THE APPLE II MAGAZINE

# inCider

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## A LOOK TO THE FUTURE

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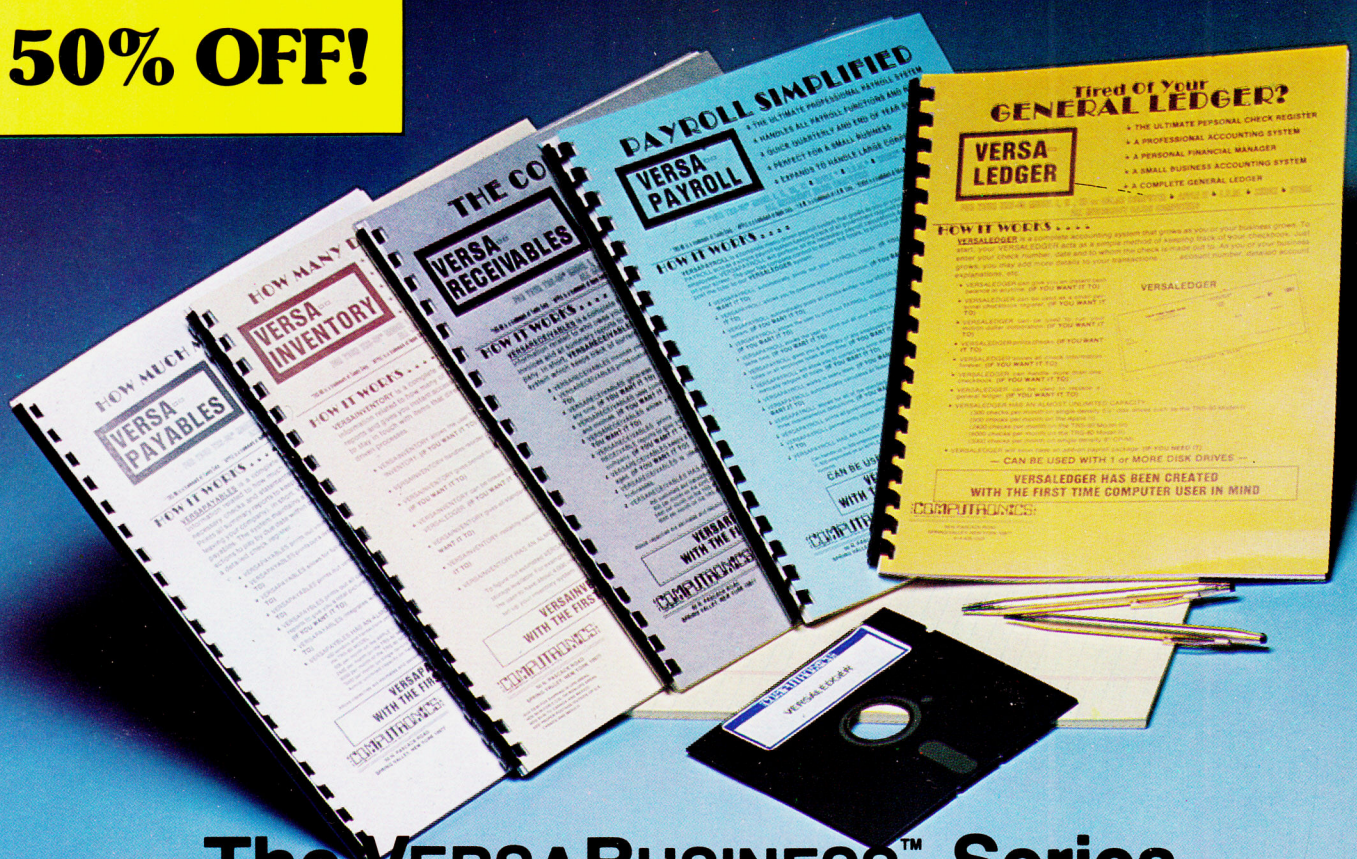



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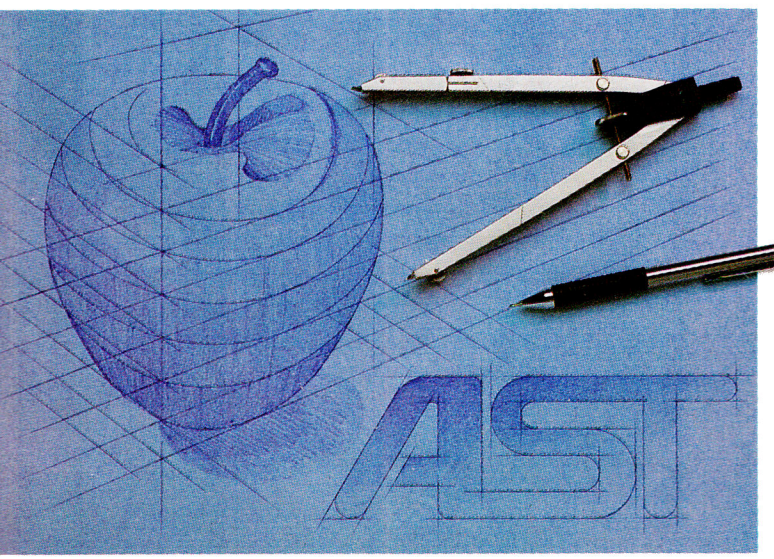
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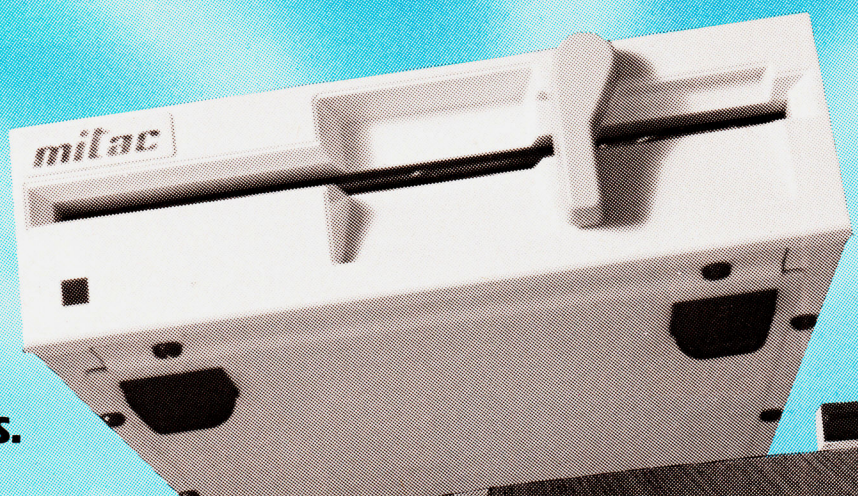
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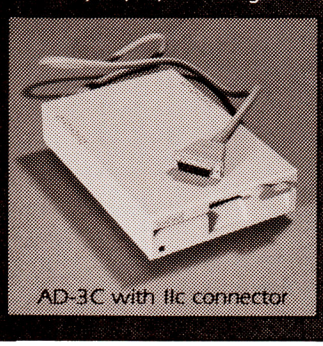
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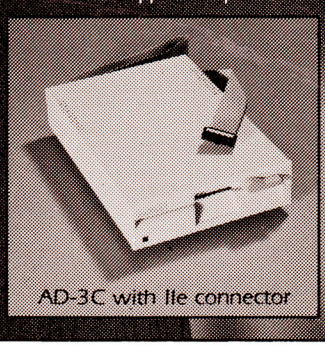
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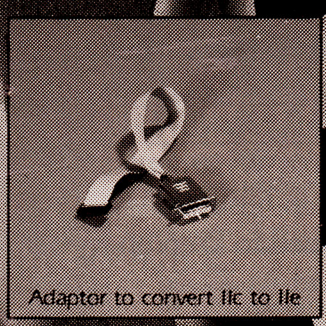
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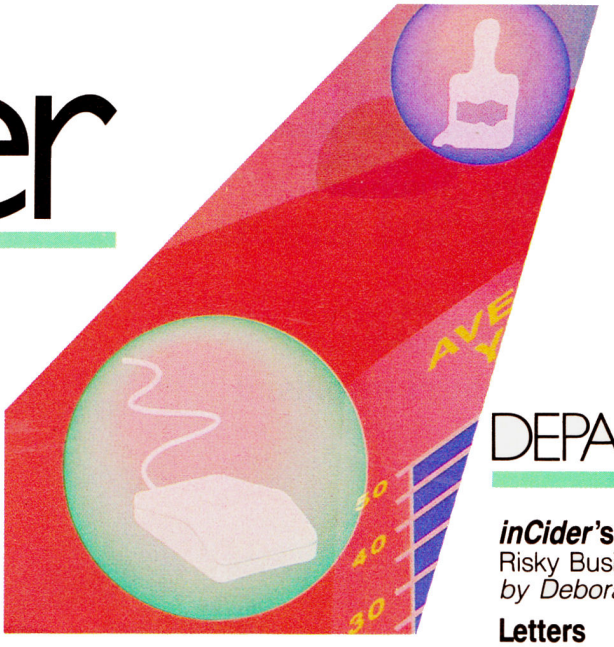
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MPA ABC

# INCIDER'S VIEW



## Risky Business

*"Mail order is only as good as the company with which you're dealing."*

by Deborah de Peyster

Ronald Compton wants to buy his son a new printer and some software for Christmas. He places his order with a mail-order firm in mid-November and is told the present will arrive soon. Compton's charge card is billed only six days later for the full $343, but the gift doesn't arrive. He waits, starts to get nervous, and phones the mail-order company once, twice, then continually. It seems he's getting nowhere fast, and time is quickly running out.

Christmas Eve; the gift hasn't arrived. Compton is out the $343 and has yet to make contact with anyone at the mail-order firm who follows through on delivery of the product or return of his credit.

"To say that my son's Christmas was a disaster is an understatement," Compton wrote to us last year.

Well, the buying time of year is upon us again, and we want you to know that Ronald Compton was hardly alone in his frustration. During the past year, we've received many letters from you telling us of your troubles in buying through mail order. Many of the problems are similar, and many are with the same mail-order firms.

Although not the company with which Compton had difficulty, a frequent subject of your letters is Northeastern Software, of Shelton, Connecticut. Northeastern general manager George Sutyak acknowledges the firm has had trouble filling orders efficiently and returning credit quickly. A move to new headquarters in March and rapid growth of the company were at the root of these problems, he says. An automated inventory, order-taking, and purchasing system put in place in August should help solve them, he reports.

But Northeastern is only one of more than 20 computer-equipment mail-order firms with which you might choose to do business. Depending on your luck, you might have a good experience and receive your order quickly at a reasonable price, or end up like Robert Hildreth, another reader who wrote to us citing statistics such as 30 phone calls in four months, 14 hours on hold, and still no refund for products never shipped.

Many mail-order firms are experiencing rapid growth, and many aren't handling it successfully. Some won't be in business next year, or maybe even next month. But some very good, reputable mail-order firms are out there, and we think it's worth your while to find them. So here's some advice from *inCider* on reducing the risk of ordering computer equipment and supplies through the mail.

First, spend some time talking to friends. Ask them where they got the best service, not the lowest price. You should also call your local computer club or user group for recommendations. Some computer clubs (such as the Boston Computer Society) even put out bulletins warning users about firms that may cause trouble.

Call the company; before you place an order, ask a few questions about the product in which you're interested. If you get a courteous reply, that's a good sign. If you get a courteous *and* intelligent reply, order right away!

Also make sure you ask about promised delivery and return policies, and, whenever you order anything through the mail, take notes throughout your conversation. Record the day and time you called, the name of the person who placed your order, and any guarantees the company makes about delivery, return, and quality.

We believe mail order is a good way to buy products, but it's only as good as the company with which you're dealing. That's the key to making mail order work for you. Good luck. ■

# BRIGHT IDEAS

## Orange Micro® Innovations for the Apple® IIGS

### The Revolution Continues

For over six years Orange Micro has demonstrated an unequalled ability to convert bright ideas into the high quality Apple innovations that you require. Products for the Apple II+, IIe and IIc and most recently the ImageWriter™ II have consistently been top sellers, and have enjoyed the support of experts and software publishers alike. With the new Apple IIGS computer, Orange Micro is again leading the way with three exciting new ideas to enhance your new Apple system.






## ProGrappler

### Intelligent Printer Interfacing




Parallel printing is fast, and now the new **ProGrappler** represents the hottest technology in parallel printer interfacing. Screenshot capability (IIGS only) lets you print screens for most popular software packages. New pull-down menus accept either mouse or keyboard input, allowing you to easily select your printing options right on the IIe or IIGS screen. We've also added printer set-up, so you can select your printer's special features without complex commands or special codes. All the commands of the original Grappler+ have been kept intact, ensuring compatibility with the thousands of software products supporting the Grappler. Go with the **ProGrappler**, the most powerful parallel printer interface available.

## RamPak 4GS™

### Memory Sub-System

Orange Micro's new **RamPak 4GS** delivers unprecedented memory expansion capacity and powerful memory management utilities. With 512K of RAM standard, the **RamPak 4GS** is socketed and ready for an incredible *four megabytes* on a single card. But it's far more than just a simple memory card. The **RamPak 4GS** also includes powerful software for RAM Caching, Dynamic Memory Allocation, and utilizes Apple's RAM Disk. These features not only assure the most efficient use of your system memory in any application, but they can increase your processing speed dramatically.

## COMING SOON:
## IIGS Maintenance System



Your new Apple IIGS will require proper care, and Orange Micro's **maintenance system** has everything you need to keep your system running strong. The **maintenance system** provides surge protected power for your Apple IIGS and any two additional peripherals from a single convenient switch; a third unswitched power outlet; a powerful fan to provide filtered, cooling air; and an hour meter that tells you how long your system has been powered up. We have even included a guide of scheduled maintenance for use with the hour meter to help you properly care for your new computer. The **maintenance system** is a complete package that lets you relax knowing that your new investment is well protected.

## A Commitment to Innovation and Excellence

These high quality products represent Orange Micro's continued commitment to Apple and the landmark Apple II series of computers. Our development efforts are, and have been, totally dedicated to bright ideas for Apple Computers. We've been dedicated to it for years and we aren't going to change now. So when you pick up your IIGS, take a look at us. Enhance your system with solutions from Orange Micro.

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# LETTERS

## Help for AppleWorks

The AppleWorks User Group (TAWUG) is an organization specializing in the AppleWorks program. We maintain a clearinghouse of AppleWorks templates and currently have more than 28 disks of templates for the data base and spreadsheet, as well as notes and comments about the word processor. These disks also contain member-submitted reviews of AppleWorks-compatible programs and related books and magazines. In addition, we have a collection of public-domain utilities that enhance AppleWorks.

TAWUG maintains an AppleWorks subboard on a BBS called The Board at (303) 756-5222. We have an AppleWorks discussion group, and you can download the latest templates. For more information and a price list, please send a self-addressed, stamped envelope to the address below.

**The AppleWorks User Group**
**P.O. Box 24869**
**Denver, CO 80224**

## More Storage

While the recent trend in office (group) computer communication has been directed toward problems associated with networking, not all groups are looking for this level of sophistication. We are a biomedical research group of six Apple users, and have recently been contemplating the purchase of an equal number of hard disks. In examining our possibilities, we concluded that the easiest way for all of us to have access to a large amount of disk space would be with a mass-storage/multiplexor system.

Having read *inCider* since its inception, I went searching through my back issues looking for reviews or product information. Unfortunately, it appears *inCider* hasn't looked into these types of "network" systems.

I came across the following product while searching for a system to fulfill our needs. It's a Winchester mass-storage system with up to 84 megabytes of formatted disk space that can be shared by up to 16 users. It's manufactured by Space Coast Systems, 301 South Washington Avenue, Titusville, FL 32796, (305) 268-0872. I'd like to know if you have any plans to review mass-storage/multiplexor systems like this one.

The introduction of RAM boards has allowed Apple Computer and third-party developers to create larger, more sophisticated applications. However, there must be a place to store the output of these packages. While individual hard disks solve one person's problems, they aren't the most cost-effective solution for groups of users.

**Jeffrey K. Ekstein**
**Department of Anatomy**
**Boston University School of Medicine**
**Research Building, Room 1014**
**80 East Concord Street**
**Boston, MA 02118**

*No doubt the IIGS' AppleTalk will stimulate interest in networking and smaller shared-resource solutions such as yours. We'll stay alert for possible review coverage, but remember that the majority of our readers are solitary Apple users. (Readers: What do you think?)* —eds.

## Japanese Spoken Here

Do you know of any Apple //e software for learning either written or spoken Japanese? I'd be interested in knowing how much such a package would cost and where I can get it.

**Frederick S. Vassie**
**8821 Tidesebb Court**
**Columbia, MD 21045**

*We searched through all our resources and found plenty of programs for learning Spanish, French, German, Hebrew, Italian, and Russian, but none for Japanese. Do any readers know of such a program?* —eds.

## The Taxman

I'm the proprietor of a medium-sized tax practice. When I bought my Apple in 1982, I also purchased a software package called Tax Manager, produced by Micro Lab of Skokie, Illinois. This year when I applied for an update of the software, I found that Micro Lab is no longer in business.

I won't be in business long enough (I plan to retire in a few years) to justify getting all new hardware to run more sophisticated tax software, so I'd like to know if any software company has a program similar to Tax Manager. Tax Manager ran on my Apple II Plus, computed and printed 14 forms, and was very easy to use.

**John J. Ritz**
**P.O. Box 337**
**West Long Branch, NJ 07764**

*Check our article "Tax Time Can Mean Returns" (April 1986, p. 44), for a comparative review of seven tax-preparation packages. One of these programs should suit your needs.* —eds.

## In Search Of

I'm searching for genealogy software that's compatible with an Apple //e computer. Can you help me with this?

**Roxwell Prejean**
**Route 1, Box 1548**
**Abbeville, LA 70510**

*Check out our June 1986 New Products section. "Roots" (p. 112) is a description of Personal Ancestral File, a genealogical record-keeping program from Ancestral File Operation Unit. Also take a look at "Trace Your Roots with AppleWorks" in this issue (p. 106).* —eds.

## Still Waiting

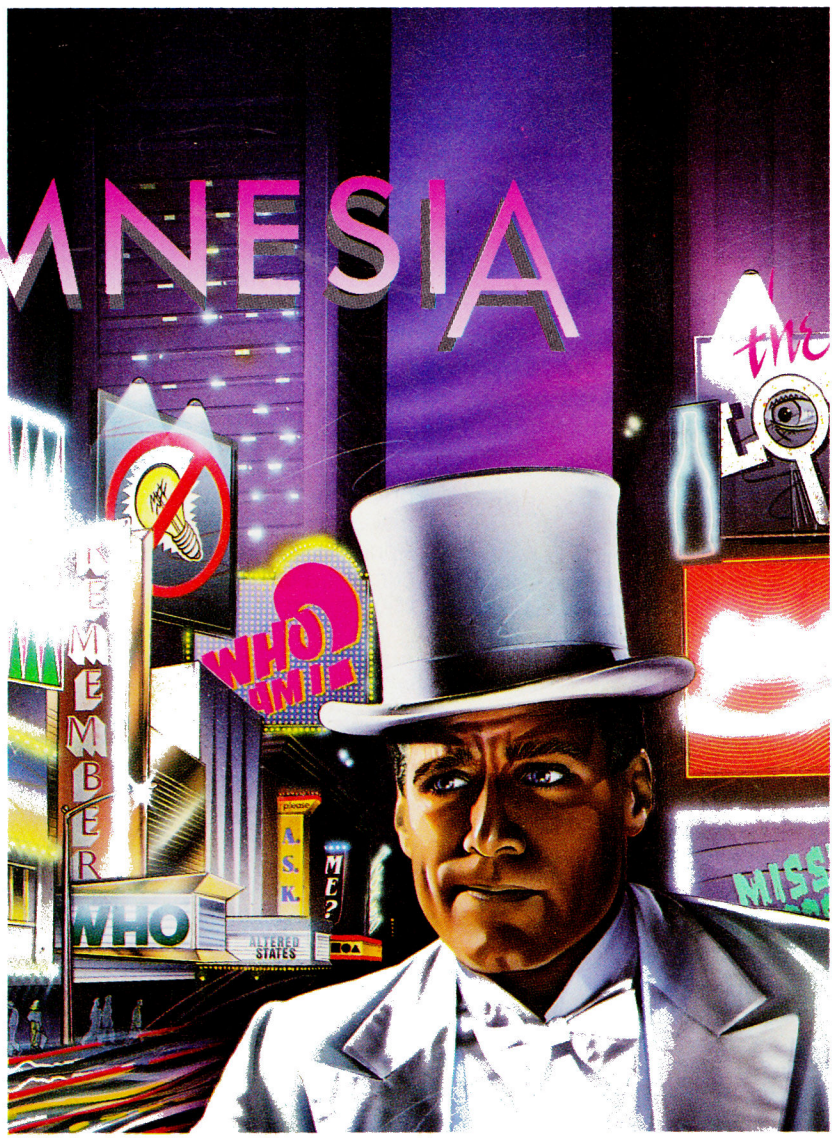
I'm wondering if you know anything about the word processor MultiScribe and the company that produces it, StyleWare. You ran its advertisement in the April and May 1986 issues of *inCider*.

The introductory offer for MultiScribe was listed in the April issue at $39.95. The May issue reported it as $59.95. The $39.95 sounded like a good deal to me, so I ordered it on March 11th. Since then, I've heard nothing—the only response I've received so far is my cancelled check. It cleared the bank within a week of my order. The company has my money; I have nothing.

# A Strange Woman Wants to Marry You.

***An unknown man is trying to kill you. The State of Texas wants you for murder. But that's not your problem. Your real problem is . . .***

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**It's a new text adventure that feels like a Hitchcock-style nightmare. You're lost on the streets of Manhattan with no money, no friends, no memory—and someone wants you dead. Somewhere in The City are the clues to your identity—and your survival. The hard part is finding them—and eliminating your problems before they eliminate you.**

> You are locked in a cell. It is bare and dark and smells of lives gone sour. The only light is a feeble fluorescent glow that slants in through the louvered grill on the iron door. You know the door is iron because you have been beating on it. Your hands are sore, and your right eye is swollen shut. You ache all over.
>
> —Ask the guard for some food, thank him, then eat it and go to sleep.

**A 1700-word vocabulary recognizes complicated commands in plain English.**

> It feels great to be a faceless, nameless atom among a million others churning about in the grid of Manhattan's streets. It feels safe. As you approach Fifth Avenue, the brief buoyancy of feeling free gives way to ordinary now-what anxieties. You've got no money, no credit cards, nowhere to sleep, and no visible means of support.
>
> —Beg for money, then enter the subway station.

**It's Manhattan on four disk sides! Over 4000 locations to explore, including 650 streets and the entire Manhattan subway system.**

***We think it's the best writing ever in a text adventure.***

**It was written by award-winning novelist Thomas M. Disch—not a team of computer programmers. In addition to his 1980 Campbell Award for *On Wings of Song*, Disch's works have won major awards in England and Japan. The game's 300-page manuscript is the most ambitious ever in interactive fiction.**

**"A robust writer . . . a virtuoso."—*New York Times Book Review***

**". . . perhaps the most respected, least trusted, most envied . . . of all SF writers of the first rank: his reputation can only grow."—*The Science Fiction Encyclopedia***

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Circle 148 on Reader Service Card.

Is StyleWare a legitimate business? Does it have a product? After nearly seven weeks, I feel I have a right to at least have my order acknowledged with some notice of a reason for the delay. Seven weeks without response, without my merchandise, and without my money is a little unreasonable, don't you think?

**Bill Kollasch**
**332 South Main Street**
**Aztec, NM 87410**

*StyleWare did have some delays in shipping MultiScribe, but is indeed shipping the product now, as the following letter will attest. See* inCider*'s review of the product in this issue, p. 30. —eds.*

## Just My Style

After less-than-successful experiences in the past when I've had problems with hardware and software companies, I'm happy to write about a company that cares about its customers.

I first saw an advertisement for MultiScribe (from StyleWare, Houston, Texas) in the March *inCider*. I immediately called the toll-free number to place my order. I was number 39 on the waiting list. Company representatives told me the program wouldn't be released until the middle of March because of a wait for printing and packaging.

After a couple of months, I still hadn't received my copy of the program, and decided that maybe such a //c program—one that emulates MacWrite—was too good to be true. In a few weeks, though, the program finally arrived and I put it through its paces. I was delighted with its performance, but disappointed that it was copy-protected and couldn't be used on a UniDisk 3.5, should I add one later. It also had a bug that caused the disk drive to sometimes make a funny noise.

I put off calling customer support, as I was sure the noise was my fault. Then, less than two weeks from the day I got the program, I received a new version without copy protection. The update was free and the bug was gone.

**Ron Kolman**
**WNCO AM-FM Radio**
**1051 Parkview Circle**
**Ashland, OH 44805**

## The Word Is Out

I purchased SpellWorks from Advanced Logic Systems in February of this year, and after using it only about a dozen times, lost the program. I've been attempting for months now to get ALS to replace it—with absolutely no success.

At one point, ALS called and asked me to return the faulty disk, which I promptly did. I was assured I would receive a replacement, which has never been sent. I've written several letters, trying to determine the status of my disk, but my correspondence hasn't been acknowledged.

I've since purchased other programs that perform the spelling and mail-merge functions (without leaving AppleWorks, I might add) SpellWorks handled, but I'm still out $50 for the original purchase.

I think it's time software users sent a message to outfits like ALS. The word is out—either support and service your products or take them off the market, because nobody is going to buy them. Fortunately, there are quality magazines like *inCider* that support their readers and guide them through the minefield of "would-be" software publishers.

**Donald P. Gagnon**
**59 Sayles Hill Road**
**North Smithfield, RI 02895**

## Action with AppleWorks

Your response to Roser Salavert (Letters, July 1986, p. 8) indicated that AppleWorks could print only one label across, not three as he was hoping. But I've found that with a little outside help, AppleWorks can be made to print three labels across.

Type in the category information for all records of the data base as described in the article ("Customer Mailing Labels with AppleWorks," March 1986, p. 54), and store it in a temporary ASCII file. To do this, press open apple-P, and choose option 3 on the report menu to create a new label format. Then enter a name for the new report. When Report Format appears, don't bother to change the categories. Go on by pressing open apple-P; select the ASCII file (option 4) rather than your printer. Enter a pathname for your file and print the data base to the temporary ASCII file on disk.

Return to the main menu and create a new file for the data base. For categories per record, enter the number that's three times what you need for each label (24 categories instead of eight, for example). Type the pathname for the temporary ASCII file you've just created, then name your new data base Three.Names.

Press open apple-P to bring up the report menu. Create a new "labels" format, and name the report Labels. When Report Format appears, move the categories so that the three labels contained in the 24 categories of the first record will be arranged properly across the top of the page (eight categories per label). When you've arranged the categories with the appropriate spacing and selected your printer options, you're ready to print.

This method may sound complicated, but it's really quite simple. The added convenience of printing three labels across is well worth the few extra steps.

**Judith Classen**
**1615 La Cabra Drive**
**Albuquerque, NM 87123**

## Grading with AppleWorks

My mother, a high-school English teacher, and I have been using AppleWorks to calculate grades for the past year. Listing the students' names down, as suggested in "Making the Grade with AppleWorks" (August 1986, p. 63), rather than across isn't very convenient. When you add a few grades, the grades for one student are spread across many screens. When you try to print a listing of grades, it becomes difficult to tell what a certain student earned on any particular test.

If you put the students' names across the top of the screen and list the tests down, the spreadsheet is easier to understand after it's printed. Each student's grades appear on a single sheet, instead of spread over many. Also, if you want to make a copy of the column with the list of grades on the left side of the page, it's easier to tell how a student earned the final grade he or she received.

**Chris Gallagher**
**7627 Chatham Road**
**Medina, OH 44256**

## Wrongs of Assembly

Your June 1986 Right of Assembly may have frustrated potential assembly programmers beyond hope. Each of the listings (pp. 91 and 96) has

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some serious errors. After reading the article, I looked up the correct codes in a manual. The following corrections should be made:

*Listing 1*
0309: C9 C1

*Listing 2*
KYBD EQU $C000
0303: AD 00 C0
0308: 90 F9

*Listing 3*
KYBD EQU $C000
0303: AD 00 C0

Actually, this complaint gave me an excuse to write and tell you how much I enjoy *inCider*. I think it's the best Apple II magazine published today, and I often recommend it to new members of our user group.

**Michael Skroch**
**P.O. Box 5344**
**Madison, WI 53705**

## REMember This

REM statements in programs aren't always innocuous. I added the following two lines to the program Flexigraph (March 1986, p. 52):

```
3 REM Flexigraph
5 REM inCider 3/86, p. 52
```

Then I typed in the balance of the program and ran it. The program ran to just before the graph plotting and displayed "Undefined Statement Error in 720."

The text advises readers to type in lines 10 and 20, followed by CALL −151. Without the 3 and 5 REM statements, the machine-language display for lines 10 and 20 was the same as the author's Listing 2. With the 3 and 5 REM statements, the machine-language display was different.

I changed the REM statements in lines 3 and 5 to 1500 and 1510 REM, and the program runs perfectly. Be forewarned that REM statements may sometimes cause problems.

**R.F. Heinzerling**
**145 Stonehouse Road**
**Glen Ridge, NJ 07028**

## Doctor in the House?

We appreciate your favorable review of HouseCall (May 1986, p. 51), but want to point out that your reviewer, Cynthia Field, made an error when she implied that HouseCall wasn't prepared by a medical doctor. The program was indeed created under the direction of Dr. Richard J. Rosenbaum, M.D., who has been certified in pediatrics for ten years, and was a general practitioner for four years. Dr. Rosenbaum is head of our medical-research staff.

Other generalists and internists participated in reviewing HouseCall as it was being written. Each of the more than 400 information screens on medical topics was written specifically for HouseCall by a physician. Your reviewer also neglected to mention the interactive nature of HouseCall, which sets it apart from a typical medical-reference manual.

We understand how this error may have come about, as we had no communication with Ms. Field about HouseCall. In general, I'm certain this is the fairest way for a writer to review a product, to eliminate prejudice and advertising pressure. We feel *inCider* and its editorial staff are top-notch.

**David J. Lester, President**
**Rocky Mountain Medical Corporation**
**5680 South Syracuse Circle**
**P.O. Box 4783**
**Greenwood Village, CO 80111**

## Easy BASIC Editing

I've found a way to use the AppleWorks word processor for editing BASIC programs. Once the word processor is set up, type in the program. The lines don't have to be in order, and the spacing doesn't matter. When you're finished, type this line:

```
0 INPUT A$:GOTO 0
```

Then press open apple-P as if you were going to print the file. Select option 3, Print to a text (ASCII) file. Then get into Applesoft by typing EXEC *filename* at the prompt. The computer reads the file, and brackets start moving up the screen. After a few seconds or more, depending on the length of the program, get rid of line zero, type LIST, and your program is ready to use, just as if it had been created in Applesoft.

**Aaron Reeves**
**P.O. Box 447**
**Simla, CO 80835**

## Pascal Bugs

As a Pascal instructor, I've been following your Pascal Primer series with great interest. I enjoy finding materials other than manuals and textbooks that discuss Pascal programming.

In "Facts on Filer: Part 4" (February 1986, pp. 76–86) the author described a bug in the Pascal compiler. Let me describe a bug in the article.

The article says the declaration

```
TYPE
  TWENTYREALS = ARRAY [20..40] OF
  REAL;
```

sets up a frame of 20 cells each of type real, hence the name TWENTYREALS. If it had been [21..40], I would certainly agree with you, as subtracting 20 from the starting index and the finishing index would give the more familiar [1..20], which clearly has 20 elements. The formula I use with my students, the difference between the starting index and the finishing index plus one, shows that your declaration involves 21 cells.

Please continue your interesting column on Apple Pascal. Perhaps you'd consider writing an introductory column on Apple Fortran also.

**Sharon Maggiore**
**29 Route 299 West**
**New Paltz, NY 12561**

*Tom Swan replies that you correctly pointed out an error in the array declaration in February's Pascal Primer. The declaration should have read:*

```
TYPE
  TWENTYREALS = ARRAY [20..39] OF
  REAL;
```

*Thanks to you and your students for finding the bug.* —*eds.*

## Integrated Teaching

Your education article "A Computer For Every Student" (July 1986, p. 58) raises some interesting questions concerning the use of personal computers in our schools. One question it didn't raise, however, is why schools and educators aren't planning to combine the best hardware and software and integrate it into existing and future curricula. If this was done, the personal computer could be used as a "support tool" for learning. In your article, it appeared that schools were choosing to decide who and what is best.

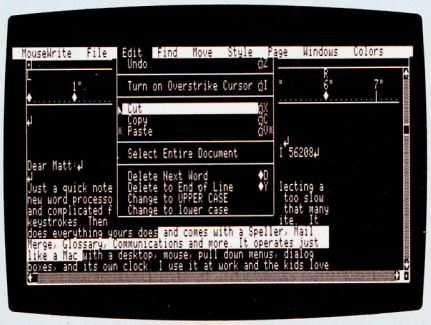
I know educators have been working hard to fit good hardware and software together into an interactive scheme. They're taking Seymour Pap-

# There Are a Lot of Great Reasons to Own MouseWrite...

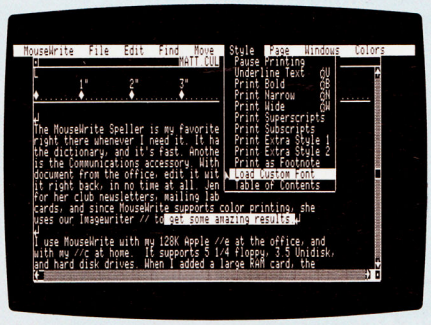
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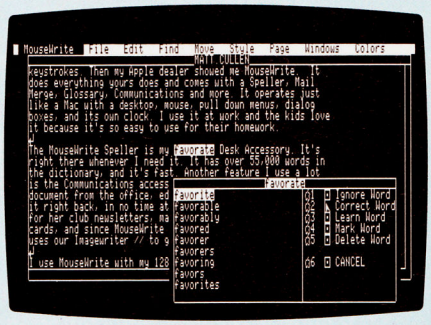
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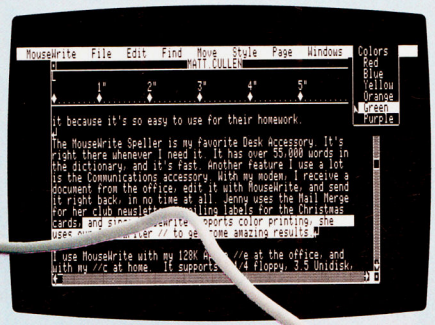

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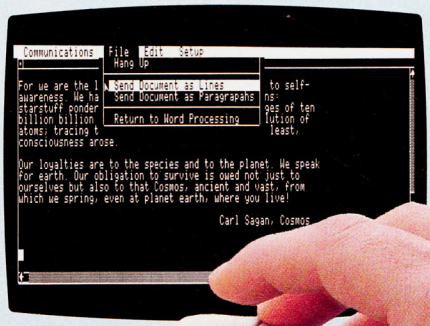

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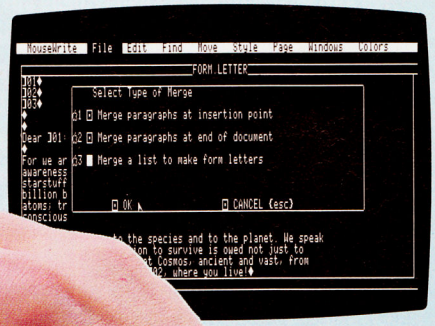

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ert's, Tom Snyder's, Broderbund's, Apple's, and Springboard's programs, along with printers, modems, graphics pads, and BASIC programming, and combining them with other rich educational materials and themselves—"humanware." This lets teachers use personal computers in a flexible fashion—computer labs, demonstrations with large and small groups, team simulations, in classrooms, and in teacher's work areas for management and recordkeeping, for example. This integration lets students and teachers have more access to the personal computer and to various areas of curriculum (art, music, math, reading, writing, and so on).

This combination of good software, hardware, and "humanware" appropriates the personal computer so that it becomes a flexible tool, not a static machine. Given the problems we face in education, the best use of the personal computer is in flexible configurations with flexible educators. We can't afford to choose sides and miss the opportunity of the "imagination machine."

**Frank Watson**
**RFD #1 Box 378**
**Underhill, VT 05489**

## Software Suggestions

I'm writing in response to your article "What's Going Wrong in Classroom Software?" I'm constantly looking for various kinds of software to use in my high-school Introduction to Data Processing course, but there's no way our school district can afford so many disks for such short-term use.

Fortunately, our regional consortium is located within our building, as is the district software library. When I borrow materials from those sources, I tell my classes they can use the software for the week or two I've checked them out. I always get the comment that "Joe" has a copy program, or that since I teach such a class I should certainly be able to copy the programs. I try to explain that if students are allowed to copy programs, it's like telling them it's okay to cheat on tests or copy homework.

You hit the nail on the head when you mentioned that budget constraints and class size compound the problem. It's difficult with today's teenagers to expect the majority of the class to "keep busy" while I'm explaining application software to a small group. Since some of your staff seem to be former teachers, they'll probably remember that students don't follow directions particularly well without help.

I hope software publishers won't curtail producing good educational programs. Perhaps some of the following suggestions can help:

1) Furnish at least one back-up copy with each program purchased, or allow one back-up copy to be made as part of the program configuration. I don't mind buying software, but I cringe whenever my "only copy" is momentarily out of my sight.

2) Publish software that has short projects—particularly in word processors, data bases, and spreadsheets—where the documentation is on a driver disk and students can save their results to another disk. This is probably one of my biggest needs.

3) Publish educational versions of some of the leading programs with simple documentation. MECC, Sunburst, and South-Western Publishing are doing this to some extent, but more needs to be done.

4) Some excellent educational games available at the elementary level need to be expanded to the high-school level, or have the age level on the packaging removed. Some elementary programs challenge some of my high-school students, but they don't relate to them if they think they're for younger children.

I wish I had a concrete answer to the problem. It's frustrating for dedicated teachers to try to meet the needs of an entire class. Teachers' salaries don't allow for extensive purchase of these kinds of materials for classroom use—even with some of the tax breaks in the past. School districts must be allowed to purchase multiple copies of inexpensive software with copying rights or some other arrangement so teachers can use them freely. Otherwise, students will miss out on many excellent computing experiences, and students are why most of us are in the classroom.

**Cindy Davies**
**Business-Education Department**
**Lamphier High School**
**Springfield, IL 62704**

## Backing Up

I completely agree with your staff's contentions in "What's Going Wrong in Classroom Software?" (August 1986, p. 56). Teachers who illegally copy educational software should be arrested as the criminals they are. But I believe the article failed to address one critical point: Teachers not only have a right, but a need to back up all their software for archival purposes.

The school computer lab is a completely different environment from the home or office. One teacher has to supervise as many as 24 students with computers and software disks. Those inquisitive, inexperienced hands, coupled with the reality of vandalism, take a terrible toll on school computer programs. Our school department spent thousands of dollars replacing crashed disks before we initiated a system of archival backups.

The disk-replacement programs many publishers offer may be fine for the home user, but schools can't wait four weeks for replacements. For software to be effective, it must be used in its proper place in the curriculum—not four weeks later. Therefore, it's critical that schools buy software they can back up and replace immediately.

I suggest these rules for software management:

1) Software should be selected by classroom teachers with regard to specific placement in the curriculum.

2) The school should buy one copy of the program to find out if it can be backed up. (We're not experts and still find programs we can't back up.)

3) Find alternative software if a program can't be copied.

4) Acquire a site license if possible.

5) Failing this, buy enough copies for all the computers in the lab.

6) Make enough copies for the lab and put the originals in a safe place.

**George Poli**
**8 Jean Drive**
**Seekonk, MA 02771**

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inCider *welcomes readers' comments regarding articles, letters, or other topics of interest. We reserve the right to edit letters for clarity, style, and space. Please address your correspondence to Letters,* inCider, *Elm Street, Peterborough, NH 03458.*

## CORRECTION

In our September 1986 issue, the price of T & W Systems' CAD program was listed incorrectly on p. 70. T & W offers an entry-level version of the package for $99.95; the production model costs $1495.

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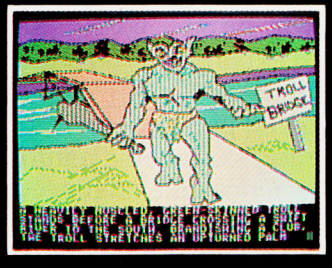
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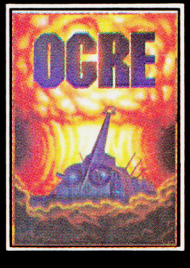

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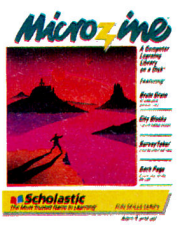

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# NEWS LINE

edited by *inCider* staff

## To Russia, with Apples

When Marilyn Forstchen first saw the global-politics simulation The Other Side (Tom Snyder Productions, 123 Mount Auburn Street, Cambridge, MA 02138, 617-876-4433), she thought taking it to the U.S.S.R. would be a great idea: "What better way to play it than with Soviet students?"

Last April, Marilyn Forstchen and her husband, Bill, did just that. They put together a group of 77 students and teachers from nine Maine high schools and junior high schools. They brought along an Apple //c and set out on a very special field trip—a ten-day tour of the Soviet Union. They spent one day at Moscow School #45 playing The Other Side.

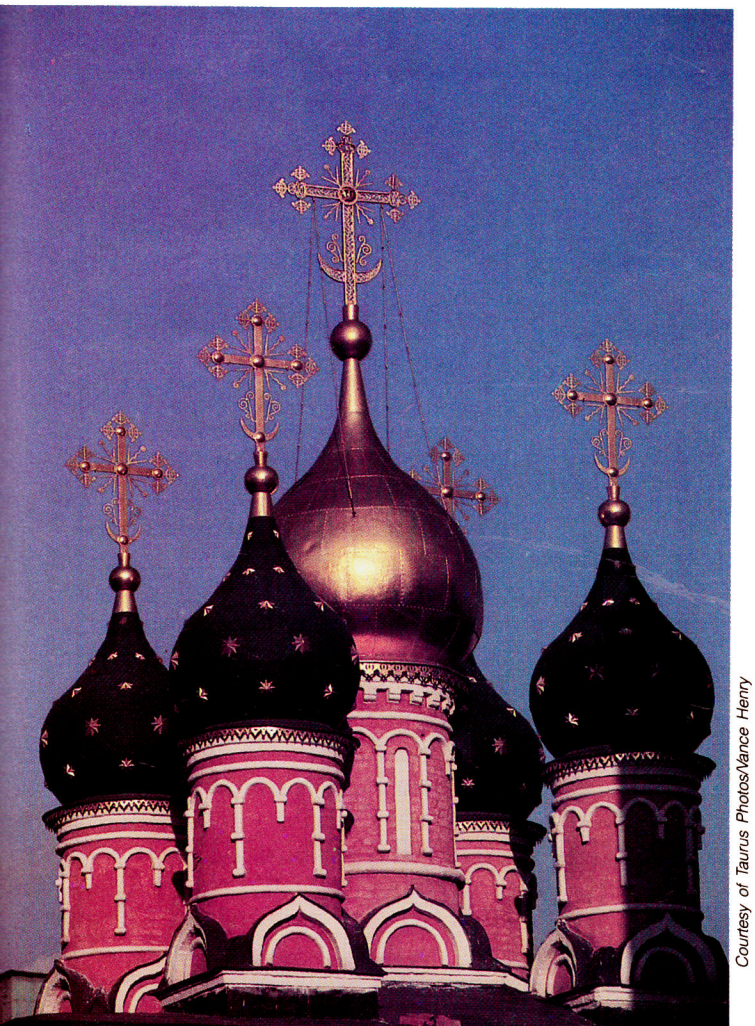
All Bill Forstchen's preconceptions about Soviet education dissolved when he arrived at the school. "[The Russian students] were all absolutely fascinated with computers," he says. They were as enthusiastic as American students are about their computers, he adds.

A team of Soviet students and a team of American students played The Other Side for a couple of hours. It was "the centerpiece of the trip," Forstchen recalls. "It was wonderful to see their children and our children working around the computer."

The Soviets are making "a genuine effort to orient students to the microcomputer generation," reports Forstchen. In addition, he says, they're producing Apple-compatible computers in the Soviet Union and Bulgaria. Forstchen notes he was able to run The Other Side on one of the Russian clones, as well as on the //c the Americans had brought over.

"The computer provided a medium for discussion," Forstchen says, with the computer as the kids' common language. They started talking about computers, then branched off into personal things—and even traded clothing. It was "a wonderful example of how our children can work together," he adds. "The Soviets truly want American kids going over there to meet their children."

When the Americans were finished, they left the Apple //c and a copy of The Other Side as gifts for their Russian friends. Forstchen's goal now is to arrange another round of The Other Side, via modem, with the students of Moscow School #45 playing against the students from Maine—just as the next session of the U.S.-Soviet summit meetings is taking place. **—L.L.**



Courtesy of Taurus Photos/Vance Henry

## Students' Winning Ideas

Finding homes for unwanted animals, teaching senior citizens how to use computers, writing a voice-synthesis program, and developing a mythology curriculum were some of the winning ideas students entered in Apple Computer Clubs International's (ACCI) Competition '86.

First-prize winners received Apple computers and an all-expense-paid trip to Washington, D.C., from June 28 through July 1. Apple co-founder Steve Wozniak presented certificates to the winners. Students were also given an opportunity to exhibit their projects, attend computer workshops, and get in a little sightseeing.

The competition was divided into four categories: Community Service, BASIC Programming, Computers in the Curriculum, and Judges' Choice. Prizes based on a project's usefulness, need for team cooperation, and overall excellence were awarded in each category at elementary, middle, and high-school levels.

"We wanted to encourage positive use of personal computers and recognize excellence in the use of personal computers," says ACCI Director John Marvelle. Entries in the Computers in the Curriculum and Community Service divisions were especially creative, Marvelle says, while entries in the BASIC Programming and Judges' Choice categories were diverse and educational.

Jim Martin, a student at William Kelley High School in Silver Bay, Minnesota, says the Washington weekend was interesting: "We got to see the monuments, had a picnic in front of the Jefferson Memorial, and rode paddleboats." Jim won the Secondary BASIC



Courtesy of Taurus Photos/L.L. Rhodes

Programming award for his voice-synthesis program. He spent six months developing it; according to most people who've heard it, he says, it sounds robotic and has a Finnish accent. Jim, who is now in tenth grade, says he'd like to be a pilot or work for a software company. First, however, he plans to enter next year's competition. His proposed entry? A speech-recognition card, so that he can talk back to his new Apple.

The Worcester County School, in Berlin, Maryland, won the Elementary Community Service Project award for helping to find homes for unwanted animals. The school established a computerized data base and used a word processor to compose letters, newsletters, and posters to reach the community.

Other entries included such projects as a "Presidential Trivia" game, an assembly-language program that teaches differential calculus, a maze game, a student-organized effort to put vocational-rehabilitation issues on the local ballot, and the development of separate curricula on bears, art, and ancient Greece and Rome.

Runners-up in the contest were awarded Apple computers and ACCI merchandise packets. Fifty-one semifinalists were also named; they received copies of AppleWorks and Apple Logo 2, and the merchandise packages.

Wozniak, who talked about the use of Apple computers, and Tom Snyder, president of Tom Snyder Productions, a software-development firm, headed the two main workshops.

Marvelle describes the long weekend as a "smashing success." He adds, "Everyone was treated like royalty, and I received nothing but positive comments."

ACCI supports more than 10,000 clubs for students in kindergarten through high school. The groups receive educational information and project ideas from Apple and are under the direction of a volunteer adviser. For more information about forming an Apple Computer Club or about Competition '87, contact John Marvelle, Director of Apple Computer Clubs International, 175 Middlesex Turnpike, Bedford, MA 01730, (800) 343-1425.

**—B.J.**

## New Developments in Home Control

The home-control and automation industry is expecting new products and the adoption of industry-wide standards to help "futurize" the average American home.

Mitsubishi announced in early July that CyberLynx (4828 Sterling Drive, Boulder, CO 80301, 303-444-7733) will assist in its development of an advanced home-automation system, which Mitsubishi says it hopes to unveil at January's National Home Builder's Show in Dallas, Texas. The Cyprus, California-based Mitsubishi is currently marketing home-automation systems in Japan and says it intends to use CyberLynx's technological ability to help design a system that will be better suited for the United States market. Another company is expected to be named to participate in the effort, says Neal Tenhulzen, manager of Home Automation Systems for Mitsubishi.

According to Mitsubishi, the systems will be able to integrate home control, telecommunications, security, entertainment, and energy management. A complete package, with features such as intercoms, video routing, and remote access by telephone, will cost about $5000 to $6000, says Tenhulzen. The system will be designed for installation in existing homes, although new homes could benefit if a sufficient number of telephone and video jacks are installed during construction. Tenhulzen anticipates that the system will have an RS-232 port and will be able to interface to most home computers.

CyberLynx will continue to market its current home-control system, SmartHome, which will serve the lower end of the market, says company official John Antonchick. (See "Let Apple Take Control," p. 92 in this issue, for a discussion of SmartHome and six other systems.)

To better develop the home-automation market, the Electronic Industries Associates (EIA) has formed three committees to recommend standard communication methods for connecting home-control devices. One committee is focusing on infrared technology, used in single-room communication, another on wired buses, which are usually installed in new houses, and the third on power-line buses, used to communicate through a



Courtesy of Taurus Photos/ Lenore Weber

home's existing electrical and telephone wiring. Most major U.S. electronics and home-appliance manufacturers and most Japanese electronics firms are involved in the committees, Tenhulzen reports.

According to Jack Frances, General Electric's general manager of product engineering for the home-control products division, the industry is pushing for a standard now because of increasing market pressure. General Electric began the move toward standardization about one and a half years ago when it proposed a standard protocol for use in electrical wiring

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# NEWS LINE

and other media used to connect electronic devices.

Although the standards committees have yet to make any official recommendations, Tenhulzen notes that the protocol Mitsubishi will use is supported by several individual companies and that his firm won't wait for the committees' reports: "We're going to take the ball and run with it." **—B.J.**

## Spanning the Globe

You may think of *National Geographic* as a colorful, slightly dry fixture in magazine racks in doctors' offices, but the Washington, D.C.-based National Geographic Society has chartered an expedition into the Apple computing world. Students should be using *National Geographic* software soon, and a three-way partnership among the society, Apple Computer, and the whiz-bang technicians at Lucasfilm promises to accelerate the arrival of learning via videodisc and compact disc.

The *Geographic* has produced educational films and filmstrips and the children's magazine *World* for many years. Now, David Beacom, copy editor for educational media, says, "We've embarked on production of computer software that'll be coming out in the spring of [1987 and will be] more dependable and visual than existing educational software."

By "dependable," Beacom explains, "the content will be better tied to curriculum material and be carefully researched." As for visuals, the Society hopes hi-res graphics will catch teachers' eyes in the crowded school software market: "We're not trying to do in software what can better be done in print, and vice versa." Those graphics, by the way, will (at least initially) appear on the II Plus, //e, and //c; Beacom doesn't rule out the possibility of IIGS programs, but "probably not in this [product] line."

Past that, he adds, "we're really just beginning" on the joint venture with Apple and Lucasfilm, designed to explore the use of optical storage technologies in education. Apple Chairman John Sculley has described the collaboration as "a unique opportunity to learn how combined technologies and media can enhance the educational process."

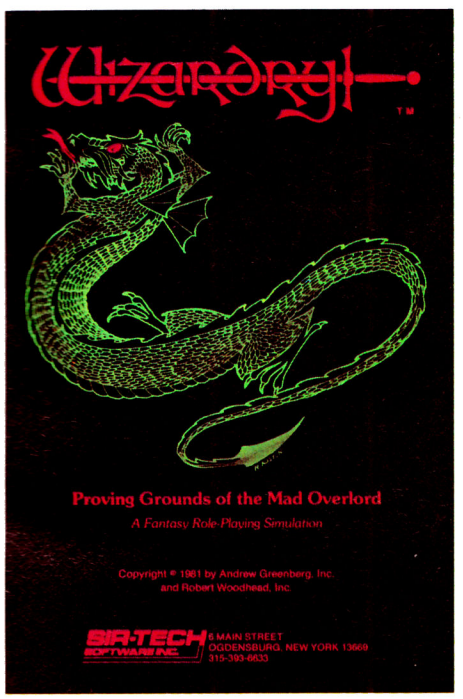
"We're all interested in seeing what each institution can contribute [to the partnership]," Beacom says. "Obviously, each has different strengths—Lucasfilm would theoretically provide the production experience, Apple the computing expertise, and we would provide visual and editorial guidance—but so far the way it's going is that everyone has had something to contribute in every aspect. We've been lucky in that regard."

The Society is in the same boat as other publishers in terms of waiting for computer-video mergers to become practical and affordable for a mass market. "Obviously every computer manufacturer is working on that; they have these meetings and talk in hushed tones [about future products]," Beacom says. "From our standpoint, the sooner the better; since we're an educational publisher, our interest is getting as much as possible that's visually arresting into the classroom." **—E.G.**

*We're always looking for news of the Apple world. If you're making news, send your press releases and photographs to News Line, inCider, Elm Street, Peterborough, NH 03458.*

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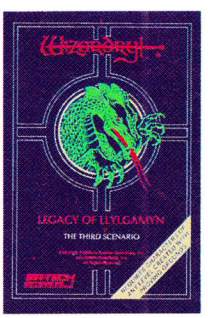
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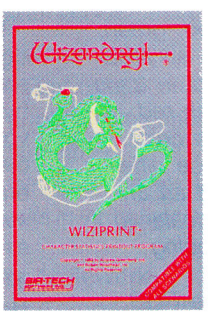
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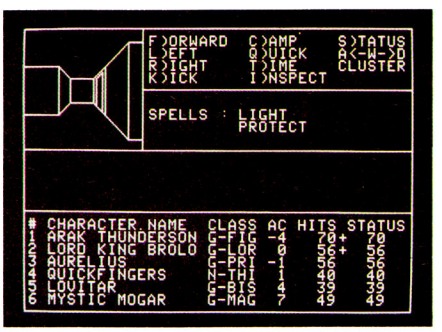



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# APPLE CLINIC

by Paul Statt, *inCider* staff

*Apple Clinic is a forum for discussing Apple II hardware, software, and related subjects. If you have questions or answers, or want to make a statement, write to Apple Clinic,* inCider, *Elm Street, Peterborough, NH 03458.*

## ProDOS and AppleWorks

I have a group of Bank Street Writer files I'd like to convert to AppleWorks files. I've been able to change them from DOS 3.3 to ProDOS, but the AppleWorks system won't accept them. Is it because DOS 3.3 files are binary and ProDOS' are system files? What's the solution?

**Jim Wright**
**Murietta, CA**

*AppleWorks has its own unique operating system—it's not exactly ProDOS, but it's close. If you convert DOS 3.3 to ProDOS, you're halfway to your goal. You simply have to use the ProDOS files as data, and "Add Files to the Desktop" from the AppleWorks Main Menu. Go with the "Make a New File for the Word Processor" and "From a Text (ASCII) File" option. You'll need to know the file's complete ProDOS pathname. Put the file on your desktop and save it to disk—it's now in AppleWorks format.*

## Noise Pollution

I recently purchased an Apple //e system and seem to be having trouble with my DuoDisk. Whenever it starts formatting a disk it makes a loud noise—much like my truck when I try to shift gears without using the clutch. It does so only in the formatting stage and doesn't return any error messages; the disks are indeed formatted afterward. Should I get this repaired while the system is under warranty, or is this noise characteristic of the DuoDisk?

**Dennis Davidson**
**Hearne, TX**

*I like the Apple UniDisk 3.5 because it holds 800K and it's quiet. DuoDisks make a lot of noise when formatting—for that matter, they scream when simply saving data or converting DOS to ProDOS. I don't know the source of the racket—maybe Apple made formatting raucous to remind us that it's a brutal process that destroys everything in its path.*

## Color Questions and Memory

I'm an electronics engineer, but I'm still confused: What will an RGB monitor do for my Apple? Will I simply see the same colors more sharply, with less color smearing, or is there more to it? With a composite video monitor, lines in my graphs change colors or break into rainbows at the corners. Will RGB help?

**R. Schneider**
**Sierra Vista, CA**

Why is it that Apple hues aren't all that hot compared to, say, the IBM PC's or Commodore Amiga's? Is it my Apple Color Monitor 100/Applied Engineering RGB Card combination? I find in particular that Apple red seems to come out more a washed-out brown than the true bright red seen on other systems.

**D.P. March**
**Honolulu, HI**

*Wise readers, you have clear heads and clear vision, too. Apple RGB colors are bad, and red is the worst. The difference between RGB and composite color is that the former is sent by three separate signals to your monitor, while the latter is a single stream of information about all colors. Apple II's send only that single composite stream—that's why you need an RGB card to separate red, green, and blue if you want to use an RGB monitor. The color loses a lot in translation—that explains the weak red.*

*You can see differences in color quality, though, when you use different RGB cards—you'd need an understanding, patient Apple dealer to let you do that kind of shopping around.*

*But there's hope for Apple RGB. The new Apple IIGS has built-in RGB output—*analog *RGB, which offers true colors and a greater range of hues.*

## Wrong Reference

I'm currently writing a program for a school that uses 80-column firmware on its Apple //e's. I recently purchased the *Apple //e Reference Manual*, which includes the system-Monitor and 80-column-firmware listings. I had no trouble finding the locations of the subroutines I needed in the manual listings, but when I disassembled the 80-column firmware ($C000–$CFFF) on my machine, I discovered that it was totally different from those listings.

I know that the enhanced //e contains new video ROM's: Does this include the 80-column firmware? The dealer from whom I bought the manual told me this was the only Apple publication with the ROM listings and had no idea how I could get updated ones.

**J.R. Bork**
**Mechanicsburg, PA**

*Does your dealer still have an Apple I for sale? He needs updating as badly as your manual. Apple's 80-column firmware is one major difference between the old and new Monitors. You can find the enhanced video firmware listed in the* Apple //c Reference Manual: Volume 2 *(Apple part #A2L4030) or the* Apple //c Technical Reference Manual *(#030-1238-A). The latter is published by Addison-Wesley Publishing Company, 6 Jacob Way, Reading, MA 01867, (617) 944-3700. It's available in bookstores or can be ordered from the publisher if not in stock.*

## Music in His Soul

I want to generate electronic music signals with my Apple II Plus. Is there some address to which I could write bytes that would directly affect the voltage on a pair of contacts? Also, is there a company that makes peripheral cards that will let my computer send and receive MIDI (Musical Instrument Digital Interface) signals?

**Jim Worden**
**Naples, FL**

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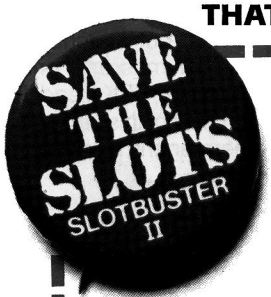
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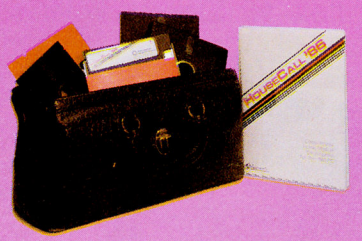
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***Table.*** *Annunciator memory locations (reproduced with permission of Apple Computer from the* Apple //e Technical Reference Manual, *Addison-Wesley, Reading, MA, 1985, p. 40).*

| Annunciator | | | Address | | |
|---|---|---|---|---|---|
| **Number** | **Pin** | **State** | **Decimal** | | **Hex** |
| 0 | 15 | off | 49240 | – 16296 | $C058 |
| | | on | 49241 | – 16295 | $C059 |
| 1 | 14 | off | 49242 | – 16294 | $C05A |
| | | on | 49243 | – 16293 | $C05B |
| 2 | 13 | off | 49244 | – 16292 | $C05C |
| | | on | 49245 | – 16291 | $C05D |
| 3 | 12 | off | 49246 | – 16290 | $C05E |
| | | on | 49247 | – 16289 | $C05F |

Pin numbers listed are for the 16-pin IC connector on the circuit board.

