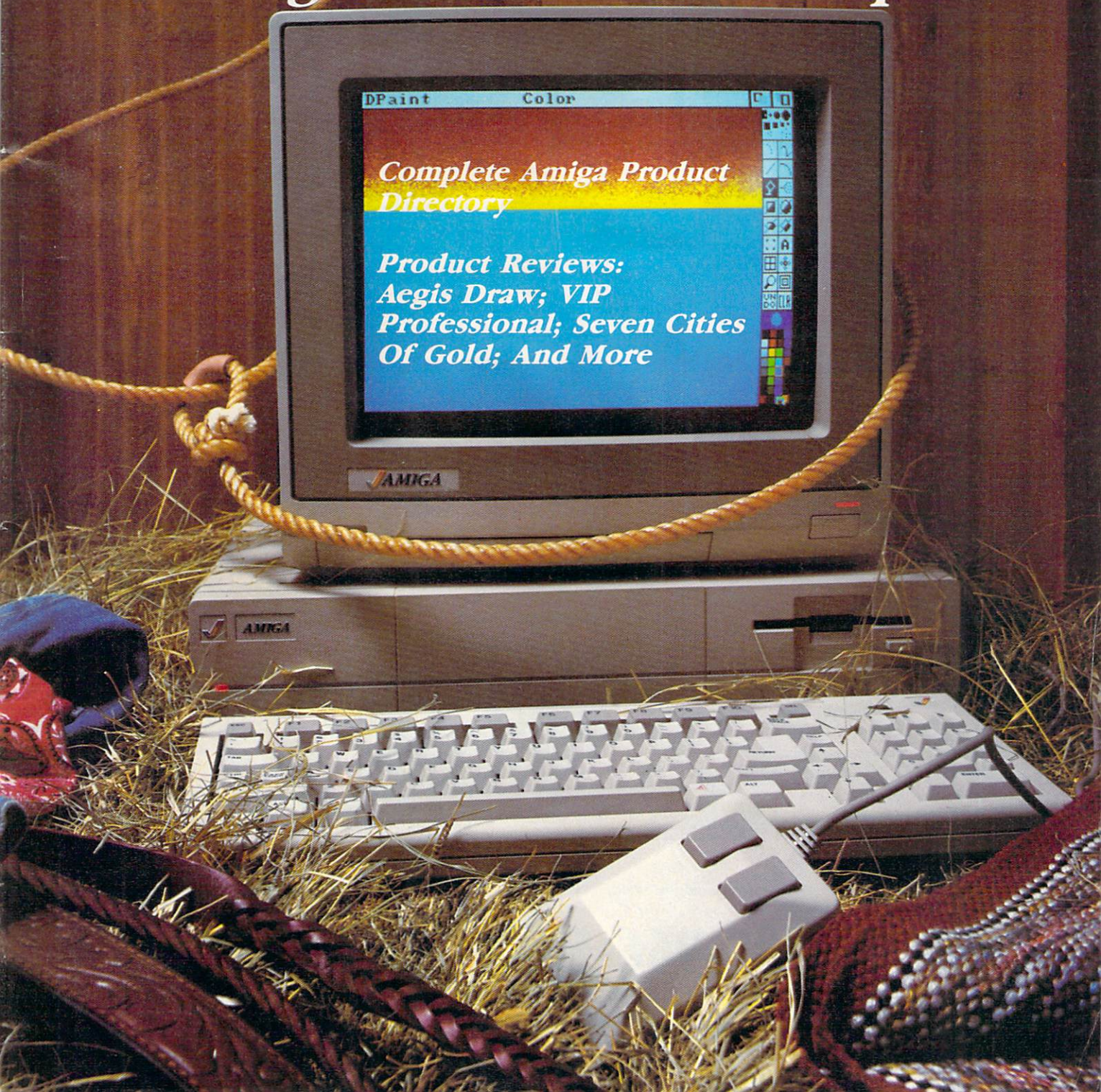
AMIGA

The Buyer's Guide

A Redgate Publication November/December, 1986

Amiga Hardware Roundup



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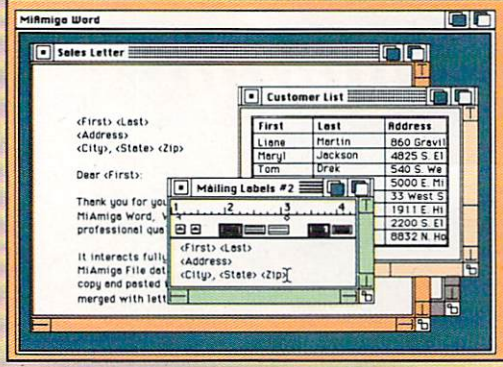
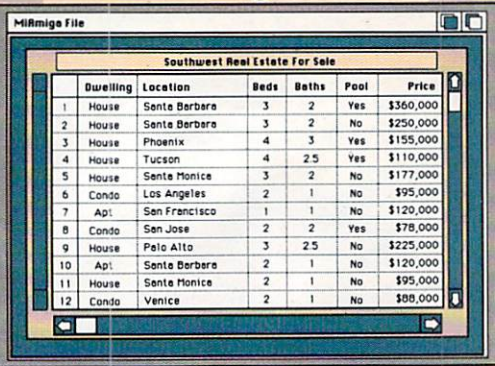


- Multi-Window Editing of separate documents...
- On-line Spelling Checker allows easy insertion of new words...
- Headers and Footers for all, left facing, or right facing pages...
- Search and Replace through entire document...
- User-definable Glossary with easy insertion of new terms...
- Supports large documents...
- Document size limited only by size of disk...
- Cut, copy, paste within and between documents...
- Left and/or right margin justification of text...
- Copy and paste from MiAmiga File database...
- Mail Merge with MiAmiga File database or ASCII file.

MiAmiga File

- Easily define column widths, placement and justification...
- Format numeric fields with commas, dollar signs, and/or decimals...
- Transfer quickly between full database and selected records...
- Transfer conveniently from selected record to data entry form...
- Print columnar reports from list including automatic page headings and cumulative totals...

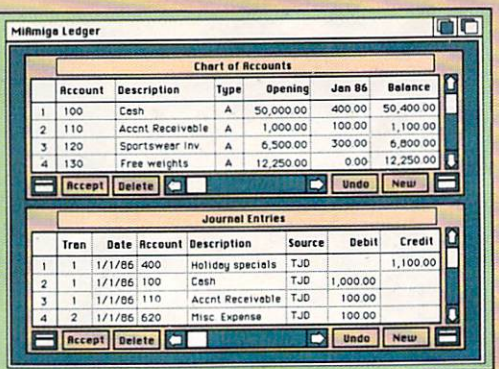


	Dwelling	Location	Beds	Baths	Pool	Price
1	House	Santa Barbara	3	2	Yes	$360,000
2	House	Santa Barbara	3	2	No	$250,000
3	House	Phoenix	4	3	Yes	$155,000
4	House	Tucson	4	2.5	Yes	$110,000
5	House	Santa Monica	3	2	No	$177,000
6	Condo	Los Angeles	2	1	No	$95,000
7	Apt	San Francisco	1	1	No	$120,000
8	Condo	San Jose	2	2	Yes	$78,000
9	House	Palo Alto	3	2.5	No	$225,000
10	Apt	Santa Barbara	2	1	No	$120,000
11	House	Santa Monica	2	1	No	$95,000
12	Condo	Venice	2	1	No	$88,000

- Format mailing labels by positioning fields on form...
- Automatic scrolling of data within a field during data entry...
- Optionally capitalize the first letter of each word automatically...
- Modify form as needed for convenient placement of data...
- Data entry form automatically created by system during database definition.

MiAmiga Ledger

- Easily define column widths, placement, and justification...
- Multi-window screen allows convenient access to both Chart of Accounts and Journal Entries...
- Edit/Post of Journal Entries to Chart of Accounts...
- User-definable Chart of Accounts...
- Transfer quickly between full GL database and selected records...
- Zoom feature automatically expands windows to full screen size.
- Print columnar reports from list including automatic page headings and cumulative totals...
- Format numeric fields with commas, dollar signs, and/or decimals...
- 12 months of prior balance info maintained for each account...
- Both current period and fiscal year-end close... Follows standard accounting practices...
- User-definable custom reports and a full set of standard GL reports.



	Account	Description	Type	Opening	Jan 86	Balance
1	100	Cash	A	50,000.00	400.00	50,400.00
2	110	Accnt Receivable	A	1,000.00	100.00	1,100.00
3	120	Sportswear Inv	A	6,500.00	300.00	6,800.00
4	130	Free weights	A	12,250.00	0.00	12,250.00

	Tran	Date	Account	Description	Source	Debit	Credit
1	1	1/1/86	400	Holiday specials	TJD		1,100.00
2	1	1/1/86	100	Cash	TJD	1,000.00	
3	1	1/1/86	110	Accnt Receivable	TJD	100.00	
4	2	1/1/86	620	Misc Expense	TJD	100.00	

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The Amiga Buyer's Guide

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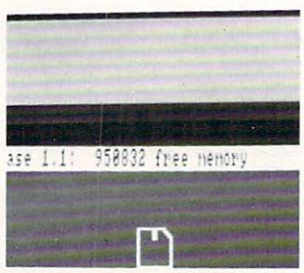

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Aegis Draw
CAD drawing package

512K Amiga; external drive.

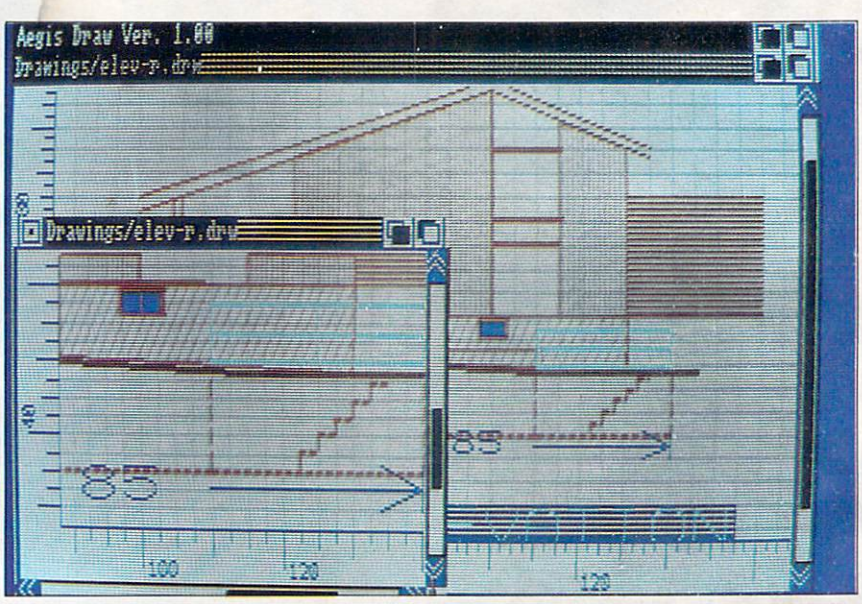
In being first to market with a computer-aided design (CAD) package for the Amiga, Aegis may well cause competitors to rethink the programs they have under development. Although pricing and ease of use would seem to position *Draw* as an entry-level CAD program, the capabilities it contains elevate it to a much higher and, therefore, more serious level.

For those not familiar with the concept of computer-aided design we'll point out that *Draw* is not a painting program such as *Aegis Images* or *Graphicraft*. CAD packages are for making finely detailed drawings such as schematics, blueprints, charts and designs. As such, they are of paramount interest to designers, architects, engineers, draftsmen, students and to those of us who want to know what CAD is all about.

After booting from the Workbench, the pull-down menus, options and tools of *Draw* may make it appear to be a painting program. It is easy to use, but don't let the seeming familiarity fool you. Early in its outstanding documentation, and at intervals thereafter, it is stressed that what you see on your monitor screen is not your actual drawing, only a representation. Your actual drawing is the hard copy you will eventually make with your printer or plotter.

If, as an example, you draw a square using triple-width lines, the vertical lines will be slimmer than the horizontal lines. This is due to the shape of the pixels created by the Amiga. If your drawing is sent to a plotter, the lines will be of equal thickness.

The default screen for *Draw* displays a grid that may be turned off. At the left and bottom borders are rulers. These can also be turned off or changed from metric to English measurement systems.



***Aegis Draw* from Aegis Development**

Because of the grid, drawing tools can be made to behave differently than what you're probably accustomed to; with the grid and Grid Snap on, you draw a square by selecting Square from the Tools menu. As with a painting program, move your cursor to the starting point, hold down the left mouse button, then drag the mouse to open the square to the size you need.

Grid Snap causes the sides and corners of your square to correspond to the nearest grid lines and intersections, allowing for a neater drawing that is closer to scale.

For scaling, there is another tool you'll find useful. When you've drawn your square, go back to the Tools menu and select Measure. Position your cursor at the beginning of one side of your square and drag it to the end of that line. A faint "ghost line" appears, aiding in accurate positioning. Now click the left mouse button, and the length of the line you measured is displayed in familiar blueprint style:

◄——— 40' 9" ———►

Because *Draw* was constructed to conform to the Amiga's intuitive user environment, you work within a window that can be sized and moved, similar to the windows on the Workbench. *Draw* also supports multiple windows. With 512K of RAM, however, the limit is two.

When using windows, it's possible to keep your original drawing, assuming it's a floor plan, in one window. In the second window you could work on a clone of that drawing, trying modifications or perhaps adding wiring diagrams.

Draw also allows for layering. In our example, the floor plan would be the first layer. Over it, using another color for clarity, we could layer the wiring diagrams and, over that, the plumbing. A pop-up Requestor window tells you which layer is currently active and allows you to change to another layer, if desired. In this way, you could load in a complete drawing and modify the electrical layer without disturbing either the basic plan below it or the plumbing diagram above it. If you can find enough things to add to your plan, *Draw* will support up to 256 layers.

The information for your draw-

ings is held in a kind of database. In our first example, to keep things simple, the square of a record and the field of that record contain information on the sides and center of the square.

What this really means is that shapes created with *Draw* can be relocated on screen by dragging them with the mouse. In dragging the square, you have, in effect, edited the field pertaining to the center of the square in relation to the Cartesian coordinates of the screen. But you don't have to think about this. The program does that for you.

Draw recognizes a shape in the same way that a word processor recognizes a word or a paragraph. For this reason, it is possible to cut, copy, paste and delete your drawings. If you want to think of *Draw* as an image processor, you're probably right.

No feature of *Draw* is more spectacular than its Zoom option. Using this option, you can enlarge any part of a drawing and see it in its proper proportions. Unlike the Fat Bits feature of painting programs, a fine line enlarged 50 times is still a fine line.

To illustrate, add a filing cabinet to your floor plan. Then, using Zoom, enlarge only the cabinet. From the menu, select Text, create a label that says "Past Due" and paste it on the cabinet. Now zoom out, either in stages or to the full extent of the drawing. If you look very closely, you'll see your label represented—though unreadable—exactly where you placed it.

What can you do with an unreadable label? Remember what was said earlier: This is only a representation of the actual drawing. Printed or plotted to the proper scale, the smallest details in your drawing will be clear and sharp.

There are almost no limits to the Zoom feature. Imagine a drawing of Earth as seen from space. In stages, you could zoom in to view continents, countries, cities, houses and the license plate on the car sitting in your driveway. Given enough memory, this is entirely possible.

For a hard copy of your drawings, a plotter is best because it can provide a larger image that most printers. *Draw* will support any plotter, and easy-to-follow driver routines are listed in the documentation. Because plotters work slowly, choosing Plot from the menu causes your drawing to be written to disk in a plotter file. Because of Amiga's multitasking capabilities, the actual plotting will not tie up your computer and you can begin to create your next drawing.

While a plotter accepts your total drawing, a printer uses only that portion showing on screen, in the manner of a screen dump. To print the entire drawing and to render all its fine detail, it is recommended that drawings to be printed be enlarged with the Zoom feature. In this way, portions are printed separately. They can then be pasted together to form a detailed whole.

The possibilities of using *Draw* seem almost endless. The examples given here represent things I have done and things suggested in the documentation. Your own imagination and the needs of your craft or profession will undoubtedly suggest more.

Although it seems to have been positioned as an entry-level CAD package, we find *Draw* to be a true heavyweight, containing most of the features found in *AutoCAD* and *VersaCAD* for MS-DOS computers—at a fraction of their prices.

—Ervin Bobo

$199.95 retail
Aegis Development; 2210 Wilshire Blvd., Ste. 277; Santa Monica, Calif. 90403; 213-392-9972

The Halley Project: A Mission In Our Solar System

Educational game

256K Amiga.

The first thing you should know about *The Halley Project* is that it has little to do with the recent visit of Halley's comet. Because it is not topical, in fact, interest and excitement generated by the game should last for a long time to come.

The second thing to know is that *The Halley Project* was created by Tom Snyder and produced by Mindscape. Snyder believes the output of a computer should have lasting value, and Mindscape is responsible for the dazzling *Amiga Tutorial*. Together they have created one of the best games of the year, complete with stunning graphics, demands upon new reflexes and, underneath it all, some very painless education.

The program's title screens appear after booting, looking as if they were produced for a motion picture. As credits appear against a field of rushing stars, your Amiga begins to sing to you. Though the digitized sound is not exceptionally clear at this point and none of the sounds take advantage of the stereo capability of the Amiga, it is a nice surprise.

Playing the enclosed cassette tape gives you the details of your mission, or you can read them off the screen. There are 10 missions in all, each more difficult than the last. The object is to accomplish each one in the least possible amount of time.

On your first mission, you blast off from your base on Comet Halley, navigate to Earth, make a landing and then return to base. While this may seem simple, it is not. *The Halley Project* simulates our solar system in great detail, and nothing you learned in *Space*

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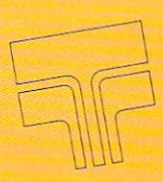

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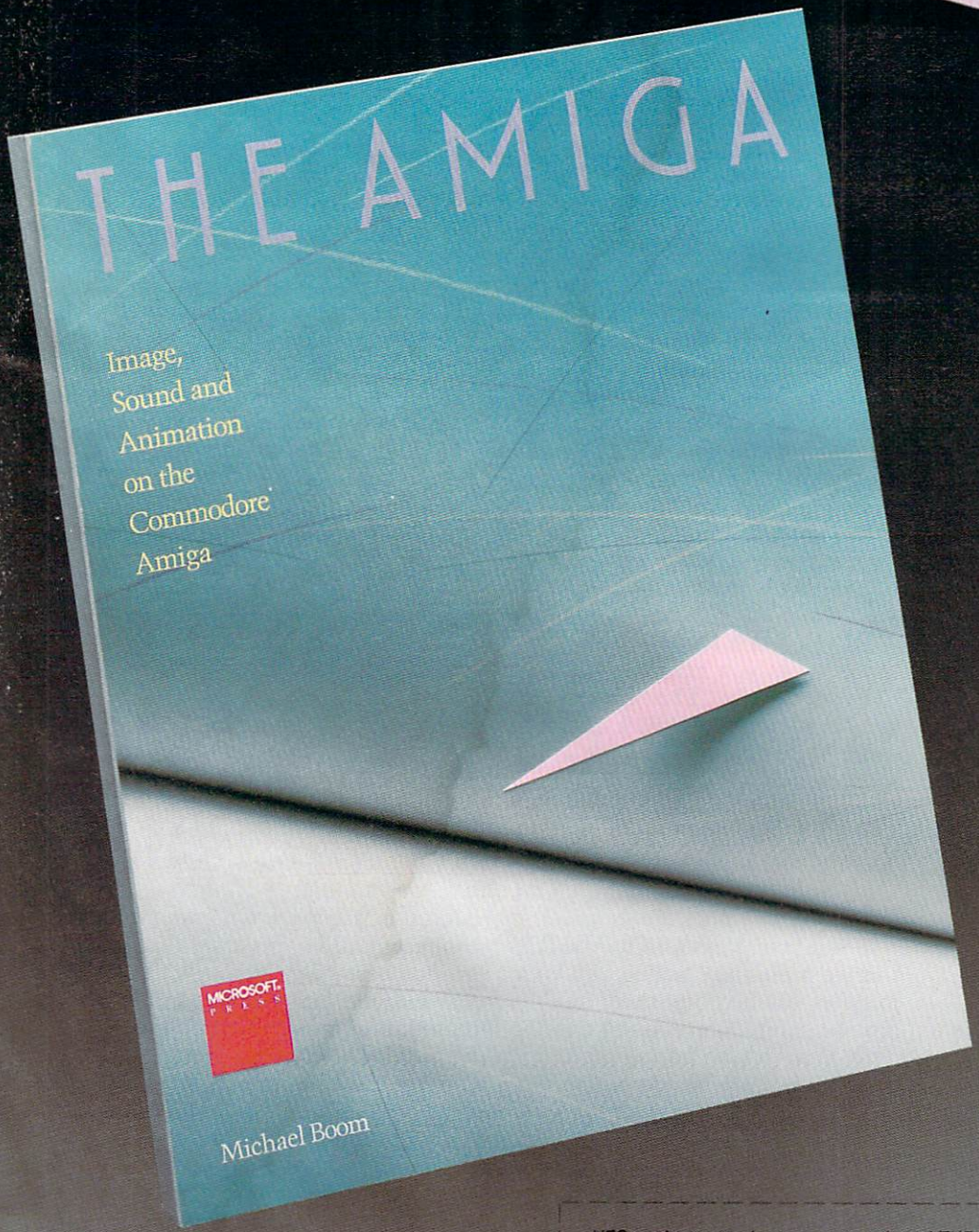

Are you a graphic artist? An audio/video specialist? A computer enthusiast? Just as the Commodore Amiga dazzled the computer world, THE AMIGA — this sizzling new book from Microsoft Press — will spur your imagination to new horizons of creativity. If you have some BASIC programming experience, get ready to produce amazing results with your 512K Amiga that go far beyond the beginner's level.

