following alterations:
Omit lines 580 and 590. Add line 60:

```
60 PRINT CHR$(15)
```

Finally, change lines 570, 670, and 780-800 to read as follows:

```

570 SYSTEM "TIME 00:00:00"
670 MIN=VAL(MID$(TIMES$,4,2))+VAL(LEFT$(TIMES$,2))*60
780 PRINT@402,CO;"      "
790 PRINT@411,MIN;"      "
800 PRINT@418,SEC;"      "

```

ATTENTION PROGRAMMERS!

FAMILY COMPUTING wants to publish your best original computer programs. We prefer programs under 100 lines, especially games or those that have useful applications in the home. Send a disk or tape containing two copies of your program, plus a listing (preferably a printout), to The Programmer, FAMILY COMPUTING, 730 Broadway, New York, NY 10003. Include your name, age, address, day and night phone numbers, computer model, program titles with brief descriptions, and the level of BASIC and memory required. We will pay \$50 for those we publish. If you want your disk or tape returned, enclose a stamped, self-addressed mailer. FAMILY COMPUTING handles all submissions carefully; however, we can't assume responsibility for loss or damage.

MOTHER'S DAY CARD

BY JOEY LATIMER

This Mother's Day, why not say it with your computer? Put aside your favorite game and type in our *Mother's Day Card* program. Set your computer to all upper-case letters, run the program, and answer the questions. Then call your mother into the room. After she's answered a few questions, a personalized *Mother's Day Card*, which says everything you've been too shy to say for years, will appear on the screen! We promise you she'll never forget it! (And while you're at it, why not wrap a ribbon around the computer, or surprise her with a rose on the keyboard?)



ADAM/Mother's Day Card

```

10 HOME
20 PRINT "MOTHER'S DAY CARD"
30 FOR d = 1 TO 2000
40 NEXT d
50 GOSUB 1000
60 PRINT "WHAT IS YOUR FIRST NAME?"
70 INPUT n$
80 PRINT
90 PRINT "DO YOU HAVE A PET? (Y/N)"
100 INPUT p$
110 IF LEFT$(p$,1) <> "Y" THEN 140
120 PRINT "WHAT IS YOUR PET'S NAME?"
130 INPUT pn$
140 HOME
150 PRINT "O.K., ";n$;"! PRESS <RETURN>,"
160 PRINT "THEN GO GET YOUR MOTHER."
170 INPUT r$
180 HOME
190 PRINT "HI MOM!"
200 PRINT
210 GOSUB 1010
220 PRINT "IF YOU COULD TAKE A TRIP TO"
230 PRINT "ANYPLACE IN THE WORLD,"
240 PRINT "WHERE WOULD YOU GO?"
250 INPUT pl$
260 HOME
270 PRINT "WHO IS THE MOST"
280 PRINT "HANDSOME MOVIE STAR?"
290 INPUT ms$
300 HOME
310 PRINT "WHAT IS YOUR FAVORITE"
320 PRINT "GOURMET DISH?"
330 INPUT gm$
340 HOME
350 PRINT "IF YOU HAD A MILLION DOLLARS,"
360 PRINT "WHAT IS THE FIRST"
370 PRINT "THING YOU WOULD BUY?"
380 PRINT "(USE 'A' OR 'AN')"
390 INPUT ob$
400 HOME
410 PRINT "DEAR MOM,"
420 PRINT
430 PRINT "I CAN'T SEND YOU TO"
440 PRINT " ";pl$;" "
450 PRINT "ALTHOUGH I WISH I COULD."