*Each annunciator is controlled by a* soft switch. *If the soft switch is off, the voltage at the corresponding pin on the game connector is very nearly zero; turn the switch on and it jumps to almost 5 volts. I'm no musician, but I figure that would give you a range of only four notes—great if you're composing for the Ramones, but your tastes may be more demanding.*

*Roland Corporation (7200 Dominion Circle, Los Angeles, CA 90040-3647, 213-685-5141) sells MIDI boards for Apples; it also publishes an electronic-music magazine that may help.* Musician: Player and Listener *(Amordian Press, P.O. Box 701, 31 Commercial Street, Gloucester, MA 01930), a slick rag for serious amateurs, has more monthly MIDI madness. (Also be sure to check out* inCider's *review of the Roland MIDI Users Sequencer/Editor interface and software in this issue, p. 42.)*

## Get Smart

Is there any way to make a "smart" ProDOS catalog—that is, one that lets you type *catalog* in 40 columns, but switches automatically to 80 columns and prints a full catalog? I know PEEKs and POKEs can accomplish this, but do you know of a permanent addition?

**Jeff Crown**
**Wichita, KS**

When I type in a program, I usually prefer to add or change some features. This practice is complicated when I use ProDOS, because I can't find a method or ProDOS routine for renumbering. Can it be done?

**SSG Rick Laws**
**Fort Ord, CA**

*The second thing beginning ProDOS programmers should do—after subscribing to* inCider*—is to call or write Beagle Bros (3990 Old Town Avenue, Suite 102C, San Diego, CA 92110, 619-296-6400), get the latest catalog, and buy everything you can afford. The third step is to call the former Beagle Brothers at The Software Touch (9842 Hilbert Street, Suite 192, San Diego, CA 92131, 619-549-3091).*

*For automatic 80-column catalogs, try Big U, the ProDOS Utility Disk by Randy Brandt of Beagle Bros ($34.95). Its nifty Key-Cat 80 routine turns Control-Reset into an instant 80-column command. For BASIC renumbering and a whole lot more, get ahold of Program Writer (see Editors' Choice, June 1986, p. 120), $49.95 from The Software Touch.*

## It Couldn't Be Done

I hear that Apple Computer is coming out with a 16-bit Apple II with a megabyte of RAM. If I get a RamWorks II with 1 megabyte and a 16-bit card, can I make my //e compatible with the IIGS? Would I need RamFactor with 1 megabyte and 16 bits? What about other cards? Should I replace a few chips in the old //e? Or is there no way to use software written for the IIGS on my //e?

**Andrew Quan**
**Hacienda Heights, CA**

*You can—you can buy Apple's IIGS retrofit kit for your //e. At press time, Apple wouldn't tell me how much it costs, but it'll be cheaper than buying a new IIGS. Adding a 65816 microprocessor and extra RAM won't do—the 65816 and 6502 aren't "pin-compatible," which briefly means that you can't plug one microprocessor into*

the other's socket. The IIGS Monitor is new, and most IIGS software makes great use of the machine's special firmware routines.

But nothing is impossible—the folks at Apple who created the IIGS built a tabletop version of the new machine from old Apple II parts, new chips, and the trash from Steve Wozniak's garage. You can build one, too, if you can find the chips. Keep in touch.

## BBS Update

A number of readers have told us they don't know how to log on to inCider's 24-hour, cost-free bulletin-board system (603-924-9801). It's easy.

Dial the number. Wait for your modem and communications software to connect; the board works at 300 or 1200 baud. If you don't see a welcome message right away, hit the return key a couple of times or try Control-C (this is one time when banging on the keyboard may help). You can write in 40 or 80 columns, capitals or lowercase. The Apple delete key also works.

A few questions follow. The first is "What's your name?" Start with your first name; don't bother with an alias (we'll change it). When the BBS asks, "Where are you calling from?" try to get as much of your city and state as you can into 20 characters. Your phone number has to be in the form 111-111-1111.

Next, read this information and okay it—you get several chances. If you want your own password, type P when prompted.

Your first BBS message will be directed to me, the sysop, or system operator. Include your name, age, and phone number (your sex as well, if your name isn't clearly male or female), and a description of your computer and your background. One reason for writing this first message is to convince me to give you a high access level, so think about what you write. Your access level gives you the power to up- and download programs and send and receive messages.

To end your message, write done on a separate line (no quotation marks). Next up is the edit menu. If the message is fine, type O for "okay," and the message is sent. If you need to edit it, type a question mark.

Let me emphasize these two general rules: If you need help, type a question mark, and if you've finished writing, type done. It's simple. We hope to hear from you soon.

## AppleWorks Wide

I'm using AppleWorks on an Apple //c. I have a data base of about 1300 names, addresses, and so on, and want to print labels in side-by-side columns, two or three wide. Can this be done?

**Richard Nemeth**
**Greenwich, CT**

Beagle Bros can do it. MacroWorks (see Editors' Choice, August 1986, p. 112) offers more than macros: It features a Multi-Columnizer that prints AppleWorks word-processing files in two or three columns. When you create a report, print in label format to


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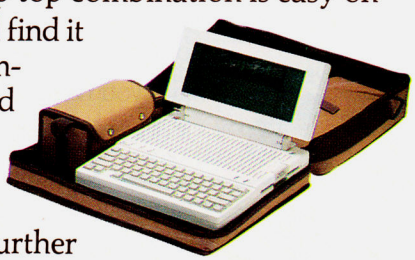
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*the clipboard, then hurry into a new word-processing document. Copy the data from the clipboard into your word-processor file and use MacroWorks' Multi-Columnizer to print two or three columns.*

*If that seems like too much work, why not write a macro with MacroWorks that does it all in one keystroke?*

*Also see "Action with AppleWorks" in this issue's Letters column, p. 10, for an alternate method submitted by one of our readers.*

## Disk, Disk

I've been having trouble with my copy-protected disks—either they won't load or they self-destruct. I'm told the problem is my DuoDisk drive but I've had my DuoDisk serviced three times and the problem still exists.

Joseph Porrini
Trenton, NJ

I've recently experienced problems with my copy-protected software and DuoDisk. The manufacturer wrote me that Apple had discovered faulty components in the DuoDisk. Can you explain the problem, how to detect it, and what one might be able to do at home to correct it?

Terry L. Fletcher
Grants, NM

*Jeff Belding, Apple's disk-drive-product manager, tells us that all DuoDisks shipped after October 29, 1984, have been fixed, but that it's possible you have older ones. If so, you can replace them free of charge.*

*The problem is the timing of the file formatter. In older Apple disk drives, the tolerances aren't as tight as they are in the new DuoDisk, which requires that everything be timed perfectly. Older DOS 3.3 copy-protected software and even some early ProDOS programs don't keep time well enough to meet the DuoDisk's exacting standards.*

*If you bought your DuoDisk in 1984 and it's eating copy-protected disks, you probably have a faulty DuoDisk. If you can't remember when you bought your DuoDisk, or you bought it secondhand, you may have a defective DuoDisk: Does it run newer ProDOS software easily, but choke on older DOS 3.3? Either way, you can't do a thing about it—take the offending DuoDisk to an authorized Apple dealer and demand your rights.*■

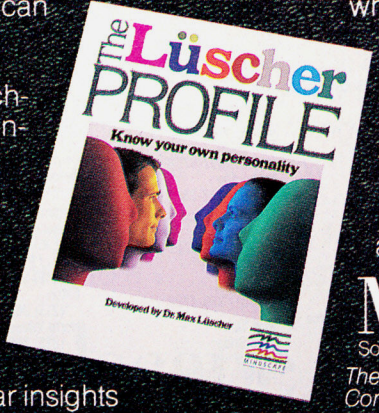
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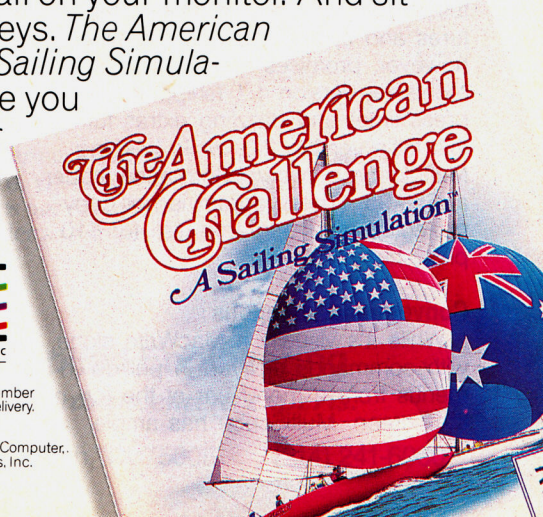
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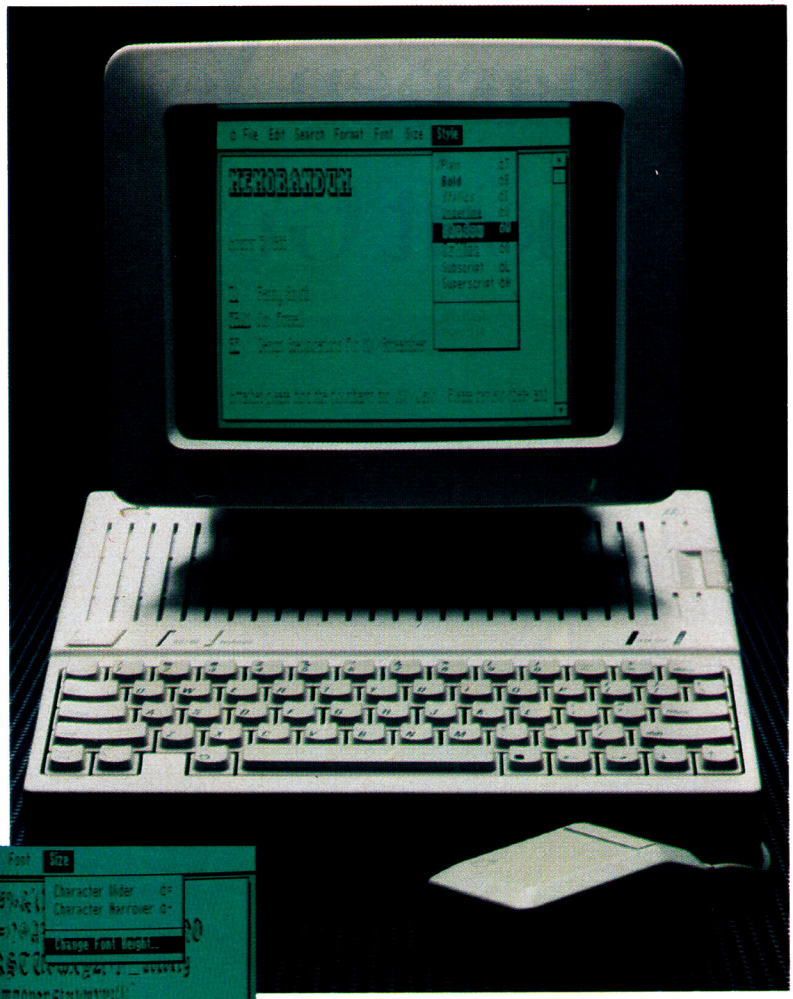
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# REVIEWS

**MultiScribe; ProModem 1200A and AppleMate; Tobacco and Fitness; Fleet System 3; AutoWorks; MIDI Users Sequencer/Editor; The Handlers; B-Sider**



## Write Like MacWrite

### MULTISCRIBE

***Styleware***, 6405 Hillcroft, Suite 201, Houston, TX 77081

Word processor; 128K Apple //e or //c, ProDOS
$59.95

| | |
|---|---|
| Ease of learning | ■■■■ |
| Ease of use | ■■■■ |
| Documentation | ■■■ |
| Support | ■■■■ |
| Overall | ■■■ |

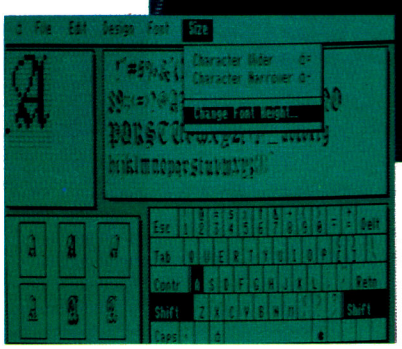
You don't need mousetext to have a good mouse-driven word processor. Styleware's innovative MultiScribe blends full-featured editing power with a Macintosh-like interface and the creative freedom of double hi-res graphics, bringing the fun of MacWrite to enhanced and unenhanced Apples alike. You may be content with your old word processor, but you can do things with MultiScribe you simply can't consider with any other program.

Its pixel-mapped graphics (as opposed to the mousetext characters competing products use) make MultiScribe as versatile on screen as it is in dot-matrix printouts. Pull-down menus provide a host of type fonts, styles, and sizes—from bold to shadow, Chaucer to Shakespeare—at the click of your mouse or the press of a key. Ten fonts come with MultiScribe; a supplied FontEditor program lets you stretch your creativity by designing your own.

MultiScribe isn't perfect; some functions are on the slow side, and the early production version (1.02) I tested had its share of omitted features and system hiccups. Styleware, however, promises needed improvements for version 1.1 (shipping at press time) and dazzling extras for this fall's version 2.0, while keeping MultiScribe a price/performance leader at $59.95. (The program is not copy-protected, and upgrades sell for $10 plus shipping.)

#### Conventional Weapons

While it's visually a MacWrite clone, with commands arrayed in pull-down menus from a menu bar at the top of the screen, MultiScribe has ample



functionality for traditional word processing. Cut, copy, and paste commands handle normal editing; a disk-based clipboard lets you copy and move text between documents easily.

Inset rulers allow complete flexibility in setting margins, tabs, spacing, and justification. (In an exception to MultiScribe's "what you see is what you get" policy, right, full, and center justification don't appear on screen. Styleware claims this is because of the slow graphics speeds of the //e and //c.)

MultiScribe currently cannot generate a table of contents or index, nor can it handle footnoting. Also missing is the ability to print headers and footers, or to undelete words or sentences when the clipboard isn't used (as with AppleWorks, which can restore text moved to the clipboard, but not text erased by the delete command).

Editing is RAM-based with 30K (approximately 9–12 pages) reserved for your document. Longer documents can be created by chaining separate files with a Print Merge command.

MultiScribe's impressive printed output supports a wide variety of dot-matrix printers (such as Epson, Okidata, and C. Itoh as well as the ImageWriter) and interface cards. When you select Print from the File menu, a dialog box opens to let you specify high, standard, draft, or text quality. Although they require the longest time to print, the high and standard modes produce crisp, dark characters. The dialog box also handles page numbering, the number of copies desired, and the range of pages to print. A print job in progress can be cancelled at any time.

If you're moving up from another word processor, MultiScribe can read and write ASCII text files. This feature lets you customize your existing documents with new fonts and styles, or transfer MultiScribe files to AppleWorks or your favorite spelling checker.

#### A Mouse of a Different Color

A common criticism of mouse software is that the mouse gets in the way by taking your fingers from the

**inCider's Ratings**

| | |
|---|---|
| Excellent | ■■■■ |
| Above average | ■■■ |
| Good enough | ■■ |
| Not up to standards | ■ |
| The empty set | □ |

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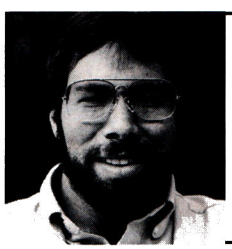


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*Steve Wozniak, the creator of Apple Computer*

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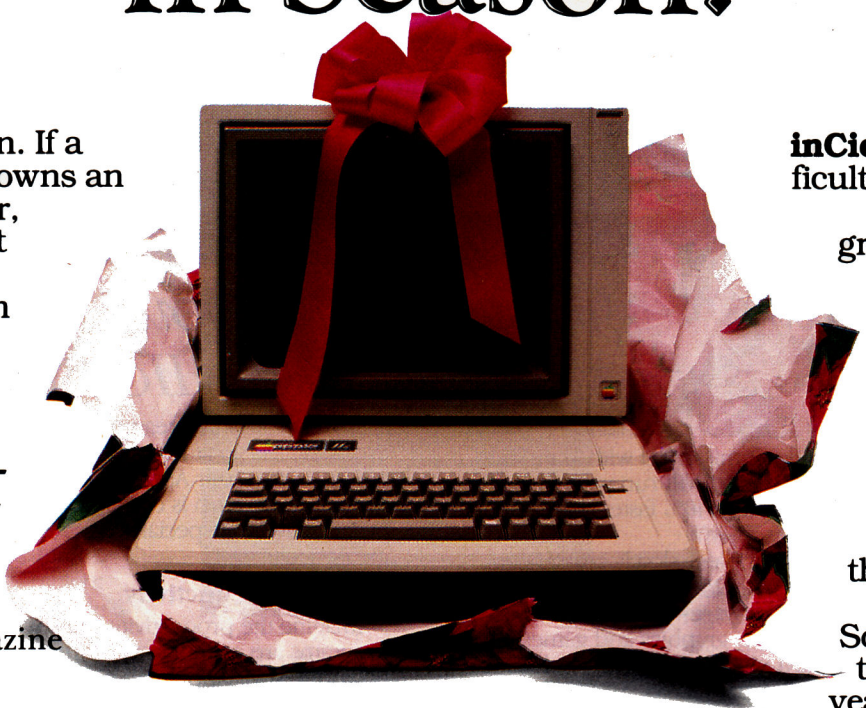
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keyboard. MultiScribe answers this complaint with ease and power. While programs like MacWrite define only a few keyboard commands, MultiScribe provides comprehensive equivalents of nearly all its pull-down menu options. You can use open-apple key combinations to access nearly all menu options directly.

In fact, MultiScribe's could be the best of all interfaces. For the novice or infrequent user, the mouse and menus guide you through the system. Once you gain familiarity and experience with the program, keyboard commands let you leave the mouse behind.

### The Joy of Fonts

Your own creativity comes into play through the FontEditor program. Fonts can be anything you can imagine—from English script or foreign languages to series of small pictures or logos.

Each font is measured in points, each point equaling one pixel, or 1/72 of an inch. Not coincidentally, most matrix printers are designed to print 1/72-inch dots, yielding a one-to-one mapping of display pixels to printout dots. The maximum size of each character in a font is 28 by 28 points.

Designing your own fonts is tedious and time-consuming; it took me three hours to create a complete 12-point Chicago font. The results, however, are well worth the effort. Once your font is finished, the Style and Size menus can embellish it in amazing ways—bolding, italicizing, outlining, or underlining any character you wish. You can also magnify a character up to three times normal size for use in headlines, banners, or presentation graphics.

### The Dark Side

MultiScribe won't win any speed-typing contests. It maintains an admirable pace while editing new text, but begins to tread water when inserting text in the middle of an existing paragraph. What you type may take a moment or two to appear as the graphics page is reformatted. Similarly, while the pull-down menus unroll and recoil instantly, the same can't be said for scrolling a page up or down or jumping to the beginning or end of a long file. At those times you'll have plenty of time to rest your fingers.

All things considered, these are tolerable slowdowns for me and are not attributable to MultiScribe, but rather the double hi-res graphics on the Apple itself. More serious were my test version's signs of adolescence—notably, bugs when searching for or replacing text.

In any given document, some strings were found and some weren't. Worse yet were the unwanted changes when text was found and highlighted. Once the desired string was automatically duplicated, and on another occasion the entire system hung, requiring a reboot.

I also experienced problems when scrolling to the bottom of a large (30K) document. Symptoms included mangled graphics around the edge of the editing window and a couple of system crashes.

When I called Styleware with these problems, I was impressed with its attention and support. The company was aware of the defects and immediately offered to send me a replacement disk, saying that the bugs were fixed in version 1.1 and that it was company policy to replace all defective copies with the most recent version.

Styleware also deserves compliments for its well-written 260-page manual. Emulating the MacWrite documentation, the book progresses from an introductory "Learning MultiScribe" tutorial to task-oriented "Using MultiScribe" exercises, with specifics for both mouse and keyboard commands. Finally, a "MultiScribe Reference" lists each menu and command in the program.

### Coming Attractions

Besides problem fixes, MultiScribe 1.1 includes a more Mac-like scroll bar, a List Volumes command that makes MultiScribe more of a disk organizer, and more flexibility in handling fonts. Extra font disks are $19.95 each, including ten fonts and a program similar to the Macintosh FontMover to aid in installing and shuffling character sets.

Version 2.0, planned for the fall of 1986, is slated to include a near-letter-quality mode that works with current dot-matrix printers, and a limited form of macro functionality. Still more

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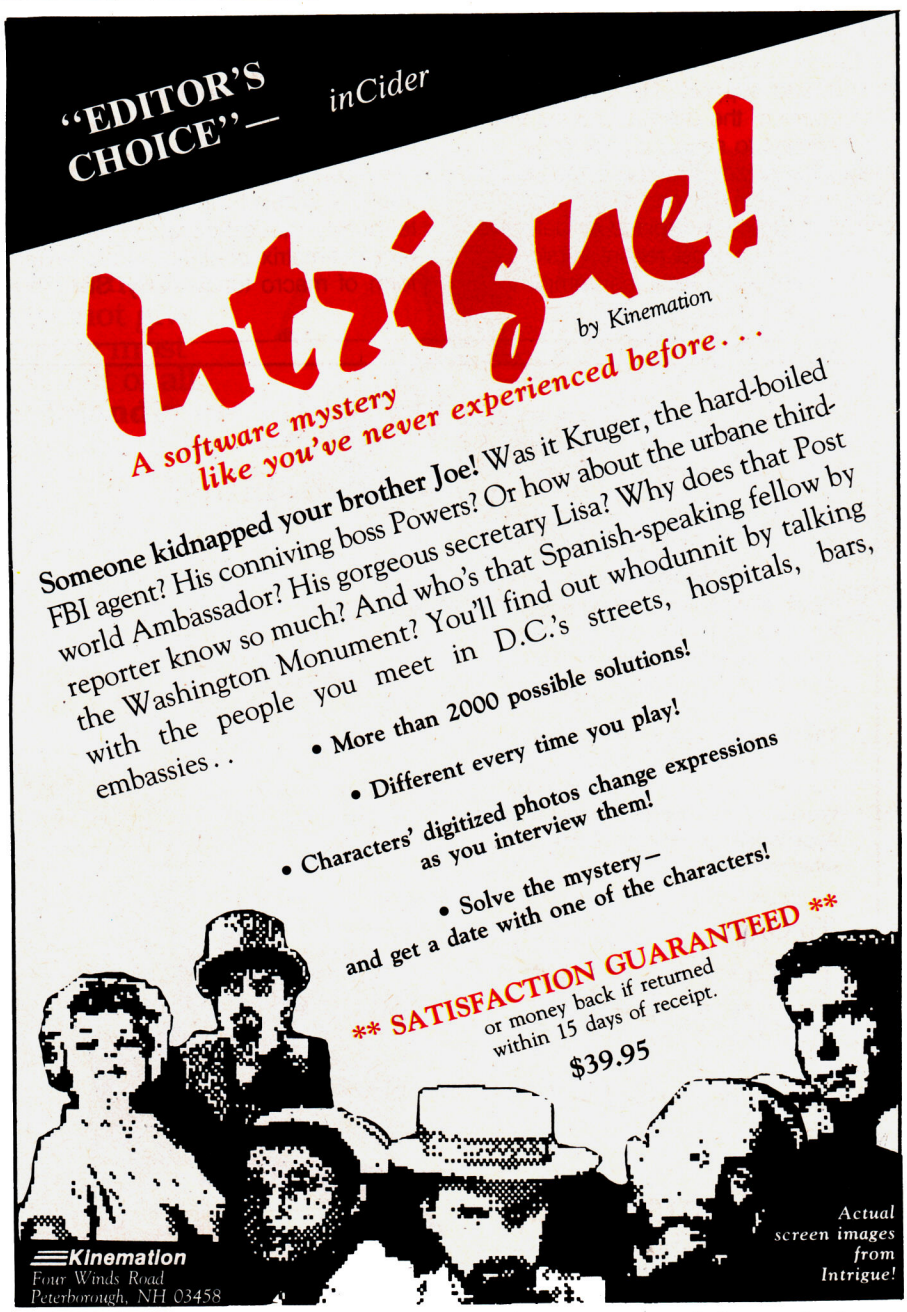
Circle 288 on Reader Service Card.

appealing are several accessory programs, priced at $29.95 each, that will work with all MultiScribe versions. One is a set of Mac-style desk accessories, complete with calculator, calendar, clock, puzzle, and control panel. Another is a spelling checker.

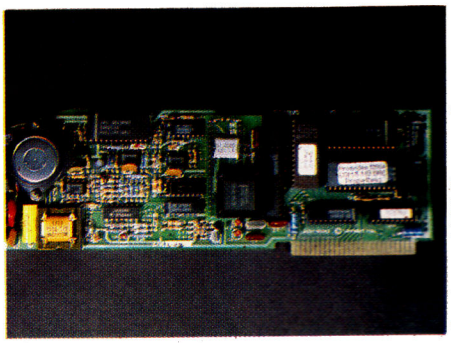
The most desirable add-on should be one called Picture Manager, which will let MultiScribe realize its full potential as a creative-writing tool—the ability to merge graphics and text in true Macintosh fashion, inserting MousePaint or Dazzle Draw sketches and diagrams into MultiScribe documents. Even my early copy of MultiScribe impressed me enough to earn three stars; with bugs ironed out and such impressive enhancements due, this would be a four-star review for sure.

MultiScribe is not just another word processor. As well as any product to date, it taps the full potential of Apple graphics and opens a new door to creative writing. ■

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Courtesy of Phil Rounseville.

# Modem Cards: Two of a Kind

## PROMODEM 1200A

***Prometheus Products***, 4545 Cushing Parkway, Fremont, CA 94538

1200/300-baud intelligent-modem card; Apple II, II Plus, //e
$295

## APPLEMATE

***Cermetek Microelectronics***, 308 Borregas Avenue, Sunnyvale, CA 94088

1200/300-baud intelligent-modem card; Apple II, II Plus, //e
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| | ProModem | AppleMate |
|---|---|---|
| Ease of setup | ■■■■ | ■■■■ |
| Ease of use | ■■■ | ■■■ |
| Documentation | ■■ | ■■■ |
| Support | ■■■ | ■■■ |
| Overall | ■■■ | ■■■ |

Telecommunications, the power to link your Apple to a mainframe data base or the micro next door, is getting cheaper and easier all the time. Prometheus' ProModem and Cermetek's AppleMate are two moderately priced cards that emulate the familiar Apple Super Serial Card and Hayes Smartmodem, combining plug-and-play convenience with 1200-baud communications. Each has strong and weak points, but overall both are well-built, well-documented choices for on-line access.

I tested the modems in slot 2 of my enhanced //e, but they should work equally well in older Apples. Both functioned smoothly at 300 and 1200 baud, whether talking to local bulletin boards or the University of Massachusetts' VAX system.

### ProModem 1200A

Many modems come bundled with communications software, but the ProModem 1200A has a terminal pro-

gram right on the board. My test model's built-in firmware was a no-frills package that nevertheless made it easy to change parameters such as baud rates and parity settings, upload and download ASCII files, or interact with DOS 3.3. In addition, the 1200A comes with a ProDOS disk-based program called ProCom-A, which combines communications features such as auto-dialing, log-on macros, and XModem transfers with a word processor that includes block moves and justification.

While the ProModem impressed me favorably, I am skeptical as to just how compatible it is with the Smartmodem and Super Serial Card (SSC). I had no trouble running the modem with its supplied software, but had no luck interfacing it with two specialized terminal programs, Talking Transend from Computer Aids Corporation (Fort Wayne, Indiana) and ProTerm from Micro Talk (Louisville, Kentucky).

Prometheus says the 1200A emulates a Super Serial Card driving a Hayes modem, and should work with any software that doesn't directly address the SSC hardware. According to Micro Talk, ProTerm fits that description, yet I couldn't make it work with the ProModem, no matter how I positioned the latter's jumper pins. On the other hand, let me stress that the ProModem worked very well with its own software.

Those jumper pins form my other ProModem complaint: two blocks, programmed by moving the tiny shorting pins to various positions, change settings such as your choice of SSC emulation versus the internal firmware. I wasn't pleased by this arrangement, and much prefer switches to do this job. Switches are much more easily changed and give a clearer visual indication of system settings; they make setting changes a matter of flipping the switches and doing a warm boot instead of removing the modem card, reinserting it, and starting over.

### AppleMate

While the ProModem and ProCom-A are an attractive combination, I was also very impressed by Cermetek's AppleMate 1200. Although this giant circuit card has bare-bones firmware for Super Serial Card or Hayes commands, it doesn't come with full-powered disk software; I don't consider this a drawback, because there are many fine communications programs already on the market. The AppleMate also has an extensive reference manual, geared for less-experienced computer users.

Like the ProModem, the AppleMate responds favorably to all Hayes Smartmodem commands, mimicking the most popular modem in the computer industry. The AppleMate can be operated either directly from the keyboard or through almost any terminal program; I liked this simplicity, because it let me get up and running without first having to configure my software.

I also found the AppleMate a snap to configure via its top-mounted DIP switches, designed to emulate many of the Apple Super Serial Card functions. The AppleMate powers up with command recognition and echo enabled, auto-answer disabled, and status messages enabled in English. I prefer my modems to awaken with auto-answer enabled; it was an easy change with the AppleMate.

As with the ProModem, I got favorable results when trying the AppleMate with all baud settings and data formats for uploads and downloads between my //e and the University VAX. All in all, I was highly pleased with the AppleMate, though disenchanted with the arrangement for adjusting the speaker volume—you must insert a small screwdriver into the card, a risky and downright silly proposition. (Why couldn't they put a thumbwheel control on the board?) But this is just a small imperfection, because the AppleMate is a near-perfect modem for the money.

### Pick a Winner

From the control point of view, the ultimate modem card might be a hybrid, with the ProModem's easily turned, front-mounted speaker knob and the AppleMate's top-mounted switch bank. But from a functional standpoint, both modems proved snappy on-line performers, well worth their price tags. ■

***Joseph J. Lazzaro***
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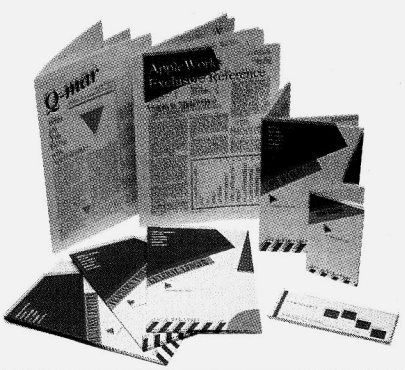
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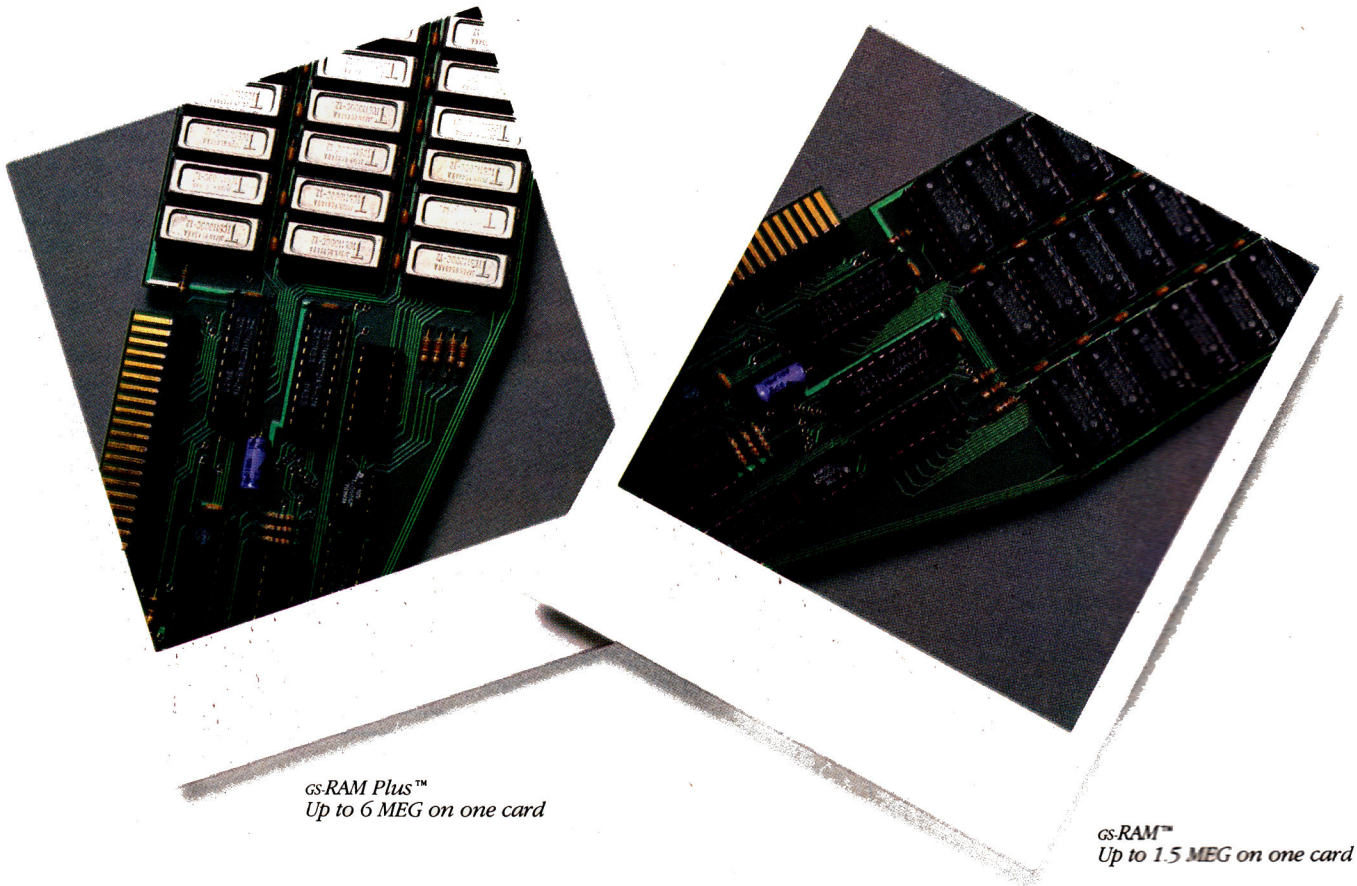
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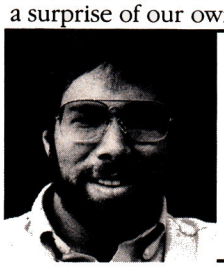


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|---|---|---|
| Ease of learning | ■■■■ | ■■■ |
| Ease of use | ■■■ | ■■■ |
| Documentation | ■■ | ■■■ |
| Support | ■■■ | ■■■ |
| Overall | ■■ | ■■■ |

Marshware rounds out its Health and Fitness series with two programs designed to help students make decisions in favor of a healthy, substance-free lifestyle.

### Tobacco

Tobacco (To Smoke or Not to Smoke) follows the pattern set by Marshware's earlier release, Alcohol (The Party). Like Alcohol, Tobacco uses a twofold approach. The program includes a disk-based tutorial and a teen-oriented simulation.

The tutorial encompasses 11 topics that focus on the dangers of smoking and brings to the student's attention such well-established health hazards as the effect of smoking on the heart and lungs. The subject matter is scientifically accurate and convincingly presented.

Tobacco's simulation, "A Group of Friends," is the more interesting program module. One or more people can run it, and it's appropriate for home and school applications.

The scenario highlights a group of a dozen computer friends. These boys and girls are 15 years old when the story begins, and you can watch what happens to as many as six of them during their lives.

Choose a friend, like Anita, and peek into her life when she turns 17, 20, 25, 30, 40, 50, and 60 (if she reaches that age). You help your friend avoid the dangers of smoking by participating in her decisions.

Each round culminates in a Status Report showing whether or not your friend followed your advice and whether he or she suffered any consequences—such as being kicked off the swim team, losing a boyfriend, or any resulting health problems—of his or her actions. And if your computer friend dies, the program also states that matter-of-factly.

The most shocking part of the Status Report is the cumulative number and total cost of cigarettes smoked. By age 20, my friend Anita had smoked 43,800 cigarettes at a cost of $2737.50. That money could have bought a lot of computer goodies.

### Fitness

You've heard of a well-balanced diet. How about a well-balanced computer program? Fitness (A State of Body and Mind) covers all the bases with respect to healthful lifestyle habits. The program's Main Menu helps you answer questions about your level of fitness, your exercise program, foods that are good for you, and chemicals that aren't.

The *Health-Related Physical-Fitness Test Manual*, which is published by the American Alliance for Health, Physical Education, Recreation, and Dance, is included in the Fitness package. This manual has instructions for properly measuring fitness in various ways—the one-mile run, sit-ups, the sit-and-reach test, subscapular and triceps skin-fold determinations, and resting and recovery pulse rates.

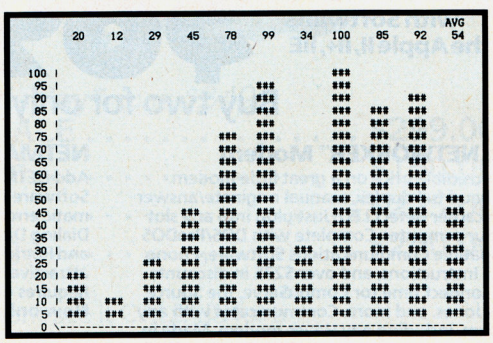
Each student can enter his or her results and print summary data. The program calculates and demonstrates results in a histogram, showing percentile rankings based on age.

Adults can also use the program to determine their levels of fitness, but the guidelines used are appropriate only up to age 18. Unless you're in

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top-flight shape, the results may be disappointing.

To demonstrate how exercise can help you become fit and trim, the program lets you take your real-time resting pulse rate, then gives you an overall assessment of your cardiovascular fitness, based on this limited test.

You interact with Fitness in other ways, too. The program gives you a list of enjoyable exercises, ranging from biking to jogging to walking. Select your favorite activity, and the program tells you its aerobic, muscular, flexibility, and weight-control values. Fitness quickly puts to rest the question it first poses: "If you can ride, why walk?"

Fitness categorizes foods into five groups. You may recall the basic four—fruits and vegetables, breads and cereals, milk and cheese, and meat and protein. Fitness adds a catch-all group—fats and sugars. With so many fabricated foods in grocery stores today and so many meals eaten at fast-food restaurants, this last group has, shall we say, a lasting effect on many hips and thighs.

To add insult to injury, Fitness calculates the caloric cost of eating certain foods. Would you walk a mile for a cookie? If you want to learn more about the relationship between exercise, food choice, and weight control, Fitness can be a real eye-opener.

This program emphasizes the importance of fitness in helping you cope successfully with a stressful lifestyle. Too many people, it seems, choose drugs as a way to cope. Fitness decries such a choice and points out the hazards of illicit drugs, as well as the potential dangers of socially acceptable ones, such as alcohol and tobacco. ■

*Cynthia E. Field*
*Wakefield, RI*


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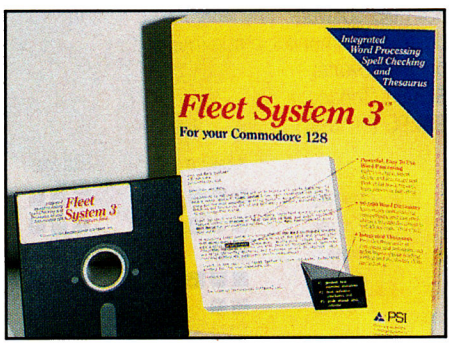
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## More and Less than Word Processing

### FLEET SYSTEM 3

*Professional Software*, 51 Fremont Street, Needham, MA 02194

Word processor with spelling checker and thesaurus; 128K Apple //e or //c, one disk drive, printer, ProDOS
$79.95

Ease of setup ■■
Ease of use ■■■
Documentation ■■■
Support ■■
Overall ■■

Did you ever try a program you liked, but hesitated to recommend to others? PSI's Fleet System 3 is attractive at first glance—an integrated word processor, spelling checker, and thesaurus for $79.95—and attractive at third glance, the stage when you've overcome its idiosyncrasies to find it a smooth, fast performer with impressive extras. But at second glance, the period of coming to terms with the program, Fleet System 3 is rather homely, stripped-down software with awkward quirks and omissions.

Some //e and //c programs, such as WordPerfect and MousePaint, are inspired by 16-bit IBM or 32-bit Macintosh software. Fleet 3 is an enhanced version of a popular Commodore 64 program, and its early 8-bit heritage shows—it harks back to the time when word processors made nice, easily transferable ASCII text files, because other kinds of files hadn't been invented yet. Back then, there wasn't any way to use formatting or control codes except inserting them by hand; in that respect, Fleet 3 is even more laborious than another early 8-bit program, WordStar.

But who said simple software's necessarily bad? Nothing beats text files for sending over phone lines or exporting to other programs, and Fleet 3 is a one-drive user's dream: Once it's loaded, you don't need the program disk again. You can work with no disk in the drive at all, until you want to use one of the other two Fleet disks (thesaurus or spelling dictionary) or save your work to a data disk. On the other hand, considering that its three-part, disk-swapping program is a natural for transfer to a UniDisk 3.5 or hard disk, Professional Software's policy is shameful: The word processor is copy-protected, and a backup costs an additional $15.

### No Tildes or Backslashes

Fleet System's combination of strangeness and simplicity begins with its opening message—you must make sure the caps-lock key is up (Fleet 3 won't work otherwise; the shift-lock function is served by the tilde key) and choose an 80- or 120-column display. The latter allows horizontal scrolling through tables set up with Fleet 3's numeric tabs, which align numbers at a decimal point and can sum a column (with negative numbers in parentheses or with minus signs before or after them).

The usual top-of-screen margin and tab ruler is only a tab indicator in Fleet 3; text always fills the width of the screen, with word wrap at 80 or 120 columns. A status indicator shows the cursor line and column number; letters next to it appear in standard or inverse video as you toggle numeric, shift-lock, and other modes. You change from typeover to insert mode by pressing shift-backslash; the backslash by itself inserts a space, and pressing the escape key, then backslash, inserts a line.

Fleet 3 is easy to use once you master its minor inconsistencies. Most commands are executed by pressing Esc (to toggle function mode), then one or more keys, such as Esc, F to find text or Esc, D, W, and Return to delete a word (Fleet 3 has no undelete ability and asks for confirmation of deletions). There are, however, a few apple-key commands to remember, such as apple-tab to set a tab (Esc, tab clears all tabs). Pressing apple-Esc offers a menu of disk functions; loading a file or inserting one at the cursor is as simple as typing 2/LETTER to specify a drive and filename.

### Chores and Complaints

The program is quick and responsive, even when inserting text in the middle of a file, but some of its good ideas are poorly executed. Cursor movement is awkward (no paging up or down, though holding Esc and an arrow key speeds scrolling, and moving by word puts the cursor between words instead of on their first letters).


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All search-and-replace jobs are universal, with no pauses or confirmation of individual changes. Blocks or ranges can be marked only in increments of screen lines, not words or sentences.

One of Fleet 3's promising features is the "extra text" area, space for a second document in memory; you flip between the two by pressing Esc, X. It's great for holding scratchpad notes or the supplied help file, but there's no easy cut-and-paste transfer between files: you must identify an extra text block as a named range or macro, typing equal signs, abbreviations, and inverse apostrophes, before you can summon it for insertion into the main text.

Now, about those imbedded formatting or control codes. Nearly every word processor offers a way to change margins, force page breaks, or put a single-spaced quotation into a double-spaced document; Fleet System 3 does the same, letting you type Esc, ] followed by cryptic codes anywhere in your file you like. Since its chock-full 80-column display bears little resemblance to most business letters, pressing apple-tilde enters a "what you see is what you get" preview mode, printing a file to the screen to see page breaks, justification, double spacing, and so on.

That's reasonable enough, but Fleet 3's reliance on plain text files makes it the dumbest word processor around when it comes to format settings. There's no such thing as a default; you must begin every file by specifying not only margins and spacing, but even page length (such as the standard 11 inches or 66 lines), in a line of gibberish such as *pp66:pg54 :vp6:lm10:rm72:sp2:ju1*. It does a great deal to reduce Fleet 3's speed and simplicity.

### The Nicer Side

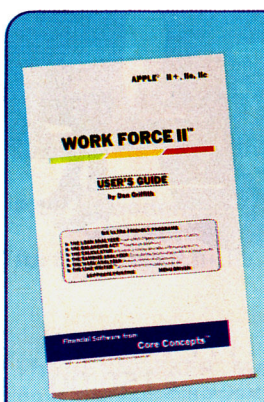
Although Fleet 3's editor reminds me of embedded-code text formatters for Radio Shack's 24K Model 100 portable, its spelling checker and thesaurus are surprisingly good. The checker simply highlights unrecognized words instead of suggesting alternate spellings as high-end programs do, but it's easy and rapid, supplying a total word count, unique word count, and checking a 4000-word file in less than two minutes.

The 90,000-word dictionary missed *understatement*, *sidebar*, *desktop*, and *synthesizer*, but knew *mucilage*, *biplane*, *triptych*, *ennui*, *hobgoblin*, and other attempted traps. Adding words to a personal user dictionary is easy, and an auxiliary program lets you do everything from checking the user dictionary to analyzing a file's average sentence length.

The thesaurus, while limited to a smaller vocabulary (no synonyms for *terrible*, for instance, but lots for *better*), is equally friendly. It lets you look for either synonyms or antonyms for a word you either type on a status line or copy from your document with the up arrow. Selecting a synonym with the cursor and pressing the return key replaces the word in your text.

Overall, Fleet System 3 is a low-priced program with fairly high-class features, decent documentation, and lively performance. If its basic word-processing functions were as good as its advanced ones, it'd be worth recommending. ■

*Eric Grevstad*
inCider *staff*


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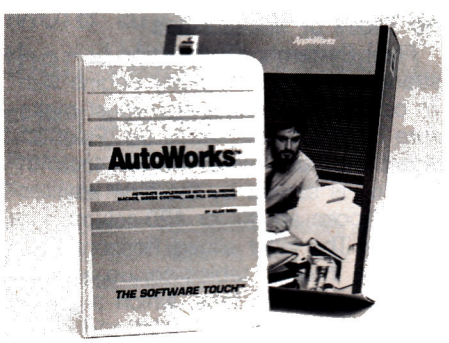
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## AppleWorks Deluxe

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| | |
|---|---|
| Ease of learning | ■■■■ |
| Ease of use | ■■■■ |
| Documentation | ■■■ |
| Support | ■■■ |
| Overall | ■■■■ |

If you use AppleWorks, AutoWorks offers you five appealing enhancements at a mere $8 apiece: mail

merge, macros, new commands, mouse control, and improved file management. Any one of these features may justify the total program price for you.

In fact, my only complaint about the package involves that truism, "You can't have it all." AutoWorks is incompatible with another popular AppleWorks add-on, Pinpoint (and with a competitive product, Beagle Bros' MacroWorks); I keep one copy of AppleWorks enhanced with Pinpoint and another with AutoWorks, using one or the other disk depending on my current project. The choice depends on whether I want access to non-AppleWorks tools, or want to stay in AppleWorks and work wonders.

For example, business owners or club officers will appreciate the ease with which AutoWorks performs mail merging. First, you create an AppleWorks data base with pertinent information like names and addresses. Next, you use the AppleWorks word processor to prepare your form letter, using numeric codes that correspond to the order of categories in the data base. If "Name" is first in the data base, it will have the code "<#1>" in the form letter.

With both files on the desktop, press open apple-X, watch the AutoWorks menu pop up on screen, and select the mail-merge option. At this point, you literally sit back and admire the speed and style of the merging process. As one form letter prints out, the screen shows substitutions being made in the next. After all the letters are printed, you can proceed to other AppleWorks tasks, since you never left AppleWorks in the first place.

The mail-merge feature makes it just as easy to fill out forms such as invoices. In data-base codes like the one above, simply substitute an asterisk for the pound sign. This turns off the reformatting that's necessary when you merge information into a letter.

### Command Shorthand

Another powerful—and practical—feature lets you create macros, short codes that substitute for long sequences of commands, to simplify your AppleWorks chores. Instead of typing command keystrokes, you can create a macro, store it, and then call up the sequence by pressing only the solid-apple and one or two other keys.

For example, one of AutoWorks' predefined macros centers a line of text at the touch of solid apple-C. It's a lot easier than going to the AppleWorks Options, selecting center justification, going back to your document, back to Options to unjustify, and back to the document again.

You can use all, some, or none of AutoWorks' roughly four dozen supplied macros; some of the others automatically move the cursor home in a spreadsheet, number an outline with Roman numerals, or create a numeric keypad in the middle of your keyboard. If reading this has made you think of specialized macro tasks, you can easily create your own.

In a macro-related matter, two of AutoWorks' added commands give AppleWorks true delete and undelete capacity—moving words or blocks of text to the clipboard so that you can undelete them if you change your mind.

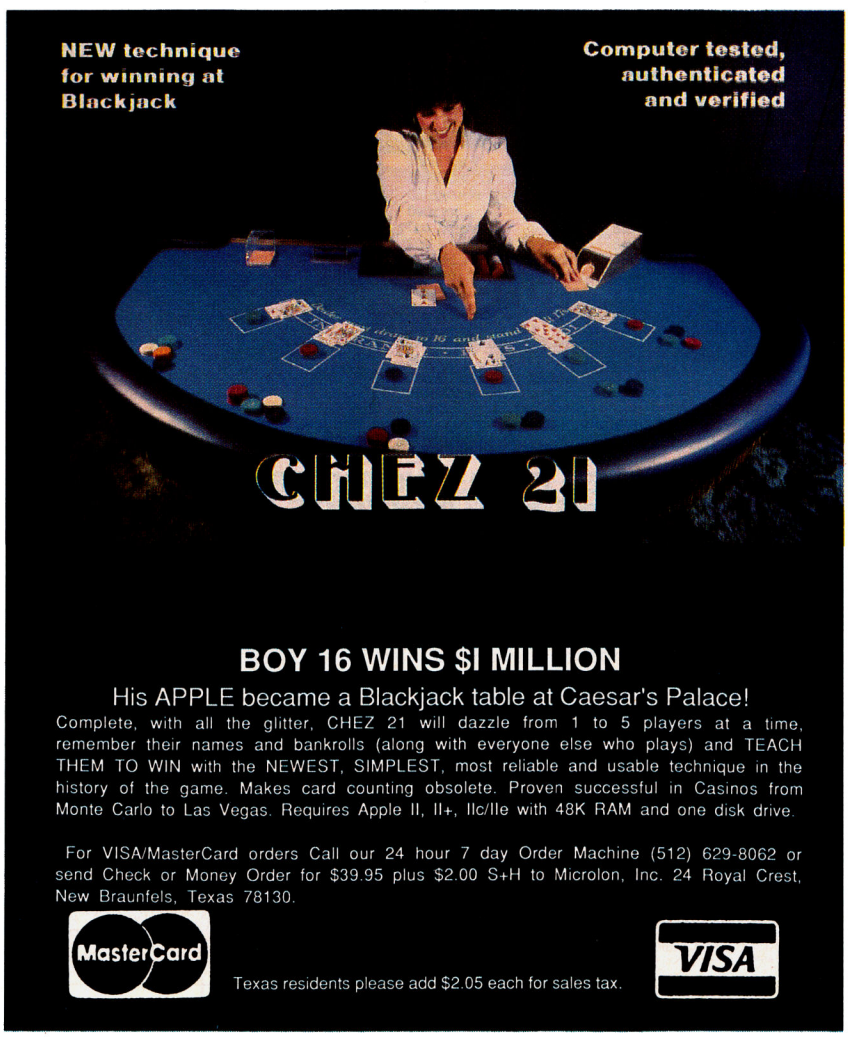
### AppleWorks Meets Mouse

If you've longed for a mouse-controlled AppleWorks, it's yours thanks to AutoWorks. You can use the mouse to make menu selections and to scroll through files. Pressing the mouse button brings you to the beginning or end of a document; double-clicking (s-l-o-w-l-y) substitutes for pressing the escape key to return to a prior menu.

Frankly, I'm accustomed to using the keyboard to move around AppleWorks and the "ruler" (open apple-1 through 9) for scrolling up and down documents. I can see the value of using the mouse to make diagonal moves, however. AutoWorks doesn't turn off keyboard control, so use the mouse only if it's more convenient for you.

The AutoWorks "Read Disk" option reads ProDOS disk directories into an AppleWorks word-processing or data-base file. If your disk library seems to have grown out of bounds (and whose hasn't?), AutoWorks can help you catalog your holdings.

The program (not copy-protected) is easy to install on your AppleWorks Startup disk, as well as easy to use; within a couple of hours, I learned its features well enough to make them productive for me. The reference manual has complete, clear instructions.

AutoWorks is compatible with ProDOS peripherals, including RAM disks, hard disks, and the UniDisk 3.5. Certain versions of RAM-disk utilities may not be compatible, however.■

*Cynthia E. Field*
*Wakefield, RI*



# A MIDI Musical Package

## MIDI USERS SEQUENCER/EDITOR

***Roland Corp.***, 7200 Dominion Circle, Los Angeles, CA 90040

MIDI musical interface and software; Apple II Plus (64K), //c, //e, MIDI synthesizer MPU-401 MIDI interface unit, $200; MIF-APL interface card, $110; MIDI Users Sequencer/Editor software, $150

| | |
|---|---|
| Ease of setup | ■■■■ |
| Ease of use | ■■■ |
| Documentation | ■■■■ |
| Support | ■■■ |
| Overall | ■■■ |

MIDI, the Musical Instrument Digital Interface, is the communications standard for electronic musical instruments. It makes possible the interfacing of electronic synthesizers such as keyboards, drum machines, and guitars to a computer. With software such as Roland's MIDI Users Sequencer/Editor (MUSE), version 1.10, you can record with your Apple what you play on the MIDI instrument (in my case, a Casio CZ-101 keyboard), then modify the measures and tracks to get just the right sound. In short, a sequencer/editor is a word processor for musicians.

What's so great about that? Well, this Apple-powered musical tool reduces the need for tape recorders, makes multitrack recording and editing easier, and brings serious electronic music composition within the financial grasp of many computer users ($460 for Roland's hardware/software bundle). For the budding musician or the pro, MIDI is a dream come true.

### Getting Started

MUSE is a sophisticated, MIDI-reliant music-composition and editing program that works with Roland's MPU-401 MIDI unit and MIF-APL interface card. The equipment seems complicated at first glance, but a quick look at the owner's guide's introductory manual will soon put you at ease. I was relieved by the clear documentation "for the masses," written by a real musician and Roland user.

The interface card and unit were a snap to install. Photos in the owner's guide helped quite a bit. The card can occupy any free slot in the computer; just remember which you used, because you'll be prompted for its number whenever you load the program. As for MUSE itself, the program is completely menu-driven and allows joystick, paddle, or keyboard input. You simply point and click your way through its features—two main menus with about 24 options, including numerous windowed submenus.

### A Little MUSE Music

To begin, you must create a musical piece, whether one measure on one track or a complete song. Once you select the Record feature from the menu, you can choose any of eight recording tracks. A set-up screen lets you enter the number of measures to record; during recording, MUSE automatically stops when your preset number has passed.

If you like, you can bypass the set-up window and start recording with no preset length—just click when you've finished performing. MUSE lets you record up to 250 measures at one time; the program handles approximately 6000 notes.

When recording multiple tracks, you can specify the measure from which you want to start recording (adding a new track to the middle of a prior piece, for example), or mute tracks during playback or the recording of another piece. You can also erase individual tracks if you mess up a session.

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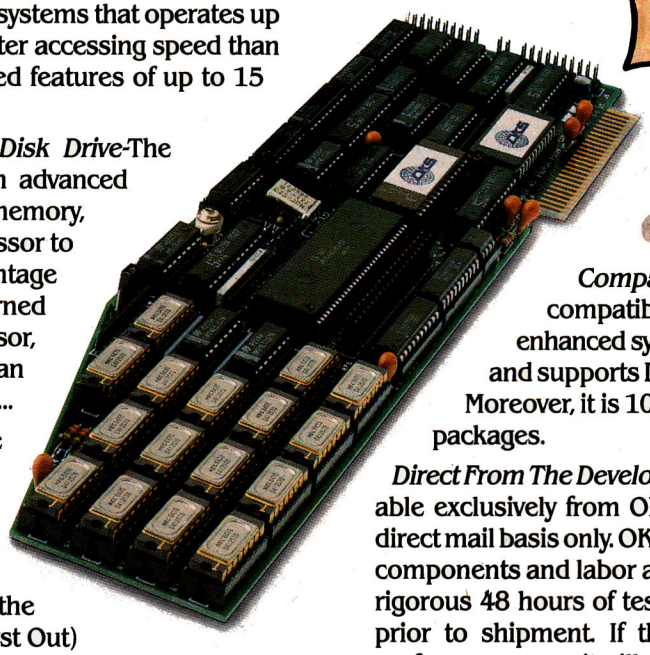
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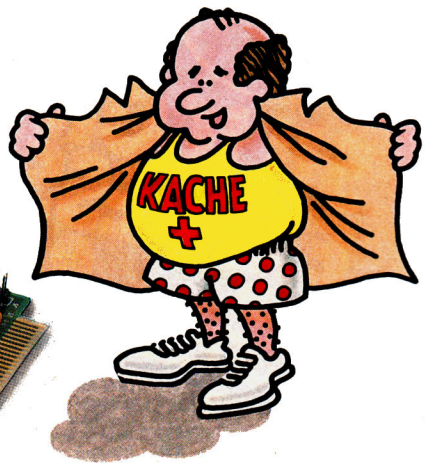
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The MPU-401 MIDI interface has a built-in metronome, which you control from the program. You can turn the metronome on or off for your recording sessions; it changes its beat whenever you change the tempo (20–240 beats per minute) from the main menu or from a tempo window prior to recording. I like the fact that while playing back your music, you can speed or slow the tempo just by turning the joystick or pressing the cursor keys. This way, you get a feel for what makes a good tempo without having to stop, return to the menu, and restart. It's all fluid.

A time-signature window lets you select from 15 signatures, ranging from 2/4 to 9/8 (the default setting is 4/4). You must select your signature, with all tracks empty, before recording; only one time signature can be used per song, a handicap for musicians trying to create multi-signatured pieces.

With MUSE's auto-correct option, the program corrects any timing errors made during the initial recording of your music. If, in real time, you made a quarter note too long or an eighth too short, the program will make amends.

When it's time to hear your composition, MUSE's Play function lets you listen to the entire piece (all or selected tracks) or choose the auto-locate function, listening to a song or track starting from any measure. You can save your recordings and settings to disk, or load previously recorded songs.

If you have more than one MIDI instrument hooked up to your computer, or an instrument that can process several channels at once, MUSE offers a powerful function: channelization of tracks, letting you create a complete orchestral arrangement with several different instruments playing simultaneously. You can assign each of the eight tracks to any of 16 standard MIDI channels. For example, my CZ-101 can handle a different monophonic voice on each of its four channels, so I can create the effect of a four-piece band.

### The Extras

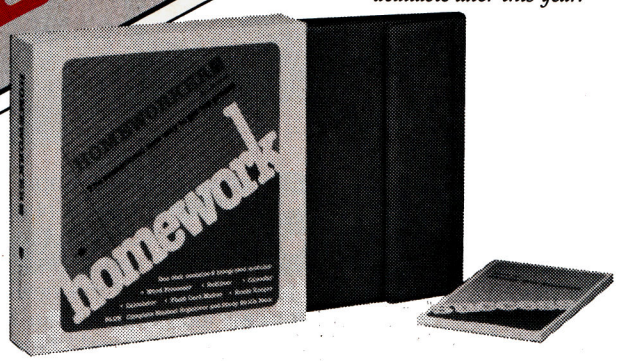
The above features are just the beginning of MUSE's capabilities. MUSE can record information about aftertouch, created when you press a key down after it has initially been pressed, from the MIDI instrument. You can set MUSE to filter this feature out when recording. You can also

*Continued on p. 142.*


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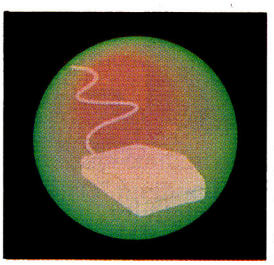
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Circle 74 on Reader Service Card.

# VISIONS OF GS SOFTWARE

by Paul Statt, *inCider* staff



Software for the Apple IIGS will come from a number of manufacturers, but, for the most part, the look will be familiar. Many of the new programs will look and act like Macintosh programs, but will come at you in living color. Upgraded Apple //e and //c software will also account for a large percentage of IIGS software. In fact, of the six programs *inCider* viewed in July, only one could be classified as new—the rest do on the IIGS what desktop-publishing software, painting programs, drawing packages, and word processors do on the Macintosh. Come to think of it, Apple IIGS software sings the same old songs Apple II software sang. It just hums faster and performs in color.

**Activision on the IIGS**

Activision's Writer's Choice Elite and PaintWorks Plus were the only two programs *inCider* saw in July that were developed on the IIGS. They were written by Version Soft, the French company that developed International Solutions' Mouse Calc and Mouse Desk. Apple's sluggish delivery of small parts, like the C compiler, delayed other software publishers, but Version Soft showed true *esprit d'Apple II* and went ahead anyway.