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Invaders or *Defender* is going to be of any help to you.

As the mission begins, your control panel shows elapsed time, speed and distance to target. The panel, which is fully operational, can be activated by using the mouse, and all its switches and levers really work. Click on the speed lever while in high thrust. It will move to the low position. Click on either the left or right direction, and the corresponding switch moves.

To find your exact location, click on radar. The screen changes and shows you an overhead view of the solar system. You are in the center. Other visible objects are the sun and planets. For your first mission, you have to know that Earth is the third planet from the sun. Using the Zoom feature, you expand the solar system until your target is at the edge of the circular screen. This allows your on-board computer to show the distance in kilometers and in which constellation your target now resides.

Navigation is based on the constellations. To help you, there is an overlay strip showing star patterns. Match the necessary constellation on the strip with the view through your port. The extra point of light, always in the center of the view port, will be your target.

Because time is important, you'll have to decide whether to cruise normally—up to 300,000 kilometers per second—or to use translight speeds. Faster than light, distance traveled shows up on your main screen while Klaxons sound, rockets roar and a kaleidoscope of color sweeps by. You'll have to be quick leaving translight mode, however. If not, you'll overshoot your target and have to find it again.

Once close to the target, it is identified on a message strip. This identification persists only as long as you keep the target centered on your screen. In the case of Earth, the planet will gradually grow until it becomes a blue sphere. The moving dot near it is the moon.

At this stage, the mechanics of orbital motion come into play. Earth is either advancing or receding, relative to your position. In addition, it will go through phases of illumination as it orbits the sun. Sometimes the Earth is only a faint shadow against the blackness of space. As you come closer, relative motion increases. You'll have to be quick with your speed controls to avoid having the planet whip by you.

Because each planet has a different mass and gravity, and since the program takes those factors into account, there is no landing procedure that will work for every mission. Your orbital velocity and altitude will vary with each planet. Fortunately, you are given opportunities to refly any of the missions in order to improve your time.

As you reach the point of orbital insertion, you hear the strumming of a guitar. This is an incongruous sound, very much out of place on the command deck of a space ship. Almost any other audible clue would have been better.

To land, you must orbit until you are over a base, signaled by a loud beep. At that moment, click on the land switch.

If you land successfully, you'll receive a message telling you your mission was accomplished. You'll also be given your elapsed time. This time will be posted on a main scoreboard, along with scores of other missions.

On your view screen, you'll see a landscape that is representative of your target. These landscapes are not fanciful drawings, but superb renditions based on the latest photos and theories. These views, as well as that of the control panel, are reason enough to pull out the superlatives and liken the graphics to those found in the *Amiga Tutorial*.

To complete your mission, you must now return to Comet Halley. This is much easier, since you merely locate it and fly to it. There are no involved landing procedures, and, once back, you may depart on another mission.

Other missions will not be as simple as the first one, and they must be flown in order. The only exception is reflying a mission that has already been completed.

You may be told to land on a planet that has no atmosphere, on a planet that has no moons or on a moon that has no atmosphere. Information necessary to define your target will not be found in the documentation. We consider this a plus factor. Any game that sends you to the encyclopedia to further your fun is worth having, and in navigating by the constellations you will soon be able to identify the real things.

All motions of objects within our solar system are correct, as indicated by their phases of illumination and darkness, by the transit of the moon across Earth or the Earth across the sun, and all distances are to scale. Once you've made a trip to Earth, you'll be amazed at how long it takes to get to other planets.

We recommend this game highly. *The Halley Project* is fun for anyone over the age of 10 and educational as well. Once you've completed all its missions, turning in your best times becomes the major challenge. You may mail these scores to Mindscape. Those with the shortest completion times become competitors in a contest. First prize is a trip to Walt Disney's Epcot Center in Florida.

Almost as exciting is learning that *The Halley Project* is actually a qualifying run. Upon receipt of your best scores, Mindscape will inform you of the prime mission!

—Ervin Bobo

$44.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, Ill. 60062; 800-221-9884 or 800-942-7315 in Ill.

Intellectual Software

Educational aids for Amiga users

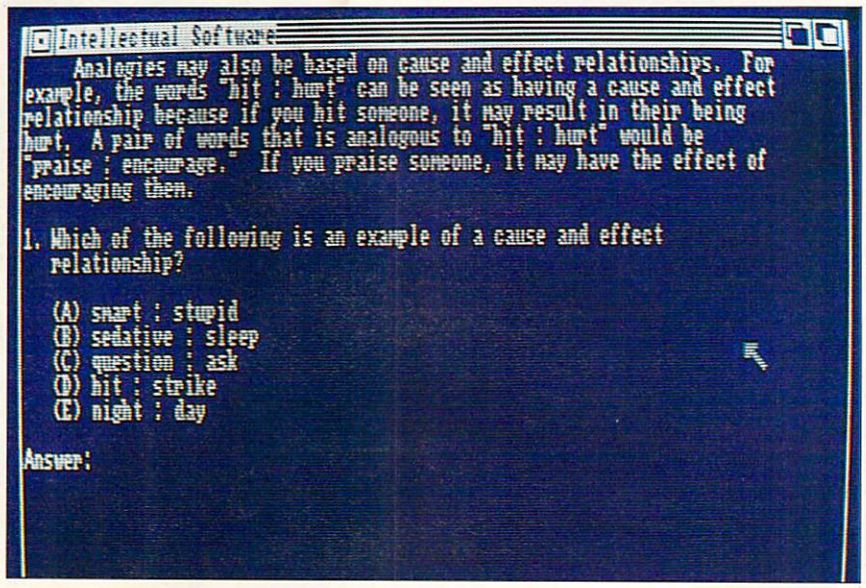
256K Amiga.

The educational software category for the Amiga is growing. The most comprehensive selection of educational packages we've found is the series from Intellectual Software, a division of Queue, Inc. in Bridgeport, Conn.

The programs we reviewed consist only of text on screen and use none of the Amiga's amazing graphic capabilities. Although the aim of educational software is to educate, not entertain, some entertaining aspects might be welcome. After all, making learning fun is something the Amiga does very well. Finding no graphics in this series was a disappointment, because the machine has great potential in the classroom, where pop and flash can hold a child's attention longer than simply text on screen.

Otherwise, the programs were fine. A subseries of programs to use as SAT (Scholastic Apptitude Test) study aids was especially good, and the questions were challenging. According to the vendor, research has shown that most students benefit appreciably by following the procedure used in the series. That procedure consists of learning a systematic approach to answering each kind of question and practicing with numerous sample items modeled on those found in the actual SAT.

The programs are serious in nature and designed for particular applications. There are 33 titles—ranging from *Reading Adventure I,* for elementary school students, to *Starting A New Business,* for adults. Language programs include several levels of French and Spanish. (See complete listing on page 105).



***Analogies I* from Intellectual Software**

The best things about the entire series are its variety and consistency. A student need only learn how to use one program to be able to test or develop skills in a variety of subject areas.

We selected three programs for review that we feel are representative of the entire series: *Analogies I, French Grammar I* and *World Geography Adventure IV: Asia.*

Analogies I

An analogy is the expression of a relationship between things that are otherwise dissimilar. Analogies are often used to test general knowledge and the ability to see connections and similarities between words. Since words frequently have more than one connotation, analogy problems require flexibility of word usage and recognition.

Analogies I, one of the programs in the SAT preparation subseries, leads students through a step-by-step process for solving analogy problems. The program requires that students solve each analogy in two steps: by selecting the "formula sentence" that best expresses the relationship between two key words, and by selecting the word pair among the answer choices that best expresses a similar relationship.

Such rarely used words as olfaction, sycophant and ascerbic are used in the exercises, so students are able to increase vocabulary skills as well as test their abilities to determine the relationships between words. This program should be good preparation for taking the SAT.

Analogies I is organized into 10 lesson modules and includes about 60 analogies.

$65 retail; two disks

French Grammar I

French Grammar I is designed specifically for students who have had only one year of French. Even so, it is simple enough for use by students who haven't studied French, as long as they've studied another foreign language. If you haven't studied French but are bilingual, you may still be able to get through *French Grammar I.*

French Grammar I includes 10 lesson modules. Topics covered are: Gender of Nouns I and II; Gender and Number; Plural of Nouns; Nouns and Articles; Definite Articles; Prepositions; Avoir and Etre; Idioms with Avoir; and Il est, C'est.

$34.95 retail

World Geography Adventure IV: Asia

In *World Geography Adventure IV,* students explore Asia on a treasure hunt, earning points by correctly answering geography questions. The more questions the students answer correctly, the more treasures they find.

The program is structured to encourage students to play the game repeatedly. Answers to questions are not included in the program or manual, and the only way to go back to a question and try again is to play the game again. The vendor maintains that students are more likely to remember the facts presented in the program if they discover the correct answers themselves, using a map, atlas, other reference books or through discussions with other students.

This may be true in a classroom situation, but not having the correct answers for home use is frustrating. A child may not have access to the resources available in a classroom when using the program at home. Though each incorrect answer branches to an explanation of why the answer is incorrect, an optional feature that would allow students to go back and try again without restarting the game is sorely needed.

The program focuses on 41 countries in Asia and consists of 41 short chapters. Each chapter includes one to five multiple-choice questions on the country being explored. The countries include Afghanistan, Bhutan, Indonesia, Kampuchea, Oman, Saudi Arabia, Sri Lanka, the Soviet Union and Yemen.

—Lori Tracy

$59.95 retail
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

Seven Cities Of Gold

Adventure game

256K Amiga.

Seven Cities Of Gold is just the kind of game that you can lose yourself in, literally. In fact, you can even lose your life if you're not careful.

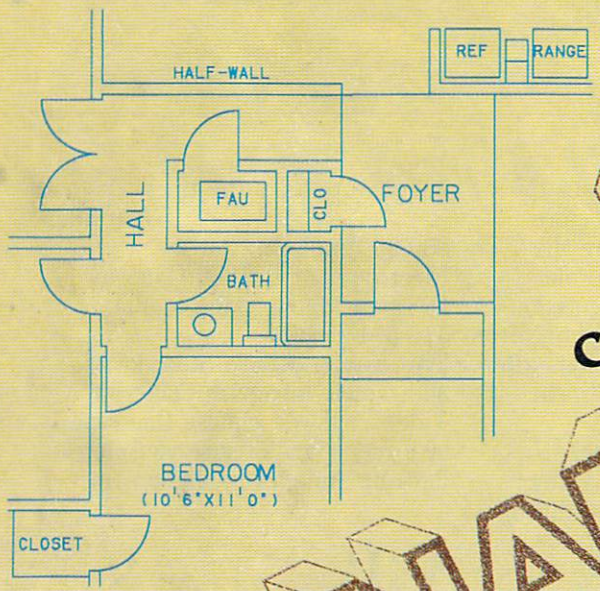
You begin the game by putting yourself in the place of a 15th century Spanish explorer with one goal in life: to find the fabled Seven Cities of Gold. Your obsession with these seven kingdoms began, according to the manual, when an old waterfront seaman told you the tale of seven bishops: "Christian men who had been blown far off course into an unknown realm and who established seven kingdoms whose splendor ranked with the reign of Solomon."

Before you can begin your quest, you need to take care of a few minor housekeeping duties. It's necessary to create a Historical Map Disk to record your travels. After using Kickstart, just insert the *Seven Cities* disk into your Amiga's disk drive. When the program finishes loading, use your joystick* (or the keyboard) to move the selecting highlight to "Make a Historical Map Disk," press the joystick button and follow the directions. You're ready to begin your search for the Seven Cities of Gold.

All you need now is the funding and equipment to carry out your quest. Of course, you need an audience with the king and queen, and this is where playing the game begins. You have four choices of skill level: observer (demo), novice, journeyman and master. It's really not necessary to choose the observer level; it's much better to jump right into the game and choose novice. Otherwise you won't get a royal audience, and you get automatic funding for your expedition.

Now that you've got the backing of the court, your next stop in Europe is The Outfitters. Food is bought and bartered for in relation to the number of men in your expedition. First decide how many men you want, then how much food to take along. Experiment with the two quantities at first. Take as much food as you can; you'll need it for long expeditions on land. Be careful about the amount of goods you take. Too

***Seven Cities Of Gold* from Electronic Arts**



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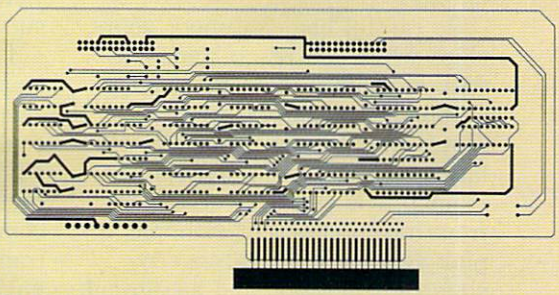

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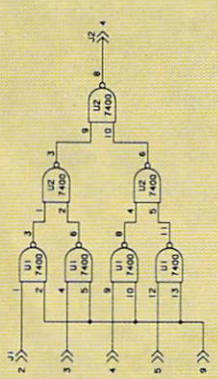
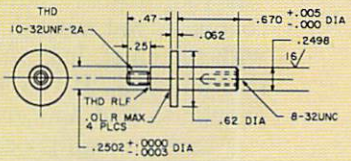
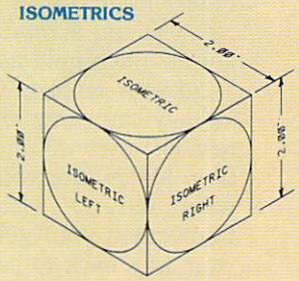


SCHEMATICS



MECHANICAL DRAFTING

ISOMETRICS



SIGNAL NAME	COMP NAME	PIN NUMB	SOURCE	TYPE COMP
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S0002	J1	3	•	CON
S0002	U1	4		7400
S0003	J1	4	•	CON
S0003	U1	9		7400
S0004	J1	5	•	CON
S0004	U1	12		7400
S0005	J1	9	•	CON
S0005	U1	2		7400
S0005	U1	5		7400
S0005	U1	10		7400
S0005	U1	13		7400
S0006	U1	3	•	7400
S0006	U2	1		7400
S0007	U1	6	•	7400
S0007	U2	2		7400
S0008	U1	8	•	7400
S0008	U2	4		7400
S0009	U1	11	•	7400
S0009	U2	5		7400
S0010	U2	3	•	7400
S0010	U2	9		7400
S0011	U2	6	•	7400
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S0012	U2	8	•	7400
S0012	J2	4		CON

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SYSTEM REQUIREMENTS
512 K RAM
2 Disk Drives (or)
1 Drive and Hard Disk
Printer or Plotter

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many goods will overload your men, but you don't want to run short when it comes time to trade with the natives.

Now it's time to set sail for parts unknown. As your ships leave port, make note of where you are and in which direction you're heading. Choosing the View Map option gives you your present position. The Amiga makes maps for you as you go, and it's wise to check them frequently. It's also useful to make notes as you lead expeditions on land.

Be careful how you moor your ships when you reach land. It's easy to destroy them by running aground. As your expedition moves over the land, look for villages. A code on the back of the manual tells you what to expect from inhabitants. For example, a pink symbol represents a city-state confederation and an agricultural economy. These clues are only visible to novices.

If your goal is trade rather than conquest, you must deal directly with the chief, but you have to find him first. If you are lucky enough to find him, make sure you have enough goods or gold to trade. I don't know how many times I wandered around a village looking for the chief, only to find I didn't have enough goods once I finally located him.

If you run across a gold mine, get as much gold as you can. Load your men up with as much as they can carry and stash the rest for retrieval on a later expedition. Make sure you carefully note where (latitude, etc.) you put it. Remember, your goal is to find your way back to useful places and avoid dangerous ones. This might be a good time to return to Europe. If you feel adventurous, however, continue your search on land. If you meet natives, this time you'll have plenty of loot to impress the chief.

Formulating goals, such as trade or conquest, before you leave your home port makes the game more fun. Decide before you leave whether you are the conquering-hero type, the merchant/trader type or the missionary type. You have the option of establishing forts or missions after conquering or trading with the natives.

I decided I was a merchant/trader type. Unfortunately, my men and I ran out of food during our first expedition in the new world. The last words I heard before I expired from starvation were, "Sir, you are the last to survive."

The next time I thought I'd be smart and take as much food as I could. Unfortunately, this meant I could take very few goods. When I finally located the chief of the first village (an Aztec city) I encountered, all he said was, "No trade." I did manage to find some gold, however, so I felt the quest wasn't a total loss.

I returned to Europe to find cheering crowds eager to hear my tales of the new world. I stopped at my home to study the maps I'd created and at the pub to record my maps and discoveries. Wise conquistadors are advised to stop at the pub after every trip or else lose all the maps and discoveries made up to that point.

I also stopped at court for recognition of my accomplishments. Unfortunately, the consensus at court was that my performance was poor. If I had done well, I might have been given a title.

All in all, I found *Seven Cities Of Gold* to be an entertaining game, and the Amiga's graphics really enhance the game experience.

Like many adventure games, it takes a bit of playing to become skilled enough to take advantage of all the features and avoid boredom. Even novice explorers, however, will find plenty to keep them occupied, as long as they carry out their quests with an explorer's spirit. Just set sail and let your imagination take the tiller.

—Lori Tracy

$39.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, Calif. 94404; 415-571-7171

*We used a Mouse Stick joystick and mouse interface, made by Video 7. If you choose this type of joystick, make sure you plug it into the Amiga's mouse port.

VIP Professional

Integrated spreadsheet, database, graphics

512K Amiga.

If I were to describe *VIP Professional* in a single sentence, I'd have to say that it is like *Lotus 1-2-3* with color. The emulation is so complete that any of the numerous books on the applications of *1-2-3* will apply to *VIP*—including the keystrokes—giving Amiga owners access to the workings of the most popular piece of productivity software.

VIP, like *1-2-3,* is a combination spreadsheet, database and graphing utility. Put your labels and numbers on the spreadsheet, manipulate the numbers according to dozens of math and business formulas, sort them on any field, then turn the numbers into one of several business graphs.

