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How to dramatically improve the way you manage meetings, ideas, time and people with MORE.

If you’re like most people your time is valuable. You believe you should, and could, be more effective managing your daily tasks. Perhaps you’ve even tried conventional methods of increasing efficiency—making lists of priorities, delegating, keeping diaries, etc.—only to find little has changed because you’re still wasting valuable time.

That’s why we wrote this guide. We want to explain four ways to improve the way you work by using the power of MORE and a Macintosh.

If you’re too busy to read further, please skip ahead to the coupon and see how easy it is to receive our free time-saving booklets on Managing Meetings, Preparing Business Plans, Creating Tree Charts and Organizing a Status Center.

1 Start a revolution at your next meeting.

How often do you come away from a meeting satisfied with the results? Probably not as often as you would like. Here are some simple ways to get more accomplished at your next meeting:

- Have a specific objective in mind; as the meeting progresses, be sure you’re still dealing with the same problem.
- Only cover things that cannot be put across in other ways—bulletins, manuals, direct contact with supervisors, etc.
- Don’t try to cover more ground than time will permit. You can’t solve the world’s problems in a 30-minute staff meeting.
- Prepare for the meeting. Find out what the other people attending need to know before the meeting.

Why MORE is so revolutionary in meetings.

Try taking a Macintosh and MORE into your next meeting. Start with an outlined agenda, develop the issues into a group action plan. The participants—even those who don’t use a computer—can direct the content and organization of the plan. Graphic Tree Charts and Bullet Charts help you present the impact of your decisions. At any point, you can review what’s been accomplished. Everyone gets a uniform set of meeting notes, on disk or printed. This frees the participants from having to take detailed notes. Everyone knows what was decided, so next time you sit down there won’t be a debate. Spreadsheets started a revolution for people who work with numbers. MORE is starting a revolution for people who spend time in meetings.

2 Manage people and projects effectively.

Managing people and projects can be very difficult. Some managers apply common sense, others learn by doing, others simply avoid the problem altogether. In an effort to simplify a complicated subject, here are a few things that will help any manager:

- Managing requires a great deal of talking and listening. It sounds easy, but it is a constant job that requires a concentrated effort.
- Job descriptions and boundaries should be provided for every person’s job.
- Feedback on performance and encouragement improve motivation. Doing and saying nothing leads to stagnation.
- Find the best people you can and support them.

Now there’s a way to manage people and projects better using MORE. Managers, executives, corporate planners and personnel staff can use MORE to outline their management ideas and instantly transform them into a Tree Chart. You can use Tree Charts for organizational charts, project flowcharts, decision trees, block diagrams or time lines. MORE also is a powerful tool for writing job descriptions and preparing employee reviews. As a project management tool, MORE is fast and flexible.

3 Create a time-saving Status Center.

The first step in becoming more time-efficient is to identify how you spend your time. Naturally, once you’ve figured how and why time is spent, you begin to do things that give you higher payoffs and more satisfaction.

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Copyright—Copy Wrong

We all have secret weaknesses. One of mine (which will no longer qualify as a secret following this paragraph) is that I spend a lot of time in comic book stores. Going through the stacks on a hunt for an old ‘Uncle Scrooge,’ ‘Donald Duck’ or other Carl Barks masterpiece, picking up the latest Dave Sim’s ‘Cerebus’ creation — this is how I unwind. But even these idyllic reveries have been interrupted by overhearing various conversations that yank me back to reality.

Conversations about computers, about software are becoming more and more prevalent among the high-school age kids who wonder who the old-looking guy by the back issues might be. Without meaning to, I have picked up a complete education on how these young people view the computer industry and, specifically, the software industry.

I have seen the future — and we might be in need of a few superheroes.

TRUTH, JUSTICE, THE AMERICAN WAY

Every computer-oriented conversation I have ever heard in this circumstance involved the pirating of software. I have heard plans being laid for mass copying of disks on both school-owned and personally-owned computers; seen facsimiles of manuals swapped and have even heard one Mom chime in that she’d buy one of the kids a computer if the others would ‘share’ the software.

Now these are not the sort of kids who you might be tempted to cross the street to avoid. Not one had a safety pin through his or her nose and they were paying cash up front for their comics.

They are not thieves; they are not dishonest and they are not stupid. But they certainly are software pirates.

How did they — and so many others — fall into this type of activity?

Well, I finally overheard one conversation wherein I knew one of the people involved. I had once had a long discussion with him about Carl Barks and how Walt Disney Studios had managed to somehow keep ‘The Duck Man’s’ name from public view for so many decades. Anyway, they (my young acquaintance and three of his friends) were talking about copying the latest game when they got home. Figuring that the worst that could happen is that I would obtain a neighborhood reputation as an old fogy, I politely interrupted and asked if they realized how wrong it is to copy software.

Well, I expected a number of replies. I figured that I would hear that software was too expensive so it was just asking to be copied; perhaps that copying is really ‘testing’, or any number of rather hollow arguments I had heard so often before.

What I did hear astounded me.

JOUSTING A DARK KNIGHT

The guys looked at me as if I was crazy. What, they wondered, could I possibly be talking about? How could it already know, I told them that many authors depended on the software sales for income, and told a few personal stories I know about people who are trying to support families being such authors. I tried to get across that once the publisher meets costs and the distributor gets a cut there is just not much left for the person who wrote the program.

I don’t want to go into all of the reasons here because that isn’t the point of this piece. You understand the reasons. I understand the reasons. Most of the people we know and work with understand the reasons.

The kids don’t understand the reasons.

The software industry has failed to reach the people who do not read computer magazines or technical journals. The software industry has failed to reach the developing consumer market at the consumer level.

And, more, the schools have failed without even trying.

A MARVELOUS IDEA...

These kids shouldn’t have to wait for some old codger to wheeze up to them in a comic book store mumbling about the ethics of software piracy. They should already have learned this, the same places that they learned that other improper actions are ethically wrong. They should have learned it in their homes and schools — at least in their schools.

Many high schools have ethics in the curriculum. Today, someplace in the country, hundreds of high schoolers have had to answer test questions by describing what they would do in hypothetical situations involving everything from cheating to dating (and even cheating on a date).

Not one high schooler I know about has been asked today what he or she would do if confronted by the chance to copy a piece of software.

The reasons for not copying software deserve at least the same exposure in the school system as the reasons why we should all vote or why we should not steal candy. As computers become more and more a part of our society — led in this advance by easy to use and maintain computers such as our Macintosh — then society will have to recognize the role computers are now playing.

AMERICAN SPLENDOR

Of course, one of the main drawbacks to this idea is that, as it now stands, teachers (as a class) are cited by the industry as being in the forefront of
If you use your Macintosh for business, educational or game applications, you need MacUser—the Mac power resource! Every issue of MacUser delivers more than 250 product reviews, in-depth coverage of the MacPlus, Desktop Publishing, Programming, Graphics, Telecommunications and more, including Mac computing's most comprehensive collection of power user's hints, tips and tutorials.

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Mentor™ It’s what MacLightning has become.
software ripoff. It seems that most teachers would not think twice about cloning any number of disks for classroom use.

(OK, put down that word processor. I know that there are very honest teachers out there. You don’t have to write to introduce yourself as one and you don’t need to write me to defend your favorite pedagogue. I’m speaking of teachers as a class here — pun intended — and not saying every individual is guilty).

Well, I have to believe that if teachers were asked to present lesson plans on why software piracy is evil that they might do well to listen to themselves.

They are not thieves, dishonest or stupid. But they certainly are software pirates.

And if they don’t, well, the kids would probably enjoy scenarios such as:

“Uh Ms. Lurch? Remember when you said we shouldn’t copy software? How come my MacWrite disk doesn’t have a printed label?”

You can’t send the whole world to detention.

Imagine a whole generation of high schoolers graduating school with a complete understanding of why software piracy is not a good idea, but, instead, the road to ruination of what many have come to know and enjoy computing. Imagine them going on through college and into the working world.

I don’t know for sure that this would work. But I think it has a much better chance of working than four-color ads that preach to the already converted.

But it is going to take some effort. First, it will take effort on the part of the software industry to broach this idea officially. Then it will mean that many teachers will have to champion the cause in their own schools. But I think there’s a good chance of bringing software ethics into the schools.

If you’re a teacher who perhaps already has such a curriculum, we’d love to hear from you. Or, if you’re a teaching professional with ideas, please share them.

Let’s get this show on the road. The software authors of 1992 are counting on us.
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Professional Series Macintosh Carrying Cases

Computer luggage for those seeking the additional professional look & feel of ballistic nylon accented with glove tanned leather on the hand grip, shoulder pad, & identification pocket. The interior pocket for the keyboard is made with 3/8" laminated foam and in addition there are pockets for a modem, mouse & folders. Available in black or burgundy for the MacPlus and Imagewriter II (these bags also fit the standard Macintosh Imagewriter I) and carrying a lifetime guarantee on materials & craftsmanship the Madison Line cases are the best we’ve ever seen at any price!

Professional Mac(Plus) Carry Case .................. 99.50
Professional Imagewriter I (II) Carry Case ............. 89.50

WriteNow by T/Maker

The next step in word processing, WriteNow for Macintosh combines the power you would expect from a dedicated word processing system with the ease of operation that you are used to with MacWrite. WriteNow is very fast especially with large documents and you can do true WYSIWYG editing in one, two, three, or four columns directly on-screen. A fast online 50,000-word spelling checker is included that can create personalized dictionaries, has a handy guess feature, and can recommend the correct spelling of misspelled words. In addition you get graphics in the same line as text, unlimited open documents, and virtually any editing action can be undone!

WriteNow .................. 99.00

"This is the word processor we built and designed Macintosh for...”
Steve Jobs, NeXT Inc.

Programs Plus Picks of the Month with Special Pricing!

(Good through April 31st 1987)

Mirror Technologies Magnet 30X
T/Maker Clickart/Laser-Letters Bundle

The Mirror Magnet 30X (30Mb) hard drive offers 50% more storage for the price of competitive 20 meg drives. It’s cooled by an extra quiet fan, sits beside your Mac so the system won’t heat up, and can be daisy chained up to 7 units. The 30X is extremely quick, taking you from 0 to 60 pages in a heartbeat and comes preformatted with backup utilities, so just plug it in & run! When you order the Magnet 30X we are bundling with it Clickart Laser-Letters-Bombay, Plymouth, & Seville by T/Maker – a $239.85 retail value at no additional cost. LaserLetters are high-quality downloadable LaserWriter font packages for the Mac and the LaserWriter or any PostScript compatible printer. A bundle with value that can’t be beat!

Mirror Magnet 30X/T/Maker Laser-Letters Bundle ... 945.00

Lightspeed Pascal by Think Technologies

Finally you can harness the power of the Macintosh for your own needs. Using the popular Pascal Programming Language, Lightspeed Pascal lets you develop complete Pascal programs in less time than you ever thought possible (whether you are a novice or a professional) and has the kind of tools you want to quickly develop & test your programs. This is the fastest compiled development system available for the Macintosh with intelligent source level debugging that lets you examine & change your program as it runs. Let Lightspeed Pascal take care of all the time consuming programming details. Not only can it make you more effective it can actually change the way you work!

Lightspeed Pascal .................. 79.00
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- UPS Next Day Air & 2nd Day Air Available.
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  - **Software Only**: Continental US: $3.00 minimum charge for Shipping & Insurance. APO: $10.00 minimum charge on packages, add 3% ($25.00 Min Hawaii Add: $15.00 Aloha Mail Add: $25.00 Min. Additional $10.00 Add: $35.00 Min. Foreign Orders: Add $20.00 ($35.00 Min.)
  - Hardware items: We cannot ship the manufacturer's box. All goods are new and are guaranteed by the manufacturer. However, we do not guarantee machine compatibility. Due to software copyright laws, all sales are final. Defective software will be replaced immediately by the same item. Defective hardware will be replaced or repaired at our discretion. Call customer service at (203) 378-3662 to obtain a Return Authorization Number before returning goods for replacements. Products purchased in error are subject to a 20% restocking fee. All items subject to availability. Prices subject to change without notice.
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Share your drawing with other users. And if anyone wants to change it—no problem—the Adobe Illustrator can give you another perfect original. Fast.

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For producing the finest details, all kinds of line weights, even typeset captions with precise control, no other program can touch it.

Other draw and paint programs also let you add captions. But none of them can put those captions next to the sharpest, cleanest lines and curves on the map.
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DOESN'T HAVE TO BE
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Now it can be the work of the new Adobe Illustrator. The most powerful and practical art production tool ever to grace a computer screen.

The Adobe Illustrator is a software program that, for the very first time, combines the control and fine detail of drawing by hand with the speed and mathematical precision of the computer.

The result is, well, you can see the results for yourself. What you can't see, and can't possibly imagine, is how fast it is. How versatile. And how productive it can make you.

Instead of building an image with dots like other programs, the Adobe Illustrator uses precise curves and lines. So nothing looks like it was drawn by a computer. And you have infinite control.

The Adobe Illustrator won't limit your artistic license, either. On the contrary, you'll be able to do things with it you've never done before.

You don't have to build a drawing from scratch, you and your Macintosh™ can start with the scanned image of a photo, logotype, blueprint, a rough sketch, even something from your scrap file. Or use a document from MacPaint™ or compatible software. You can even combine two or more images into a single image and work with that.

Once it's in the computer, you can manipulate it in ways possible only with a computer. Even share your work with other users.

But no matter where you start, or what you do to it, you'll be pleased to know the Adobe Illustrator will drive any PostScript®-equipped printer from an Apple® LaserWriter® to a typesetter like the Linotype® Linotronic® 300. So you can get final art with resolution so high you'll get dizzy just looking at it.

So go see it. Call us at (800) 29-ADOBE, (800) 85-ADOBE in California, and (415) 852-0271 from Canada for the location of the Adobe dealer nearest you.

But do it soon. The first thing the Adobe Illustrator is going to draw is a crowd.
Our New MacEnhancer™ lets you consider all the possibilities

Open your Mac up to the world. Break your Mac's two port barrier and connect more things to your Mac. MacEnhancer instantly turns one port into four very smart ports, all controlled with the mouse. And, you can connect non-Apple printers like daisywheels, ink jets, lasers, even color plotters. Snap, zap, you're in business, without changing the way you use your Mac.

Get the most out of your Macintosh marriage. Use a modem, scanner, plotter, and laser, dot matrix, or daisywheel printers. Talk to IBM PCs or other computers, AppleTalk or more. MacEnhancer plugs into your Printer or Modem port and takes them on, four at a time.

Now Mac Plus compatible. A port for any brainstorm: a standard Mac ES-422 serial port; two ES-232C serial ports; and a serial-to-parallel Centronics port for most IBM PC-compatible printers.

Comes with a dowry of software

MacEnhancer knows what turns on more than 30 printers. The new Driver Disk has most of SoftStyle's proven 'Start family of printer drivers, including Laserstart™ and Plotstart™ for HP laser printers and desktop plotters. Install your drivers for good with a click on your application or hard disks. And improve your communications with the powerful, comprehensive communications software package included at no extra cost—hook up to data bases, tie into other computers, transfer files and emulate a mainframe terminal.

Family ties

Hardware developed by Microsoft, software by SoftStyle. The new MacEnhancer is attractive, compact and completely mouse controlled. All you need to add is a variety of Apple and non-Apple peripheral devices.

Changing devices is quick as a click because you have no switches to set or spaghetti to untangle. Now Apple's Chooser desk accessory controls it all. Want to expand later? Add another to get eight ports in all. With MacEnhancer, you and your Mac are open to all the possibilities.

Works with: Macintosh 512K, 512K Enhanced or Plus; Finder 5.3 or equivalent and Chooser; virtually all application software; AppleTalk plug compatible; Apple modem and Hayes Smartmodem or compatible; Apple ImageWriter and Laserwriter; selected daisywheel, ink jet and dot matrix printers from Brother, Diablo, Epson, Hewlett Packard, IBM, NEC, Star Micronics, Texas Instruments, and Toshiba; HP ColorPro, HP7475A, HP7550A plotters; HP Laserjet laser printer family; as well as numerous other devices. Upgrades available to registered owners of original MacEnhancer. Not copy protected. $245 complete.