If you're familiar with Macintosh programs, Writer's Choice will remind you of MacWrite. You can choose your own background color from a rainbow of 16 and type in either black or red. You can cross out mistakes or variants—a nice alternative to deleting text altogether—in black or white.

Like MacWrite, Writer's Choice puts your papers on display: Each document you create occupies one of 16 windows, only four of which can be open at a time. The size of the window is up to you. To scroll, you use a mouse to move a square box that looks like an elevator up and down the right-hand side of the screen.

You can transfer all or part of a document from one window to another. Since Writer's Choice and PaintWorks are integrated, you can also cut and paste pictures and words between the two programs.

Above your colorful desktop, Writer's Choice displays a Mac-like menu bar, with Apple, File, Edit, Find, Format, Font, Style, Color, and Window as your choices. In July's version not everything on the menu was in the kitchen: Not every command on every menu worked, but preparation was far enough along to get a taste of the final product.

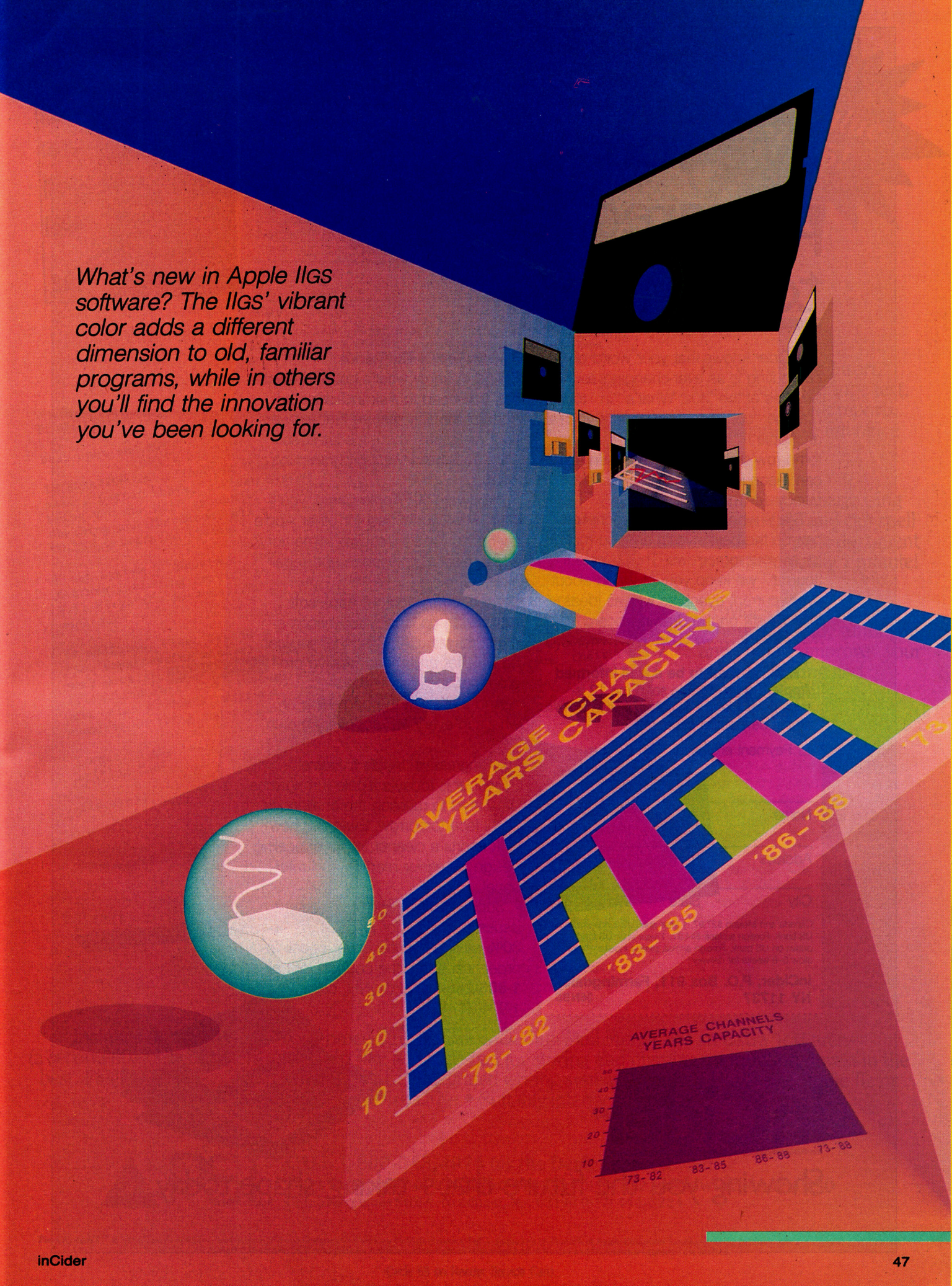
The Apple icon offers information and access to the IIGS Control Panel, as well as a puzzle. The File commands are the usual ones: Open a file, close a file, save a file, save a file as, and so forth. (File commands and Edit options are also available as "open-apple" commands.) Printing options are also listed on the File menu. Although details were incomplete in July, Activision promised that Writer's Choice Elite would support common printers and could print "more than words": That is, graphics imported from PaintWorks Plus could also appear on paper.

Edit offers choices like insert, delete, undo, and so on. Undo is unique in that you can reverse the previous erasure—undo your last undo, as it were—handy for those of us who have been known to make more than one mistake at a time.

The Find menu can search for and replace text. (You can also execute these commands from the keyboard.) At the Format and Font bars you can choose the typeface you prefer. Again, choices were not yet final in July, but Activision says Writer's Choice Elite will include every Mac font.

Typestyle, underlining, boldface, and the like will depend on the print capabilities Apple decides to finally build into the IIGS. Activision will support whatever Apple offers in firmware, but will surely offer color highlighting on screen. The Color menu is clear; you select hues for text and background. At the Window bar, you can choose new windows and lay them over each other.

*What's new in Apple IIGS software? The IIGS' vibrant color adds a different dimension to old, familiar programs, while in others you'll find the innovation you've been looking for.*



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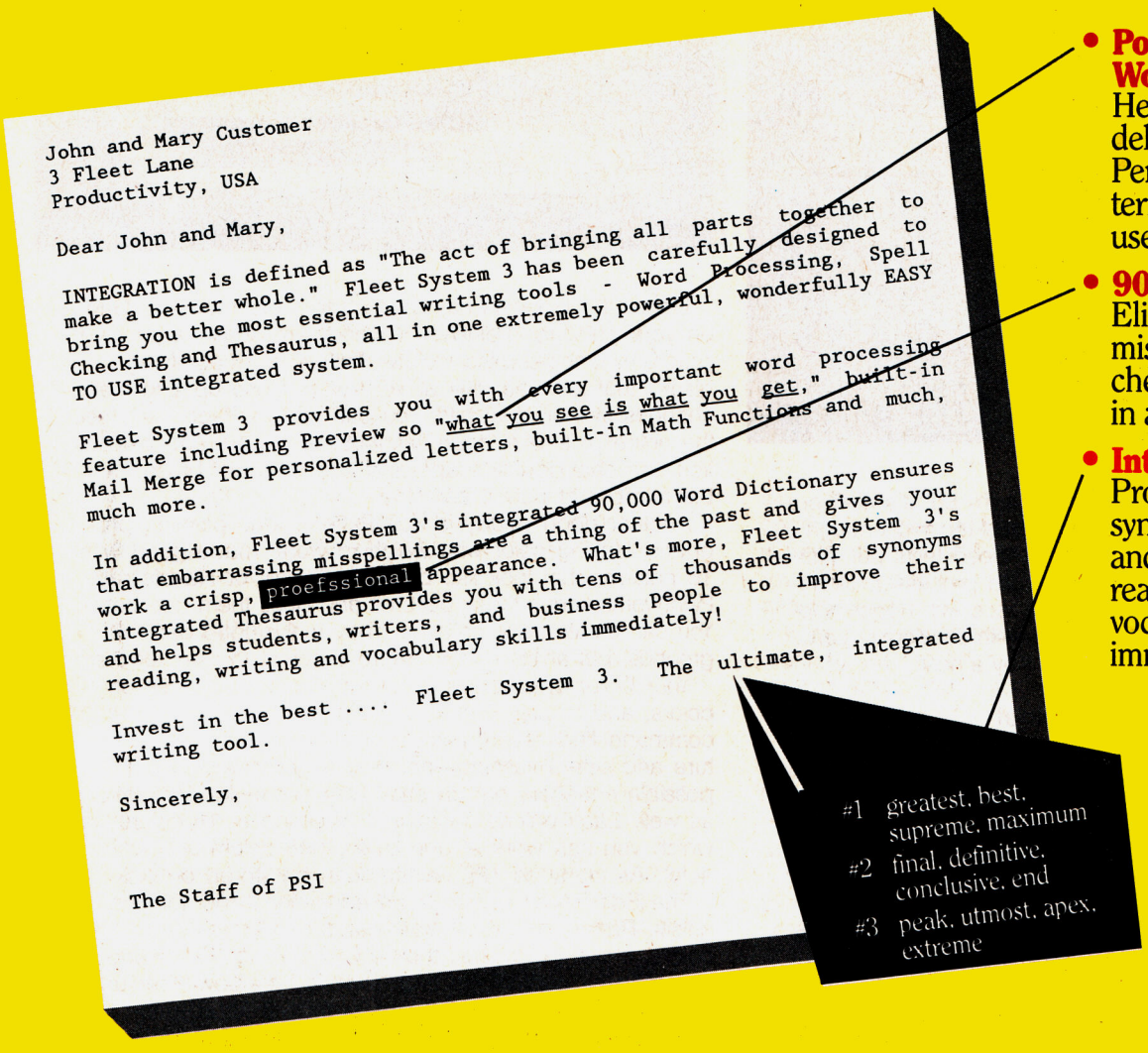
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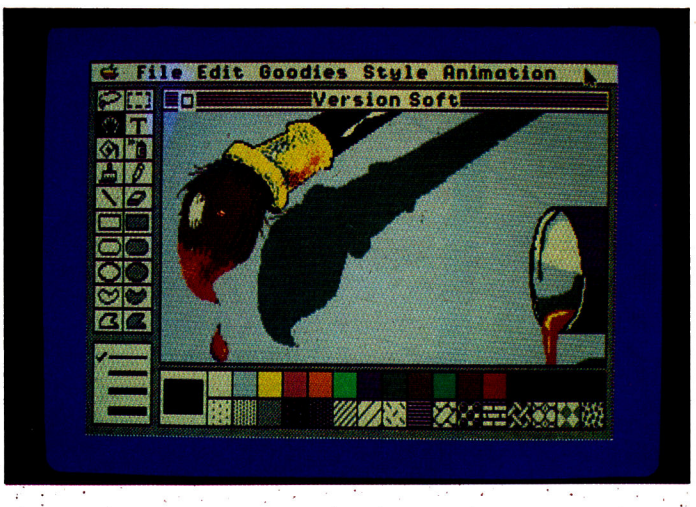
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*Activision's PaintWorks Plus lets you mix colors from three "rainbow" palettes to create any of 4096 hues, while your "paintbrush" cursor can vary in size, shape, and the number of dots it contains.*




Writer's Choice Elite is fun to work with, but it's also productive: Those 16 windows mean a desktop big enough to hold all your words. And informal speed tests put Writer's Choice far ahead of any Mac word processor. Don't put any money on Writer's Choice in a race with Roger Wagner's MouseWrite on a 256K Apple //e with accelerator card, though—MouseWrite would be in front by a nose.

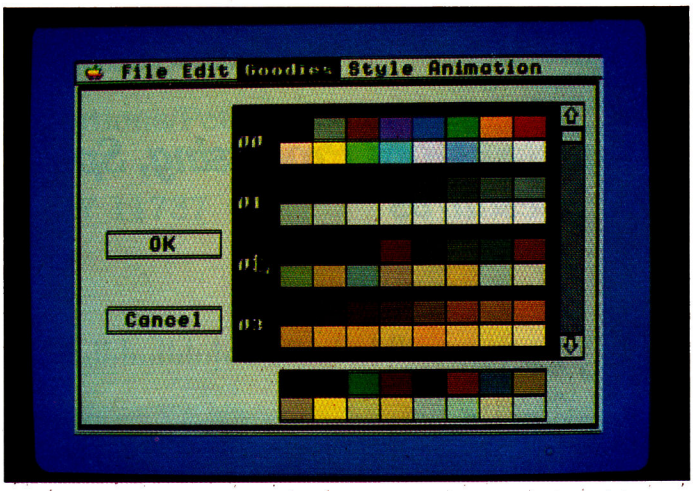
**PaintWorks Plus: Fun and Educational**

PaintWorks Plus is fun to use, too. It may not be as practical as Writer's Choice, but it's educational.

PaintWorks was modeled on MacPaint—the look is similar, but more colorful. At the bottom of the screen is your current palette, from which you draw the colors and patterns you want to paint. To the left is a pictorial menu of choices: draw, erase, paint, make boxes, circles and ovals, spray paint, and everything else you could do with MacPaint. You choose from an iconic menu that's Apple standard, if not altogether intuitive: For example, the lasso, which to many would suggest a roundup, actually selects part of the painting program.

The menu bar at the top shows Apple, File, Edit, Goodies, Color, Font, and Animation. Under the Apple icon are all the usual features: About PaintWorks, Help, and access to the Control Panel. The File Menu contains the usual commands, plus Revert, a command that substitutes the picture with which you started for the one you've drawn—useful if you've painted a moustache on your Mona Lisa and changed your mind.

When you Edit, you can Undo, Cut, Copy, Paste, Clear the screen, Invert the painting, Flip it horizontally or vertically, or Rotate it. (Remember that you can undo what you just undid.) Activision also promises that you can copy paintings into Writer's Choice documents.




Under the Goodies menu you can superimpose a Grid on your painting—PaintWorks works almost like a drawing program. Goodies also include FatBits, a "magnifying glass" that lets you look at your work close up and make changes in individual bits. You can "Show Page" and see the entire picture at once, without menu bars and palettes. You can change the shape and size of your "brush" and the number of dots it contains.

Another good goody is Edit Pattern. Mac painting programs, lacking color with which to work, made good with 16 patterns that look like bricks in a wall, or Navajo rugs. PaintWorks keeps these patterns and does them one better: You can create color patterns. They make good backgrounds, but artists will find more imaginative uses for them.

Your Color options are to Search for and Dispose of colors, and to play with your Palettes. The Search Color command finds every pixel of a given color in your picture and sets it flashing—not only a good way to preview possible changes, but an easy way to simulate animation, as well. Each palette contains a selection of 16 colors with which you can work at one time (4096 colors are available). As many as 128 palettes can be stored on disk.

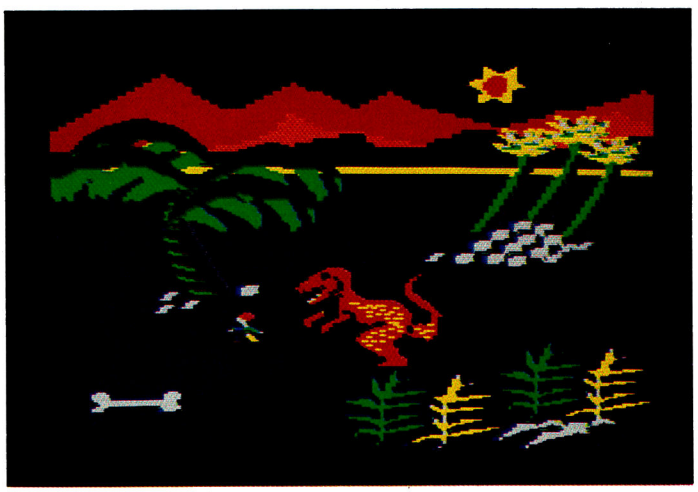
The Edit Palette option is an educational tool for non-artists. Rather than paint with standard, "store-bought" colors, artists like to mix their own paints; in PaintWorks, you slide a "cursor" up and down a "rainbow" bar until you find the color you like. You work with three rainbows—red, green, and blue. You can add and remove colors to create any of the 4096 hues, letting you match colors perfectly. The yellows are the weakest colors in that mixing just the right shade is difficult.

Playing with the Palette Editor, you'll remember that the Apple IIGS is still digital. Those 4096 colors are about 64 times as many as most people can detect. Even a palette of whites, in which the difference between one shade and the next is only a shadow, is possible. The Palette Editor gives you a quick lesson in color theory—the way adding a bit of blue transforms yellow, for instance. It's fun, but don't call it educational—it might scare kids away.

The Font menu, like the Writer's Choice Font menu, was waiting in July for Apple to firm up its IIGS firmware. PaintWorks will support all the machine's fonts, which should number at least seven.



*In LearningWays' Explore-a-Story series, colorful characters talk about problems kids understand. There's a structure on which the child can hang a daydream, but there's room for imagination, too.*



The only no-show at the PaintWorks performance in July was full animation. It produced animated sequences, but you couldn't create your own cartoon. The animation, though, is good—it moves at 16 frames per second, and hacker Walt Disneys can fill an entire disk with images if they like. Animation isn't easy on the Apple IIGS—it doesn't have the Amiga's "blitter" chip, which lets you move blocks of the screen without accessing the microprocessor; it doesn't have the Commodore 128's sprite graphics, or even page-flipping, like the old Apple II. But PaintWorks still handles animation beautifully.

**Innovative Storytelling**

Everyone's seen paint programs and word processors before, but LearningWays' Explore-a-Story is new and different.

Explore-a-Story is a small voice crying, "Innovation," in a monotone wilderness. Explore-a-Story tells a tale (it's billed as reading software for kids) in so radical a manner that most adults won't even notice they're experiencing the story in a whole new way. But kids will.

The stories are simple. "The Lima Bean Dream" and "The Bald-Headed Chicken" are good tales for young children: Colorful animals talk about problems kids understand, like feeling lonely or hating lima beans.

These stories are distinguished in the telling. First, the young reader gets a book. Already Explore-a-Story is ahead of the reading-software pack, because nobody has ever learned to read books by tickling a computer's keys, no more than by watching *Sesame Street* on television. The child holds a book in his or her hands—a book with lots of pictures, complete sentences, and a story.

The innovation is that each picture—about 14 per story, one for each scene—is also displayed on the computer. The computer picture is unlike the image in the book—and just like the one in the child's head. It's dynamic: You can move objects around; birds fly; frogs hop.

You can add flora and fauna to a scene, or print dialog on screen in balloons. You can print pictures—color or coloring-book-quality black-and-white—and coloring does more for hand-eye coordination than typing or wielding a joystick.

Explore-a-Story sounds simple. It's much simpler than, say, interactive fiction, in which you must crack a certain code, pick up a particular toy, or say "abracadabra" to survive into the next scene. In an Explore-a-Story, tomorrow always comes; what you do in the first scene doesn't affect the second.

Explore-a-Stories encourage reverie. In the words of their creators, they're "noncoercive." There's a story—a structure on which the child can hang his or her daydreams—but there's room for imagination at every turn.

The LearningWays user interface takes the Mac idea and goes a step beyond. Two boxes are on screen at all times. With the mouse, move the cursor to the upper right-hand corner and click to "flip pages." Clicking on the upper left-hand box brings the menu bar to the screen.

Menus are iconic. The animals menu, for instance, contains a picture of an animal, and the pull-down menu scrolls through a number of pictures of animals, not a list of their names. You don't have to hold down the pull-down menus, either. A child, who might find clicking and dragging a bit difficult, merely has to click on the menu, then bring that item into the picture.

Other menus list objects, including living things like trees, that you can add to a scene, but you can't animate them. The same goes for background landscapes; one possible landscape is empty, so the reader can start from scratch. The Text menu contains the names of all the objects and animals on screen that the child can drag into the picture. Disk (or File) and Print menus are more traditional.

LearningWays and book publisher D.C. Heath have 16 stories ready for the Apple IIGS, as well as eight science lessons and three Spanish-language stories that use the same routines. Although LearningWays didn't comment on its plans for future Explore-a-Stories, *inCider* felt this unique software would also be a great way to bring to life ancient tales, tales such as "Androcles and the Lion" and "Jason and the Argonauts" that preceded written language.

*Broderbund's Newsmaker (below) lays out color text, graphics, and background. It's suitable for professional or beginning typesetters and designers. Electronic Arts' Deluxe Paint (right) takes advantage of the IIGS' 16 active colors.*







## In the Works

In July, Broderbund was developing a program called Drawing Table on a Macintosh. It will feature color on the IIGS. The Drawing Table is more like MacDraw than MacPaint in that you create scale drawings, plans, maps, and blueprints rather than paintings. In addition, the Drawing Table display looks like MacDraw's—menu bar at the top, cursor options to the side. The drawing surface is a grid.

The menu offers File, Edit, Style, Fonts, Kind, View, and Set, including the options you'd expect—file saving, various typestyles, printer options, and the like. The Kind menu lets you set line thickness, pattern, and color, and thickness and "roundedness" of corners. The Set menu offers rotation and inversion, and can also line up your drawing on the grid.

Drawing Table's Zoom feature lets you move in on a small part of your drawing for detailed viewing and editing. Creatively using Zoom, you can also produce drawings, plans, and blueprints much larger than your screen.

In addition to lines and boxes, Drawing Table contains built-in arcs, which simplify the "free-hand" drawing of complex objects.

Broderbund is also working on a desktop-publishing program called Newsmaker, which was running on a IIGS in July. Newsmaker has a small built-in word processor and can also receive text files from AppleWorks or Broderbund's Bank Street Writer. You can resize graphics images from other sources.

Newsmaker can lay out color text and color backgrounds, too, but Broderbund stresses that black-and-white support, including LaserWriter capability, is built in.

The menu bar offers Page, Text, Pen, Line, and Fill menus, as well as the usual File and Edit. Page lets you preview your page at various sizes—what you see is indeed what you get. You can turn a grid on or off; when it's on, your text and graphics are automatically aligned to the nearest eighth of an inch; when off, you can float pieces freely on the page. You can wrap text around those floating pictures, too.

The rest of the menu choices weren't implemented in July, but a library of formats helps get beginners started. That's the strength of the program: It's helpful not only to professional typesetters and layout artists, but beginners, too.

Megahaus also promises desktop-publishing software. Its PageWorks program uses an interesting technique that keeps text in "cells," which work something like pages in a word processor or cells in a spreadsheet. You can move cells around in your layout, but when one cell is filled, the text moves into the next as in a word processor.

Electronic Arts has moved Deluxe Paint from the Amiga to the Apple IIGS. The only differences are that the IIGS has 16 active colors compared to the Amiga's 32, and that the Amiga has a blitter chip to ease animation. The IIGS Deluxe Paint will be slower, too.

Two other programs in the works for the Apple IIGS in July were Scholastic's Talking TextWriter, a speaking word processor that also runs on the old Apple II, and TML Systems' Pascal, an implementation of the programming language that promises the best of Mac Pascal and Apple II Instant Pascal in one package.

## A Safe Investment

Rather than risk investing time and money in programs that work only on the Apple IIGS, a number of software developers have simply upgraded old Apple II programs: Rags to Riches (Chang Labs), Pinpoint (Pinpoint), CommWorks (PBI), Managing Your Money (MECA), Dollars & Sense (Monogram), MouseWrite (Roger Wagner Publishing), and VIP Professional (VIP Technologies). MouseWrite, a word processor, and VIP Professional, a spreadsheet program, have already used the "point and click" interface and mouse in their earlier Apple II lives—in fact, they're products that seem to have been waiting for the IIGS.

The story of Apple IIGS software has an ironic twist: The most interesting program available for the IIGS at this time is LearningWays' Explore-a-Story, which was released simultaneously for the good old 128K Apple //e and //c. As you'd expect, though, the IIGS version is faster, and the colors are prettier.

The moral is simple: Good hardware, even innovative hardware, won't give birth to good, new software overnight. Good software needs imaginative programmers who are willing to try something new, and raise a bright young program. ■

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# The IIGS Hardware Report

While the software for the Apple IIGS hasn't yet reached its creative potential, certain developments in hardware may provide tools programmers need to break new ground.

The big news in IIGS hardware is in graphics and sound. AST Research (2121 Alton Avenue, Irvine, CA 92714, 714-863-1333) has added a frame grabber called VisionPlus ($249, including hardware and software) to its HD-2000 line of hard disks and SprintDisk memory-expansion cards for the Apple IIGS. VisionPlus is a tool that digitizes any standard NTSC video input, then lets you manipulate the image with your drawing program—much as you'd copy typewritten text into your word processor with an optical character reader.

It's a popular peripheral for the Commodore Amiga, but the Apple IIGS model, which AST says will be available beginning the first quarter of 1987, should take video image processing out of artists' ateliers and into the schools. The benefit of frame grabbing for education is limited only by the value of the video: Imagine making multiple copies of maps and charts from a TV science special simply by using your color printer.

PBI Software and MDIdeas (1111 Triton Drive, Suite 101, Foster City, CA 94404, 415-349-8765) promise a IIGS audio digitizer called SuperSonic, as well as attendant music software. The product should feature true stereo sound and sport an amplifier cord you attach to your hi-fi. It uses its own Ensoniq sound chip, just like the one in the IIGS, and creates as many as eight wave forms in two channels; the software lets you compose your own music. At $100 for hardware and software, this system is a low-cost synthesizer.

New RAM-expansion boards will also be available from numerous manufacturers. Even Applied Engineering (P.O. Box 798, Carrollton, TX 75006, 214-241-6060), the company that brought a rival "standard" for memory expansion to the Apple //e—one that became more popular than the Apple protocol—has an Apple-compatible memory-expansion board for the IIGS. PBI will market its own memory-expansion card, OctoRAM, with up to 8 megabytes, along with a IIGS power supply/power conditioner.

There are some brand-new ideas as well on the RAM-card horizon. In addition to offering a IIGS ProGrappler, which supplies a parallel interface, Orange Micro (1400 North Lakeview Avenue, Anaheim, CA 92807, 714-779-2772) will present a product called RAMPack, a 512K memory-expansion board with *dynamic memory allocation*: You'll be able to use all that extra memory for more than one application at a time. The standard 512K RAMPack costs $295; a 4-megabyte version is priced at $465.

Other memory-expansion folks are waiting for the price of 1-megabyte RAM chips to come down before attacking that market—a 4-megabyte board using 256K chips is pretty cluttered. Some manufacturers are leaving room on their current expansion boards to plug in the new megachips—so look for those holes when you buy a board.□ **—P.S.**

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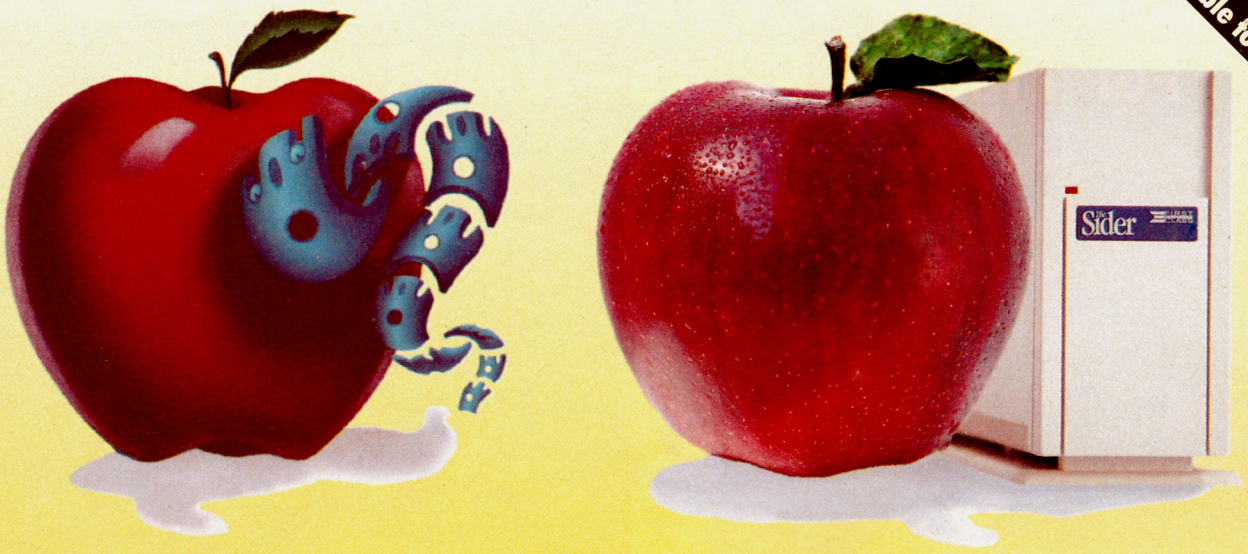
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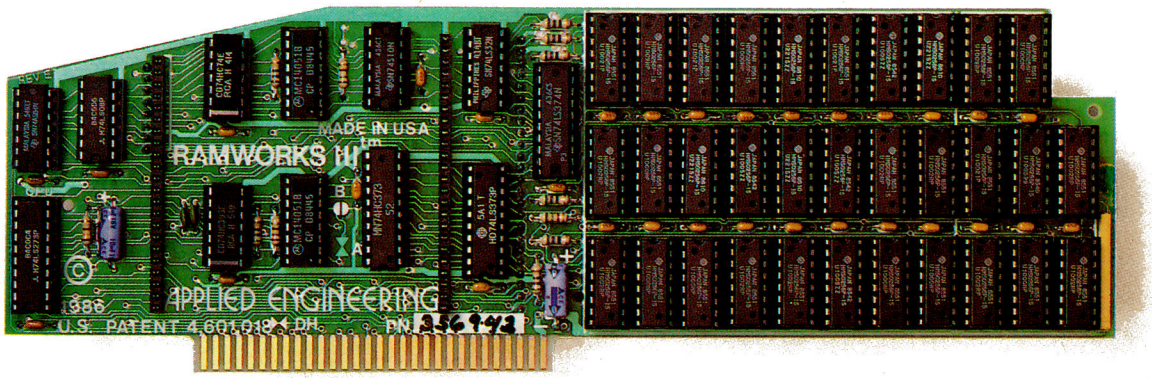
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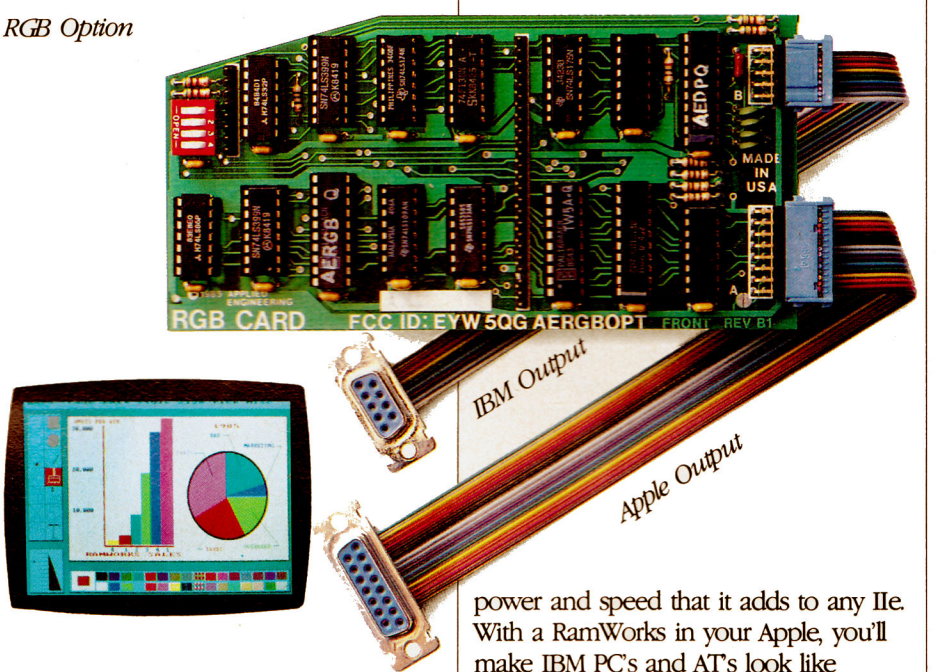
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RGB color is an option on RamWorks and with good reason. Some others combine RGB color output with their memory cards, but that's unfair for those who don't need RGB *and* for those that do. Because if you don't need RGB

Applied Engineering doesn't make you buy it, but if you want RGB output you're in for a nice surprise because the RamWorks RGB option offers better color graphics plus a more readable 80 column text (that blows away any composite color monitor). For only $129 it can be added to RamWorks giving you a razor sharp, vivid brilliance that most claim is the best they have ever seen. You'll also appreciate the multiple text colors (others only have green) that come standard. But the RamWorks RGB option is more than just the ultimate in color output because unlike others, it's fully compatible with all the Apple standards for RGB output control, making it more compatible with off-the-shelf software. With its FCC certified design, you can use almost any RGB monitor because only the new RamWorks RGB option provides both Apple standard and IBM standard RGB outputs (cables included). The RGB option plugs into the back of RamWorks with no slot 1 interference and remember you can order the RGB option with your RamWorks or add it on at a later date.

*RGB Option*

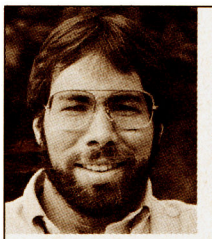



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*Steve Wozniak, the creator of Apple Computer*

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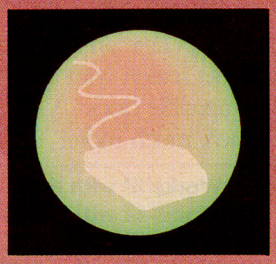
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# EXPLORING THE WORLD OF C

by Robert M. Ryan



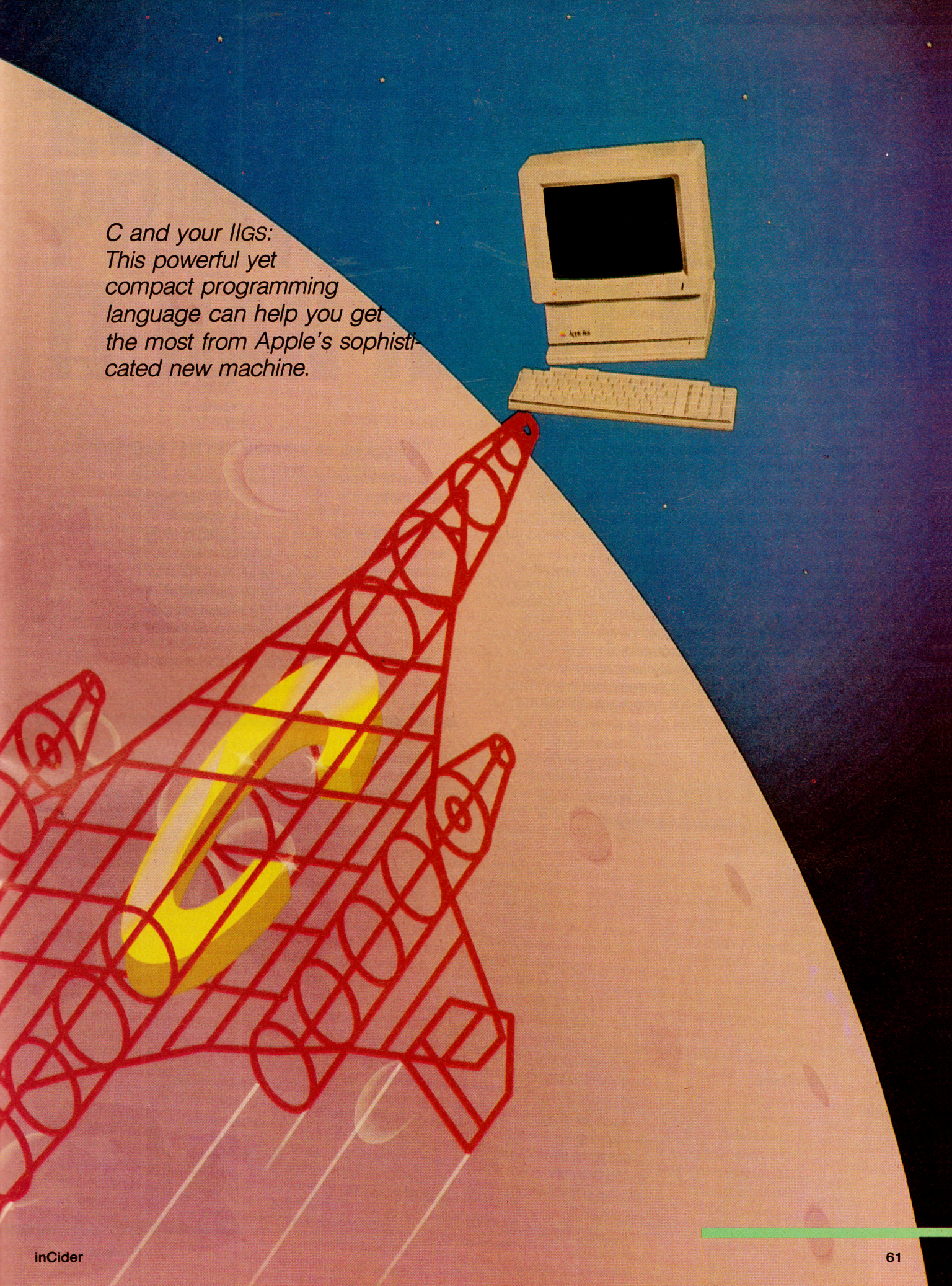
Sure, the Apple IIGS has great graphics and sound, lots of memory, and a high degree of compatibility with current Apple II's. So what's new in the GS for programmers? If you're a programmer, the most important thing about the latest Apple II is that at first you'll know very little about how it works. The IIGS is an unexplored continent, waiting for you to unearth its secrets. In other words, the IIGS is a great machine to hack. And if you're going to hack the GS, you'd better learn C.

Without a lot of fanfare, C has become the language of choice among professional personal-computer programmers. Even Apple Computer, long a champion of Pascal, has bowed to the inevitable: The company has designated C the "official" language of the IIGS, and is readying a C compiler for the machine. If you're an Apple II programmer, you're probably not familiar with this language—C doesn't fit comfortably into 8-bit machines. The 16-bit IIGS, though, is made to take advantage of C's power and speed. In this article, I'll give you an overview of C—a starting point for your explorations of C and the IIGS.

## Roots in UNIX Development

C hatched from the creative mind of one man—Dennis Ritchie—working at AT&T's Bell Laboratories in the early 1970's. C was designed as a systems language, not a general-purpose programming language. Ritchie wanted a language that would let him and his associates develop systems software—compilers and utilities—for UNIX, the operating system then under development at Bell Labs. Ritchie was so successful that eventually most of UNIX was written in C, as well.

When Bell Labs began licensing UNIX to universities in the mid-1970's, C was part of the package. By the end of the decade, C was showing up in a number of commercial installations. From there it was inevitable that C, like other languages, would be transported into the burgeoning microcomputer world. What no one foresaw was that C and microcomputers make a nearly perfect match.



*C and your IIGS: This powerful yet compact programming language can help you get the most from Apple's sophisticated new machine.*

### Compact Code and External Libraries

C straddles the line between high-level languages, such as BASIC and Pascal, and low-level ones, such as assembler. Like a high-level language, it insulates you from the hardware: You don't have to know the architecture of the machine to program in C. On the other side of the coin, C also lets you manipulate your data down to the bit level. This feature makes it a great favorite of systems programmers: They can do bit-level manipulations without having to know the hardware.

C is a very small language—it uses less than three dozen keywords, and doesn't even have a print statement. All input and output, as well as math functions and any machine-dependent functions, are handled by calls to external libraries. Some of these libraries, such as the standard input-output library, contain the same routines and have the same syntax regardless of the type of machine with which they work, thus ensuring that C programs are quite portable. Other libraries, such as graphics libraries, differ from machine to machine.

This dependence on external libraries illustrates one of C's important features: It's a modular language, letting you build large programs out of small pieces. C also has a wide array of data types, operators, and control structures. In addition, C lets you combine basic data types to build your own data structures. Since one of these basic data types is the pointer, complex structures such as linked lists are easily implemented in C.

C compilers are native-code compilers. Their output is the machine code of the target machine, not an intermediate code like that of the Apple Pascal compiler. Because the core of the language is so small and programmers can get right down to the bit level, C programs are usually small and fast. C probably produces the fastest, most compact code this side of assembly language, yet it's nearly as easy to use as other high-level languages. This makes it very attractive to anyone who wants to get the most out of his or her computer.

***Program listing.*** *This sample C program prints "The IIGS is great!" 100 times on your screen. Comments are included between asterisk/slash marks.*

```
main( )                         /*Every C program needs
                                one main module. The
                                empty parenthesis
                                opens the standard
                                input and output
                                streams and the
                                standard run-time
                                library.*/

{                               /*Braces set off modules.*/

    int i = 100, n = 1;         /*All C variables must be
                                declared. In this case,
                                both i and n are integers.
                                They are also assigned
                                initial values.*/

    while (n <= i)              /*Conditions for loop
                                exit.*/

       {                        /*Sets off while block./*

          print f ("The IIGS is great!"\n");

                                /*Function call to standard
                                print function. Prints text
                                to standard output device
                                (monitor) and sends a new-
                                line character (LF+CR).*/

          n++;                  /*Increments counter.*/

       }                        /*End while block.*/

}                               /*End of main program.*/
```

## C Operators

**Arithmetic**

| | |
|---|---|
| + | addition |
| – | subtraction or negation |
| * | multiplication |
| / | division |
| % | modulus |

**Logical**

| | |
|---|---|
| && | AND |
| \|\| | OR |
| ! | NOT |

**Assignment**

| | |
|---|---|
| + + | increment |
| – – | decrement |
| = | simple assignment (can be combined with any arithmetic or bit-level operator to form compound assignment operators) |

**Relational**

| | |
|---|---|
| < | less than |
| < = | less than or equal to |
| > | greater than |
| > = | greater than or equal to |
| = = | equal to |
| ! = | not equal to |

**Bit operators**

| | |
|---|---|
| ~ | one's complement |
| & | AND |
| Λ | XOR |
| \| | OR |
| < < | left shift |
| > > | right shift |

**Pointers, structures, miscellaneous**

| | |
|---|---|
| & | address of |
| * | indirection (complement of address of) |
| size of | size in bytes |
| . | member of structure |
| – > | member of structure |
| cast | forced type conversion |
| ?: | conditional |

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# PRINT A SPREADSHE
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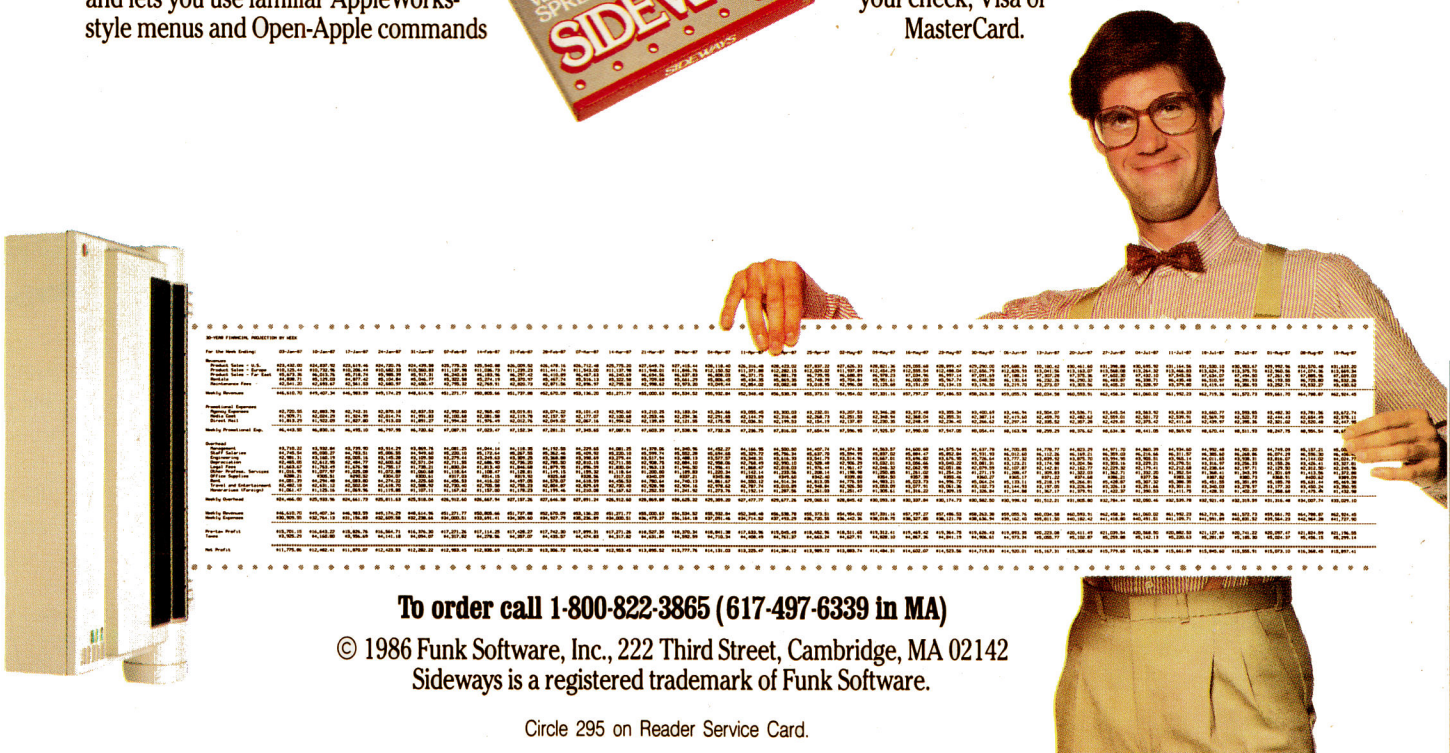



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PREMIERE ISSUE: OCTOBER 1986

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• **Focus on Function.** Want to cut and paste between applications? It's easy . . . when you know how it happens. Whatever AppleWorks functions you want to know more about, you'll find them all covered in depth right here in The Main Menu.

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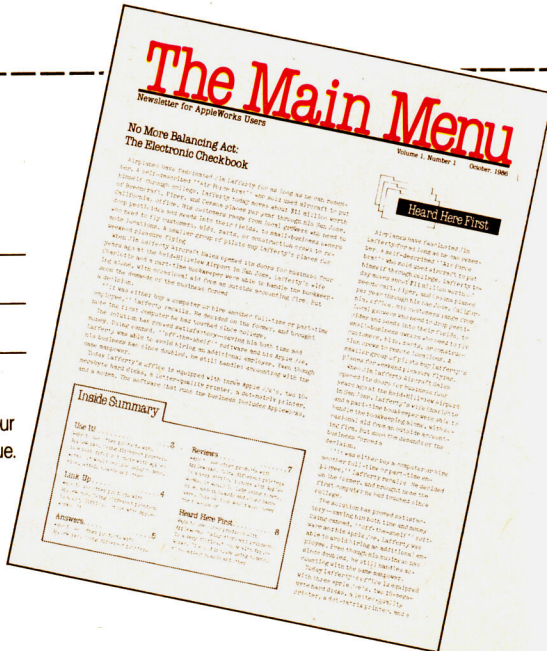
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### Writing a C Program

You can't simply type in a C program and run it, as you would a BASIC program. Many steps are involved in producing an executable C program. First, you must type the C source code into a text editor, then call the C compiler to expand any macros you included and to translate the source code into machine or object code. Finally, you need to link your object file to any libraries or external routines your program needs. Only then do you have a program you can run. If your program has bugs, you have to return to the source-code stage to correct your errors, then recompile the program before you can run it again.

Although writing a C program can be a laborious proposition, the fast, efficient code that results is usually worth the effort. Compiling parts of a program separately and linking them when you need to can greatly reduce the time involved in developing a long program. Debugging ten 20-line modules is a lot easier than debugging 200 lines of source code.

### Variable-Type Conversion

Although it's a powerful language, C has a few drawbacks. Unlike Pascal source code, which is easy to read and understand, C source code is quite cryptic. Keywords and function names are abbreviated, and you'll find a lot of parentheses and braces floating around. All in all, C source code isn't easy to follow.

More importantly, C places a great deal of the burden of type checking on the programmer. It's easy to convert a variable from one type to another in a C program (to access certain external routines, for example), and, many programmers say, too easy to do so accidentally, perhaps destroying the integrity of your data. C gives you great flexibility in type conversion, but it also makes you responsible for keeping things straight.

Despite its quirks, C strikes a balance between the speed and power of assembler and the ease of use of high-level languages: It's the ideal tool for mining the power of your new Apple IIGS. ■

*Bob Ryan, former technical editor for* inCider, *is currently technical editor for* AmigaWorld *(CW Communications).*

## References

Apple Computer Corp., *Apple IIGS Technical Reference Manual.* Addison-Wesley, Reading, MA, 1986. Roadmap to IIGS ROM routines.

Hancock, Les, and Morris Krieger, *The C Primer: 2nd Edition,* McGraw-Hill, New York, 1986. The best C tutorial I've ever run across.

Kernighan, Brian W., and Dennis M. Ritchie, *The C Programming Language,* Prentice Hall, 1978. The C Bible—the definitive description of C.

## Reserved Words in C

Lowercase reserved words, or keywords, are recognized by the C compiler and define the types of operations the computer is to perform.

| | |
|---|---|
| auto | declares automatic variables |
| break | in a loop, lets control pass to next statement |
| case | in a multiple-alternative situation, precedes integer or character constant |
| char | declares character variables |
| continue | passes control back to top of loop |
| default | specifies option if cases of *switch* statement don't match |
| do | with *while*, tests a condition after executing a statement |
| double | declares double-precision variables |
| else | extends the *if* control structure |
| enum | draws parallels between different types of variables |
| extern | designates a global variable |
| float | declares a floating-point variable |
| for | designates loop structure, a reorganization of *while...do* syntax |
| goto | indicates unconditional branch to specified label |
| if | indicates conditional control structure |
| int | declares a variable of type integer |
| long | allocates additional bytes for larger integer values |
| register | gives a variable priority use of an internal register, gives programmer lower-level control of program |
| return | ends function, returns execution to point of function call |
| short | indicates a short integer, allows faster execution speed |
| sizeof | returns number of bytes used to store a variable |
| static | indicates local variables in functions, but values aren't lost if function is called again |
| struct | groups variables of different types into a logical unit |
| switch | in multiple-alternative situation, precedes integer expression to be evaluated and matched against constant values |
| typedef | declares type of variable |
| union | allocates storage space for variables of different types |
| unsigned | declares a positive integer variable |
| void | denotes a type of function that doesn't return a value |
| while | tests a condition before executing a statement |

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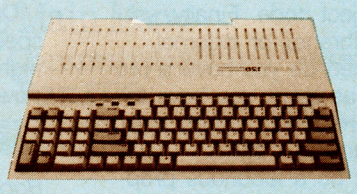
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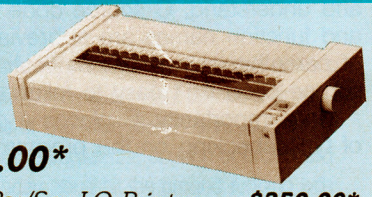


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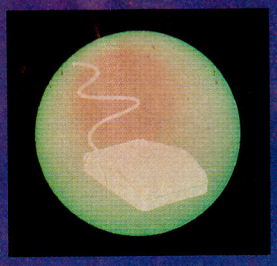
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# DELVING INTO ASSEMBLY LANGUAGE

by Roger Wagner



The Apple IIGS may look like a //e to all current software, but treating it like any other Apple II would be to ignore its tremendous potential for assembly-language programming. Whether you're creating a simple subroutine or a complex application, don't miss out on the programming power the IIGS offers you.

The Apple IIGS is a superset of the Apple II, and many advanced features are available to the assembly-language programmer with a minimum of effort. In addition, the operating system is a constant, with ProDOS the common file environment.

## Soul of a New Machine

The central issue for any assembly-language programmer is, of course, the machine's microprocessor. The Apple IIGS uses the 65816, a descendant of the original Apple II's 6502. The 65816, though, has 36 new instructions and 11 new addressing modes, for a total of 91 individual new instructions.

What's the advantage? When the 65C02 was introduced, it simplified certain programming steps by adding new instructions. For example, to set a memory location to zero in the 6502, you first load the accumulator with zero, then store that value in the desired memory location. The 65C02 makes this easier (and eliminates use of the accumulator entirely) with the instruction STZ, which stores a zero in the designated location. The 65816 not only adds convenient instructions like MVN (move block negative) and MVP (move block positive), which move a block of memory with a single instruction, but adds 16-bit (2-byte) operation and larger memory addressing, as well.

*Assembly-language programmers are looking to the future—with a powerful microprocessor and new tools in ROM, the IIGS is giving them fresh inspiration.*



To understand why 16-bit operations are useful, consider the problem of adding a large offset (greater than 256) to an existing 2-byte address in the Apple //e. You'd usually do this by individually adding the low- and high-order bytes; it might take seven instructions in assembly language.

In the 65816, you can set the accumulator, X, and Y registers to be 16 bits long, which means that any of them can contain a complete 64K address and you can add a large value to a 2-byte address with just four instructions. This takes fewer microprocessor cycles to accomplish, and thus you get your answer faster than you would with a 6502 or 65C02.

The net result is that programs written specifically for the 65816 will run faster and use less memory than equivalent programs written for the 6502 or 65C02.

Although not a direct result of using the 65816, the Apple IIGS also runs about twice as fast as an Apple //e or //c, and this, combined with the inherently faster execution of 65816 programs themselves, yields a speed increase of four to eight times over an equivalent 6502/C02 program.

The other big advantage of the 65816 is its ability to address a larger amount of memory than the 6502/C02. You address a memory location by setting up a bit pattern in a microprocessor register. This register correlates to the microprocessor's *address bus*, the group of parallel wires needed to address a given memory location.

The number of wires in the address bus determines the amount of continuous memory a program can address. In the 6502/C02, the address bus is 16 bits (2 bytes) wide, and 64K becomes the limit of addressable memory.

In Apple II's with more memory (such as the 128K Apple //e) or memory-expansion cards, the 6502/C02 operates on blocks of 64K switched in one at a time. A soft switch somewhere in the $C000 range of memory controls the block selected at any particular time.

The microprocessor itself can't treat the larger amount of memory as a continuous block. This, among other reasons, is why so few programs take advantage of larger amounts of memory in an Apple II. (See "Bank-Switched Memory," August 1986, p. 50, and "6502 Addressing," Apple Clinic, June 1986, p. 26, for more information.)

The 65816, however, has a 24-bit (3-byte) address bus, and addresses specified in a program can be 3 bytes long, yielding a maximum of 4.25 megabytes (256 × 64K) of memory addressable by the microprocessor itself. A great deal of the credit for the improvements in the Apple IIGS goes to the designers of the 65816 itself, Western Design Center of Phoenix, Arizona.

## Tools for Programming

The microprocessor itself represents a large territory for assembly-language programmers to explore in the coming years, but there's even more to make the adventure exciting. Apple has also built a number of "tools" into the IIGS, tucked into the 128K of ROM that comes in each machine.

These tools include QuickDraw II, the SANE Numeric package, Memory Manager, Desk-Accessory Manager, Event Manager, Menu Manager, Window Manager, Control Manager, Line Editor, Dialog Manager, Scrap Manager, and Print Manager. If you're familiar with the Macintosh, you'll recognize the similarity.

The presence of these tools in every machine means that a programmer can quickly put true (not simulated) windows, pull-down menus, dialog boxes, interrupt handling, and much, much more into a program without writing any of the specific code that performs the function or dedicating large amounts of RAM to the job.

With the Apple II, many programmers use this technique to take advantage of built-in Monitor and Applesoft routines to enhance their assembly-language programs. The Monitor and Applesoft make up 12K—imagine what you'll be able to do with ten times that amount!

Whatever IIGS tool you use, you follow the same procedure. The stack first holds all data to be passed to the software tool, including a code number that identifies the particular tool you want to call. The program then executes all tool calls by means of the equivalent of a JSR (jump to subroutine) to address $E10000, the Tool Locator. The Tool Locator also lets you use disk-based tools and automatically loads whatever it needs if it can't find it already in ROM. After the tool call, any returned data are on the stack, ready to be pulled off by the calling program.

The Apple IIGS Monitor also includes a mini-assembler and disassembler that work with 6502, 65C02, and 65816 instructions, as well as disassembling ProDOS MLI (machine-language interface) calls.

## Hardware Extras

In addition to its software enhancements, a number of hardware additions make the IIGS a more interesting machine. Among them are a built-in clock, a 32-oscillator sound-synthesis chip, an improved graphics display (320 by 200 pixels with 16 colors, or 640 by 200 pixels with four colors), AppleTalk interface, and the Apple Desktop Bus. The Desktop Bus, also called the Front Desk Bus, is an all-inclusive keyboard and mouse interface you can expand to interface to graphics tablets, numeric keypads, and other input devices.

Keep in mind that the assembler you're using must be able to accommodate the 65816 with its new instruction set. Apple Computer (20525 Mariani Avenue, Cupertino, CA 95014, 408-996-1010) provides an updated version of the assembler ORCA/M to handle it; the development package also includes a macro library to make calling IIGS tools easier. Roger Wagner Publishing (10761 Woodside Avenue, Suite E, P.O. Box 582, Santee, CA 92071, 619-562-3670) offers a MerlinPro extension called Merlin 16, and the S-C Macro Assembler from S-C Software (P.O. Box 280300, Dallas, TX 75228, 214-324-2050) also supports 65816 instructions.

All in all, if you've enjoyed programming on the Apple II, the Apple IIGS will be a treat. The only thing more impressive than the creation of the Apple II itself is what resourceful, inventive programmers have been able to do with it over the years, in many cases surpassing what even the original designers thought possible.