If that sounds like a lot for one program to do, it is. This is why it requires 512K and why you are left with a work sheet of about 60K. Now 60K is enough for a large work sheet, but whether you actually are able to use that much depends on how you load the program. If you use more than one external drive, disconnect it. Then, after using the Workbench to set Preferences, be sure to close the window before opening *VIP.*

Although *VIP* features an

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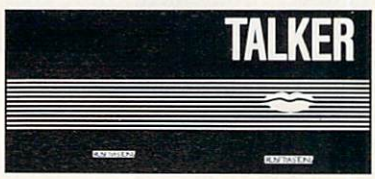

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It's pretty hard to keep up with the change and do your job at the same time. But my only job is to understand what's important and why. So I travel around the country talking to hardware and software vendors, dealers, users, venture capitalists, publishers, consultants, anybody who has something important to say about the pc business. And twice a month I give you the latest take on what's important. That's what I mean by asking you to rent a new pair eyes: subscribing to my newsletter is a way to see trends you might not pick up in the normal course of business.

My name is Stewart Alsop. I've been involved with the pc business full time now for five years and before that was trained as a business editor. Five years ago, I was executive editor at Inc. magazine. Since then I've been chairman of the Boston Computer Society, editor of Micro Marketworld, co-founder of Soft•letter, and editor of Infoworld. Now I'm West Coast Editor of PC Magazine, as well as editor and publisher of P.C. Letter.

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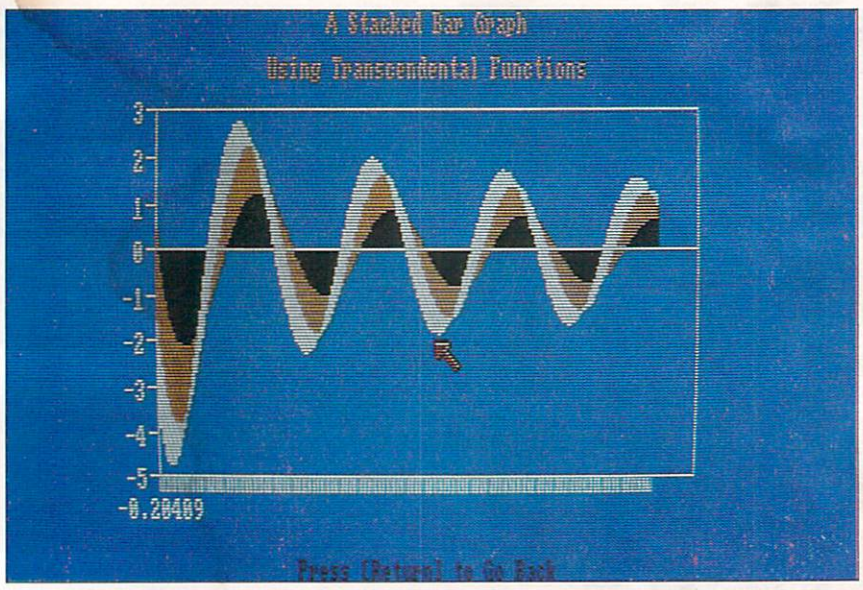
intuitive interface, memory requirements preclude multitasking. The program's documentation recommends expanding RAM to at least 1 megabyte (MB), and both the Tecmar and Cardco memory-expansion units have been tested and work well. With the Cardco interface, *VIP* supports up to 8MB.

After booting, you're presented with a work sheet having columns designed by letters and rows by numbers. Combined, these coordinates indicate the absolute address of any cell on the sheet; A1 is the cell in the top left corner, and one step to the right is B1. Move the cursor down and you are at B2. In all, *VIP* allows you to create work sheets of up to 8,192 rows and 256 columns, giving you a possibility of more than 2 million cells, with sufficient memory, of course.

Just above the work sheet, an information block keeps you current as to where your cursor resides, and any information you type into a cell is displayed in that block until you enter it by pressing Return or the cursor key.

That block also displays menu choices and a brief explanation of each item in the menu. Press "/" at any point and the main menu appears. The cursor is found resting on the Work-sheet entry, and just below it you are told that this selection invokes work-sheet commands. Select it by pressing Return. The menu changes to show the commands you can use and the results of each command. Because the menus and submenus cover virtually every operation of *VIP*, you'll find much of your work is done with just the cursor and Return keys.

Using what are by now almost conventional spreadsheet routines, *VIP* supports the use of "@" commands as a kind of shorthand for entering commonly used formulas, as well as more complicated formulas traditionally used in business. For example, "@ sum(B1..B12)" would add the numbers in the range specified and present you with a total in the cell you used to enter the formula. A formula can be absolute, pertaining to only one range, or relative, performing the same operation on many ranges.



***VIP Professional* from VIP Technologies**

In addition, *VIP* supports the creation of macros and gives you quite a bit of documentation on the subject. Because macros have almost attained the status of programming languages and because there are many good books on the subject, we'll simply note that macros are similar to batch files or programmed function keys. Using macros, it is possible to set up a formula you may need to repeat or to set up a series of sort commands.

Saved as a macro and with a key or keys assigned to it, a command can be invoked at any time with just one or two keystrokes. This becomes a great timesaver and a hedge against a faulty memory. Once you have the command in memory, you don't have to remember syntax, only a single key.

OK, you've sped through the creation of a work sheet and now you want to turn the numerical information into a graph. Once again, menus and submenus lead you through all the choices: type of graph, range of the work sheet for labeling and range or ranges of numbers to be included in the graph. *VIP* can give you all kinds of graphs: line, bar, stacked-bar, pie, etc.—whatever best expresses the information you wish to convey.

If you want to make a presentation-quality graph, you may save your information to a graph file, load the *Graphprint* module and call up the graph file.

It is only in *Graphprint* that you actually use your Amiga controls. (Remember, *1-2-3* was not made for a mouse.) By using the mouse and pull-down menus, you can create graphs with stunning colors. In addition, you have at your disposal all the Amiga Notepad fonts for creating labels and legends.

Such charts may be printed in color as well, as may the less-spectacular charts made by the *VIP* main program. With a standard printer, a black-and-white option of *Graphprint* translates colors

into shadings, so you may still have the full utility of the program.

As a database, *VIP* may be just a little different than what you've seen before. Record fields are laid out right to left instead of top to bottom. For example, a name would appear in column A, the address in B, state in C, zip code in D and so on.

When using *VIP* as a database, each cell becomes a field holding one item of information such as an address or zip code. Your records can be sorted on one or two fields, so it would be possible to keep records in alphabetical order and grouped by zip code.

Just because a program such as *VIP* is useful, it does not mean that it is difficult to use. *Lotus 1-2-3* attained its status on the best-seller list because it could do many things well and because most literate people could use it almost immediately.

VIP Professional also emulates *1-2-3*'s on-screen tutorials, menus, submenus and documentation. This assumes users know nothing about spreadsheets and provides excellent background information and a step-by-step example of a home budget program.

VIP is one of the more expensive programs for the Amiga, but it is well worth the price. Though several other good spreadsheets recently have appeared on the Amiga market, we've seen nothing else that puts the strength, simplicity and utility of *VIP* into one neat package.

—Ervin Bobo

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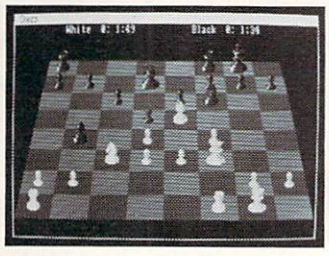

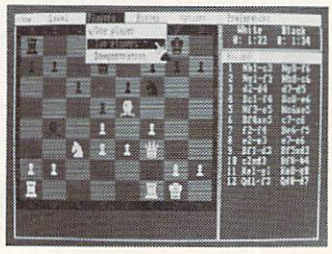

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AMIGA HARDWARE ROUNDUP

One highly acclaimed aspect of the Amiga is its open architecture, which allows the addition of extra hardware devices through one or more of the computer's expansion ports. Many companies, in addition to Commodore Business Machines, Inc., are taking advantage of this open architecture and creating new lines of Amiga hardware products. These new devices greatly enhance the machine's capabilities, allowing users to work faster and more efficiently.

There are more than 1,000 registered developers of Amiga products, many of whom produce only hardware. Some of these developers are now shipping products, or soon will be, that most serious Amiga users should be aware of. The following is a brief report on many of the new Amiga hardware products coming to market.

RAM Expansion Beyond 512K

Before you expand your Amiga's random-access memory (RAM) beyond the 512K internal limit, you need to be aware of several facts. First, the 68000 microprocessor in the Amiga is able to address a total of 16 megabytes (MB) of RAM directly. Due to certain design restraints, however, the computer can only use 8.5MB. (The IBM PC can only directly address 640K, less than 1MB.) The Amiga can hold 512K inside its chassis. To add more RAM than that will require some kind of expansion interface. Some RAM upgrades supply that interface, others do not.

If you are using *Version 1.1* of the Amiga operating-system software, you will have to execute one or more programs at start-up for the computer to recognize the extra RAM (or any other hardware

DPaint
Color
AMIGA
AMIGA

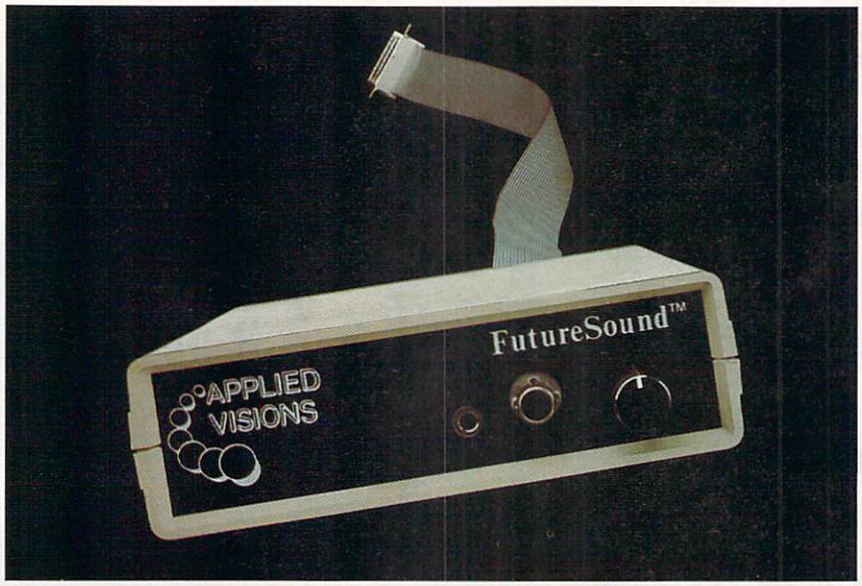
device for that matter). This is accomplished by entering appropriate commands in your Workbench Start-up Sequence in the "S" directory on your boot disk. These commands (usually **AddMem**) direct the operating system to expect RAM at a given address. In most cases, the RAM expansion maker will supply you with a program that installs the necessary software on your Workbench disk.

If you are using *Version 1.2* of Kickstart/Workbench, you have the added convenience of automatic configuration devices, which inform the computer they are there and tell what resources they need. The Amiga performs necessary housekeeping arrangements for these devices, enabling them to work in harmony. The result for the user is simplicity. Setup requires no effort at all.

The following five companies currently market RAM expansion cards for the Amiga:

Tecmar in Solon, Ohio, produces the T-Card, which installs on the main expansion bus on the right side of the Amiga. The T-Card can add a maximum of 1MB of extra RAM. It can be purchased fully populated with the 1MB or as a 256K or 512K card that can have extra RAM added. The T-Card contains a clock with a battery, so users never need to set the time and date after doing so initially. It also has a SASI (Schugart Associates System Interface) hard drive interface built in. Only Tecmar's hard drive will work with the card at this time, however.

The T-Card cannot automatically configure, so it is necessary to change the start-up sequence to activate it. Tecmar supplies a utility program that does this. We used the T-Card for several months (with *Version 1.1* software) and found that most, but not all, programs will work with the extra RAM. None of the hard disk drives or alternate processors we have (except the Tecmar hard disk drive) worked properly with the card installed, and we were not able to check it with *Version 1.2*.



***FutureSound* from Applied Visions**

The T-Card does not have a pass-through, so you cannot add anything else to the main bus except the T-Disk hard disk drive. The T-Card's retail price is $995.

Toronto-based Comspec offers the AX2000 2MB expansion card. It may be the best piece of hardware on the Amiga market today. The RAM comes in a small Amiga-colored metal box that easily plugs into the main bus. It installs in seconds, faster than the extra 256K you may have added when you bought your Amiga. Using software *Version 1.1,* the card requires the use of **AddMem** in the start-up sequence. When using *Version 1.2,* it automatically configures. In any event, the card's hassle-free extra memory is nice to have.

The Comspec card was the most compatible RAM-expansion system we tried, in terms of hardware and software combinations. We liked the fact that it offered an available pass-through edge connector from the Amiga's main bus. Comspec says, which we were not able to confirm, that you can piggyback two of its cards and have more than 4MB of main memory. The Comspec 2MB card is $899 retail.

Cardco offers the aMEGA 1MB card, another easy-to-install RAM upgrade. It consists of a small box, which is longer than Comspec's card but smaller than Tecmar's, that plugs into an Amiga's expansion port. It works under *Versions 1.1* and *1.2* (automatically configures with *1.2*) and offers a pass-through to the main bus. It was not as compatible with software and other hardware as the Comspec board, but more so than the Tecmar. The Cardco board sells for $550 retail.

One of the largest RAM-expansion cards we found was the RS Data, based in Houston, 4MB RAM card. This card even offers an option to add another 4MB, so you can—with one card—increase your Amiga to a whopping 8.5MB.

Unlike the previous three, this card is not enclosed in a case. It is an exposed circuit board with RAM chips and an 86-pin edge connector and it looks like an IBM-style RAM card. It was originally designed to be mounted inside Amiga RAM-expansion boxes made by The Micro Forge, but RS Data says it now plans to market its own boxes with its RAM cards.

The RS Data card works with *Version 1.1* software. It does not automatically configure with *Version 1.2,* but works if installed using the **AddMem** command. While we did not test this card thoroughly, we did try it with some *AmigaBASIC* programs and successfully allocated over 1.5MB

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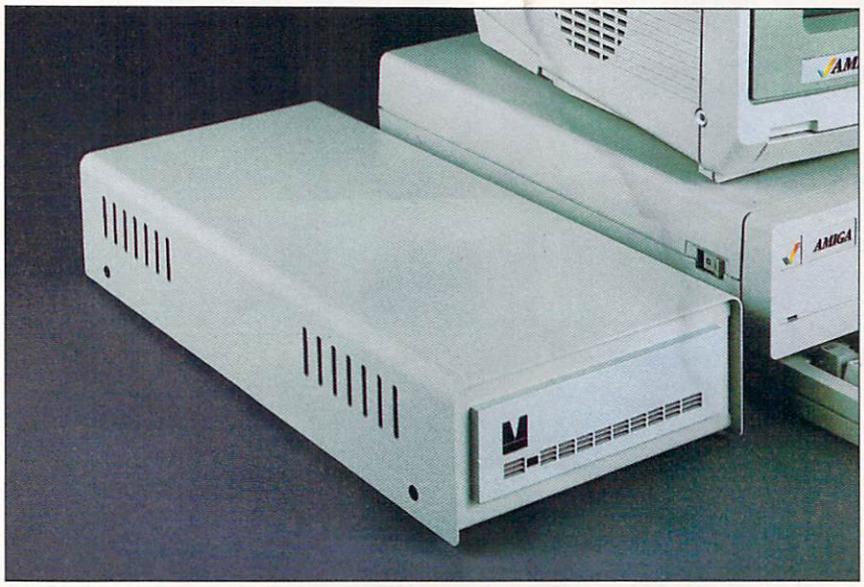

MAS-Drive 20 **from MicroBotics, Inc.**

of memory for basic use, leaving more than 2MB for other Amiga tasks. That much memory allowed us to manipulate 1000- by 1000-element arrays (1 million elements) quite easily.

At this time, the RS Data card is the largest single RAM upgrade available. It is also, therefore, the least expensive in terms of dollars per megabyte. The RS Data 4MB cards retails for $1,246 and can be purchased in a 2MB version for $850. All versions require an expansion device with an 86-pin format.

The last RAM-expansion board we were able to examine is the Alegra Memory Expansion Unit from Access Associates, Santa Clara, Calif. The Alegra card comes with 512K RAM, which expands an Amiga to 1MB of RAM. The card can be expanded by replacing its 256K RAM chips with a user-installed 1MB RAM chip. The current cost of this 1MB upgrade is quite high, but it may soon become more reasonable.

The Alegra card automatically configures under *Version 1.2* software and works with *Version 1.1* by using **AddMem**. We did not have sufficient time to test it with a lot of software and other hardware for compatibility. It was easy to install, however, and we completed the task in about five minutes. The card does not have a pass-through to the main bus, but its vendor believes users simply want more RAM and are not worried about adding larger expansion hardware. They may be right. The Alegra card sells for $379 retail.

In addition to these five companies, several others have announced products that extend an Amiga's RAM over the 512K internal maximum. These include Skyles Electric Works, Microbotics, Inc., Interactive Video Systems and The Micro Forge. Products from these firms may be available by the time you read this.

Hard Disk Systems

A computer as powerful as the Amiga often requires a mass-storage device, such as a hard disk drive. We were able to look firsthand at three such drives, each with 20MB capacity.

Tecmar produces the T-Disk, a 20MB hard disk drive that connects to an Amiga via Tecmar's T-Connect (a simple SASI interface, no RAM) or T-Card SASI interface. We used the T-Disk for several months with a 1MB T-Card interface; an earlier preproduction drive failed after a few weeks. The T-Disk and T-Card worked fine together, but did not work with non-Tecmar RAM cards, hard disk drives, expansion boxes or alternate processors.

We were only able to test the T-Disk with *Version 1.1* software. The T-Disk itself is $1,495 retail, but the required T-Connect or T-Card raises the price to at least $2,000 for a 20MB system.

A 20MB hard disk system is available from The Micro Forge in Atlanta. This drive is designed to be used externally or inside an expansion box. We used the drive routinely for several months without any problems. It was compatible with the Netch 68881 math coprocessor board, the Comspec RAM card and *Version 1.2* software. We did not use the drive extensively with *Version 1.2*.

The biggest complaint we had was with the unit's power supply, which could be placed out of sight with a longer connection to the drive. When using the expansion box, the power supply is no problem. We basically liked the drive, found it reliable and fast and missed it when we had to return it. The Micro Forge CD20 sells for $1,495 retail. If you don't have an expansion box, a single-slot adaptor is less than $100.

A new entry is the Microbotics 20MB hard disk drive. Microbotics is in Richardson, Texas. This drive differs from the previous two in that it does not connect to an Amiga via the main expansion bus. It connects instead to the printer port, leaving the main bus free. We were only able to use it for a few days, but found it to be slightly slower than the Tecmar or Micro Forge hard disk drives. The Microbotics drive works only under *Version 1.2* software, although the company promises compatibility soon for both *Versions 1.1* and *1.2*.

The drive does offer a SCSI, (small-computer system interface) however, and can be piggybacked with up to four Microbotic drive systems, each with its own power supply. Interestingly, the Microbotic drive does not have a cooling fan, using its metal housing instead to dissipate heat. The Microbotic drive retails for $1,495 and includes its own interface.

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The above-mentioned hard disk drives are all slow, compared to hard disk drives used on IBM PCs. The Micro Forge CD20, the fastest, is only about two to three times as fast as the Amiga's floppy drives. One reason for the lack of speed is that none of these drives use direct memory access (DMA) to transfer data. With all the DMA channels available, Amiga hardware developers should be using them. So far they are not. Take heart, Commodore has developed a DMA hard disk drive controller and is licensing it to some hardware developers.

Several companies are now promising DMA drives. One is Byte By Byte of Austin, Texas, which has designed the PAL expansion system and is promising a DMA hard drive for it.

Another is Supra of Albany, Oreg. Supra markets a high-speed 20MB hard disk drive for the Atari ST. The company intends to deliver a version for the Amiga by Christmas. This drive would also be a 20MB system and would sell for about $799 retail.

The Micro Forge has announced The Business Partner, a 20MB drive with 2MB of RAM. Not much was known about this drive at press time, but it should be available by the time you read this.

Alternate Microprocessors

Some of the most interesting hardware products for the Amiga are substitute microprocessors and math coprocessors. These devices are mounted internally, replacing the Motorola 68000 chip.

One such product comes from Computer System Associates (CSA) in San Diego. It's the Turbo Amiga board—consisting of a full 32-bit 68020 microprocessor, a Motorola 68881 floating-point math coprocessor and 512K RAM—which runs at more than twice the normal speed of the Amiga. Once the Turbo Amiga board is installed in your start-up sequence via its new commands, the computer appears to function normally.