```

GAMES									
Title Manufacturer Price	Brief description	Hardware/ Equipment required	Backup policy	Ratings					
				O	D	EH	GQ	EU	V
BRISTLES First Star Software, Inc. 22 E. 41st St. New York, NY 10017 (212) 532-4666 \$29.95 © 1983	Paint the rooms of a house while avoiding obstacles in easy-to-learn, amusing arcade game with six skill levels. A charmer for ages 10+. —DELSON	Atari 400/800/XL series, 32K (disk), 16K (cartridge and cassette). Also for Commodore 64 (disk, cartridge, and cassette). Joystick(s) required.	Defective material replaced free w/in 90 days; \$9 fee thereafter.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	E	★ ★ ★
DINO EGGS Micro Fun 2699 Skokie Valley Rd. Highland Park, IL 60635 (312) 433-7550 \$40 (Apple) \$35 (Commodore) © 1983	Rescue baby dinosaurs from contamination as you evade prehistoric creatures and the Dino Mom's dangerous footfalls in challenging arcade game good for ages 9+. —DELSON	Apple II/II plus/IIe, 48K (disk). Also available for Commodore 64 (disk). Versions planned for Atari, IBM PC/PCjr.	Defective disks replaced free w/in 30 days; \$5 fee thereafter.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	A	★ ★ ★
GALACTIC ATTACK Sir-tech Software, Inc. 6 Main St. Ogdensburg, NY 13669 (315) 393-6633 \$29.95 © 1981	Shoot it out with enemy spacecraft in exciting strategy arcade game, a challenge for ages 12+. Flexible play system keeps action varied, game fresh. —DELSON	Apple II/II plus/IIe/III w/ emulator, 48K (disk).	Disks replaced free w/in 30 days; \$5 fee thereafter; backup copy included.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	A	★ ★ ★
JULIUS ERVING AND LARRY BIRD GO ONE-ON-ONE Electronic Arts 2755 Campus Dr. San Mateo, CA 94403 (415) 571-7171 \$40 © 1983	Play computer or friend as Dr. J or Larry Bird in first-rate basketball simulation featuring fast action, four play levels, player fatigue, and hot streaks. Excellent challenge for ages 10+; requires practice. —DELSON	Apple II/II plus/IIe, 48K (disk). Also available for Commodore 64 (disk). Joystick required. Versions planned for Atari, IBM PC.	Defective disks replaced free w/in 90 days; \$7.50 fee thereafter or if user-damaged.	★ ★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	A	★ ★ ★
NECROMANCER Synapse Software 5221 Central Ave. Richmond, CA 94804 (415) 527-7751 \$34.95 © 1983	Plant and protect trees, then march them into enemy territory and take on opposing forces in fantasy arcade game requiring superior hand-eye coordination, for ages 12+. —DELSON	Atari 400/800/XL series, 32K (disk or cassette). Also available for Commodore 64 (disk or cassette). Joystick required.	Defective material replaced free w/in 90 days; \$5 fee thereafter or if user-damaged.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	D	★ ★ ★
OIL BARONS Epyx, Inc. 1043 Kiel Ct. Sunnyvale, CA 94089 (408) 745-0700 Approx. \$40 © 1983	Wheel and deal, form cartels, outbid the competition, in serious, slow-moving, challenging, resource-management game for ages 12+. † —DELSON	IBM PC, 64K w/advanced BASIC (disk). Also available for Apple II/II plus/IIe, 48K (disk); Commodore 64 (disk).	Defective disks replaced free w/in 30 days; \$5 fee thereafter.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	D	★ ★ ★
PARTHIAN KINGS Avalon Hill Game Co. 4517 Harford Rd. Baltimore, MD 21214 (301) 254-5300 \$25 © 1983	As a king you build up an army, engage in combat, make and break alliances, use magic, acquire land for points and gain victory over up to three foes in war game for ages 12+. † —DELSON	Apple II/II plus/IIe, 48K (disk). Version planned for Commodore 64.	Defective disks replaced free.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	A	★ ★ ★
PROFESSIONAL TOUR GOLF Strategic Simulations, Inc. 883 Stierlin Rd., Bldg. A-200 Mountain View, CA 94043 (415) 964-1353 \$39.95 © 1983	Drive, chip, and putt across two golf courses composed of the world's greatest holes. Use one of 20 real-life golf greats or create your own player with strengths and weaknesses. † —DELSON	Apple II/II plus/IIe/III w/ emulator, 48K (disk). Also available for Commodore 64 (disk).	Defective disks replaced free w/in 30 days; \$10 fee thereafter or for backup copy.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	A	★ ★ ★
ROCKY Coleco Industries, Inc. 999 Quaker Lane S. West Hartford, CT 06110 (800) 842-1225 Approx. \$30 © 1984	Take on human or computerized opponent in fast-action boxing match featuring variable skill levels and fluid graphics. Good for ages 10+. —DELSON	Coleco ADAM (cartridge). ColecoVision Super Action Controller(s) required.	Defective cartridges replaced free w/in 90 days.	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	A	★ ★ ★
SUBMARINE COMMANDER Thorn EMI 1370 Ave. of the Americas New York, NY 10019 (212) 977-8990 \$19.95; \$29.95 (Apple) \$44.95 (Atari) © 1983	Track and follow enemy convoys, use special sonar, and torpedo enemy ships in exciting submarine simulation game popular among players 10+. † —DELSON	Commodore VIC-20, 5K (cartridge). Also available for Apple II/II plus/IIe, 48K (disk); Atari 400/800/XL series, 16K (cartridge).	Defective material replaced through retailer.	★ ★ ★ ★	★ ★ ★ ★	★ ★ ★ ★	★ ★ ★ ★	A	★ ★ ★ ★

RATINGS KEY O Overall performance; D Documentation; EH Error-handling; GQ Graphics quality; EU Ease of use; V Value for money; ★ Poor; ★★ Average; ★★★ Good; ★★★ Excellent; n/a Not applicable; E Easy; A Average; D Difficult; † Longer review follows chart