If the past is any indication, the IIGS will give birth to an entirely new generation of software. I hope you'll be a part of it. ■

*Roger Wagner is the author of* Assembly Lines: the Book *and is president of Roger Wagner Publishing, the publisher of Merlin and MerlinPro assemblers. Write to him at Roger Wagner Publishing, 10761 Woodside Avenue, Suite E, P.O. Box 582, Santee, CA 92071.*

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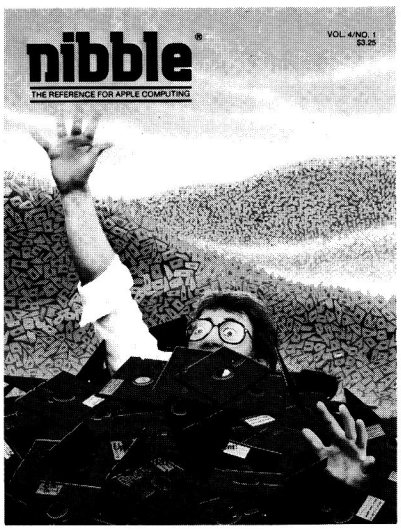
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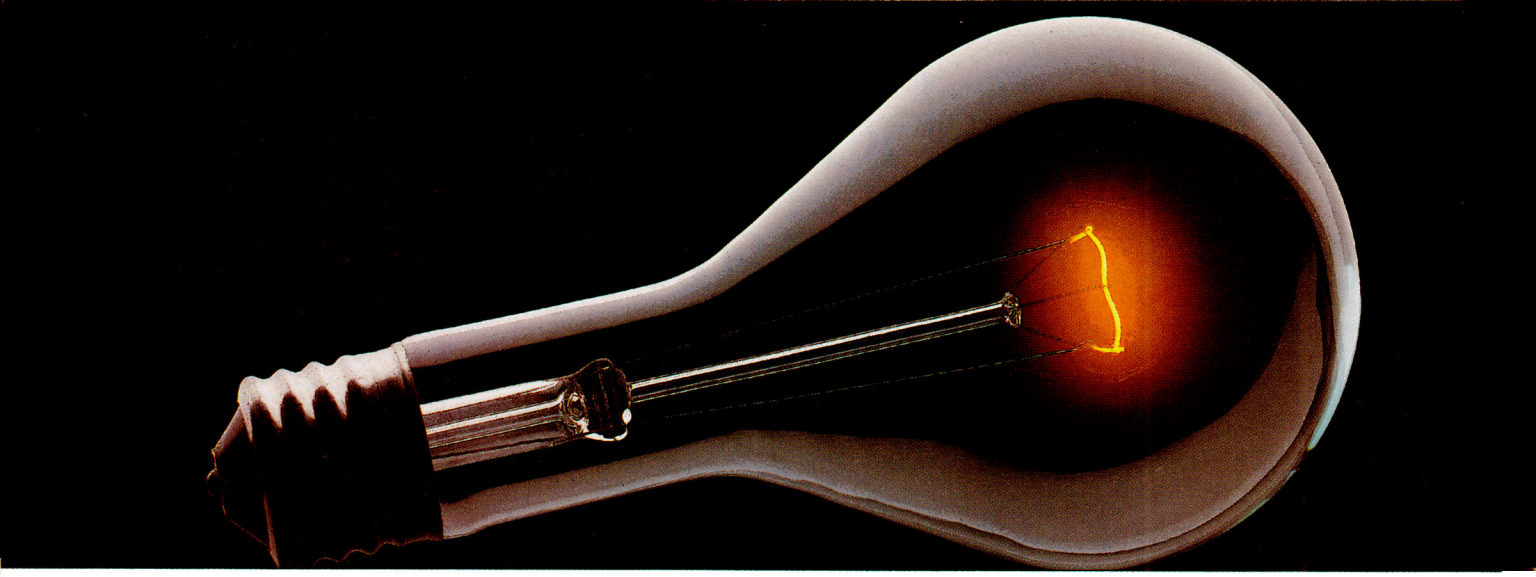
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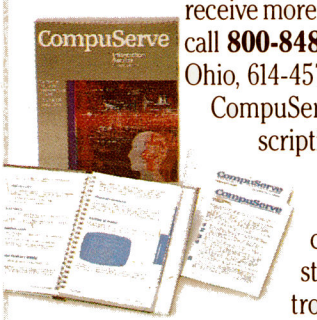
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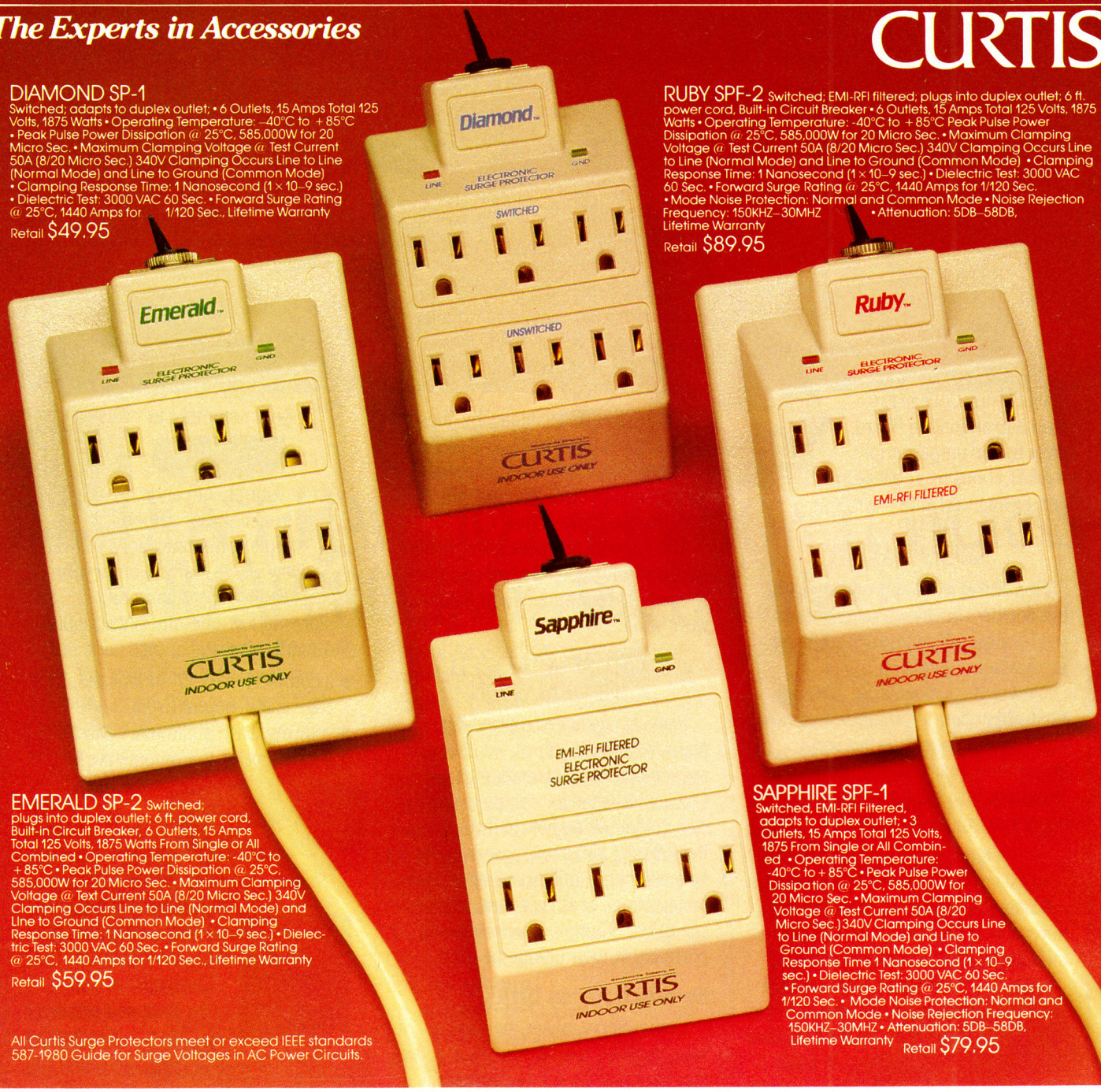
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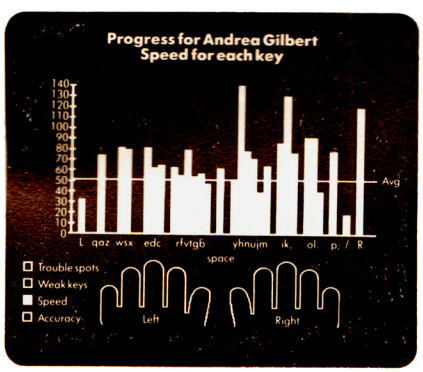
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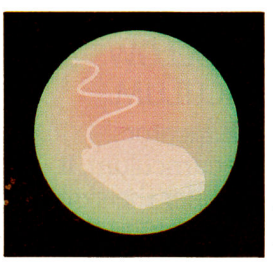
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# DESKTOP ORGANIZERS

*Take the drudgery out of desktop management:* inCider *evaluates three program selectors that will organize your software housekeeping.*

by Cynthia E. Field



Maybe you and your Apple II can mix words and numbers like a gourmet chef and his Cuisinart, but repetitive computing tasks are about as much fun as the stack of dirty dishes in the kitchen. Let's face it: Typing pathnames and swapping disks is the pits!

Luckily, a new breed of software utility—program selectors, or desktop organizers—can revolutionize your disk housekeeping chores, using Macintosh-style icons and menus to make child's play out of program juggling or ProDOS management. While the three desktop packages tested here differ in many subtle and not-so-subtle ways, they have one trait in common: They'll have you working more effectively than ever before.

**Mac-coutrements for ProDOS**

The tested trio—Quark's **Catalyst**, International Solutions' **Mouse Desk**, and Harbor Software's **MouseFiler**—emulate the Mac interface with mouse- or keyboard-controlled pull-down menus.

Catalyst and Mouse Desk make your computer's screen look like the Macintosh Desktop, complete with icons such as a trash can for deleting programs and files. You can drag icons around the desktop or move them from window to window with a mouse or its keyboard equivalent.

In Catalyst, starting up a new program is as easy as double-clicking on that program's icon. In Mouse Desk, it's a snap to copy a file from one disk to another by clicking on and dragging that file's icon.

MouseFiler, by contrast, has windows and pull-down menus but few icons. In that, it resembles applications such as Mouse Word and Mouse Calc from Mouse Desk publisher International Solutions (see "The Magic of the Visual Interface," April 1986, p. 56).

As for hardware requirements, Catalyst and MouseFiler work only on //c's or enhanced //e's, while Mouse Desk can get along on machines without mousetext. All require 128K and one disk drive, but are designed to shine with multiple ProDOS peripherals such as the UniDisk 3.5 and various hard disks and RAM disks. None requires a mouse, though most work better with one. Catalyst and MouseFiler can read the time and date from hardware clocks.

**Catalyst: Most Like the Mac**

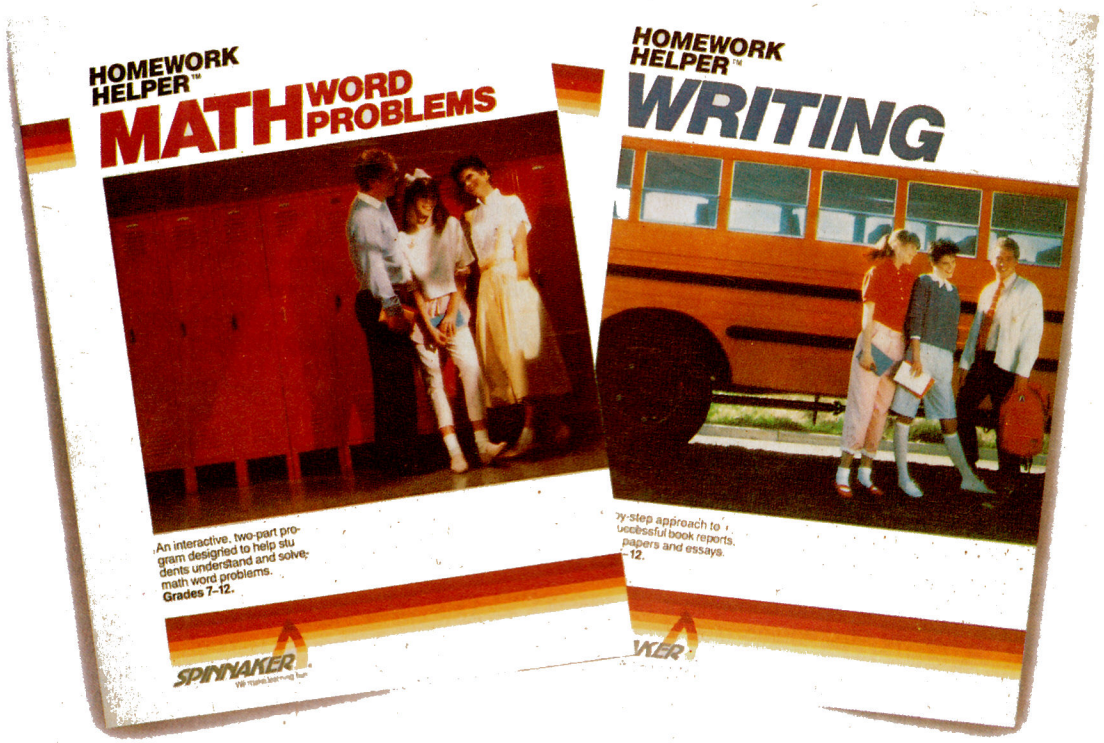
In certain respects, Catalyst is the Cadillac of the four programs reviewed here. It's the most expensive and requires a mass-storage device such as a UniDisk 3.5 or hard drive, but includes extras like MousePaint and an array of utilities (Apple's System Utilities, Quick Copy, Filer, and Backup II) as standard. There are even appealing if faddish features such as a Mac-style calculator, a puzzle, and a desktop that comes in a number of pleasing background patterns.

If your application programs are recognized by Catalyst or are noncopy-protected, you can use Catalyst to install them on your 3½-inch disk or hard disk. Depending on the applications you use, it's possible to start up your computer in the morning and not have to switch disks all day. For instance, you can install the Catalyst desktop, AppleWorks, and all Pinpoint accessories (including the Pinpoint Spelling Checker) on one microdisk. If you have an appropriately sized RAM disk, you can direct Catalyst to copy any program to it automatically at startup.

Program-oriented as it is, Catalyst is somewhat weak when it comes to file handling and similar housekeeping chores. If you use a UniDisk 3.5, performing a simple task such as copying files between disks requires that you leave the Catalyst desktop, temporarily abandoning the Mac interface and parking the mouse, to invoke the supplied Apple System Utilities.

Catalyst offers four pull-down menus: Apple, File, Edit, and Miscellaneous. The Apple menu contains some of the Catalyst goodies, such as the four-function calculator,

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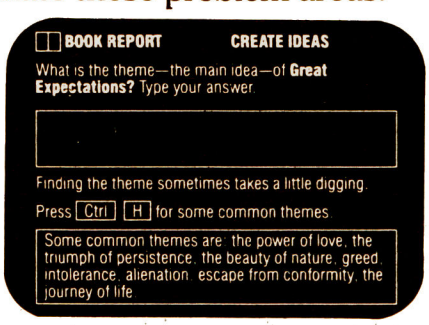
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*Table. Product ratings: program selectors compared.*

| | Catalyst | M. Desk | M.Filer |
|---|---|---|---|
| **Ease of learning** | ■■■ | ■■■ | ■■■ |
| **Ease of use** | ■■■ | ■■■ | ■■■ |
| **Documentation** | ■■■ | ■■ | ■■ |
| **Support** | ■■ | ■■■ | ■■■ |
| **Overall** | ■■■ | ■■■ | ■■■ |

clock, desktop appearance, and puzzle.

The File menu has an assortment of seemingly disparate offerings. You can Get Info about a program here, or Open an icon to start a program without a mouse. If you're averse to pushing the little button on your UniDisk 3.5, you can click on Eject in the File menu, or Quit the program altogether.

The choices in Catalyst's Edit menu (Undo, Cut, Copy, Paste, Clear, Show Clipboard) are largely unavailable. The manual states that these items are activated by "separate desk-accessory products." Undaunted by a continuous busy signal, I dialed (and let my phone redial and redial) Quark's technical-support number. When I finally got through, a spokesman told me there are no such products.

The Miscellaneous menu presents some convenient options for mouseless users. Instead of dragging disk icons or using the trash can, you can Copy or Delete programs or Discard disks via menu choices. Other Miscellaneous choices let you show or hide the RAM-disk icon (if you have a RAM disk) or bring a floppy-disk icon to the screen if you insert a new program disk into a 5¼-inch drive.

Catalyst has a flexible, full-spectrum user interface; you can use it exclusively with the mouse or exclusively without one. Either way, you can avoid the pull-down menus by learning a few mostly mnemonic control-key and apple-key commands.

The Catalyst manual is thorough and well designed. A table of contents, glossary, and index make finding information easy. There are separate chapters for mouse and mouseless operation and a whole chapter devoted to disk management, covering 5¼-inch, 3½-inch, hard, and RAM disks.

While it excels at installing copyable programs, Catalyst itself is the only copy-protected program of the four tested. A free backup is provided, however.

### Mouse Desk: Variation on a Theme

Where Catalyst is program-oriented, Mouse Desk is file-oriented. Its windows show individual file (or subdirectory) icons, not program icons. As a result, windows containing many files can seem overwhelmingly cluttered; you may have to scroll through two or more screens to see all the files listed. To Mouse Desk's credit, however, you don't have to leave the program to perform routine chores like copying files or formatting disks.

Like Catalyst, Mouse Desk is very Mac-like. It features pull-down menus, expandable windows, dialog boxes, and disk, file, and trash-can icons. A Show menu lets you display files by icon, name, date, size, or type.

You can install unprotected software by transferring program files to 3½-inch or hard disks. The latest versions of Mouse Word and Mouse Calc are two such programs that can reside along with Mouse Desk on one microfloppy. Selecting and running either of these programs is as simple as pulling down the Run menu and clicking on the desired entry.

This setup is especially convenient if you're looking for an alternative to AppleWorks, because the Mouse Series is integrated.

Like Catalyst, Mouse Desk offers mnemonic apple-key commands to help speed things for mice and typists alike. A Keyboard menu helps mouseless users make selections, move elevators, and manipulate windows more easily.

The Check menu lets Mouse Desk ascertain the status of connected drives. If you want to leave Mouse Desk and work on a program that's not on the Run list, pull down the Boot menu and click on the Slot 5 or Slot 6 listing.

The original Mouse Desk manual was incomplete and contained editorial errors. At this writing, a new manual that promises to be much better is in the works.

### MouseFiler: A Desktop Bargain

If you're looking for a Mac-like disk-file manager at a very reasonable price, look no further. MouseFiler's six

## RunRun: Pinpoint Meets Programs

As Cynthia Field finished this review, *inCider* received a prerelease copy of a fourth ProDOS program selector: RunRun, a new entry from Pinpoint Publishing (5901 Christie Avenue, Emeryville, CA 94608). Like MouseFiler, RunRun uses mousetext characters (but no icons) and requires a //c or 128K enhanced //e; it displays a Macintosh-style desktop with expandable, movable windows. It also appears to be aimed almost exclusively at users of Pinpoint's Desktop Accessories package.

In addition to a disk-catalog window showing files by name, type, size, or date, RunRun ($49) features an applications window listing your executable programs (you install programs by specifying their on-screen titles and on-disk paths and filenames). There are two pull-down menus, opened with the escape key. The File menu lets you select a floppy, hard, or RAM disk, sort the catalog, or run, install, or uninstall an application. RunRun doesn't offer mouse control, and (at least in the prototype version) has no file- or disk-handling commands such as copying or formatting.

Instead, there's the Accessories menu, a list of Pinpoint utilities such as the notepad, appointment calendar, phone dialer, and filer (for some of the ProDOS functions omitted from the main program). The advantage of RunRun, and the reason for its name, is its ability to run one accessory from within another. For example, after opening Pinpoint's notepad from the RunRun desktop, you can call the solid apple-P Pinpoint menu and load the calculator.

This convenience, and the customizable applications window for users interested in setting up their own menu-driven hard-disk or UniDisk 3.5 systems, seem to be RunRun's main attractions. We'll keep an eye on it, and the legions of other new products Pinpoint plans, as production copies become available.□

**—Eric Grevstad**

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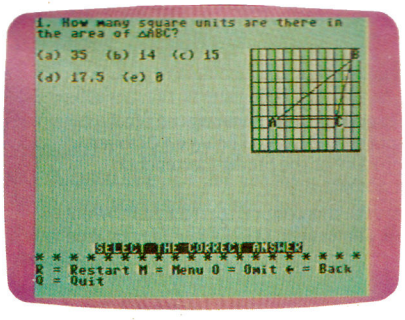
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pull-down menus contain most of the disk-maintenance options you're likely to want.

File and Volume commands are listed in separate menus. Using the former menu, you can open a file and display its contents in ASCII or hexadecimal format; copy, paste, delete, rename, and compare files; or create, list, copy, or delete directories. The Volume menu offers options for listing, formatting, copying, renaming, and comparing disk volumes. MouseFiler determines block allocation and tests for bad blocks.

On-line volumes appear in a special window listing volume names and locations. Clicking on a volume opens it; double-clicking opens a directory window listing files by icon, name, and type (MouseFiler recognizes more than a dozen file types, including the three AppleWorks applications). Disk swaps, by the way, are not automatically recognized; when you change disks, you have to click on the Volume List option in the Volume menu.

A decidedly strong file-management program, MouseFiler is understandably less adept at program selection. To boot an application program, you highlight the volume name, open its directory, click on a system file, move to the Apple menu, and select Exit to Program.

MouseFiler works well and is easy to learn, though I would like to see some improvement in error handling. I purposely asked the program to format a disk in slot 6, drive 2, a drive not attached to my //c. Instead of a "Can't find device" message, I was told, "Disk is write-protected."

When I wanted to format a microfloppy in my UniDisk 3.5 (slot 5, drive 1), an inexplicit message warned, "You are about to format a big disk. Do you really want to do this?" Once you consent and type in the disk's name, the formatting begins—with no warning if the target disk already contains data! Programs usually ask if it's "OK to Destroy" a preformatted volume.

Despite these complaints, I like MouseFiler. It's an unpretentious program that does what it claims to do, with an adequate manual and no copy protection. The manual says this last point is "for your protection." This refreshing attitude makes me think that maybe MouseFiler's developers are consumers, too.

At $39.95, MouseFiler is an excellent investment. It can be installed on mass-storage devices using Catalyst. Such a configuration eliminates the need to leave the Catalyst desktop to use Apple's System Utilities, as MouseFiler easily substitutes for all except modem and printer utilities. With a Catalyst/MouseFiler partnership, you'll probably never have to abandon the Mac metaphor and leave your mouse idle.

### Different Strokes

None of the programs reviewed here is perfect in every way. Neither are software reviewers or Apple II users, so several satisfying matchups are possible.

If you want a Mac-like program selector, Catalyst is tops. If you have a lot of file-management chores and like the Mac environment, MouseFiler is an excellent buy. If integrated software is a high priority or if you have an unenhanced //e, Mouse Desk and the accompanying Mouse Series programs are a good choice. ■

*Write to Cynthia Field at 10 Border Avenue, Wakefield, RI 02879.*

## Product Information

**Catalyst 3.0**
Quark
2525 West Evans
Suite 220
Denver, CO 80219-5554
(303) 934-2211
$99
//c or enhanced //e

**Reader Service Number 300**

**MouseFiler 1.1**
Harbor Software
403 Great Road #8
Acton, MA 01720
(617) 263-1870
$39.95
//c or enhanced //e

**Reader Service Number 301**

*Editor's note: International Solutions, U.S. distributor of Version Soft's Mouse Desk, went out of business at press time. According to Bill Cleary, International Solutions board member and vice president of marketing for Activision, several companies including Activision were negotiating to take over Mouse Series sales;* inCider *will publish the new distributor when one is named.*

**Mouse Desk 1.02**
International Solutions
Distributor unknown
at press time;
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$69.95
//c or 128K //e

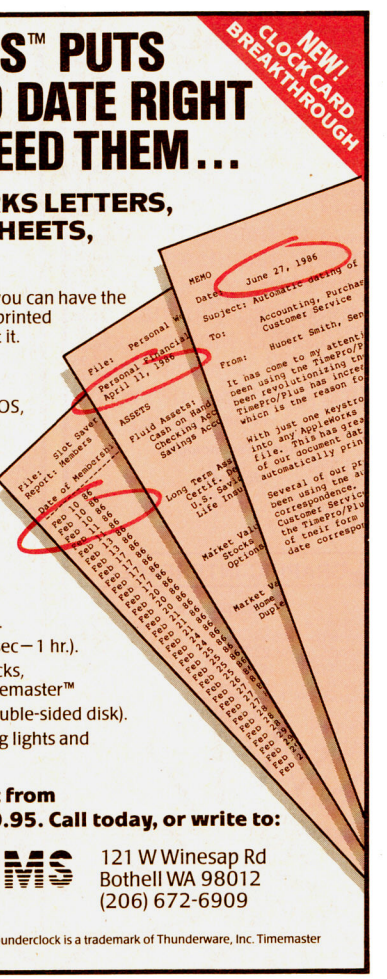

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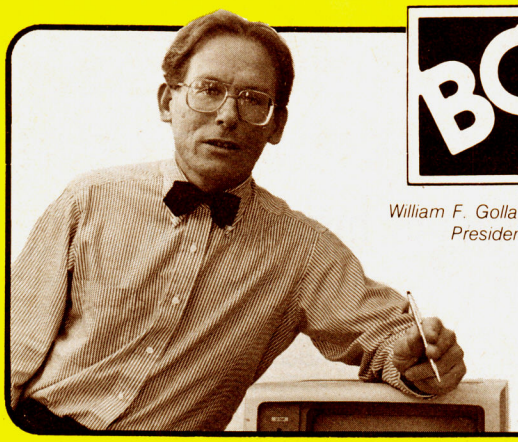


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| ***Mindscape*** | |
| Bank St. Story B. | 30.95 |
| Keyboard Cadet, Lusher Profile (ea) | 28.95 |
| Perfect Score | 48.95 |
| ***Pinpoint*** | |
| Added Menue's (ea) | 14.95 |
| Micro Cookbook | 30.95 |
| ***Random House*** | |
| Charlie Brown Series + All Products | 24.95 |
| ***Scarborough*** | |
| Boston Diet, Personal Net Worth (ea) | 54.95 |
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| Mastertype New, Filer (ea) | 28.95 |
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| Writing Wizard | 49.95 |
| ***Simon & Schuster*** | |
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| JK Lasser $ Mng. | 51.95 |
| Lovejoy's SAT | 45.95 |
| Make A Match | 22.95 |
| Math Buster | 22.95 |
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| Webster's Spelling Ck. | 42.95 |
| ***Spinnaker*** | |
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| BW File/Report, BW Spread., WP (ea) | 40.95 |
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| Grandma's House | 21.95 |
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| Puzzle Master, Rainbow P., Stickers (ea) | 24.95 |
| ***Timeworks*** | |
| Evelyn Wood Reader | 46.95 |
| Silvia Porter $ Planner | 73.95 |
| Swiftcalc w/Sideways | 103.95 |
| ***Xerox/Weekly Reader*** | |
| Sticky Bear Series (ea) | 26.95 |

## GAMES SOFTWARE

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| ***Access*** | |
| Beach-Head II | 28.95 |
| ***Accolade*** | |
| DamBusters, Fight N., Hard Ball, Laws of West, Psi 5, Sundog 2.0 (ea) | 23.95 |
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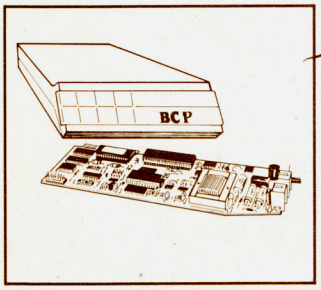
## GAMES SOFTWARE

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## GAMES SOFTWARE

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| Rescue Raiders | 27.95 |
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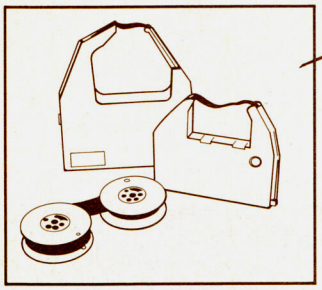
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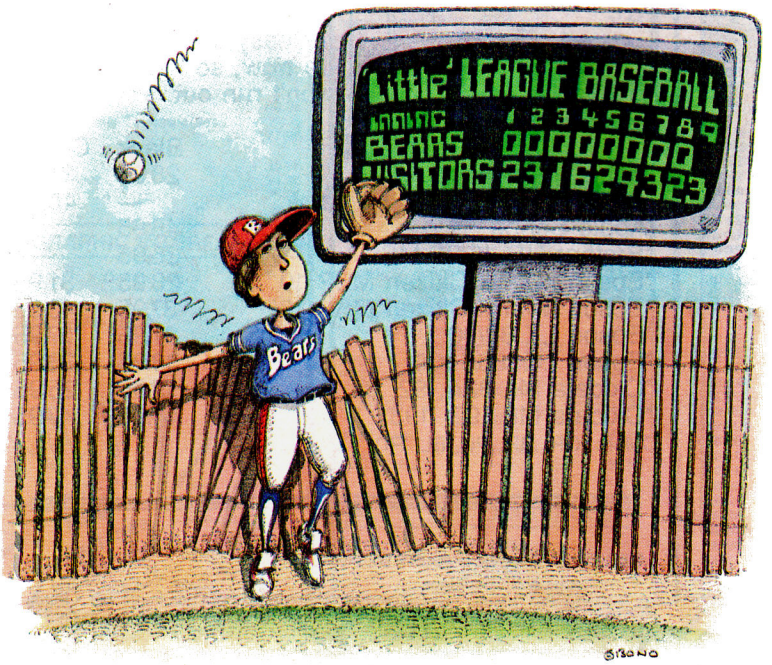
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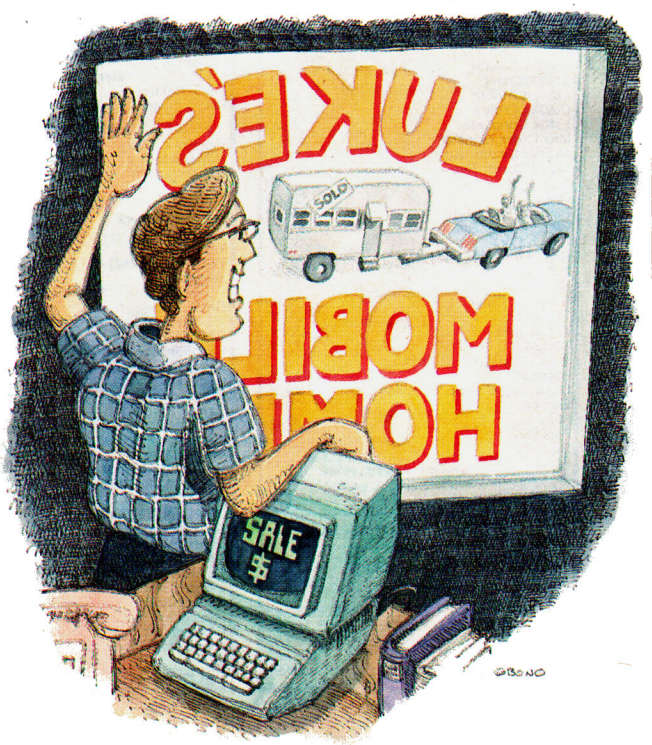
VISA





*When you're trying to organize your business and personal records, you can't beat data-base programs for information management. This month,* inCider *takes a look at the wide range of features and capabilities available in seven Apple II data-base systems.*



# WHAT DO THESE PEOPLE HAVE IN COMMON?

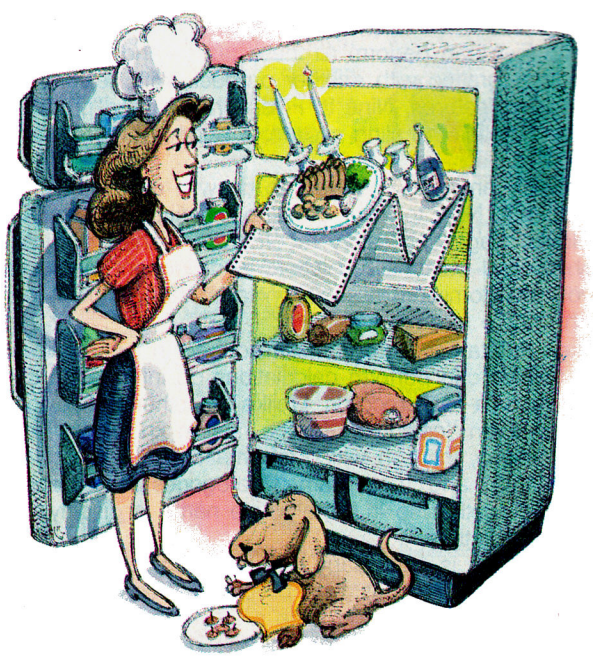
by Cynthia E. Field

Data bases are boring, right? Not to Luke McCollum, owner of Centennial Mobile Homes in Farmington, New Mexico. Luke's dealership is a one-man, million-dollar-a-year operation. He's taken on all management, sales, and clerical duties. Too much for one person to handle? Not if your assistant is an Apple II data-base program.

Let's take a look at seven data-base packages (see the accompanying Product Information sidebar and ratings **Table**) that can help you and your Apple save time and make money (maybe data bases aren't so boring after all).

### What Is a Data Base, Anyway?

What computer enthusiasts sometimes loosely refer to as "data bases" are known formally as data-base management systems (DBMS's). The data base itself is the mass of information these programs store—like stamps in a collection.



According to Rick Minicucci, writing in *Today's Office* ("Database Management Systems: Keys That Unlock the Power of Data," July 1986), data-base management programs fall into three categories: single-file, intermediate, and relational.

The first type, represented by six of the seven programs surveyed in this article, can work only with information stored in a single file—like the U.S. Commemorative stamps you keep in a separate album. A single-file program can electronically rearrange your list of stamps or any information about them, such as number of perforations, presence of watermarks, and market value. You can physically remove all the commemoratives from your album, sort them by issue date, and reinsert them, but a DBMS performs these tricks much more quickly and in a more sophisticated way.

What happens if you decide to combine two albums into one, adding your Canadian commemoratives to those from the U.S.? In the physical world, you'd have to remove the stamps from each album and reinsert them into a larger one, labeled *North American Commemoratives*.

When you want to combine files or transfer information from one data-base file to another, an intermediate or relational DBMS can save you time and trouble—not to mention a lot of stamp hinges. If the files are similar in the type of information they hold, though, you may not need a high-powered DBMS: Most single-file DBMS's (of the seven reviewed here, all but Filer's Choice and Better-Working File & Report) can merge two files into one.

Nine to Five is the only one of the seven programs in this article that could be classified as an intermediate data base. An intermediate program goes beyond merging two separate files: You can merge selected information from one file into another. If, for example, you had a file of U.S. stamps and a file of stamps from other countries, you could select the North American stamps from the latter and merge them with the U.S. stamps.

### What If I Don't Collect Stamps?

Most of us tend to be acquisitive—the closets, garages, and basements of America prove we're pack rats. You may not collect stamps or coins, but you probably have a growing book or compact-disc library.

How about the assorted slips of paper, index cards, and newspaper clippings in the kitchen drawer to which you facetiously refer as the "recipe file"? A computerized cookbook can give you a clean printout whenever you need one so that you don't have to read through aged Worcestershire sauce and grease stains. An electronic food file can suggest a meal you can whip up when the only items in your refrigerator are leftover liverwurst, day-old pizza, and clam juice of unknown vintage.

In a more serious vein, a growing family needs to keep track of health records, household inventory (in case of theft or fire), and tax information. Any DBMS, including the no-frills BetterWorking File & Report and Filer's Choice, can help you manage these mundane but vital affairs.

### Can a Data-Base Program Help My Social Life?

It might be amusing to computerize your "little black book," but it probably wouldn't justify the price of DBMS software. Still....

In other ways, a DBMS can augment your enjoyment of the clubs and organizations to which you belong. Even your bowling league needs to keep track of who the club kingpin is and who leads in gutter balls. Some professional baseball teams, like the New York Yankees, keep track of player statistics on an Apple II (see "The Tenth Player," July 1986, p. 42). Little League and Babe Ruth League teams can do the same.

Have you ever been asked to organize a class reunion? Any DBMS can keep track of class members, addresses, and personal information. Some computerized filing programs, like ProFiler and Nine to Five, can even help you prepare personalized form letters telling each member about planned reunion activities.

About a year ago, Richard Ethier, an electrician from Narragansett, Rhode Island, purchased an Apple //c. Before he could say "Space Invaders," the Rhode Island chapter of the Disabled Veterans of America elected him adjutant—which meant he was corralled into setting up a data base of the group's approximately 220 members. He used Bank Street Filer to do the job.

According to Richard, "If you're not a typist, entering all this information is a monumental job—but it's worth it in the end."

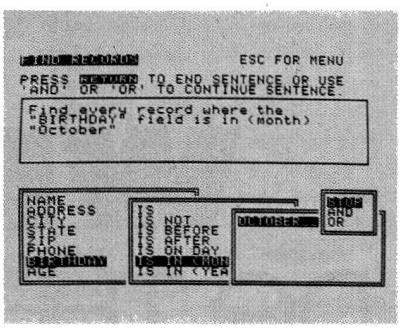
### How Can a Data-Base Program Make Money for Me?

Some businesses such as Dow Jones, The Source, and CompuServe make money by selling the information in their data bases. Unless you have hard-to-come-by, proprietary, or particularly valuable information, you probably won't be able to market yours.

How *you* use your data base can help you improve profits, though. Whether your business is small or conglomerate-sized, DBMS's help you organize information and make better decisions. The improvement you see in your bottom line is an indirect measure of your success.

Cynthia Villari and Sister Catherine Fazzina have only recently begun computerizing the Rolfe Square Counseling Center in Cranston, Rhode Island. Their business sponsors seminars and provides professional counseling services for children, adults, and couples.

In the past, Sister Catherine used her typewriter and a stack of envelopes whenever she wanted to send announcements to professionals, paraprofessionals, and lay people on the Center's mailing list. Just when things began to get unwieldy—the mailing list has grown to 550—Sister Catherine discovered what an Apple //e and PFS:File could do for the Center: She's added codes to each person's record so that she can generate labels for a select list of associates.




*Bank Street Filer: Easy, flexible, capable, with a natural-language interface.*

Having used an older, DOS 3.3 version of PFS:File, Sister Catherine is ready to switch to the more powerful, current ProDOS version, which comes bundled with PFS:Report. (She plans to have the program automatically sort by zip code to take advantage of bulk-mail rates.) And Sister Catherine won't have to retype her data base to change from DOS to ProDOS: Software Publishing provides a free utility program, PFS:Convert, that takes care of that task.

Whether you sell a service, as the Rolfe Square Counseling Center does, or a product, a DBMS can help you find customers, handle their needs, and keep them coming back.

Luke McCollum, the mobile-home dealer in New Mexico, uses Nine to Five to prospect—for the "gold" that's already in people's pockets.

If you're not on enough mailing lists, stop in and visit Luke—he'll gladly add you to his. He can use his 300-baud Apple modem to call the credit bureau's data bas to "pre-qualify" you, too.

If you seem a likely candidate for a mobile home, Lu will follow up your visit with a phone call or letter. If yo buy, Luke's Apple //e will generate a contract and trans you from the "Prospect" file to the "Customer" file. Luke's data-base program is among the friendliest—it c even remind him to send you a birthday card!

### Nine to Five, the Program

Unlike the other six programs described in this article, Nine to Five can perform all these tasks—and more—without integrating with another product. With flexible, easy-to-use features, Nine to Five is really three programs in one. Besides the filing system, a report generator and word processor are built in.

Probably anything you want to do with a data base you can do with Nine to Five. Creating, printing, and storing employee wage and salary records are a snap. It's just as easy to send personalized letters to delinquent members of your condominium association to let them know how much they're in arrears.

Like all data-base programs described in this article, Nine to Five can perform calculations on information contained in data-base records. Unlike the others, Nine to Five can even "calculate" text, a feature known as *text concatenation*, through which information you've entered in "First Name" and "Last Name" categories, for instance, is "added" together so that the whole name is displayed in reports and letters.

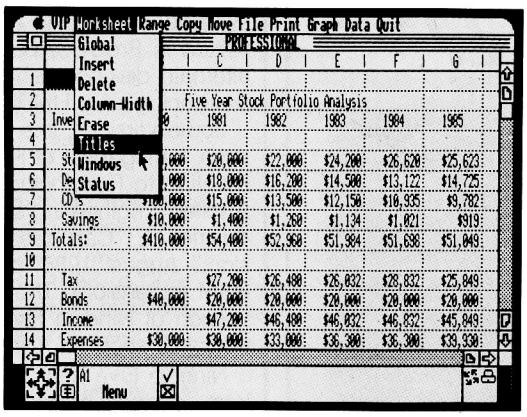
Nine to Five is particularly well suited for business, especially sales operations. The program's "conditional paragraphing" feature lets you write a form letter, then go into the data base and select the specific clients you want to

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### Professional Power

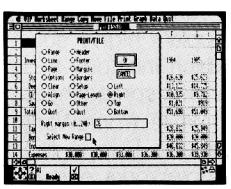
Don't be fooled by the pretty face. Professional packs a tremendous punch. Like its ability to address up to four megabytes of data; Or its 50-plus built-in financial and mathematical functions; Or its database with up to 8,192 records, each with up to 256 fields; Or its five different types of graphs with tens of options; And its Lotus 1-2-3 macro programming language that lets you automate your spreadsheet for specific tasks such as classroom exercises, experiments, or business applications such as accounting.

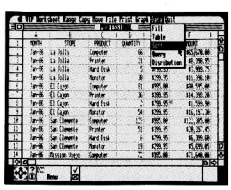
### Works Great in 8 & 16 Bit

VIP Professional not only has the same commands and features as 1-2-3, you can also type the same keys to do the same things. Lotus files can be read and written, and all functions can be used, including the powerful macros.

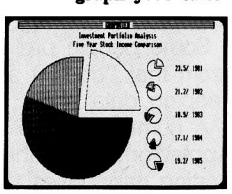
Of course you get variable column width, split screens, frozen titles, sorting, data query, file combine and extract, copy, move, range naming, justification for doing business form letters, statistical analysis, a full range of numerical formatting, engineering graphics precision, local and global protection of cells, header and footer control. In short, Professional matches the power of any spreadsheet for any computer!

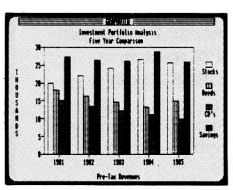
But Professional goes beyond Lotus, making it oh so easy to use—and even more powerful. Pull-down menus, dialogue boxes, mouse ranging, scads of icons, scroll bars, column "grabbers", grids—everything you need for ease of use, everything Lotus lacks. Plus, Professional adds things that were left out of Lotus, like a giant 8,192 row by 256 column spreadsheet, and the ability to use up to four megabytes of memory.





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### Just Minutes to Learn

Professional comes with a user-sensitive tutorial for the newcomer. And help is built right into the program. With the handy tutorial you will be able to create your first worksheets in just minutes.

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| Feature | VIP | SuperCalc3a™ | Mouse Calc™ | AppleWorks™ |
|---|---|---|---|---|
| Sheet Size | 256x8192 | 63x256 | 63x254 | 153x999 |
| Usable Memory | 4 Meg | 500K | 42K | 61K |
| Lotus Spreadsheet | Yes | No | No | No |
| Lotus Database | Yes | No | No | No |
| Lotus Graphs | Yes | No | No | No |
| Lotus Macros | Yes | No | No | No |
| Uses Lotus Files | Yes | No | No | No |
| Uses Mouse | Yes | No | Yes | No |
| Uses Icons | Yes | No | No | No |
| Math Functions | 51 | 49 | 24 | 13 |
| Fast Natural Recalc | Yes | No | No | No |
| Speed | Fast | Fast | Slow | Fast |
| Supports 16-Bit* | Yes | No | No | No |

*Works with but does not require Checkmate and Applied Engineering 16-bit boards.

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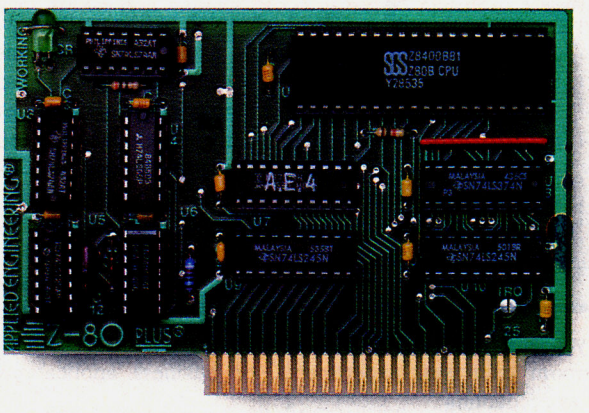
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receive the letter (for example, customers who are two or more months behind in their payments).

Most programs for the Apple II come in one version, but Nine to Five is custom-tailored to your hardware. The basic edition requires 128K and two floppy drives. Other versions are available for hard-disk drive and UniDisk 3.5 systems. (According to the company, Nine to Five isn't written in ProDOS, but still supports the UniDisk 3.5: An alternate disk-operating system called DOS 3.5 allows the partitioning of a UniDisk 3.5 disk into two DOS volumes.)

Some versions, like Luke McCollum's, require 512K or even 1 megabyte of RAM expansion. Cards recommended by Nine to Five include Apple's Memory Expansion board, Applied Engineering's RamWorks series, and Legend Industries' E′ Card (see "Two Roads to Memory Expansion," August 1986, p. 46, for a discussion of Apple II RAM expansion). The frequent disk-drive access the 128K version of Nine to Five requires also warrants an accelerator card, such as Applied Engineering's TransWarp.

Nine to Five has the worst—and at the same time the best—support program I know. First, Nine to Five is copy-protected (a backup is free and is included in the package). While the company's policy isn't yet set in stone, Glenda Survance, a spokeswoman at Nine to Five, tells me that support is free for the first 30 days. After that, support will cost you $60 per hour (six-minute minimum charge).

Now, the good news. To encourage as many people as possible to try the program, Nine to Five Software provides free demo disks. The actual program comes with a six-month money-back guarantee. How many software companies offer the actual program on approval?

### AppleWorks

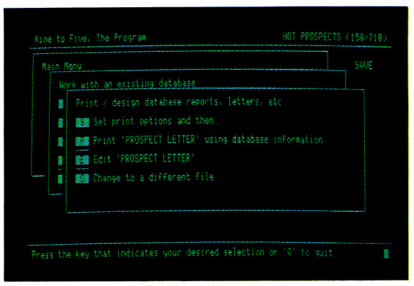
Nine to Five's primary competitor in the marketplace is Apple's highly successful integrated program, AppleWorks, which includes a data-base program, a word processor, and a spreadsheet generator—all on one program disk.

While AppleWorks' data base isn't nearly as capable as Nine to Five in filing, searching, sorting, and reporting, AppleWorks enjoys the edge because it's easier to learn and requires less hardware—a 64K Apple //e with just one floppy drive, for instance. (That configuration is slow and limited, but it runs.)

Some people prefer the convenience of having one program that "does it all" in terms of preparing documents, keeping data bases, and creating spreadsheets.

A number of publishers market useful enhancements for AppleWorks. Megahaus' ReportWorks adds advanced reporting capabilities to the AppleWorks data base (see our review, September 1986, p. 32). In fact, ReportWorks turns AppleWorks into the only quasirelational Apple data-base program available at this writing (although the new Foundation package claims to be—see our review in an upcoming issue). ReportWorks can extract information from a number of AppleWorks files—not just merge the information, but manipulate it with built-in mathematical functions or user-created formulas. ReportWorks doesn't coexist with AppleWorks and therefore can't automatically update all pertinent files as a true relational data base can. For advanced reporting features using AppleWorks data-base files, though, ReportWorks has no peer.

To ReportWorks, add AutoWorks (see our review in this issue, p. 40) or MacroWorks (see Editors' Choice, August 1986, p. 112), and AppleWorks is even more powerful. These programs let you create shortcut commands called *macros*, which speed you through the sometimes tedious key-pressing process. AutoWorks also lets you use a mouse




*Nine to Five: Filer, report generator, and word processor all in one.*

for cursor control within menus and records in AppleWorks. And don't forget Pinpoint with its desktop accessories—including the Spelling Checker (see "Desktop Power," March 1986, p. 34, and Reviews, October 1986, p. 27).

For casual small-business use—tasks such as maintaining a mailing list or keeping employee records—AppleWorks probably suffices. If you want a data base to keep track of receivables and inventory (and automatically generate invoices, statements, or purchase orders), AppleWorks by itself is inadequate.

### PFS:File and PFS:Report

Originally packaged separately and priced at $125 each, PFS:File and Report are now bundled together for $125, or with PFS:Write (a word-processing program with spelling checker) and PFS:Plan (a spreadsheet program) for $250.

Many veteran Apple II owners cut their teeth on PFS:File when it was known simply as PFS (Personal Filing System). In those days, this very basic filer was considered pretty spiffy. How things change!

Today, we want programs that can search, sort, and report in more sophisticated fashion. We also want to be able to modify our record format. All these features are standard in the "new" PFS:File.

The menu setup used throughout the PFS series is consistent and easy to understand. Like the other programs reviewed here, PFS:File and PFS:Report help you customize your reports in both content and format. These programs can also perform calculations on selected data.

One of PFS:File's strengths is its ability to integrate with other PFS programs. You can import budget data from Plan into File, where you can rearrange and reformat them, then add them to a Write document.

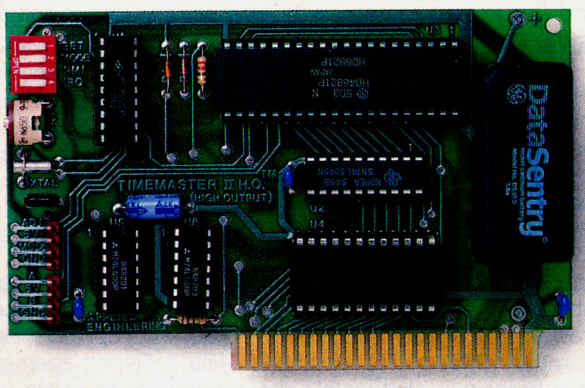
The ProDOS-based PFS programs require 128K of RAM and one floppy drive, though two are recommended for easier sorting by PFS:Report. The PFS series also supports the UniDisk 3.5.

### ProFiler

Another file-and-report program in the $100-and-up category is ProFiler, from PM Software. The noncopy-protected floppy disk contains an experimental version of ProDOS for quicker record retrieval. I found program loading slow, however.

ProFiler requires at least 64K and one floppy drive. The program is compatible with the UniDisk 3.5 and the Sider and ProFile hard-disk drives. As a rule of thumb, ProFiler—like other Apple DBMS's—lets you store more than 1000 records on a floppy disk and tens of thousands of records on a hard-disk drive.


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If you own AppleWriter 2.0 (the ProDOS version) you'll appreciate ProFiler's ability to export mailing-list information to an AppleWriter file for mail merging.

ProFiler's appearance is traditional, and its command structure will be most appealing to Apple II Plus owners. Instead of using an apple key, Apple //e and //c owners have to use the control key to execute commands. Some programs, like Spinnaker's BetterWorking File & Report, let //e and //c users press an apple key, while II Plus owners press the control key.

### BetterWorking File & Report

When I first reviewed BetterWorking File & Report (September 1985, p. 75), I criticized its scrambling of the information I had laboriously typed into a file consisting of members of my high school's alumnae association. I'm pleased to report, though, that this major flaw has been eliminated.

BetterWorking File & Report can be integrated with other members of the BetterWorking series: Word Processor (see our review in the May 1986 issue, p. 98) and Spreadsheet (September 1985, p. 75). At $59.95, File & Report seems to be a bargain. Unfortunately, the program is copy-protected. A backup costs $12, bringing the price to more than $70.

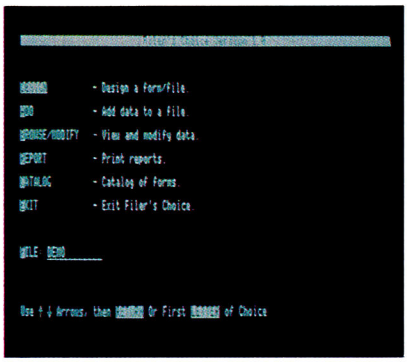
File & Report is relatively easy to learn and use. The trickiest part is remembering the somewhat cryptic codes you use to perform searches and to sort and print information in your reports. It's difficult, too, to judge how wide a column you need to accommodate different fields of information. You may forget that Mary's maiden name was Wojciechowski and that she no longer lives at 3221 East Legend Rock Road; when your report is printed, you may wonder who Mary Wojciechow is and where 3221 East Leg is.

With a little advance planning on paper, perhaps you can avoid these hassles, though you may prefer programs like Bank Street Filer or AppleWorks, which tell you the column-width settings you need.

BetterWorking File & Report is the only program reviewed here that runs on that sometimes unappreciated workhorse, the 48K Apple II Plus with one disk drive. Happily, Spinnaker Software hasn't forgotten those who, for one reason or another, didn't need to jump on the hardware-upgrade bandwagon.

### Bank Street Filer

If ever there was a supremely easy, reasonably flexible, surprisingly capable DBMS, Bank Street Filer is it. Both 64K and 128K versions are available. The program loads fully




*Filer's Choice: New kid on the personal-database block.*

at startup, and you can keep your data disk in drive 1. A second drive isn't required and is probably not even useful.

You'd think that a low-priced ($69.95) program would be bereft of features. Not so. Bank Street Filer has a large number of built-in capabilities, cleverly disguised and simplified by a natural-language interface. In short, Bank Street Filer speaks English—unlike any other DBMS reviewed in this article.

You won't have to learn any commands (there are a few mnemonic apple-key commands if you want to bother with them); you don't even have to know what to do next—the program prompts you when you make an operational mistake.

Unlike Spinnaker's BetterWorking File & Report, Broderbund's program lets you change the record layout without losing data you've already entered.

Searching is a breeze. The program prompts you by displaying pop-up windows containing words like *is*, *is not*, *starts with*, *ends with*, *contains*, and so forth. The "selection sentence" you create can include more than one sort criterion. For example, you could search for all Apple user-group members living in Flushing, New York, who are plumbers.

So why is Richard Ethier, adjutant for the Rhode Island Disabled Veterans of America, switching from Bank Street Filer to AppleWorks? Now that its membership records are fairly complete, the group is ready to send out notices. While it can create all sorts of columnar reports, Bank Street Filer can't print mailing labels.

To do that, Richard would have to purchase Broderbund's mailing-list management program, Bank Street Mailer. It's of the same high quality as Bank Street Filer and Writer, but it costs an additional $69.95.

There's another consideration: Richard already owns AppleWorks. And, quite frankly, now that he has a year's computing experience under his belt, he's tired of respond-

| | Ratings | | | | |
|---|---|---|---|---|---|
| **Product** | **Ease of learning** | **Ease of use** | **Support** | **Documentation** | **Overall** |
| AppleWorks | ■■■ | ■■■ | ■■■ | ■■■■ | ■■■ |
| Bank Street Filer | ■■■■ | ■■■ | ■■ | ■■■ | ■■■ |
| BetterWorking File & Report | ■■ | ■■ | ■ | ■■ | ■■ |
| Filer's Choice | ■■ | ■■ | ■■ | ■■ | ■■ |
| Nine to Five | ■■ | ■■■ | ■■■ | ■■ | ■■■ |
| PFS:File and Report | ■■■ | ■■ | ■ | ■■■ | ■■ |
| ProFiler | ■■ | ■■ | ■■■ | ■■ | ■■ |

ing to the many prompts Bank Street Filer presents. Even if you accept all the defaults (usually Y for yes), you have to respond to about ten questions before you can print a simple report.

### Filer's Choice

The new kid on the block among DBMS's is Filer's Choice, a $49.95 program you can purchase as part of Activision's Personal Choice Collection (see "Your Choice" in this month's New Products section, p. 152). At $119.95, this software library contains, in addition to Filer's Choice, a word processor (Writer's Choice) and a spreadsheet program (Planner's Choice).

Like Bank Street Filer and BetterWorking File & Report, Filer's Choice is appropriate for casual personal use. The program requires only 64K and one floppy drive. Like Bank Street Filer and BetterWorking File & Report, Filer's Choice offers either a 40-column or 80-column display.

The program is menu-driven, and creating reports is somewhat easier than it is with Spinnaker's program. For instance, if you don't want to guess the number of spaces a column needs to display complete data, the program has a default setting that calculates the longest piece of information and adds one space.

Unlike Bank Street Filer, Filer's Choice requires you to memorize commands. To make matters worse, they're largely non-mnemonic. This program offers less flexibility than some others do; for instance, you can add new fields, but you can't delete old ones.

Like BetterWorking File & Report, Filer's Choice is copy-protected, and a backup costs you extra—in this case, $15. When you add it all up, these two programs, which at first appear to be less costly than Bank Street Filer, are actually just as expensive.

Activision should be complimented, though, on other aspects of its support policy. Consulting is free, and the company's toll-free telephone number is clearly displayed in the manual.

### Getting Started

Only you can determine the level of sophistication you need in a data-base management system; you'll have to consider each package in terms of price, hardware requirements, report- and letter-generation capabilities, and ease of use. And with the wide variety of Apple data-base programs from which to choose, you may need a DBMS just to help you decide! ■

*Write to Cynthia Field at 10 Border Avenue, Wakefield, RI 02879.*

## Product Information

**AppleWorks 1.3**
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$250
**Reader Service Number 303**

**Bank Street Filer**
**Bank Street Mailer**
Broderbund Software
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San Rafael, CA 94903-2101
(415) 479-1170
$69.95 each
**Reader Service Number 304**

**BetterWorking File & Report 1.1, 1.2**
Spinnaker Software
One Kendall Square
Cambridge, MA 02139
(617) 494-1200
$59.95
**Reader Service Number 305**

**Filer's Choice 1.0**, $49.95
**Personal Choice Collection**, $119.95
Activision
2350 Bayshore Frontage Road
Mountain View, CA 94043
(415) 960-0410
**Reader Service Number 306**

**Nine to Five, the Program**
Nine to Five Software
P.O. Box 915
231 East Main Street
Greenwood, IN 46142
(317) 887-2154
$99.95
**Reader Service Number 307**

**PFS:File and PFS:Report**, $125
**PFS:Workmates**, $250
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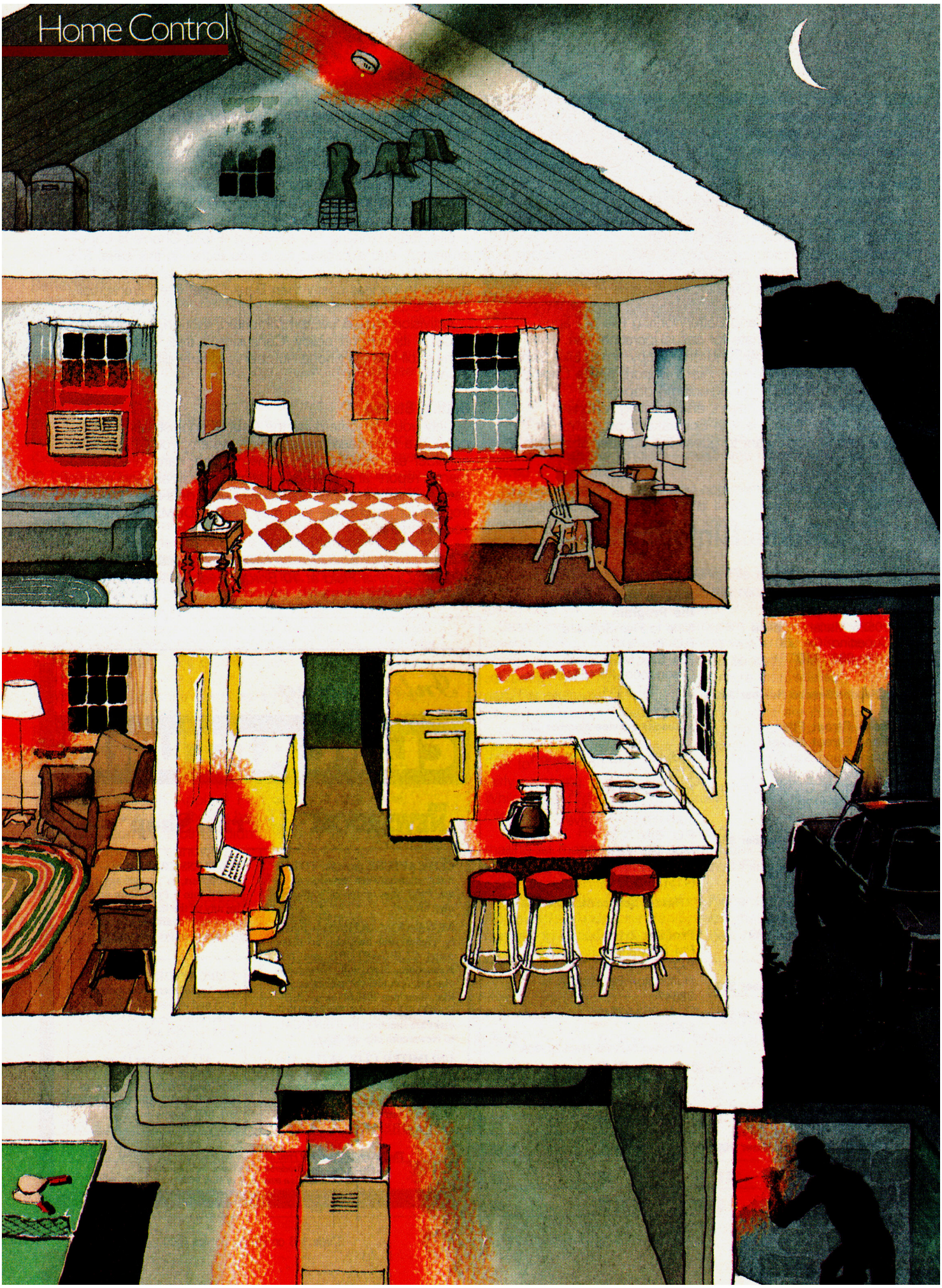
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Home Control

# LET APPLE TAKE CONTROL

*Turn your Apple II into a home controller:* inCider *looks at seven systems that offer you convenience, security, and energy savings.*

by Tan A. Summers

If you've always thought your computer could do more than process words and calculate numbers, you're right. Your Apple II can keep you safe and warm and save you money on your heating bill in the process. Whether your goal is to detect burglars or just to turn on your coffee maker 15 minutes before you get up in the morning, a home-control system adds a new dimension to your computer.

**Why Home Control?**

There are as many reasons to automate a home as there are computer buffs to do it. Security is one. Changing levels of light and sound make a house seem lived in while you're away, and motion sensors and magnetic switches on doors and windows can detect intruders. Smoke alarms and humidity detectors warn of fire and flood; an alarm or telephone dialer can then alert your neighbors or an answering service.

Home control saves energy dollars, too. In summer the computer can close drapes and regulate air conditioning. In winter it can set the thermostat back, start your electric blanket, and operate a sophisticated solar-heating arrangement. Close attention to heat and humidity coupled with direct control of fans and heating, ventilation, and air conditioning (HVAC) equipment keeps you more comfortable while reducing energy costs. Also, the computer will remember to turn off those lights your children continually forget.