In truth, you will have the equivalent of a Digital Equipment Corporation VAX computer on your desk. According to the Byte Information Exchange, Turbo Amiga actually outperforms a VAX in certain types of computations. The 68881 allows you to calculate real numbers up to 10 times faster than before, and the 68020 performs many operations at twice the speed of the 68000, even when running at the same clock rate.

Combining the 68020, the 68881 and the higher clock rate gives true mainframe power to an Amiga user. But this extra power does extract a price in software compatibility. Many commercial programs will not run with the CSA Turbo Amiga board in place. Check your software to see if it is compatible.

In addition, your programs will not automatically benefit from the 68881 math chip. Software must be written to check for the availability of the chip. Very few Amiga programs currently do that, but this will change as the number of 68881s in use increases.

The major users of the Turbo Amiga are research laboratories, computer centers, military installations, universities and a small number of advanced individuals. These users require the computer muscle of the Turbo Amiga and have the programming expertise to write the custom software they need. The 68020/68881 board can be purchased directly from CSA for $1,495 retail.

The second alternate processor board is from Netch Computer Products in Monrovia, Calif. Called the 68881 Floating Coprocessor Board, it incorporates a Motorola 68010 with a 68881 chip and is a fairly inexpensive math coprocessor at $495 retail. The 68010 is not a true 32-bit processor—as is the 68020—but it is essentially software compatible.

You could use this device as an inexpensive 68020/68881 development environment or just utilize the math chip, which provides Amiga owners with a powerful hardware upgrade without sacrificing a lot of money and software compatibility. The device was compatible with almost all the software and hardware we tried. With the exception of a few Electronic Arts games and the Cardco 1MB RAM card, it worked quite well.

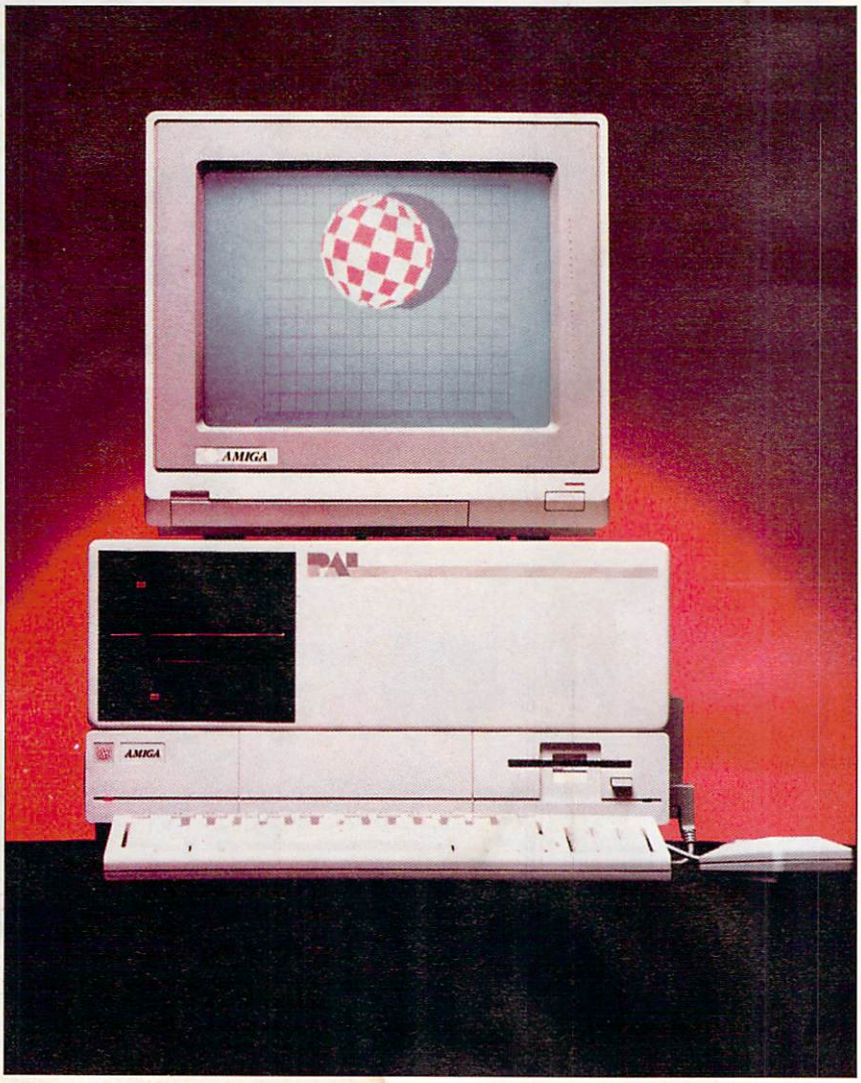
In terms of future coprocessor accessories, Microbotics is planning to offer a multifunction board with a 68881 socket. *Version 1.2* of the Amiga system software offers some 68881 support, and more hardware companies will be offering math chips. The combination of the Amiga operating system and third-party hardware support will ensure the availability of commercial software that takes advantage of the extra power offered by the Motorola 68881.

Expansion Boxes

Expansion boxes give an Amiga the same abilities as an IBM PC, which has a number of built-in (and empty) slots where users who want to upgrade their machines can install new hardware. With a few exceptions, the Amiga requires its upgrades to be external. Originally, the Amiga was to use an 86-pin format, and some earlier equipment uses that design. The newest expansion schemes use what is called the Zorro expansion architecture, a 100-pin connector design.

The only expansion box we could find that was shipping at the time of this writing is the one from The Micro Forge. Called the Seven Slot Expansion Box, it retails for $656.95 and is designed to be used with Micro Forge's CD20 hard disk drive and stereo digitizer card. We used one of these expansion boxes for a while and found it unsatisfactory. Perhaps it was only this one, but we had problems with both the hard disk drive and the stereo card, both of which worked fine using Micro Forge's Single Slot Adaptor Card. All the slots were the 86-pin format.

There are several other expan-



PAL Expansion System from Byte by Byte

sion boxes that should be available by press time. One is from RS Data, maker of the 4MB RAM card. This box will contain two slots and be used for RS Data's RAM cards and, possibly, a hard disk drive controller.

Another expansion system that looks very solid is PAL from Byte By Byte. It's a high-end system with DMA hard disk drive controllers, RAM expansion with a clock/calendar and five slots. It may be the premiere expansion box for some time.

Buss Station from DSI in Wichita, Kan., is said to be a modular expansion system with eight 86-pin connectors. In addition, CSA in San Diego says it will offer an expansion system for its Turbo Amiga board.

Sound Digitizers

The Amiga's sound capabilities truly set it apart from run-of-the-mill micros and super-micros. It is the first commercial computer to offer speech synthesis as a standard feature, and it has stereo four-voice sound output and a dedicated music chip. This chip is capable of reproducing sound in near CD ROM (compact disc) quality.

Sound digitizers for the Amiga collect and analyze sound via a microphone or line input and convert it to digital data. By using software, a user can recreate the original sound. How well the sound reproduces depends on the original sampling rate, the quality of the device and the software.

Our favorite sound digitizer is Futuresound from Applied Visions, Medford, Maine. This is a complete system that interfaces to an Amiga via the printer port, with a pass-through connection for a printer. It comes complete with a microphone, interface, good software and decent documentation.

It also comes with working C (executable files and source code on disk) and *AmigaBASIC* routines that enable users to use digital samples in their programs. They can perform multitrack recordings, manipulate sounds by filtering and other more exotic functions. Futuresound accepts line and microphone input. At $175 retail, it is a good buy and may be the choice digitizer for programmers who need sound effects in their programs.

Another fine digitizer is the Soundscape Sound Digitizer from Mimetics Corporation in Palo Alto, Calif. It's the cheapest system ($99 retail) and, perhaps, the most professional. Its manual is comprehensive, and the software, while not as user friendly as Futuresound, is very powerful. It even contains examples of programming techniques, but they are not available on disk, only in the manual.

The Soundscape Sound Digitizer is easy to install, connecting to the computer's second mouse port. It accepts both microphone and line input, but users must supply their own microphones. The device is a good value and a quality instrument. Mimetics also makes a MIDI interface for the Amiga that plugs into its serial port. It offers MIDI in, out and through connections and allows an Amiga to communicate with MIDI-capable musical instruments and devices. The interface is available for $49 retail.

Mimetics also sells a very powerful software system that complements its hardware. It is called the *Pro MIDI Studio* and retails for $149. While software is outside the scope of this article, it is important to note that Mimetics offers this extra software support

for its sound hardware.

A third sound digitizer is the Stereo Sound Digitizer from The Micro Forge. It is a true stereo digitizer, which means it captures sound from two channels concurrently. The other systems mentioned here do not have that capability. The device interfaces with an Amiga via The Micro Forge's Single Slot Adaptor expansion box.

The Stereo Sound Digitizer consists of a printed circuit board with two line inputs. There is no provision for a direct microphone input, but its included software allows users to digitize sounds in mono or stereo. The device is available from The Micro Forge for $345 retail.

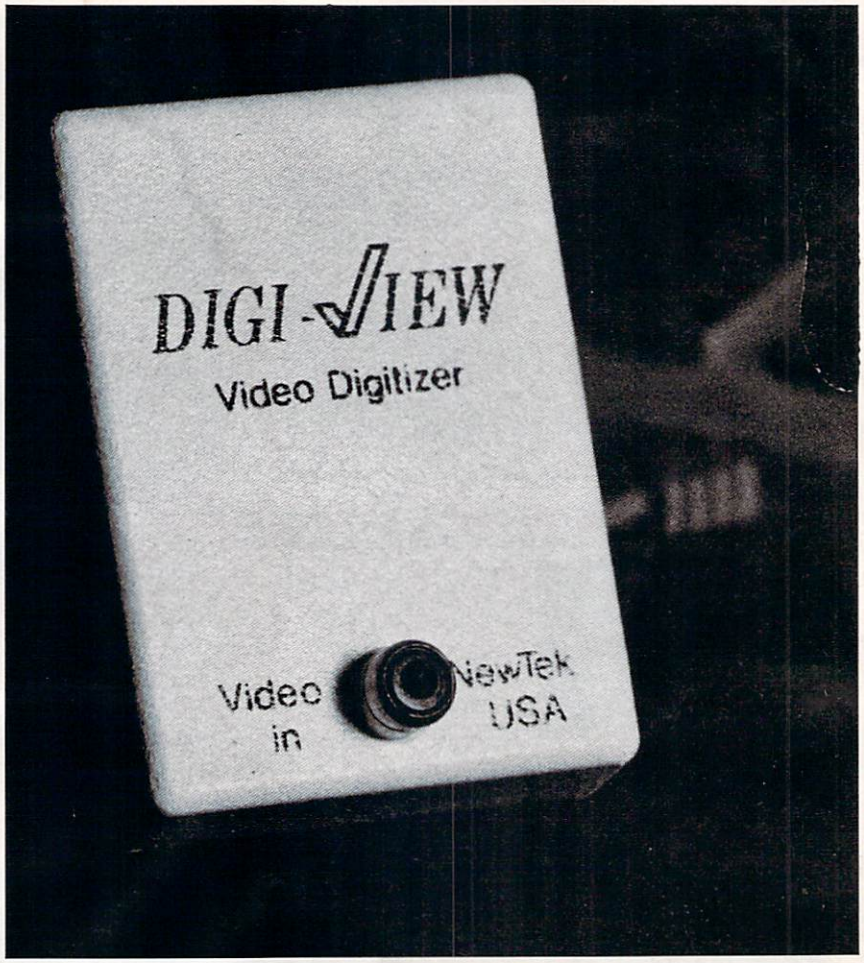
Graphic Devices

Sound is not the only area where the Amiga excels. Graphics is also one of the machine's most outstanding features. Early on, Amiga users were promised a host of high-tech graphic devices. Recently, we were able to look at one such system shipping to the public at this time.

Digiview from NewTek in Topeka, Kan., is one of the neatest things for the Amiga to come down the road in a while. It is a small device that plugs into the computer's printer port and acts as a graphic digitizer. It is not a frame grabber, however, which can snap several frames a second. Digiview requires 10 to 30 seconds to capture its images, so it is useful only for still shots.

What is unique is that it is able to create full-color pictures from a black-and-white camera. Using powerful software techniques, it combines three filtered photographs into one. Then using the Amiga's hold-and-modify mode, it displays the picture using all of the Amiga's 4,096 possible colors.

Digiview also has an interlaced version that uses sophisticated gray shading techniques, which eliminate most of the flicker associated with the interlaced mode. The device comes with software and instructions, but no camera. A relatively inexpensive black-and-white camera, such as the $200 (approximately) Panasonic WV-1410, may be used. Digiview itself retails for $200.



***Digiview* from NetTek**

Speaking of frame-grabber devices, we were not able to get the Amiga Live! color frame grabber for this review. We have seen it twice at trade shows, however, we are at a loss as to why it has not yet been marketed. Nor were we able to get a Genlock device.

Graphic Controllers

There are a couple alternatives to using the mouse as a graphic controller. One is the Easyl from Anakin Research, Rexdale, Ontario, Canada. It is a standard graphics digitizing pad that can be used for creating original drawings and designs or as a means of digitizing printed drawings. It retails for $499.

A second system is the Series One graphics tablet from Kurta Corporation in Phoenix. It is an 8½- by 11-inch graphics tablet. No price was available at press time.

This strong array of new hardware products for the Amiga boosts its memory capacity, speed, power and utility to an admirable and affordable level. An eye-opening number of developers see a potential in the Amiga based solely on the computer's merits, not its manufacturer's name. From all indications, the Amiga is growing into a powerful, versatile, high-quality-oriented machine.■

—Louis R. Wallace

The author is a computer specialist and research chemist for the Veteran's Administration and a contributing editor for many computer publications.

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Produces a fully integrated quotation, job order, sales transaction, inventory control, inventory costs and a complete accounting program.
Clockwork Computers, Inc.; 4612 Holly Ridge Rd.; Rockville, Md. 20853; 301-924-5509

Financial Plus
Integrated business accounting
An integrated accounting package that incorporates general ledger, accounts payable, accounts receivable, payroll and word processing.
$295 retail
Byte By Byte; Arboretum Plaza II; 9442 Capital of Texas Hwy. N., Ste. 150; Austin, Texas 78759; 512-343-4357

MiAmiga Ledger
General ledger accounting system
A double entry general ledger accounting system designed to be used in both the home and in small businesses.
$99.95 retail
SoftWood Company; PO Box 2280; Santa Barbara, Calif. 93120; 805-966-5884

Rags To Riches IV
Accounting
Modules include General Ledger, Accounts Receivable and Accounts Payable.
$199.95 retail; per module
$499.50 retail; all three modules
Chang Labs; 5300 Stevens Creek Blvd.; San Jose, Calif. 95129; 408-246-8020

Business Graphics

Impact
Graphics
Displays numeric data in graphic form. There are two parts to the program: the first allows a user to create slides of graphs, charts, text and symbols in a free format; the second plays the slides back in a predetermined sequence and fashion.
$199.95 retail
Aegis Development; 2210 Wilshire Blvd., Ste. 277; Santa Monica, Calif. 90403; 213-392-9972

Communications

A-TALK 1.1
Communications
Includes support for Kermit, XMODEM, XMODEM-CRC, Compuserve B and Plain Text file transfers. Emulators for VT100, VT52, Heath H19, ANSI and TTY are provided.
$49.95 retail
Felsina Software; 3175 S. Hoover St., Ste. 275; Los Angeles, Calif. 90007; 213-747-8498

A-Term
Communications
A terminal program that allows incoming data to be spoken through the speaker; data to be printed as it is coming over the line; support of protocols; auto-dialing and more.
$49.95 retail
MegaSoft Limited; PO Box 1080; Battle Ground, Wash. 98604; 800-541-1541 or 206-687-5205

BBS-PC!
Bulletin board system
A versatile electronic bulletin board system that transforms an Amiga into an on-line information network.
$99.95 retail
Micro-Systems Software, Inc.; 4301-18 Oak Cir.; Boca Raton, Fla. 33431; 305-391-5077 or 800-327-8724

D.A.S. Communications
Telecommunications
Features include VT100 emulation; support of 110 to 2400 baud; built-in bulletin board system with message base; and upload and download options.
$30 retail
Developers of Advanced Software; 12455 Veterans Memorial Dr., Ste. 204; Houston, Texas 77014

Digital Link
File transfer; telecommunications
Enables a user to transfer programs, data and text from IBM PCs, PC-compatibles and the Macintosh to the Amiga and back. It also offers full terminal emulation for VT52, VT100, Televideo 925 series, ADM-3A, ANSI and TTY terminals.
$69.95 retail; *Digital Link*
$19.95 each retail; cables
Digital Creations; 1333 Howe Ave., #208; Sacramento, Calif. 95825; 916-344-4825

Genie
Integrated software
An integrated information management/electronic communications application program for computer conferencing and electronic mail in a networked environment.
Available second quarter, 1987
Data Dynamics, Inc.; PO Box 2728; Portland, Oreg. 97208; 503-626-4635

■MacroModem
Telecommunications
Simplifies telecommunication sessions by allowing users to create sets of macro commands and companion help screens and direct log-on procedures. For example, one macro can include up to 35 keystrokes—or function-key commands, control codes, text, even other macros—and one keystroke can prepare and execute a terminal session.
Files of macros for each telecommunications service accessed and task performed can be constructed using the program's built-in editor and sample macro templates, and macro sets may be edited while on-line.
Macromodem is compatible with an Amiga's multitasking, multiwindow environment. A current terminal-capture file may be displayed as an independent task. On-line conference or electronic messages of up to 10 lines may be prepared and sent from a resizable Compose window, and a user-defined phone directory can store electronic-mail addresses.
$69.95 retail
Kent Engineering & Design; 4215 Jordan Rd.; PO Box 178; Mottville, N.Y. 13119; 315-685-8237

MaxiComm
Communications; file transfer utility
An ANSI terminal and file transfer utility program that allows a user to connect an Amiga to public database services, public bulletin boards and another local computer.
$49.95 retail
MaxiSoft; 2817 Sloat Rd.; Pebble Beach, Calif. 93953; 408-625-4104 or 800-942-6294

MiddleMan
Terminal emulator
Allows an Amiga to emulate the functions of the DEC VT100 terminal.
$59.95 retail
Benaiah Computer Products, Inc.; PO Box 11165; Huntsville, Ala. 35814; 205-859-9487

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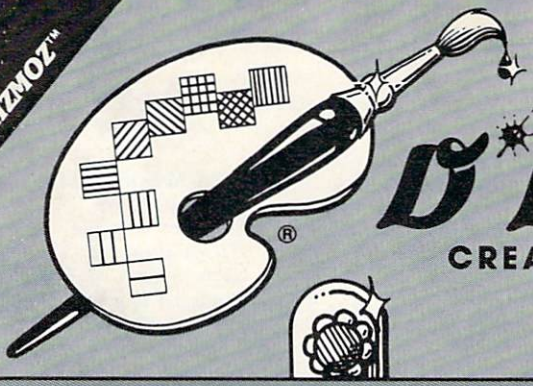

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Organize Amiga Clipboard and IFF files into a scrapbook for ease of use.

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Use this Buddy to make the colors of one image match the colors of another image. Useful when merging images into one picture.

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Digital Creations

Communications Continued

Online!
Telecommunications
A telecommunications program that can transform any Amiga into a terminal capable of interacting with micros and mainframes, so users can exchange information, news and data with other computers.