Now Mac Plus compatible. A port for any brainstorm: a standard Mac ES-422 serial port; two ES-232C serial ports; and a serial-to-parallel Centronics port for most IBM PC-compatible printers.

Essential Software™

When you marry into SoftStyle's family of utilities, you inherit ease of use, power, speed, color and expandability. Discover how much better your applications can work. Our software is so basic and critical to performance, your computer will feel sluggish and incomplete without it. We call it Essential Software. You'll call it indispensable.

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UNDER THE AEGIS

I have just completed reading the “No Applause For Clapp” comments in the Letters section of the January 1987 MacUser. There are several references to our upcoming product, Doug Clapp’s Word Tools in those comments.

Although DCWT has been delayed for over 6 months, it is indeed a real product. With the surge in desktop publishing and the Macintosh user base, it is vital to make sure a product is “right the first time.” Word Tools didn’t pass our testing program with the marks we expected. We’ve put extra time, effort, money and coding into this product. As a result, the marketplace will get a remarkable program that will not require an update in order to make it “right.”

We have been testing each new test release with a series of beta sites, including MacUser magazine.

Further, it should be noted that Aegis Development has not advertised, issued press releases or otherwise promoted any product before a definitive release date has been determined. Word Tools is no different. Delayed? Yes. Vaporware? Hardly.

With regard to the writing abilities of Mr. Clapp, he is one of the most prominent writers in the Mac market. The comments by your readers indicate that Doug has stirred their emotions to the point of writing about it. Style is very subjective. Doug (and all good writers) are always looking for ways to improve, experiment and expand their writing horizons. Word Tools was his idea. I loved it. Thanks, Doug.

David Barrett
President, Aegis Development

We called Mr. Barrett for clarification of “definitive release date” and he told us that, while a definitive date had originally been agreed on, it subsequently became clear that Word Tools would not be ready by that date. It was too late to pull advertising that had already been placed, but a morality was placed on further advertising and promotion. Many of you have written in saying you have already paid for DCWT and are still waiting for the product. According to Mr. Barrett, at least two — shall we say unscrupulous — mail order companies pirated early beta versions of Word Tools, photographed screens and advertised the program. They’re the people who have your money, and you no doubt know who they are. Aegis Development has never taken an order for DCWT. We still can’t say exactly when the program will actually appear, but we can tell this: the manuals are at the printers and the packaging is complete. The last major bug seems to be an inability to read MacWrite files. — LK

DUNGEONS DOOMED?

On reading Dave Vallilas’ article on John Raymond’s Dungeons of Doom in your January issue, I got the impression that he highly recommended the game. Because I enjoy dungeon-type games, I decided to give it a try and I sent Mr. Raymond a request for a copy of the software. One week later I received an apologetic letter saying that the program was not available through him. He also mentioned that there would be a new, improved version under the name The Dungeon Revealed.

I would truly like to get a copy of either Dungeons of Doom or The Dungeon Revealed. Can you please tell me where and how this is possible?

Mark Rambler
Woodcliff Lake, NJ

Dungeons of Doom is available on CompuServe and quite a few local bulletin boards. If you don’t have access to BBS, you might try a local users group; a lot of them offer shareware and public domain software on disk. If your local group doesn’t have Dungeons, write to the Boston Computer Society’s MSX group at RCS Mac, 1 Center Plaza, Boston, MA 02108. Dave tells us that the word on The Dungeon Revealed is that it is too big to put on a service, so you may have to wait awhile for that one. — LK

THE REAL SECRET IS...

In “The Secrets of Pascal” in your December 1986 issue, Doug Clapp presents what is said to be a simple procedure for incrementing a variable. The routine as printed will do nothing but use up processor cycles; I’m sure it was an oversight. The following procedure accomplishes the increment:

Procedure AddOne(VAR x : INTEGER):
BEGIN
x := x + 1
END;

Mikell D. Nelson
Lewisville, TX

GENERAL KUDOS

I happen to like Doug Clapp’s “What’s Hot — What’s Not” article myself. In fact, the January 1987 issue was full of good articles. It seemed like everyone was humming; writing tight and brisk good stuff.

Dvorak was back in the saddle, after a series of puzzling fantasy articles. We may not always agree with Dvorak, but we always read him. I disagree with his idea that Sculley isn’t curting it as Apple’s rep. Sculley is definitely Mac-militant and always quotable. The “Test Drive a Mac” campaign wasn’t a failure, either. I know some hardline Mac veterans within this Mac-hostile corporation who had their first contact with the Mac because of that campaign. If not for that, there would be no Revolution here at all.

Neil Shapiro’s “Big Brother and Newspeak” editorial was dead-on, packing a devastating nuclear punch, as usual. Shapiro’s clearpeak editorials like this are alone worth the cover price, especially to those of us in PC-crushed corporations. Thanks for the inspiration.

Arden Henderson
Angleton, TX

I have been waiting a long time for Dvorak to hit a nerve and for all hell to break loose. So here are a few imperfect replies to all of those even more imperfect remarks in your December 1986 issue.

Sure, Dvorak is a bit off the wall and is an IBM user, but I don’t know very many Macintosh users who have even come close to the IBM, either. You all say that the IBM is dumb, is hard to use, the Mac is #1, etc. I have used the IBM many times and I think that both computers have problems. Not major problems, but still problems.

The mouse always gets dirty and is always lost in a fast typing session, while
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— MacWorld, December 1986

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LETTERS

OVERVUE MISSTEP

December's "Answers From the Mac Team" column contained a response stating that OverVUE is incompatible with Switcher, and though your responses are usually right, you missed the boat on that one. Granted, OverVUE has had its problems with Switcher in the past, but versions 2.0c and above are Switcher-compatible, and these versions have been available since October 1985.

There are, however, some traps to watch out for. OverVUE does not use the Clipboard for cutting and pasting; therefore, you cannot cut and paste between OverVUE and other applications. If you do convert the Clipboard into OverVUE from another application, OverVUE's menus will freeze up. The best way to configure OverVUE under Switcher is with the Always Convert Clipboard Box turned off. Then switching between OverVUE and, say, Word — the ideal mail merge combination — is a piece of cake. If you have more than two applications installed under Switcher, you can still convert the Clipboard between them by holding down the Option key as you switch.

RUSSELL WYLLIE

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PRIZE DISAPPOINTMENT

I was greatly disappointed on reading the Editors' Choice awards for 1986. For example, Best New Entertainment Program: Adventure — Unlimited. It is

- a Financial Analyst in New York

"MacCalc's one of the best programs I've ever bought... It has an excellent manual... [Bravo] did a terrific job." — a Financial Analyst in New York

"MacCalc is a well-designed and powerful product for those who require a full-featured spreadsheet... It is easy to learn, fast and efficient, and is a very good buy."

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THANKS FOR WRITING, HAVE A NICE DAY

Neil Shapiro's "Editor's Desktop" in your January 1987 issue was one of the most blatant examples of the amateurish slant that pervades much of the computer press these days. Granted this is a column/opinion that we're dealing with here, but boosterism has absolutely no place in any publication. Objectivity? Obviously, Mr. Shapiro has only as passing acquaintance with the word. Don't misunderstand me, I, too, have enjoyed many hours playing Smash Hit Raquetball. Shilling for the company, any company, however, should not be the job of any writer, editor or cub reporter.

They may make "swell" gifts (come on, reach for a thesaurus and quit using these charby, juvenile expressions that jump from the pages of MacUser), I surmise that Primera Software has already received its "swell" gift, a free advertisement. No, I won't "reward" a manufacturer for turning out an entertaining piece of software — isn't that what they're supposed to be doing? If it's cheap, great. If not, I have the choice of not buying it.

I feel no obligation or responsibility to support a company, regardless of its altruistic actions. If the game is great, say so, but please spare us such blatant shilling.

JACK BELL
PATERSON, NJ

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Let's
Out of the growing field of Mac Business Accounting software comes yet another contender—who's probably the winner. Up against glossy, high-priced packages, the $299 Accountant, Inc. is a simple, affordable, no-nonsense solution.

The features are very impressive, indeed. Accountant, Inc. contains General Ledger, Accounts Payable and Accounts Receivable ledgers, plus an integrated inventory management module that can only be found in very few "high end" business accounting programs.

The support materials are excellent. Over 500 pages of explanation, training and tutorial are provided. There is even a course in accounting. But you'll probably be up and running without any help.

This software works so hard and so well, we marvel at its simplicity. The Order Entry system generates invoices and purchase orders as it updates your inventory. It keeps the General Ledger up to date; it makes the journal entries automatically.

And then you'll discover its extensive analysis capabilities.

The price tag may confuse users on the issue of quality. Don't let it fool you. We believe this software to be every bit as good as its expensive competition—and in some ways, even better.

Accountant, Inc. offers everything that the high-priced programs offer, except the high price. You need software that's simply powerful and a good value.

At $299, Accountant, Inc. is the must-buy business accounting program for the Macintosh office. From Softsync. Please call or write for a free catalog.
Oh, I don't know. Any time we review any software — as a Quick Click or feature — we give our honest opinion of the product. Sometimes, like Neil, we get excited. It doesn't constitute "shilling" or anything morally or legally reprehensible. (In that context, you'll notice your more libelous comments have been edited out.) And while you may not intend to reward a manufacturer, that's pretty much what any customer does by buying a product — good or bad. — LK

MANUAL ERROR
I renewed my MacUser subscription early and, true to your promise, you sent me Mr. Kottwitz' excellent book, The Power User's Manual. Thank you. It is full of useful information and has already proved its worth by clearing up a mystery which I, my dealer and others had been unable to fathom — why disks initialized on one person's Mac 512E did not nor always read properly on a Mac 512K.

However, there is an error on page 54 to which I wish to draw your attention. In regard to Helix, under the section entitled "Keeping Relations Efficient," it states "Remember that Helix allocates disk space in a record for every field that's defined in your relation, regardless of whether you've entered data into the field or not." As one of the primary designers of Helix, I can state unequivocally that this is wrong. All versions of Helix and Double Helix use NO disk storage for fields containing no data in a particular record. This is how Helix detects an "Undefined" field in record: It detects the fact that the record (or row in Helix's terminology) has no space allocated for a particular field and that therefore the field is undefined.

When you create a field (by tearing off a field icon) a certain amount of disk space is used (20 to 50 bytes depending upon type and the version of Helix in use). However, no additional disk space is used except when a row actually contains data for the field. The only place where unused field icons cost "extra" disk space (beyond the space used by their creation) is with indices. Here, an unused field icon costs two bytes per row in the relation.

I hope this error can be corrected in the next edition — and given the usefulness of The Power User's Manual and the rate at which the new Macintosh software seems to be created. I have no doubt that a next edition will come.

JONATHAN SCHNEIDER
NORTHBROOK, IL

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<table>
<thead>
<tr>
<th></th>
<th>Time required to format a 5-page Word file.</th>
<th>Time required to format a 5-page MacWrite file.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BackPrint</td>
<td>16 seconds</td>
<td>44 seconds</td>
</tr>
<tr>
<td>MacMate!</td>
<td>2 minutes, 8 seconds</td>
<td>9 minutes, 28 seconds</td>
</tr>
<tr>
<td>MacSpool</td>
<td>5 minutes</td>
<td>7 minutes, 40 seconds</td>
</tr>
<tr>
<td>MaxPrint</td>
<td>2 minutes, 33 seconds</td>
<td>2 minutes, 58 seconds</td>
</tr>
</tbody>
</table>

- Queue up an unlimited number of pages from different documents to be printed in succession
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Heeeeere’s Eddy!

For those of you who keep hearing his name but have never laid eyes on him, meet Eddy. More formally, the statuette awarded to the winners of our Editors Choice Awards at a fancy annual dinner. This year, Jean-Louis Gassée, Apple’s Vice President of Product Development, kindly did the honors, presenting Eddies to 30-odd delighted recipients at the Four Seasons Clift in San Francisco. Trivia fans: Given that an Eddy weighs in at slightly more than a full-grown St. Bernard, how many pounds did Jean-Louis pump for MacUser that night? Send answers on a postcard.

SuperMac At AppleWorld

SuperMac announced a series of very high resolution video cards for the Macintosh SE and Macintosh II, high performance disk drives for the Mac II and RAM upgrades for the Plus, SE and II at the AppleWorld Conference in Los Angeles.

The most dramatic of the cards, with the codename “Wizard,” offers 640 X 480 resolution in 1, 2, 4 and 8 bits per pixel (the same as the Apple video card) and it can also display up to 1024 X 768 resolution in 1, 2, 4 or 8 bits per pixel, in color or monochrome. Fully configured with RAM, SuperMac expected this board to sell in the $700 to $1000 range. A slightly less expensive card called “Toto,” for users who don’t need color but do want the greater resolution, offers up to 1K X 768 resolution by 1 bit for black and white. SuperMac will also package two RGB monitors, a 15-inch and a 19-inch model.

The third video card, called “Scarecrow” at press time, is similar to Toto, but for the Macintosh SE. It gives the SE 1480 X 1024, black and white resolution, and will drive virtually any monochrome monitor. Toto and Scarecrow should sell for under $500.

SuperMac’s RAM upgrade products use 1-megabit chips in 1-megabyte SIMMs. These are available in 1-, 2- and 4-megabyte configurations.

Apples and Oranges

Since the introduction of the Mac, there have been a number of products that have attempted to bridge the incompatibilities between the Mac and the Apple II. Products such as Mac +II allow Apple II owners to use the ProDOS 3.5-inch diskettes on their Macintosh. Three new products have recently been introduced to help supplement this emerging market.

Of these products, the only one intended for the casual user is ProLink. Developed by AlSoft, Inc. (PO Box 927, Spring, TX 77383-0927, (713) 353-4090), ProLink is a Macintosh application that allows you to insert an Apple II 3.5-inch (ProDOS 8 and 16 only) disk into your Macintosh and have it read by the Mac for text file transfers. You are able to convert text type files (text, ASCII, DIF and SLYK) in both directions. The interface is similar to the Font/DA Mover, with your Macintosh directory on the left side and the ProDOS directory on the right. The only restriction with this application is that it only does text file transfers. If you are in MacWrite (or AppleWorks for that matter), you must save the file as text and then do the transfer. Multiplan files, however, can be saved as SLYK files and then transferred. ProLink retails for $39.95.

Passport is primarily a developers tool that provides Apple II and Mac developers with powerful file conversion facilities. Passport does the same as ProLink, but it goes much further. First, Passport allows Mac files to go to and from ProDOS and Pascal formatted diskettes. Conversion utilities that are included are transfer facilities to/from AppleSoft BASIC, AppleWorks, MacWrite, Excel and Apple II Pascal source, to name a few. Second, you must be a fairly proficient programmer to program conversion routines for Passport to handle other types of file conversions between the machines.

The Passport application was available at press time only in early test (alpha) form from the Apple Programmers and Developers Association (APDA) — 290 SW 43rd Street, Renton, WA 98055, (206) 251-6548 — and does have some bugs. You must first be a member of APDA ($20/year) in order to purchase Passport for $13.

The third new product to enter into the Mac/Apple II market is the MACtoGS cross develop-
Kick some tires with a mouse.

Let Buick Dimension take you on an interactive shopping trip for a new Buick right on the screen of your Macintosh. It's a brand-new software program that's as informative as it is fun. And it's free from Buick.

You'll click your way around the showroom with your mouse and do more than just kick tires. Buick Dimension can answer thousands of questions about any new Buick with data, diagrams and animated graphics.

Compare Buick with the competition, dimension by dimension. Equip your dream car any way you want it, and Buick Dimension's electronic spreadsheet will tell you the price, even work out what your monthly payments would be. And it will issue you a personal invitation to a test drive, redeemable with no obligation at your Buick dealer.

System requirements are an Apple Macintosh with 512K memory.