Of course, you could perform all those tasks yourself. But wouldn't you rather have the computer turn up the heat half an hour before you get up? Convenience is one popular reason for automating a home. A sensor keyed to the garage door can turn on a welcoming light whenever the door opens after dark, or turn lights on as you enter a room and switch them off after you leave. And you can save steps by using a handheld transmitter that controls lights and appliances at the touch of a button.

**How Does It Work?**

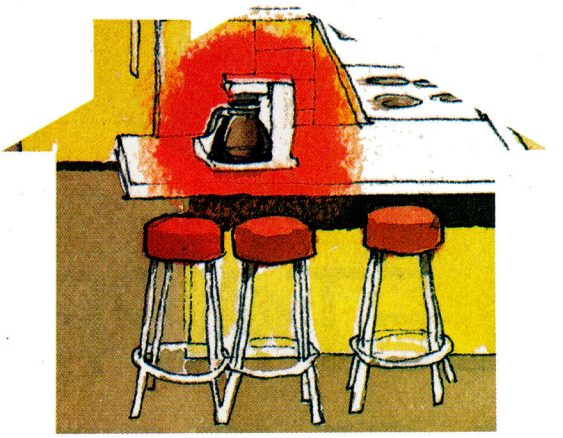
An environmental controller connected to your Apple works by sending signals along existing electrical wiring to receiver units throughout your house. The accompanying software is often easier to use than the average game program, so system setup is a snap. Once you've programmed the controller, your computer is free for other tasks.

Most receivers need only be plugged into wall sockets, with lamps or appliances plugged into the receivers in turn. If you want to control lights that are operated by wall switches, you can replace standard switches and receptacles with receiver-equipped models. Receiver units and simple transmitters can be purchased from many sources, including Sears, Heath, and Radio Shack, as well as directly from the manufacturer, X-10 (USA). (See the accompanying Product Information sidebar for a list of sources of computer-programmable controllers and corresponding software.) All require that your computer be equipped with a serial port—usually the Apple Super Serial card in the case of the //e.

Controllers differ in the level of automation they can effect. Noncomputerized transmitters send signals only once or twice a day to 16 or fewer sets of lights or appliances. Computer-programmed controllers can usually operate as many as 256 sets of devices and can send multiple signals.

More significant is the ability of some computerized controllers to respond to their environment. For instance, heat, light, humidity, and motion sensors inside and outside your house let the controller turn your lights on only if the room is dark, and your sprinkler system only if the ground is

*"Controllers differ in the level of automation they can effect; some can respond to their environment."*



dry. Sensors can do double duty: The same motion detector that turns on the bathroom light when your four-year-old gets up during the night can trigger an intruder alarm while you're away on vacation.

### Choosing a System

A computerized controller that simply sends signals is inexpensive and simple to install, since you can easily unplug and move receivers. Arrangements that include sensors require more planning and cost more, especially if the sensors contain radio transmitters. Depending on how much control you want, installation may be more complex, too. Standard sensors need to be hard-wired—connected directly to the controller using lengths of electrical wire.

Let's take a look at seven home-control systems, each representing a different price category and level of automation. The X-10 Powerhouse and Bi-Comm's PC-1 and Autocrat LCS provide the most basic type of home control: remote control of lights and appliances without input from external sensors. In the next category, systems that provide some response to sensors but are fairly simple to install, is the CyberLynx SmartHome. CompuHome's TomorrowHouse II, Remote Measurement's ADC-1, and Hypertek's Home Brain are more powerful yet, capable of monitoring a number of remote sensors in a highly personalized control system.

Six controllers (not the ADC-1) come with built-in clock and battery backup. All allow multiple schedules for different circumstances, and most include software in the package. Note that most systems require that you purchase sensors and receiver modules separately.

### Simple Systems

The X-10 Powerhouse comes in modules—the controller in one package, software and cables for both the //e and //c in another. To use Powerhouse with the //e, you'll also need expanded memory and an 80-column card.

Powerhouse can regulate up to 256 devices and gives you push-button control over eight lights. It's handicapped by a lack of sensor input, but it's an excellent choice for the homeowner on a budget. Powerhouse provides convenience rather than energy saving or security.

The software is easy to use and surprisingly powerful. With your joystick, you select the room you want to program first, then "install" lights and appropriate appliances in each. Next you can describe the way you want each device to behave. You can set control sequences to operate just once or on a regular basis, and you can easily monitor or change them. An optional security mode lets you indicate the lights you want the controller to turn on or off—at approximate rather than exact times, to make the house look lived in while you're away.

The X-10 software is a bit arbitrary in deciding the number of rooms you can control and the types of devices you can put into them. Rooms are predesignated as kitchen, bedroom, and so on, with lights and appliance choices appropriate for each. If you have more than four bedrooms or have unusual lighting needs, you'll have to customize the software yourself (a BASIC programming utility is included).

Two other products that fall into the basic-control category are Bi-Comm Systems' PC-1 and Autocrat LCS controllers. The PC-1 is a plug-in expansion card that works with Apple //e-type computers only, while the Autocrat connects to an RS-232 port on either the //e or //c. The PC-1 requires constant use of the computer, but you can disconnect the Autocrat once you've used your computer to program it. The PC-1 comes with comprehensive software you can modify using BASIC. You must purchase software for the Autocrat separately.

### SmartHome: Intermediate Complexity

Convenience is the hallmark of the CyberLynx SmartHome system. You can use the controller, which comes with a handheld transmitter, as is the minute you take it out of the box. And, if you prefer, you can add an alarm center, transmitter-equipped smoke alarms, emergency auto-dialer, and personal-emergency signal devices.

The SmartHome system can control only 16 sets of devices; most simple transmitters perform as well. This limitation is balanced, however, by SmartHome's easily installed sensor system. Since smoke alarms, door and window sensors, and motion detectors all use radio signals to communicate with the controller, no wiring is necessary. The motion detector, which you can use either for security or lighting control, also includes a light-sensing diode that prevents lamps from being turned on unnecessarily.

The software is easy to use, but won't let you program multiple signals. Scheduling is rigid, although monitoring or altering it is easy. SmartHome provides no real control over HVAC equipment, but a standard X-10 device that "tricks" the thermometer can simulate it.

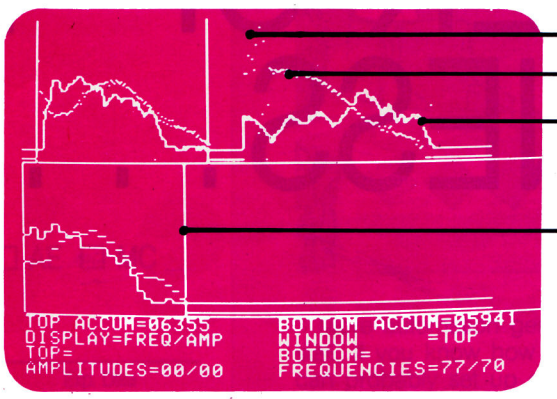
SmartHome's best asset is ease of installation. Since the sensors don't require wiring, they're a good choice for rented homes and apartments and for individuals with little technical know-how. SmartHome's emphasis on security also makes it appropriate for people who are most interested in that aspect of home control.

### Advanced Control

TomorrowHouse II controls up to 256 devices, can send a practically unlimited number of signals, and can receive input from up to 22 digital switches and 29 sensors. Specially designed with HVAC control in mind, it uses relays to manage up to eight zones of equipment—or you can use some of these 64 relays instead to connect security systems and other electrical devices. The software lets you specify temperature and lighting for every area of your house and lets you link day-to-day and weekly schedules in any combination. Good documentation makes all of this

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(actual screen photo)




**Top Trace:** Recording of "one . . . two" **Bottom Trace:** Pasted approximation of "one"

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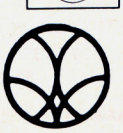
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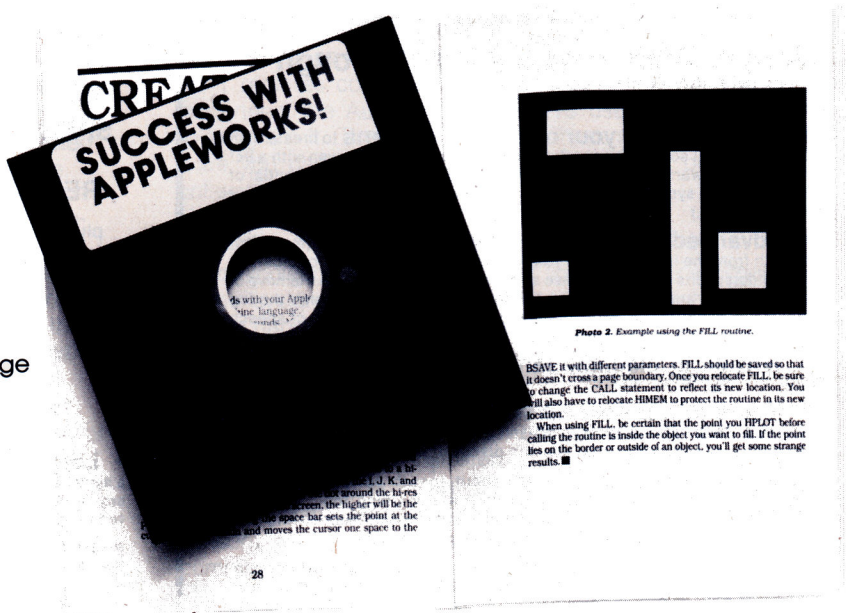
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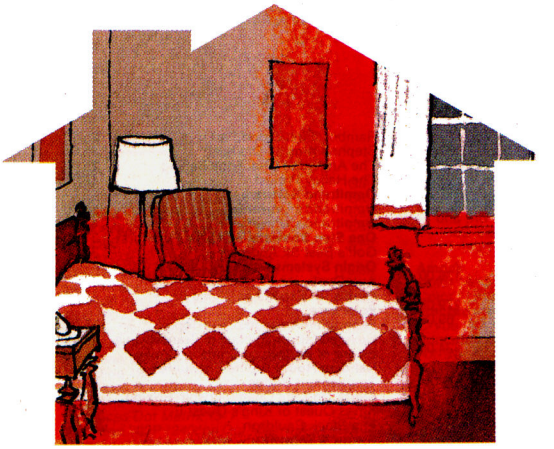
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*"If you know how to work safely with electricity, you can probably set up even the most complex home-control system yourself."*



less intimidating than it may sound.

The TomorrowHouse II package includes eight relays, four thermistors (heat sensors), and five receiver modules. You can obtain cables from your local electronics dealer.

This system is one of the best on the market. Its emphasis on HVAC control makes it a good choice for the person interested in saving energy dollars, but it handles security and convenience equally well. Its only drawbacks are a higher price and more demanding installation requirements. Since all sensors must be hard-wired to the controller, this system seems most appropriate for houses still under construction—or for the dedicated do-it-yourselfer.

TomorrowHouse gets some competition from at least two other products that use sensor input extensively. One is the Hypertek Home Brain, capable of receiving input from up to 16 sensors and as many as 64 digital switches. It can control eight relay outputs and 256 X-10-type receivers. Home Brain comes ready to use and doesn't even require a computer. Complete software, however, lets you use your Apple //e or //c to personalize your automation program.

Remote Measurement Systems provides a do-it-yourselfer's version of a complete control system—the ADC-1. Its software consists simply of a disk of subroutines you can include in your own BASIC control program, plus printed suggestions for using them. Less powerful than either the Home Brain or TomorrowHouse II systems, ADC-1 can receive input from only four digital switches and 16 sensors; it controls up to six relays. It costs only one-fourth as much as either the Home Brain or TomorrowHouse II, though.

All three of these systems can use input from almost any type of sensor and include provisions in their software for adding new ones when they're invented.

### The Bottom Line

Before you buy, take time to find out exactly what the system you're considering can do—the number of devices it can control, the sensors it can use. Software is important, too. Unless you're a programmer, you'll be able to use only the sensors your software allows. Find out what's included with the system. You'll need a number of receiver modules and sensors to set up a complex arrangement, and you can often purchase them at a lower cost from a consumer-electronics store than from the controller's manufacturer.

Although your main consideration in choosing a system should be the ultimate level of control and flexibility you need, cost and ease of installation are important, too. The computerized controller that just sends signals costs little more than a push-button transmitter—it's a terrific bargain for someone who wants to test the water before plunging in. This is especially true because even the most powerful controller uses identical receiver units as the core of its system.

More automation generally means more equipment to install. If you know how to work safely with electricity, you can probably set up even the most complex home-control system yourself. If not, make sure your dealer includes installation costs in the system's purchase price, especially if he has to connect HVAC equipment.

And that's really all there is to it: Plan your system carefully and set it up correctly. Now sit back and relax. After all, that's why you bought it, isn't it?■

*Tan Summers is a freelance journalist specializing in computer-related topics. Contact her at CompuServe address 70177,1202.*

## Product Information

**ADC-1**
Remote Measurement Systems
2633 East Lake Avenue
Seattle, WA 98102
(206) 328-2255
$499 ($449 standard)
**Reader Service Number 324**

**Autocrat LCS**
**PC-1**
Bi-Comm Systems
1779 Highway 8
Saint Paul, MN 55112
(612) 636-1643
$1300 (Autocrat LCS)
$165 (Autocrat software)
$355 (PC-1)
**Reader Service Number 325**

**Home Brain**
Hypertek
P.O. Box 13
Route 22 East
Whitehouse, NJ 08888
(201) 534-9700
$1850
**Reader Service Number 326**

**Powerhouse**
X-10 (USA)
185A Legrande Avenue
Northvale, NJ 07647
(201) 784-9700
$69.99
**Reader Service Number 327**

**SmartHome I**
CyberLynx
4828 Sterling Drive
Boulder, CO 80301
(303) 444-7733
$720 (computer starter kit)
$60 (door/window sensor/transmitter)
$185 (motion detector/transmitter)
$100 (smoke sensor/transmitter)
$390 (alarm center)
**Reader Service Number 328**

**TomorrowHouse II**
CompuHome Systems
2645 Snyder Court
Walnut Creek, CA 94598
(415) 932-1346
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| | |
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# LEARNING LANGUAGES WITH LOGO

*Create a Logo lexicon with TransAid, a foreign-language translation program you can tailor to your needs.*

by Glenn Thomas

If you've just started learning a foreign language, it probably seems to have no clear structure—and what about all those confusing cases and tenses?

TransAid, an Apple Logo II program, can help you translate text. Creating your own dictionary provides painless vocabulary drill, and when you've accumulated a number of terms, you'll have an electronic tool for deciphering the mystery of a foreign language.

**Setting Up the TransAid Dictionary**

Using your Apple Logo II program, format a disk and give it volume name LOGO to ensure compatibility with the start-up file you'll create. Then type in **Listings 1** through **5** and save them with the following names: STARTUP (automatically loaded start-up program); TRANSAID.LOG (initialization, termination, and main menu); TRANST.LOG (translation procedures); TRANSD.LOG (dictionary utilities); and TRANSP.LOG (text-printing procedure). **Figure 1** shows TransAid's program flow.

Embedded LOAD commands link the last four files and let you switch from one to another. Segmenting is a programming trade-off—speed versus room. Consolidating the files would eliminate the delay during file loading, but the reduced amount of RAM available would mean a smaller dictionary during translation.

TransAid maintains your dictionary as variable VOCAB in file VOCAB.LOG. The program's target language as presented in **Listing 2** is Dutch; to start a dictionary for a different language, erase or rename the VOCAB.LOG file, and replace the word *HET* in line 3 of procedure TRANS.AID in the TRANSAID.LOG file (**Listing 2**) with the word for "the" in the new language (be sure to use uppercase). Then boot the Apple Logo II program disk, insert your TransAid disk, and press the return key to boot the program; it automatically loads and initializes, then creates a new one-word dictionary. Once you've started a dictionary (the VOCAB.LOG file), TransAid carries it over from session to session.

TransAid's dictionary illustrates a particularly flexible data structure: an arbitrary number of alternate entry words (synonyms or verb forms, for instance) linked to any number of single- or multiple-word associations (such as definitions). Using the dictionary utilities of TRANSD.LOG (**Listing 4**), you can add, extend, or delete entries. The LOOKUP and INDICP procedures of TRANST.LOG (**Listing 3**) let you access them.

TransAid works best with an 80-column display: Multiple definitions take up a great deal of screen space, and when you're translating an entire sentence, it's best to get the whole thing on a single screen. The program does run in 40-column mode, though—just change 78 to 38 in line 8 of procedure PRINT.WD in the TRANST.LOG file (**Listing 3**).

### Putting the Clues Together

After you boot Apple Logo II and TransAid as described above, a menu of options appears: translate a text, print a working translation, or work with the dictionary. Since your dictionary initially contains only one word, select "work with the dictionary" first. (Be patient—transitions to main-menu

*Listing 1. STARTUP loads automatically upon booting.*

```
TO BEGIN
ERPS
CT PR [      Loading necessary procedures.] PR [Please wait .......] PR []
LOAD "TRANSAID.LOG
TRANS.AID
END

MAKE "STARTUP [BEGIN]
```

*Listing 2. TRANSAID.LOG contains initialization and termination procedures and TransAid's main menu.*

```
TO TRANS.AID
CT PR [      Initializing.] PR [Please wait .......] PR []
INITIALIZE
IF NOT FILEP "VOCAB.LOG [MAKE "VOCAB [[[[HET]] [[THE]]]] OPEN "VOCAB.LOG SETWRIT
E "VOCAB.LOG PRINT :VOCAB SETWRITE [] CLOSE "VOCAB.LOG]
OPEN "VOCAB.LOG SETREAD "VOCAB.LOG
MAKE "VOCAB RL
SETREAD [] CLOSE "VOCAB.LOG
MENU
END

TO GOODBYE
CT
PR [] PR [] PR []
PR [      Thank you for using TRANS.AID.]
WAIT 300
ERALL STOP STOP
END

TO GOTO :R
LOCAL "A LOCAL "B
MAKE "A [      Loading necessary procedures.]
MAKE "B [Please wait .......]
IF :R = 1 [ERPS CT PR [] PR :A PR :B LOAD "TRANST.LOG TRAN.TEXT]
IF :R = 2 [ERPS CT PR [] PR :A PR :B LOAD "TRANSP.LOG OUT.TEXT]
IF :R = 3 [ERPS CT PR [] PR :A PR :B LOAD "TRANSD.LOG DICTIONARY]
END

TO INITIALIZE
MAKE "INTEXT []
MAKE "TRANTEXT []
MAKE "CLOC [0 2]
MAKE "CLEARLINE [
                 ]
END

TO MENU
LOCAL "R
CT MAKE "CLOC [0 2]
SETCURSOR [15 0] PR [TRANS.AID]
SETCURSOR [2 3] PR [Enter number of the option desired from the following list:]
SETCURSOR [4 6] PR [1 Translate]
SETCURSOR [4 8] PR [2 Print out working text]
SETCURSOR [4 10] PR [3 Work with dictionary]
SETCURSOR [2 14] PR [Press RETURN with no entry to quit]
SETCURSOR [4 20] TYPE [Choice  ]
MAKE "R RL
IF EMPTYP :R [GOODBYE CT STOP]
IF NUMBERP FIRST :R [IF AND ( FIRST :R ) < 4 ( FIRST :R ) > 0 [GOTO ( FIRST :R )
] [MENU]] [MENU]
END
```

*Listing 3. TRANST.LOG handles translation.*

```
TO TRAN.TEXT
CT
SETCURSOR [15 0] PR [TRANSLATION]
SETCURSOR [4 23] TYPE [Enter sentence - Press RETURN]
SETCURSOR [0 2] MAKE "INSEN RL
IF EMPTYP :INSEN [MAIN.MENU STOP]
SETCURSOR [0 2] REPEAT 2 [PR :CLEARLINE]
MAKE "INTEXT LPUT :INSEN :INTEXT
MAKE "MDICN 1 MAKE "CLOC [0 2]
PRINT.TEXT :INSEN
GET.TRANS
TRAN.TEXT
END

TO MAIN.MENU
ERPS
CT PR [      Loading necessary procedures.] PR [Please wait .......] PR []
LOAD "TRANSAID.LOG
MENU
END

TO GET.TRANS
LOCAL "TRS
SETCURSOR [0 23] TYPE :CLEARLINE
SETCURSOR [0 20] PR [Enter translation:]
SETCURSOR [0 22] MAKE "TRS RL
IF EMPTYP :TRS [MAIN.MENU STOP]
MAKE "TRANTEXT LPUT :TRS :TRANTEXT
END

TO PRINT.TEXT :S
IF EMPTYP :S [STOP]
PRINT.WD ( UPPERCASE FIRST :S )
PRINT.TEXT ( BUTFIRST :S )
END

TO PRINT.WD :W
LOCAL "INL LOCAL "DEF LOCAL "DICN LOCAL "DICL LOCAL "ML
MAKE "INL ( ( COUNT :W ) + 1 )
MAKE "DEF LOOKUP ( LIST ( LIST :W ) ) :VOCAB
MAKE "DICN COUNT :DEF
IF :DICN > :MDICN [MAKE "MDICN :DICN]
MAKE "DICL MAXL :DEF
IF :INL > :DICL [MAKE "ML :INL] [MAKE "ML :DICL]
IF ( FIRST :CLOC ) + :ML > 78 [MAKE "CLOC LIST 0 ( SUM ( LAST :CLOC ) :MDICN 3 )
 MAKE "MDICN :DICN IF ( SUM ( LAST :CLOC ) 1 :MDICN ) > 17 [MAKE "CLOC LPUT 2 BU
TLAST :CLOC NEW.SCN]]
SETCURSOR :CLOC TYPE :W
PRINT.DEF :DEF ( LPUT ( ( LAST :CLOC ) + 2 ) BUTLAST :CLOC )
MAKE "CLOC FPUT ( ( FIRST :CLOC ) + :ML ) BUTFIRST :CLOC
END

TO PRINT.DEF :D :S
IF EMPTYP :D [STOP]
IF EQUALP ( FIRST :D ) [XXX] [STOP]
SETCURSOR :S TYPE ( FIRST :D )
PRINT.DEF BUTFIRST :D ( LPUT ( ( LAST :S ) + 1 ) BUTLAST :S )
END

TO NEW.SCN
LOCAL "R
SETCURSOR [4 23] TYPE [Press RETURN to continue translation.]
MAKE "R RL
CT SETCURSOR [15 0] PR [TRANSLATION]
END


TO CT.CHR :D
IF EMPTYP :D [OUTPUT 0]
OUTPUT ( SUM ( ( COUNT ( FIRST :D ) ) + 1 ) CT.CHR BUTFIRST :D )
END

TO MAXL :D
IF EMPTYP :D [OUTPUT 0]
IF ( CT.CHR FIRST :D ) > MAXL BUTFIRST :D [OUTPUT CT.CHR FIRST :D] [OUTPUT MAXL
BUTFIRST :D]
END

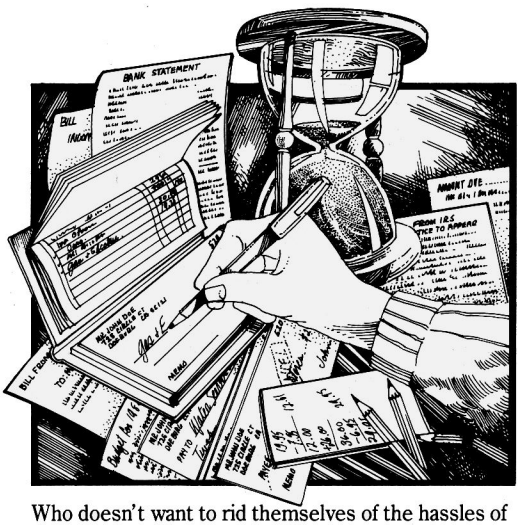
TO LOOKUP :NW :D
IF EMPTYP :D [OUTPUT [[XXX]]]
IF INDICP :NW FIRST :D [OUTPUT LAST FIRST :D]
OUTPUT LOOKUP :NW BUTFIRST :D
END

TO INDICP :NW :E
IF EMPTYP :NW [OUTPUT "FALSE]
IF MEMBERP FIRST :NW FIRST :E [OUTPUT "TRUE]
OUTPUT INDICP BUTFIRST :NW :E
END
```

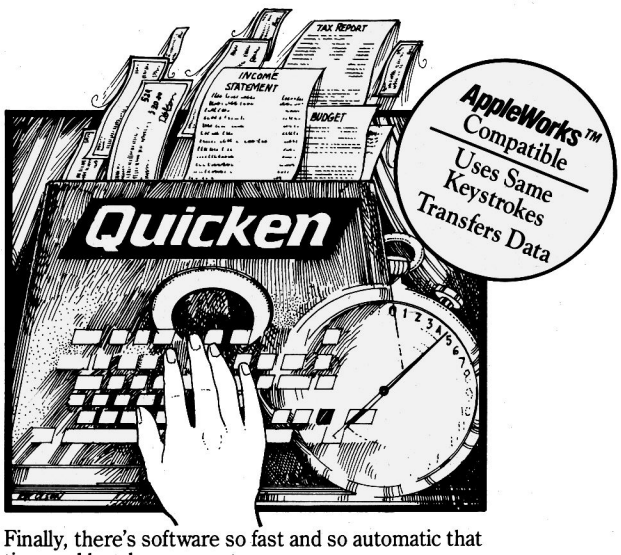
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selections are the slowest processes in TransAid, because a whole new program segment is loaded for each selection.) From the dictionary-utilities menu, select "add to dictionary." (Other options let you delete a word from the dictionary or print a hardcopy of the current dictionary.)

To add a word to your dictionary, first type in the new term in the target language. Note that TransAid lets you include different "forms" of the new word (several synonyms, for instance) in a single entry. You can also enter more than one definition, each made up of several words, if you like. (Try to keep them succinct, though, to save space on the translation screen.)

**Figure 2** shows your computer screen following completion of a typical entry (the Dutch word *neef*, meaning "nephew," or "cousin" in this case).

Throughout the program, simply pressing the return key with no entry either moves you along in a procedure or takes you to the next menu. TransAid implements this consistent, simple user interface by collecting keyboard input through its READLIST operation, then testing for a blank list.

When you've added a few words to your dictionary, try a translation. Press the return key twice with no entry to go back to the dictionary-utilities menu, then to the main menu.

Select the "translate" option, then simply type in a sentence from your target-language text and press the return key. (Omit punctuation, or separate marks from words with a space.) TransAid reprints the input sentence and lists under each word a number of possible meanings if you've included the term in your dictionary.

**Figure 3** shows the computer screen following translation of the Dutch sentence *Gebruik bij het schoonmaken van de helm alleen warm water in zachte zeep.* Using the clues listed and considering the sentence in context, type in your best try at a translation: "Use only warm water and ??? soap to clean the helmet."

Press the return key to save the foreign-language sentence and the translation you came up with. Then type in another sentence, or press the return key with no entry to go back to the main menu.

The third main-menu option, "print working text," gives you a list of your foreign-language-text sentences followed by the corresponding translations you've put together. From the main menu, press the return key with no selection to exit to Logo.

### Translating from the Top

Looking up each word in a dictionary—paper or electronic—isn't the best way to translate a substantial body of text. Skim the whole passage to get a general idea of its topic, then begin working on individual paragraphs and sentences, fitting them into the overall theme. Consider each sentence in context. It's at this stage that TransAid will be most helpful to you. To borrow a phrase from another sort of language, think of it as "top-down" programming: Begin with the "big picture" and keep filling in successive levels of detail until you get down to specific words. ■

*Glenn Thomas is a mechanical engineer with the U.S. Navy. Write to him at 4 Washington Circle, Alexandria, VA 22305.*

### Listing 4. TRANSD.LOG includes dictionary utilities.

```
TO INDICP :NW :E
IF EMPTYP :NW [OUTPUT "FALSE]
IF MEMBERP FIRST :NW FIRST :E [OUTPUT "TRUE]
OUTPUT INDICP BUTFIRST :NW :E
END

TO DROP.DEF :R :VOCAB
IF INDICP ( FPUT :R [ ] ) ( FIRST :VOCAB ) [OUTPUT BUTFIRST :VOCAB]
MAKE "VOCAB FPUT ( LAST :VOCAB ) ( BUTLAST :VOCAB )
OUTPUT DROP.DEF :R :VOCAB
END

TO UPDATE
IF FILEP "VOCAB.LOG [ERF "VOCAB.LOG]
OPEN "VOCAB.LOG SETWRITE "VOCAB.LOG
PRINT :VOCAB
SETWRITE [ ] CLOSE "VOCAB.LOG
END

TO ADD.TO.DEF :NW :ND :VOCAB
IF INDICP :NW ( FIRST :VOCAB ) [OUTPUT FPUT ( LIST :NW ( SE ( :ND ) ( FIRST BUTF
IRST FIRST :VOCAB ) ) ) ( BUTFIRST :VOCAB ) STOP]
OUTPUT ADD.TO.DEF :NW :ND ( FPUT ( LAST :VOCAB ) ( BUTLAST :VOCAB ) )
END

TO GET.NEW.DEF :ND
LOCAL "R
TYPE [ Definition:  ] MAKE "R ( LIST,UPPERCASE FIRST RL )
IF EMPTYP :R [OUTPUT :ND]
MAKE "ND LPUT :R :ND
OUTPUT GET.NEW.DEF :ND
END

TO LOOKUP :NW :D
IF EMPTYP :D [OUTPUT [[XXX]]]
IF INDICP :NW FIRST :D [OUTPUT LAST FIRST :D]
OUTPUT LOOKUP :NW BUTFIRST :D
END

TO DEL.FM.DIC
LOCAL "R LOCAL "D
CT SETCURSOR [9 0] PR [DELETE FROM DICTIONARY]
SETCURSOR [2 3] PR [Enter word to be deleted.]
SETCURSOR [2 5] TYPE [Word:  ]
SETCURSOR [9 5] MAKE "R ( LIST UPPERCASE FIRST RL )
IF EMPTYP :R [DICTIONARY STOP]
MAKE "D LOOKUP ( FPUT :R [ ] ) :VOCAB
IF EQUALP ( FIRST :D ) [XXX] [PR [ ] TYPE :R PR [ is not in the dictionary.] WAIT
 240 STOP]
MAKE "VOCAB DROP.DEF :R :VOCAB
UPDATE
DEL.FM.DIC
END

TO ADD.TO.DIC
LOCAL "R LOCAL "NW LOCAL "D LOCAL "ND
CT SETCURSOR [12 0] PR [ADD TO DICTIONARY]
SETCURSOR [2 3] PR [Enter word to be added]
SETCURSOR [2 5] TYPE [Word:]
SETCURSOR [9 5] MAKE "R ( LIST UPPERCASE FIRST RL ) MAKE "NW [ ] MAKE "NW FPUT :R
 :NW
IF EMPTYP :R [DICTIONARY STOP]
SETCURSOR [2 3] PR ( SE [Enter additional forms of] :R [ to be added] )
PR [( RETURN with no entry if no additional forms )] PR :CLEARLINE
MAKE "NW GET.ADD.FORMS :NW

MAKE "D LOOKUP :NW :VOCAB
IF NOT EQUALP ( FIRST :D ) [XXX] [PR [ ] TYPE :R PR [is already in the dictionary
.] PR [New definitions will be added.]]
PR [ ] PR [Enter definitions - one at a time.]
PR [( RETURN with no entry to end. )] PR [ ]
MAKE "ND [ ] MAKE "ND GET.NEW.DEF :ND
IF EQUALP ( FIRST :D ) [XXX] [MAKE "VOCAB LPUT ( LIST :NW :ND ) :VOCAB] [MAKE "V
OCAB ADD.TO.DEF :NW :ND :VOCAB]
UPDATE
ADD.TO.DIC
END

TO GOTO.DIC :R
IF :R = 1 [ADD.TO.DIC STOP]
IF :R = 2 [DEL.FM.DIC STOP]
IF :R = 3 [PRINT.DIC :VOCAB STOP]
END

TO DICTIONARY
LOCAL "R
CT SETCURSOR [9 0] PR [DICTIONARY UTILITIES]
SETCURSOR [2 3] PR [Enter number of option desired from the following list:]
SETCURSOR [4 6] PR [1 Add to dictionary]
SETCURSOR [4 8] PR [2 Delete from dictionary]
SETCURSOR [4 10] PR [3 Print out dictionary]
SETCURSOR [4 14] PR [RETURN with no entry to exit dictionary procedures]
SETCURSOR [4 20] TYPE [Choice]
SETCURSOR [12 20] MAKE "R RL
IF EMPTYP :R [MAIN.MENU STOP]
IF NUMBERP FIRST :R [IF AND ( FIRST :R ) < 4 ( FIRST :R ) > 0 [GOTO.DIC ( FIRST
:R )] [DICTIONARY]] [DICTIONARY]
END

TO PRINT.DIC :D
CT
LOCAL "E LOCAL "W
OPEN 1 SETWRITE 1
PR [ ]
REPEAT ( COUNT :D ) [MAKE "E FIRST :D MAKE "D BUTFIRST :D MAKE "W FIRST :E REPEA
T ( COUNT :W ) [PR FIRST :W MAKE "W BUTFIRST :W] MAKE "W FIRST BUTFIRST :E REPEA
T ( COUNT :W ) [TYPE [  ] PR FIRST :W MAKE "W BUTFIRST :W]]
SETWRITE [ ] CLOSE 1
DICTIONARY
END

TO MAIN.MENU
ERPS
CT PR [      Loading necessary procedures.] PR [Please wait .......] PR [ ]
LOAD "TRANSAID.LOG
MENU
END

TO GET.ADD.FORMS :NW
LOCAL "R
TYPE [Additional form:] MAKE "R RL
IF EMPTYP :R [OUTPUT :NW]
MAKE "NW LPUT :R :NW
OUTPUT GET.ADD.FORMS :NW
END
```

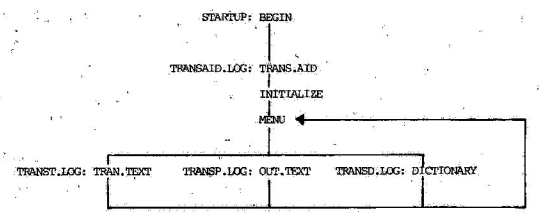
### Listing 5. TRANSP.LOG lets you print your foreign-language sentences with corresponding translations.

```
TO PR.TX.LIST :L
REPEAT ( COUNT :L ) [PR FIRST :L MAKE "L BUTFIRST :L]
PR [ ]
END

TO OUT.TEXT
CT SETCURSOR [9 0]
OPEN 1 SETWRITE 1
PR [TRANS.AID TRANSLATION] PR [ ]
PR [Input text:] PR [ ]
PR.TX.LIST :INTEXT
PR [Translation:] PR [ ]
PR.TX.LIST :TRANTEXT
SETWRITE [ ] CLOSE 1
MAIN.MENU
END

TO MAIN.MENU
ERPS
CT PR [      Loading necessary procedures.] PR [Please wait .......] PR [ ]
LOAD "TRANSAID.LOG
MENU
END
```

### Figure 1. TransAid program flowchart.




### Figure 2. Entering terms and definitions into your dictionary.

```
                ADD TO DICTIONARY

Enter additional forms of NEEF to be added
(RETURN with no entry if no additional forms)
Additional form: <RETURN>

Enter definitions -- one at a time.

(RETURN with no entry to end.)


Definition: cousin <RETURN>

Definition: nephew <RETURN>

Definition: <RETURN>
```

### Figure 3. The TransAid translation screen lists individual definitions and lets you enter an appropriate translation.

```
                        TRANSLATION

GEBRUIK   BIJ        HET   SCHOONMAKEN   VAN   DE   HELM         ALLEEN   WARM   WATER

USE       NEAR       THE   TO CLEAN      OF    THE  HELMET       ALONE
CUSTOM    AT                                      BEACH-GRASS   ONLY
          WITH
          BY
          PRESENT
          IN ADDITION
          BEE


IN    ZACHTE   ZEEP

AND            SOAP


Enter translation:
```

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| Z-RAM II 1 meg //c | CALL |
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# TRACE YOUR ROOTS

*Journey into your family's past—with AppleWorks as your guide.*

by Weston George

Tracing the history of your own family involves plot twists as intriguing as any novel. With AppleWorks leading the way and eliminating the drudgery, you're free to savor the insights, surprises, and mysteries of the unfolding story.

For example, the search into my own ancestral past led to the enigma of my great-great-grandfather, a man with the unlikely name of Bushrod Craven.

Bushrod was at the end of a strand that pulled me through time and space—from the present back to 1807, from Colorado through Iowa, Illinois, and Kentucky to Loudoun County, Virginia. There it stopped. Just who were Bushrod Craven's proud parents?

For the moment, that remains uncertain, but the investigation has turned up an interesting detail from a couple of generations earlier: One Hanna Bushrod married a man called John Augustine Washington in Virginia and gave birth in 1762 to a son they named Bushrod. John had a brother named George, who died in 1799 after a distinguished military and political career. Yes, Bushrod's uncle was George Washington. While I haven't yet documented my connection to the father of our country, AppleWorks is handling the routine work and keeping track of the clues—so there's the tantalizing prospect that I might.

My situation isn't unusual—anyone who explores his or her ancestry will turn up equally enticing trails to follow. In fact, the problem will soon become how to plan the trip so that you don't get hopelessly lost in a maze of fascinating detail. What I offer in this article is a strategy for your investigation and tips on using AppleWorks to implement it.

While the satisfaction of solving the puzzle and the thrill of unexpected discovery may be enough motivation for some of us, others will want more practical reasons for recording their genealogy. It's one way to increase your self-understanding, and it's a chance to contribute to recorded history by preserving unique information that would otherwise be lost. In the process, you'll produce organized data that will aid other researchers.

*Figure 1. Individual worksheet as it appears in the AppleWorks data base.*

```
10 File:   INDVWS
 Report: IndividualWS
 INDIVIDUAL WORKSHEET

 CODE NUMBER: 24                        FATHER'S CODE NO.: 48
 NAME (in full): Bushrod W. Craven      MOTHER'S NAME: unk
 BIRTH DATE: 1807                       MOTHER'S CODE NO.: 49
 BIRTH PLACE: Loudoun County, Virginia  RESIDENCE 1: Loudoun County, Virginia
 OCCUPATIONS(S): Iowa pioneer, farmer,  RESIDENCE 2: Kentucky
 OCCUPATIONS(S): judge, commissioner    RESIDENCE 3: Indiana
 MILITARY SERVICE: unknown              RESIDENCE 4: Illinois
 DEATH DATE: 1878, October              RESIDENCE 5: Davis County, Iowa
 BURIAL DATE: unk                       RESIDENCE 6: Milton, Iowa
 BURIAL PLACE: Russell cem., Milton, IA INFO.: 1st settler, Davis County, IA in
 MARRIAGE DATE: 1830, August 19         INFO.: 1838; elected judge when county
 MARRIAGE PLACE: Flemingsburg, Kentucky INFO.: established in 1843
 SPOUSE'S NAME: Nancy Tracy             SOURCES: family records, 1850 census,
 SPOUSE'S CODE NO.: 25                  SOURCES: Pioneer Hist. of Davis Cty, IA
 FATHER'S NAME: unk                     SOURCES: Kentucky marriage record
```

*Figure 2. Family group worksheet as it appears in the AppleWorks data base.*

```
File:   FAMGRPWS                                              Page 1
Report: famgrp3a                                              6/16/86

 FAMILY HEAD CODE NO.: 24               Marriage: see file 24
 HUSBAND (full name): Bushrod W. Craven CHILD (name): Margaret
 RESIDENCES PRIOR TO: Loudoun county, KY  Birth date & place: 1836
 MARRAIGE WITH DATES: circa 1807          Death date & place: unk
 WIFE (maiden name): Nancy Tracy          Marriage: unk
 WIFE'S CODE NO.: 25                    CHILD (name): Caroline
 MARRIAGE DATE: 1830, August 19           Birth date & place: 1837, Illionis
 MARRIAGE PLACE: Flemingsburg, KY         Death date & place: unk
 CHILD (name): John A. (code no. 12)      Marriage: unk
  Birth date & place: 1831, unk         RESIDENCES: KY, Montgomery, IN; IL;
  Death date & place: 1871, Iowa        RESIDENCES: Davis county, IA
  Marriage: Sarah J. Wandel, 2/28/1854  OTHER:
 CHILD (name): James E.                 OTHER:
  Birth date & place: 1833 Montgomery,IN SOURCES: family records; Flemings, KY;
  Death date & place: unk               SOURCES: 1850 census
 FAMILY HEAD CODE NO.: Continuation: 24   Marriage: see file 24
 HUSBAND (full name): Bushrod W. Craven CHILD (name): Lewis P.
 RESIDENCES PRIOR TO: (this is part two   Birth date & place: 1843, Iowa
 MARRAIGE WITH DATES: of record 24 to     Death date & place: unk
 WIFE (maiden name): continue listing of  Marriage: unk
 WIFE'S CODE NO.: children.  See part   CHILD (name):
 MARRIAGE DATE: one for data on husband   Birth date & place:
 MARRIAGE PLACE: and wife)              CHILD (name):
 CHILD (name): George W.                  Marriage:
  Birth date & place: 1840, Iowa        RESIDENCES:
  Death date & place: 1865, Atlanta, GA RESIDENCES:
  Marriage: unmarried                   OTHER: George & Lewis served in Union
 CHILD (name): William H.               OTHER: army. George died in battle.
  Birth date & place: 1842, Iowa        SOURCES: fam. rec.; Military Service
  Death date & place: 1881, Milton, IA  SOURCES: Records, National Archives
```

*Figure 3. Five-generation ancestral chart as it appears in the AppleWorks spreadsheet.*

```
File:   anchart                                               Page 1

FIVE GENERATION ANCESTRAL CHART

                                                    ----------16 ? George
                                                    8 Edmond      Born:
                                                      George      Died:
                                                    Born: 1849    17 ?
                                  4 James           Wales         Born:
                                    George          Died: 1906    Died:
                                  Born: 1882        Emporia, KS
                                  Emporia, KS       ----------18 ? Williams
                                  Died: 1967        9 Elizabeth   Born:
                                  Belle Plaine,       Williams    Died:
                                  Kansas            Born:         19 ?
                                                    Wales         Born:
                 2 Weston W.                        Died:1906     Died:
                   George                           Emporia, KS
                 Born: 1908                         ----------20 Alec Fleming
                 Newton, KS                         10 John W.    Born:
                 Died:                                Fleming     Died:
                                                    Born:1858     21 Mollie Tipton
                                  5 Elva Mae                      Born:
                                    Fleming         Died: 1915    Died:
                                  Born: 1881        Emporia, KS
                                  Ada, Kansas       ----------22 Peter Leuhr
                                  Died: 1968        11 Maggie     Born:
                                  Belle Plaine,       Leuhr       Died:
                                  Kansas            Born: 1865    23 Katherine Dittmer
                                                    Germany       Born:
1 Weston W.                                         Died:         Died:
  George, Jr.                                       Newton, KS
Born: 1935                      ------------------------------24 Bushrod Craven
Hutchinson, KS                                      12 John A.    Born: 1807, Virginia
Died:                                                 Craven      Died: 1878, Iowa
                                                    Born: 1831    25 Nancy Tracey
                                                    Milton, IA    Born: 1810, Kentucky
                                  6 James Frank     Died: 1871    Died:
                                    Craven          Milton, IA
                                  Born: 1857        ----------26 Charles Wandel
                                  Milton, Iowa      13 Sarah Jane Born: 1804, New York
                                  Died: 1917          Wandel      Died:
                                  Kremmling, CO     Born: 1836    27 ?
                                                    Iowa          Born:
                 3 Francis Marie                    Died: 1871    Died:
                   Craven
                 Born: 1910                         ----------28 ? Hagen
                 Kremmling, CO                      14 William L. Born:
                 Died:                                Hagen       Died:
                                                    Born: 1842    29 ?
                                  7 Amy Francis     Dayton, OH    Born:
                                    Hagen           Died:         Died:
                                  Born: 1877
                                  Conifer, CO       ----------30 ? Hughes
                                  Died: 1953        15 Annis      Born:
                                  Kremmling, CO       Hughes      Died:
                                                    Born: 1851    31 ?
                                                    Indianapolis  Born:
                                                    Died:         Died:
```

Whatever your motivation, you'll soon confront a mob of ancestors and the need to establish some limits and goals. A realistic long-term goal is to complete a five-generation ancestral chart and files of supporting data: names and birth, death, and marriage data for 30 ancestors and their offspring. This is no small task, but you did say you were looking for something worthwhile to do with your computer, didn't you?

## Keeping a Log

Before embarking on this voyage of discovery, like Captain Kirk, you'll need a log in which to record your adventures. Experienced genealogical explorers, such as the staff of the American Genealogical Research Institute, recommend two basic forms: the individual worksheet (see **Figure 1**) and the family group worksheet (**Figure 2**).

For every ancestor you come across, you'll prepare an individual worksheet. On the family group worksheet you'll record data for husband, wife, and their children. If an ancestor has more than one spouse (usually serially, but not always), complete a family group worksheet for each marriage or other relationship that produced offspring.

A five-generation ancestral chart (**Figure 3**—also known as a family tree or pedigree) is the third blank form you'll fill in as your exploration progresses, and completing it accurately may be your ultimate goal.

If anything was ever made for genealogical recordkeeping, it's AppleWorks' data-base function. You can design your own file equivalents of the two forms; easily enter, change, and add data; and, most importantly, quickly find and relate names, dates, places, and other information. If you need help setting up your system, run through the data-base sections of the *AppleWorks Tutorial* and *Reference Manual*.

Since you probably won't be taking your computer with you on research trips, you'll also need printed, blank individual and family group worksheets. You can produce the masters with the AppleWorks word processor (see **Figures 4** and **5**), then photocopy a supply.

Now what about the ancestral chart? Looking at **Figure 3**, you'll note that it consists of rows and columns—a spreadsheet. With that, we've made genealogical use of all three integrated functions and temporarily converted AppleWorks to AncestorWorks.

## Planning Your Strategy

So where do you start?

Record the facts in your AppleWorks data-base version of the individual worksheet. If you're married, also enter your data into a family group worksheet with yourself or your spouse as head of family. The information on your own individual and family worksheets is what future genealogists will know about you. It's your chance to set the record straight.

Be scrupulous about checking your facts. It's better to record nothing than to record an error. For example, if you're uncertain about the town in which you lived when you were six, don't guess—find a reliable source and document it.

After recording all the facts of which you're sure, proceed to your parents and closest relatives and document their recollections and records. The basic idea is to record the more recent past first.

Having gathered all the information you can directly from your living relatives, you'll still have a lot of blanks to fill and uncertain facts to confirm. The first records you should search are those belonging to your family—Bibles, diaries, letters, school diplomas, passports, ledgers, photo-

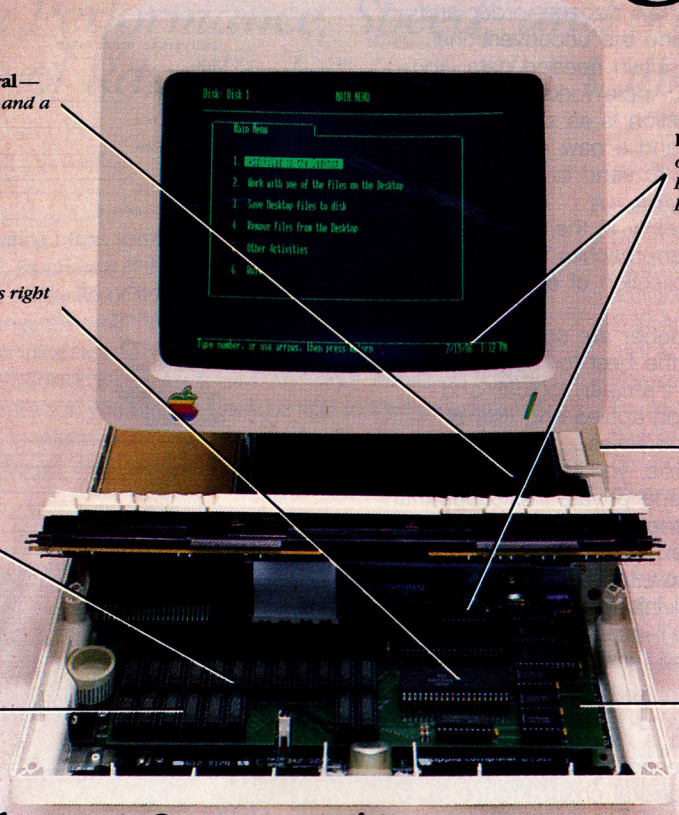
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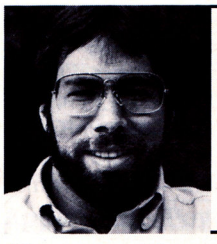
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graphs, samplers and quilts, and awards.

If genealogy were as orderly as a courtroom trial, we could move progressively outward from family to town, county, state, national, and international records. But it's much more like one of Sam Spade's capers—order and logic often give way to intuition and the unconventional. Inevitably you'll have to write to obtain needed data. You can prepare form letters with the AppleWorks word processor, so that requesting information is as simple as inserting the appropriate specifics and a new address. You can also make up questionnaires to send to relatives living too far away for a personal interview.

One stop you'll want to make early in the game is your local library. The wide range of approaches to the subject, as illustrated in the genealogy collection of even a modest institution, will impress you.

Listed in the accompanying sidebar are some of the books I've found useful. One of the best for beginners is *How to Trace Your Family Tree*—it's clear, logical, and concise and contains useful bibliographies and lists of state and federal sources with addresses.

In most general genealogy books, you'll find extensive descriptions of the many public and private institutions that maintain records useful to the genealogist. These books also suggest the records that are more likely to provide the data you seek and tips on how to use them. They contain the all-important technical information that's beyond the scope of this article, and you'll need to keep at least one such reference book on hand throughout your quest.

## Numbering the Ancestral Chart

One bit of technical information is directly related to your three computer forms: the numbering system.

As the starting point of the ancestral chart (**Figure 3**), you're given code number 1. Your father and mother are assigned numbers 2 and 3, respectively. Your four grandparents are numbered 4, 5, 6, and 7, the even numbers being assigned to the males and the lowest number in each generation going to your father's side of the family. The numbering system continues in this fashion for each succeeding generation.

The usefulness of the system becomes apparent when you've completed a number of individual and family group sheets, many with the same surname. It's tedious to find the particular one for which you're looking when you have to locate James amid John, Joshua, and Judith. More importantly, the files can be arranged in the order in which they appear on the ancestral chart rather than alphabetically or chronologically, neither of which is appropriate.

Each worksheet is numbered to correspond to this system, with the family group sheet taking its number from the head of the family. This numbering system will help you maintain one very important part of your recordkeeping system—the document file. In this file are marriage certificates, diplomas, military-discharge papers, photographs, photocopies of census records, letters, and all the other archival material that supports the data recorded in your individual and family group sheets.

Give each document the number of the individual or family group to which it pertains. After accumulating even a few dozen items in this file, you'll appreciate the numbering system when it comes time to retrieve that letter from Great-grandmother (number 15) and decipher a clue that suddenly makes sense.

If you want to make up individual and family group sheets for uncles, aunts, and cousins, you can work out an appropriate numbering system for them (2.1, 7.4.1, and so forth), but be forewarned: You'll be well occupied for quite some time with just the major players in your

*Figure 4. Individual worksheet form created with AppleWorks word processor.*

INDIVIDUAL WORK SHEET CODE NUMBER:_____
NAME (in full) _____
BIRTH DATE _____
BIRTH PLACE _____
OCCUPATIONS _____
MILITARY SERVICE _____
DEATH DATE _____ BURIAL DATE_____
BURIAL PLACE _____
MARRIAGE DATE _____
MARRIAGE PLACE _____
SPOUSE'S NAME _____ CODE NO. ____
FATHER'S NAME _____ CODE NO. ____
MOTHER'S NAME _____ CODE NO. ____
RESIDENCES DATES
OTHER BIOGRAPHICAL INFORMATION (education, hobbies, etc.)
SOURCES USED FOR RESEARCH AND VERIFICATION

*Figure 5. Family group worksheet form created with AppleWorks word processor.*

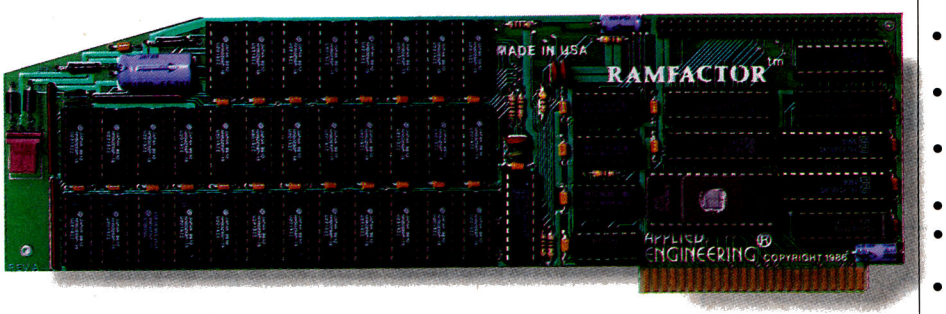
FAMILY GROUP WORK SHEET FAMILY HEAD CODE NO. _____
HUSBAND (full name) _____
RESIDENCES PRIOR TO MARRIAGE DATE
WIFE (full maiden name) _____
RESIDENCES PRIOR TO MARRIAGE DATE
MARRIAGE DATE _____ PLACE_____
CHILD'S NAME _____
BIRTH DATE _____ PLACE _____
DEATH DATE _____ PLACE _____
MARRIAGE _____
CHILD'S NAME _____
BIRTH DATE _____ PLACE _____
DEATH DATE _____ PLACE _____
MARRIAGE _____
CHILD'S NAME _____
BIRTH DATE _____ PLACE _____
DEATH DATE _____ PLACE _____
MARRIAGE _____
CHILD'S NAME _____
BIRTH DATE _____ PLACE _____
DEATH DATE _____ PLACE _____
MARRIAGE _____
If more than four children use second sheet
FAMILY RESIDENCES (places and dates) _____
OTHER DATA _____
SOURCES USED FOR RESEARCH AND VERIFICATION _____

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own saga, even with the unflagging support of AppleWorks. My advice: Leave the supporting cast to other family historians for whom they are the stars. Stick to your goals.

**On the Other Hand...**

In the midst of writing this article, I visited Mount Vernon, George Washington's beautifully preserved estate high on a bluff above the mile-wide Potomac. I walked from the pillared mansion through the flowering dogwood to Washington's burial site on the grounds. The modest, red-brick tomb is surrounded by four white marble obelisks, smaller versions of the monument in the capital. I was only casually observing one of them when the inscription suddenly seized my attention. It was the last resting place of old Bushrod Washington.

The Mount Vernon guidebook indicated that Bushrod had inherited Mount Vernon upon his uncle's death, but had died childless in 1829. Was this the end of my hope to find that the first President's blood flowed in my veins? Perhaps not. Bushrod had two sisters and two brothers—maybe one of the women in that generation or the next married a Craven and named a son Bushrod. I had a feeling I was going to disregard my own admonition and take off on a genealogical tangent. But that's one of the benefits of goals and strategies: You can tell when the right thing to do is ignore them.■

*Weston George is a history buff, Apple enthusiast, and freelance journalist. Write to him at 843 Trenton Drive, Sunnyvale, CA 94087.*

## Resources

American Genealogical Research Institute, *How to Trace Your Family Tree*, Doubleday, Garden City, NY, 1973.

Beard, Timothy Field, *How to Find Your Family Roots*, McGraw-Hill, New York, 1977.

Croom, Emily Anne, *Unpuzzling Your Past: A Basic Guide to Genealogy*, Betterway Publications, White Hall, VA, 1984.

Doan, Gilbert H., *Searching for Your Ancestors*, Bantam Books, New York, 1978.

Everton, George B., Sr., *Handy Book for Genealogists: Vital Record Sources*, Everton Publishers, Logan, UT, 1971.

Helmbold, F. Wilbur, *Tracing Your Ancestry*, Oxford House, Birmingham, AL, 1976.

Library of Congress, Washington, DC 20540, *Reference Services and Facilities of the Genealogy Room* and *Guides to Genealogical Research: A Selected List* (free leaflets).

Library of the Genealogical Society of the Church of Jesus Christ of Latterday Saints, 50 East North Temple Street, Salt Lake City, UT 84105: Send for information on books and microfilmed data available.

National Archives and Records Service, Publications Sales Branch, General Services Administration, Washington, DC 20408, *Genealogical Records in the National Archives* (free leaflet).

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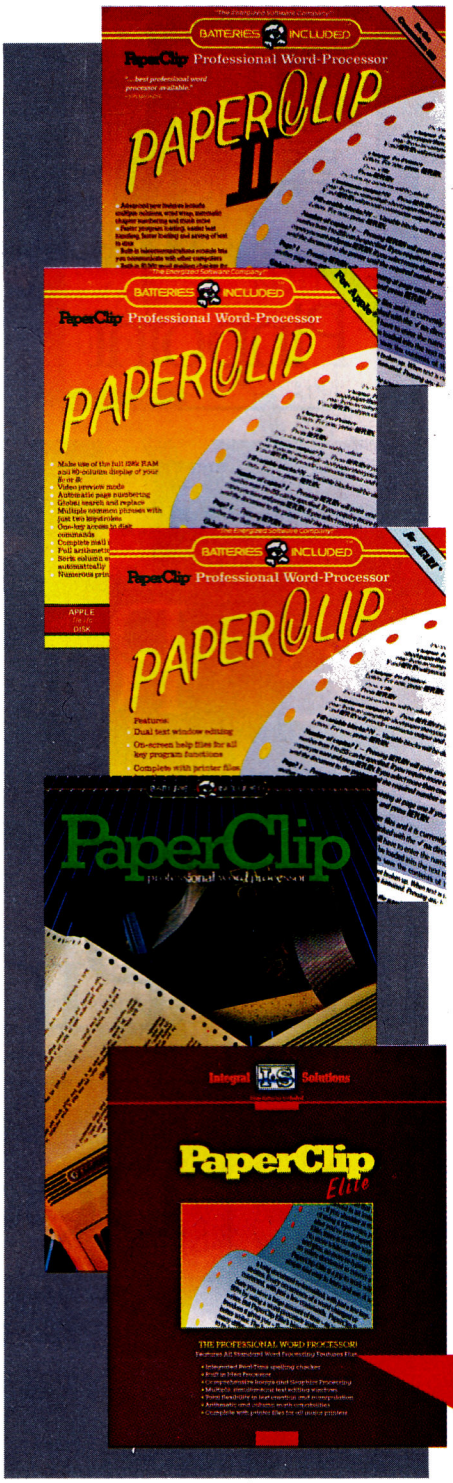
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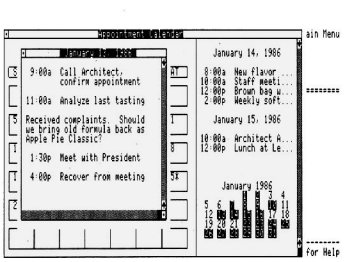
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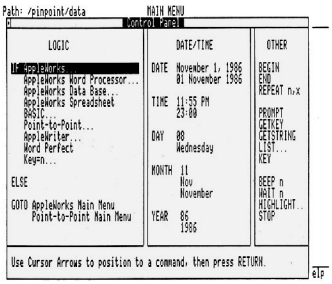
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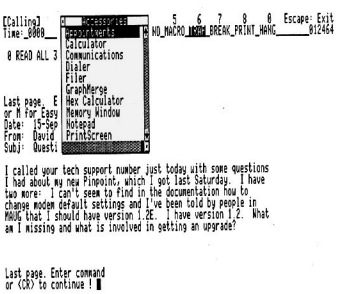
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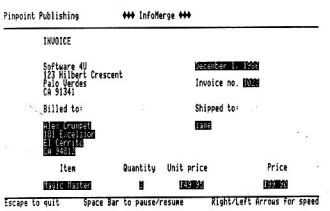
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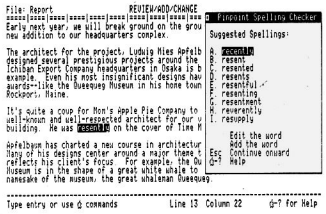
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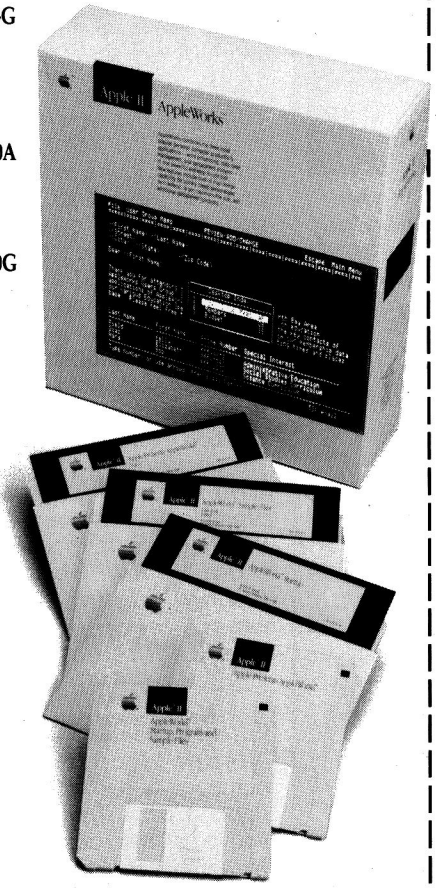
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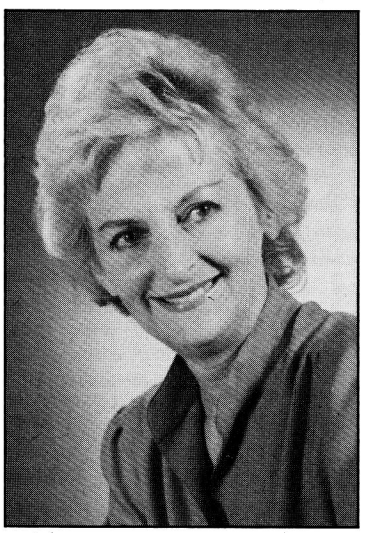
*Thank you for your order.* ▸

Pinpoint

# APPLEWORKS IN ACTION

## Publishing a Company Newsletter

*"Publishing a newsletter is one of the best ways to communicate."*



by Ruth K. Witkin

Good communication with employees is the glue that holds a company together. One of the best ways to communicate is through a company newsletter. Properly done, a newsletter creates good will, gets the word out on important matters, and involves employees in the workings of a company. It doesn't have to be fancy, and it shouldn't be frivolous—just accurate, informative reporting of the company's past achievements, current happenings, and future plans.