Creative

Aegis Draw
Aegis Development, Inc., see review on page 70

Amiga Coloring Book
Clip art
Each *Amiga Coloring Book* is a one-disk volume of line art containing 20 files that a user can cut and paste to create his own graphics. Volumes include *The Sampler, The World* and *Borders*.
$34.95 each retail
The Dragon Group, Inc.; 148 Poca Fork Rd.; Elkview, W.Va. 25071; 304-965-5517

Analytic Art
Graphics, pictures
Can be used to produce precise drawings of striking beauty and complexity. Users don't have to understand math, programming or art to develop interesting pictures.
$59.95 retail
Crystal Rose Software; 109 S. Los Robles; Pasadena, Calif. 91101; 818-795-6664

Animator
Animation package
A metamorphic animation package that uses a concept called "tweening," which allows movement and change within each segment of the animation.
$139.95 retail
Aegis Development, Inc.; 2210 Wilshire Blvd., Ste. 277; Santa Monica, Calif. 90403; 213-392-9972

Art Director
Allows a user to create storyboards and layouts, lay out and justify text, experiment with colors and typefaces, create and move artwork and more.
Available second quarter, 1987
Grey Associates; 250 Bruton Way; Atlanta, Ga. 30342; 404-851-9103

■Art Pak, Vol. I
Clip art
Art Paks consist of precreated art that can be used with *Aegis Images, Animator* or *Draw*. Other programs that can read IFF file-formatted paint files can also be used.
Art Pak, Vol. I includes photograph-quality artwork of buildings for use as backdrops and pieces of cell animations for creating walking and moving animations. Because *Aegis Animator* can do both metamorphic and cell animations, these images can be used with both styles.
$34.95 retail
Aegis Development, Inc.; 2210 Wilshire Blvd., Ste. 277; Santa Monica, Calif. 90403; 213-392-9972

Bobshop; Soundshop
Animation; sound
Bobshop is a Blitter-Object and animation editor that exploits the Amiga's custom graphics circuitry.
Soundshop exploits the sound production circuitry of the Amiga. Waveforms may be read from files on the disk, displayed on the screen graphically and played through the Amiga's digital to audio converter. It supports the IFF standard for sampled sound data files.
$49.95 retail; both programs
Revolution Software; PO Box 38; West Chester, Pa. 19381; 215-430-0412

■D'Buddy
Creativity set
D'buddy is a creativity set that contains a collection of "buddies" that can be used separately or with another tool or program.
Freeze Frame! allows a user to instantly grab any screen and place it in an IFF file for use with a *Paint* program or to send to a printer; *PrintIt!* allows a user to print one picture while working on another; *Touchup* is a mini-paint accessory that can be used to touch up a painting or drawing; *Postermaker* blows up any IFF-compatible picture to poster-size dimensions; *Slideshow* creates slideshows of pictures for presentations; *Scissors* is used to clip images from any screen and save them to the Amiga Clipboard or to an IFF file; *Scrapbook* organizes Amiga Clipboard and IFF files; *Colormatch* is used to make the colors of one image match the colors of another image; and *Joymouse* allows a joystick to be used as a mouse.
$79.95 retail
Digital Creations; 1333 Howe Ave., Ste. 208; Sacramento, Calif. 95825; 916-344-4825

DeluxePaint
Color graphics; drawing; design
A paint program loaded with special features such as zoom enlarging, split-screen magnification, color cycling, blend, smear, stretch, bend and rotate.
$99.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, Calif. 94404; 415-571-7171

DeluxeVideo
Video production
Deluxevideo can be used to produce video slideshows, point-of-sale videos, animated commercials, business presentation videos, interactive educational videos, animations and home versions of MTV.
$99.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, Calif. 94404; 415-571-7171

DNA Music; Protein Music; Fractal Music
Sequence mapping
DNA Music allows a user to "hear" DNA by mapping a DNA sequence directly into a musical sequence.
Protein Music allows a user to "hear" protein by mapping a protein sequence directly into a musical sequence.
Fractal Music generates music and synchronized high-resolution graphics based on fractal mathematics.
$19.95 each retail
Sterling Software; 77 Mead St.; Bridgeport, Conn. 06610; 203-366-7775

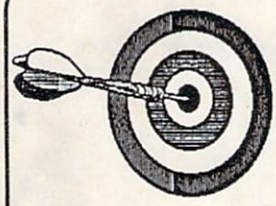
FutureSound
Digital sound recorder
Futuresound makes it possible to record, play back and store any sound directly on the Amiga. Features include multitrack recording, variable recording speeds and variable playback speeds.
$175 retail
Applied Visions; 15 Oak Ridge Rd.; Medford, Mass. 02155; 617-488-3602

Graphicraft
Graphics creation
An entry-level graphics design and paint program that features 32 colors and special effects such as color animation.
$49.95 retail
Commodore Business Machines, Inc.; 1200 Wilson Dr.; West Chester, Pa. 19380; 215-431-9180

Images
Creative
Allows a user to create paintings with as many as 32 different colors. Colors can be mixed and changed on a palette to get the exact colors needed. There are 20 different brushes and 16 patterns available, all of which can be modified for custom designing.
$79.95 retail
Aegis Development, Inc.; 2210 Wilshire Blvd., Ste. 277; Santa Monica, Calif. 90403; 213-392-9972

Imagine This
Image processing; software development
Image processing software system that turns an Amiga computer into an image processing workstation.
Zoxso; PO Box 283; Lowell, Mass. 01853; 617-655-9548

■Instant Music
Music composition, recording, playback
Instant Music allows a user to create his own compositions, record them and play them back.
The program keeps a user's creations within musical boundaries, so they always sound good. It does this by introducing a musical "template," which is a set of guidelines that keeps a user within a chosen key and tempo.
Instant Music lets a user make music in



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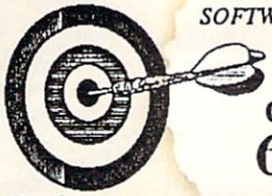

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Sony KV1331 Mon./TV	$469
T-Card w/256K RAM	$589
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Amiga/Mon./Ram Exp.	call

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BBS PC	$62
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DBC 3 Library	$127
DiskWik	$36
Lattice "C" Compiler	$115
Lisp	$139
Mac Library	$84
Manx "C" (Developers)	$203
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Text Utility	$64

Sound and Graphics

Aegis Draw	$111
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Deluxe Music	$65
Deluxe Paint	$52
Deluxe Print	$65
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real time, using a mouse with a method known as "mousejamming." In mousejamming mode, a user plays along with the computer, playing the fourth instrument or voice while the computer plays the other three.

The program comes with more than 80 complete songs to experiment with and more than a dozen digitized instrument sounds to choose from.

A user can adjust the tempo and volume for each voice independently of the others. In addition, the program allows zooming in and out, so a user can view a single measure or the entire song on screen.

A unique color coding of its digitized instruments lets a user see which instrument is doing what, and to follow each individual note as it is played.

Output is saved in IFF files in Simple Music format, making them compatible with other programs such as the *Deluxe Music Construction Set* and *Deluxevideo.*
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, Calif. 94404; 415-571-7171

The Music Studio
Music composition
A music program that features stereo composition and MIDI capabilities and includes a complete library of instruments, sound effects and music.
$59.95 retail
Activision, Inc.; PO Box 7286; Mountain View, Calif. 94039; 415-960-0410

■Pitchrider 1000
MIDI interface
Utilizing IVL's pitch-recognition technology, the *Pitchrider 1000* accepts and then converts sound waves into digital information almost instantaneously.

Using MIDI, it allows a user to utilize MIDI-equipped devices, such as synthesizers and samplers, using monophonic acoustic instruments. This provides access to a full range of synthesizer sounds previously available to keyboard players only.

The *Pitchrider 1000* also enables a user to interact with MIDI software for the Amiga, using his own instrument. It has its own pitch error display, using the Amiga monitor to help a user stay in tune.
$249 retail
DOD Electronics Corp.; 5639 S. Riley Ln.; Salt Lake City, Utah 84107; 800-453-7484 or 801-268-8400

■Waveform Easel
Allows a user to draw with the mouse a sound table of 256 values to create different sounds and tone qualities.

The program is compatible with the *DNA, Protein* and *Fractal* music programs.
$19.95 retail
Sterling Software; 77 Mead St.; Bridgeport, Conn. 06610; 203-366-7775

Zuma TV*TXT
A video production tool that enables a user to produce high-resolution, animated video titles on the Amiga.
$249.95 retail
Brown-Wagh Publishing; 16795 Lark Ave., Ste. 210; Los Gatos, Calif. 95030; 408-395-3838

Database

■Abase
Database manager
Abase provides access to multiple databases and index files from a menu-driven user interface or through a library of routines. It allows multiple tasks to access database files and supports record and file locking.

In addition to giving non-programmers a traditional method of accessing data in different databases, the program gives users the ability to import other database files, such as *Dbase,* and export ASCII files.

Program specifications include a maximum 40 files open at one time (memory permitting), a maximum 10 index files per database (memory permitting), 4,000 bytes maximum record size, 128 fields per record, six field types total and more.
Available third quarter, 1986; $100 retail
Computer Power Unlimited; 2014 W. Chandler Ave.; Santa Ana, Calif. 92704; 714-557-3358

A Filer, A Report
Database
A Filer features include creation of disk files; sorting of information; printing out mailing labels; printing out a sorted or partially selected list; 12 fields per record and more. $49.95 retail

A Report features include creation of custom report headings; page numbering; column-type or multiple-line reports; calculation of totals and more. $49.95 retail
MegaSoft Limited; PO Box 1080; Battle Ground, Wash. 98604; 800-541-1541 or 206-687-5205

Amiga Record Manager
Features include 16 fields with user definable input and length; sorts on any field; arranges into zip code order or alphabetically; prints mailing labels; accounts ledger; and on-line help.
$38 retail
HC Software Australia; GPO Box 2204; Adelaide, South Australia 5001; 08-428377

DATAMAT
Database manager
A menu-driven relational database management system for micro-to-mainframe applications that has an identical user interface across hardware and operating systems. It currently runs under AmigaDOS, MS-DOS, XENIX, UNIX and VMS.
$495 retail; A300 (AmigaDOS) or MX300 (MS-DOS)
$350 retail; A200 (AmigaDOS) or MX200 (MS-DOS)
$125 retail; A100 (AmigaDOS only)
Transtime Technologies Corp.; 797 Sheridan Dr.; Tonawanda, N.Y. 14150; 716-874-2010

The Data System
A full-featured database management package that builds files, reports and lists with posting, totals, subtotals, calculations, etc., all on up to nine conditions.
$200 retail; without ABasiC
$210 retail; with ABasiC
Gander Software, Ltd.; 3223 Bross Rd., "The Ponds"; Hastings, Mich. 49058; 616-945-2821

dBMAN
Relational database manager
A *Dbase*-compatible relational database manager that can be used for developing databases and database-related application programs.
$149 retail
VersaSoft; 4340 Almaden Expressway; San Jose, Calif. 95118; 408-723-9044

FoxFile
File management
A file manager that will accept up to 65,536 records.
$50 retail
Foxware; 1554 Park Creek Ln.; Atlanta, Ga. 30319

InfoBase
Database
A database program that provides many powerful functions. Each record can contain up to 200 fields of information.
$45 retail
Harvsoft; PO Box 725; Kenmore, N.Y. 14217; 716-877-3510

MiAmiga File
Database management
A database management system that presents its databases in both list (spreadsheet-like) and form formats. Sorting and selection capabilities are also provided. Up to 32 levels of progressive sorting are supported.
$99.95 retail
SoftWood Company; PO Box 2280; Santa Barbara, Calif. 93120; 805-966-5884

■Organize!
Custom filing system
Organize! helps a user create a custom filing system for organizing business records, contact lists, recipes, etc.

The program features up to 128 fields for each form or record and up to 254 bytes per field, with a maximum of 4,000 bytes per record.

Other features include pull-down menus, mail-merge functions, abbreviated entries for simplified searches, printed reports and more.
$99.95 retail
Micro-Systems Software, Inc.; 4301-18 Oak

Cir.; Boca Raton, Fla. 33431; 305-391-5077 or 800-327-8724

■Superbase
Database manager
Superbase allows business and home users to simplify, control and organize information.
The program is menu-driven and takes advantage of the Amiga's point-and-click and mouse-and-menus environments. It requires no programming, but lets users access its dataBASIC Database Management Language to create custom applications.
Superbase, which offers unlimited files, open files, fields per record, sort levels, search criteria, reports and screen formats and more, can work with a RAM disk and supports all standard peripherals, including hard disk drives.
Progressive Peripherals & Software, Inc.; 464 Kalamath St.; Denver, Colo. 80204; 303-825-4144

Integrated

■Logistix
Project management; database; graphics
Logistix is a spreadsheet-based integrated program that incorporates project-management, database and graphic functions. It uses *Lotus 1-2-3*-style commands and reads *1-2-3, Supercalc, Dbase,* DIF and many other file formats.
A 1,024-column by 2,048-row work sheet lets users manage information, and a built-in utility allows them to print their spreadsheets straight-up or sideways.
The project-management portion of the program lets users track variables and time units (in half-hour increments) involved in a task. The effects of holidays, vacations, sick days taken by employees or changes in working hours can be graphically displayed. So can the effects of time and schedule changes on resources and cash flow.
Finally, *Logistix* performs critical-path analyses, date arithmetic and what-if and logical operations, as directed by its users. Its presentation-quality graphics program produces more than 20 types of graphs.
$249.95 retail
Progressive Peripherals & Software, Inc.; 464 Kalamath St.; Denver, Colo. 80204; 303-825-4144

VIP Professional
VIP Technologies, see review on page 78

Miscellaneous Management

Computer Co-Pilot
Assists a user at his communication tasks, while learning about the user and his relation to the world. It maintains a complete personal database and world model.
Available fourth quarter, 1986; $900 retail
Alive Systems Group; PO Box 369; Big Sur, Calif. 93920; 415-332-8018

D.A.S. Business Finance
Assists business owners in making financial decisions and planning for future business expansion.
$30 retail
Developers of Advanced Software; 12455 Veterans Memorial Dr., Ste. 204; Houston, Texas 77014

Gizmoz Productivity Set
Desktop accessories
Contains 18 desktop accessories: calendar, Rolodex, memo pad, black book, calculator set, hot key, free list display, cuckoo alarm clock, terminal package, announcer, graph package, pop-up cards, super life, data compressor and data encryptor.
$69.95 retail
Digital Creations; 1333 Howe Ave., #208; Sacramento, Calif. 95825; 916-344-4825

MaxiDesk
Business tools
Comprised of a set of useful business tools, including a calculator, appointment calendar, alarm clock, phone book, keyboard helper and notepad.
$70 retail
MaxiSoft; 2817 Sloat Rd.; Pebble Beach, Calif. 93953; 408-625-4104 or 800-942-6294

Time & Task Planner
A time management tool for up to five users that provides each user with a 60-item To Do List; a 60-item Future Planning List; an Appointment Scheduler; a Copy to Scheduler utility; and a Calendar utility.
$100 retail; without ABasic
$110 retail; with ABasic
Gander Software, Ltd.; 3223 Bross Rd., "The Ponds"; Hastings, Mich. 49058; 616-945-2821

Programming

3D Graphics Library
Available fourth quarter, 1986
Computer Food, Inc.; 2215 Sarah Ct., Ste. 80H; Norcross, Ga. 30093; 404-851-9103

A Copier
Nibbler
$39.95 retail
MegaSoft Limited; PO Box 1080; Battle Ground, Wash. 98604; 800-541-1541 or 206-687-5205

Advanced String Library
$49.95 retail
True BASIC, Inc.; 39 S. Main St.; Hanover, N.H. 03755; 603-643-3882

■AEdit
Screen editor
Aedit is a general-purpose text editor that places specific emphasis on program text entry. It also handles the day-to-day text entry necessary for practically every function a computer is called upon to perform.
Some features of this program include Overstrike and Insert modes; Writer's and Programmer's modes; a 300-line Undo Buffer, which restores text; Move, Echo, Cut, Copy and Paste commands; an Append mode for storing anything—from one line of text to a full file—at the end of a file already on disk; and more.
The program comes in either a full-featured or limited version. *Aedit Version 2* is the larger model. It features a full set of menus and commands. *Aedit Version 1*, the smaller model, features a smaller command subset. According to its vendor, *Aedit Version 2* is now the preferred version.
$35 retail
DRM Programs; 1329 Arthur Ave.; Las Vegas, Nev. 89101; 702-457-9489

Amiga Lattice C Compiler
$149.95 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Amiga Lattice dBC III Library
$150 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Amiga Lattice Maclibrary
$100 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Amiga Lattice Make Utility
$125 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Amiga Lattice Screen Editor
$100 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Amiga Lattice Text Utilities
$75 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Amiga-Lint
Diagnostic facility for C
$98 retail
Gimpel Software; 3207 Hogarth Ln.; Collegeville, Pa. 19426; 215-584-4261

Amiga MS-DOS C Cross Compiler
$250 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Amiga Panel Forms Manager
$195 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Programming Continued

Amiga Programmer's Library
Software development; file transfers
$200 retail
MaxiSoft; 2817 Sloat Rd.; Pebble Beach, Calif. 93953; 408-625-4104 or 800-942-6294

■APL.68000 for the Commodore Amiga
Programming
APL.68000 provides a friendly environment in which to program in APL. It is available in both a standard APL character-set version and in a keyword version.
Features include a built-in function editor; built-in VT100 APL/ASCII terminal emulation; full Clipboard support for data exchange; pull-down menus; full printer support; runs in its own window; user-defined dialogue and alert boxes; arbitrary I/O via serial ports; a session manager, which allows editing of screen lines; and more.
$299 retail
Spencer Organization, Inc.; 366 Kinderkamack Rd.; PO Box 248; Westwood, N.J. 07675; 201-666-6011

Aztec C68k/Am
C software development system
$249 retail; *Aztec C68k/Am-d*
$499 retail; *Aztec C68k/Am-c*
Manx Software Systems; PO Box 55; Shrewsbury, N.J. 07701; 800-221-0440 or 201-542-2121

Commodore-Amiga
Programming languages
$199.95 retail; *Amiga LISP*
$149.95 retail; *Amiga C*
$99.95 retail; *Amiga Pascal*
$99.95 retail; *Amiga Macro Assembler*
Commodore Business Machines, Inc.; 1200 Wilson Dr.; West Chester, Pa. 19380; 215-431-9180

■cxref
C cross-reference utility
This utility gives programmers information concerning variable declaration and usage.
Command-line arguments allow developers to determine the level of detail contained in their cross-reference listings.
Configuration files provide a way to customize the cross-reference utility for any particular C compiler.
$49.95 retail
Meta-Soft, Inc.; PO Box 7293; Las Cruces, N.M. 88006; 505-523-0371

■HexDump
Hexdump allows a user to display and print the contents of any file.
The program's formatted display shows all characters, whether printable or not, and their respective hexadecimal values. The display may be directed to the screen or to a printer.
$19.95 retail
Northwest Machine Specialties; 3611 Joshua NE; Salem, Oreg. 97305

Key To C
Developer's package
$34.95 retail
Data Research Processing, Inc.; 5121 Audrey Dr.; Huntington Beach, Calif. 92649; 714-840-7186

Metacomco
Programming
$199.95; *Cambridge LISP*
$99.95; *ISO Pascal*
$99.95 retail; *Macro Assembler*
Available October, 1986; *Amiga Shell*
Tenchstar, Inc./Metacomco; 5353 #E Scotts Valley Dr.; Scotts Valley, Calif. 95066; 408-438-7201

■The Metacomco Toolkit
Programming aids
The Metacomco Toolkit consists of several programming tools: Pipes, Librarian, Disassembler, Pack & Unpack, Enlarge, Browse and AUX CLI.
Pipes are a way of connecting output from one program to the input of another program without using cumbersome temporary files.
An Amiga library consists of a series of object modules, each consisting of one or more program units. The Librarian allows inspection and selective updating of the library.
The Disassembler produces a source assembly file from any file output by a compiler, linker or assembler, retaining all of the information in the binary file.
Pack & Unpack allows text files to be condensed and later expanded.
Enlarge produces messages in enlarged format, allowing creation of program headers, titles, etc.
Browse features pausing after each page, searching for strings, advancing through files line by line, rewinding, etc.
AUX CLI allows a second terminal to be connected to the Amiga's serial port and used as an auxiliary CLI, expanding the Amiga into a true multiuser system.
$49.95 retail
Tenchstar, Inc./Metacomco; 5353 #E Scotts Valley Dr.; Scotts Valley, Calif. 95066; 408-438-7201

Metadigm Software
Programming tools
$95 retail; *Metascope: The Debugger*
$85 retail; *Metascribe: The Editor*
$69.95 retail; *Metatools I*
Metadigm, Inc.; 19762 MacArthur Blvd., Ste. 300; Irvine, Calif. 92715; 714-955-2555

The Micro Forge Programming
Programming utilities
$69.95 retail; *Programmer's Editor*
$89.95 retail; *Prolog Level 1*
The Micro Forge; 398 Grant St. SE; Atlanta, Ga. 30312; 404-688-9464

Micro-shell
Programming
$79.95 retail
Meta-Soft, Inc.; PO Box 7293; Las Cruces, N.M. 88006; 505-523-0371

Multi-Forth—Amiga Version
Software development
$179 retail
Creative Solutions, Inc.; 4701 Randolph Rd., Ste. 12; Rockville, Md. 20852; 301-984-0262 or 800-367-8465

Program Generator
$400 retail; without ABasiC
$410 retail; with ABasiC
Gander Software, Ltd.; 3223 Bross Rd., "The Ponds"; Hastings, Mich. 49058; 616-945-2821

Programmers Toolkit
Available fourth quarter, 1986; $124.95 retail
MicroDimensions, Inc.; 455 North University Ave., Ste. 206; Provo, Utah 84601; 801-377-0933

■Screen Mapper
Screen Mapper contains programs that allow a user to design and use multifield screens.
One program allows a user to design the screen as it would look when in use; another can be used as a subroutine to display information in variable fields and allow entry in those fields.
The subroutine will do all of the input/output functions from and to the screen. When the subroutine is in control, a user can skip from field to field and enter only the class of characters legal for that field (alpha or numeric, etc.).
$89.95 retail
Northwest Machine Specialties; 3611 Joshua NE; Salem, Oreg. 97305

Sorting & Searching
$49.95 retail
True BASIC, Inc.; 39 S. Main St.; Hanover, N.H. 03755; 603-643-3882

Sprite/Graphics Editors
$50 retail
Scott Lamb; 205C Heights Ln.; Ft. Worth, Texas 76112; 817-496-9220

■TDI Modula-2
Programming language
TDI Modula-2 is a programming language designed to make it easier to conceive, write and maintain software.
The Regular Version of the program features a desktop that presents *Modula-2* files as icons and automates the edit/compile/link cycle; a desk accessory to set directory search paths, heap size of a program and several other linker and compiler options; an enhanced editor with global search and replace, the ability to set and jump to markers, auto ident options, keyboard macros and more; an optimization pass in the linker that removes all uncalled

procedures and reduces code size; the ability to write desktop accessories with *Modula-2;* modules for full Atari BIOS (basic input/output system) and XBIOS interfaces; and more.