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When you boot up Buick Dimension on your Macintosh, you'll discover that Buick has a better way to shop for your new automobile. To get your free copy, just send the postage-paid response card opposite this ad. Please allow 3-4 weeks for delivery. Offer good in USA, while supply lasts.

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BUICK
A cross development system is where you use another computer (that is usually more powerful) to develop software for your target computer. In this case, you are able to use the speed and larger storage capacity of the Macintosh to cross develop assembly language (6502/65C02/65816) applications for the Apple II family, primarily the Apple IIgs.

MACtoGS, by Consulair Corp. (140 Campo Dr., Portola Valley, CA 94025, (415) 851-3272), is the first cross development system using the Mac as the developing machine. The assembler source code for MACtoGS is compatible with Apple II Programmer's Workshop (APW) which runs on the Apple IIgs. MACtoGS lists for $195 and includes Passport. — DS

**MORE Color**

Most people, when they think of color on computers, probably think of games or art. Who would have guessed that one of the first places we'd see support of the new Mac color would be in a desktop presentation program (or idea processor, if you will)! MORE's 1.1 upgrade also comes in a 1.1C version that is compatible with both the Mac II and the SE. The price is $295, same as for the black-and-white version. Living Videotext is planning to provide the program to registered users who purchase a Mac II. For more information write or call Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043; (415) 964-6300. — LK

**Prints Charming**

All that media hype about desktop publishing last year got a lot of desktops into the publishing business. One of the more attractive new offerings is Verbum, a quarterly personal computer art magazine edited and published by Michael Gosney. In the early issues at least most of the art is Macintosh-generated, and includes high-res 3-D, digital photography and bitmapped abstracts. For information about subscriptions, write to Verbum, PO Box 15439, San Diego, CA 92115. Subscriptions are $28 per year.

Another Mac-produced effort is American Window Cleaners Newsletter. AWCN is the brainchild of Rod Woodward and Richard Fabry. The latest issue we saw has an editorial tracing the etymology of such words as "clean" and "water." American Window Cleaners Newsletter, PO Box 5653, Berkeley, CA 94705. We were assured this is the only newsletter of its kind, and we believe it. — LK

**RUMOR MANAGER**

Hardware totally dominates the latest rumors. Apple has lots of new goodies almost ready for release. PostScript has been added to the low-cost ($1795), low-speed Personal LaserWriter (the one with the Kycera engine) and it will be out very soon, if it's not already available. That was sort of expected. What's not is the third Mac of 1987. This is a Mac II with everything built-in and then some. Special deals have been cut with many third party vendors and many applications will be built into the 2 megalobytes of ROM. This professional workstation machine will list at $8999 with software and a 17-inch square corner color monitor. Latest codename we heard was Honda. . . .The recent wave of takeovers (of which we were part of) will continue unabated as some of the bigger players go after some equally big players (no more just big companies snatching up little companies). There is sure to be one real shocker soon and possibly two... . . .The add-on board market is doing just what everyone expected and then some. RAM cards abound including many using the new (and pricey) 1-megabit chips. (It might be wise to hold off on added memory until later in the year when prices will fall.) The 16-megabyte barrier has fallen and 64-meg cards can't be far off. The few attempts at adding hard disks to actual cards (the current rage in IBM PCs) have not been impressive. And they've been small, generally 10 megabytes. Stick to the big external units. Speaking of which, that gigabyte plus unit from the Midwest, codename SuperPerson, is really impressive. . . .ROM cards (software in ROM) will appear very soon. The performance benefits are impressive, but the concept only works for stable, thoroughly debugged software. So far there are two cards that we'll loathe to return when their loan periods expire... . . .There are at least two winners among the rash of third-party keyboards due. One is clearly better than both Apple units. . . .The Apple System software will finally stabilize by mid-July (their prediction, not ours). Keep tuned. . . .The software arena is dominated by one major question: Will my program run on a Mac II? The answer has been yes in a surprisingly high number of cases, although fixed window sizes on bigger screens are still causing major problems for some people. . . .Page layout programs continue to pop up from surprising sources, and most of them are surprisingly good. That's more than we can say about the new word processing programs (with one very notable exception).
Ring Around The Font

Lots of chemical scientists and chemistry students have started flocking towards the Mac in hopes of making their work easier. Among the more time-consuming tasks that they often do is producing organic chemical structures. For most, MacPaint and MacDraw were a blessing. The ability to draw the complex structures and easily manipulate them made the charting of structures go much more quickly.

A new product, Organic Fonts, by Modern Graphics, makes the job even easier still. Organic Fonts is actually several products in one. The first font, OrganicFont, includes both simple ring and aliphatic portions of organic compounds. OrganicFont is designed to be used with word processing programs. It's a unique font in that a number of key combinations will type behind the cursor, altering the character that was previously typed. This allows you to overlay a ring that had just been typed (e.g., adding a bond to the top or bottom of a symbol). Even though OrganicFont takes a bit of learning, you'll later be able to place the resulting organic structures directly into your text.

The other two fonts included with Organic Fonts are primarily for use with painting and drawing applications. The fonts, RingFont and AliphicFont, are exactly as their names imply: each is loaded with basic structures and symbols used in organic compounds. OrganicFont can be used to create formulas in addition to structures, as Greek characters and direct, easy-to-input super- and subscripted numbers are provided. The RingFont provides you with over 30 basic ring structures that are just a single keystroke away.

The final part of Organic Fonts, DrawRings and Bonds, is a set of object-oriented rings (at various rotations) that can be accessed by any object-oriented drawing program. These rings are provided in a MacDraw document as well as in a Scrapbook file. These files are provided for users who wish to get optimal LaserWriter output from drawn compounds.

If your livelihood involves building organic structures, Organic Fonts is a piece of software that you must have. Organic Fonts can be purchased for $79.95 (10% educational discount) from Modern Graphics, P.O. Box 21366, Indianapolis, IN 46221, (317) 253-4016. —DS

UPDATES

Programs, like people, change over time. To get the most out of your programs, you should be using the most recent versions:

- Acta 1.03 NCP
- Ariege C 1.09 NCP
- Back to Basics 1.03 CP
- BatteryPower 1.03 CP
- BatteryPak 1.23 CP
- Business Filevision 2.5 CP
- CalendarMaker 2.1 CP
- Calendar 3.0 CP
- Chroma 3.0 CP
- ColorChart 3.1 CP
- ColorPaint 2.1 CP
- ColorPrint 2.03 CP
- ComicWorks 1.0 CP
- Competitive 3.1 CP
- Copy II Mac 6.3 CP
- Copy II HD 6.3 CP
- Cricket Graph 1.1 CP
- DesignScope 1.14 CP
- Desk Accessory Mover 1.4 CP
- Disk Express 1.10 CP
- Disk First Aid 1.01 CP
- Diskinfo 1.4 CP
- Disk Rangler 2.6 CP
- Dollars & Sense 1.4 CP
- Dimensions of Doom 4.0 CP
- Easy3D 1.01 CP
- Edit 2.0 CP
- Experleap 1.5 CP
- Excel 1.1 CP
- ExcelPro 1.1 CP
- Explorer 1.0 CP
- FileMaker 1.0 CP
- FileMaker Plus 2.0 CP
- FlashVision 1.1 CP
- Finder (MFS-128K) 4.1 CP
- Finder (HFS) 5.4 CP
- Flashtec 1.1 CP
- Right Simulator 1.0 CP
- FONTastic 2.7 CP
- FONTS 2.7 CP
- FontDA Mover 3.2 CP
- Fontographer 2.1 CP
- FrontDesk 3.0 CP
- FullPaint 1.0 CP
- Gato 1.43 CP
- Hard Disk Desk 11.1 CP
- Hard Disk Utility 2.0 CP
- Helix 2.011 CP
- Helix - Double Helix 1.23 CP
- HFS Backup 2.0 CP
- HFS Location Plus 1.4 CP
- ImageWriter 3.2 CP
- ImageWriter, AppleTalk 2.3 CP
- ImageWriter, AppleTalk (was inTouch) 2.1 CP
- Jazz 2.11 CP
- Just Text 1.1 CP
- LaserWriter 3.1 CP
- LaserWriterX 3.1 CP
- Lightspeed C 2.01 CP
- Lightspeed Pascal 1.0 CP
- Lode Runner 1.0 CP
- MacASM 2.0 CP
- MacBoard 4.01 CP
- Mac C 5.0 CP
- MacDesk 2.0 CP
- MacDraw 2.1 CP
- MacDraw 2.1 CP
- MacDrawPlus 2.1 CP
- MacEdit 2.3 CP
- MacFileManager 2.0 CP
- MacFinder 2.0 CP
- MacLabel 1.1 CP
- MacMoney 2.0 CP
- MacNet 1.1 CP
- MacPaint 2.1 CP
- MacPhone 1.0 CP
- MacPro 1.0 CP
- MacProject 1.1 CP
- MacProof 2.0 CP
- MacServe 2.0 CP
- MacSpool 2.1 CP
- MacTerminal 2.0 CP
- MacTools 4.3 CP
- MacWrite 4.5 CP
- MacZone 4.5 CP
- Manager 1.0 CP
- MicroPhone 1.0 CP
- MicroPrimer Plus 5 CP
- MindWrite 1.0 CP
- miniWriter 1.3 CP
- MockPackage 1.4 CP
- MORE 1.0 CP
- MS BASIC 3.0 CP
- MS Chart 2.1 CP
- MS Excel 1.03 CP
- MS File 1.02 CP
- MS ForTrans 2.2 CP
- MS Word 3.0 CP
- MS Works 1.0 CP
- Multicam 1.1 CP
- MusicWorks 1.1 CP
- myFirstLabeler 2.1 CP
- Omnitron Plus 3.2 CP
- OmeVUE 2.0d CP
- PageMaker 1.2 CP
- PageWriter 1.2 CP
- PenDraw 1.1 CP
- PDE 1.1 CP
- QED 1.54 CP
- Quick & Dirty Util. 1.6 CP
- Quick & Dirty Util., Vol. 1 1.6 CP
- Rags to Riches 3.0 CP
- Raisin 1.0 CP
- ReadRdy 2.0 CP
- Red Ryder 1.0 CP
- Reflex 1.0 CP
- ResEdit 1.1 CP
- Sargon III 1.0 CP
- Sidekick II 1.0 CP
- Silicon Press 1.1 CP
- Smile 1.0 CP
- Smartcase 2.28 CP
- SoundCap 4.3 CP
- SpellNow 1.0 CP
- Spellwell 1.3 CP
- StarWorks 1.0 CP
- Studio Session II 1.0 CP
- SuperPaint 1.0 CP
- Switcher 1.0 CP
- System (MFS-128K) 2.0 CP
- System (HFS) 3.3 CP
- Tempo 1.1 CP
- ThinkTank 512 1.3 CP
- ThunderScan 3.2 CP
- TMON 2.0 CP
- TopDesk 2.1 CP
- TurboCharger 2.0 REV CP
- VersaTerm 3.0 CP
- VersaTerm Pro 2.0 CP
- VideoWorks 1.1 CP
- Word Handler 1.0 CP
- WriteNow 1.0 CP
- ZBasic 3.02 CP

Quick & Dirty Util., Vol. 2 1.0 CP
Rags to Riches 3.0 CP
Raisin 1.0 CP
ReadyStoP 3.0 CP
Record Holder 2.1 CP
Redefine 1.2 CP
Red Ryder 1.0 CP
Reflex 1.0 CP
ResEdit 1.1 CP
Sargon III 1.0 CP
Sidekick II 1.0 CP
Silicon Press 1.1 CP
Sparta 1.0 CP
SuperPaint 4.3 CP
SpellNow 1.0 CP
Spellwell 1.3 CP
StarWorks 1.0 CP
Studio Session II 1.0 CP
SuperPaint 1.02 CP
Switcher 1.1 CP
System (MFS-128K) 2.0 CP
System (HFS) 3.3 CP
Tempo 1.1 CP
ThinkTank 512 1.3 CP
ThunderScan 3.2 CP
TMON 2.0 CP
TopDesk 2.1 CP
TurboCharger 2.0 REV CP
VersaTerm 3.0 CP
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VideoWorks 1.1 CP
Word Handler 1.0 CP
WriteNow 1.0 CP
ZBasic 3.02 CP
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It's hard disk performance for the Mac Plus that's as fast as it comes! CIRRUS 40FD delivers 28ms seek and 40MB of storage in a small, classy package that's feature rich. Two SCSI interfaces: Auto park. Locking heads. Formatted ready to run. The CIRRUS 40FD supports swap protection, multiple volumes on a single disk and can treat multiple hard disks as a single volume. That means you can daisy chain up to 7 CIRRUS hard disks and treat them as one. The CIRRUS 40FD is cool, quiet, reliable. Available:

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- RUS 60D 60MB Hard Disk

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Page Processing: A New Breed

Word Processing has served you well for over two decades, and has now been replaced by a new, superior application—Page Processing. It's called Page Processing because it contains all the necessary tools for creating exciting pages and professional documents. Gone are the limitations of words without pictures and text without numbers.

Ragtime, the premier Page Processor for the Macintosh computer, is the first to combine the functions of word processing, spreadsheets, page layout (also known as desktop publishing), business forms generation and graphics management all in one complete package. Effective businessmen need these combined functions to create truly professional documents such as proposals, manuals, financial presentations, newsletters, and advertisements.

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As an example, consider a typical business proposal, like that pictured above right. Only with the power of Ragtime Page Processing can you create the entire page layout (including columns, hairlines, headers, and the like) and simultaneously word process all your required text. Next, you can build in a persuasive spreadsheet with all the facts and figures (a requirement in any business proposal), all without leaving the application. Then bring in the graph that illustrates your data (a picture is worth a thousand words processed). Voilà, you and Ragtime have produced your most professional proposal ever. All this at a fraction of your previous efforts and costs. This is the Page Processing advantage.

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Orange Micro has spent over six years providing innovation to Apple users all over the world. To date, we have sold over 500,000 Apple enhancement products, and gained the support and respect of the industry.

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NEW ON THE MENU

Sounding Off

One of the easier choices in our 1986 Editors' Choice Awards was for the best music application, Studio Session. In our review (Dec '86) we had found the documentation to be the one of the most disappointing parts of this innovative program. Since that time a final manual has been completed and sent out to all registered users. Now that an excellent manual exists, we have added a half a mouse to the program’s rating, bringing it to four and one half mice.

The developers of Studio Session, Bogas Productions, are offering two add-ons, on their own. The first is a set of two diskettes (with more forthcoming) of Studio Session songs. One diskette is all country music, while the other features early heavy metal.

The second product is not really a product at all, but an audio sampler. It’s a free audio cassette that features Studio Session sounds and songs. The hope is that after hearing Studio Session play you will run to your local dealer to get it. When sending for your free cassette be sure to send a self-addressed, stamped (No. 10) envelope.

To obtain the free cassette or the $19.95 (each) song diskettes, contact Bogas Productions, 1520 Pacific Ave., San Francisco, CA 94109, (415) ED-BOGAS. To purchase the Studio Session program ($89.95), contact Impulse at 6860 Shingle Creek Pkwy., Minneapolis, MN 55430, (800) 328-0184. — DS

DIALOG BOX OF THE MONTH

I must have amnesia! The date can’t possibly be correct. We’d both be really happy if you’d fix it with the Control Panel.

OK

A number of users of MacServe networks have reported this alarming dialog box. It will appear if the clock in a Mac on the MacServe network becomes set to an obviously incorrect date and time. The clock in a Macintosh can reset (to January 1, 1904) by simply removing the battery and turning the computer on and off. A powerful surge of electricity can also cause the clock to show the wrong time. This problem can be corrected by changing the date with the Alarm Clock DA. From the looks of this man, a surge seems a possibility.

If you’ve stumbled over any unusual dialog boxes recently, we’d like to see them. Send them to MacUser Dialog Box, 25 West 39th Street, New York, NY 10018.

The MacGolf Challenge.

Sit down, boot up and find yourself surrounded by the sights and sounds of the fairway – with MacGolf, the premier simulation golf game for Macintosh™ users.

MacGolf challenges beginners and experts with 3-dimensional animated golfers and graphics, realistic (digitized) sound effects, and two 18 hole golf courses. Up to four people can play.