Newsletters typically contain messages from management, articles on social and athletic activities, safety and health programs, benefits, policies and procedures, employee promotions, service anniversaries, birthdays, and anything else that tells employees, "You're important."

If you publish a newsletter and are often in a bind for material, look into a subscription service that provides articles, artwork, headings, and fillers that can make your newsletter livelier. Berry Publishing (300 North State Street, Chicago, IL 60610) is a good one. Ask for a free copy of *Pages*, its monthly brochure.

Imagine that you're the personnel director of the Vollner Tool & Die Company. You're working on the front page of *The Vollner Voice*. In this session, you create everything shown in **Figure 1**—newsletter name, credits, dashed lines, and a special-occasion report—on the AppleWorks word processor.

When you see such key combinations as OA-Z, hold down the open apple key and type Z. During the creation process, I'll ask you to save the document. If you have a one-drive system, watch the screen for prompts that tell you when to swap the Program disk for the data disk.

Use the AppleWorks Startup and Program disks to bring up a new word-processor screen. Name this file *NEWSLETTER*. You should now see the Review/Add/Change screen.

### Entering the Text

**Figure 2** contains the text, line numbers, and rectangular characters dubbed *blots*. The blots show where you press the return key to end a paragraph or insert a blank line. Press OA-Z to keep the blots on screen as you work.

The next step is to enter the text. Before you start, though, read the following instructions: To be sure your results agree with the finished product, press the space bar only *once* between sentences. If you make a typo, press the delete key to back up the cursor. You'll find many "employee" names in this piece. It won't hurt anything and it can be fun to substitute the names of people *you* know. Don't go overboard, though; just substitute one-for-one.

Your cursor should be in line 1 column 1. Now enter the text shown in **Figure 2** according to the instructions shown in the **Table**.

### Correcting the Text

Now compare your text with **Figure 2**. If something is missing, place the insert cursor (the blinking underline) on the character to the right of the insertion. If you discover a typo, place the overtype cursor atop the character you want to replace. Pressing OA-E switches from one cursor to the other. If you need to delete anything, just place either cursor to the right of the doomed character and press the delete key.

The following keys get you from one place to another: The left and right arrow keys move the cursor one character at a time in the direction of the arrow. OA-left arrow and OA-right arrow hop the cursor from word to word. The down and up arrow keys move the cursor one line at a time. Keys OA-1 through OA-9 jump the cursor vertically in proportional increments.

When the text is complete, press OA-S to store it on disk.

### Printing the Unformatted Document

Seeing how something looks before formatting can give you an idea of the tasks that lie ahead. Turn on your printer. Press OA-P to start the print command. Press the return key to confirm *Beginning*. Now press the return key to select the printer (or type a printer number, then Return). Press the return key again to confirm one copy. When the printer stops, there's your document. Your words are brilliant, of course. But the way it looks—yuch!

# MACROWORKS

**$34.95** (for AppleWorks 1.3 or older)

**Note: New AppleWorks version 2.0 requires *Super MacroWorks* (many new features: $49.95)**

MACROWORKS™ streamlines AppleWorks' word processor with new features. For example, one keystroke now deletes a character or word.

Another keystroke jumps you to the start or end of a text line. Another erases an entire line. Change your mind? Press ♦-U to instantly "UNDO" your last delete command.

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MacroWorks converts *any* series of keystrokes into a new one-keystroke solid-Apple (♦) command (all original open-Apple commands stay intact). Use our built-in macros or define your own. For example, make ♦-N type your name and address. Or let ♦-X save or print *all* of your Desktop files, nonstop.

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Be creative–set up macros to execute any often-repeated function. You can even skip unwanted questions like 'How many copies?'.

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To get going, just boot AppleWorks like you always do. Now you can use your Mouse to control AppleWorks. And you can define 4,000 keystrokes-worth of custom macros.

MacroWorks is now compatible with the Checkmate™and Applied Engineering (RamWorks™ or Z-Ram™) "Desktop Expanders".

# POWER PRINT

**$39.95** (for any Apple II–64K min.)

Works with most full-font download printers, including: Apple DMP and IMAGEWRITER (I & II), EPSON (FX, JX, EX), OKIDATA (92, 93, 192, 193), PANASONIC (1092, 1093), STAR (DELTA, RADIX, SD, SG, SR), and More.

POWER PRINT™ lets you "download" a second typestyle into your printer's memory, so you can alternate between your standard printer-font and a custom font with special characters and symbols:

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BYTE: ABCDE12345
OUTLINE: XYZ OLD ENGLISH

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Many custom printer-fonts are included on the Power Print disk. An easy-to-use Font Editor lets you quickly redraw any of the characters in our fonts. Or you can design your own fonts and characters from scratch.

You can even design printer characters that combine to print a small illustration like a personal signature or company logo.

### *FAST*-AND COMPATIBLE WITH APPLEWORKS

Unlike other printer-font software, Power Print won't slow your printer down one bit.

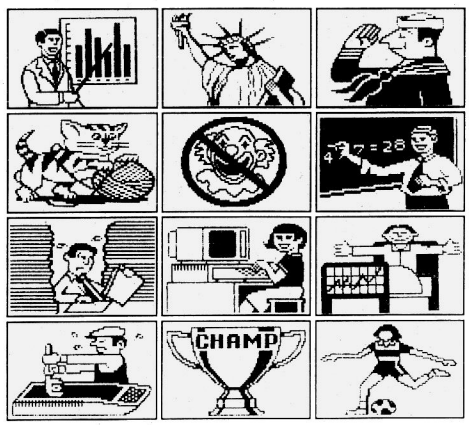
Power Print works with *AppleWorks, AppleWriter,* ProDOS, DOS 3.3 and every piece of Apple software anywhere.

Your printer's special effects (condensed type, expanded, bold, etc.) will work with both your standard and custom fonts.

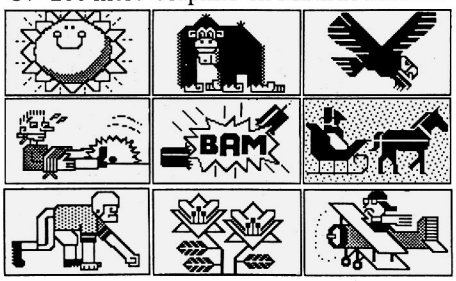
# MINIPIX Disk#2

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Coming Next: **DISK#3** and **NEWSROOM™pix**

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TRIPLE-DUMP™ combines with your dot-matrix (graphics-capable) printer and any Apple II to print:

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- ✔ LO-RES graphics
- ✔ 40-column TEXT
- ✔ Double Hi-res
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# G.P.L.E.

**$49.95** (for any version of Apple II)

GPLE™ is Beagle's "Global Program Line Editor"–still the NUMBER ONE editor for your Applesoft programs.

**INSERT AND DELETE** characters and words in your BASIC programs. No more awkward "cursor tracing" to make changes.

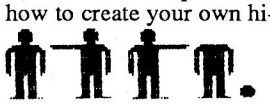
**SEARCH AND REPLACE:** Find every occurrence of any word or variable. Or replace any word in a program with another.

**ESCAPE MACROS:** GPLE lets you make Escape-anykey do almost anything you want. For example, Esc-**1** can Catalog drive 1. Esc-**N** can type your name and address, etc.

# SHAPE MECHANIC

**$39.95** (for any version of Apple II)

SHAPE MECHANIC™ converts your hi-res drawings into "shape tables" so you can create title screens, charts and hi-res animation with Apple's built-in Draw and Xdraw commands. "List and Learn" demos on the Shape Mechanic disk teach you how to create your own hi-res programs.



### FANCY HI-RES TYPEFACES

30 proportionally spaced hi-res screen display fonts–both large and small–are included on the Shape Mechanic disk. Each character may be edited or redrawn as you choose.

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SQUARE ZOOLOO

Shape Mechanic's new SHAPE CAPTURE feature lets you convert a section of any normal hi-res picture into a shape table.

**NO FEE IS REQUIRED** to use Shape Mechanic's fonts and routines in programs that you sell. Just give Beagle Bros credit.

# FONT MECHANIC

**$29.95** (for any version of Apple II)

FONT MECHANIC™ gives you 30 new hi-res display typefaces compatible with all of the programs on Shape Mechanic and Apple Mechanic.

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ZEBRA UNCLE BRANDING
Caesar HOLLYWOOD
BELLS SANDWICH TIMES
U.S. OPEN EDISON
COUNTDOWN ROOSEVELT

### FONT UTILITIES TOO

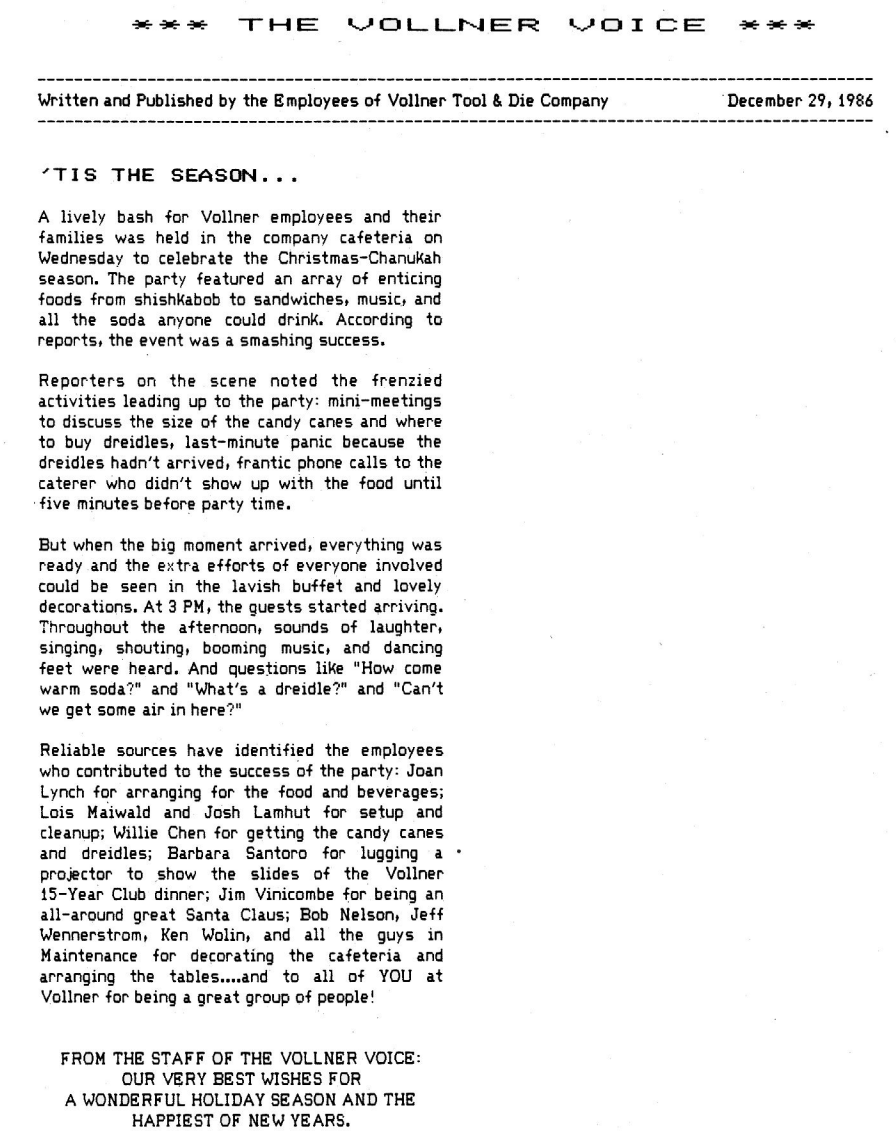
Font Mechanic lets you distort shape table fonts (s-t-r-e-t-c-h, compress, etc.) for copy-fitting and hi-res special effects.

Convert fonts from other sources (DOS Tool Kit, the Penguin disks, etc.) so they're compatible with Apple or Shape Mechanic.

AD #281

Circle 229 on Reader Service Card.

*Figure 1. The front page of* The Vollner Voice, *a company newsletter produced with the AppleWorks word processor.*



*** THE VOLLNER VOICE ***

Written and Published by the Employees of Vollner Tool & Die Company — December 29, 1986

'TIS THE SEASON...

A lively bash for Vollner employees and their families was held in the company cafeteria on Wednesday to celebrate the Christmas-Chanukah season. The party featured an array of enticing foods from shishkabob to sandwiches, music, and all the soda anyone could drink. According to reports, the event was a smashing success.

Reporters on the scene noted the frenzied activities leading up to the party: mini-meetings to discuss the size of the candy canes and where to buy dreidles, last-minute panic because the dreidles hadn't arrived, frantic phone calls to the caterer who didn't show up with the food until five minutes before party time.

But when the big moment arrived, everything was ready and the extra efforts of everyone involved could be seen in the lavish buffet and lovely decorations. At 3 PM, the guests started arriving. Throughout the afternoon, sounds of laughter, singing, shouting, booming music, and dancing feet were heard. And questions like "How come warm soda?" and "What's a dreidle?" and "Can't we get some air in here?"

Reliable sources have identified the employees who contributed to the success of the party: Joan Lynch for arranging for the food and beverages; Lois Maiwald and Josh Lamhut for setup and cleanup; Willie Chen for getting the candy canes and dreidles; Barbara Santoro for lugging a projector to show the slides of the Vollner 15-Year Club dinner; Jim Vinicombe for being an all-around great Santa Claus; Bob Nelson, Jeff Wennerstrom, Ken Wolin, and all the guys in Maintenance for decorating the cafeteria and arranging the tables....and to all of YOU at Vollner for being a great group of people!

FROM THE STAFF OF THE VOLLNER VOICE:
OUR VERY BEST WISHES FOR
A WONDERFUL HOLIDAY SEASON AND THE
HAPPIEST OF NEW YEARS.

## Formatting the Document

Getting the results you want is often a matter of doing the obvious first, then testing to see what works better. I wanted this newsletter to have two columns of equal width, page variety, and a professional, typeset look. After some initial planning and a few false starts—mainly the width of the columns—I finally reached the point where I could say, "That's it." Here's how to do it.

## Setting the Margins

First, set the margins. Press OA-1 to jump the cursor to line 1 column 1. Press OA-O to bring up the Printer Options screen. Type **TM** and press the return key. Type **.6** and press the return key again. Now type **BM** and press the return key. Type **1** and press the return key again. Next, type **LM** and press Return. Type **.5** and press Return. And finally, type **RM** and press Return. Type **.5** and press the return key again.

## Character Size and Centering

The next step prints THE VOLLNER VOICE at four characters per inch. Type **CI** and press the return key. Type **4** and press the return key again. Now center the newsletter name: Type **CN** and press Return. Press the escape key to exit the Printer Options screen.

## Uncentering and Proportional Spacing

Next, have AppleWorks end the centering. Place the cursor on line 8 column 1. Press OA-O, type **UJ**, and press the return key. The rest of the text is proportionally spaced, which gives each character—skinny *i* or chubby *w*—only the room it needs, unlike standard spacing, which gives every character the same amount of room. AppleWorks has two kinds of proportional spacing—P1 and P2. P1 characters are slightly narrower. Type **P1** and press Return. Press the escape key.

## Increasing the Article Heading

Next, tell AppleWorks to print *'TIS THE SEASON* at eight characters per inch. Place the cursor on line 20 column 1. Press OA-O, type **CI**, and press the return key. Type **8** and press the return key again. Press the escape key.

## Proportional Spacing and Justifying Text

Now return the text to proportional spacing. Place the cursor on line 23 column 1 and press OA-O. Type **P1** and press Return. Next, have AppleWorks justify the lines to produce an even right edge: Type **JU** and press the return key again.

## Increasing the Right Margin

Next, increase the right margin to allow room for a right column. You are still in the Printer Options screen. Type **RM** and press Return. Type **4.2** and press Return again. Press the escape key.

## Centering the Good Wishes

To give this page a bit more variety, center the last four lines. Press OA-9 to jump the cursor to line 75. Move the cursor to line 71 column 1 and press OA-O. Type **CN** and press Return. Press the escape key.

## Boldfacing

The final step tells AppleWorks to print the newsletter name, credits, and 'TIS THE SEASON in boldface type, which makes them really stand out. Press OA-3 to jump the cursor to line 19. Now place the cursor on line 21 column 1. Press the control key and type **B**. The caret that appears indicates the start of boldface.

AppleWorks uses the same caret for different printer options. To see what a caret stands for, just place the cursor on the caret. Try it now: Press the left arrow key and there's the description

*Figure 2. The text for a column in* The Vollner Voice.

```
*** THE VOLLNER VOICE ***※
※
※
----------------------------------------------------------------
--------------------------------※
Written and Published by the Employees of Vollner Tool & Die
Company                          December 29, 1986※
----------------------------------------------------------------
--------------------------------※
※
※
'TIS THE SEASON...※
※
A lively bash for Vollner employees and their families was
held in the company cafeteria on Wednesday to celebrate the
Christmas-Chanukah season. The party featured an array of
enticing foods from shishkabob to sandwiches, music, and all
the soda anyone could drink. According to reports, the event
was a smashing success.※
※
Reporters on the scene noted the frenzied activities leading
up to the party: mini-meetings to discuss the size of the
candy canes and where to buy dreidles, last-minute panic
because the dreidles hadn't arrived, frantic phone calls to
the caterer who didn't show up with the food until five
minutes before party time.※
※
But when the big moment arrived, everything was ready and
the extra efforts of everyone involved could be seen in the
lavish buffet and lovely decorations. At 3 PM, the guests
started arriving. Throughout the afternoon, sounds of
laughter, singing, shouting, booming music, and dancing feet
were heard. And questions like "How come warm soda?" and
"What's a dreidle?" and "Can't we get some air in here?"※
※
Reliable sources have identified the employees who
contributed to the success of the party: Joan Lynch for
arranging for the food and beverages; Lois Maiwald and Josh
Lamhut for setup and cleanup; Willie Chen for getting the
candy canes and dreidles; Barbara Santoro for lugging a
projector to show the slides of the Vollner 15-Year Club
dinner; Jim Vinicombe for being an all-around great Santa
Claus; Bob Nelson, Jeff Wennerstrom, Ken Wolin, and all the
guys in Maintenance for decorating the cafeteria and
arranging the tables....and to all of YOU at Vollner for
being a great group of people!※
※
※
FROM THE STAFF OF THE VOLLNER VOICE:※
OUR VERY BEST WISHES FOR ※
A WONDERFUL HOLIDAY SEASON AND THE HAPPIEST OF NEW YEARS.
```

*Table. Instructions for entering the text in* ***Figure 2****.*

| Line | Action |
|---|---|
| 1 | Type ***** THE VOLLNER VOICE ***** and press the return key three times to end the paragraph and insert two blank lines. The cursor moves to line 4. |
| 4 | Hold down the minus-sign key until the cursor is on line 5 column 32. The minus sign will wrap around. Release the minus-sign key and press the return key. The cursor moves to line 6. |
| 6 | Type **Written and Published by the Employees of Vollner Tool & Die Company**. Hold down the space bar until the cursor is on line 7 column 30. Type **December 29, 1986** and press the return key. The cursor moves to line 8. |
| 8 | Hold down the minus-sign key until the cursor is on line 9 column 32. Release the key and press Return three times to end the paragraph and insert two blank lines. The cursor moves to line 12. |
| 12 | Type **'TIS THE SEASON. . .** and press the return key twice to end the paragraph and insert a blank line. The cursor moves to line 14. |

*Table continued on next page.*


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at the bottom of the screen—*Boldface Begin*. There's no need to enter an end caret because boldface cancels itself at the end of a line.

To boldface the other lines, move the cursor to line 14 column 1 and press the control key and **B**. Now move the cursor to line 7 column 2 and press the control key and **B** again. The formatting is complete. Press OA-S to store the document on disk.

### Printing the Formatted Document

It's printing time again, so be sure your printer is on. Press OA-P to start the Print command. Press the return key three times to confirm *Beginning*, the printer, and one copy. The printer whirs. And presto—the magic of formatting did indeed transform an ugly duckling into a swan.

### A Few Comments on Newsletters

When you design something a bit out of the ordinary—like this newsletter—have patience, try new approaches, and stop only when you're truly satisfied with the results. With so many formatting possibilities, there's no need to settle for anything less.

Sometimes you'll have to look beyond AppleWorks and your printer. Clearly, a front page with a typeset name is more attractive. In the absence of typesetting equipment, you can use press-on lettering available at graphics-supply stores. Create the name on a separate sheet of paper, trim the paper to size, and apply *art wax* (not glue or scotch tape) to the back so that you can reuse it in succeeding issues. **Figure 3** shows the front page of *The Vollner Voice* with this kind of lettering, hand-drawn lines, and an illustration and text pasted into the right column.

Next month, I'll tell you how to create a spreadsheet to do break-even analysis. ■

---


*Ruth K. Witkin is a consultant in computer applications for business. She is the author of the hotCider* Success with AppleWorks *(*inCider, *CW Communications),* Managing with AppleWorks *(Howard W. Sams & Co.), and* Personal Money Management with AppleWorks *(Hayden Books). Write to her at 5 Patricia Street, Plainview, NY 11803. Enclose a stamped, self-addressed envelope if you'd like a personal reply.*

*Table continued.*

| | |
|---|---|
| 14 | Refer to **Figure 2** and type the entire paragraph starting with *A lively bash for Vollner employees and their families* (remember, only one space between sentences). Press the return key twice to end the paragraph and insert a blank line. The cursor moves to line 21. |
| 21 | Type the entire paragraph starting with *Reporters on the scene noted the frenzied activities* and press the return key twice. The cursor moves to line 28. |
| 28 | Type the entire paragraph starting with *But when the big moment arrived,* and press the return key twice. The cursor moves to line 36. |
| 36 | Type the entire paragraph starting with *Reliable sources have identified the employees* (this is where you can type your own names). At the end of the paragraph, press the return key three times. The cursor moves to line 49. |
| 49 | Type **FROM THE STAFF OF THE VOLLNER VOICE:** and press the return key. The cursor moves to line 50. |
| 50 | Type **OUR VERY BEST WISHES FOR** and press the return key. The cursor moves to line 51. |
| 51 | Type **A WONDERFUL HOLIDAY SEASON AND THE HAPPIEST OF NEW YEARS.** Your cursor should now be in line 51 column 58. |

*End of Table.*

*Figure 3. The front page of* The Vollner Voice *complete with typeset name, two columns of text, and an illustration.*

# THE VOLLNER VOICE

Written and Published by the Employees of Vollner Tool & Die Company — December 29, 1986

## 'TIS THE SEASON...

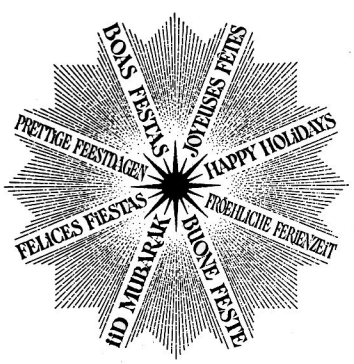
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Reporters on the scene noted the frenzied activities leading up to the party: mini-meetings to discuss the size of the candy canes and where to buy dreidles, last-minute panic because the dreidles hadn't arrived, frantic phone calls to the caterer who didn't show up with the food until five minutes before party time.

But when the big moment arrived, everything was ready and the extra efforts of everyone involved could be seen in the lavish buffet and lovely decorations. At 3 PM, the guests started arriving. Throughout the afternoon, sounds of laughter, singing, shouting, booming music, and dancing feet were heard. And questions like "How come warm soda?" and "What's a dreidle?" and "Can't we get some air in here?"

Reliable sources have identified the employees who contributed to the success of the party: Joan Lynch for arranging for the food and beverages; Lois Maiwald and Josh Lamhut for setup and cleanup; Willie Chen for getting the candy canes and dreidles; Barbara Santoro for lugging a projector to show the slides of the Vollner 15-Year Club dinner; Jim Vinicombe for being an all-around great Santa Claus; Bob Nelson, Jeff Wennerstrom, Ken Wolin, and all the guys in Maintenance for decorating the cafeteria and arranging the tables....and to all of YOU at Vollner for being a great group of people!

FROM THE STAFF OF THE VOLLNER VOICE:
OUR VERY BEST WISHES FOR
A WONDERFUL HOLIDAY SEASON AND THE
HAPPIEST OF NEW YEARS.




## NAMES IN THE NEWS

In this, our first issue of The Vollner Voice, we offer congratulations and continued success to the following employees who are celebrating employment anniversaries this month.

**John Schmidlapp, Tool & Die Maker**

John's been with Vollner for 14 years and was the first to graduate from our Tool & Die Apprentice Program. He's a member of the Safety Committee.

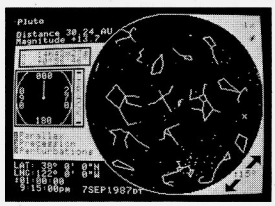
**Cathy Stewart, Senior Mechanical Engineer**

Cathy started in the Drafting Department and attended college at night to earn her ME degree. She's been with Vollner for 12 years.

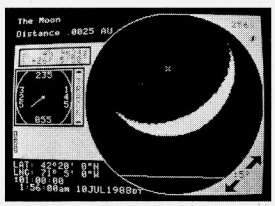
**Bob Nelson, Maintenance Supervisor**

Bob reached that 10-year milestone last week. Thanks to Bob, a battery cart with jumper cables is available to employees who find themselves unable to start their car in the parking lot.

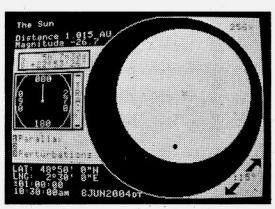

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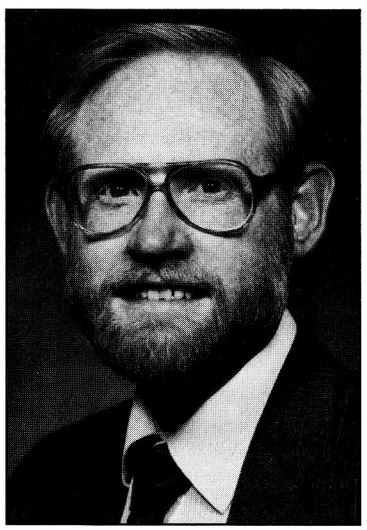
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# APPLESOFT ADVISER

## Data-Base Arrays

*"Array variables can greatly expand your control of data manipulation in your program."*



by Dan Bishop

Data Filer, presented in last month's Applesoft Adviser (October 1986, p. 86), illustrates the use of simple READ/DATA commands in BASIC to build a data-base list. In that program, you include a data statement for each record in your data-base list. You list all items associated with a specific record (such as name, address, and phone number) in the same data line. Each line becomes a permanent part of the program itself.

Presenting a list of the records in your "data base" on the video monitor is Data Filer's only function. The program uses a single set of variables for the items it reads from your list. Only the items associated with the most recently read record are present in working RAM at any given time. The program reads each record in the list and displays all items in one record before going on to the next. It has none of the familiar functions of a data-base management program.

This month, I'll introduce the concept of array variables and show how this feature of BASIC can greatly expand your control of data manipulation in your program. Arrays let you keep a large number of related items in memory simultaneously, and use very short segments of program code to process large amounts of information. Without array variables, the capabilities of computer programming would be limited.

### The Variable Variable

BASIC uses variable names to "tag" locations in memory that contain values the program needs. For example, define a variable named XX in your program by assigning it the value 12.653:

```
100 XX = 12.653
```

The computer now stores the value 12.653 in memory, and uses that value when the program calls for XX.

You must associate this type of variable with only a single value. If you assign the value −2.24 to XX later in the program, you'll lose the previously assigned value, 12.653. Most computer applications require a way to assign more than one value to a variable name. Consider, for example, a program that searches through a list of numbers to find the largest one. If you assign each number a unique variable name, such as AA, AB, or AC, then each comparison must have its own unique line in the program.

You can solve this problem by using array variables. An array is a list of variables that use the same variable name. Each variable differs from the others in the list by a number, called a subscript, which you append to the variable name. In BASIC, subscripts are enclosed in parentheses.

For example, you can use RG in a program as a numeric variable name. Similarly, you can use T3 as a unique variable name. You can assign RG and T3 only one value each. But the same program can have array variables RG and T3, and you can assign any number of values to them.

You shouldn't write array variables alone, however. You have to include appropriate subscripts, such as RG(23) and T3(14). (Read these two examples as "RG sub 23" and "T three sub 14.") With these subscripts, the array variable RG can contain at least 24 values (RG(0) through RG(23)), and T3 can contain at least 15 values (T3(0) through T3(14)).

BASIC treats subscripts just like any other numeric values. In fact, you can use any numeric variable as a subscript. If M has a value of 23, and J has a value of 14, then RG(M) and T3(J) refer to the same memory locations and values as RG(23) and T3(14).

This explains the power behind array variables. In BASIC, you can control the values you assign to numeric variables and change them at will with simple arithmetic expressions. If you also use a numeric variable to represent the subscript in an array variable, you can use the same simple arithmetic expressions to refer to different members of the array list.

As an example, the following sequence of BASIC instructions uses the variable J as a loop counter:

```
210 FOR J = 1 TO 12
220 READ CD$(J), CN$(J), ED$(J)
230 NEXT J
```

The program cycles through these three lines 12 times. J has a value of one the first time through, and increases by one with each cycle of the loop.

*Program listing. Data-Base Array.*

```
1   REM  DEMONSTRATION OF ARRAY DEF-
2   REM  INITION AND LOADING FROM READ
3   REM  DATA STATEMENTS CONTAINED IN A
4   REM  LOOP.
5   REM          ARRAY FILER
6   REM  BY DAN BISHOP
7   REM     APPLESOFT ADVISOR
8   REM      INCIDER MAGAZINE - 11/86
9   REM
10   READ NE
20   DIM CD$(NE),CN$(NE),ED$(NE)
30   GOSUB 100: REM  DISPLAY TITLES
40   GOSUB 200: REM  READ DATA
50   GOSUB 300: REM  DISPLAY DATA
90   END
97   REM
98   REM  ROUTINE FOR SCREEN TITLES
99   REM
100   HOME
110   READ T$
120   PRINT T$
130 L$ = "---------"
140 L$ = "   " + L$ + L$ + L$ + L$
150   PRINT L$
160   PRINT "COMPANY / CARD NO.","EXP.DT."
170   PRINT L$
180   PRINT
190   RETURN
196   REM
197   REM  ROUTINE TO READ DATA
198   REM
199   REM
200   READ NR
210   FOR J = 1 TO NE
220   READ CD$(J),CN$(J),ED$(J)
230   NEXT J
240   RETURN
296   REM
297   REM  ROUTINE TO DISPLAY DATA
298   REM  NR RECORDS AT A TIME
299   REM
300 CT = 0
310   FOR J = 1 TO NR
320 CT = CT + 1
330   PRINT CT;". ";CD$(CT)
340   PRINT "     "CN$(CT);
345   IF  LEN (CN$(CT)) < 11 THEN  PRINT ,;
346   PRINT ,ED$(CT)
350   IF CT = NE THEN J = NR
360   NEXT J
370   PRINT L$
380   IF CT = NE THEN  GOTO 440
390   PRINT "PRESS <RETURN> TO CONTINUE...";
400   INPUT X$
410   HOME
420   GOSUB 120
430   GOTO 310
440   RETURN
496   REM
497   REM  DATA BLOCK FOR DATABASE FILES
498   DATA  13: REM  # OF ENTRIES IN LIST
499   DATA  CREDIT CARD INVENTORY
500   DATA  8: REM  # OF RECORDS/SCREEN
501   DATA  JACK'S PIZZA,"8-6211-48","12/99"
502   DATA  SUE'S SHOES, "421-37-8","05/88"
```

*Listing continued.*

Line 220 shows three array variables: CD$, CN$, and ED$. These are all string variables (denoted by the dollar sign following the variable name), and all use J as a subscript. The first time through the loop, the program reads values into CD$(1), CN$(1), and ED$(1). By the 12th cycle through the loop, the program reads values into CD$(12), CN$(12), and ED$(12). Three simple lines assign values to 36 variables! And all 36 variables are present in RAM, available to the program whenever it refers to a specific variable name and appropriate subscript.

### The DIM Statement

As long as you follow the rules in naming simple variables, all you need to do to introduce a new variable into your program is use it. The computer expects a one-to-one relationship between variables and values, and can deal easily with unexpected variables.

Things aren't so simple when it comes to array variables, though. Your computer needs to know the number of elements you intend to use when you introduce an array-variable name into your program. Since the computer keeps all the memory spaces for each array together as a block, it needs to know how much memory to reserve for each array before you can use it in your program.

BASIC's dimension statement, or DIM, lets you dimension your arrays. Follow DIM with a list of the array-variable names you plan to use in your program. Use commas to separate the variable names, and add the largest subscript value you intend to use to each variable name. For example,

```
20 DIM CD$(12), CN$(12), ED$(12),
   RG(25)
```

tells the computer to reserve 13 slots in memory for the CD$ list, 13 for the CN$ list, 13 for the ED$ list, and 26 for the RG list. (Don't forget that in each case, there's also a "zeroth" element.)

You can use as many DIM statements in a program as you need, with only two restrictions:

1) Array variables must be "dimensioned" before the program can use them. (Most programmers place the DIM statements together at the start of the program.)

2) Array variables can be dimensioned only once in a program. Applesoft BASIC doesn't let you redimension them.

*Listing continued.*

```
503   DATA   THE MERCANTILE,"0817-2553","11/86"
504   DATA   DRIVER'S LICENSE,"A-222115","08/89"
505   DATA   HAPPY HOUR BAR & GRILL, "000-00-001","09/99"
506   DATA   SALLY'S HAIR SALON, "5-928-3",
507   DATA   MARTY'S MECHANICS,"522-88-6178","02/88"
508   DATA   XYZ INVESTMENTS,"3-6211-8497","10/86"
509   DATA   SLICKER OIL CO.,"41-28545","08/88"
510   DATA   JOE'S TOOL CO.,"83214","09/90"
511   DATA   LE CAFE CLUB,"523-523-9929","01/87"
512   DATA    HARRY'S HEALTH CLUB,"21-88-44-669789","02/92"
513   DATA    OLIVE'S GAS-M-UP,"499-276-366",
```

*End of listing.*

The subscripts you use in a DIM statement can be numeric variables, as long as the variable has an appropriate numeric value. (Refer to line 20 in the **Program listing**.)

You don't have to dimension an array variable if the largest subscript you intend to use is 10. However, it's good programming practice to dimension all array variables. The DIM statement helps provide some degree of documentation for your program. It's the only time in BASIC you *declare*, or define, the variables you intend to use. Some programming languages, such as Pascal, require you to declare all variables at the beginning of your program.

### Min and Max

For a picture of how arrays can make data manipulation easier, consider the following program segment, which determines the minimum and maximum values a list contains. The segment assumes that an array, RS, has been dimensioned to contain 1001 elements with a DIM RS(1000) command, and that 1001 values have been read into the array:

```
700 MX = RS(0)
710 MN = RS(0)
720 FOR A = 1 TO 1000
730   IF RS(A) > MX THEN MX = RS(A)
740   IF RS(A) < MN THEN MN = RS(A)
750 NEXT A
```

Lines 700 and 710 assign the value in the first array element to MX and MN, the two variables that will ultimately contain the list's maximum and minimum values. Then a FOR...NEXT loop, using A for the loop counter as well as the array-subscript variable, cycles through all of the 1000 remaining values. When the loop encounters a value larger than the current MX, that value replaces the old maximum. When it finds a value smaller than the current MN, the program reassigns MN to that value. When the loop is finished, MX contains the list's maximum value, and MN its minimum value.

### Multiple Dimensions

The examples above use a single subscript with each array-variable name. These are *one-dimensional* arrays, or simply lists. For many applications, this is all you need.

Applesoft BASIC lets you define arrays in many more dimensions than just one. For example, suppose you have a two-dimensional grid, like a checkerboard, and need to indicate the presence or absence of some condition relating to each square on the grid. You could assign a value of +1 to a square if the condition is met, and a zero if it isn't.

The easiest way to handle this situation is to use a single array to represent the entire grid. If you call the array SQ, you can pinpoint any square in the grid with a row number and a column number. Thus, SQ(0,0) is the square in the upper left corner of the grid, while SQ(10,15) is the square in the lower right corner (assuming the grid has 11 rows and 16 columns).

You dimension this array with the following DIM statement:

```
DIM SQ(10,15)
```

As you probably guessed, three-dimensional arrays have three subscripts, four-dimensional arrays have four, and so on. Applesoft lets you define up to 88 subscripts for an array variable, probably more than you'll ever need—you'll run out of memory long before you can use an array with that many dimensions!

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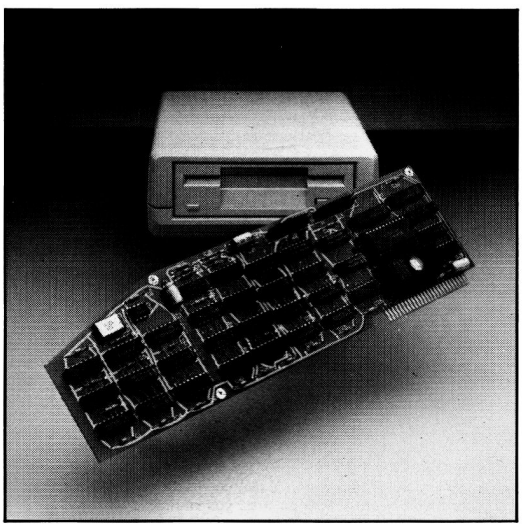
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You control multidimensional arrays by using nested loops with different loop variables for each dimension. For example, consider the three-dimensional array:

```
DIM A(6,12,9)
```

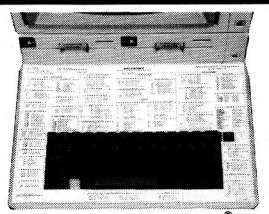
(This array has 7 × 13 × 10, or 910, elements.) If you want to fill this array with threes (that is, give each array element the value three), you can use the following program sequence:

```
600 FOR X = 0 TO 6
610   FOR Y = 0 TO 12
620     FOR Z = 0 TO 9
630       A(X,Y,Z) = 3
640     NEXT Z
650   NEXT Y
660 NEXT X
```

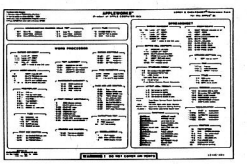
Or, if you want to fill all the elements that have the same value for all three subscripts with fives, you use a sequence such as:

```
670 FOR X = 0 TO 6
680   A(X,X,X) = 5
690 NEXT X
```


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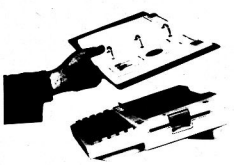
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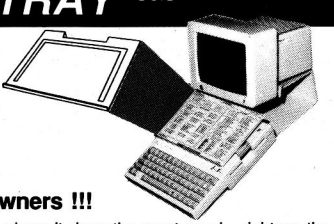
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## Data-Base Array

The **Program listing** uses three arrays to contain the credit-card information (company, card number, and expiration date) the data statements provide. Unlike last month's Data Filer program, Data-Base Array uses the FOR...NEXT loop in lines 210–230 to read the data base into the arrays CD$, CN$, and ED$. From this point on, the program can call up any element in the data base for processing at any time, without having to reread the entire data base. Consequently, you can separate the loop that displays the data from the loop that reads it. The display loop appears in lines 310–360.

The program adds one line to the display so that short credit-card numbers can't alter the column with the expiration date. Line 345 tells the computer to send an extra tab (denoted by the comma) to the display if the card number contains fewer than 11 characters. (One of life's little mysteries is why, with *only* five billion people on the entire planet, credit-card companies insist on using numbers that contain as many as 16 digits!)

## Conclusion

The Data-Base Array program presented this month may not appear to be very different from last month's Data Filer program. Its use of arrays, though, sets the stage for a wide variety of programming capabilities that aren't otherwise possible. In my next column, I'll begin exploiting these capabilities by combining arrays with FOR...NEXT loops to achieve greater display control. So bear with me as we expand the original Data Filer program into a fully functional data-base management system.

In the meantime, add subroutines of your own design to carry out specific tasks with your data base. The best way to learn programming is by doing. Even the hours spent agonizing over a problem that turns out to have a simple solution creates a depth of understanding you can't achieve by simply reading about programming.■

*Write to Dan Bishop at 4124 Beaver Creek Drive, Fort Collins, CO 80526.*

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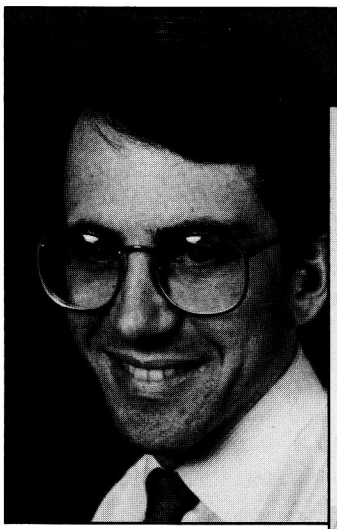
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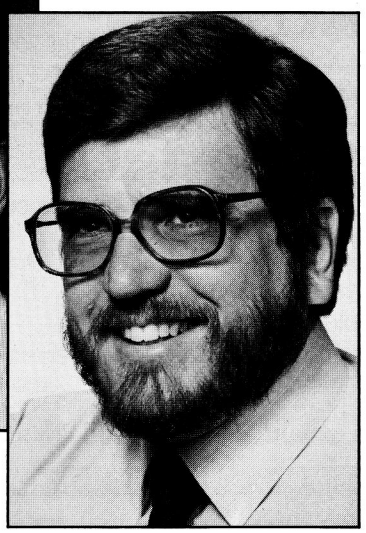
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*"You can 'teach' the versatile AppleWorks data base to format and print your exams."*





by David Goodrum
and Joel Robbins

To foil peepers and cribbers, teachers writing exams have to spend a lot of time cutting and pasting, copying, and moving questions to get different versions of each test. Many teachers abandon word processors and seek out separate test-writing programs, a number of which are slow, cumbersome, and unfriendly.

The versatile AppleWorks data base is a better choice: You can "teach" it to format and print a multiple-choice or true/false exam in several versions. TestMaker, the name we'll give our test-writing data-base template, has a lot of flexibility, too. The printed test will look as good as any you'd type into a word processor; AppleWorks' print-formatting capabilities will automatically take care of page breaks; you can use TestMaker for one exam or a library of questions from which to pick and choose; you can easily rearrange questions for different versions of the same test; and TestMaker will work for multiple-choice or true/false questions.

### Setting Up Your Test Maker

The keystrokes listed in **Table 1** will help you design the data base and type in a few sample questions.

The first category will contain the question number; type in "1." and hit Return. Type in the sample question and choices as shown in **Figure 1**. Note that the data base can't perform word wrap, so you must break the question into separate lines. TestMaker gives you up to three lines for your question. If you usually write longer questions, you can design your data base with additional space.

The sample shows up to five lines for choices, but you're not limited to five choices: Since you're labeling answers with A, B, C, and so on, you can place more than one choice on each line, up to the full width of the screen. This arrangement accommodates short or long answers; an answer can even continue onto a second line. And you can use TestMaker for writing true/false exams: Instead of several choices, T and F would be the only options.

After you place the answer in the ANS category and hit Return, you'll see another blank record. Type in a few sample questions of your own; experiment with questions of different lengths and with varying arrangements of choices.

When you finish entering questions, press the escape key to return to Review/Add/Change, then type OA-Z (zoom) to view the file in multiple-record format.

### Customizing and Printing

You now need to customize the layout of the data-base screen to see the question number, the first part of the question, and the reference. When you're trying to get a quick overall view of your test questions or need to choose questions for a particular test, this view should give you enough information to make your decisions and number your questions. Follow the keystrokes in **Table 2** to customize the TestMaker layout to resemble **Figure 2**.

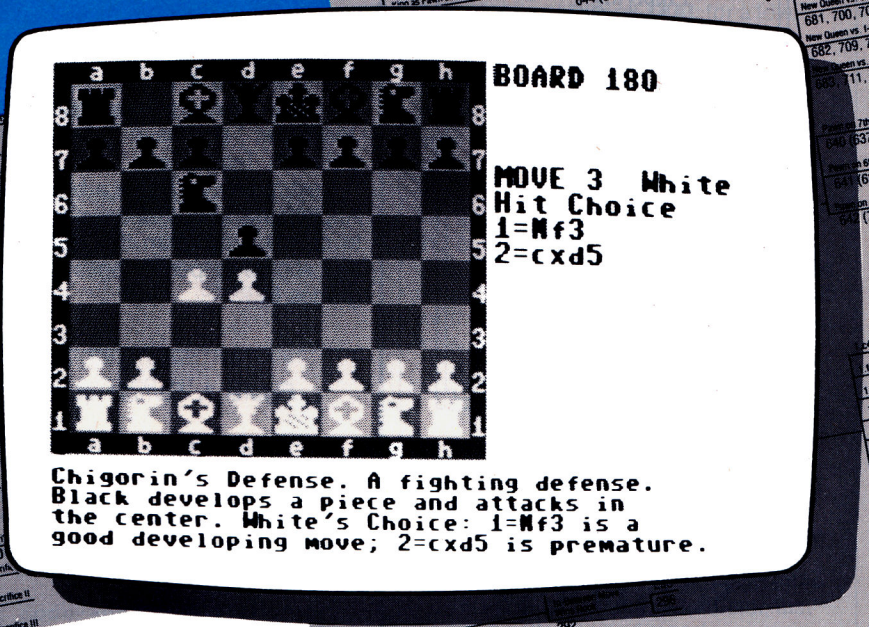
The template is still incomplete until you create a Print Format that will get the test out of the computer and onto your printer paper. You want a label-type print report that will omit blank lines and allow for different question sizes and printed spaces between questions. AppleWorks will automatically keep a question and its choices together, so that questions won't be split across the page break.

Follow the keystrokes in **Table 3** to make the Print Format called PRINT TEST as shown in **Figure 3**.

TestMaker is now ready for action. Type OA-P (print) and respond to prompts to print your first test. If you're a teacher, grab a few students for a pop quiz. If you're not a teacher, give your children or relatives an exam on Who's Who in your family. Don't forget to type the documenta-

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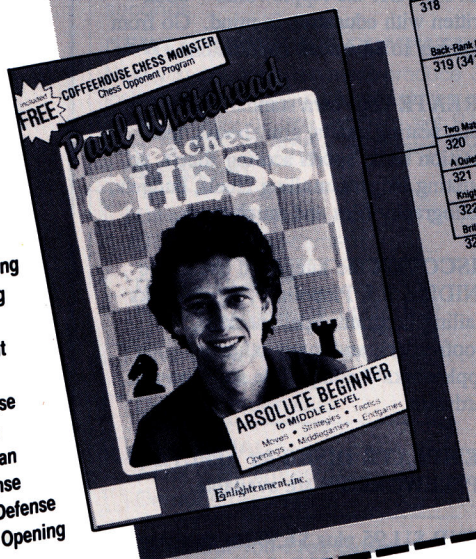
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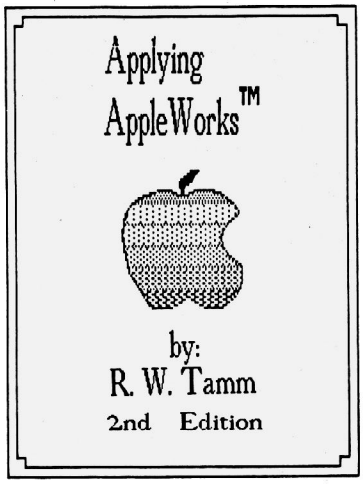
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tion in **Figure 4** into an AppleWorks word-processing file you name "DOC .testmaker" and save it on the same disk with TestMaker.

Next month we'll take a break from AppleWorks and "get down to BASICs" to create a program that converts raw scores to percentages and letter grades.■

*David Goodrum and Joel Robbins are the developers of SchoolWorks, AppleWorks templates for education, published by K–12 MicroMedia Publishing. Write to them at Tulip Tree House 1016, Bloomington, IN 47401. Enclose a self-addressed, stamped envelope if you want a personal reply.*

*Figure 1. Sample question 1 as it appears on your AppleWorks screen.*

```
File: TESTMAKER              INSERT NEW RECORDS        Escape: Review/Add/Change


Record 1 of 1
================================================================================
__: 1.
QUESTN: In quest of the New World, what ships were taken by Christopher
-: Columbus?
-: -
:: A. Nina
:: B. Pinta
:: C. Santa Maria
:: D. All of the above
:: -
REF: -
ANS: D.

--------------------------------------------------------------------------------
Type entry or use @ commands                                        @-? for Help
```

*Figure 2. Customizing the Record Layout on your AppleWorks screen.*

```
File: TESTMAKER          CHANGE RECORD LAYOUT      Escape: Review/Add/Change

================================================================================

                    --> or <--  Move cursor
                     >  @   <   Switch category positions
                    --> @  <--  Change column width
                    @-D         Delete this category
                    @-I         Insert a previously deleted category

--------------------------------------------------------------------------------

__  QUESTN                                                                REF
--- ---------------------------------------------------------------------- -----
1.  In quest of the New World, what ships were taken by Christopher

--------------------------------------------------------------------------More-->
Use options shown above to change record layout                      50K Avail.
```

*Figure 3. Creating a Print Format on your AppleWorks screen.*

```
File: TESTMAKER              REPORT FORMAT              Escape: Report Menu
Report: PRINT TEST
Selection: All records

================================================================================
__: 1.  <QUESTN
-
-
:
:
:
:
:

-------------------------Each record will print 9 lines-----------------------

--------------------------------------------------------------------------------
Use options shown on Help Screen                                    @-? for Help
```

*Figure 4. Documentation for TestMaker data-base template.*

```
TEMPLATE:  TESTMAKER, data base

USES:  You can make and store multiple-choice or true/false
       questions in a file, then number or renumber the ones
       you want for a particular test.  The printout will
       format the questions, allow a place for the student
       answer, and allow a place for instructions, class
       name, date, and the student's name.

PRINT FORMAT:  PRINT TEST, labels: gives a printout of the
                    test questions you've created or
                    selected.

REMEMBER:  In the multiple-record viewing mode, you'll see
           only the first line of the question and the REF
           (reference) category. In the single-record viewing
           mode you'll see the entire question, page, chapter
           or unit reference, and answer.

THINGS TO TRY:
  1.  Be in the single-record viewing mode--use Apple-Z
      (zoom) if necessary. Use Apple-I (insert) to start
      inserting or adding new questions.
  2.  Leave the __: (number) category blank for now, or go
      ahead and insert a number.  Or, leave it blank or use
      a zero, and you can use this record for INSTRUCTIONS
      for the test (when you arrange by number field, a
      blank category will go to the top of the list).
  3.  Of course, there's no word-wrap, so you must finish or
      hyphenate a word near the end of a line (category
      QUESTN) before proceeding to the second or third line
      (blank category).
  4.  There are four categories that appear as   ::   .
      These are for your choices.  Longer choices should be
      put on separate lines.  Shorter ones can be put
      together; for example:
                        A. Nina   B. Pinta   C. Santa Maria
      This gives a lot of flexibility to the maximum number
      of choices.  In fact, you could even extend the
      question onto these lines if necessary.  If a category
      is left blank, nothing will be printed, so there's not
      a lot of wasted space on the test.
  5.  The category REF can be used for a page, chapter,
      unit, book reference, or key word.  Arrange (OA-A) by
      this category to group questions.  Category ANS is
      for the answer.
  6.  Choose the questions you want for a particular test by
      placing the question number or question letter in the
      __: Category.  You can do this quickly while in the
      multiple-record viewing mode.
  7.  Sort the questions on the __: Category, Ø-9.
  8.  Use OA-P (print) to proceed to the Print Format
      Catalog, highlight PRINT TEST and hit return. Use OA-R
      (range), if necessary, to choose the range of
      questions you want (there are a few steps to this
      process; watch the prompts on the screen). Use OA-N
      (name) and return to go to the line where you can
      specify the class name and date. Press OA-P again to
      continue the printing process.
  9.  Print another copy of the test with the questions
      rearranged simply by renumbering the questions and
      pressing OA-A (arrange).
  1Ø. Build up a whole list of questions, then go into the
      file and choose the few you want, using OA-R (record
      selection) to choose only those questions in the __:
      Category that Are Not Blank.
  11. You can also use this template for true/false
      questions.  Leave the lines for choices blank: Only
      the question with a line for the student's T or F will
      print.
```


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*Table 1. Designing TestMaker.*

From the AppleWorks Main Menu, the following keystrokes will set up the data base file for our multiple-choice test writer.

| | |
|---|---|
| 1 (return) | Chooses: Add files to the Desktop |
| 4 (return) | Chooses: Data Base |
| 1 (return) | Chooses: From scratch |
| TESTMAKER (return) | Names our data-base file |
| (OA-Y) | Yanks the label: Category 1 |
| (underline key twice) (return) | Makes our answer blank for each question and gives us the category for the question number |
| QUESTN (return) | Names our Question category |
| - (return) - (return) | Gives us two more lines for each question |
| : (return) : (return) : (return) : (return) : (return) | Adds up to five lines for the choices |
| REF (return) | Gives us a place for a textbook reference |
| ANS (return) | Puts in a place for the answer |
| (escape) | Exits template-design section |
| (space bar) | Places us into Insert New Records |

*Table 2. Keystrokes customizing the TestMaker layout.*

From the multi-record view:

| | |
|---|---|
| (OA-L) | Allows us to customize layout |
| (OA-left arrow 12 times) | Narrows the first category, leaving enough room to show the question number |
| (right arrow twice) | Moves cursor to 3rd category |
| (OA-D seven times) | Removes choice categories from view in the multiple-record view |
| (right arrow) | Moves cursor to ANS category |
| (OA-D) | Removes ANS category from view |
| (left arrow twice) | Moves cursor to the Q in the QUESTN category |
| (OA-right arrow until the REF category is pushed to the right-hand side of the screen) | Gives the 1st line of the question full view |
| | Now compare to Figure 2 |
| (escape) | Quits customizing the screen layout |
| (return) | Chooses DOWN as the direction of RETURN |

*Table 3. Designing the TestMaker Print Format.*

From Review/Add/Change of TESTMAKER:

| | |
|---|---|
| (OA-P) | Begins the print-format process |
| 3 (return) | Creates a new "labels" format |
| PRINT TEST (return) | Names our print format |
| (OA-V) | Prints category name AND entry for our __: (Number) category |
| (down arrow once) | Moves cursor onto the QUESTN category |
| (OA-right arrow 7 times) | Moves QUESTN to the right |
| (OA-up arrow once) | Moves QUESTN up next to the __: category |
| (OA-J) | Causes the entry in QUESTN to always print one space after the question number |
| (down arrow) | Moves cursor to blank space |
| (OA-D) | Deletes empty line |
| (arrow down and over to the beginning of REF) | Positions cursor on R of REF |
| (OA-D three times) | Deletes REF and ANS categories and leaves a blank line |
| (OA-N) (return) | Takes us to a blank line above the print format |
| NAME_____(return) | Creates a space for student name (use this to list class name and date or other info) |
| (OA-O) | Takes us to Printer Options |
| PH (return) | Takes away the report Header |
| KS (return) | Allows for questions of different length |
| BM (return) 1 (return) | Changes Bottom Margin to one inch |
| (escape) | Exits Printer Options |

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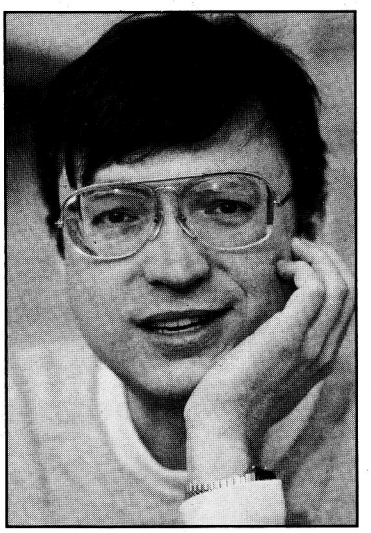
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# PASCAL PRIMER

## Large-Program Tools—Part 1

*"Apple Pascal comes with tools to help you divide large programs into manageable pieces."*



by Tom Swan

Apple Pascal comes packed with tools for writing large programs. Three of these tools—chaining, segments, and units—can help you compile massive projects, even those with tens of thousands of statements, that run as though your 64K Apple had many times as much memory. This month I'll explain how to use chaining and segments to divide large programs into manageable pieces. I'll cover units in the next part of this two-part miniseries.

### Hoisting the Pascal Chain

Imagine a chain passing through several programs you want to run in order. If you could stand inside your Apple and wind in the chain, you'd pull each successive program into memory. The programs would appear to run as a unit, perhaps with brief pauses at the start of each new link in the chain as you—with a little help from the Pascal operating system—haul in programs from disk.

You form such imaginary chains by telling your programs which new programs to run next. As an example, type in **Listings 1**, **2**, and **3**. (See the September 1986 Pascal Primer, p. 93, for complete instructions for typing Pascal listings.) MENU, CHOICE1, and CHOICE2 demonstrate a typical menu-driven design that runs as a collection of chained programs. In this demonstration, the menu selections A(dd and D(elete are merely for show—they don't actually add or delete anything. Compile and execute MENU (**Listing 1**) to start the demo. Type A to run sub program CHOICE1 (**Listing 2**); type B to run CHOICE2 (**Listing 3**); type Q to quit.

MENU chains from one program to another with help from the ChainStuff library unit—a collection of precompiled routines, plus a few other goodies. The actual programming for ChainStuff is in file SYSTEM.LIBRARY on your APPLE1: disk. Line 2 of MENU includes this programming with the phrase "uses ChainStuff;" immediately after the program declaration.

### Parents and Children

Chaining occurs in procedure ChainTo in lines 7–12 of the main program, MENU, which some programmers call the *parent process*. Line 9 gives procedure SetChain the name of the next program, or *child process*, in the chain. SetChain merely prepares for an eventual chain to another program. The actual chaining occurs when the parent process ends, passing control to its child.

This leads to two methods for running a child process. As the MENU example shows, you can use the statements

```
SetChain( ProgramName );
Exit( program );
```

to tell ChainStuff which program to run when it gets to the Exit statement. An even easier method is simply to end your program the usual way. Whichever method you use, ChainStuff executes the program name you last gave to SetChain.

### Errors in Chaining

If one program chains to a nonexistent program, the computer displays the error message "No file CHOICE1.CODE" and halts. To avoid this error, replace procedure ChainTo in the MENU example with the programming in **Listing 4**. Now, before chaining, the new procedure tries to reset the filename you give ChainTo. If that fails, it asks you to insert the correct disk, waits for you to press the return key, and then tries again. You could use this method to chain together dozens of programs from several disks.