The Developer's Version includes a symbolic debugger that presents programs in symbolic form and uses GEM multiwindows, a high-level GEM application library, source-file cross-referencer, link and code-file disassembler, symbol file decoder, the source code for a RAM disk driver and printer spooler in *Modula-2* and more.
$89.95 retail; Regular Version
$149.95 retail; Developer's Version
TDI Software, Inc.; 10410 Markison Rd.; Dallas, Texas 75238; 214-340-4942

TxEd
Text editor
$59.95 retail
Microsmiths, Inc.; PO Box 561; Cambridge, Mass. 02140; 617-576-2878

True BASIC Language System
$149.90 retail
True BASIC, Inc.; 39 S. Main St.; Hanover, N.H. 03755; 603-643-3882

■True BASIC Runtime Package
Application development

The *Runtime Package* contains everything needed to create a stand-alone application.

The *Language System* is used for development, and the *Runtime Package* links a user's main program and external libraries with the *Runtime* module to produce a self-contained "clickable" program.

The *Runtime Package* reduces the memory required to run programs, speeds up loading and start-up time and gives a user the same execution speed as the *Language System*. No syntax changes are necessary.
$150 retail; non-commercial licensing
$500 retail; unlimited commercial licensing
True BASIC, Inc.; 39 S. Main St.; Hanover, N.H. 03755; 603-643-3882

ZLI
Line interpreter
$49.95 retail
Zoxso; PO Box 283; Lowell, Mass. 01853; 617-655-9548

Specific Application

3-D Graphics Library
Three-dimensional graphics

The *3-D Graphics Library* allows a user to create three-dimensional images.
$49.95 retail
True BASIC, Inc.; 39 S. Main St.; Hanover, N.H. 03755; 603-643-3882

Digital Building System
Graphically simulates digital electronic circuits on the Amiga's hi-res screen.

Standard schematic, logic and integrated circuit symbols are used to build the circuit on the screen using the mouse or keyboard to move parts around.
$299 retail
MicroMaster Software; 1289 Brodhead Rd.; Monaca, Pa. 15061; 412-775-3000

Dynamic-CAD
Computer-aided design

A two-dimensional drafting system with isometric capabilities that can be combined with many models of printers, plotters and digitizers.
$495 retail
MicroIllusions; PO Box 3475; Granada Hills, Calif. 91344; 818-360-3715

ES5C Calculator
Programmable scientific calculator

A software module that emulates a programmable scientific calculator. It resides in its own window and can run concurrently with other applications.
Emusoft Corp.; 1400 Chicago Ave., Ste. 303; Evanston, Ill. 60201; 312-869-6676

The Film Production Toolkit
Scheduling and budgeting motion pictures

Designed to aid directors, production managers and assistant directors.

The program is written in the C programming language, and is designed to

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Specific Application Continued

connect with a series of building blocks that will interface the program's scheduling and budgeting programs.

The system includes a Wizard feature that answers what-if questions about any planned or unplanned circumstances a producer may encounter.
$1,500 retail
Film Production Toolkits; 3114 Fifth St.; Santa Monica, Calif. 90405; 213-396-1199

Grade Manager
Gradebook and statistics

Allows for the entry of any type of grade entry with full category weighting and renaming, automatic conversion of grades to a true 100-point scale and after-the-fact grade maintenance.
$89.95 retail
Associated Computer Services; 1306 E. Sunshine; Springfield, Mo. 65804; 417-887-7373

Lionheart Business Software
Business-analysis books with software
$145 retail; *Business Statistics*
$145 retail; *Experimental Statistics*
$150 retail; *Multivariate Analysis*
$145 retail; *Forecasting and Time Series*
$150 retail; *Sales and Market Forecasting*
$110 retail; *Decision Analysis Techniques*
$95 retail; *Linear and Non-linear Programming*
$95 retail; *Pert and Critical Path Techniques*
$110 retail; *Optimization*
$75 retail; *Exploratory Data Analysis*
$145 retail; *Quality Control and Industrial Experiments*
$150 retail; *Statistics for Marketing*
$125 retail; *Monte Carlo Simulations*
Lionheart Press; PO Box 329; Alburg, Vt. 05440; 514-933-4918

LogicWorks
Integrated logic design

A tool that contains schematic diagram entry and simulation capabilities, user-definable macro devices, PROM and PLA support and interactive operation.
$199.95 retail
Capilano Computing Systems, Ltd.; PO Box 86971; N. Vancouver, B.C., Canada V7L 4P6; 604-669-6343

PCLO
Printed circuit-board layout

A multiple-layer, interactive auto-routing CAD tool for engineers and technicians who want complete control over their printed circuit-board artwork.
$1,024 retail
$75 retail; demo
SoftCircuits, Inc.; 401 SW 75th Terrace; North Lauderdale, Fla. 33068; 305-721-2707

Quiz Master
Music

Allows a teacher to create and give tests or quizzes directly on the computer. Two additional support packages, *Music Student I* and *II*, take the student through all major areas of music theory such as symbol recognition, scales, chords, etc.
$79.95 retail; *Quiz Master*
$49.95 retail; *Music Student I* and *II*
Associated Computer Services; 1306 E. Sunshine; Springfield, Mo. 65804; 417-887-7373

SciCalc
Scientific calculator

A full-featured scientific calculator. Features include algebraic hierarchy with automatic constant, 10 memories, powers, logs, trig, hyperbolics, statistics and polar/rectangular conversion.
$14.95 retail
DESKWARE; PO Box 47577; St. Petersburg, Fla. 33743

Station Manager

A full-featured television station management system. The first module to be completed is the weather graphics system.

Additional modules will be available to handle interoffice mail, teleprompting, downloading from news and weather services and production of news "copy." This will link together all newsroom services.
$1,995 retail; *Station Manager*
$995 retail; *Station Manager Weather Graphics*
Associated Computer Services; 1306 E. Sunshine; Springfield, Mo. 65804; 417-887-7373

Spreadsheets

Amiga Unicalc Spreadsheet

An electronic spreadsheet that provides a 256-column by 1,024-row processing area.
$79.95 retail
Lattice, Inc.; PO Box 3072; Glen Ellyn, Ill. 60138; 312-858-7950

Analyze!
Spreadsheet

A spreadsheet program that provides a 256-column by 8,156-row processing area.
$99.95 retail
Micro-Systems Software, Inc.; 4301-18 Oak Cir.; Boca Raton, Fla. 33431; 305-391-5077 or 800-327-8724

■BTS
Spreadsheet

BTS is a spreadsheet program that contains a maximum work-sheet size of 1,000 rows by 1,000 columns.

The program features math, statistic and financial functions; the logical operators And, True and False; standard formatting options; variable column widths with counter; a sparse matrix storage method; automatic or manually selected calculations; calculations by row or column; shows values or formulas in each cell; protects an entire spreadsheet file or selected portions; and more.
$69.95 U.S. retail; $99.95 Canada retail
Batteries Included; 30 Mural St.; Richmond Hill, Ontario, Canada L4B 1B5; 416-881-9816

MaxiPlan
Spreadsheet

A spreadsheet, graphics and database program that provides a 512-column by 16,384-row processing area and what-if analysis with numerical data.
$150 retail
MaxiSoft; 2817 Sloat Rd.; Pebble Beach, Calif. 93953; 408-625-4104 or 800-942-6294

Utilities

A Disk
Two-drive emulator

A two-drive emulator that allows a user to load and run programs without continually swapping the Workbench disk.
$29.95 retail
MegaSoft Limited; PO Box 1080; Battle Ground, Wash. 98604; 800-541-1541 or 206-687-5205

Clock For Amiga
Utility

A small cartridge that plugs onto the side of the Amiga. The time of day is set automatically each time the computer is turned on, and the clock will run for two years even when the Amiga is turned off.
$69.95 retail
Skyles Electric Works, Inc.; 231-E S. Whisman Rd.; Mountain View, Calif. 94041; 800-227-9998 or 415-965-1735

D.A.S. Disk Editor
Utility

A utility program that allows a user to change any byte(s) on a disk and display sectors in Hex, Octal, ASCII and Decimal format.
$20 retail
Developers of Advanced Software; 12455 Veterans Memorial Dr., Ste. 204; Houston, Texas 77014

Deluxe Print
Color printing program

Contains 15 formats for creating a variety of customized printouts, in either color or black and white.
$99.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, Calif. 94404; 415-571-7171

Disk Library

Provides a way to organize the contents of a disk for easy access.
$49.95 retail
Classic Image, Inc.; 510 Rhode Island Ave.; Cherry Hill, N.J. 08002; 609-667-2526

Disk Traffic Controller
File/drawer/disk database

Computer Food, Inc.; 2215 Sarah Ct., Ste. 80H; Norcross, Ga. 30093; 404-851-9103

Diskwik
Disk utility package

Gives a user total access and control of his disks. Features include restoring deleted files; eliminating any errors on a disk (except those due to defective disks); editing in hex or ASCII; copying blocks to the same or another disk; reformatting tracks; correcting checksums; and more.
$49.95 retail
Tigress; PO Box 665; Glendora, Calif. 91740; 818-334-0709

■ **DOS-2-DOS**
File transfer

DOS-2-DOS transfers all file types from MS-DOS/PC-DOS to AmigaDOS and vice versa.

Features include selection of a desired MS-DOS/PC-DOS subdirectory, displays a sorted directory listing of a current subdirectory with disk-usage statistics, supports full directory path names, provides duplicate file-name detection with query/replace options permits renaming of files where file-name restrictions occur, offers type and delete commands and remains resident to permit AmigaDOS disk swapping.
$55 retail
Central Coast Software; 268 Bowie Dr.; Los Osos, Calif. 93402; 805-528-4906

InfoMinder
Information resource

An information resource program that allows a user to access stored data.

The program consists of three parts: an access/display program, a text compiler and a programmer's interface.
$89.95 retail
Byte By Byte; Arboretum Plaza II; 9442 Capital of Texas Hwy. N., Ste. 150; Austin, Texas 78759; 512-343-4357

■ **LaserUp! Graphics**
Printer utility

Laserup! Graphics allows a user to print virtually any Amiga screen on an Apple Laserwriter printer.

The program allows a user to load and display any IFF-formatted picture, and print all or any portion of it at any scale and at any place on a page.

A user has complete control of halftone screen types, independent X and Y scaling and positioning on the page.

All files are saved as Postscript images.
$79.95 retail
S. Anthony Studios; 889 De Haro St.; San Francisco, Calif. 94107; 415-826-6193

LaserUtilities Vol. 1

A collection of *Postscript* procedures for formatting text on the Laserwriter.
$39.95 retail
S. Anthony Studios; 889 De Haro St.; San Francisco, Calif. 94107; 415-826-6193

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Utilities Continued

■ lpr
Line-printing spooler
Similar to the UNIX line-printing spooler utility, *lpr* outputs files to a user-defined port.
A configuration file allows the user to tell the utility about print parameters such as pagination and page headers.
Command-line arguments may also be used to override or add other information to the output.
Available January, 1987; $59.95 estimated retail
Meta-Soft, Inc.; PO Box 7293; Las Cruces, N.M. 88006; 505-523-0371

Maxipower Series
Utilities
Maximizer is a mouse/keyboard record and playback program.
Maxicache is a floppy disk performance enhancement that allows a floppy to work faster than a hard disk.
Maxikey is an abbreviation handler for word processing and programming.
Maxishare is a real-time data sharing program using two Amigas.
$29.95 each retail
MaxiSoft; 2817 Sloat Rd.; Pebble Beach, Calif. 93953; 408-625-4104 or 800-942-6294

The On-line AmigaBASIC Manual
On-line help utility
An on-line help utility program that includes pull-down menus for help on all the BASIC instructions.
Available January, 1987; $29.95 retail; not copy-protected
Omega Star Software; PO Box 1831; Clemson, S.C. 29633; 803-882-3602

Pick Your Preferences
Start-up file
An auto-running start-up file that presents a user with a menu that lists the available preference settings on a disk.
$29.95 retail
MicroMaster Software; 1289 Brodhead Rd.; Monaca, Pa. 15061; 412-775-3000

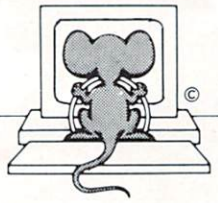
RAM Disk
Memory partitioning utility
Gives high-speed capabilities to users of the Workbench interface.
The Micro Forge; 398 Grant St. SE; Atlanta, Ga. 30312; 404-688-9464

T-Util
File recovery
Consists of four programs: *Recover-All, Recover-Deleted, Un-Kill* and *Diskedit*. These files are designed to run from the CLI environment, and instructions are provided in the manual for users who are not familiar with CLI.
$49.95 retail
Techni Soft; PO Box 7175; 5505 Walden Meadows Dr.; Murray, Utah 84123; 801-268-4961

■ VLI
Operating shell
VLI is an operating shell that is a cross between the Workbench and CLI.
All *CLI* commands are available with the use of the mouse. Files in the current directory are displayed and can be selected for any *CLI* operation.
Available fourth quarter, 1986
Computer Food, Inc.; 2215 Sarah Ct., Ste. 80H; Norcross, Ga. 30093; 404-851-9103

■ ZING!
Productivity software
Zing! allows a user to bypass typing cryptic commands through CLI. With the program, a user can copy, edit, delete, rename, sort, search and organize files and programs using the mouse.
Screens can be saved to standard IFF files or to a printer. A user can monitor and control running tasks and interface with other software applications.
Other features include a built-in screen dimmer during periods of inactivity.
Zing! does not sacrifice memory, disk space or prevent a user from running other applications simultaneously.
$79.95 retail
Meridian Software, Inc.; PO Box 890408; Houston, Texas 77289; 713-488-2144

Mouse Driven



Classic games software you can drive with your mouse! But, you don't need a license -just an AMIGA and:

Games Gallery I, II, and III.

Each of these packages contain exciting:
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Word Processing

E.T. Writer
Turns an Amiga computer and printer into a full-featured electronic typewriter or standard word processor.
Available first quarter, 1987; $49.95 retail
T.R. Software; 4346 W. Maypole; Chicago, Ill. 60624; 312-875-9760

Flow
Idea processor
A tool that assists in creating sales reports, school papers and novels; helps plan business strategies and schedule appointments; and organizes thoughts and ideas.
$99.95 retail
New Horizons Software, Inc.; PO Box 43167; Austin, Texas 78745; 512-280-0319

■Illusion Fonts #1
System fonts and utilities
Illusion Fonts #1 is a library of system utilities and accessories that contains a set of various fonts and font-handling utilities.
Features include 10 complete custom-made, high-quality fonts including serif, sans serif and decorative fonts; multiple font sizes from eight to 21 points; and a font-mover utility. The program is not copy-protected.
Illusion Fonts #1 is compatible with *Deluxe Paint, Deluxe Video, Notepad* and other programs conforming to Amiga font standards.
$24.95 retail
Illusion Software; 6546 Hollywood Blvd., Ste. 201; Hollywood, Calif. 90028; 213-464-8381

LaserFonts Vol. 1
A collection of three downloadable analytic (not bit-mapped) fonts for the Laserwriter printer.
$39.95 retail
S. Anthony Studios; 889 De Haro St.; San Francisco, Calif. 94107; 415-826-6193

Nancy
Spelling checker and utilities
A spelling checker with a compressed dictionary file containing more than 80,000 words. It can search up to four user-supplied word lists of unlimited length which can, for example, hold names and technical words.
$60 retail
The Computer Club; 4843A S. 28th St.; Arlington, Va. 22206; 703-998-7588

■ProWrite
Word processor
Prowrite is a word processor that allows a user to edit and print in different fonts, styles and colors.
Prowrite supports all printers that have Amiga printer drivers. Only graphics-capable printers can print in the font used on screen, however, and only color-capable printers can utilize the program's color-printing capabilities.
Multitasking is fully supported.
Available January, 1987; $124.95 retail
New Horizons Software, Inc.; PO Box 43167; Austin, Texas 78745; 512-280-0319

Scribble!
Word processor
A full-featured word processor that contains a 40,000-word spelling checker, basic word processing capabilities and advanced features.
$99.95 retail
Micro-Systems Software, Inc.; 4301-18 Oak Cir.; Boca Raton, Fla. 33431; 305-391-5077 or 800-327-8724

Talker
Talking word processor
An easy-to-use word processor that speaks as a user types. It includes all standard word processor features such as word wrap, margin setting, bold, italic and underlined text.
$69.96 retail
Finally Software; 4000 MacArthur Blvd., Ste. 3000; Newport Beach, Calif. 92663; 714-854-4434

Textcraft
Word processing
An entry-level word processor that stresses ease of use, on-screen documentation and templates for business letters, memos, etc.
$99.95 retail
Commodore Business Machines, Inc.; 1200 Wilson Dr.; West Chester, Pa. 19380; 215-431-9180

■Thunder! The Writer's Assistant
Word processing
Thunder! contains three timesaving accessories that work within application programs to increase productivity: Spelling Checker, Abbreviations Expander and Document Analyzer.
The Spelling Checker contains a 50,000-word dictionary, works in real-time mode to instantly identify errors as a user types and more.
The Abbreviations Expander saves a user time entering commonly used items.
The Document Analyzer displays a statistical report, including number of words, average sentence length and more.
$39.95 retail
Batteries Included; 30 Mural St.; Richmond Hill, Ontario, Canada L4B 1B5; 416-881-9816

Wordwright
Word processing
A word processor that can handle large text files and is oriented to the user who wants total control over the way text is printed.
$75 retail
RTL Programming Aids; 10844 Deerwood SE; Lowell, Mich. 49331; 616-897-5672

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Word processor
A full-featured word processor that includes extensive on-line help, form letter generation, mail merge, automatic document backup, time/date stamp, conditional page breaks, custom printer configuration, block graphics, viewing of multiple documents during edit and more.
$50 retail
Byte By Byte; Arboretum Plaza II; 9442 Capital of Texas Hwy. N., Ste. 150; Austin, Texas 78759; 512-343-4357

Zuma Fonts
Video; presentation graphics
Designed for use in video and presentation graphics applications. Each of the volumes contains font sizes ranging from 20 to 100 points for screen resolutions of 320 x 200, 640 x 200 and 640 x 400.
$34.95 per volume retail
Brown-Wagh Publishing; 16795 Lark Ave., Ste. 210; Los Gatos, Calif. 95030; 408-395-3838

Personal And Home Software

Education

Analogies I And II
$65 each retail
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

Comprehensive Grammar Review I And II
$54.95 each retail
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

■Conversation With A Computer
Logic games and Amiga Basic programming guide
$29.50 retail
Jenday Software; PO Box 4313; Garden Grove, Calif. 92642; 714-636-3378

Discovery
Interactive educational space adventure
Through the mastering of mathematical and spelling challenges a user explores and repairs the inner workings of the spaceship *Discovery.*
$39.95 retail
MicroIllusions; PO Box 3475; Granada Hills, Calif. 91344; 818-360-3715

■Equation Plotter
Educational aid
Equation Plotter is designed to be used as an educational aid by junior high, high

Education Continued

school and even advanced college students.