MacGolf works on a 512K or Macintosh Plus and costs only $59.95. Get MacGolf at your nearest dealer today. Or call Practical Computer Applications at (612) 427-4789.

MacGolf
Macintosh is a trademark licensed to Apple Computers, Inc. MacGolf is a trademark of Practical Computer Applications, Inc.
Cricket Graph, version 1.1, has a rather serious bug that many people, except for Professor H. Kroemer of Santa Barbara, have overlooked.

Cricket Graph does not properly graph data points in a list in the order in which they occur in that list. Rather, the application graphs data points in the order of increasing X-coordinate (or Y-coordinate, if you interchange axes). This makes it impossible to draw any curve along which both the X values and Y values change in their direction.

Examine the example below. Shown is the data along with a chart of that data from both Excel and Cricket Graph. Notice how Excel draws the circle that is called for while Cricket Graph plots its lines progressively in the direction of the X axis.

For discovering this bug, Professor Kroemer, of the University of California will be receiving $25. Send any bugs that you may have stumbled upon to Bugsy, c/o MacUser, 25 W. 39th St., New York, NY 10018. Always remember to include all of the gory details, including Finder/System versions, what additional DAs, etc., and exactly how you found your bug. — DS

### The Original Data

Shown is the data that was plotted by both Excel and Cricket Graph. Notice that Excel was able to draw the proper graph (a circle), while Cricket Graph plotted data in the incrementing X axis only.

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**The Maze Survival**

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**M A Y 1 9 8 7  M A C U S E R 4 1**
“MindWrite?”
"It's too easy to use."

"They make a big deal out of features we can't find on the standard comparison charts."

"And at $125, it's suspiciously inexpensive. How can we take MindWrite seriously?"

If you make up your mind about MindWrite software without looking beyond the obvious conventional criteria, you'll miss the point, too.

The more you write, the more you'll like MindWrite.

Like no word processor before, MindWrite focuses the power of the Macintosh on the creative part of the writing process.

MindWrite goes farther than any product since the Macintosh itself to simplify and speed up the process of turning nebulous notions into matchless manuscripts.

Unlike any other software— including any other that touts "integrated outlining"—MindWrite lets your finished piece evolve smoothly and naturally from your outline.

Because whether you like to work from a quick list of catchwords or a precisely detailed blueprint, you can move effortlessly between outline and draft at any time. It's a simple matter of selecting a display option.

So if an effervescent phrase flashes off your fingertips, you're word processing. If you need to note three ideas for the ending, you're outlining.

And if you think nothing can be this simple, you're almost right. Nothing else is this simple.

The more you rewrite, the more you'll like MindWrite.

If you want to move a MindWrite paragraph, for example, just select it with the mouse and drag it to its new location.

If you want to make identical changes to several headings or paragraphs, just select them all at once—even if they're separated by other text—and make them italic or bold or whatever.

Or drag them to a new location—where they'll appear in the order you selected them.

Nothing else is this foolproof, either. MindWrite's exclusive "accumulating clipboard" stores everything you've cut until you're sure you won't need it.

Numbered sections are automatically renumbered when you move them.

If you're writing to fill a certain space, the word-count feature keeps you posted.

And time-and-date stamping lets you mark changed paragraphs, so it's now much easier to review complex revisions. Speaking of which:

The longer you write, the more you'll like MindWrite.

Now you can navigate through long or complex (or long and complex) documents faster than ever before.

No more tedious scrolling.

A tap on the mouse-button shows the entire manuscript in outline form.

Click on the chapter, section or sub-section you want and it opens. Work, click back to the outline, and move on.

Of course, you can view outline and text in separate windows, too.

And have as many windows as you want.

Don't let the low $125 price pull the wool over your eyes.

MindWrite is full-strength Macintosh word processing. With easy learning. Integrated graphics. Its own unique features. Plus more we don't have space for here.

It's guaranteed, too: if within 30 days of purchase you find it doesn't live up to our claims, you can call us for a refund.

So ask for MindWrite at your dealer. Or order directly from us at 800-367-4334. (800-654-5999 in CA.) We accept Visa and MasterCard.

And if you must pay more for a word processor, that's okay. We'll take more.

MINDWRITE

Macintosh word processing for creative individuals
If you’re among the inner-directed, we can mold a Macintosh in your own image.

Through HyperDrive 20—the first hard disk to be installed inside the Mac or Mac Plus and connected directly to its microprocessor.

The resulting Macintosh can, in its own quiet and unobtrusive manner, out-perform any other Mac in its class.

It can not only store as much information as 50 diskettes. But it will also reduce power-up time by 66% over a Mac Plus.

Load Aldus’ PageMaker 150% faster. Microsoft’s Excel 250% faster. And so on.

Which should more than satisfy anyone’s need for speed. Unless, of course, you need something “lightning fast,” which is how Macworld described HyperDrive 2000.

This internal hard disk system also includes an additional microprocessor and a floating-point processor—turning the Macintosh into an authentic number-cruncher. In fact, a Mac with HyperDrive 2000 can perform computations from 10 to an astonishing 250 times faster than a Mac Plus.

Both HyperDrive 20 and 2000 can share their vast hard disk storage with regular Macintoshes through HyperNet 2.0. Our new networking software that’s universally compatible with any Macintosh and any hard disk, internal or external.

But sheer speed aside, what distinguishes all HyperDrives is the software they’re equipped with. Which you can learn more about by consulting the ad on the right.

The FX/20 and FX/40 are the most outgoing members of the HyperDrive family. They spend their time on desktops, in the company of other office tools, connected to any Macintosh with an SCSI port. The resulting Macintosh is extremely fast, which will come as no surprise to anyone familiar with HyperDrives. (If you aren't familiar, see the fourth paragraph of the ad to the left.)

Nor is it surprising that our FX series is extremely accommodating, providing a vast 20 or 40 megabytes of storage. The real surprise, at least for those familiar with external hard disks, is all the software the FX comes with.

Such as a program that protects your documents by making back-up copies of them onto diskettes.

Another program protects your documents from certain excesses of sociability—denying access to anyone who doesn’t know the password you choose.

Still another program automatically queues up documents for your ImageWriter or LaserWriter. So you can go on to other jobs without waiting for your printer.

In short, no other external hard disk does everything that HyperDrive FX/20 or FX/40 does. Which is a distinction it shares with the internal HyperDrives on the left.

Over 1200 authorized General Computer dealers will be happy to help you establish a meaningful relationship with either. For the dealer nearest you, call (800) 634-9737.*

* Trademarks of Microsoft Corp. ImageWriter and LaserWriter are trademarks of Apple Computer, Inc. Macintosh is a trademark licensed to Apple Computer, Inc.
FileMaker Plus
From Forethought

Now, the only Mac database ever to get both MacUser's and InfoWorld's highest ratings does even more, with even more ease.

Humble, ordinary-but-necessary forms like mailing labels, purchase orders, invoices, credit memos or packing lists. Pain-in-the-neck forms like expense reports and insurance inventories. Hard selling forms like proposals and quotations. Indispensable forms like phone messages, address books and sales contact records.

FileMaker Plus lets you do these any way you want, or do them for you if you want. An extra disk full of templates gives you a whole set of typical formats, so all you have to do is fill in the blanks.

And in addition to doing what a database is supposed to do — calculations, summary reports, sorting — FileMaker Plus does everything you wish a database would do. View multiple records on a screen. Pull information from different files together. Include graphics in your fields. Create reports. Print mailing labels 3 or 4-up, or more.

Your information takes much more human form. It makes more than sense. It makes an impression.

With FileMaker Plus, you can put information in any way you want, without arbitrary limitations. It automatically indexes every word, number and date. You design your output right on the screen, so you can see exactly what you (and your clients, staff, suppliers, publishers, board of directors) are going to get.

You can exchange information with other programs, like MacWrite, MacPaint, MacDraw, Microsoft Word and Microsoft Excel. You can share applications or formats you've created with other members of your team, or consolidate group efforts into one database.

And FileMaker takes full advantage of the Macintosh family, including the Mac Plus, Mac 512, Imagewriter and LaserWriter.

So, for a mere $295, you can watch as your data takes on all kinds of interesting and profitable new forms. Call 1 800 MACWARE today for the name of your nearest dealer.

We guarantee it.

If FileMaker Plus doesn't completely fulfill your expectations, call 1 800 MACWARE and we'll solve your problem or arrange a refund. From Forethought, Inc.
Walking the Floor

Walking the floor of the San Francisco Mac Expo for three days in January made it clear that the rest of the world has finally started to realize what you and I have known all along: The Macintosh is a business computer. There were plenty of people in suits, working in booths and on the floor. And there were very few games on display. Most of the booths were showing “serious” software and hardware.

While there were no announcements from Apple, many developers used the show to announce new products, and in several cases released new products at the show.

Redgate Communications honored the “Mac 100” — people, companies and software that are or were significant to the Macintosh community (and there was as much talk about who was not on the list as there was about who was on); and MacUser had a dinner to formally present its Editors’ Choice Awards (the Eddies) that were featured in our January issue.

Here are some of the highlights of the show:

**Word Processing/Page Layout**

—the second and third generation word processors now starting to come out add enough features of page layout programs to blur the line between them and force me to lump them together. MacAuthor, er, Laser Quill, er, Laser Author finally debuted for real at this show and is now shipping, but it had plenty of vaporware (software that is announced but is as yet as elusive as vapor) competition from Word 3.0, FullWrite Professional and Word Perfect. All of these are promised soon, and all had some impressive demos. We’ve come a long way from the days of MacWrite and Word 1.0.

Aldus PageMaker 2.0 was also talked about at the show, but ReadySetGo 3.0 got more floor space since both Manhattan Graphics and LetraSet had it up and running.

Laser Author is the same full-featured product previously available in England and in addition to its style sheets and unique “frames,” it has features such as the ability to open MORE, Acta and MacWrite files. Microsoft was demoing Word 3.0, which adds features like configurable menus, hyphenation, spell checking and index and table of contents generation. It’s still not WYSIWYG (What You See Is What You Get), but it has a page preview mode that lets you see in reduced form on the screen approximately what the page will look like. Ann Arbor was showing a demo of FullWrite Professional, direct from the programmers, with just about every feature found in any word processor, with quite a few page layout capabilities thrown in, such as the ability to wrap text around irregularly shaped pictures.

Aldus wasn’t showing PageMaker 2.0 to just anyone, so the traffic at their booth was lighter than it would have been if they had been showing continuous demos. LetraSet’s acquisition of ReadySetGo 3.0 made for a bit of excitement, and many people now swear by it, as, unlike PageMaker 2.0, it is available now. In fact, some people seemed quite disturbed that the new PageMaker will be available on the IBM-PC before the Macintosh version is out.

So you can judge for yourself — all of these products are promised by April or May, just about the time you’ll be reading this, so check around and see who did and did not make their deadlines.

**Spreadsheets**

Excel 1.03 made a quiet bow at the Microsoft booth (it’s only a minor update, after all, although those with big screens like the Radius won’t find it so minor — it now works on these screens). The big splash was made by Trapper from Data Tailor, an innovative concept in spreadsheets that’s hard to explain but fairly easy to use once you get used to it. Trapper is a marvel that can produce gorgeous output (including pictures), and better yet, it’s available right now. It may not be for you, as it’s a bit more complicated to use than a “normal” spreadsheet, but it’s worth looking into.

**Graphics**

While SuperPaint and Cricket Draw were on display, the graphic product drawing the biggest crowds was Adobe’s Illustrator (so big that they demoed it at the Radius booth in addition to their own booth), a sort of full-page FONTographer. Illustrator allows graphic images to be imported and then traced over with curves and lines that will have full LaserWriter resolution, and gives access to some PostScript features that up to now have been difficult or impossible to get to from most applications. Two drawbacks (aside from expense): it’s not ready yet, and it’s probably going to be copy protected. Cricket drew pretty good crowds with Cricket Draw, which was available, and which has a lot of extra features to allow access to PostScript capabilities which have been unavailable in previous drawing programs like MacDraw and MacDraft.

**Elsewhere On The Floor — MORE**

from Living VideoText gets the award for best upgrade, with a free upgrade to version 1.1 which adds “Undo” and several other nifty features (not to mention bug fixes) making MORE an even better program. Symmetry also announced an upgrade for Acta to 1.2, which adds features like painting and “intelligent cut and paste.” Smathers-Barnes demoted Prototyper, a program for programmers who want to prototype their applications quickly and easily. And my personal favorite (and possibly least business-related) product introduced at the Expo: DiskTop and its accompanying program Widgets from CE Software (the Mock people), which performs a number of handy and sometimes odd little functions I’ve always wanted to be able to do easily (like disable the LaserWriter startup page).

**SCENES WE’D LIKE TO SEE**

With the business orientation of the Macintosh becoming more and more apparent and its growing acceptance by big (and small) business, it may not be too long before a scene like this is played out in corporate America:

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And that beats all.
The title and concept of this column, West Coast Report, sometimes get stretched a little bit — as a columnist, I have the freedom to get carried away sometimes. But the fact is that in this month's column I am going to stick to the concept like Glue and report on what's happening on the West Coast, in as much detail as I can.

This might be tricky, because the West Coast is going nuts. Usually at this time of year there is a lot of activity because of the many new products announced or shown at the MacWorld Expo in January. Winter is a time for companies to finish and ship products introduced at the Expo. The spring and early summer are a little bit quieter, then people gear up again for major announcements in the fall. We editors/writers/columnists usually get a chance to catch our breath between shows.

Those days are gone, at least for this year. As usual, many new products were shown at the Mac Expo, including Stepping Out from Berkeley System Design; Quark Xpress; FullWrite, from Ann Arbor Softworks; Illustrator from Adobe; a 9600 baud modem from AST; more hard disks; Super Laser Spool and DiskFit from Supremacy; Guide from OWL Systems; LabView from National Instruments; TrapEase from Data Tailor; WorksPlus Spell from Lundeen and Associates — and more, more than I can even remember. Add to these the list of products already announced that will be coming soon — PageMaker 2.0, dBase Mac, Word 3.0.

But this year developers didn't stop at the Mac Expo. We barely had time to sort through the new products before another show came along. A bunch of developers announced major products at the Seybold Desktop Communications Conference in January, showing a tremendous amount of key third-party support for Apple's file server and the main AppleTalk ingredient, the Apple File Protocol. (You can get a more detailed discussion of this in the Desktop Communications Supplement in this issue.)

These two events by themselves would have been more than enough to keep the press extra busy, but the activity didn't stop at Seybold, either. Apple led the way with new product announcements at Seybold and also at the AppleWorld Conference in Los Angeles. And third parties, excited as I am about the new Macintosh machines, have leaped into the spotlight with new products: add-on cards; high speed, large capacity hard disks from everyone and his brother; monitors to take advantage of the new Mac's display abilities, and in fact to enhance them; colorized versions of existing software and hints, at least, of outrageous software to come.

It seems that I've spent at least as much time out of the office looking at new products as I have in the office trying to write about them. It's an incredibly exciting period, if a bit tiring and somewhat nerve-wracking. Every time I think I've just seen the Greatest Product Ever Sold, someone else sneaks up on me and says "We have a new product that you'd like to see."

While the almost whirlwind activity has made life crazy for the press, it's actually quite wonderful for you, the Macintosh user. Over the next several months you'll have an enormous range of choices in hardware, software and peripherals. You'll be able to do more with a Macintosh than many people ever dreamed possible.

WHAT'S COMING
I don't usually like to make predictions except in the privacy of my own home, but I've gotten lucky the last couple of times out so I'm going to look ahead to the rest of this year. Remember that I'm writing this in January, so the whole year looks good for me, even if you're reading it in May.

DESKTOP PUBLISHING
The Macintosh family of computers will get a lot of competition in the marketplace, from Xerox, IBM and others, but Apple will assert its position as the quality leader. Even though software and systems from other manufacturers will sell well, Apple will stay on top because other machines are just catching up to where Apple has been for a year, and the new Macs — the SE and the Macintosh II — will see huge advances in software that can't be matched by the other machines.