To see how this works, make a copy of your boot disk containing the three demonstration programs. Remove CHOICE1.CODE from one disk and CHOICE2.CODE from the other. Execute MENU and select the A(dd or D(elete operation. If MENU can't find the program for your selection, it asks you to insert another disk and press return.

Notice that line 7 in the new ChainTo adds .CODE to ProgramName in a concat (concatenation) statement. Because of this, you can't use a statement such as ChainTo ('CHOICE1.CODE') or the program will mistakenly look for a file named CHOICE1.CODE.CODE. Notice also how the procedure turns off input/output error checking with the compiler option (*$I-*) in line 5. If the built-in

function ioresult returns zero with this option in effect, then no error occurred. Otherwise, the program knows that the reset in line 13 failed, and asks you to insert another disk.

### Other Chaining Procedures

ChainStuff has a few other useful procedures. SetCval stores a string in memory where a child process can read it with procedure GetCval. (*Cval* means *common value*.) This lets a parent process pass information to its children—the only direct method for passing data from one chained program to another.

One neat use for SetCval is to pass what I call a ComeFrom value to a child process. A ComeFrom value is a string containing the filename of the parent process that chained to one of its children. The child reads the ComeFrom value to discover the name of its parent and can then chain back to the parent program that called it. This lets programs return to different callers in complex menu-driven systems in which two or more menus call the same sub program.

You can better understand this idea with an experiment. Add the following line between lines 14 and 15 in **Listing 1**, the parent process:

```
SetCval( 'MENU' );
```

Then add this string-variable declaration between lines 3 and 4 in **Listings 2** and **3**, the children:

```
VAR
  ComeFrom : string;
```

Finally, replace line 9 in **Listings 2** and **3** with the following two lines:

```
GetCval( ComeFrom );
SetChain( ComeFrom );
```

After recompiling MENU, CHOICE1, and CHOICE2, you're ready for the test. Execute MENU and select the dummy A(dd and D(elete operations; they should work the same as before. Quit MENU and execute CHOICE2 directly from the Pascal command line. What then happens when you press return?

Instead of chaining back to MENU, the program simply ends because line 24 in MENU passes a zero-length, or null, string to SetCval when you quit the program, and chaining to a null string simply ends the program.

Knowing this, you can design sub programs that operate as children of a main parent (MENU in this example), or as the adopted children of still other parents. (Try writing your own alternate MENU programs and pass their names as the ComeFrom values to CHOICE1 and CHOICE2.) You can also directly run the children as stand-alone orphans.

*Listing 1. MENU.TEXT.*

```
 0: PROGRAM Menu;
 1:
 2:    Uses ChainStuff;
 3:
 4: VAR
 5:    ch : Char;
 6:
 7: PROCEDURE ChainTo( ProgramName : string );
 8: BEGIN
 9:    SetChain( ProgramName );
10:    Write( 'Chaining to ', ProgramName, ' ...' );
11:    exit( program );      (* chain occurs here *)
12: END;
13:
14: BEGIN
15:    Page( output );       (* clear screen *)
16:    Write( 'Menu: A(dd, D(elete, Q(uit ? ' );
17:    REPEAT
18:       read( keyboard, ch )
19:    UNTIL ch in [ 'A', 'D', 'Q' ];
20:    Writeln( ch );
21:    IF ch = 'A' THEN ChainTo( 'CHOICE1' )        (* A(dd *)
22:       ELSE
23:    IF ch = 'D' THEN ChainTo( 'CHOICE2' )        (* D(elete *)
24:       ELSE SetCval( '' )
25: END.
```

*Listing 2. CHOICE1.TEXT.*

```
 0: PROGRAM Choice1;
 1:
 2:    Uses ChainStuff;
 3:
 4: BEGIN
 5:    writeln;
 6:    writeln( 'Add records selection.' );
 7:    write( 'Press return ...' );
 8:    readln;
 9:    SetChain( 'MENU' )
10: END.
```

*Listing 3. CHOICE2.TEXT.*

```
 0: PROGRAM Choice2;
 1:
 2:    Uses ChainStuff;
 3:
 4: BEGIN
 5:    writeln;
 6:    writeln( 'Delete records selection.' );
 7:    write( 'Press return ...' );
 8:    readln;
 9:    SetChain( 'MENU' )
10: END.
```

### Memory Swapping

ChainStuff has two other procedures for increasing the amount of memory available to your programs. SwapOn causes portions of the operating system to share the same memory and, in the process, releases 2262 bytes for your program to use. But you gain this memory at the expense of slower operation while Pascal exchanges portions of itself from disk. It's hard to predict whether this swapping will go unnoticed or become an annoying disadvantage. Usually, the more file handling in your program, the slower it operates with swapping in effect.

SwapOff turns swapping off, reducing available memory by 2262 bytes. In Apple Pascal versions 1.2 and 1.3, a third procedure, SwapGPOn, releases an additional 800 bytes. (*GP* refers to Get and Put.) Don't use SwapGPOn if your program has Get and Put statements or reads and writes text files by other means, which Pascal internally translates to the same code Get and Put use. If you ignore this warning, your program will sluggishly read the disk for each character transfer. In other words, reading an 80-character string with SwapGPOn will take 80 disk reads!

The three swapping procedures, SwapOn, SwapOff, and SwapGPOn, take effect after chaining to another program. They have no effect on the program that uses them. That may seem strange, but swapping requires internal initializing steps that Pascal can take only before running a program. Therefore, it delays turning swapping on or off until you chain somewhere else. In other words, you can't swap your parents until you first swap your children. (And I can't help but wonder what you think of that sentence if you started reading this column in the middle.)

## Segments

Segments are procedures (or functions) that stay on disk until needed. This lets you divide a large program into pieces and load into memory only one or more of its pieces at a time. Because the segments share the same memory, the program occupies less memory than it would if the segment procedures were the regular kind. And, unlike chaining, loading segments takes only a brief moment—a tiny flash of the disk-drive light is the only evidence that the operating system is activating a new segment.

To create a segment routine, add SEGMENT to the front of a procedure or function declaration. For example, this creates a segment named OneSeg:

```
SEGMENT PROCEDURE OneSeg;
BEGIN
  (* programming for OneSeg *)
END;
```

When you compile the program containing that segment, Pascal creates the code for loading the procedure from disk every time you call OneSeg in your program. A program usually has many segments that share the same space. Although Pascal automatically organizes these segments, loading the ones it needs and keeping the others on disk, there are a few restrictions.

## Segment Restrictions

All code files contain a *segment dictionary*, an array of slots containing the pieces that make up a program. To see this array, run LIBRARY from APPLE3:, type X or some other dummy output filename, and supply the full name of the program you want to examine. (Try MENU.CODE, for example.) Type A to abort the LIBRARY program. You can use LIBRARY to examine code files because they have the same form as library files such as SYSTEM.LIBRARY. The contents of library and code files differ, of course, but they're physically the same.

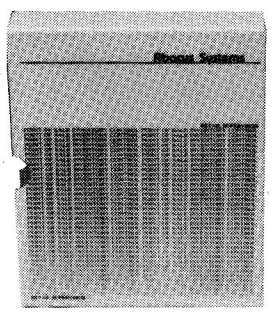
If you're following along, you'll see 16 slots numbered zero to 15: These are the segment numbers. The program is segment zero. The first seg-


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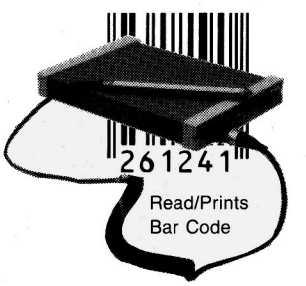




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ment procedure is number 1, the next number 2. Because of the segment dictionary's limited size, you can have up to 15 segmented procedures in one program.

Many people mistakenly assume that nesting segments inside others increases the maximum number of segments you can have. But this isn't the case. You can certainly nest segment procedures, but each still takes one slot in the segment dictionary. For example, the following procedure occupies two dictionary slots, even though procedure InSide is visible only from OutSide's body:

```
SEGMENT PROCEDURE OutSide;
    SEGMENT PROCEDURE InSide;
    BEGIN
        (* Inside programming *)
    END;
BEGIN
    (* Outside programming *)
    (* InSide visible here *)
END;
```

Another restriction is that segment procedures must come before any regular procedures and functions. This often poses a problem. How can segmented procedures call the non-segmented ones? As **Listing 5**, SegDemo, shows, it's an easy problem to solve. Just declare regular procedures FORWARD before any segments. Then insert the bodies (minus any parameter lists) of the procedures you earlier declared FORWARD.

SegDemo has two such FORWARD procedures, Pause and GetTwoRandomNumbers. Segments Add and Multiply call these two procedures, whose bodies appear after the segments. The parameter list in GetTwoRandomNumbers appears only in the FORWARD declaration. It doesn't repeat in the actual programming for the procedure at line 41. Similarly, the result type for the Random function appears only in the FORWARD declaration.

When you compile and run SegDemo, press return and watch your disk-drive light. You should see a brief flash when Pascal loads the programming for the Add and Multiply segments.

## Segment Abuse

Never put calls to segment procedures inside loops. If you use the statement

```
FOR i := 1 TO 500 DO
  OutSide;
```

in your program, Pascal will load segments InSide and OutSide 500 times from disk, drastically slowing your program. Generally, you should segment only main program operations. Don't make the common mistake of segmenting everything in sight.

If you must repeatedly call segment procedures, place the compiler Resident option (*$R <name>*) immediately after BEGIN in the procedure or program block that causes Pascal to load the segment from disk. Pascal temporarily makes resident all segment names following the R. You can also use a segment number in place of <name>, but the name is handier.

To experiment with resident segments, remove lines 27–29 from procedure Pause in SegDemo (**Listing 5**). Add an integer variable I in the main VAR declaration at line 3. Finally, insert the following FOR loop in place of lines 48–50:

```
FOR I := 1 TO 10 DO
BEGIN
  Add; Multiply
END;
```


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*Listing 4. CHAINTO.*

```
 0: PROCEDURE ChainTo( ProgramName : string );
 1: VAR
 2:    f : FILE;
 3: BEGIN
 4:    ProgramName := concat( ProgramName, '.CODE' );
 5:    (*$I-*)      (* turn off I/O error checking *)
 6:    reset( f, ProgramName );
 7:    WHILE ioresult <> 0 DO
 8:    BEGIN
 9:       writeln;
10:       writeln( 'Put in disk with ', ProgramName );
11:       write( 'Press RETURN to continue...' );
12:       readln;  (* wait for RETURN *)
13:       reset( f, ProgramName )
14:    END;
15:    (*$I+*)      (* turn on I/O error checking *)
16:    SetChain( ProgramName );
17:    Write( 'Chaining to ', ProgramName, ' ...' );
18:    exit( program )      (* chain occurs here *)
19: END;
```

*Listing 5. SEGDEMO.TEXT.*

```
 0: PROGRAM SegDemo;
 1:
 2: VAR
 3:    Seed, a, b : integer;
 4:
 5: PROCEDURE Pause;
 6:    FORWARD;
 7:
 8: PROCEDURE GetTwoRandomNumbers( VAR x, y : integer );
 9:    FORWARD;
10:
11: SEGMENT PROCEDURE Add;
12: BEGIN
13:    GetTwoRandomNumbers( a, b );
14:    writeln( a, ' + ', b, ' = ', a + b );
15:    Pause
16: END; (* Add *)
17:
18: SEGMENT PROCEDURE Multiply;
19: BEGIN
20:    GetTwoRandomNumbers( a, b );
21:    writeln( a, ' x ', b, ' = ', a * b );
22:    Pause
23: END; (* Multiply *)
24:
25: PROCEDURE Pause;
26: BEGIN
27:    writeln;
28:    write( 'Press return...' );
29:    readln
30: END; (* Pause *)
31:
32: FUNCTION Random : integer;
33: CONST
34:    Modulus = 7415;
35:    Increment = 25543;
36: BEGIN
37:    Seed := ( Seed + Increment ) MOD Modulus;
38:    Random := Seed
39: END; (* Random *)
40:
41: PROCEDURE GetTwoRandomNumbers;
42: BEGIN
43:    x := Random;
44:    y := Random
45: END; (* GetTwoRandomNumbers *)
46:
47: BEGIN
48:    Pause;
49:    Add;
50:    Multiply
51: END.
```

When you compile and run SegDemo, Pascal loads the Add and Multiply segments from disk ten times, for a total of 20 disk reads. To repair the problem, add this compiler option just after the BEGIN at line 47:

(*$R Add, Multiply*)

That makes Add and Multiply resident throughout the body of the main program, which again runs at top speed. Of course, this also removes the advantage of segmenting the procedures. With the R option in effect, Add and Multiply are resident all of the time. But usually, you'll use this option only in some procedures that call various segments—not in the main program body, as in this demonstration.

**Pascal News**

P-Tral, from Woodchuck Industries (340 West 17th Street, #2B, New York, NY 10011, 212-924-0576), helps you convert Applesoft BASIC programs to Pascal. My tests indicate that P-Tral does a good job, but not a perfect one. Don't expect to run your Applesoft collection through P-Tral and immediately run all your programs in Pascal. But if you have BASIC programs to convert to Pascal, P-Tral is a great way to get a head start on the job. (See *inCider*'s review, February 1986, p. 63.)

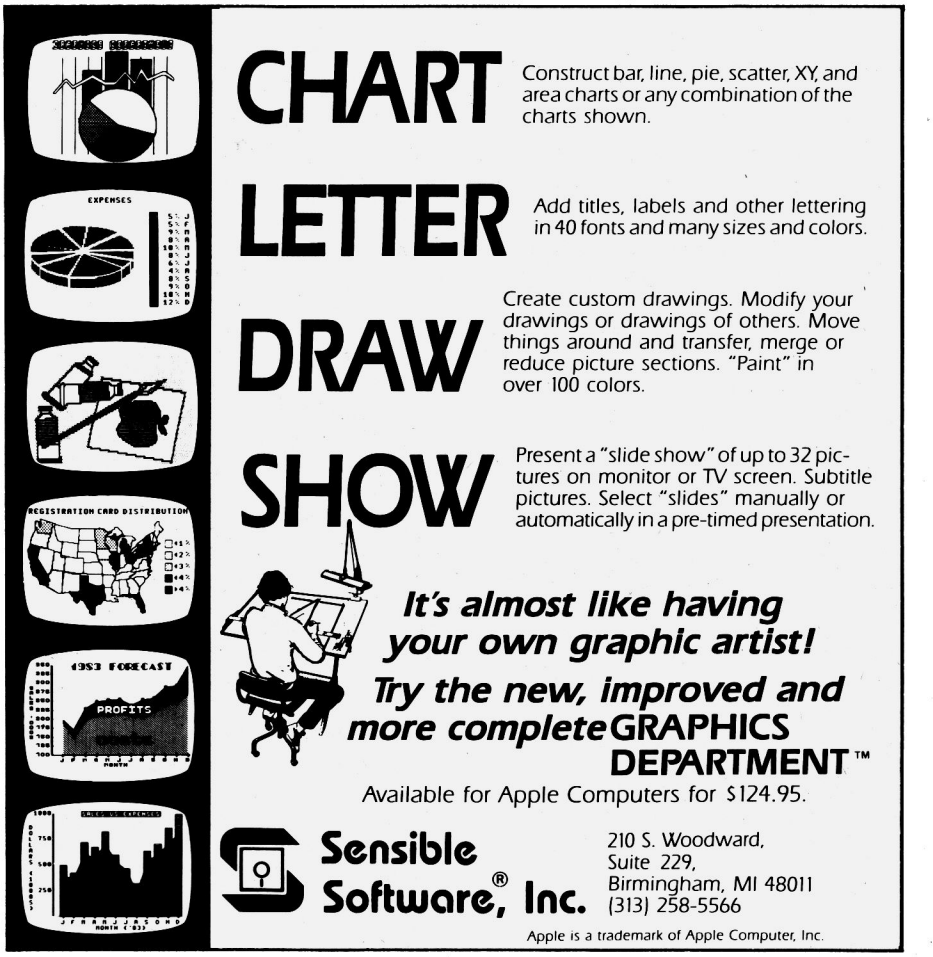
If you object to a columnist's self-advertising, don't read this paragraph. But if you want information about Tom Swan's Apple Pascal Toolkit, Volume 1, send a note to the address at the end of the column. The ideas for some of the tools came from letters and comments many of you kindly sent.

**And Finally...**

Next time, I'll explain how you can write your own units, just like the TurtleGraphics and ChainStuff units that come with Apple Pascal. Units let you precompile your best routines and store them in SYSTEM.LIBRARY, where they're available to all your programs. Along with chaining and segments, units are professional tools for fitting large programs into small computers.■

---

*Tom Swan is the author of several books including* Pascal Programs for Data Base Management *and* Mastering Turbo Pascal. *Address correspondence to Tom at Swan Software, P.O. Box 206, Lititz, PA 17543. Please enclose a self-addressed, stamped envelope if you want a personal reply.*


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*Continued from p. 45.*

change preset sounds from the instrument during track recording—beginning with a flute and ending with a trumpet sound, for instance. When you play back a piece, the various instruments will chime in at the appropriate times.

MUSE can also keep track of information about MIDI keyboards' modulation wheel settings, or filter out the information if desired (my Casio doesn't support this feature). Furthermore, you can control the flow of MIDI data from the instrument you're playing; the default setting passes all information to the computer, but you can turn this off if you don't want to hear a second attached synthesizer while programming a sound on the master keyboard.

The program lets you set three synchronization modes: internal, MIDI sync, and tape. Internal sync is the default mode that determines the tempo for recording and playback. MIDI synchronization requires a separate device that generates MIDI clock signals, such as another MPU-401, a Roland MSQ-700, or any sequencer or drum machine; tape sync lets you use an MPU-401 clock signal recorded on tape.

If you want to play back part of your song repeatedly, MUSE will let you set a loop for either a single track or the whole song. For multitrack recording, you can merge two tracks, copy individual tracks, chain them end-to-end, edit individual measures of chained tracks, or transpose tracks up or down the scale. If MUSE's myriad options get too overwhelming, you can clear the computer's memory and start all over.

### Take It from the Top

What doesn't the MIDI Users Sequencer/Editor do? For one thing, it doesn't have a print feature, so you can't transcribe your scores to sheet music. For another, you don't actually see the staff and your notes on screen; the program is audio-oriented, not visual. Also, MUSE can't act as a sound editor; that is, it can't program your synthesizer to create new sound patches.

However, the program and accompanying hardware offer a great deal of flexibility and power for the Apple owner who wants to record and fine-tune his or her own multi-voiced music. The newcomer to MIDI can easily get up and running with Roland's package, while the expert will find readily understandable and controllable advanced features. Overall, I'd recommend MUSE for the intermediate to advanced user.

Roland supports its product with free telephone assistance; a Roland user-group magazine offers tips on getting the most from its MIDI equipment.■

***Margaret Morabito***
***Rindge, NH***


**SCRG** SOUTHERN CALIFORNIA RESEARCH GROUP

**quikLoader**

The **quikLoader**™ provides *absolute* security of programs. The program can be put onto an EPROM chip, plugged into the quikLoader, and the quikLoader plugged into any slot of the APPLE™ ][, ][+, or //e. The program cannot be misplaced, and it *will* load when needed.

Any program that can be loaded as files can be stored on the quikLoader with the aid of an EPROM programmer board (such as the PROmGRAMER™), and our new PROGRAMMERS AID program. Up to 512K of programs can be stored on each quikLoader. Access to these programs can be as easy as turning on the computer.

An example of a practical application is APPLEWORKS™. We can transfer your copy of APPLEWORKS for an additional $89.50, and the program will be up and running within 2 seconds after turning on the computer. There is no need to use either the startup or program disks.

The quikLoader provides many other benefits. As soon as power is applied, DOS loads automatically from the card. Included with the quikloader are the popular programs FID and COPYA. These programs, as well as any that you add, will show on the catalog screen. The program is selected with a single keypress.

Installation is easy, just plug it into any peripheral slot. It will work on a APPLE ][, ][+, or //e.

**$179.50**

DOS 3.3, Integer, Fid, and COPYA are copyrighted programs of APPLE COMPUTER Inc., and are licensed to Southern California Research Group for distribution only with quikLoader.
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**quikLoader** (designed by Jim Sather) is a trademark of S.C.R.G.

**PROmGRAMER™**

Designed by Bob Brice Software by Bob Sander-Cederlof

The PROmGRAMER is an inexpensive **EPROM** programmer for the **APPLE** ][, ][+, and //e computers. The unit plugs into any slot of the computer, and allows programming any standard 5 volt, 27 series **EPROM**. The ZIF socket allows rapid programming, copying, duplication, or modification of **EPROMs**. **$149.50**

**SLOT 3 CLOCK™**

The **SLOT 3 CLOCK** is designed to plug into slot 3 of the *//e without* interfering with auxillary memory. **PRODOS™** is fully supported, and the card is APPLESOFT™ compatible. Installation software and long-life lithium battery are included. designed by Chuck Shaffer **$79.50**

**SWITCH-A-SLOT**

The SWITCH-A-SLOT is an expansion chassis, which allows the user to plug in up to four peripheral cards in one slot. One of these cards is selected for use, and *only* that card draws power. **$179.50**

**SWITCH-A-SLOT** and **EXTEND-A-SLOT** work well with most slow to medium speed cards. They are not recommended for high speed data transfer devices.

**EXTEND-A-SLOT**

The **EXTEND-A-SLOT** brings a slot outside your APPLE™, allowing an easy change of cards. **$34.95**

**9-16 Adapter** **for APPLE //e & //c**

This permits the use of most 16-pin I/O devices with the APPLE //e or //c. The only limitations are those devices that use the annunciators or the $CØ4Ø strobe. **NOTE:** The //c does not support the use of two joysticks. **$14.95**

**16-9 Adapter** **for APPLE ][ and ][+**

With this adapter, owners of early APPLEs can take advantage of the newer 9-pin game products, such as joysticks, **MUPPET LEARNING KEYS™**, etc. **$14.95**

**BOOKS BY JIM SATHER**

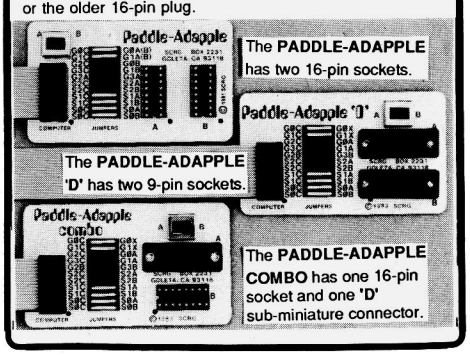
**Understanding the APPLE** ][ - The definitive source of information about how the APPLE ][ works. Forword by Steve Wozniak. **$22.95**

**Understanding the APPLE //e** - This companion volume covers the additional information needed to know details of the computer hardware. **$24.95**

**Paddle-Adapple**

The **PADDLE-ADAPPLE** game expansion adapter plugs into the 16-pin interior game I/O socket, and allows you to select between one of two devices, or use two joysticks for games such as **ARCHON™** and **ONE-ON-ONE™**. **$29.95**

There are three versions to adapt to any combination of the newer type APPLE connector (the 9-pin D sub-miniature), or the older 16-pin plug.

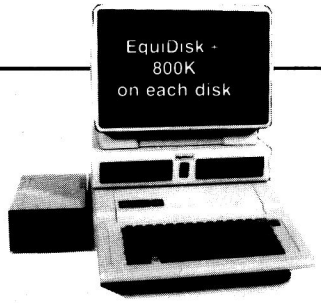



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## EquiDisk + ™

# We've got a lot in store for you!

The EquiDisk + is the next generation in 5¼" floppy disk storage — and it's here today! Unlike your old Apple drives that were probably too small for any real work, the EquiDisk + dual drive system gives you over 1.6 megabytes of immediately accessible on-line storage. Now you can store over 8 megabytes of data with that box of diskettes sitting on your shelf. That's over 3500 double-spaced pages, or 70,000 names and addresses, or complete payroll information for more than 4000 employees. And with that second box of diskettes on your shelf you can back it all up — 800K on each disk.

### More than just Storage!

+ The EquiDisk + works with DOS 3.3, ProDOS and CP/M.
+ Standard 5¼" diskettes are all you need.
+ The entire unit fits neatly between your monitor and computer console.

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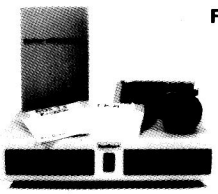
+ Each EquiDisk + comes with a surge suppressor, three built-in AC outlets on the back and a front-mounted power switch. You can turn everything on and off at the same time.
+ CP/M users can access software formatted for other computers. Using one of the commercially available "transfer" programs, this feature allows you to access any CP/M software and run it on your Apple.
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The new ProDOS Sensible Speller supports the Apple II Memory Expansion Card and is now supplied on the UniDisk 3.5, as well as on the 5¼" disk. Its huge vocabulary – 80,000 words in all – is derived from the official Random House Dictionary®.

Used in conjunction with a memory expansion card, the improved Sensible Speller runs up to three times faster than before. You can also load everything – program and dictionaries – on to a hard disk drive.

However, Sensible Speller is still just as easy to use. It shows you misspellings in context, suggests the correct spelling, and allows immediate replacement of misspelled words with correct ones.

Chances are you are already equipped to use Sensible Speller because it works with AppleWorks and virtually all other Apple word processors.* It runs on all Apple //c, //e and II + computers and is available at your dealer for $125.

**Black's Law Dictionary,™ Sensible Technical Dictionary™** and **Stedman's Medical Dictionary™** are available separately on diskette for use with the Sensible Speller. Each is $39.95. A new utility now allows you to merge the dictionaries together.

***Sensible Speller ProDOS** works with the following word processors: AppleWorks, AppleWriter-ProDOS version (Apple Computer, Inc.), Format II Enhanced-ProDOS (Kensington Microware), Mouse Write-text files (Roger Wagner Publishing), MouseWord (International Solutions), PFS:WRITE-ProDOS (Software Publishing, Inc.), Word-Talk (Computer Aids) and WordPerfect (SSI Software). Word Juggler (Quark Inc.), Writing Wizard (Scarborough Systems), Zardax-ProDOS (Computer Solutions), and others. Owners of trademarks indicated in parentheses: Black's Law Dictionary (West Publishing, Inc.), Stedman's Medical Dictionary (Waverly Press, Inc.)

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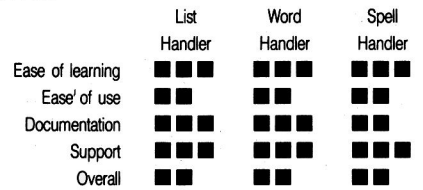
**Sensible Software, Inc.** 210 S. Woodward, Suite 229, Birmingham, MI 48011 (313) 258-5566

# Productivity Trio

## THE HANDLERS

***Advanced Logic Systems***, 1283 Reamwood Avenue, Sunnyvale, CA 94089

File manager, word processor, and spelling checker; 48K Apple II, II Plus, //e, //c, DOS 3.3
$99.95




The old saying "You get what you pay for" usually rings true for software. Not so—at least, not entirely so—for the Handlers. Advanced Logic Systems' list manager, word processor, and spelling checker are surprisingly powerful and easy to use, not to mention inexpensive at $99.95 for all three. That doesn't mean I'd choose them over AppleWorks, but they do have some worthwhile capabilities.

List Handler, while not a super-powered data base, makes up for it with impressive capacity—allowing some 3000 records on a single floppy, and sorting them in a scant 45 seconds. Each record can hold up to 255 fields, each field up to 200 characters, and the program can use up to eight disk drives.

Unlike some programs that can take hours to learn, List Handler is easily mastered, with clear, concise documentation and tutorial exercises. Getting started is fairly straightforward—boot the List Utility side of the program disk and the main menu will appear; select "Create a New List" and you're ready to key in the field names.

You can change the field names later if you choose, but if you want to add a new one, it will be entered at the end of your list. For example, if your original list consists of name, address, and telephone number, you won't be able to add a company name before the address later.

Once the field names are decided, you write them to a list disk (a blank disk formatted automatically). Each set of names requires its own list disk, so creating a new list destroys any earlier one on that disk.

After that, you remove the list disk and reboot the system with the List Handler disk (the flip side of List Utility). This main program uses mnemonic control-key commands (the delete key, in a minor inconvenience, is nonfunctional in all Handlers programs). Helpful prompts at the bottom of the screen guide confused users.

From the main menu, you can add or find records, print labels or letters, or print or mount list disks (you must mount or log on a list disk before beginning data entry or maintenance). Select "Add Records" and your fields appear on screen—only five at a time, a minor hassle. Data entry is simple and quick. The only trick is to return to the main menu when you exit so that the data won't be lost.

Finding and editing records is easy, too, though List Handler can't scroll


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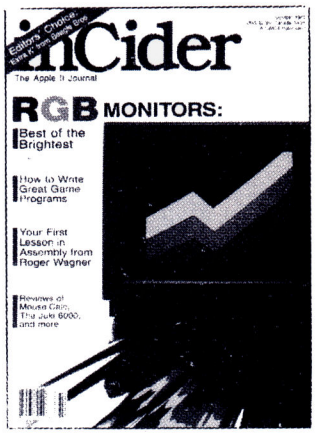
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back through selected records. The return key moves forward through records matching your search criteria, but you must run the search again to review previous matches.

There are editing inconveniences (although the well-written manual points them out so that you don't discover them by accident). If you change a misspelled word within a field entry, the entire line of data is erased and must be keyed in again—particularly annoying if you've just written a 200-character comment. Also, any changed record is automatically moved to the end of the file. This could prove a nuisance if you inserted records in a certain order.

Not to dwell on the negative, but List Handler lacks a counter; you never know how many records you've entered or labels you've printed unless you count them yourself. I often charge list-maintenance clients by number of entries or printed labels, and I find a counter invaluable.

List Handler offers three printing options: form letters, labels, and lists. Mail merge runs without a hitch with Word Handler or any other DOS 3.3 word-processing document of up to two pages. For quick convenience, List Handler also provides up to 15 lines for entering a short document (well, a postcard) directly.

To print, you specify a range (such as everyone living in zip codes 70000–80000 or all the Smiths in Cleveland), then, if you want, a particular printout order (numerical, alphabetical, or chronological). On the next screen, the input document, you design the layout of your document. For example, if printing a label, you would select the fields to be used in setting up an address block. List Handler tends to chop off characters unless enough spaces to accommodate your longest entry are set up beforehand; leave plenty of space on each line or Fort Lauderdale will end up as a truncated Fort Laud.

The last pre-printing step is simple housekeeping: setting up paper width, page length, margins, and so on. The program is unforgiving here; if you change your mind while selecting printing options, you can't go back through previous screens to review or alter your choices. As with search subsets, you must return to the main menu and start over.

## All Right to Write

Word Handler is to word processors as List Handler is to data bases—an adequate performer, if no match for other, costlier programs on the market.

Like List Handler, it's a treat for those who don't want to get buried in a burdensome user's manual, with a helpful tutorial and mnemonic control-key commands (or open-apple commands for //e and //c users)—control-D instead of the delete key, for example, to delete characters. The program disk has two sides, one containing 40- and 66-column formats and the other the 80-column format. Unlike List Handler, Word Handler requires you to initialize your data disks instead of doing it automatically.

The title screen enables you to run Word Handler, select the interface


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- Only elementary programming is required to use the A/D.
- The entire system is on one standard size plug in card that fits neatly inside the Apple.
- System includes sample programs on disk.

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**A/D & D/A Features:**

- Single PC card
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- Manual contains sample applications

**A/D SPECIFICATIONS**

- 0.3% accuracy
- On-board memory
- Fast conversion (.078 MS per channel)
- A/D process totally transparent to Apple (looks like memory)
- User programmable input ranges are 0 to 10 volts, 0 to 5, −5 to +5, −2.5 to +2.5, −5 to 0, −10 to 0.

The A/D process takes place on a continuous, channel sequencing basis. Data is automatically transferred to its proper location in the on-board RAM. No A/D converter could be easier to use.

**D/A SPECIFICATIONS**

- 0.3% accuracy
- On-board memory
- On-board output buffer amps can drive 5 MA
- D/A process is totally transparent to the Apple (just poke the data)
- Fast conversion (.003 MS per channel)
- User programmable output ranges are 0 to 5 volts and 0 to 10 volts

The D/A section contains 8 digital to analog converters, with output buffer amplifiers and all interface logic on a single card. On-card latches are provided for each of the eight D/A converters. No D/A converter could be easier to use. The on-board amplifiers are laser-trimmed during manufacture, thereby eliminating any requirement for off-set nulling.

**PRICE $199**

**SIGNAL CONDITIONER**

Our 8 channel signal conditioner is designed for use with both our A/D converters. This board incorporates 8 F.E.T. op-amps, which allow almost any gain or offset. For example, an input signal that varies from 2.00 to 2.15 volts or a signal that varies from 0 to 50 mV can easily be converted to 0-10V output for the A/D.

The signal conditioner's outputs are on a high quality 16 pin gold I.C. socket that matches the one on the A/D's so a simple ribbon cable connects the two. The signal conditioner can be powered by your Apple or from an external supply.

**FEATURES**

- 4.5" square for standard card cage and 4 mounting holes for standard mounting. The signal conditioner does not plug into the Apple, it can be located up to ½ mile away from the A/D.
- 22 pin .156 spacing edge card input connector (extra connectors are easily available i.e. Radio Shack).
- Large bread board area.
- Full detailed schematic included.

**PRICE $79**

**I/O 32**

- Provides 4, 8-Bit programmable I/O Ports
- Any of the 4 ports can be programmed as an input or an output port
- All I/O lines are TTL (0-5 volt) compatible
- Your inputs can be anything from high speed logic to simple switches
- Programming is made very easy by powerful on-board firmware
- The I/O 32 is your best choice for any control application

The I/O manual includes many programs for inputs and outputs.

**Some applications include:**
Burglar alarm, direction sensing, use with relays to turn on lights, sound buzzers, start motors, control tape recorders and printers, use with digital joystick.

**PRICE $89**

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Our boards are far superior to most of the consumer electronics made today. All I.C.'s are in high quality sockets with mil-spec. components used throughout. P.C. boards are glass-epoxy with gold contacts. Made in America to be the best in the world. All products compatible with Apple II and //e.
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and printer, convert Word Handler documents to DOS 3.3 text files, or quit. Pick "Run Word Handler" and you enter an "idle mode," the only point where you can exit safely without losing data and your cue to insert or remove your data disk. Although it's mentioned in the manual in several places, there are no on-screen prompts to warn you against writing to your program disk.

Performance-wise, Word Handler is pretty similar to most word processors. It offers word wrap, justification, search, replace, move, and copy functions, and can underline, boldface, and superscript text. On the other hand, its insert mode is the most unusual feature I found in the entire Handlers package. When you press control-I to insert text, everything after the cursor temporarily disappears from the screen. After typing the new material, pressing the right arrow brings back the old text and returns you to edit mode. I found this most distracting and difficult to use.

The control-F command lets you format text for printing or use Word Handler's built-in defaults. Printing is accomplished by returning to the idle mode (control-E is save and exit), selecting the print option, and entering the document name and number of pages to be printed. Word Handler can also print multiple copies of different pages.

### A Straightforward Speller

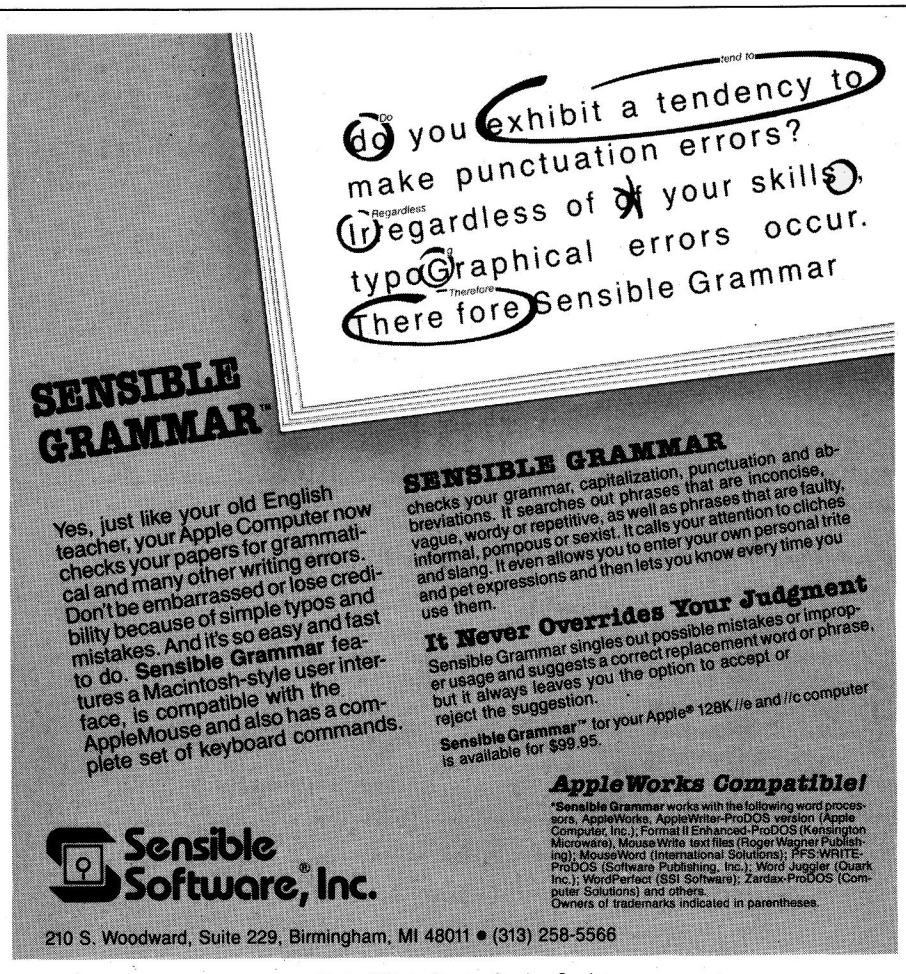
For those of you who never made it to the finals of your school spelling bee, Spell Handler might be able to help. It contains a 2750-word RAM dictionary for computers with less than 128K, and a 90,000-word, disk-based dictionary for Apples with 128K or more. The main menu also lets you use a custom dictionary (created by typing a long sentence of your chosen words), set the default drive for documents to check, or get an index of documents on your data disk.

When you check a document, Spell Handler will underline the last character of any word it finds misspelled. The manual says Spell Handler will create an alphabetical list of misspelled words at the beginning of your document, although I was able to see the list on screen only while still in Spell Handler, not from the word processor. After you select your dictionary and name your drive and document (be sure your data disk is inserted at this point; there are no handy reminders), the screen displays the number of words read and the number of misspelled words and lists them alphabetically on the screen.

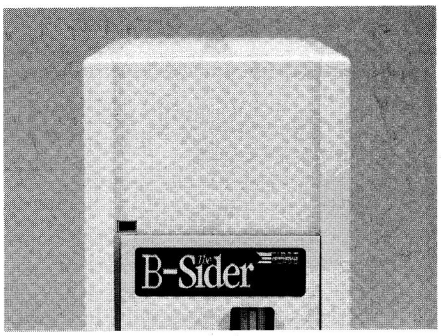
You may then exit to the main menu, reboot Word Handler, call up your document, and fix your errors. It's no match for a spelling checker built into a word processor, but it's quick and simple.

Overall, the Handlers deliver fair value for a low price. Though not power users' dream programs, they're simple to learn and easy to get started, an advantage to consider when purchasing software.■

*Diane Morgan*
*Hopkinton, NH*

Circle 246 on Reader Service Card.


## Back Up the Sider

### B-SIDER

*First Class Peripherals*, 3579 Highway 50 East, Carson City, NV 89701

Streaming tape drive for Sider or Sider II hard-disk backup; Apple II, II Plus, //e
$695

Ease of setup ■
Ease of use ■■■■
Documentation ■
Support ■■■■
Overall ■■■

If you're the proud owner of a Sider (10-megabyte) or Sider II (20-megabyte) hard disk, you've probably questioned the wisdom of your purchase every time you've backed up the hard drive onto floppy disks (you do believe in backups, don't you?). The process is especially dull if you have an early Sider with its DOS 3.3 Backup/Restore program, requiring you to confirm (with a Y and return)

each file you want to back up; for 10 megabytes, the task will take more than 70 disks, not to mention more than two hours of your time.

With First Class Peripherals' B-Sider tape unit, this agonizingly long, boring chore becomes quick and easy. Instead of hours, you'll need only nine minutes to back up 10 megabytes of data, and you don't even have to hang around to watch. Once you start the back-up operation, it proceeds automatically with no further user interaction.

### Zero Defects, Almost

First Class claims its products are defect-free because each one is tested before going out the door. That may be the case, but apparently the shipping boxes could be stronger; both my hard disk and the tape unit arrived with problems that FCP attributed to shipping damage.

While my Sider's problem is minor—an LED that doesn't always light when it should—the first B-Sider I ordered was dead on arrival. Unfortunately, the poor manual that accompanied the tape drive contributed to my not knowing about the unit's condition for almost a full day.

Once I received a working B-Sider, I found a minor inconvenience: The unit has no power-on indicator. The only way to determine whether the tape drive is switched on is to check the rear of the case to see whether it's getting warm.

### A Mediocre Manual

The B-Sider's documentation needs a lot of work. It consists of a loose-leaf binder with two major sections, one for the Sider and one for the B-Sider. The former is fairly complete, but the B-Sider section isn't. For example, the tape drive comes with a ROM chip that's obviously meant to be plugged into the Sider interface card. Nowhere do the installation instructions mention where the chip belongs or how you're to install it; only when I phoned the manufacturer did I learn that a very short section on ROM installation is buried in the "Technical Addenda" in the back of the manual.

Another shortcoming involved the software that accompanied the tape drive, including an excellent Backup/Restore program written in Pascal. The problem here is that all program directions are geared to the first-time user and assume that the hard disk is empty (which makes installation simple and straightforward). However, many potential B-Sider buyers already own a Sider with a significant amount of data on it, which they'd rather not save to floppies and restore again. It turns out that's not necessary, as a quick call to the toll-free support line resulted in excellent instructions for getting started without losing existing data. That simple explanation, however, should be in the manual.

Besides the manuals, some of the B-Sider programs could be designed better. For example, with the original tape unit, my attempt to prewind a cassette (recommended for all new data tapes) generated an "Error 130" message; nowhere in either manual is there a list of error codes and their meanings. In addition, when I tried to format a blank tape, the program refused to proceed, but also refused to alert me that a possible problem existed.

### The Bright Side

Although this review may seem overly negative so far, that gives a false impression: The B-Sider is a superb accessory and an absolute must for every Sider or Sider II owner. While my initial problems were very annoying, the system performed flawlessly once I got it set up and working.

The First Class Peripherals support people to whom I talked were courteous, knowledgeable, and quick to respond. Best of all, their help is free thanks to the firm's nationwide toll-free hotline.

While most computer-related warranties today disclaim everything, it's refreshing to see a simple, straightforward one-year warranty like the B-Sider's. In another radical departure from industry practice, First Class will ship you a B-Sider and let you use it for 15 days; if you're not happy after the trial, return the unit and it will have cost you nothing.

This kind of attitude makes me overlook the frustrations of a unit that arrived DOA and a manual that's sorely lacking in content. First Class Peripherals, you're first class, and I'm happy to recommend this product. ■

***Jules H. Gilder***
***Brooklyn, NY***


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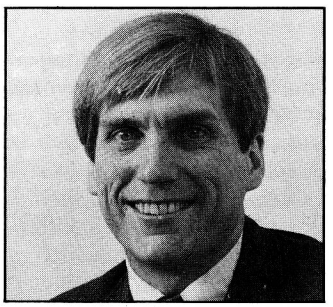
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Circle 39 on Reader Service Card.

# STATTUS REPORT



## Déjà Vu

*"Standards can inspire creativity, but most programmers are still composing doggerel."*

by Paul Statt, *inCider* staff

I've seen it all before. That's my complaint about the current crop of Apple IIGS programs. It's more of the same: Macintosh word processors, Amiga painting software, anybody's desktop publishing—it's all been done.

This monotony is no surprise. I spent a week last July looking at IIGS software—and never saw an Apple IIGS. I admired paintings on Amigas, marvelled at Mac graphics; I saw an IBM PC AT; once or twice I even saw a stock Apple //e souped up with a IIGS motherboard. Most of the writers of IIGS software sat down at a keyboard far removed from an Apple II: They scribbled C, Pascal, or assembly language on some other computer. Like dutiful scribes, they copied old programs onto the new machine.

IIGS developers were forced to use other computers because Apple was slow to deliver IIGS firmware. Apple's C compiler for the IIGS wasn't in the stores; the IIGS Control Panel wasn't on the shelves. Illiterate in the "native tongue," programmers lapsed into what they knew well—Amiga C or Macintosh firmware, for example.

And Apple indeed designed the IIGS to be able to hear the language of foreign machines. IIGS firmware works like Macintosh firmware to ease GS transcriptions for Mac authors; transcriptions from Commodore Amiga programs are easy because both the Amiga and the IIGS are C machines, and C is a portable language (see "Exploring the World of C," p. 60 in this issue, for more information on C programming).

A universal language and universal firmware can inhibit variety in programming: If your firmware has windows, your programs are likely to have windows, even if the job requires a door.

Standards can also inspire creativity: Shakespeare penned sonnets, not free verse. A common interface is firmware form—and despite the inherent constraints, not every IIGS word processor, for instance, has to look like all the others, no more than Elizabeth Barrett Browning sounds like William Shakespeare. The trouble is most programmers are still composing rhymed doggerel.

There's hope for the art of computer programming, though. At Electronic Arts, in San Mateo, California, I was impressed by a program called Electronic Artist's Work Station—the company's home-grown C compiler. It runs on the IBM PC AT, but it's also a "cross-debugger" for every machine for which Electronic Arts creates software, except the Apple //e and //c. The result is that the "artist" can write C code on the AT and run it simultaneously on the IIGS, Amiga, or Atari ST.

Jerry Morrison, Electronic Arts' technical director, admits that the Electronic Artist's Work Station is "a barrier to outside development": That is, it makes it harder for home programmers to come up with nifty arcade games and sell them to software companies. On the other hand, for the programmers at Electronic Arts, the Work Station is a versatile tool that gives the creator more time to think, to think about thinking, and to simulate thought in software. That task is tough enough; the designer doesn't need to worry about print spooling, too.

Good software is the product of hard thinking, not neat hardware. When will you see some really good software for the Apple IIGS? You'll see it when software developers quit trying to mimic the success of the Macintosh, Amiga, or any other machine. They'll take some of the time the universal language and firmware of the IIGS have saved them, and sit down for some creative thinking about what the machine can do.■

# When you really want to see how Apple works...

## AutoWorks *by Alan Bird*

### (AUTOmatic AppleWORKS)

AutoWorks adds to AppleWorks several important time-saving features including mail merge, file organizing, macros, new AppleWorks commands and mouse control.

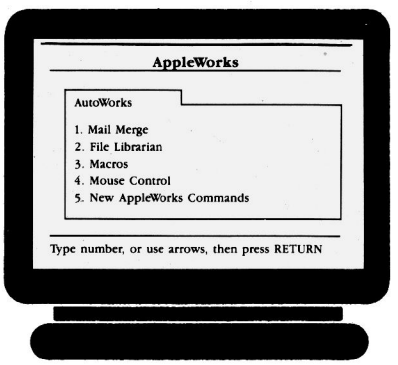
MAIL MERGE allows you to automatically print form letters and fill out forms from your Apple Works data base files. Form letters are reformatted to accommodate varying lengths of names, addresses, etc. Since AutoWorks is built-in, there is never any need to leave AppleWorks to do a mail merge.

AutoWorks allows you to use your MOUSE to make menu selections and to quickly scroll through and position the cursor in your document, data base file or spreadsheet. This feature alone is worth the price of AutoWorks.

With AutoWorks' powerful MACROS, you can automatically enter hundreds of keys including AppleWorks commands with a single keystroke. You can, for example, print out one or several reports by entering one key. The macros are easily updated instantly using the AppleWorks word processor. New AppleWorks commands are also included with macros such as forward delete, word delete, jump to beginning or end of line, etc. With macros you can even create your own AppleWorks commands.

The Disk Librarian helps you keep track of all your disk files. It reads ProDOS file information directly from your disks into an AppleWorks data base file where you may search for certain files and disks, sort on various file characteristics, find disks with free space, etc.

AutoWorks is compatible with AppleWorks versions 1.1, 1.2, and 1.3.




***AutoWorks***
**$39.95**

## FontWorks *by Mark Simonsen*

### Good-looking Printing for AppleWorks

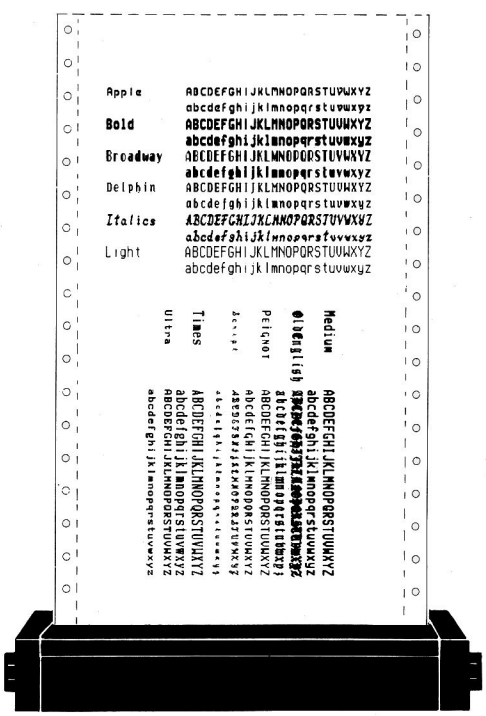
Now you can print your AppleWorks files in a variety of typestyles. FontWorks reads your Appleworks files directly (no need to save them in a different format) and prints them with the typefaces you choose. You can even print your files sideways — great for those wide spreadsheets.

There are no complicated commands to learn. FontWorks incorporates the same easy-to-use menu style as AppleWorks.

Choose from 15 typefaces of various styles and sizes, including Broadway, Delphin, Old English, Peignot, Script, Times, and many more. You can use up to 4 of these typefaces at one time when printing your AppleWorks files. And FontWorks comes with its own Font Editor, allowing you to customize our typefaces or create your own.

FontWorks works with any Apple IIe or IIc and is compatible with most popular dot-matrix printers, including ImageWriter, Epson, and Okidata.

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# E.G. FOR EXAMPLE



## Erotic Software

by Eric Grevstad, *inCider* staff

*"Software vendors are racing for the last place we need them—the bedroom."*

The personal computer—I'll start with a bland general statement; things will get gamy soon enough—has found a role in many areas of our lives, from sorting office files to managing home finances. Lately, however, it seems that software vendors are racing for the last place we need them—the bedroom, with a new crop of sexually oriented software. There are programs nowadays you have to hide from your kids.

Computing has always been a male-dominated industry, and there's always been a small, naughty underground of lo-res strip blackjack and racy MacPaint disks, but today smut is rising to the surface. We at *inCider* refused one of its suggestive ads and wondered if readers might object to the others, but no one seems to mind **Interlude II** from Recreational Technology (11011 Richmond #600, Houston, TX 77042). I'm more bemused than angered by it myself, but couples considering Interlude II could better spend their $39.95 on champagne and pretty underwear.

The program (which isn't in the mood all the time; the disk only booted on three of eight Apples in our office) is correctly advertised as a game rather than sex therapy. Players answer a series of questions about their preferences (Interlude invariably asks how erogenous your feet ); the program then presents one to five propriate scenarios.

The sex scenes are utterly explicit, though at various levels. A few are as mild as "Spice Up Your Marriage" hints from *Redbook*; others would fit into *Cosmopolitan*; and the rest—well, one of *inCider*'s least feminist employees (he goes to strip clubs on road trips) could only cry, "Gross!" It's nice to take a break from software manuals that discuss back-up and hardware requirements, but Interlude's gives safety tips for bondage escapades.

Nothing described in 40-column capitals will ever be tenderly erotic, but Interlude II spoils even its low-key scenarios with crass wisecracks—"That horny, huh?" "I feel your fingers on my keys!" "My RAM's getting tired." It nods toward affectionate lovemaking, but Interlude's heart is in sniggering scenario titles like "Peek-A-Boob" and "Hookie Nookie."

Things don't seem much better elsewhere. Avalon Hill, an outfit best known for war games, has signed the chirping counselor Ruth Westheimer for **Dr. Ruth's Game of Good Sex**. I haven't seen the software yet, but watched her TV show and saw a commercial for the board game—two couples laughing hilariously at "Zipper stuck, lose a turn."

Infocom, the nonpareil text-adventure company, promises rollicking sex comedy with the forthcoming **Leather Goddesses of Phobos**, but the game also promises a headlong dive into tackiness (a voluptuous 3-D comic book and clues on scratch-and-sniff cards).

Before you call me a miserable Puritan, let me admit not only that sex is part of life, but that I've seen it treated tastefully in one software package—Activision's **Alter Ego**. The "game" part of psychologist Peter Favaro's simulation is a dull job of periodically rating your assumed personality's happiness, trustworthiness, and similar scores, but the life experiences are realistic, matter-of-fact vignettes. That applies to the ones about sex as well as those about schooling, work, and finances.

When Activision sent the female version, I thought I'd be a voyeur at girls' locker-room scenes; instead, I found sensitive accounts of everything from adult affairs to high-school dating (I'd forgotten how terrible teenaged boys are). The male version is a bit lewder, with temptations from hookers and strippers, but Alter Ego generally avoids prudishness and prurience alike.

In the words of James Thurber and E.B. White (*Is Sex Necessary?*), "Sex is by no means everything. It varies, as a matter of fact, from only as high as 78 percent of everything to as low as 3.10 percent. The norm, in a sane, healthy person, should be between 18 and 24 percent." I'm not sure we need to have sex in software at all, but we can certainly do better than the down-and-dirty attitude of Interlude II. Relationships start with holding hands, not elbowing people in the ribs. ■

# "Make sure you get the value you deserve."



Andrew P. Niemic
President of Checkmate Technology

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## Andrew P. Niemic, President of Checkmate Technology speaks out.

"Many Apple II owners find that buying a RAM card is a confusing process. Conflicting claims by manufacturers only cloud the issue".

"User Groups are known for being knowledgeable and not influenced by any profit motive. They are responsible to no one but their members. Here is what their reviewers have said when comparing memory cards":

"In my opinion, the MultiRam //e card by **Checkmate Technology** is superior in several respects... It has the best manual, easiest to use software set-up, very friendly customer service, it is expandable and upgradeable without becoming obsolete like some of the other cards. Best of all, you get most features for best price." **-Joe Farkas, CRAB-Apple Bulletin, County of Rockland Apple Branch, January 1986.**

"After using the **Checkmate MultiRam RGB**, I can see that they aren't selling sales hype; they actually have a good product that doesn't need hype." **-Dick Ferris, Apple LUG News, Apple Lansing Users Group, September 1986.**

"The **MultiRam RGB** card is presently the most versatile memory card for the Apple //e and less expensive than several others..." **-Dr Kolan K. Bisbee, The Spokesman, The New York State Technology Education Association.**

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Circle 227 on Reader Service Card.

# NEW PRODUCTS

edited by Lafe Low

## Hardware

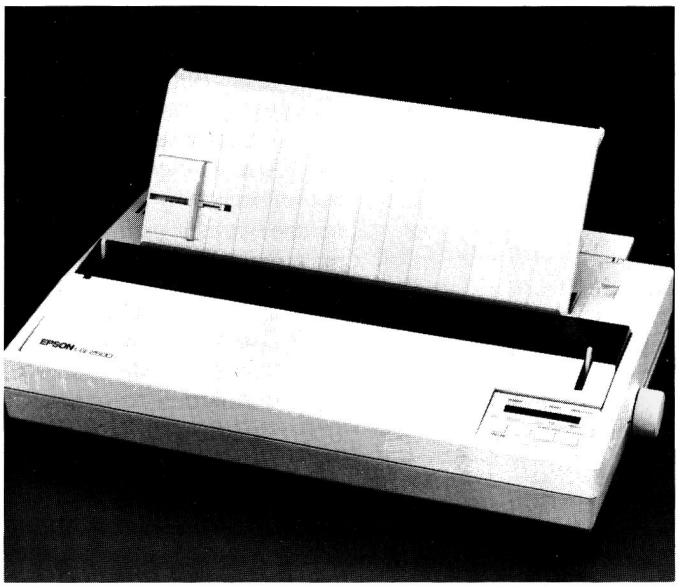
### Quick and Easy

A trio of new **dot-matrix printers** from Epson feature high speed and easily defined typestyles.

The Epson EX-800 prints at a rate of up to 300 characters per second in draft mode and 54 cps in near-letter-quality, making it Epson's fastest nine-pin printer. Eliminating the need to memorize control codes or change DIP switches, its eight-button typestyle-selection panel lets you choose from draft, pica, elite, normal, NLQ roman, NLQ sans serif, proportional, and condensed typefaces. For a little extra, you can have a color-output option that can produce seven hues and a 32K expanded print-buffer option. The Epson EX-800 sells for $749.

The EX-1000 is Epson's fastest nine-pin wide-carriage printer, running at speeds of up to 300 cps in draft mode and 60 cps in near-letter-quality. The 136-column EX-1000 is suitable for producing spreadsheets, business graphics, engineering applications, and other wide-format documents. Like the EX-800, the 1000 features the SelecType II control panel, which lets you choose from eight typestyles by pressing a button.

The LQ-2500, a 24-pin dot-matrix model, prints at 324 cps in draft mode and 108 cps in letter-quality mode. The SelecType III liquid-crystal-display panel lets you enter and store commands for 14 printer functions. The LQ-2500 is flexible enough for high-speed, large-volume printing and high-resolution letter-quality printing. The Epson EX-1000 and LQ-2500 retail for $995 and $1595, respectively, from Epson America, 2780 Lomita Boulevard, Torrance, CA 90505, (213) 539-9140. Circle Reader Service number 369 for more information.



*Epson's LQ-2500 dot-matrix printer has draft and letter-quality modes, and can store up to 14 print-function commands.*

### Hard Driving

HardWorks is a **20-megabyte hard drive** that's less sensitive to the bus noise and odd timing of some Apple II and Franklin computers. HardWorks supports DOS 3.3 and ProDOS, Apple Pascal, and Softcard or PCPI CP/M. The hard-disk drive retails for $999; three versions of software (supporting different operating systems and controller cards) are available, ranging in price from $69 to $149. Contact the A.S.C.I.I. Co-op, 682 East Wind Road, Tecumseh, MO 65760, (417) 679-3526, or circle Reader Service number 365 for more information.

### Sound Idea

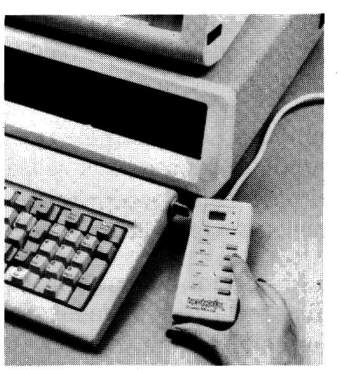
Synthesize speech, music, and sound effects on your Apple with The Phasor, a **synthesizer card** with 12 simultaneous sound channels and four white-noise generators. It's fully compatible with the Mockingboard, the ALF music card, Symphonix, and the Super Music Synthesizer. The card's ProDOS-based software includes a music editor, sound-effects editor, text-to-speech converter, and more than 30 songs and sound effects. The Phasor retails for $179, from Applied Engineering, P.O. Box 798, Carrollton, TX 75006, (214) 241-6060. For more information, circle Reader Service number 364.

### Monster Mash

Keep your printer cables from snagging your paper with Monster Cable's new **90-degree Centronics connectors**. They feature a right-angle hood design that directs the printer cable out of the path of continuous-feed paper. Monster Cable's new line also features relocatable pins, which let you change the cable-connector pin configurations to suit a wide variety of hardware and peripherals. Get in touch with Monster Cable, 101 Townsend Street, San Francisco, CA 94107, (415) 777-1355, or circle Reader Service number 366 for more information.

### Power Up

Now you can turn on your entire computer system with a single switch. The Power Mouse **remote power-control unit** lets you connect up to five separate components or peripherals. It also protects your system against voltage surges, electromagnetic interference, radio-frequency interference, and static, and your modem and telephone line against spikes and surges. The remote power module mounts unobtrusively under your desktop or table. Control your system for $199.95 with the Power Mouse, from Networx, 203 Harrison Place, Brooklyn, NY 11237, (212) 821-7555. Circle Reader Service number 371 for more information.