Classroom teachers can also benefit from the program's ability to let them draw graphs in the X and Y plane, compare mathematical functions, find solutions of equations graphically, locate maxima and minima of functions and more.

Equation Plotter accepts user-defined mathematical functions, or a user can select from a generalized library of equation types.

A user can optionally decide to view one or two curves, the latter enabling detailed comparisons of equation types. Additional options turn grid lines on or off and will repeat the current display, with a change of scale in either or both the X or Y axes.
$29.95 retail
Scientific Software; PO Box 202; Rexford, N.Y. 12148

■First Shapes
Basic geometric shapes

First Shapes teaches young children, ages three to eight, beginning concepts about shape and form through a talking friend, Ted E. Bear. It helps to increase a child's readiness for mathematics, reading, writing and problem solving.

Learning modules include Shapes, which teaches five basic shapes; The Toy Factory, which allows a child to build toys with shapes; The Toy Boxes, to store created toys; The Toy Fair, which teaches shape recognition; and Make-a-Match, which matches shapes and toys.
$49.95 retail
First Byte, Inc.; 2845 Temple Ave.; Long Beach, Calif. 90806; 213-595-7006

French And Spanish Grammar
$34.95 each retail; *French Grammar I, Spanish Grammar I, II, III*
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

Geography
$59.95 each retail; *U.S. Geography Adventure, World Geography Adventure I, II, III, IV*
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

The Halley Project: A Mission In Our Solar System
Mindscape, Inc., see review on page 71

History
$59.95 each retail; *American History Adventure, How A Bill Becomes A Law, World History Adventure*
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

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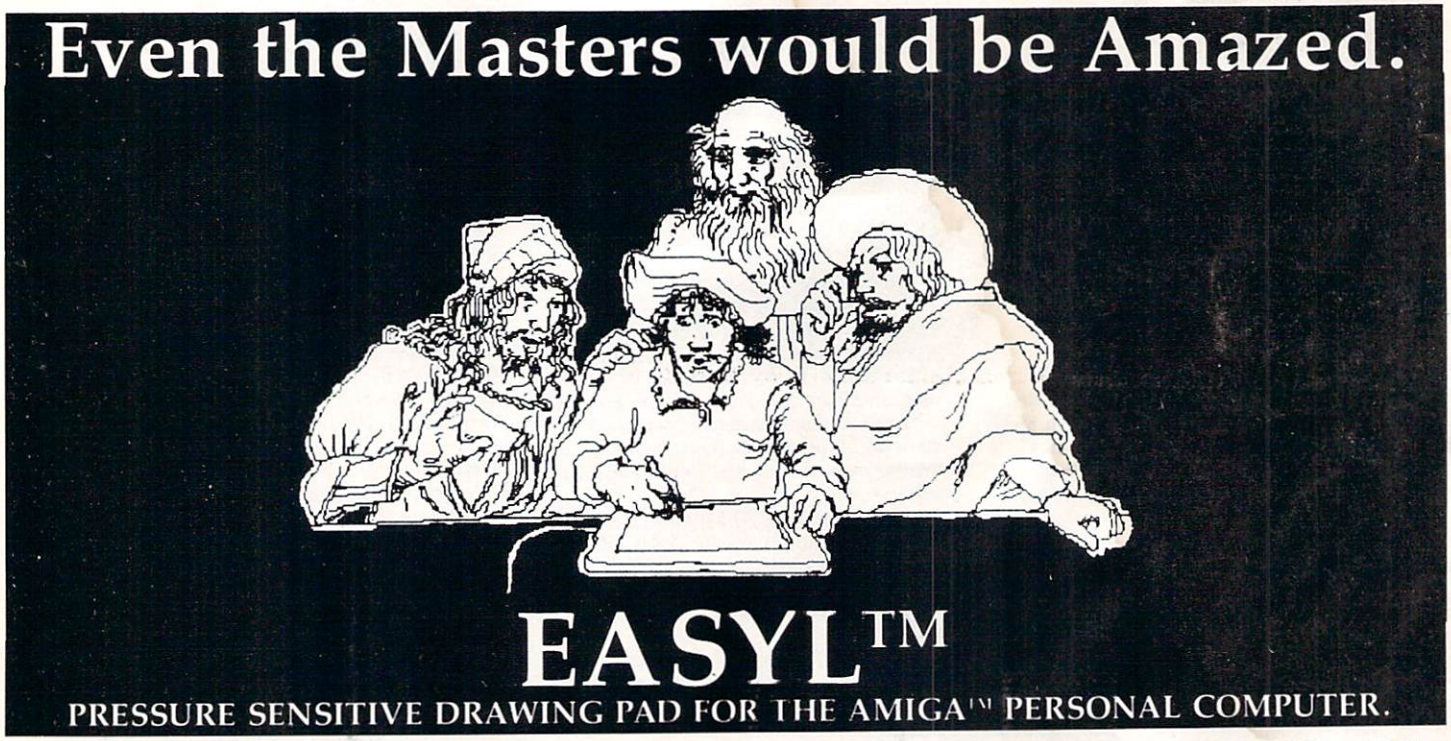
Lessons In Reading And Reasoning
$39.95 each retail; *Lessons I, II, III*
$59.95 retail; *Lesson IV*
$149.95 retail; Entire package
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

MasterType
Typing tutor
$39.95 retail
Scarborough Systems, Inc.; 55 S. Broadway; Tarrytown, N.Y. 10591; 914-332-4545

■MathTalk
Mathematics

Mathtalk is a mathematics learning tool



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with built-in speech that helps increase a child's (primary through elementary grades) ability to solve basic addition, subtraction, multiplication and division problems.

Learning modules include Math Book, which allows a child to enter his own problems and receive individualized tutorial help; Whiz, which keeps children in control, letting them move at their own pace; Scores, which keeps a record of each child's test and game scores; Tabletalk, which teaches math tables; and Mystery Number, which allows a child to solve simple math equations with missing numbers.
$59.95 retail
First Byte, Inc.; 2845 Temple Ave.; Long Beach, Calif. 90806; 213-595-7006

■MicroEd Educational Programs

Microed, Inc. offers a series of educational programs that range from reading to history. All programs use the Amiga voice.
$29.95 each retail; *Beginning Reading One* through *Four*
$29.95 each retail; *Spelling Level Two* through *Six*
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$79.95 retail; *Making Our Constitution*
MicroEd, Inc.; PO Box 444005; Eden Prairie, Minn. 55344; 612-944-8750

Paraclete
Music aid
$89.95 retail
Associated Computer Services; 1306 E. Sunshine; Springfield, Mo. 65804; 417-887-7373

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$44.95 retail; *Practical Composition I: Making Words Work*
$54.95 retail; *Practical Composition II: Logical, Clear Sentences*
$44.95 retail; *Practical Composition III: Selecting The Best Approach*
$44.95 retail; *Practical Composition IV: Making Sentences Work*
$44.95 retail; *Practical Composition V: Using Words Correctly*
$144.95 retail; *Practical Composition Package I;* includes *Practical Composition I, II* and *III*
$85 retail; *Practical Composition Package II;* includes *Practical Composition IV* and *V*
$44.95 retail; *Sentence Completion*
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

Reading
$65 retail; *College Aptitude Reading Comprehension Exercises*
$39.95 retail; *Reading Adventure I*
$59.95 each retail; *Reading Adventure II, III*
$54.95 each retail; *Reading and Thinking I, II, III*
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■Senor Tutor
Conversational Spanish tutor

Senor Tutor is a program that speaks and teaches Spanish.

Lessons include greetings and phrases, around the house, a trip to the market, finding your way around and more.

Lessons change so that a user never sees the same one twice, and variable quizzes help monitor progress.
$69.96 retail
Finally Software; 4000 MacArthur Blvd., Ste. 3000; Newport Beach, Calif. 92663; 714-854-4434

Speller Bee
Spelling instruction

An educational program with built-in speech capabilities that can help children in preschool through sixth grade improve their spelling skills.
$59.95 retail
First Byte, Inc.; 2845 Temple Ave.; Long Beach, Calif. 90806; 213-595-7006

Starting A New Business
Simulation game
$59.95 retail
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

■The Surgeon
Simulation game

The Surgeon is a simulation game of a real-life operation on a disease called aortic aneurysm.

The program includes all of the complications that can occur in a surgical operation, such as abnormal electrocardiographic wave patterns, a drop in blood pressure and complications from incorrect procedures.

The program can be used to understand the parts of the human body, medical terminologies and surgical operations.
$60 retail
ISM, Inc.; 2936 Paper Mill Rd.; Phoenix, Md. 21131; 301-666-2672

True BASIC Educational Software
$49.95 each retail; *Algebra, Pre-Calculus, Calculus, Chance, Discrete Math, Trigonometry*
True BASIC, Inc.; 39 S. Main St.; Hanover, N.H. 03755; 603-643-3882

Typing Tutor And Word Invaders
Typing instruction
$34.95 retail
Academy Software, Inc.; PO Box 6277; San Rafael, Calif. 94903; 415-499-0850

Unicorn Educational Software
$49.95 each retail; *Decimal Dungeon, Fraction Action, Math Wizard, Animal Kingdom, Read and Rhyme, Kinderama*
Unicorn Software Co.; 2950 E. Flamingo Rd.; Las Vegas, Nev. 89121; 702-737-8862

Vocabulary
$34.95 retail; *Antonyms*
$54.95 retail; *Practical Vocabulary*
$59.95 each retail; *Vocabulary Adventure I, II, III*
$39.95 retail; *How To Spell*
Intellectual Software, a division of Queue, Inc.; 562 Boston Ave.; Bridgeport, Conn. 06610; 800-232-2224

Games And Entertainment

Activision Games
$44.95 each retail; *Hacker, Hacker II: The Doomsday Papers, Mindshadow, Borrowed Time, Shanghai, Tass Times in Tonetown*
$49.95 retail; *The Activision Little Computer People Discovery Kit*
Activision, Inc.; PO Box 7286; Mountain View, Calif. 94039; 415-960-0410

■Aldaron
Reversi board game
$39.95 retail
Microsmiths, Inc.; PO Box 561; Cambridge, Mass. 02140; 617-576-2878

■Arazok's Tomb
Adventure, role-playing game
$49.95 retail
Aegis Development, Inc.; 2210 Wilshire Blvd., Ste. 277; Santa Monica, Calif. 90403; 213-392-9972

Bowling
Action game
$19.95 retail
Sterling Software; 77 Mead St.; Bridgeport, Conn. 06610; 203-366-7775

■Chess & Checkers
Strategy games
$39.95 retail
Point Software Development, Inc.; PO Box 1946; Huntsville, Ala. 35807; 205-350-5511

Chessmate 1.1
Computerized chess game
$29.95 retail
Dark Horse; 3117 Freeman Mill Rd.; Greensboro, N.C. 27406; 919-292-3979

■The Chessmaster 2000; Software Golden Oldies Volume 1
Strategy; entertainment
$44.95 retail; *The Chessmaster 2000*
$34.95 retail; *Software Golden Oldies Volume 1*
The Software Toolworks; 9713 Santa Monica Blvd., Ste. 204; Beverly Hills, Calif. 90210; 213-278-8450

Games And Entertainment Continued

■Computer Baseball
Sports game
$39.95 retail
Strategic Simulations, Inc.; 1046 N. Rengstorff Ave.; Mountain View, Calif. 94043; 415-964-1200

Diablo
Maze-like, arcade-style game
$29.95 retail
Classic Image, Inc.; 510 Rhode Island Ave.; Cherry Hill, N.J. 08002; 609-667-2526

Dr. Xes
Psychotherapeutic game
$49.96 retail
Finally Software; 4000 MacArthur Blvd., Ste. 3000; Newport Beach, Calif. 92663; 714-854-4434

Electronic Arts Games
$39.95 each retail; *Archon, Dr. J and Larry Bird Go One-On-One, Skyfox, Arcticfox, Return To Atlantis*
$49.95 retail; *Adventure Construction Set*
Electronic Arts; 1820 Gateway Dr.; San Mateo, Calif. 94404; 415-571-7171

■Epyx Games
Strategy
Temple of Apshai Trilogy, Rogue, Winter Games
Epyx, Inc.; 1043 Kiel Ct.; Sunnyvale, Calif. 94089; 408-745-0700

■The Faery Tale Adventure
Adventure game
$49.95 retail
MicroIllusions; PO Box 3475; Granada Hills, Calif. 91344; 818-360-3715

■Flight Simulator II
$49.95 retail
Sublogic Corp.; 713 Edgebrook Dr.; Champaign, Ill. 61820; 217-359-8482

■Games Gallery I, II And III
Classic computer games
$29.95 each retail
Meridian Software, Inc.; PO Box 890408; Houston, Texas 77289; 713-488-2144

Gamestar Games
Sport simulations
$54.95 retail; *Championship Golf: The Great Courses Of The World, Vol. I Pebble Beach*
$44.95 each retail; *GFL Championship Football, Championship Baseball, GBA Basketball: Two On Two*
Gamestar; PO Box 7286; Mountain View, Calif. 94039; 800-227-9759 or 415-940-6044

GRIDIRON!
GRIDIRON! NFL DataDisk
Football simulation
$69.95 retail; *GRIDIRON!*
Available fall, 1986; *NFL Datadisk*
Bethesda Softworks; 9208 Burning Tree Rd.; Bethesda, Md. 20817; 301-469-7061 or 800-992-4009

HC Software Australia Games
$38 each retail; *Cosmos, Napoleonics G.A.P., Land G.A.P.*
HC Software Australia; GPO Box 2204; Adelaide, South Australia 5001; 08-428377

Infocom Games
$49.95 each retail; *Starcross, Suspended, Spellbreaker, Deadline*
$39.95 each retail; *Planetfall, The Hitchhiker's Guide To The Galaxy, A Mind Forever Voyaging, Seastalker, Cutthroats, Wishbringer, Zork I, Enchanter, The Witness, Ballyhoo, Suspect, Trinity, Leather Goddesses Of Phobos*
$44.95 each retail; *Infidel, Zork II, Zork III, Sorcerer*
Infocom; 125 CambridgePark Dr.; Cambridge, Mass. 02140; 617-492-6000

Leader Board
Golf simulation
$39.95 retail
Access Software; 2561 South 1560 West; Woods Cross, Utah 84087; 801-298-9077

Mindscape Games
$49.95 each retail; *Deja Vu: A Nightmare Comes True, Brataccas, Balance Of Power*
$44.95 retail; *Racter*
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, Ill. 60062; 800-221-9884 or 800-942-7315 in Ill.

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Seven Cities Of Gold
Electronic Arts, see review on page 76

■Super Huey
Helicopter flight simulation
$39.95 retail
COSMI; 415 N. Figueroa St.; Wilmington, Calif. 90744; 213-835-9687

■Video Vegas
Slots, blackjack, draw poker, keno
$34.95 retail
Baudville; 1001 Medical Park Dr. SE; Grand Rapids, Mich. 49506; 616-957-3036 or 800-824-8873

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2+2
Home management system
A home management system that features an integrated database to help organize financial transactions and daily activities for the home and small businesses.
$99 retail
Olamic Systems Corp.; 141 W. Jackson Blvd.; Chicago, Ill. 60604; 312-786-1410

■Commodity Futures Real-Time Tic Charts
Commodity quotations
This package, in conjunction with the Market Monitor satellite decoder from Bonneville Telecommunications, allows a user to plot in real time the tic-by-tic quote information from the commodity exchanges.
Bonneville's full-service information includes commodity quotations, information and news.
A user can plot as many as 80 commodities at a time from a selection of more than 200 carried on the Market Monitor. Charts can be printed at any time.
$795 retail
Ensign Software; 7337 Northview; Boise, Idaho 83704; 208-378-8086

D.A.S. Home Finance
Assists the homeowner in making financial decisions and in planning for future investments.
$30 retail
Developers of Advanced Software; 12455 Veterans Memorial Dr., Ste. 204; Houston, Texas 77014

Financial Cookbook
Financial analysis
The program offers 32 financial calculation "recipes" that contain formulas that produce answers about taxes, investments, savings, mortgages, IRAs and other personal finance questions.
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, Calif. 94404; 415-571-7171

Financial Planner
A what-if planning tool for all common financial transactions with amortizations. All math, rows and columns are built in.
$100 retail; without ABasiC
$110 retail; with ABasiC
Gander Software, Ltd.; 3223 Bross Rd., "The Ponds"; Hastings, Mich. 49058; 616-945-2821

Home I, Real I
PAR financial software
PAR Home I enables a home user to get a handle on major areas of personal financial management. $69 retail
PAR Real I assists a realtor or investor with several property financial management areas. $149 retail
PAR Software, Inc.; PO Box 1089; Vancouver, Wash. 98666; 206-695-1368 or 800-433-8433

■Isgur Portfolio System
Investment decisions
The *Portfolio System* provides instant updates and powerful analytical features to help investors and full-time counselors make profitable investment decisions.
The program updates portfolios with the latest data from on-line services; includes the *I*S* telecommunications program; allows new ways to compile, structure and display portfolio data; contains a memo function that advises a user of important upcoming dates; includes a replay mode that records every move a user makes, providing a virtual turnkey system; and more.
Analytical features include Raise Money, Splits/Dividends, Cash and Margins, Suppose and more.
$199.95 U.S. retail; $269.95 Canada retail
Batteries Included; 30 Mural St.; Richmond Hill, Ontario, Canada L4B 1B5; 416-881-9816

■Money Mentor
Personal finance
Money Mentor is a financial accounting system that manages up to 30 separate accounts, keeps track of transactions, computes balances, projects and budgets expenses and alerts a user when a balance or budget has been exceeded.
The program produces comprehensive financial reports in both tabular and graphic form and summarizes account and item transactions, including actuals, budgeted values and variances. It also detects and reports problems resulting from discrepancies in budgeted payments.
Smart scrolls, a feature based on artificial-intelligence techniques, recognizes frequent transactions. This means *Money Mentor* can complete the logging of new entries based on recalled information. If the recalled information and new-entry data are the same, the user need not enter anything. The user can, however, overwrite any information he wants changed.
The program utilizes the Amiga's sound, voice, color graphics and mouse input capabilities.
$95.95 retail
Sedona Software; 11844 Rancho Bernardo Rd., Ste. 20; San Diego, Calif. 92127; 619-451-0151

PHASAR
Home/small-business management system
PHASAR (Professional/Home Accounting System And Register) is a financial management system that allows up to 40 bank/charge acounts and 130 income/expense categories.
$89.95 retail
Marksman Technology, Inc.; Rt. 5, Box 221A; Santa Fe, N.M. 87501; 505-455-2681 or 800-334-7792

■Trendrider
Talking investor's tool
Trendrider is a program that uses a time-proven method of tracking fluctuations in the mutual-funds market.
The program uses artificial-intelligence techniques and speech synthesis in explaining its investment trend information.
$99.96 retail
Finally Software; 4000 MacArthur Blvd., Ste. 3000; Newport Beach, Calif. 92663; 714-854-4434