DESKTOP COMMUNICATIONS
Macintosh networks will link Macs to damn near anybody's personal computer, minicomputer or mainframe system, so Macintosh networks will spread to every level of business. This will mean that more and more people will be exposed to Macintosh, and, as has happened before, be converted to the Macintosh way. Macintosh II will be the premiere communications machine.

DESKTOP PRODUCTIVITY
Thanks to Excel and recent inroads from data base products such as Omnis 3 and Helix, Macintosh has started to be recognized for the amazing productivity tool that it is. This year new products, including PowerPoint from Forethought, will redefine this category.

DESKTOP ENGINEERING
Let's face it, CAD and engineering on the Mac has been pretty stagnant because even the Mac Plus lacks the speed and power to do hardcore simulations and drafting. This area, just waiting to explode, is going to go bananas in 1987 because Macintosh II has the power and the speed. What happened to typesetting will happen to CAD — a previously specialized field, limited to a few highly trained experts, will become more accessible to everyone. The university community, which embraced the Macintosh early, will continue to do astounding things. I can't wait to see what happens when you put a Macintosh II in the hands of Mac fanatics who feed on raw computing power.

MACINTOSH BY GOSH — THE OVERALL VIEW
IBM is always a force to be reckoned with, but in an article in Computer Reseller News, an unnamed third party developer who has spent some time with Macintosh II was quoted as saying that Macintosh II is now where the 386 machine everyone's waiting for will be in two years. I think IBM will be lucky to catch up at all. The Mac SE, now Apple's mainstream business machine, is fast,
flexible and extremely capable. Macintosh II is phenomenal, and as I write this, work has already begun on Apple's new CPUs for 1988 and beyond.

I think that Mac sales will more than double over this year. Apple will have sold the 1,000,000th Macintosh sometime in March of 1976. The 2,000,000th may well come before the end of the year. Some of this growth may well be at the expense of the Apple II line, but some of it will erode the position of Big Blue. Apple is already gearing up its corporate sales efforts for a full-scale attack. Rumors have been floating about very large sales pending to an unnamed aircraft company and a military arm of the US government.

The growth of Apple and Macintosh will also mean increased sales of Macintosh software and peripherals, and I think these areas will also more than double over the next year. There will be a lot of takeovers in 1987, with small developers consolidating and larger companies taking a firmer position in the market. Let's hope there will still be room for the small innovator.

John Sculley's autobiography will outsell Lee Iacocca's and Mr. Sculley's name will be bandied about as a possible presidential candidate. I'm not really on anything, just a Macintosh believer who happens to be very excited about what's happening and what's going to happen. Of course, something could go wrong. Apple certainly isn't perfect - they made some odd design decisions with the new machines that will come back to haunt them, and if there are serious delays in shipping the SE or the Macintosh II, disregard everything said to this point.

THE MELLOW WEST

Anyone outside of California who thinks the West Coast is a mellow place should be here now. Sure, business is conducted in relaxed settings and casual clothing, but that's mainly because nobody has time to go home and change clothes. Ask anyone at Apple what the past few months have been like. Ask Lisa Van Horn, a superstar in Apple's public relations department, who gave up 22 hours on a Sunday so our photographer could shoot pictures of Apple's new equipment, then turned around and did it again for another publication the following day.

Things aren't going to calm down for a while, and that's great. Great for you, great for Apple, great for Macintosh, great for me, even great for my office cat, Mac-Beethoven.
In today's computerized world, the concept of craftsmanship is still very much alive.

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In On The Ground Floor

First, two stories.
When Edison invented the phonograph, he thought his invention would be used primarily by lawyers, whose clients could give phonographic accounts of their legal wishes. Edison never imagined that music would fill those wax platters. He didn't foresee the never imagined that music would fill those wax platters. He didn't foresee the

Papyrrns.

Nell' Papyrrus, even "The rest are history"—a masterpiece of pretension. The title is a masterpiece of pretension. The title is a masterpiece of pretension. The title is a masterpiece of pretension.

That's what I've been doing the past few nights: reading CD ROM: The New Papyrrus, published by Microsoft Press.

That means you won't watch CD ROM movies. Pictures, yes; movies, no. The individual frames can't be read in, one after the other, fast enough.

But that's okay. "Wedge-CD ROMs" are in development. And disk caching and other software tricks will speed up CD ROM reading. It can be done. Remember the Finder 1.0?

The killer, as I'm sure you know, is writing to CD ROM disks. You can't. They're read-only.

If you wade into the literature, you'll find that WORM disks (for "Write Once, Read Mostly") and DRAW disks (for "Direct Read After Write") and other acronymic platters are being feverishly worked on. WORM drives do exist, but they're expensive. When CD ROMs arrive, expect to read only.

That's okay by me. I'd kill to have the Encyclopaedia Britannica an electron spurt away. Or Webster's or Roget's or Larousse Gastronomique or the Yellow Pages. Come to think of it — why not the National Yellow Pages? What a concept!

But the rest of the market may not be as easily swayed. You know why Apple (and everybody else) doesn't like new product leaks, right? It's because the rumors kill sales of existing products. Why buy today's ho-hum reality when tomorrow's sizzler will soon arrive?

So with writeable CD ROMs. If we all wait to write, the read-only market may fizzle. CD ROMs probably won't be a Good Idea That Didn't Make It — there's too much momentum already for that to happen. But if we all wait, it won't help.

But enough gloom. Here's the good news.

CD ROMs will probably be cheap. CD ROM drives will be similar to — but simpler than — CD audio players. You can buy a CD audio player today for less than $200. To make a computer CD ROM drive, you take stuff out. Less, not more, hardware. Cheap.

How much data on a CD ROM disk? About 500 megabytes. The same as twenty-five 20-megabyte hard disks. The same as a mountain of floppy disks. Grolier's Encyclopedia, as I remember, takes up less than 15 percent of a CD ROM disk.

Or look at it another way. Audio data takes up a tremendous amount of disk space. One second of sound, sampled at 22 kilohertz, requires 22,000 bytes of storage. The quality of CD audio disks is even higher, which requires even more disk space. The result, on an audio CD, is about one hour of music — extremely high quality music.

But what about lower quality, which takes less room? If you're willing to accept "telephone quality" sound, a CD can hold about 35 hours of sound!

Or graphics. A CD ROM could hold about 10,000 full-page MimePaint files.

Or all three: programs, sound and graphics. Imagine Helix, FileFinder and the Talking Mouse rolled into one application. On second thought, don't.

And with luck, there won't be a fight over formats. Phillips and Sony have already agreed on a standard. Microsoft has blessed it. Apple will give its blessing. That helps.

Not that Apple needs to do much. Macintosh already has a CD ROM port. Apple calls it a SCSI port.

Given that, developers will be all over CD ROMs. Apple will make the market, Microsoft will build the tools. Macintosh proved that the race goes to the swiftest developer — at least in the beginning. Lots of track shoes are being laced as you read this.

Even now, you can buy CD ROM applications. FileMaker, which hasn't achieved much success, may make it yet, if CD ROMs come out — quick. Guide, from OWL international, is an amazing program for creating "hypertext." When CD ROMs arrive, Guide won't be amazing; it'll be awesome.

But all the above may be computer-chaunism. CD ROMs may be more than another computer peripheral. Maybe, just maybe, it'll be the other way around: computers may become CD ROM peripherals.

There's already talk of "viewers": Dyna book contraptions built around a CD ROM drive, a flat screen and easy ways to navigate through millions of megabytes of information.

Someday, history may record what we knew all along: to make the computer a household appliance is easy. Just get rid of that damned keyboard.
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Supports Laserwriter™ and ImageWriter™ I and II.
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Plug More Power into Your MAC
The Hollywood screenplay format was perfected nearly 50 years ago, soon after Al Jolson first spoke in “The Jazz Singer.” Sans graphics or font changes, the classic screenplay is a stark, bare-bones blueprint. Its precise indentations, punctuation and transitional phrases make all scripts look the way they should. It operates on screenplay format. That’s a tall order. Some of the rules are:

1. Action: descriptions run full width of the page; dialogue margins cover about one-third the page width. Character names are never separated from their dialogue. Speeches are never broken in mid-sentence. When dialogue is broken, you must repeat the character name followed by a (CONT’D), atop the next page. And so on.

Word will do a lot toward getting you there. You can “keep lines together” in the format box (COMMAND-M), to lock names and dialogue. You can indent text by using the glossary to call up pre-set formatting.

2. The Project window. Here you choose the project file, open its window, and format or print the entire page as a whole or in part. You can add or delete scene numbers, change line spacing and insert Act Breaks (for TV)—all without touching Word.

3. The Format and Print Modes. Formatting and/or printing are controlled from the Layout window. You call up a new layout, choose type (Feature, Theatrical or Television) and then name it. Once selected you can modify the layout’s settings under the File menu, you can choose to open a project and formatting and/or printing. Note user’s name and serial number.

SCRIPTOR


The Hollywood screenplay format was perfected nearly 50 years ago, soon after Al Jolson first spoke in “The Jazz Singer.” Sans graphics or font changes, the classic screenplay is a stark, bare-bones blueprint. Its precise indentations, punctuation and transitional phrases make all scripts look the way they should. It operates on screenplay format. That’s a tall order. Some of the rules are:

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Word will do a lot toward getting you there. You can “keep lines together” in the format box (COMMAND-M), to lock names and dialogue. You can indent text by using the glossary to call up pre-set formatting.

But when it comes time to break dialogue, insert all those “continuities,” and eliminate unwanted “white space”—a 120-page script can be a massive job. And if you later make changes—well, you’ve got to do it all over again.

Enter Scriptor. It opens your Word files, executes intelligent page breaks. It inserts all names, transitions, scene and page numbers. It then strings your files together and prints them as one seamless document.

And when you add new material, Scriptor will reformat, renumber and reprint the whole screenplay—automatically.

Scriptor has some very powerful features. You can manipulate your margins, widen the dialogue a few characters, let’s say, to shorten the overall script by several pages. You can tell it to Create A and B pages (page 17a, 17b, etc.) for your new material, while keeping the old page breaks. You can add or delete scene numbers, change line spacing and insert Act Breaks (for TV)—all without touching Word.

Scriptor’s desktop, the Layout window. You call up a new layout, choose type (Feature, Theatrical or Television) and then name it. Once selected you can modify the layout’s settings under the File menu, you can choose to open a project and formatting and/or printing. Note user’s name and serial number.

The Blueprint window. The cursor becomes a handle that can grab the margin lines, and move them. As you shift the margins, the new values appear. Click a new item, i.e., Dialogue, and the blueprint reflects the settings for that item. Changes here will be saved to the currently selected “layout” when you click OK.

Scriptor’s Formatting window. The “action” description will be broken as indicated—unless the user moves the “break indicator” by scrolling up/down or left/right. Revert returns the break to Scriptor’s recommendation.

Switch from “Auto” to “Ask,” and it consults you about each dialogue break. You can accept Scriptor’s recommended break, or choose your own.

Meanwhile, a Status display tells you the page number, the scene number, which Word file you’re in—the works.

The Print window offers all the usual Mac options, plus the ability to find and print strings of miscellaneous pages (e.g., 4a, 15-17, 26b), or pages featuring a particular character, location or other keyword. Scriptor prints faster than Word; it is a joy to behold. Daisywheel printers are supported, as well as the LaserWriter and ImageWriter.

Scriptor does not yet support proportional fonts; a version that will is planned for later this year. Actually, screenplays are best left monospaced, to format out at the correct page length. (Again, standard screenplay format is for a good reason.) I recommend Courier 12 on the LaserWriter.

The program takes some getting used to. The biggest problem is the interface. It is not entirely Mac-like. For instance, the Layout menu offers you all the options: margins, headers, scene numbers and so on. But the New Layout command is under the Edit menu. Curious.

The Project window always looks the same, whether you’re selecting, formatting or printing files. Except that you must leave it, return to the layout level, and then return again to format or print. This is confusing.

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The Margins window. Each value represents a left indent. In P10 increments on the Word ruler. Note the icons at bottom; these are the other layout options.

The Project window. You enter it once to select Word files and options. You enter the window again, via the Format command, to begin formatting. You enter it once again, via the Print command, to commence printing.

The box pop-up menu to allow selecting/changing block names, to show or change cell contents, to show or change block formulas, and to view or edit comments about a block.

Cells cannot contain formulas, only blocks can contain formulas, and the formula applies to every cell in the block. For example, if revenue for 5 years is in a block named "Revenue" containing one row and five columns; and expenses are in a block named "Costs" the same size; then the block called "Net Income" would contain the formula "Revenue-Costs" and would automatically be five cells wide. If another column is added later to Revenue and to Costs, Net Income would automatically grow, too. This behavior has a lot of advantages, but some disadvantages, too. If a specific year's revenue is needed in a formula, a function needs to be used to extract it. And if enough cells need to participate in multiple formulas without the rest of the block, a worksheet can and up with lots and lots of single cell blocks that have to be individually created, placed and named (since functions can only refer to blocks by name). But what formulas can be created! Since Trapeze treats blocks with multiple rows and columns as matrices, there are a number of built-in functions such as matrix inversion, matrix multiplication, linear regression, multiple linear regression and polynomial regression that won't be found in standard spreadsheets. There are financial functions (amortization, present value and the like), statistical functions (averages, standard deviation, sample variance and more), string manipulation functions, logical functions, conversion functions and even a large set of transcendental functions (logarithms, geometric formulas and then some).

Overall, Trapeze is very rich in function, and can produce very attractive output. It is not easy to learn, but once you are mastered it is fairly easy to use. It may still require occasional visits to the manual which is fairly comprehensive—although it could be improved. The original version had some bugs, but Data Tailor quickly shipped out a free upgrade to registered owners, and hopefully will continue this kind of behavior. Trapeze is not only for the faint of heart, but power users should find it to be right up their alley.—Robert R. Wiggins
Stop Waiting for Your LaserWriter

The Apple Macintosh and LaserWriter created Desktop Publishing and made high quality graphics a cost-effective reality. This also marked the advent of a new form of office bottleneck, "waiting for the LaserWriter." This means that, while printing, the Macintosh is held hostage, needlessly waiting for the LaserWriter to complete the complex calculations necessary to produce the finished page. In fact, every Mac on the network is forced to wait for a single print job.

MacBuffer is compatible with most of the major Macintosh software packages and the most popular desktop publishing programs such as PageMaker. It comes in 1 and 2 megabyte models and connects via Appletalk.

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If you are an Imagewriter user, MacBuffer for the Imagewriter will dramatically reduce the time the Macintosh spends waiting for the Printer. In addition to less time spent waiting, MacBuffer enables two Macs to share one printer and has a Local Copy and Single Sheet mode. Get the most out of your Imagewriter I or II with MacBuffer.

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MacBuffer LW; MacBuffer; and MacTilt, the professional workstation for the Macintosh (pictured above), are all designed to help you get more done in less time.

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Do you ever have trouble finding one of your favorite graphics? Graphidex lets you index MacPaint and MacDraw format graphics without removing them from their original documents. The Graphidex application allows you to peer inside your documents. You just select the area of interest, name it and click OK; it's indexed. Selection is done with a combination of the familiar selection rectangle and some picture-searching algorithms unique to Graphidex. In the case of MacPaint documents, pictures are delimited by a specified number of white space pixels surrounding them. In the case of MacDraw, grouped objects qualify as indexable pictures.

To retrieve an indexed graphic, you call up the Graphidex DA, select the document that contains the graphic, then the graphic itself by name. You can copy it to the Clipboard, place it directly into the Scrapbook, or bring it into a preview window. You can make modifications in the preview window. Possible modifications include borders, as well as flipping, inverting, resizing and rotating images and make FatBits changes. You can copy a modified graphic to the Clipboard or Scrapbook without affecting the original indexed graphic. This is handy for making last-minute changes, especially for Paint format graphics. It's less useful with MacDraw graphics. Modifying a MacDraw graphic often converts it to MacPaint format, resulting in a loss of resolution if you print to a LaserWriter.