*Networx's Power Mouse gives you remote control of five computer components.*




*Disky color-coded floppy disks from Boeder Magnetics are available in single- and double-sided storage formats.*

## Colorful Disks

Keep your disks in order and recognize them at a glance. The Disky line of **color-coded 5¼-inch floppies** comes in red, blue, yellow, and green. These high-quality disks from West German manufacturer Dobbelin & Boeder are available in single- or double-sided storage and are temperature-resistant up to 63 degrees centigrade. These colorful disks come in packages of ten (two of each color plus two black) for $18 (single-sided) or $19 (double-sided) from Boeder Magnetics (American subsidiary of Dobbelin & Boeder), 828 Hillcrest Boulevard, Inglewood, CA 90301, (213) 216-0771. For more information, circle Reader Service number 370.

## Universal Interface

Hook your computer up to just about any other electronic device with the Simple Interface //e System, a **general-purpose I/O system**. You can connect up to eight switches for lamps, relays, or small motors to construct your own security system, home controller, light display, or whatever system you like. The Simple Interface //e card plugs into a CPU slot and is connected by a 36-inch cable to signal conditioning circuits housed in a sturdy cartridge case outside the CPU. Program your operations through BASIC or machine-language commands. The Simple Interface //e card retails for $46.95, from Proteus Electronics, Spayde Road RD2, P.O. Box 693, Belleville, OH 44813, (419) 886-2296. Circle Reader Service number 368 for more information.

# Software

## Your Choice

Activision has diversified into **home and personal productivity** with its Personal Choice Software line. Writer's Choice, Filer's Choice, and Planner's Choice are the first products in this new series, available individually or as a set, the Personal Choice Collection. Writer's Choice includes a full range of writing and editing features, a 50,000-word spelling checker, help screens, and a full layout-preview option. Filer's Choice lets you create custom "index cards" and sort records alphabetically or numerically. Planner's Choice features horizontal and vertical windowing (to view different sections of the spreadsheet simultaneously) and adjustable column width. Designed to work together or individually, the Personal Choice Collection retails for $119.95, or $49.95 each, from Activision, 2350 Bayshore Frontage Road, Mountain View, CA 94043, (415) 960-0410. For more information, circle Reader Service number 350.

## Seeing Stars

You don't need a telescope to see the stars: Three **astronomy programs** from Hubbard Scientific teach you all about stars and constellations. Computer Star Games/Stellar 28 is a series of 28-plus games and activities that help you learn about more than 100 stars and constellations. It's available separately or combined with the board game Stellar 28.

Computer Starfinder, a data base of planets and constellations, includes a graphics library showing the positions of stars according to year, month, day, hour, and minute for the years 1900 to 2100 A.D. The program is also available with the book *Seasonal Star Chart.*

Astro-Data Bytes is an up-to-date data bank of astronomy facts with information on comets, asteroids, meteors, moons, planets, stars, celestial phenomena, discoveries, events, and instruments. The program also comes with the *Hubbard Astronomy Fact Book.* Computer Star Games and Computer Starfinder retail for $44.95 with game or book, $39.95 without. Astro-Data Bytes is priced at $59.95 with accompanying book, $58 without. The three programs, with games and books, are also sold as a set for $145, from Hubbard Scientific, 1946 Raymond Drive, Northbrook, IL 60062, (312) 272-7810. Circle Reader Service number 372 for more information.




*Study the heavens with Hubbard's astronomy programs.*

*Product descriptions contained in this section are based on information supplied to us by the respective manufacturers. These announcements are provided solely as a service to our readers and do not constitute endorsement by* inCider *of any given product.*

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# NEW PRODUCTS

## The French Connection

Travel to the City of Light with Ticket to Paris. In this **simulation of Parisian life**, you book a hotel room, visit the Louvre, change money at a bank, and dine in a fancy restaurant. You can speak French to get around in the city, but if you get stuck, the game includes an English-language option. Get a taste of life in Paris while brushing up on your French. Ticket to Paris sells for $39.95, from Blue Lion Software, P.O. Box 650, Belmont, MA 02178, (617) 489-2477. Circle Reader Service number 361 for more information.

## Print That Tune

Musicians can now **write complex notation** on their Apple II's with MusicPrinter. This composition program permits fast entry of notes, chords, and a full range of musical characters, and includes its own word processor with three font styles for inserting lyrics. You can print your music as single lines, full scores, or individual parts in normal, compressed, and emphasized modes. MusicPrinter sells for $149, from Temporal Acuity Products, Building One, Suite 200, 300 120th Avenue NE, Bellevue, WA 98005, (800) 426-2673. For more information, circle Reader Service number 362.

## Two-D Design

CAD-2 Professional allows **advanced two-dimensional drafting**, with time-saving functions such as auto-dimensioning, magnetic point snap, and user-definable snap grids. You can easily extend flat drawings to three dimensions, then view them from any angle, distance, or height. CAD-2 Professional includes RoboView, a three-dimensional-perspective program, and RoboData, a bill-of-materials program. This package retails for $1720, from Robo Systems, 111 Pheasant Run, Newtown, PA 18940, (215) 968-4422. Circle Reader Service number 363 for more information.

## Shopping for Numbers

Challenge your students with real-life work situations in the Math Shop mall. Students enter any of the ten shops, and, using their **math and problem-solving skills**, lend a hand by making donuts, cutting lumber, distributing eggs, or any of a variety of other chores. The school edition of Math Shop sells for $87.45, the home version for $49.95, from Scholastic Software, 730 Broadway, New York, NY 10003, (212) 505-3000. For more information, circle Reader Service number 357.

## Collection Organizer

**Stamp and coin collectors** can organize their material with specially designed data bases from Andent. The Stamp Collector and The Coin Collector each consist of six programs that help you organize your foreign and domestic stamps or coins by denomination, country, description, year, value, Scotts catalog number, and source. A Meeting List in each program lets you sort and select gatherings by date and location. A Source List gives you names of suppliers and information on trades and liquidations. The Stamp Collector and The Coin Collector retail for $49 each, from Andent, 1000 North Avenue, Waukegan, IL 60085, (312) 223-5077. Circle Reader Service number 351 for more information.



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# 7 Meg IIe/1 Meg IIc

Don't buy an over-hyped over-priced card that rams itself down your throat with overpowering advertising. You can buy **Checkmate Technology's State-Of-The-Art MULTIRAM RGB RAM CARD™ from Coit Valley Computers w/BATTERY BACKED-UP STATIC RAM** options that can load & save programs like AppleWorks for 10 years! It's a **FASTER CHEAPER REPLACEMENT FOR HARD DISKS, is USER EXPANDABLE TO 7 MEGABYTES,** compatable with all (100%) 3rd party software/hardware, has an optional 16-Bit 65C816 slot saver Co-Processor card ($157), sharp 80 columns, super Double Hi-Res, & FREE RGB*! It's a direct substitute for Ramworks II™ or Apple 80 col cards, has a 5 yr warranty & **FREE AUTOMATIC SOFTWARE UPDATES ONLY FROM US!** Unlike Ramworks II, which can cost $13000+, MultiRam fits ALL (even Euro) Apple IIe's, can't interfere w/ slot 1 cards, has no soldered chips & costs less!

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| 1344k **MULTIRAM** | **419.** | - |
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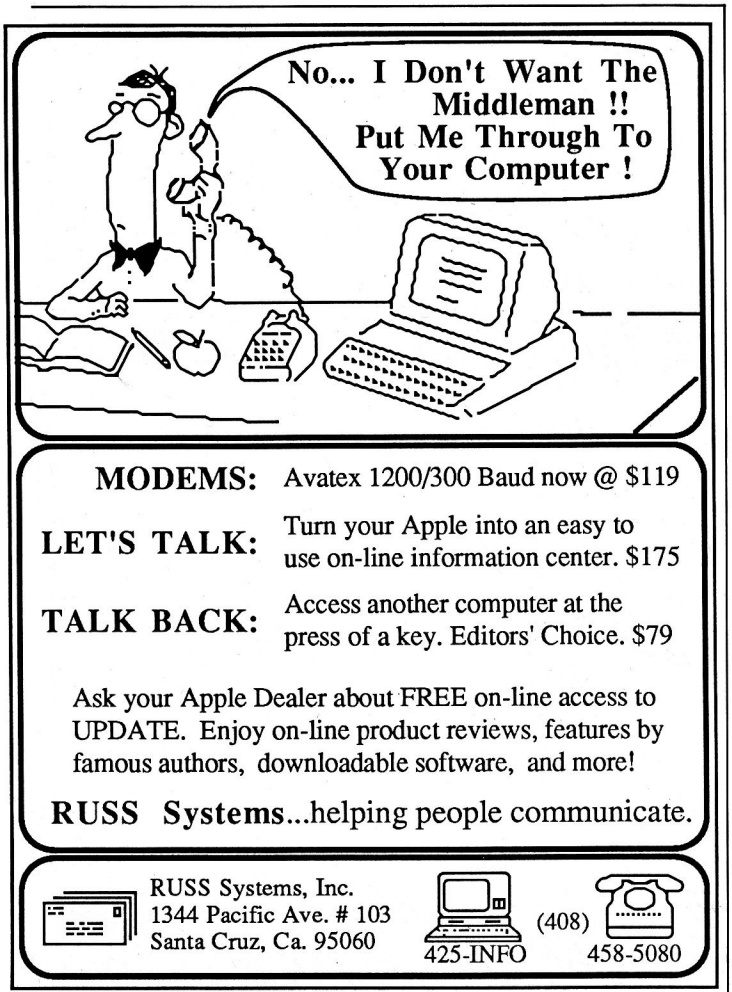
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## Product Updates

● The latest edition of **MouseFiler** has some new features and enhancements: Version 1.1.4 can copy and paste directories, and includes a delete function that operates on directories and subdirectories. In addition, the file-copy buffer size has been increased by 250 percent, and the Directory window now stays where you drag it, instead of returning to its original screen position when you change directories. MouseFiler version 1.1.4 sells for $39.95, from Harbor Software, 430 Great Road, Suite 8, Acton, MA 01720, (617) 263-1870.

● Blue Chip Software is bundling three of its financial-simulation software packages for educational use. **Millionaire**, **Tycoon**, and **Baron** will come in one package, **The Challenge**, including disk and manual for each program. Students can get a feel for Wall Street finance through simulations of stock-exchange, real-estate, and commodities markets. Invest in The Challenge for $99.95, from Blue Chip Software, 6744 Eton Avenue, Canoga Park, CA 91303, (818) 346-0730.




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### To the Moon

Explore the surface of the moon, or at least pretend to, in the new **adventure game** Lunar Explorer: A Space Flight Simulator. Maneuver your craft over the moon's rugged surface, perform rescue missions, and touch down at lunar bases, refueling stations, or the Apollo 11 landing site. Become a space pilot for $40, from Electric Transit, 501 Marin Street, Suite 116, Thousand Oaks, CA 91360, (805) 373-1960. For more information, circle Reader Service number 358.

## Resources

### Electronic Magazines

Seven of Time Incorporated's publications are going to be offered on the Vu/Text electronic information service. *Time* will be the first **on-line magazine**, and the others—*Life*, *Fortune*, *Sports Illustrated*, *People*, *Money*, and *Discover*—will follow shortly. Vu/Text is the world's largest full-text newspaper data bank with more than 30 publications, including *The Boston Globe*, *Chicago Tribune*, *Detroit Free Press*, *Miami Herald*, and *Philadelphia Enquirer*. Contact Vu/Text Information Services at 1211 Chestnut Street, Philadelphia, PA 19107, (215) 665-3300, or circle Reader Service number 356 for more information.

### 65816 Help

Programmers working on computers using the **65816 chip** (the Apple IIGS' CPU) will want to take a look at these two new books. *Programming the 65816*, by William Labiak, is an introduction and reference for programming systems in native machine language. It covers 65816 hardware organization, 8- and 16-bit modes, the complete 65816 instruction set, detailed command explanations, 6502-emulation techniques, serial and parallel I/O, and other programming structures. *65816/65802 Assembly Language Programming*, by Michael Fisher, discusses code conversion, sorting and searching, subroutines, I/O and interrupts, testing and debugging, and includes a wide range of programming information for beginners and experts. *Programming the 65816* retails for $33.95, from Sybex Computer Books, 2344 Sixth Street, Berkeley, CA 94710, (415) 848-8233. *65816/65802 Assembly Language Programming* sells for $19.95, from Osborne/McGraw-Hill, 2600 Tenth Street, Berkeley, CA 94710, (415) 548-2805. For more information, circle Reader Service number 353 or 354, respectively.

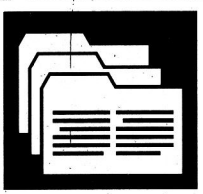
### Music Lovers On Line

If you're a music lover with a computer and modem, check out The Audiophile Network, a new **databoard system** that lists information, specifications, prices, and the latest news on high-end stereo components. The network operates 24 hours a day, seven days a week in the Los Angeles area. Dial (818) 988-0452 with your modem; there's no charge for the service. For more information, call voice line (818) 782-1676, write The Audiophile Network at 14155 Kittridge Street, Van Nuys, CA 91405, or circle Reader Service number 355.

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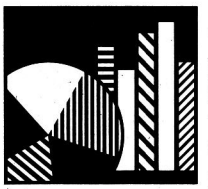
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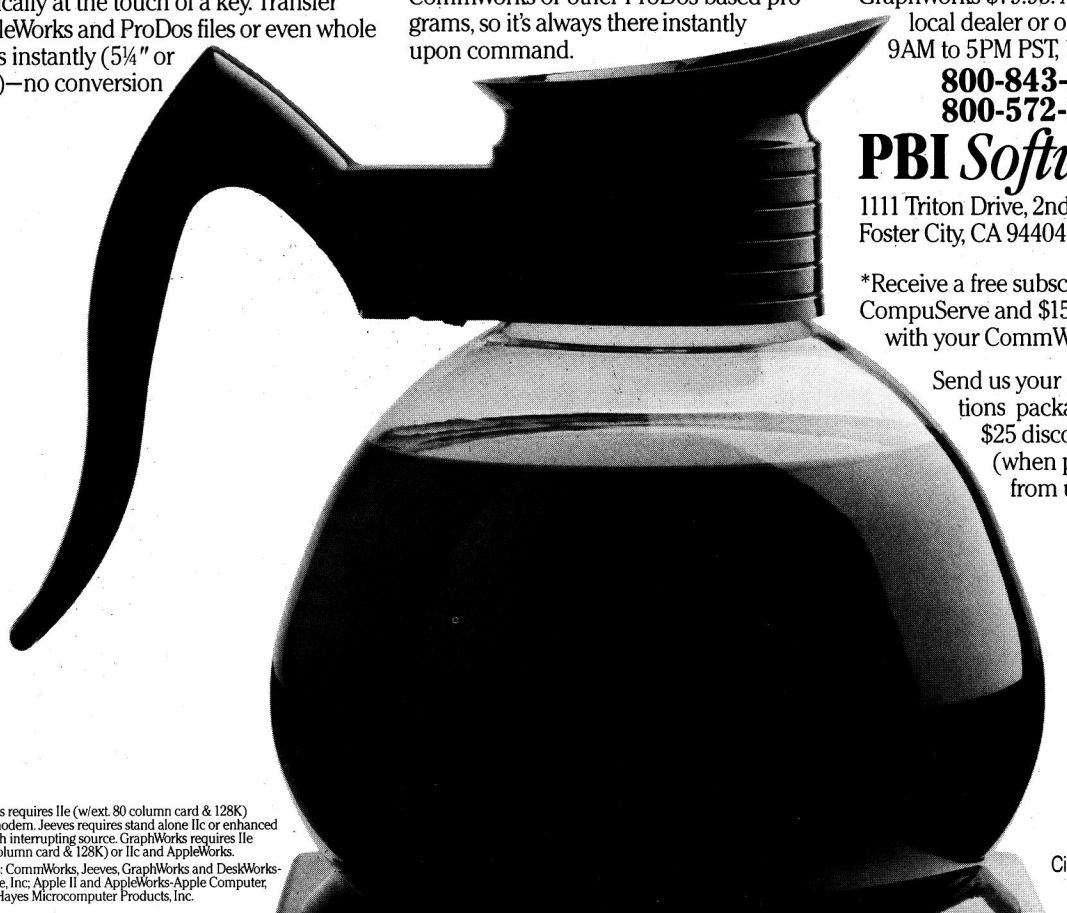
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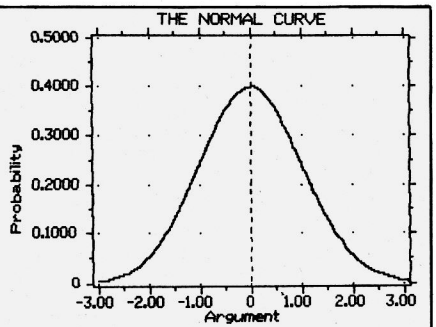
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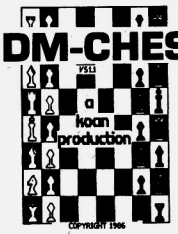
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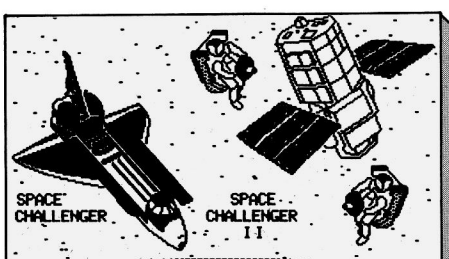
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THE APPLE II MAGAZINE

# GAME ROOM

by Brian J. Murphy

*In Game Room, Brian Murphy tells us what's new in the world of Apple games. Look here for* inCider's *scoop on the latest fun.*

## Amnesia

★★★★

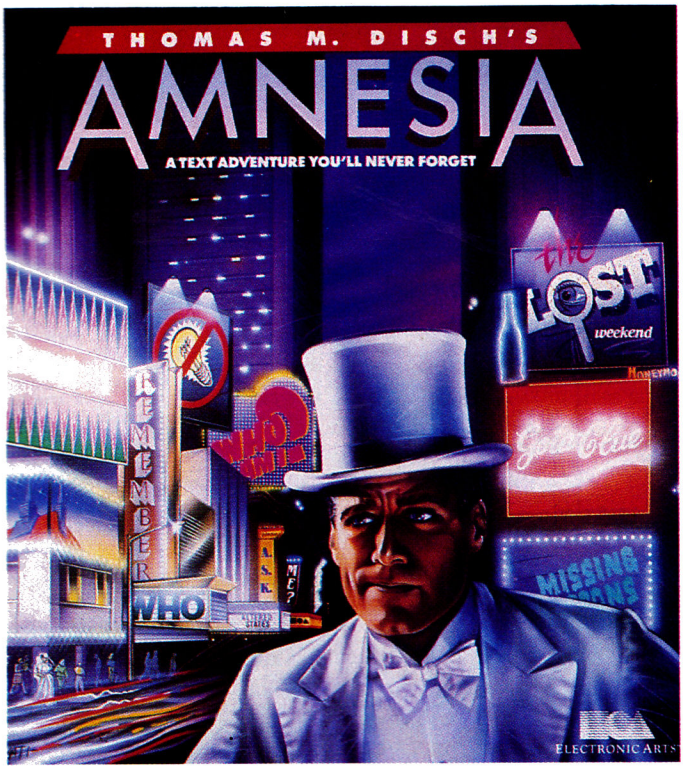
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Nineteen eighty-six has been a good year for game-software "firsts." In a radical break with tradition, Infocom published Fooblitzky, its first game with graphics (see Game Room, October 1986, p. 129). Now Electronic Arts, creators of dazzling animated color-graphics games, has come out with Amnesia, its first all-text adventure—and the game is first-rate.

Amnesia may be the most complex adventure game to date—the program requires two double-sided disks. It's certainly the first to employ a vocabulary of 1700 words. With its sophisticated parser, Amnesia lets you issue commands in near-conversational English.

The emphasis in Amnesia is on realistic detail. As game time passes, stores and services open and close; you get hungry and sleepy; you find and run out of money, converse with characters, and explore, explore, explore. Four thousand locations on 650 simulated streets, as well as an entire subway system, help Amnesia's Manhattan come alive.

As in any adventure, it's the story that counts. Because the author is Thomas M. Disch, Campbell Award winner and master science-fiction storyteller, Amnesia's story line is unusually strong.




*Electronic Arts' first text adventure: Manhattan mystery with a twist.*

The game gets off to a nightmarish start, then, through innumerable twists and turns of plot, gives you terror, tension, comedy, and mystery. Few adventures offer this strong a combination of story, atmosphere, and just plain good writing.

### Lost in the City

The game's title, Amnesia, perfectly summarizes the theme of this adventure. Waking up in a hotel room in midtown Manhattan, you look at yourself in the mirror and receive a mind-numbing shock. The face staring back at you belongs to a complete stranger; you can't even remember your own name.

To complement the horror of feeling mentally naked, you find that you're physically naked as well. A quick look around yields nothing but the basics of any hotel room—a bed and sheets, a bathroom, a phone, an empty closet, a chest of drawers with a Gideon Bible, and a TV—no clothes, no cash, no change, not even a subway token. The only anomaly is an Apple II computer.

To begin, keep the first rule of adventure gaming in mind: Search everything, try everything, and take everything that isn't nailed down. Make some calls from the phone in your room; turn on your TV and switch channels. If you painstakingly search the contents of the entire room, you'll come up with some objects and clues to get you started. Here's a hint: Where in the hotel can you go wearing a sheet?

The answer to that question (and many others) lies in Amnesia's documentation. (The game manual is also vital in explaining the mechanics of play for first-time adventurers.) It includes a guide to the Sunderland Hotel, the seedy establishment in which you find yourself as the game begins.

You'll also find a map of Manhattan from 110th Street down, with a subway guide on the reverse, and an address book containing 17 entries and phone numbers—your most important tool. You'll have to call each number, then follow the resulting instructions to travel around the city—an interesting, and hazardous, expedition. (Use your cross-street indexer to find some of these places.)

Where you wind up will depend on your ability to develop a feel for Amnesia. If you can psych yourself up to think like Disch, you'll discover that he doesn't like easy solutions, superficial exploration, or unwary travelers. You could end up safely married to a pretty young woman on a sheep ranch in Australia, or begging for spare change on Times Square. The possibilities also include sudden death at any number of locations, as well as the optimal ending—finding out who you really are and living to tell the tale. Whatever happens, Amnesia will be a fascinating, challenging experience. ■

*Brian Murphy is anxious to learn what you think of the current state of computer games. Write him at* inCider, *Elm Street, Peterborough, NH 03458, and let him know your opinion.*

### inCider's Ratings

| | |
|---|---|
| ★★★★ | Excellent |
| ★★★ | Above average |
| ★★ | Good enough |
| ★ | Not up to standards |
| ☆ | The empty set |

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## Binary-to-Text Revision

*by Thomas L. Muller*

Binary-to-Text Converter (Hints/Techniques, June 1986, p. 115) produces text files from binary without requiring a second program to regenerate the latter. Readers have pinpointed two conditions, though (in addition to the quirk mentioned in the June article), under which this conversion program doesn't function properly:

1) A binary file above memory location 32767 yields an ILLEGAL QUANTITY ERROR message. The original program uses the variable AR% to keep track of the memory location it's currently converting, but integer variables can't exceed 32767. To fix this bug, change AR% to AR.

2) When the binary file loads into memory just below HIMEM or LOMEM, the areas in which your Apple stores data, those data may overwrite the binary file. Binary-to-Text Converter produces no error message, but the resulting text file is scrambled. Adjust HIMEM to accommodate both your binary file and your data.

The revised program (see **Listing 1**) corrects these problems and includes a few enhancements that make it easier to use with very large files—even up to 30,000 bytes.■

*Write to Thomas Muller at 156 Starr Road, Newark, DE 19711.*

*Listing 1. Revised Binary-to-Text Converter.*

```
10  REM  THIS ROUTINE CONVERTS A  BINARY FILE TO A TEXT FILE
      THAT CAN BE EXEC'ED.
20 LC =  PEEK (103) + 256 *  PEEK (104)
30  HIMEM: LC + 2000
40  DIM H$(16),A%(2)
50 D$ =  CHR$ (4)
60  INPUT "BINARY FILE NAME? ";FILE$
70  PRINT D$;"MONICO"
80  PRINT D$;"BLOAD ";FILE$
90 TFILE$ = "T-" + FILE$
100 AD =  PEEK (43634) + 256 *  PEEK (43635)
110 LN =  PEEK (43616) + 256 *  PEEK (43617)
120  IF ((AD < LC) AND (AD + LN) < LC) OR (AD > (LC + 2000)) THEN
      GOTO 140
130  PRINT "BINARY FILE OCCUPIES MEMORY NEEDED BY": PRINT "TH
     IS PROGRAM.  RE-BOOT DOS, THEN TRY": PRINT "POKE 103,1 :
      POKE 104,64 : POKE 16384,0": PRINT "THEN RE-LOAD THIS P
     ROGRAM AND TRY AGAIN.": END
140  PRINT "INSERT NEW DISK IF DESIRED AND HIT A KEY": GET A$
     : PRINT
150  PRINT D$;"OPEN ";TFILE$
160  PRINT D$;"DELETE ";TFILE$
170  PRINT D$;"OPEN ";TFILE$
180  PRINT D$;"WRITE ";TFILE$
190  PRINT : PRINT "CALL -151"
200  FOR J = 0 TO LN - 1
210 I = I + 1
220  IF I = 1 THEN  GOSUB 340
230 Y% =  PEEK (J + AD)
240 N2% = Y% / 16
250 N1% = Y% - N2% * 16
260  IF N1% < 10 THEN H1$ =  STR$ (N1%)
270  IF N1% > 9 THEN H1$ =  CHR$ (N1% + 55)
280  IF N2% < 10 THEN H2$ =  STR$ (N2%)
290  IF N2% > 9 THEN H2$ =  CHR$ (N2% + 55)
300 H$(I) = H2$ + H1$
310  IF I = 16 OR J = LN - 1 THEN  GOSUB 470
320  NEXT J
330  GOTO 500
340 AR = AD + J
350 A%(2) = AR / 256
360 A%(1) = AR - A%(2) * 256
370 HA$ = "": FOR L = 1 TO 2
380 N2% = A%(L) / 16
390 N1% = A%(L) - N2% * 16
400  IF N1% < 10 THEN H1$ =  STR$ (N1%)
410  IF N1% > 9 THEN H1$ =  CHR$ (N1% + 55)
420  IF N2% < 10 THEN H2$ =  STR$ (N2%)
430  IF N2% > 9 THEN H2$ =  CHR$ (N2% + 55)
440 HA$ = H2$ + H1$ + HA$
450  NEXT L
460  RETURN
470  PRINT HA$;":";: FOR K = 1 TO 16: PRINT " ";H$(K);: NEXT
     K: PRINT
480 I = 0: FOR K = 1 TO 16:H$(K) = "": NEXT K
490  RETURN
500  PRINT "3D0G"
510  PRINT "PRINT"; CHR$ (34);"INSERT NEW DISK IF DESIRED, TH
     EN TYPE"; CHR$ (34)
515  PRINT "PRINT"; CHR$ (34);"BSAVE ";FILE$;",A";AD;",L";LN;
      CHR$ (34)
520  PRINT : PRINT D$;"CLOSE ";TFILE$
530  PRINT : PRINT D$;"NOMONICO": PRINT  CHR$ (7);"FINISHED":
      GOTO 540
540  END
```

## Word-Processor Data Base

*by Arthur Rex Rogers*

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*Figure 1. Word-processor data base divided into fields for inventory information.*

| Stock no. | Material | Description | Retail | Quan. | Cost | Ext. |
|---|---|---|---|---|---|---|
| <-9sp-> | <-9sp-> | <-28 spaces----------> | <-7sp-> | <-6sp-> | <-7sp-> | <-7sp-> |

*Figure 2. Section of the inventory data base.*

C. COMPONENTS

| Stock no. | Material | Description >rtl>quan>whsl>ext> | | | | |
|---|---|---|---|---|---|---|
| 660001 | SS | EAR WIRES | 0 | 86 | .1865 | 0 |
| 660010 | AG | BEAD EAR WIRES | 0 | 13 | 0.47 | 0 |
| 660033 | SS | EAR POST DOUBLE NOTCH | 0 | 100 | .1274 | 0 |
| 990-758 | SS | 7MM 6PR EZ MOUNT CAST | 0 | 2 | 2.22 | 0 |
| X | SS | 2MM BEADS | 0 | 73 | .05 | 0 |
| X | SS | 3MM BEADS | 0 | 2 | .065 | 0 |
| AB996-018 | SS | MAPLE LEAVES pair | 0 | 8 | .99 | 0 |

*Figure 3. Inventory data base after calculation of item values and total.*

C. COMPONENTS

| Stock no. | Material | Description >rtl>quan>whsl>ext> | | | | |
|---|---|---|---|---|---|---|
| 660001 | SS | EAR WIRES | 0 | 86 | .1865 | 16.04 |
| 660010 | AG | BEAD EAR WIRES | 0 | 13 | 0.47 | 6.22 |
| 660033 | SS | EAR POST DOUBLE NOTCH | 0 | 100 | .1274 | 12.74 |
| 990-758 | SS | 7MM 6PR EZ MOUNT CAST | 0 | 2 | 2.22 | 4.44 |
| X | SS | 2MM BEADS | 0 | 73 | .05 | 3.65 |
| X | SS | 3MM BEADS | 0 | 2 | .065 | .13 |
| AB996-018 | SS | MAPLE LEAVES pair | 0 | 8 | .99 | 7.92 |

*Figure 4. Inventory data base after generation of price list.*

C. COMPONENTS

| Stock no. | Material | Description | Price | Quantity |
|---|---|---|---|---|
| 660001 | SS | EAR WIRES | .23 | 86 |
| 660010 | AG | BEAD EAR WIRES | .59 | 13 |
| 660033 | SS | EAR POST DOUBLE NOTCH | .16 | 100 |
| 990-758 | SS | 7MM 6PR EZ MOUNT CAST | 2.78 | 2 |
| X | SS | 2MM BEADS | .06 | 73 |
| X | SS | 3MM BEADS | .08 | 2 |
| AB996-018 | SS | MAPLE LEAVES pair | 1.24 | 8 |

*Listing 2. Inventory Calculator.*

```
10  HOME :D$ =  CHR$ (4): PRINT "READING INVENTORY INTO MEMOR
    Y "
20 X = 0:TX = 0:EX = 0: DIM X$(400):EX$ = "":TX$ = ""
30  PRINT D$;"OPEN MAIN.INV": PRINT D$;"READ MAIN.INV"
40  INPUT X$(X)
50  IF  LEFT$ (X$(X),3) = "EOF" THEN X = X - 1: GOTO 70
60 X = X + 1: GOTO 40
70  PRINT D$;"CLOSE": HOME
90  IF Z = X THEN  GOSUB 1100
100  IF  LEN (X$(Z)) < 72 THEN  GOTO 170
110 X$(Z) =  LEFT$ (X$(Z),71)
130 EX =  INT (EX * 10 ^ 2 + .5) /  INT (10 ^ 2 + .5)
140 TX = TX + EX
150 EX$ =  STR$ (EX): GOSUB 1000
160 X$(Z) = X$(Z) + EX$
170  PRINT X$(Z)
180  NEXT
190  PRINT D$;"OPEN EXTEND.INV": PRINT D$;"WRITE EXTEND.INV"
200  FOR Y = 0 TO X
210  PRINT X$(Y)
220  NEXT
230  PRINT D$;"CLOSE"
300  HOME : PRINT X$(X)
999  END
```

*Listing continued.*

amount of information. Using your word processor and a small file-management program written in BASIC, you can handle a number of everyday recordkeeping tasks.

For example, my wife maintains records for her jewelry business, which has a stock of about 300 items. That small quantity hardly justifies buying an expensive inventory program, although we do have to track inventory for tax purposes. My wife also prefers to use her sales slips and invoices to keep a running inventory. Some calculation is required to arrive at a total value for taxes; she also needs a retail price list based on a standard markup from cost.

If your needs are similar, consider the following solution. Using your word processor to maintain a data base and write a text file, you can access the text file from BASIC, extract the figures you need from each line, perform the calculations you need, and reformat them for another file, which you can later print with your word processor.

You must define each line in your data base at a set length, then segment it into fields that contain information on each item in the inventory (see **Figure 1**). Each line can then be considered a string, as defined in BASIC, and can be manipulated by a BASIC program. (One empty space between fields improves readability.)

First consider the amount of room you'll need to adequately describe each inventory item; we decided 80 columns would be enough for our application. The number of characters per record is limited only by your printer; using compressed mode, you may be able to print as many as 132 characters or more per line, provided your word processor can generate lines that long.

When designing the format of your data base, try to fit one record per line. If you need longer records, stretch the fields of the first part of the record so that the data fit across the entire length of your word processor's line. Then start the second line with a new field in the first column, but make sure that a character (not one or more spaces) is always stored in the first column; if not, the processor will probably format out those initial spaces, thus upsetting the design of the data base.

**Figure 2** shows a small part of the inventory data base and demonstrates how the various fields fit within the framework outlined in **Figure 1**. The

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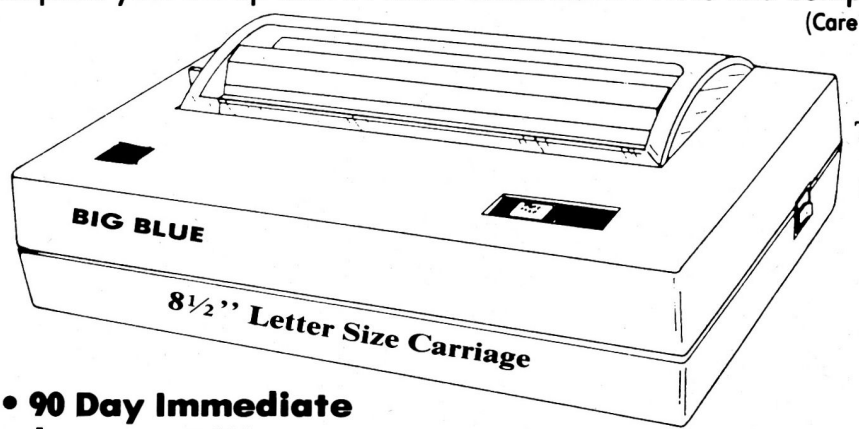
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*Listing continued.*

```
1000  FOR Y = 1 TO  LEN (EX$): IF  MID$ (EX$,Y,1) <  > "." THEN
      NEXT Y
1010 A =  LEN (EX$) - Y: IF A = 1 THEN EX$ = EX$ + "0"
1020  IF A < 1 THEN EX$ = EX$ + ".00"
1030  IF  LEN (EX$) <  > 8 THEN EX$ = " " + EX$: GOTO 1030
1040  RETURN
1100 EX$ =  STR$ (TX): GOSUB 1000:TX$ = EX$
1110 X$(Z) = "          TOTAL VALUE OF INVENTORY IS $" + TX$:
      RETURN
```

*End of listing.*

*Listing 3. Price List.*

```
10  REM ---PROGRAM TO CALCULATE RETAIL PRICE AND MAKE A FILE
     OF THE INFORMATION
20  HOME :X = 0:TX = 0:EX = 0: DIM X$(400):EX$ = "":TX$ = ""
30 D$ =  CHR$ (4): PRINT D$;"OPEN MAIN.INV": PRINT D$;"READ M
     AIN.INV"
40  INPUT X$(X): IF  LEFT$ (X$(X),3) = "EOF" THEN  GOTO 170
50  IF  LEFT$ (X$(X),5) <  > "Stock" THEN  GOTO 70
60 X$(X) =  LEFT$ (X$(X),31) + "                    Price  Quan
     tity"
70  IF  LEN (X$(X)) < 72 THEN  GOTO 150
80 X$(X) =  LEFT$ (X$(X),71)
90  IF  VAL ( MID$ (X$(X),49,7)) <  > 0 THEN X$(X) =  LEFT$ (
     X$(X),63): GOTO 150
100 QN$ =  MID$ (X$(X),57,6):CO = ( VAL ( MID$ (X$(X),64,7)))
110 RTL = CO / .8:EX =  INT (RTL * 10 ^ 2 + .5) /  INT (10 ^
     2 + .5)
```

*Listing continued.*

heading "C. COMPONENTS" is a major division within the inventory and is assigned a letter, the only purpose of which is to start the line. Column headings are shortened so that the calculating program can disregard them as it passes through the file. Fields to be calculated are represented by zeros just to show their placement.

**Listing 2** is a BASIC program that computes the value of each item in the inventory and the total; **Listing 3** generates a price list for a 20 percent markup. You can use these two programs as a basis from which to write your own custom applications. **Figure 3** shows the data base from **Figure 2** after processing by the program in **Listing 2**; **Figure 4** shows data after processing by **Listing 3**.

Using your word processor as a data base, while unorthodox, is quite practical for some types of data. Its search and editing functions make maintaining a data base easy. BASIC's power of string manipulation allows much more complicated operations


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*Listing continued.*

```
130 EX$ =  STR$ (EX): GOSUB 1000
140 X$(X) =  LEFT$ (X$(X),47) + EX$ + " " + QN$
150  PRINT X$(X)
160 X = X + 1: GOTO 40
170  PRINT D$;"CLOSE"
200  PRINT D$;"OPEN PRICE.LIST.INV": PRINT D$;"WRITE PRICE.LI
     ST.INV"
210  FOR Y = 0 TO X
220  PRINT X$(Y)
230  NEXT
240  PRINT D$;"CLOSE"
250  HOME : PRINT "THAT'S IT. ALL DONE."
999  END
1000  FOR Y = 1 TO  LEN (EX$): IF  MID$ (EX$,Y,1) <  > "." THEN
      NEXT Y
1010 A =  LEN (EX$) - Y: IF A = 1 THEN EX$ = EX$ + "0"
1020  IF A < 1 THEN EX$ = EX$ + ".00"
1030  IF  LEN (EX$) <  > 8 THEN EX$ = " " + EX$: GOTO 1030
1040  RETURN
```

*End of listing.*

than you see in these two programs: What you do with your word-processor data base is limited by only your imagination.■

*Write to Arthur Rex Rogers at 1010 Mary Anne Drive, Riverton, WY 82501.*

## Recovering WordStar Data

*by P.P. Ong*

If you're a frequent user of MicroPro's WordStar, you know that feeling of frustration when your Apple hangs with a section of your document in RAM that you haven't saved to disk and can't recover. Since Apple WordStar operates under CP/M, it inherits all the idiosyncrasies associated with that operating system: If you swap data disks, if a disk is write-protected or full, if some of its sectors are bad or the drive head is dirty, you run the risk of hanging the program. If you can get back to CP/M DOS while your data are still in memory, though, there's a cure for your WordStar woes.

A WordStar document resides in a range of contiguous RAM, the exact location of which depends not on whether your system is an Apple II, II Plus, or //e, but on the particular versions of CP/M and WordStar you're using. The **Table** shows memory ranges allocated to text for four different configurations. Corresponding memory size expressed in pages of 256 bytes each is shown in parentheses.

If your file is too large to fit into available memory, WordStar automatically saves to disk those portions of your document not in RAM; you therefore need concern yourself only with the sections still in RAM and not


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- How to find "lost" AppleWorks files.
- How to use non-Apple printers with AppleWorks.
- How to configure AppleWorks for different interface cards.
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yet saved. Also note that for a long file, the starting memory location may slide down by a few pages from the figure listed in the **Table**. (This is inconsequential, since you can easily clean up the unwanted section above the top of the file after a disk save.)

You can retrieve the RAM section of your document with CP/M's Data Debugging Tool (DDT) and the following steps:

1) First, stay cool, but keep your computer warm: *Don't* cut off its power. Then try all possible means to get back to CP/M DOS—you should see the A> or B> prompt. If you don't, insert a CP/M master disk (containing the same version of DOS your WordStar uses) into drive B as well, and type control-C. Try the reset key as a last resort.

2) Rectify your system error (such as cleaning your disk head).

3) Insert a good, uncluttered CP/M-formatted data disk into drive B.

4) If necessary, type A: to set the default drive to A.

*Table. Resident locations of WordStar data file.*

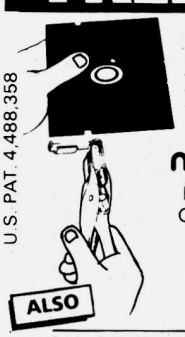
| | CP/M Configuration | |
|---|---|---|
| **WS Version** | **CP/M 56K** | **CP/M 60K** |
| 3.3 | $846D–$BAFF (55) | $846D–$CAFF (71) |
| 3.0 | $7849–$BAFF (67) | $7849–$CAFF (83) |

5) Insert a CP/M system disk containing DDT.COM into drive A and type DDT. For convenience, simply add DDT to your WordStar disk so that it's always there when needed. If DDT program execution is successful, you'll see a hyphen-sign (-) prompt.

6) Type D846D,CAFF to display memory from $846D to $CAFF. Your document is intact and is displayed in ASCII code on the right-hand side of your screen. (For this and the following steps, I refer specifically to WordStar version 3.3 with CP/M 60K of RAM. If you use WordStar 3.0, replace the hex value $846D with $7849; if you use CP/M 56K, replace $CAFF with $BAFF.)

7) Let your document scroll up the screen until you see the end. Press control-S to halt scrolling, and make a note of the exact end of your document—say, $wxyz. The length of your document in number of pages (256 bytes each) is therefore given approximately by the hex value $mn = ($wx – $84 + $01). You can convert this page number to decimal value d

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with the formula d = m*16+n.

8) Press the escape key twice followed by a carriage return to terminate scrolling.

9) Type M846D,wxyz,100 to move your data to memory locations starting at $100 to prepare them for saving.

10) Type control-C to terminate DDT and reenter DOS.

11) Type SAVE d B:filename, where *d* is the decimal value computed in step 6, and *filename* is the actual name of the document file in which you want to save your data.

If you don't like dealing with hex numbers, you can skip steps 5, 6, and 7. Replace step 8 by typing M846D, CAFF,100. If your document is single-spaced, replace d in step 11 with (10*N), where *N* is the number of pages of your document still in memory. If your document is double-spaced, use d = (5*N). A less elegant, but easier, way (and a safe one) is to always set d equal to the number given in parentheses in the **Table**, and save the entire block of memory set aside for WordStar files as a single file.

Congratulations—you've just recovered your lost file. Get back to WordStar, tidy up the aftermath, and complete your document. But be sure to keep WordStar's quirks in mind and handle your disks with care.■

---

*Write to P.P. Ong at the Department of Physics, National University of Singapore, Kent Ridge, Singapore 0511.*

## Applesoft Decimals

*by Vincent D. O'Connor*

Applesoft has a number of features that make it a convenient, effective version of BASIC with which to work, but you may also have to compensate for certain shortcomings. One of these is a problem common among home computers: Applesoft, like many other versions of BASIC, can't handle decimals accurately.

Let's look at a few of those circumstances in which you'll run into problems with decimal computation:

1) *Exponentiation.* Numbers raised to a power don't calculate precisely, and in complex formulas can cause errors. (For example, when you type PRINT 3^4 and press return, you'll get an answer of 81.0000001, instead of 81.) To avoid errors, use Applesoft's integer function (INT) to drop the decimal portion of the answer. Instead of PRINT 3^4, type PRINT INT(3^4).

2) *IF...THEN.* Comparing numbers in IF...THEN statements creates problems when a result depends on two numbers being exactly equivalent, as in the program below:

```
5 X=8.001-8:Y=.001
10 IF X=Y THEN PRINT "THEY ARE
   THE SAME":END
15 PRINT "THEY ARE DIFFERENT"
20 END
```

The program will print THEY ARE DIFFERENT because 8.001-8 won't yield .001, but 9.99998301E-04.

If you're dealing with comparisons, substitute the following for line 10:

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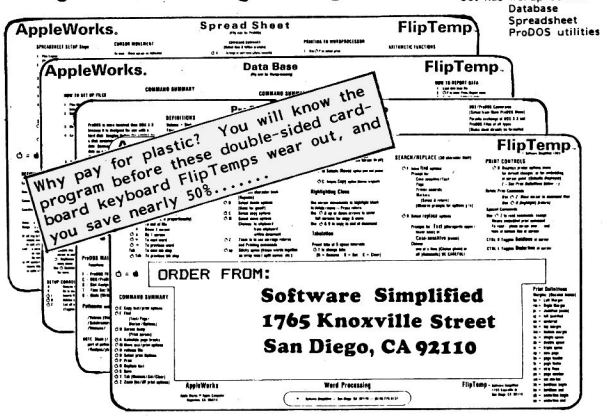
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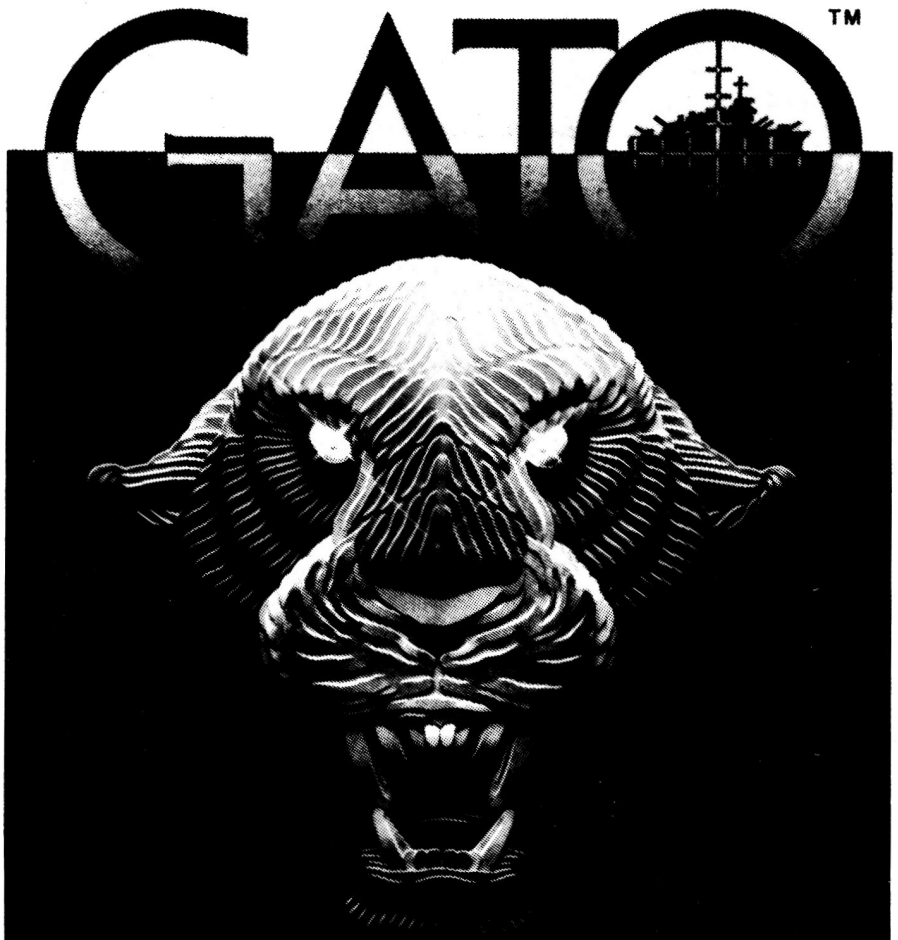

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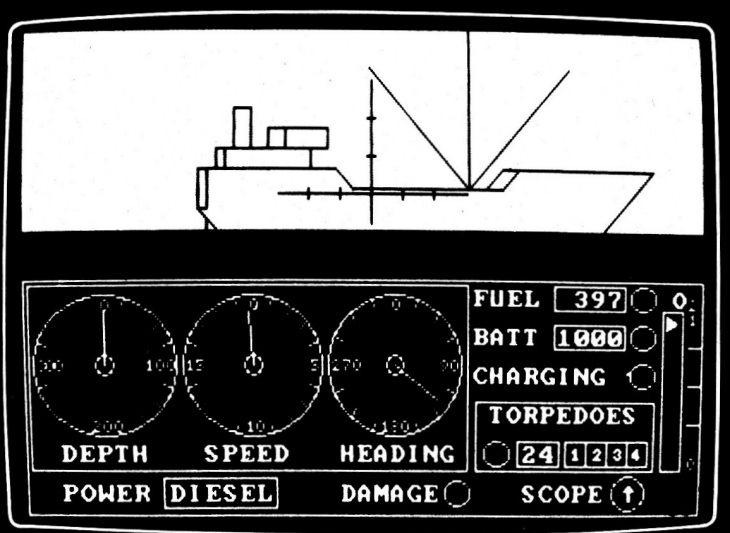
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```
10 IF ABS(X-Y)<=.00001*ABS(Y)
```

This program prints THEY ARE THE SAME. Use the absolute-value function (ABS) to avoid problems with negative numbers; .00001 indicates that the program should compare just the first five significant digits.

3) *Subtracting close numbers.* When you subtract numbers in which several initial digits are the same (and at least one is a decimal), you'll get inaccuracies, as in the example above, 8.001 – 8.

Another example is the following expression: (987654.1 – 987654)*100. The correct answer is .1*100, or 10. Applesoft yields an answer of 10.0097656. The best way to avoid errors is to multiply the minuend and subtrahend by some factor that eliminates the decimal, then perform the calculations and divide by that factor: (((987654.1*10) – (987654*10))*100)/10.

4) *FOR. . .NEXT loops.* If you're using a FOR. . .NEXT loop in which STEP is a decimal, the loop won't execute the correct number of times. Look at the following program:

```
5 FOR I=1 to 2 STEP .1
10 PRINT I
15 NEXT I
```

The program should print 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2—but it won't print 2. The numbers the program calculates are slightly larger, then rounded off by PRINT to five significant digits to produce the numerals on your screen; the number that should be 2 is actually a little more than 2, but the FOR...NEXT loop makes the program stop right at 2.

If you can eliminate decimals from your FOR. . .NEXT loops altogether, fine, but if you must use them, convert them to whole numbers by multiplication, then divide, as in example 3 above:

```
5 FOR I=10 TO 20
10 PRINT I/10
15 NEXT I
```

This version of your program now produces the steps you're looking for. ■

---

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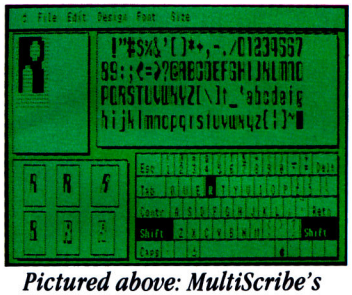
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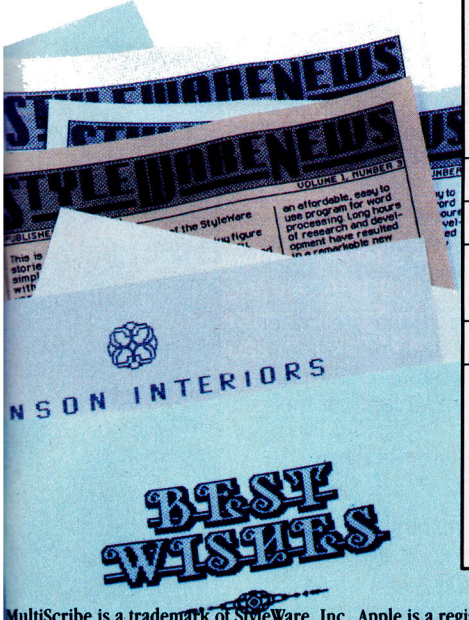
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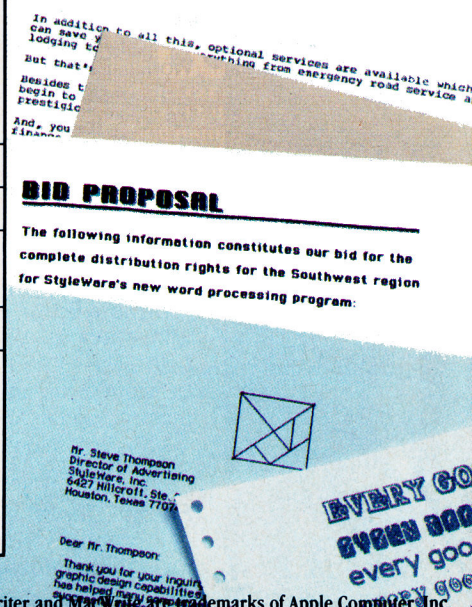
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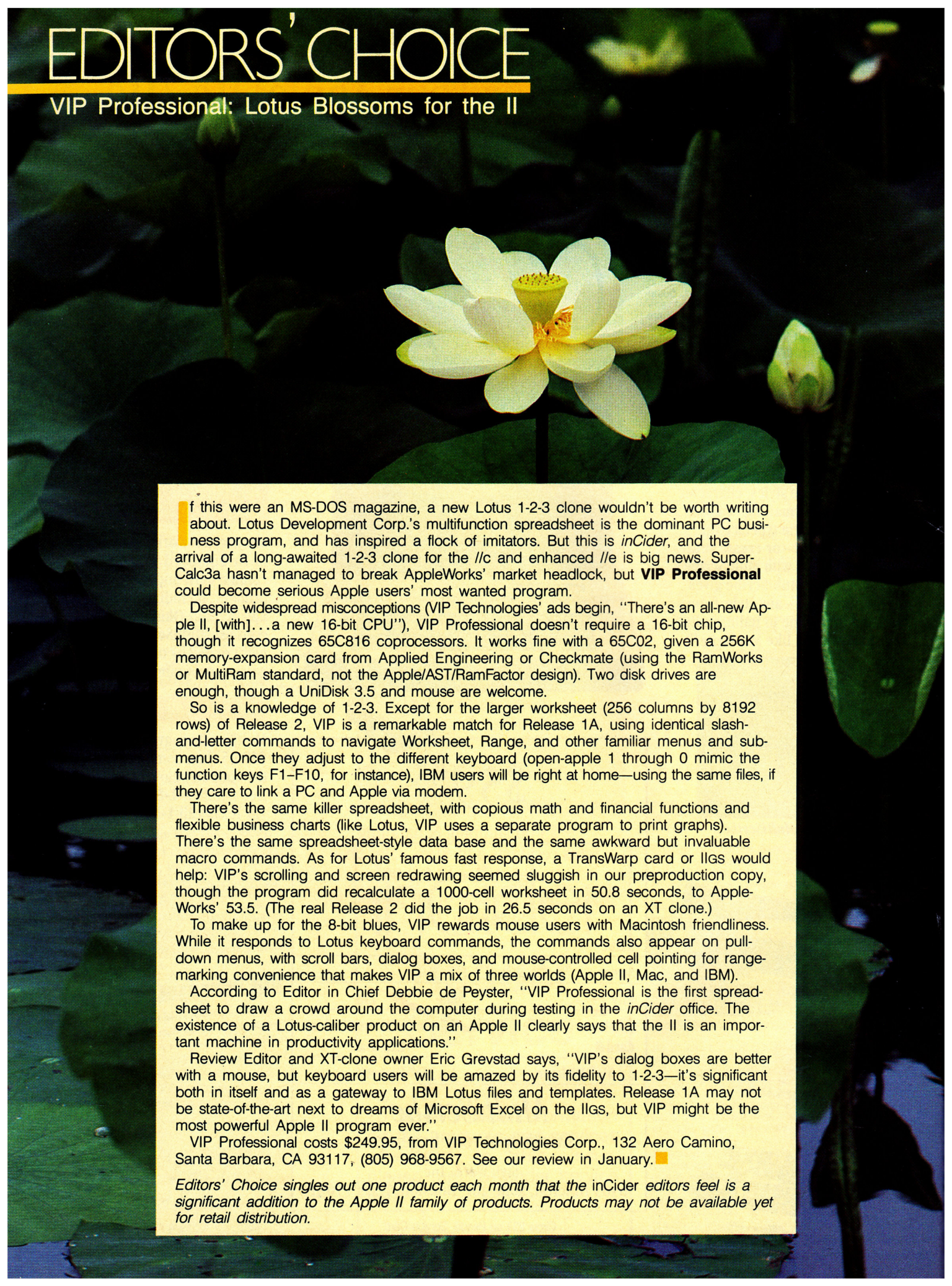




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# EDITORS' CHOICE

## VIP Professional: Lotus Blossoms for the II



If this were an MS-DOS magazine, a new Lotus 1-2-3 clone wouldn't be worth writing about. Lotus Development Corp.'s multifunction spreadsheet is the dominant PC business program, and has inspired a flock of imitators. But this is *inCider*, and the arrival of a long-awaited 1-2-3 clone for the //c and enhanced //e is big news. SuperCalc3a hasn't managed to break AppleWorks' market headlock, but **VIP Professional** could become serious Apple users' most wanted program.

Despite widespread misconceptions (VIP Technologies' ads begin, "There's an all-new Apple II, [with]...a new 16-bit CPU"), VIP Professional doesn't require a 16-bit chip, though it recognizes 65C816 coprocessors. It works fine with a 65C02, given a 256K memory-expansion card from Applied Engineering or Checkmate (using the RamWorks or MultiRam standard, not the Apple/AST/RamFactor design). Two disk drives are enough, though a UniDisk 3.5 and mouse are welcome.

So is a knowledge of 1-2-3. Except for the larger worksheet (256 columns by 8192 rows) of Release 2, VIP is a remarkable match for Release 1A, using identical slash-and-letter commands to navigate Worksheet, Range, and other familiar menus and submenus. Once they adjust to the different keyboard (open-apple 1 through 0 mimic the function keys F1–F10, for instance), IBM users will be right at home—using the same files, if they care to link a PC and Apple via modem.

There's the same killer spreadsheet, with copious math and financial functions and flexible business charts (like Lotus, VIP uses a separate program to print graphs). There's the same spreadsheet-style data base and the same awkward but invaluable macro commands. As for Lotus' famous fast response, a TransWarp card or IIGS would help: VIP's scrolling and screen redrawing seemed sluggish in our preproduction copy, though the program did recalculate a 1000-cell worksheet in 50.8 seconds, to AppleWorks' 53.5. (The real Release 2 did the job in 26.5 seconds on an XT clone.)

To make up for the 8-bit blues, VIP rewards mouse users with Macintosh friendliness. While it responds to Lotus keyboard commands, the commands also appear on pull-down menus, with scroll bars, dialog boxes, and mouse-controlled cell pointing for range-marking convenience that makes VIP a mix of three worlds (Apple II, Mac, and IBM).

According to Editor in Chief Debbie de Peyster, "VIP Professional is the first spreadsheet to draw a crowd around the computer during testing in the *inCider* office. The existence of a Lotus-caliber product on an Apple II clearly says that the II is an important machine in productivity applications."

Review Editor and XT-clone owner Eric Grevstad says, "VIP's dialog boxes are better with a mouse, but keyboard users will be amazed by its fidelity to 1-2-3—it's significant both in itself and as a gateway to IBM Lotus files and templates. Release 1A may not be state-of-the-art next to dreams of Microsoft Excel on the IIGS, but VIP might be the most powerful Apple II program ever."

VIP Professional costs $249.95, from VIP Technologies Corp., 132 Aero Camino, Santa Barbara, CA 93117, (805) 968-9567. See our review in January.

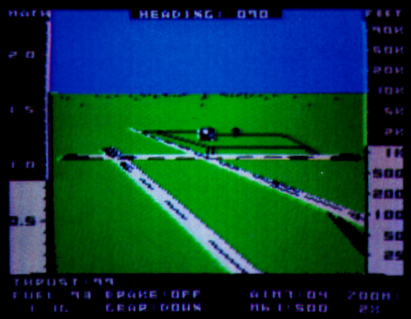
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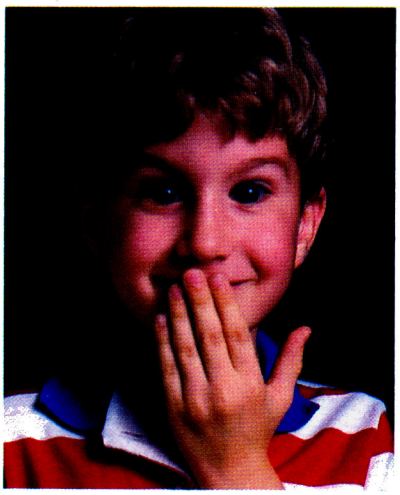
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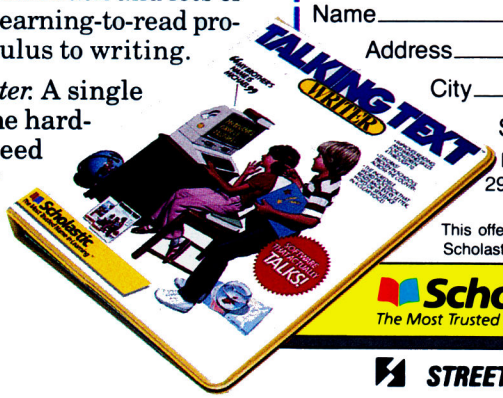
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