Other Software

■Eye Play 1
Graphic routines
A collection of graphic routines that are randomly generated for a kaleidoscope-like visual effect.
Each program is 40K large, written in C and has 40 routines.
$19.95 retail
Sterling Software; 77 Mead St.; Bridgeport, Conn. 06610; 203-366-7775

■Jumpdisk
Magazine on disk
Jumpdisk is a monthly magazine on disk that contains at least 10 programs and 10 articles. Each issue includes product news and reviews, and reader submissions of programs and articles are invited.
$7 retail; one month
$18 retail; three months
$34 retail; six months
$60 retail; one year
Jumpdisk; 1493 Mt. View Ave.; Chico, Calif. 95926; 916-343-7658

Publications

■The Amigan Apprentice & Journeyman
Reference journal
$24 retail U.S.; one year
$34 retail overseas; one year
The Amigans; PO Box 411; Hatteras, N.C. 27943; 919-986-2443

Hardware And Peripherals

256K Memory Expansion
$119.95 retail
Skyles Electric Works, Inc.; 231-E S. Whisman Rd.; Mountain View, Calif. 94041; 800-227-9998 or 415-965-1735

256K Memory Expansion
$115 retail
Starpoint Software; 122 S. Broadway; Yreka, Calif. 96097; 916-842-6183

■68881 Floating Point Coprocessor Board
Math coprocessor board
This add-on math coprocessor board features a Motorola 68881 chip and 68010 microprocessor and, according to its vendor, increases the processing speed of math-oriented software by as much as 500 percent.
Software included with every board consists of a *Coprocessor Interface Emulator; Lattice C:,* offering direct-replacement, double-precision IEEE-format math libraries; *Aztec C68K;* preliminary floating-point libraries; and an *Assembler,* which enables encoding of 68881 mnemonics using Amiga or Aztec assemblers.
$149 retail; bare board
$269 retail; without 68881
$459 retail; with 68881
Netch Computer Products; PO Box 645; Monrovia, Calif. 91016; 818-334-1002

ADC-1 Data Acquisition And Control System
Measurement; monitoring hardware
An RS-232 peripheral product that combines analog and digital inputs with hardwired, controlled outputs and a transmitter
$449 retail; standard model
Remote Measurement Systems, Inc.; 2633 Eastlake Ave. E, Ste. 200; Seattle, Wash. 98102; 206-328-2255

Alegra
Memory-expansion unit
The Alegra allows a user to add 512K bytes of external memory to an Amiga. It features a ¾-inch footprint and a no-wait-state design that lets an Amiga operate at its intended speed. It can be upgraded to 2MB.
$379 retail
Access Associates; 491 Aldo Ave.; Santa Clara, Calif. 95054; 408-727-8520

Amiga Expansion Box
$995 retail; Expansion box, 8 expansion slots, 512K bytes of expansion fast memory (with sockets for 8MB), battery backed-up real-time clock, DMA SCSI hard disk interface, power supply
$1,995 retail; Above plus 8MB of memory
The Gemstone Group; 620 Indian Spring Ln.; Buffalo Grove, Ill 60089; 312-537-7405

Aprotek Printers
Daisy wheel and dot matrix printers
$279.95 retail; Aprotek Daisy 1120
$189.95 retail; Seikosha SP-1000A
Aprotek; 1071-A Avenida Acaso; Camarillo, Calif. 93010; 805-987-2454

■ASDG Multifunction Boards; Card Racks
The Convertible SMGC is a Zorro-compatible multifunction board that incorporates the following sections: four DMA-driven serial ports supporting synchronous and asynchronous operation, a math processor in the form of a M68881, a DMA-driven GPIB port (IEEE 488) and a clock with battery backup. The board may be purchased with any combination of sections populated or depopulated.
The Convertible .5M, 1M and 2M are Zorro-compatible RAM boards that are fully auto-configuring. Memory access takes place at full processor speed. $450 retail, .5MB; $650 retail, 1MB; $900 retail, 2MB
The Mini-Rack-B is a Zorro-compatible two-slot card rack that contains a 6-amp power supply. $300 retail
The Mini-Rack is a Zorro-compatible three-slot card rack that contains a 9-amp power supply. $500 retail
ASDG, Inc.; 280 River Rd., Ste. 54A; Piscataway, N.J. 08854; 201-540-9670

■AX2000
2MB RAM board
The AX2000 adds 2MB of RAM to the Amiga. The board uses standard memory bus architecture to ensure compatibility with all standard peripherals.
It fits onto the expansion port on an Amiga and duplicates the port, so a user can add other peripherals or piggyback two units for more than 4MB of RAM. The extra RAM can be used to create a RAM drive that allows a user to compile his programs quickly in memory.
$899 U.S. retail; $1,276.54 Canada retail
Comspec Communications, Inc.; 153 Bridgeland Ave., Unit 5; Toronto, Ontario, Canada M6A 2Y6; 416-787-0617

■Bright-1
MIDI interface card
The Bright-1 is a MIDI interface card that connects to an Amiga's serial port with a male-to-male cable (not supplied) and provides 5-pin connectors for MIDI In and MIDI Out.
It has two bicolor LEDs that verify proper connection and monitor activity on the musical instrument interface.
$39.95 retail
Micro Engineering of Northern Virginia; PO Box 11780; Alexandria, Va. 22312; 703-750-7860

The Business Partner
Hard disk drive
$2,042.95 retail; 10MB
$2,199.95 retail; 20MB
$2,504.95 retail; 40MB
The Micro Forge; 398 Grant St. SE; Atlanta, Ga. 30312; 404-688-9464

Buss Station
Features include a recessed slot; surge, spike, RFI and EMI interference; a multiport data switch; a RAM expansion port; arbitration circuit; and eight 86-pin card edge connectors.
DSI; 717 South Emporia; Wichita, Kan. 67211; 316-264-6118

■Comspec Printer Enhancements
The Microshare MCS 6550 is a 256K printer network for an Amiga. The buffer frees up the computer during outputs to the printer by storing text and graphics in its own memory rather than the Amiga's memory. $286 U.S. retail; $447.95 Canada retail
The Microshare MCS 1050 is an interface that allows an Amiga to communicate with an IEEE printer, such as the Commodore MPP 1361 or the Commodore 6400.
$128 U.S retail; $201.54 Canada retail
The Microshare MCS 8008 is an eight-channel, 256K printer network that allows a user to connect several computers to one printer. Its built-in 256K buffer allows the MCS 8008 to accept requests for printing from more than one computer at the same time. $714 U.S. retail; $1,119.95 Canada retail
Comspec Communications, Inc.; 153 Bridgeland Ave., Unit 5; Toronto, Ontario, Canada M6A 2Y6; 416-787-0617

Converter+
Universal interface and buffer
Provides buffer memory for a printer and interfaces parallel-to-serial or serial-to-parallel at the flip of a switch.
$229.95 retail; 64K
$279.95 retail; 256K
$329 retail; 512K
$399 retail; 1MB
$179.95 retail; 0K
Johnathon Freeman Designs; PO Box 880114; San Francisco, Calif. 94188; 415-822-8451

Desktop_Amp, Disk_Mate
Stereo amplifier, disk drive expansion box
Desktop_Amp is a small, stereophonic amplifier. $44.95 retail

Disk_Mate is an add-on peripheral box that allows a user to use two or three external drives with the Amiga. $89.95 retail (built on special order only)
Digital Systems Engineering; 6854 Blowing Wind Way; Citrus Heights, Calif. 95621; 916-725-3025

■Digi-View
Digitizer
Digi-View uses the Amiga's exclusive hold-and-modify mode and dithering techniques to display broadcast-quality color photographs.
Color resolution is made possible by a precision color-separation process that uses color filters (included) and an inexpensive black-and-white video camera to resolve 21 bits per pixel, or more than 2 million shades.
In monochrome mode, Digi-View features a resolution of up to 640 by 400 with 128 gray levels. Special image-processing software eliminates flickering and contour effects.
IFF disk format allows a user to transfer pictures to other Amiga graphic programs.
$199.95 retail; video cameras and accessories available
NewTek; 701 Jackson, Ste. B3; Topeka, Kan. 66603; 913-354-9332

Easyl
Drawing pad
A pressure-activated drawing pad that allows a user to draw directly into the Amiga with a pencil.
$499 U.S. retail
Anakin Research, Inc.; 100 Westmore Dr., Unit 11C; Rexdale, Ontario, Canada M9V 5C3; 416-744-4246

The Executive
Expansion box
A two-slot, 100-pin auto-configuration expansion box that sits under the Amiga monitor. It is 2.8-inches high and has a pass-through for other hardware.
The Micro Forge; 398 Grant St. SE; Atlanta, Ga. 30312; 404-688-9464

■ImaJet
Ink-jet color-image printer
The Imajet ink-jet color-image printer operates at a maximum of 120 dots per inch and can produce more than 4,000 dithered colors.
$1,495.98 retail
Illustrated Images, Inc.; PO Box 19149; Portland, Oreg. 97219; 503-246-2774

IVS Busbox
Bus expansion box
A fully buffered bus expansion box with integral power supplies for the Amiga. Included are four expansion slots in a fully buffered backplane and a real-time clock.
$349.95 retail
Interactive Video Systems; 15201 Santa Gertrudes Ave., Y-102; La Mirada, Calif. 90638; 714-739-5020

IVS Ramex-1M
RAM memory expansion board
Comes with 1MB of dynamic RAM installed and is user expandable up to 8MB.
$299.95 retail
Interactive Video Systems; 15201 Santa Gertrudes Ave., Y-102; La Mirada, Calif. 90638; 714-739-5020

MAS-Drive 20
20MB, half-height SCSI hard disk drive
$1,495 retail
MicroBotics, Inc.; PO Box 855115; Richardson, Texas 75085; 214-437-5330

■MediaPhile System
Computer-controlled audio/video center
This system, which includes a Sony EVS 700U Video 8 videocassette deck, *Mediaphile 1.0* software and an interface unit, gives Amiga users access to 24 hours of digital stereo sound, four hours of video or mixed audio and video on one videocassette tape.
Users may watch television programs or video tape on their computer monitors—using Commodore Business Machines, Inc.'s optional Genlock peripheral device—and play audio and music video from the same tape.
The system's video editing features include audio dubbing in stereo and a flying erase head for professional-looking insert edits. Record, freeze-frame, slow-motion, single-frame-stepping, double-speed and high-speed-search options are selectable from a control pad on screen.
$1,334 retail
Interactive MicroSystems; PO Box 272; Boxford, Mass. 01921; 617-887-9607

Megabytes/Amiga
Megabytes/Amiga has 1.05, 2.10, 4.19 or 8.39MB of memory on a single board, which is designed to plug directly into the right side of the Amiga or to fit into the Zorro expansion box.
$599 retail; 1.05MB
$899 retail; 2.10MB
$1,499 retail; 4.19MB
$2,799 retail; 8.39MB
Skyles Electric Works, Inc.; 231-E South Whisman Rd.; Mountain View, Calif. 94041; 800-227-9998 or 415-965-1735

The Micro Forge Hardware
Memory and hard disk expansion systems
$656.95 retail; Seven Slot Expansion Box
$84.95 retail; One Slot Expansion Board
$1,134.95 retail, 10MB; $1,229.95 retail, 20MB; $1,479.95 retail, 40MB; Basic Hard Disk System
$755.95 retail, 10MB; $849.95 retail, 20MB; $1,099.95 retail, 40MB; Second Hard Drive Kit
$1,507.70 retail, 10MB; $1,582.70 retail, 20MB; $1,850.45 retail, 40MB; Standard Single Drive System
The Micro Forge; 398 Grant St. SE; Atlanta, Ga. 30312; 404-688-9464

MIDI For Amiga
Standard MIDI IN, two MIDI OUTs and MIDI THRU interface
$59.95 retail
Skyles Electric Works, Inc.; 231-E South Whisman Rd.; Mountain View, Calif. 94041; 800-227-9998 or 415-965-1735

■MIDI GOLD
MIDI interface
MIDI Gold is a MIDI interface that connects directly to the serial port of an Amiga. It features dual MIDI-Out and single MIDI-In connections and a Sync-Out connection that provides a clock and start/stop control for drum machines and other devices.
MIDI Gold comes with a custom metal enclosure and an interface cable.
$79 retail
Golden Hawk Technology; 427-3 Amherst St., Ste. 389; Nashua, N.H. 03063; 603-882-7198

Model RM-2 Sync Generator And Genlock Subsystem
Designed for professional use of the Amiga in recording studios and broadcast applications.
$2,500 retail; RM-2
$300 retail; Keyer module (if required)
Burklund & Associates; 3903 Carolyn Ave.; Fairfax, Va. 22031; 703-273-5663

MTA Series 1000
Optical computer components
Series 1000 components will convert an Amiga to an interactive laserdisc terminal.
Available Winter, 1986; dependent on Genlock System
Media Technology Associates; 9208 Burning Tree Rd.; Bethesda, Md. 20817; 301-469-7060

Multiport Controller
Multiport asynchronous RS-232C/RS-422 port controller
The basic system consists of one DCE and one DTE port factory preset at 9600 baud, 32K bytes of RAM expandable to 192K bytes in 32K increments, resident FORTH or BASIC control language available on host Port 1, resident setup menu invoked by embedded control characters and non-volatile memory storage of port setups (EEPROM).
$877 retail
Component Systems, Inc.; 778-A Brannan St.; San Francisco, Calif. 94103; 415-861-1345

Okimate 20
Color printer
A ribbon-transfer color printer that allows users to print thousands of shades of color to create pictures and graphics.
$268 retail; printer and Plug 'N Print kit
Okidata; 532 Fellowship Rd.; Mount Laurel, N.J. 08054; 800-654-3282 or 609-235-2600

Hardware And Peripherals Continued

■Pacific Cypress
RAM expansion boards/RAM disks
The XpanderII board is a 2MB RAM expansion board/RAM disk for the Amiga 1000 or 2000 that allows a user to use memory intensive programs. The board may be loaded in increments of .5MB, 1MB or 2MB, using 256K DRAM chips. The expansion slot allows a user to add additional boards to reach 4MB, or an optional SCSI-multifunction board. $499 retail; 0 memory
The XpanderII 2MB unit is a self-contained 2MB RAM expansion board/RAM disk for the Amiga 1000. The board may be loaded in increments of .5MB, 1MB or 2MB, using 256K DRAM chips. $499 retail; 0 memory
The XpanderII 4MB unit is a self-contained 4MB RAM expansion board/RAM disk for the Amiga 1000. The board may be loaded in increments of .5MB, 1MB, 2MB, 2.5MB, 3MB or 4MB, using 256K DRAM chips. $799 retail; 0 memory
Pacific Cypress; 46127 Landing Pkwy.; Fremont, Calif. 94538; 415-656-1974

The Pal
Expansion chassis
An expansion chassis that features a hard disk that transfers data via true DMA into the Amiga; a hard disk controller capable of a 10 megabit data transfer rate; five DMA expansion slots; 1MB RAM with a battery-backed clock/calendar that resides on the motherboard; room for multiple storage and retrieval devices; 2 to 8MB RAM card options; optional pass-through BUSS connector for further expansion; and optional prototyping card. Retail price depends upon configuration
Byte By Byte; Arboretum Plaza II; 9442 Capital of Texas Hwy. N., Ste. 150; Austin, Texas 78759; 512-343-4357

■Parallel Printer Buffer
$199 retail; 64K
$259 retail; 256K
Johnathon Freeman Designs, Inc.; PO Box 880114; San Francisco, Calif. 94188; 415-822-8451

Penmouse
Input device
$295 retail
Kurta Corp.; 4610 S. 35th St.; Phoenix, Ariz. 85040

Plug-compatible, Standard 256K
A compatible, standard memory expansion in a heavy-duty metal case.
$149.95 retail
MicroBotics, Inc.; PO Box 855115; Richardson, Texas 75085; 214-437-5330

Pow-R-Card
Memory expansion
An expansion board that upgrades in increments of 2MB to give a user a full 8MB of RAM. It fits all expansion boxes for the Amiga, including the new 7-slot expansion box.
RS Data Systems; 7322 Southwest Freeway, Ste. 660; Houston, Texas 77074; 713-988-5441

Series One
Graphics tablet
A graphics tablet that comes in three sizes and includes a pen, cabling, power supply and software driver.
Kurta Corp.; 4610 S. 35th St.; Phoenix, Ariz. 85040; 602-276-5533

StarBoardII
2MB memory expansion
A memory device that has optional multi-function features such as a battery-backed real-time clock, Motorola math chip socket and parity checking.
$495 retail; 512K installed
MicroBotics, Inc.; PO Box 855115; Richardson, Texas 75085; 214-437-5330

Stereo Sound Digitizer
This unit is a hardware device designed to provide digital sound capture and recording for the purpose of adding high-quality speech and special effects to programs.
$344.95 retail
The Micro Forge; 398 Grant St. SE; Atlanta, Ga. 30312; 404-688-9464

■TIC
The Tic provides an Amiga with a tiny, battery-backed clock/calendar that plugs into the second joystick port.
The Tic's three-year battery will maintain time even if temporarily removed from the Amiga.
The Amiga's internal time can be changed by moving the displayed clock's hands with the mouse.
$59.95 retail
Byte By Byte; Arboretum Plaza II; 9442 Capital of Texas Hwy. N., Ste. 150; Austin, Texas 78759; 512-343-4357

Universal Printer/Plotter Buffer
Printer/plotter accessory
Interfaces an Amiga to a wide variety of printers and plotters by providing RS-232C and Centronic Parallel interfaces on both its input and output.
$269 retail; 64K model
$329 retail; 256K model
Johnathon Freeman Designs; PO Box 880114; San Francisco, Calif. 94188; 415-822-8451

Volks Omega 80
Modem
Designed for the Amiga 1000, the modem features auto dial/auto answer; user selectable pulse/tone dialing; built-in audio monitor speaker; dial tone and busy detection; an auxiliary telephone jack; and online software.
$199 retail
Anchor Automation; 6913 Valjean Ave.; Van Nuys, Calif. 91406; 818-997-7758

Accessories

Amiga Parallel Printer Cables
$17.95 retail; six-foot
$21.95 retail; 10-foot
Aprotek; 1071-A Avenida Acaso; Camarillo, Calif. 93010; 805-987-2454

Belkin Accessories
$18 retail; Amiga parallel printer cable
$89 retail; two-way parallel data switch
$129 retail; four-way data-transfer switch
Belkin Components; 4718 W. Rosecrans Ave.; Hawthorne, Calif. 90250; 800-223-5546 or 213-644-3184

IVS Magnus
Computer audio system
$99.95 retail
Interactive Video Systems; 15201 Santa Gertrudes Ave., Y-102; La Mirada, Calif. 90638; 714-739-5020

■MouseTime
Battery-backed, real-time clock
$39.95 retail
MicroBotics, Inc.; PO Box 855115; Richardson, Texas 75085; 214-437-5330

Universal Interface Converter
Interface conversion
Interfaces serial-to-parallel or parallel-to-serial at the flip of a switch.
$99 retail
Johnathon Freeman Designs; PO Box 880144; San Francisco, Calif. 94188; 415-822-8451

Books

The AmigaDOS Manual
$24.95 retail
Bantam Books, Inc.; 666 Fifth Ave., 21st Fl.; New York, N.Y. 10103; 212-765-6500

The Amiga: Image, Sound and Animation on the Commodore Amiga
$19.95 retail
Microsoft Press; 16011 NE 36th Way; Box 97017; Redmond, Wash. 98073

Mastering AmigaDOS
$16.95 retail
Arrays, Inc.; 6711 Valjean Ave.; Van Nuys, Calif. 91406; 818-994-1899

Progressive Peripherals & Software Books
$24.95 retail; *The Amiga Handbook*
$15.95 retail; *The Amiga System*
Progressive Peripherals & Software; 464 Kalamath St.; Denver, Colo. 80204; 303-825-4144

Sybex Books
$24.95 retail; *Programmer's Handbook*
$28.95 retail; *Programmer's Reference Guide*
Sybex, Inc.; 2344 Sixth St.; Berkeley, Calif. 94710; 415-848-8233

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