You can also create fonts from the images you select. This is a great way of making clip art and original drawings accessible with a single keystroke, and integrating them easily into your word processor.

Although this sounds great, the program itself is not very impressive. It has two major problems. The first is that graphics software is no longer the private domain of MacPaint and MacDraw. We now have SuperPaint, GraphicWorks, MacDraft, Cricket Draw, and Illustrator.

Graphidex is not really set up to handle graphics created by these applications (although it does OK with FullPaint). Graphics created in these programs and saved in MacPaint or PICT format (Illustrator doesn't support either format) can be indexed by Graphidex. But the whole point of the utility is to let you get at the graphics where they live. It loses its punch if you have to save a copy of everything for indexing purposes.

The second problem is that there is no automatic re-indexer. The program comes with a library of clip art that fills a 400K disk. But if you move the library to your hard disk—a procedure recommended in the manual—Graphidex has a hard time finding the graphics. It keeps asking for their original disk. You can overcome this by clicking on a button that tells it to "Search Everywhere," but it would be much better if you could just tell it, "Hey, I moved this graphics file. Redo all the indexes that reference it." As it is now, if you want Graphidex to know exactly where to find the graphics on a file that's been moved, you have to manually re-index it, one graphic at a time. There are hundreds of graphics in their library alone. And what about when you finally get that new hard disk?

You may find Graphidex useful as it is if you work primarily with bit-mapped (Paint format) images. It's up to you whether what you get is worth the price. If you're object-oriented like me, stay away from it.—Henry Botman

MoonMist

List Price: $39.95. Published by Infocom, 125 CambridgePark Drive, Cambridge, MA 02140. (617) 492-6000. Not copy protected.

Anyone who draws smiley faces in their letters deserves to be haunted by ghosts. Tamara, a fair maiden in distress, does just that in the letters you receive as part of the support material in Infocom's latest introductory level game, MoonMist.

Tamara writes to tell you she is living in a castle in Cornwall, England and engaged to Jack, a British Lord. Unfortunately she is also being threatened by a ghost, who may or may not be the real thing. Tresyllian Castle has a long history of hauntings, and Lord Jack's old girl friend Deirdre, adds to this rather typical haunted English castle story. Deirdre was mysteriously drowned in a well after her break-up with Jack. Being a famous detective from the States, you rush off to help your friend in need. Armed with a suitcase, which I found lacking in stylish content (you only have three outfits and one of them is a nightshirt), you are off to Cornwall.

Upon arrival at Cornwall you can dub yourself with the title Lord, Lady, Duke or Duchess. You're also asked what your favorite color is; this not only determines the color of your bedroom, but also which version of the game you'll be playing. I went ahead and picked red for more than one go. The four versions of the game are red, blue, green and yellow. But don't fret if your favorite color is chartreuse or mauve; in that case the computer will randomly pick a version for you to play.

The four versions differ only slightly. The plot, people and scenery are the same, and this is a shame, since none of them is particularly interesting. The only apparent differences are the clues, the locations of the clues and treasure—and, of course, the color of your bedroom.

Even though I am relatively new to text adventures, I did not find MoonMist very challenging. I was able to say or do just about anything I wanted to any character and a simple apology sufficed. MoonMist's cast of characters also easily hand you written clues on request without even the slightest hesitation. The other clues are easy to figure out, and I was even able to find the treasure before I found all the clues. MoonMist is not the most exciting game around. It would have livened things up a bit if I could have pushed someone (else) down the well. Or at least gotten Bolitho, the butler, to gossip.—JH

Back To Basics Accounting


Back to Basics is a powerful software accounting package for the small business user. It consists of three modules: General Ledger, Accounts Receivable and Accounts Payable. The modules can share information, but entries are not linked automatically between modules. This package is definitely not intended for an accountant with multiple clients. Rather, it is intended for use by the owner or bookkeeper of a small business. Their tutorial example is of a mom and pop type TV store.

Peachtree Software has made a serious effort to make their product accessible to the uninitiat-
ed. The manual is exhaustive, with numerous true life examples; the program is fairly Mac-like; and is an 800 technical support number (pay as you use, "$1 a minute, $20 minimum), and there are numerous dialog boxes so you must double-check your actions frequently.

Back to Basics is a double entry accounting system. In general, every transaction is entered as both a debit and credit to separate accounts. The program is very good at preventing you from making an error in posting. In most cases, it will
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not allow you to save a record that is not balanced. The general ledger can be used alone for cash basis accounting or in combination with the other two linkable modules for accrual basis accounting.

A filing cabinet with labels on the drawers replaces the expected menu bar for choosing things up. Also, I would like to see a transfer with your own, highlight the headlines and deviance from the Mac interface might be excusable because of the complexity of the choices, but I still would like command keys to speed things up. Also, I would like to see a transfer menu item added to allow transfer between the three modules of the program without going back to the desktop.

Data entry is fairly fast and efficient. The program fills in as much as possible automatical-

ly. There are methods provided to avoid most errors. There is no on-screen help, but there are numerous dialog boxes constantly reminding the user when to make back-ups or when saving will prevent further modification of entries. In fact, there are so many dialog boxes, the experienced user is certain to wish for the option of turning them off.

The report capabilities are amazing. I printed out 25 pages just by following the tutorial. Back to Basics generates so much paper, there is a danger of being inundated. With time, the user will presumably learn to be judicious in regard to printing.

The reports are saved as MacWrite documents, so they are available for import by other programs. One such use might be to dress up their formatting. All Back to Basics reports are printed in plain draft mode. This is disappointing for those of us grown accustomed to the elegance of formatting offered by other Macintosh programs.

The program will print both mailing labels and checks. Invoices can be printed on plain paper or preprinted forms. In fact, in the package Peachtree includes an order form for eight separate stationery items to be used with the software.

The large, full-color manual is excellent. There is even a 38-page section on "Accounting Principles" by a professor emeritus from Harvard Business School. There are tutorials for each module, numerous examples, and discussions of where a user has some discretion in setting up accounts. Forty pages of sample reports are included as are 34 pages entitled "Business Situations." There is an excellent index and a glossary.

The manual has one problem. It refers to copyright protection not present in version 1.03 of the program. Also, it does not mention the HFS filing system and assumes you are using 400K disks. With 800K disks, you can put monthly data files for all three modules on one disk. Strangely enough, Back to Basics will still run on a 128K machine, though I couldn't recommend such a configuration. Much better would be a Mac Plus with an extra disk.

With over two dozen accounting packages available on the Mac, choosing just the right one is a difficult task. For any program of this cost, complexity and importance, I would strongly recommend renting it and making sure this is the program for you. Let your accountant see it, too.

Peachtree offers a 30-day money back guarantee for those who buy direct from the firm (subject to a restocking charge of $20 if the disk envelope has been opened). This is a very generous offer, allowing you adequate time to make certain that this is the accounting package for your business. An additional module, invoicing, is due out this spring. — Scott Beamer

PORTFOLIO: DESIGNS FOR NEWSLETTERS


Desktop publishing has brought the page layout into the electronic age for thousands of Macintosh users and PageMaker has been the application leading the pack. Unfortunately, owning PageMaker doesn't mean you know what to do with it.

Aldus has taken a step toward alleviating that problem by publishing the Portfolio: Designs for Newsletters. This two-disk set, accompanied by excellent documentation, provides over 20 different basic designs for laying out a two-page newsletter. Each template is a set of dummy pages, with preset columns and place-holding headlines, graphics and captions already in place. The designs range from simple two-column formats to complex five-column layouts with variable column widths.

All you need to do to use one of these templates is to open it. After saving it with a new file name, replace the masthead and graphics with your own, highlight the headlines and captions and retype them, and then pour your text. Changes, such as removing a graphic, extending a line, and so on, are easily made, because the basic page structure is already there.

The documentation is a tutorial in the best sense of the word. It is actually a short course in page design. An early chapter walks you through using templates to create a newsletter.

Later chapters each show three completed templates and discuss the particular design elements that distinguish them. Here, too, there are numerous hints on how to produce documents that will strike the right balance between visual impact and simplicity.

Aldus also provides end users with a complete set of Adobe's screen fonts for Times and Helvetica — separate screen fonts for Plain, Italic, Bold and Bold Italic. These fill up the font list (and your System file) rather quickly, but they have several advantages. They look better on the screen; they allow the screen image to more precisely match the printed output; they result in tighter copy fit and they are easier to edit, especially the italic styles.

It would have been nice if Aldus had provided the screen fonts for the full set of Apple LaserWriter Plus fonts, rather than just Times and Helvetica. Users of Palatino, Bookman and the like will continue to have the same problems with these fonts as with previous versions of Times and Helvetica. (If you want the LaserWriter Plus screen fonts, you'll have to get them from Adobe — fifty bucks for the full set.)

And Aldus should have issued a warning to hard disk users. Once these screen fonts are in your System file, they affect all the programs on your hard disk. Fortunately, there is a solution to this problem except with MacDraw, but there may be some unexpected results with previously created files in other programs. You could also be in for a rude shock using these screen fonts if you output at a service bureau which doesn't have them. Bring a system disk with the new fonts on it, just in case.

Along with the screen fonts comes a new version of Aldus Prep and a wonderful new DA called Wyzzy. With Wyzzy installed and turned on, you will get the maximum benefit from the new screen fonts, and your on-screen copy fit will be optimized. The bad news: Wyzzy only works with PageMaker; it can crash other applications. More bad news: Aldus has no plan to make Wyzzy available to PageMaker owners who don't buy the Portfolio. The good news: PageMaker 2.0 should correct the problems that caused the need for Wyzzy in the first place.

The Portfolio is an impressive package and recommended to anyone who has tried to harness the power of PageMaker without quite hitting the mark. The price is a little steep after plunking down the money for PageMaker, but if you're someone who could use the help — and you know who you are — it's probably worth it.

— Henry Bortman.
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QUARK XPRESS (★★★★)  

Quark Xpress is a superb product that represents a major step forward in the evolution of desktop publishing. Developed by a company in Denver previously known for a few very high quality software products on Apple IIe and Apple IIIs, Xpress is light-years ahead of where desktop publishing was a year ago.

PageMaker, MacPublisher and ReadySetGo! made people aware of what the Macintosh could do with presentation text and graphics. But anyone who has spent a good deal of time with them will admit that there are limitations set within QuickDraw) .

Xpress represents a major step forward in the evolution of desktop publishing. Developed by a company in Denver previously known for a few very high quality software products on Apple IIe and Apple IIIs, Xpress is light-years ahead of where desktop publishing was a year ago.

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Xpress makes true, professional quality page layout and page layout programs let you work in typefaces from 0 to 127 points (a limitation set within QuickDraw). Xpress has a range from 0 to 500 point typefaces, in 1-point increments. Xpress contains a full-featured word processor with built-in spell checking, manual or automatic hyphenation and an exception dictionary. You can pipeline text from one area to another, with tag lines that let you know where the text went. Simply type in your tag and a command key for “Next Page.” The tag line will register the correct page number of the continuation text. A similar tag “From page...” can be added at the beginning of the continuation box. The page references are relative—if either portion of the pipeline text is moved, the tag lines automatically update to show the correct placement.

Xpress offers extraordinary control over the look of text on the page. It has global kerning even if you change the style or size of the font. Xpress also does horizontal tracking in increments of 1/100 of an em space. Of course you don’t have to move in such small steps—you can set a numeric distance as well.

On top of these features, Xpress also allows you to program PostScript devices from within Xpress documents, giving you even more control over the final output.

The program does have a few peculiarities, it offers a command key equivalent for almost every conceivable action, which is fine, but the choices are sometimes odd and take a little getting used to (COMMAND-SHIFT-a for bold, instead of COMMAND-b, for example). There is an excellent on-line help facility that smooths things over, though. Xpress seems a little slow at times, even on a Mac Plus, until you realize just what it is the program is doing and how long it would have taken with any other program. Give it a powerful Mac with lots of RAM and watch it sing.

Xpress is a real find and a very good value at $695.—MDW

“Editor’s Note : This product’s rating is provisional. Even at the date of the review, with the product in final beta test, it is a 5-mouse program.”

MAY 1987 MAC USER 73

MAGIC DIGITIZER (★★★★)  

New Image Technology has come close to perfection with their Magic digitizer and LaserMagic software. The digitizer proper is a black box (actually, it’s beige) which converts video images into MacPaint files at 72 dots per inch. A companion RCA video camera can be purchased as an option, but the lens on this camera is not the greatest. New Image recommends that you buy a C-mount adapter which will let you use standard camera lenses (Nikon, Canon, Minolta, etc.) instead. You can also use a home video camera/VCR as a video source.

The power of the system lies in the software. The standard Magic software gives you complete control over gray scales—anything from high contrast black and white to 38 levels of gray. A number of different MacPaint-like pattern palettes are provided, any of which can be brought in and “mapped” into the gray scale. If you don’t like any of the palettes that come on the disk, you can create one of your own in MacPaint and use it instead. There is also a way to produce a “trace-edges” effect, with the outlines in the image keyed to the patterns in the gray scale.

LaserMagic, the updated software, with a companion program Showimage, takes a giant step forward. It allows images to be digitized at a full 300 dpi, retaining up to 256 levels of gray-scale information for each picture. This makes it possible to take advantage of the full resolution both of the LaserWriter (300 dpi) and of higher resolution devices like the Allied Linotronic (1270/2540 dpi). Unfortunately, the ability to manipulate the grayscale scale on-screen at this resolution is currently limited to brightness and contrast controls. However, the image can be saved as a PostScript file.

LaserMagic burns up disk space at a rapid clip. A full-sized image stored with 256 gray levels requires over 250K. Saving a PostScript file requires an additional 500K. If you plan to do serious work with LaserMagic, you’ll probably want to use a hard disk.

The user interface is very complex. There are 33 different controls packed onto the Control screen, and the relationships among them are not always clear. Particularly disturbing is the fact that all the controls are on the standard Magic screen are present in LaserMagic, none of them affect the way a LaserMagic image is stored. The control screen also departs significantly from the Macintosh standard—there’s no menu bar.

The manual provides a reasonably good tutorial, but it’s a poor reference guide. Part of the problem lies in the complexity of the user interface, but the manual has some shortcomings all its own. For example, there is neither a parts list nor an adequate diagram of how to hook all the pieces together. As a result, it took half an hour of head-scratching before I realized that the unit I received was shipped without a crucial adapter.

Some people are going to dive in with Magic and start making beautiful pictures right away. Others may never understand it. Most of us, somewhere in between, will need practice. But if you want to work with digitized images, and are willing to meet the software half way, you will be more than pleased with this product. If you need more convincing, go watch it run. Sales are direct from the manufacturer, but they will give you the names of satisfied users in your area.

—Henry Bartman
Another Round of Cricket

**Cricket Draw** is the most advanced and powerful graphics application you can buy for the Mac.

"Did he really say that? What about FullPaint? GraphicWorks? SuperPaint? Cricket Draw doesn’t do half the things any one of them can do."

True. But Cricket Draw does PostScript. PostScript is the page description language that makes the Apple LaserWriter tick. You know all those great special effects you’ve seen in the sample book that sits next to the LaserWriter demo unit in your local computer store? PostScript. Without PostScript, a LaserWriter is just another Canon copier. And Cricket Draw gives you more PostScript power than any other Mac application can shake a stick at. This is an application easy enough for anyone to use, but packing power that professionals have been anxiously waiting for.

**SEEING IS BELIEVING**

To draw, you must start with drawing tools, and Cricket Draw has a full complement of them. The top half of the tool palette contains the familiar standards: straight lines, rectangles with square or rounded corners, ovals and circles, arcs, polygons and freehand shapes. As you move down towards the bottom of the palette, things get more exciting (see Figure 1).

A new diamond-shaped tool gives you parallelograms. The “grate” tool allows you, with a single drag of the mouse, to draw a series of either parallel straight lines or concentric circles. The straight lines can have either linear or logarithmic spacing.

**Cricket Draw adds**

PostScript to object-oriented drawing and shoots to the head of the class.

The bezier curve tool lets you plot curved line segments that can be twisted and reshaped in bizarre and wonderful ways by dragging their control points. (Previously, this type of tool has been available only in font-generation applications like FontGrapher and LaserWorks.) And the starburst tool creates just what its name implies, a set of lines radiating from a common center.

Yet Cricket Draw’s new tools reveal only a hint of what the program can do. Cricket Draw also allows you much greater freedom to fine tune the appearance of what you draw. For example, any object can be rotated and/or skewed (tilted) to any angle, selectable in 1 degree increments. By comparison, MacDraw can’t do either; MacDraft can do rotation, but not skewing.

Double-clicking on an object invokes a dialog box that gives you very precise control over the line width, gray intensity and dash pattern of its outline, as well as the gray intensity of its interior, if it’s a filled object (see Figure 2). Have you ever wished you could make a line just a wee bit thicker or thinner than one of the half-dozen or so choices usually offered? Now you can — any thickness from 0.05 points to 99 points, in 0.05 point increments.

Ever longed for a shade of gray somewhere in between the ones available on the drawing palette? How does 0% to 100% in 1% steps sound? It’s yours. Tired of trying to create dashed lines with diagonal-pattern “ink”? Cricket Draw offers you nine different dash patterns. And they don’t get lost going around corners.

Depending on the type of object you select, you may get additional controls specific to that object type. For example, the dialog for a grate lets you set the style of grate (linear, log or radial) and the number of lines it contains. All open-ended objects, including curves, can have arrowheads on one or both ends. And wait until you see the precision with which you can control the corners on rounded rectangles.

Polygons and freehand shapes can be set to display and print smoothed or unsmoothed. And the smoothing is... smooooth. So smooth, in fact, that you may find smoothed polygons more practical to work with than bezier curves. Bezier curves, noted for their exceptional smoothness, are by definition limited to exactly four points. A smoothed polygon, however, can have as many points as you like, and looks just as good.

There’s more. Any closed object can be filled with a graduated gray scale, known as a “fountain” (see...
Figure 3). Both the initial and final gray intensities of the fountain can be specified, as can its orientation. In addition, an object can be given a shadow, extending any desired distance and in any direction, in any shade of gray or graduated range of grays. Shadows work on open-ended objects as well as closed ones. You haven't seen anything like this anywhere before. Guaranteed. It's worth buying the program just to watch it draw fountains and shadows.

_Cricket Draw_ has no pattern palette. This may seem strange for a high-powered drawing program, but remember that it's optimized for the LaserWriter. Bit-mapped patterns can't take advantage of the LaserWriter's resolution. In fact, they slow down printing. This is why Cricket Software opted instead to concentrate on an expanded gray scale. In contrast to bit-mapped patterns, true gray fills — both solid and graduated — are significantly improved by LaserWriter printing, and get even better when printed on a Linotronic.

However, if you still want patterns, there is something you can do. Using undocumented techniques, specifically the line screen (discussed in the sidebar “How to Get What You Don’t See”), you can produce an infinite variety of fill patterns composed of horizontal, vertical and diagonal lines. Try playing around. Higher gray fill intensities will give you thicker lines. Higher frequencies will give you more lines per inch.

**SHAPING YOUR VISION**

Editing in _Cricket Draw_ is far more versatile than in other drawing programs. To edit an object, select it and type COMMAND-E. For objects that can be edited — ovals/circles, lines, rounded rectangles and starbursts can only be resized — the standard resizing handles will disappear and a new set of editing handles will be displayed, one at each vertex or control point. Dragging one of these handles will reshape the object.

Using this technique, you can reduce or extend the angle subtended by an arc. You can move the corners of a grate around to create perspective-like effects. If you OPTION-CLICK on one of the edit handles of a polygon, a second, independent, edit handle appears. This is referred to as “CUSPING.” The best part of this feature is that if you cusp a vertex in a smoothed polygon, it squares off. This means that you can have both straight and smooth line segments in the same polygon. SHIFT-OPTION-CLICK will delete an edit handle from a polygon.

These editing abilities are further enhanced by zooming: You can enlarge a portion of a drawing up to eight times its original size, or reduce it down to one-eighth of its size.

**A THOUSAND PICTURES FROM A SINGLE WORD**

If you are a frustrated user of other drawing programs, you may now be wondering, “All right, so it does fancy pictures. What about text?” Good question. The inability to manipulate text on the screen while retaining the integrity of the character outlines of PostScript fonts has been the most limiting aspect of drawing programs to date. _Cricket Draw_ meets the challenge.

You want text rotation? Skewing? Reflection on X and Y? Text in any shade of gray, instead of just black...
ANOTHER ROUND OF CRICKET

Fig. 1 Cricket Draw's new tools allow the drawing above to be made with only three objects. The diamond is a basic Cricket Draw shape, not a rotated rectangle. While both the starburst and grate contain multiple lines, each can be drawn with a single drag of the mouse. On the left, the drawing as it appears on the Mac screen; on the right, LaserWriter output.

Fig. 2 When you double-click on any object you have drawn on the screen, a dialog box appears in which you can set line width and intensity, fill intensity (for closed objects), dash pattern and other attributes of the object's appearance. Shown here is the dialog box for a rounded rectangle.

and white? Shadow text, with graduated gray scales in the shadows? Cricket Draw lets you have it all.

Anything else? How about text placed along an arbitrary path, such as an arc, a bezier curve, an open-ended polygon or frehand shape? No problem. Just select a text block and any open-ended object simultaneously and choose the BIND TEXT option from the Special menu. It's done. You won't see a full representation of the bound text on screen. QuickDraw simply can't handle it. Instead, an area filled with diagonal lines will show you where on the printout the text will appear. You'll have to wait until you print your drawing to see the actual text in position along the path.

Each text block is fully editable; just press COMMAND-E. Numerous different font, size and style combinations can appear side by side within a single block. It's even possible to edit rotated or skewed text. It will straighten up while you work on it, then pop back to its previous orientation. To edit path-bound text, you must first unbind it.

Unfortunately, text editing, while powerful, is confusing. There are five different ways to get at text. (1) The selection tool (arrow) lets you resize a block of text or move it around on the page. (2) The text tool lets you draw a new text edit box; or, if the cursor is over an existing text block, it lets you edit. (3) The EDIT TEXT choice on the Edit menu (COMMAND-E) also lets you edit text, if the block is already selected. (4) The SET TYPE choice on the Edit menu (COMMAND-T) displays a dialog box that lets you make font, style and point size changes on text that is selected. (5) There are command key equivalents for changing style and point size (but none is available for font changes). This all works quite differently than similar functions in other drawing programs (MacDraw, MacDraft, the draw layer of SuperPaint), and takes some getting used to. At first, you may feel the program is working against you.

POSTSCRIPT AND MORE POSTSCRIPT

Cricket Draw does PostScript and I've discussed a number of ways in which the program gives you unprecedented interactive access to PostScript's power. But Cricket Draw really does PostScript. We're talking code.

You can see the PostScript code for any drawing you make by selecting NEW from the File menu and clicking on the PostScript button. This will open an editing window. Choose GENERATE POSTSCRIPT from the Goodies menu and the PostScript code for the frontmost drawing window will appear in the PostScript window.

The contents of a PostScript window can be saved either in brief form — just what's in the window — or in complete form, which includes Cricket's PostScript header as well. This header is a wealth of information for anyone interested in the language. Cricket has revealed exactly how they accomplished every one of their PostScript techniques. And it's reasonably readable code, unlike some other PostScript headers that the hackers among you may have tried to decipher.

You can modify the code in a PostScript window — it's simply a text file. Your changes are not reflected on the screen, but you can download the contents of the window directly from Cricket Draw and see their effects on the resulting printout. If you don't like what you see, just try again. You can use the code generated by Cricket Draw as a building block for your own pro-
grams, making only minor modifications; or you can get as elaborate as you want. There is also a complete on-line PostScript help function, which shows you the proper syntax for and a short description of nearly every operator (primitive command) in Adobe's PostScript Reference Manual.

We really have to hand it to Cricket Software for providing this feature. Many developers would have stopped at the boundary of the drawing window and said, "We’ve given the user enough." You would never have seen their hard-earned PostScript secrets, and if you did, they’d be virtually unintelligible. Instead, Cricket went the extra mile and provided a full-scale PostScript laboratory as well as a great drawing application. It's a welcome change to see software done with the user in mind.

If, on the other hand, you have no interest in the hidden mysteries of PostScript, you can ignore this part of the application altogether. You'll still have all the power of the drawing program at your command. The two operate independently.

**DOT TO DOT**

Although Cricket Draw is optimized for PostScript, it is fully compatible with the ImageWriter. Of course, while a PostScript printer will often improve on the screen image, the printout from an ImageWriter will mirror the screen pixel for pixel. Text effects like rotation and skewing, in particular, which require better than 72 dpi to show their stuff and which therefore look ragged on the screen, will look equally rough when printed on an ImageWriter.

However, there is one distinct advantage Cricket Draw offers to those with an ImageWriter II: color. Color, along with line width, gray intensity, and so on, is one of the attributes that can be selected from the dialog boxes that appear when you double-click on an object. Gray intensities, fountains and shadows all work with color as well as with black and white. Of course you can't see color on the screen — not yet, anyway — but you can create four-
ANOTHER ROUND OF CRICKET

color graphics on an ImageWriter directly from within Cricket Draw. No additional utility program is required to generate color output.

Many early users of Cricket Draw reported problems when trying to print their files, particularly when printing to Linotronics. I had this experience myself with one file that printed fine on a LaserWriter but thumbed its nose at me when I tried to get Lino output. Cricket has been working feverishly to overcome these problems since Draw's initial release. As we went to press, they had just released an upgrade, version 1.01, which they claim has resolved most of the reported problems. This new version was not yet available for testing at press time. It is being sent free to all registered owners.

TO SEE IS TO KNOW

Cricket Draw's user interface is excellent. In designing a user interface for Macintosh software, it's easy to get carried away. It's hard to create a good balance between power and simplicity. Decisions about things like the organization of the menus, the assignment of command keys and the use of dialog boxes must be made carefully. Otherwise, the interface will end up obscuring a program's capabilities, rather than providing easy access to them. There is one area in Cricket Draw: text editing, already mentioned — that can use some improvements. But on the whole, the Cricket Draw interface is so well done that anyone who understands the distinction between bit maps and objects, can, if given the simple advice "Try double-clicking," learn 90 percent of Cricket Draw in 30 minutes — without the manual.

A program's user interface and its written documentation are two sides of the same coin. They both contribute to or detract from the ease with which the user can get a job done. Cricket has done a solid job on both. The manual has clear, accurate explanations. It is well organized and extremely well illustrated. There are a few places where there could have been a bit more explanation — not because what's there is inadequate, but because you get the feeling that there has to be more to the story.

Cricket is planning to release an ongoing series of technical notes about Cricket Draw, with pointers on how to get the most out of the product, and, alas, workarounds for any bugs that crop up. These notes will be uploaded to a number of subscriber bulletin boards (ComputerServe, MCI, AppleLink) and will be made available free to Macintosh user groups. Registered owners who want to be sure to get them all, on a monthly basis, can subscribe for $25 a year. The first set of such notes, detailing changes that were made in the software after the manual was printed, is included in the Cricket Draw package.

Registering will also guarantee that you'll be notified of upgrades. These will be available for a nominal fee ($10 for minor versions, more when major new features are added). Cricket has already planned to publish a version early in 1987 that fixes any bugs found in the initial release.

Now You See It, Now You Don't

Standards are a wonderful thing. The computer world is full of them. Like the RS-232 "standard," Or "standard" ASCII text files. The Macintosh has graced us with yet another, the "standard" PICT file format. There are several different programs that generate PICT files, among them MacDraw, MacDraft, SuperPaint, and now Cricket Draw. Others, such as PageMaker and ReadySetGo can't produce PICT files but can read them.

PICT is supposed to make it easy to move graphics from one application to another. But reality isn't always as accommodating as the paper world in which standards are written. So here's the low-down on what works and what doesn't with the initial release of Cricket Draw. The most reliable transfer is from MacDraw into Cricket Draw. This can be successfully done either with MacDraw files themselves or with PICT files created in MacDraw. The only surprise is that, since Cricket Draw has no fill patterns, MacDraw objects filled with patterns other than shades of gray will be converted into gray-filled objects in Cricket Draw.

MacDraw files cannot be read directly by Cricket Draw. PICT files created by MacDraft can be read by Cricket Draw, but the fill patterns will not transfer at all; filled objects will all become unfilled.

If you try to read a SuperPaint PICT file into Cricket Draw, the system will crash.

And in the "oops" department: Cricket Draw (version 1.0) can't read its own PICT files. So, if you save a Cricket Draw drawing in PICT format for export to another application, save a second copy of it in Cricket Draw format. Otherwise, you will not be able to make any further changes to it.

So much for bringing PICT images into Cricket Draw. Going the other way, the most reliable transfer is into ReadySetGo 3.0. I am told — although I didn't have a copy to test it myself — that Cricket Draw PICT files can be ported to ReadySetGo 3.0 with no problem, and that they will print properly. A handy hint: When you create the PICT file, hold down the Option key while you click on the Save button. This will generate a PICT file in which the screen image is a bit-mapped image, rather than an object-oriented image. The bit-mapped screen image will scroll much more rapidly in ReadySetGo than its object-oriented counterpart. You will still get the full benefit of the LaserWriter's resolution when your drawing prints, since the PostScript commands are exported to ReadySetGo along with the bit-mapped screen image.

As for PageMaker, wait until version 2.0, which will be fully compatible with Cricket Draw PICT files. Since version 1.2 uses Aldus Prep instead of Laser Prep (like everyone else does) and since Aldus Prep was not designed to handle the PostScript that is embedded in Cricket Draw PICT files, the latter can be read into PageMaker, but will not print properly.

MACUSER MAY 1987
Fig. 4 The 1270 dpi resolution of the Linotronic 100 yields a smoother gradation of grays in fountain-filled objects (bottom strip) than does the LaserWriter with its 300 dpi resolution (top strip).

Fig. 5 Text can be rotated or skewed to any angle in one degree increments. It can also be placed along any arbitrary path. On the Top, the modified text as it appears on the screen. On the bottom, LaserWriter output.

Fig. 6 You can see the PostScript code for a Cricket Draw drawing by opening a PostScript window and choosing GENERATE POSTSCRIPT from the Goodies menu. What appears in this window can be saved on disk as a text file. It can also be edited — if you know PostScript — and downloaded to a printer directly from within Cricket Draw.

Since *Cricket Draw* is not a CAD program, a single page was deemed adequate. Those who are looking for increased resolution can achieve it in *Cricket Draw* by setting the reduction percentage in the Page Setup window to less than 100% (25% is as low as you can go). This expands the rulers in the drawing window proportionally, allowing you to draw on a piece of “virtual paper” as large as 30" wide X 40" high (or 27" X 50" if you choose legal size paper). When you print, however, it will be reduced to a single sheet.

**DRAWING TO THE END**

*Cricket Draw* is hot, and anyone with an interest in serious drawing or playful drawing or general playing should consider buying this program. Take a long look at what it can do and I think you’ll see what we mean.

HENRY BORTMAN IS A SAN FRANCISCO-BASED FREELANCE WRITER AND AN ENGINEER FOR US PRINT.

**Cricket Draw**

*Cricket Draw*

|---------------|----------|------------------------|----------|------------------------|----------|---------------|-----------------|-------------|----------|---------|-----------------|--------------|----------|

**Comments:** High-powered object-oriented graphics, optimized for PostScript printers. A tad expensive, but worth it.

**Best Features:** Unbelievable screen displays; rotation and skewing of text in 1-degree increments; graduated gray fills and shadows.

**Worst Features:** Text editing is confusing.

**List Price:** $295. Requires 512+.

<table>
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<th>SOFTWARE</th>
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<td><strong>NCP denotes not copy-protected.</strong></td>
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<td><strong>CP denotes copy-protected.</strong></td>
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Don’t overlook the Mac if computer-aided drafting is part of your business. EZ-Draft offers professional quality CAD on the Mac.
Mac products from

Personal Computer Peripherals ... NCP
HFS Backup ................................ $39.
ProVUE Development ... NCP
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Mail Manager Template .................. 29.
Personal Finance Template .............. 29.
Rubicon Publishing ... CP
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SuperPaint (advanced graphics program) 55.
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MacConnection Special of the Month
through May 31, 1987

T/Maker
Write Now
Steve Jobs claims "this is the word processor we built and designed Macintosh for."
Write Now is a fast, general-purpose word processor with simple page layout capability.
Easy to use and learn, Write Now can accommodate any size Mac (512k recommended for spelling checker).
• Not copy-protected
• Extensive Undo feature
• On-screen multi-column editing
• Built-in spelling checker with 50,000 word dictionary

Write Now .................................. $99

ClickArt Business Image .................. 29.
Bombay, Plymouth, or Seville Laser font ... 59.
Write Now (word processor) special
Target Software ... NCP
Merriam Webster's Thesaurus ............ 29.
MacLightning (interactive spell checker) ... 53.
Medical or Legal Dictionary .............. 53.
Volta (Desk accessory outline) .......... 59.

Telos Software ... NCP
Business Filevision (512k, external drive) 199.
Think Educational ... CP
MacEdge II or Mind Over Mac ............ 28.
Think Technologies ... NCP
LaserSpread (Laserwriter utility) ....... 69.
Lightsped Pascal (includes debugger) ... 85.
Lightsped C (top-rated C Compiler) ... 129.

TML Systems ... NCP
TML Source Code Library ............... 59.
TML Database Toolkit ............. 65.
TML Pascal (compiler, req. 512k) ........ 69.
TrueBasic ... NCP
TrueBasic (fast, flexible & portable) ... 69.

Algebra II, Pre-calculus, Calculus, Trigonometry, 3D Graphics, Discrete Math, Probability & Chipendale utilities ... each 36.
TrueSTAT (statistics) ..................... 59.
Runtime (create stand-alone applications) ... 59.

Unicorn ... CP
Animal Kingdom (ages 6-12) ............ 29.
Decimal Dungeon (math, ages 9 up) ........ 59.
Fraction Action (arcade style math game) ... 29.

Math Wizard (math games, ages 5-10) ........ 29.
Read-A-Rams (reading, ages 5-8) ........ 35.
William & Macias ... NCP
myDiskLabeler (design & print labels) 25.
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GAMES

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Artworx ... CP
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Pinball Construction Set ............ 27.

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Infinity Software ... CP
Grand Slam (tennis, req. 512k) .......... 28.

Inforcom ... CP
Leather Goddesses of Phobos (standard) ... 24.

1-800/Mac&Lisa

700U

MacConnection, 14 Mill Street, Marlboro, NH 03456 800/622-5472 603/446-7711

*Defective software replaced immediately. Defective hardware replaced or repaired at our discretion. Some items have warranties up to five years.
**HARDWARE**

Manufacturer's minimum limited warranty period is listed after each company name. Some products in their line may have longer warranty periods.

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<td>4695</td>
</tr>
<tr>
<td>Curtis Manufacturing</td>
<td>lifetime</td>
</tr>
<tr>
<td>Diamond (6 outlets)</td>
<td>29</td>
</tr>
<tr>
<td>Emerald (6 outlets; 6 ft cord)</td>
<td>36</td>
</tr>
<tr>
<td>Sapphire (3 outlets; EMI/FI filtered)</td>
<td>47</td>
</tr>
<tr>
<td>Ruby (6 outlets; EMI/FI filtered; 6 ft cord)</td>
<td>55</td>
</tr>
<tr>
<td>Dove Computer</td>
<td>1 year</td>
</tr>
<tr>
<td>MacSnap Memory Upgrades</td>
<td></td>
</tr>
<tr>
<td>MacSnap 524 (612k to 1 Meg)</td>
<td>149</td>
</tr>
<tr>
<td>MacSnap Plus 2 (Mac Plus to 2 Meg)</td>
<td>269</td>
</tr>
<tr>
<td>MacSnap 548 (612k to 2 Meg)</td>
<td>389</td>
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<tr>
<td>Ehman Engineering</td>
<td>1 year</td>
</tr>
<tr>
<td>800k External Disk Drive</td>
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<tr>
<td>Ergotron</td>
<td>1 year</td>
</tr>
<tr>
<td>MacTilt (includes external drive bracket)</td>
<td>75</td>
</tr>
<tr>
<td>MacBuffer 512k</td>
<td>call</td>
</tr>
<tr>
<td>MacBuffer 1024k</td>
<td>call</td>
</tr>
<tr>
<td>Hayes</td>
<td>2 years</td>
</tr>
<tr>
<td>SmartCom II (communications software)</td>
<td>89</td>
</tr>
</tbody>
</table>

**SMARTDISK**

| Single-sided Diskettes |
| --- | --- |
| Sony 3½" Disk (box of 10) | 15 |
| MAXELL 3½" Disk (box of 10) | 15 |
| Fuji 3½" Disk (box of 10) | 15 |
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| 3M 3½" Disk (box of 10) | 16 |

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| Sony 3½" Disk (box of 10) | 23 |
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| The Easel (holds 20 disks) | 13 |
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| ImageWriter Black or Color Ribbons | 5 |
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| Smith & Bellows | 25 |
| Mahogany Disk Case (holds 90 disks) | 28 |

**OUR POLICY**

- We accept VISA and MASTERCARD.
- No surcharge added for credit card orders.
- Your card is not charged until we ship.
- We ship a partial order whenever we charge.
- If you ship a partial order, we ship the shipment(s) that complete the order.
- No sales tax.
- All U.S. shipments insured. No additional charge.
- APO/FPO orders shipped 1st Class Mail.
- Allow 1 week for personal and company checks to clear.
- UPS Next-Day Air available.
- COD max. $1000. Cash or certified check.

**SHIPPING**

- 120 day limited warranty on all products.
- To order, call us anytime Monday through Friday 9:00 to 9:00, or Saturday 9:00 to 5:30. You can call our business offices at 603/446-7711 Monday through Friday 9:00 to 5:30.

Please circle 82 on reader service card.
Artificial Intelligence.

Guess who’s coming to dinner?

You’re having a party, right? And you need someone to round out a guest list. How about a person with real presence, let’s say twentieth century, male, perhaps a bit controversial? Diamond Jim Brady? P.T. Barnum? I know—Albert Einstein. He’d be perfect! Relatively speaking. What a conversation piece!

Just call our latest contest winner, Robert Dorfman. He’s got Al right on the shelf. He’s maybe a little bald, and could use some arms and legs, but that’s nothing. Mr. Dorfman can’t take care of with a little vinyl, plastic, fiberglass and some genuine human hair. But we should warn you—the famous professor won’t come cheap. After all, in Mr. Dorfman’s line of work, everyone has a price on their head.

Double or nothing. We’ve finally found a winner who’s head and shoulders above the other entries. Mr. Dorfman’s father started creating lifelike figures over thirty years ago, and now Dorfman Museum Figures can be found in exhibitions from Cape Cod to Singapore. There’s even one of the boss himself, which he takes a few hairs off each year to maintain the resemblance to his own distinguished, but receding pate.

Fortunately, Mr. Dorfman is no dummy. He uses OverVUE to categorize his 700 different heads, as well as to keep up with his 2000 contacts in museums all over the world. Excel comes in handy for budgeting, sales, and for creating detailed cost analyses on each figure.

And, what about you? How does your Mac help you get ahead? Your story could be worth $500 in free add-ons and software. Write away!
RECENTLY COMPUTERGRAPHICS World, a trade journal for the computer graphics industry, editorially asked "Where has Apple gone?" They were highlighting the fact that Apple has so far been a no-show in micro-based computer-aided design (or drafting)/(CAD) software. They pointed out that Apple had everything going for it in the Macintosh with its high-resolution screen, its uniform user interface, its mouse, and so on. The editorial chided Apple for not being in the CAD marketplace where it belonged.

Until recently micro-based CAD software available has run exclusively on the IBM PCs and PC clones. And some of these software packages have become very sophisticated. Thanks to programs like AutoCAD, the industry leader, many "big" CAD companies have felt the impact of micros and mice on their market.

Now there's EZ-Draft, a $2500, full-featured computer-aided drafting package by Bridgeport Machines. Bridgeport is a company well known for its large, numerical-controlled (read "computerized") milling machines that are used to create all kinds of metal shapes from car fenders to jet engine parts. This program should silence the critics about Apple's lack of "Real CAD" (Real draftsmen don't do FatBits?)

WHAT ABOUT MACDRAW?

Many Macintosh users who work with MacDraw think of it as a computer-aided design program. In reality it's more like a computer-assisted pencil when compared to dedicated CAD system capabilities. The main difference between MacDraw and EZ-Draft is the latter's ability to manipulate individual drawing elements with a greater degree of accuracy and flexibility. There is an analogy to this in the contrast between computer-aided drafting and "person-aided drafting" (i.e., pushing a pencil).

In computer-aided drafting there are usually 200 or more command
combining geometrical drawings without resorting to calculating and drawing the position of every line, arc or circle in a drawing, EZ-Draft also includes a very complete set of dimensioning commands to help create a finished drawing. In fact one of the main strengths of this package lies in its dimensioning abilities.

CAD consists of two distinct drawing phases: geometry construction and detailing. Geometry construction is the job of creating the object you are describing in picture form, using a series of primitive elements such as lines, arcs and circles. Detailing is adding notes, callouts, sectioning, creating auxiliary views and so on.

A word of caution is needed here. Unlike most Mac applications, EZ-Draft is not immediately user friendly. For example, take the procedure necessary to install it on a hard disk (and programs this complex really require hard disks, even if they'll run from floppies). To install EZ-Draft on an Apple HD-20 requires no fewer than 10 steps. If you miss one the software will not work! Once you manage to install it correctly things get a little easier.

EZ-Draft's command structure is not as intuitive as many other Mac drawing programs. In defense of EZ-Draft note that in order to perform the many tasks required to create real working drawings, the program must contain hundreds of command combinations. EZ-Draft started out as a software package running on other computer systems including Apollo CAE workstations and the NEC APC computer system. It was ported over to the Mac. As such it brings along some of these other-system quirks.

Every command for CAD work is provided with the EZ-Draft menus. The program has so much command flexibility that each pull-down menu has its own pop-up menu.
Incremental entry refers to a difference in distance from some point on the drawing previously identified. This distance is commonly called the “delta” distance. EZ-Draft refers to this as “implicit point entry.” EZ-Draft can accept polar coordinates (i.e., radius and angle) as well as Cartesian coordinates (i.e., X and Y).

**TAKING IN THE VIEWS**

Once in the drawing the user must set up the “views” needed to create the geometry. View is a concept that will be familiar to anyone who has taken any courses in drafting. Views are analogous to the orthogonal projection views used to describe a three-dimensional object with a two-dimensional drawing. In fact, EZ-Draft uses standard orthogonal names such as Front, Right and Bottom for its view names.

When you define a view you must define its position and size on the drawing sheet — where XOYO is located and what the view name is going to be. A scaling factor can be applied to each view independent of all other views. This is another example of true CAD.

Almost all drawings are created in some scale other than one to one. Architects, for example typically work at scales of 1 inch = 8 feet or 1 inch = 4 feet. If the view size turns out to be too small or the scale selected was either too big or too small for the sheet, EZ-Draft makes it easy to change all of the view parameters. A whole menu is devoted to view manipulation and control. Views can have different scale values on the same drawing sheet.

**ALL KINDS OF GEOMETRY**

Now on to the job of “layin’ down some lines.” Once a view has been created and selected as the work view you begin to create the graphics or geometry by using commands found on the Line, Arc and Other menus. There are lots of choices available. In the case of the Line menu there are 30 different ways to insert a line.

The options available to enter the all-important coordinate information are not restricted to just mouse clicks on the screen; they also include explicit entry from the keyboard, and calculations from other elements already placed.

Keyboard input takes two forms: absolute coordinate entry and incremental coordinate entry. Absolute entry refers to a point on the drawing referenced back to the X and Y axes (i.e., XOYO). EZ-Draft refers to this as “explicit point entry.”

The zooming features of EZ-Draft allow control so that the designer may work close to the geometry of the drawing.
command allows creation of a pair of lines a set distance apart, handy for creating walls on architectural plans. Lines can be drawn horizontally, vertically or at set angles, the angles being entered by either keyboard or calculated. Lines can be inserted with respect to other elements such as circles using commands such as Tangent-Tangent that draws a line tangent to two arcs or circles.

The Arc menu has a rich set of commands to create all manner of arcs and circles. Some commands, such as Circles, are straightforward. You provide a radius or diameter and a center point, and EZ-Draft draws a circle. A pop-up menu offers you three options as to how to enter the radius or diameter.

Arcs are among the most difficult of all drawings elements to place, because they have not only radii and origins, but also endpoints, like a line. The way this information is entered can be very confusing. Some large CAD systems give the user more than 30 different ways to enter an arc! EZ-Draft doesn’t have quite that many, but there is still a dizzying array of arc commands. At the bottom of the Arc menu there is a series of commands followed by letter pairs. These letter pairs represent the parameters of the arc generated by that particular command. It can be a bit intimidating trying to keep up with all of the command combinations, especially without so much as rudimentary on-screen help. In this area EZ-Draft could really use some improvement. Virtually every other major CAD system has some sort of on-line help facility.

One very useful and well thought out Arc command is the Fillets. This command places a tangent arc at the intersection of two elements. The power of this command is demonstrated by the kinds of modifications you can do while placing your fillets. When you select the command, you’re presented with a pop-up menu that includes such items as set radius (a very important aspect of a fillet), as well as how the command is to treat the two elements to which the fillet is to be applied. You simply identify the two target elements, the quadrant the fillet is to occupy and the elements the fillet command is to trim.

The third element insertion menu is the Other menu. This menu contains commands for those element types other than lines or arcs, as well as commands to generate symbols.

Points (from the Other menu) are just that, points in space (or as they are sometimes known, zero length lines). These are handy to have around for complex constructions. Curves are similar to the curves available in MacDraw, although they are actually Bezier splines here. These are mathematical curves similar to the French curves used in manual drafting. Bezier splines are very advanced elements and their existence in EZ-Draft says much about the maturity of this product. Other commands in this menu include Ellipse, Hex, Polygon and Symbols.

AH YES, SYMBOLS
Symbols are a way to create uniform drawings. A symbol is a group...
The Power of Color.
Until now desktop publishers could only dream of it.

Great minds create powerful ideas in color. Their thoughts may be blue sky, wave a red flag or make the competition green with envy. But, somehow the reports and graphics that spring from these color ideas rarely convey the life and energy of the original thoughts.

Kroy® brings the power of color to desktop publishing and business communications with a simple process compatible with virtually every laser printer, including the Apple™ LaserWriter, and most photocopiers that apply dry toner.

Presentation graphics like these are created on a laser printer, then enhanced for visual impact with KroyKolor.

To bring your idea to life, add KroyKolor™ to the message. There are 60 vivid colors and shimmering metallic foils to match the mood and add impact to your business communications. The matte and gloss colors range from a cool blue, to a blazing, fire-engine red.

Especially exciting are the 14 metallic foils that perfectly simulate foil stamping on your logos, invitations, letterhead, presentation folders, newsletter, artwork and mock-ups. The dazzling metallics range from polished gold and silver to burnished aluminum and copper.

Applying KroyKolor is an easy (and amazing) process. After your original has been printed on a laser printer or photocopier, you insert it into a sheet of KroyKolor transfer film, feed it through the processor, peel away the transfer film and you have vibrant color in seconds.

The real fun begins when you create multi-color business graphics (such as a pie chart with each slice a different color). To do this, cut pieces from various colors of transfer film and place the pieces onto the areas of the graphic you wish to highlight. That's how the multi-colored examples shown in this ad were produced. It's possible to produce multi-colored presentation graphics in a few minutes which would have taken several days (and several hundred dollars) to produce at a print shop.

Kroy, a leader in graphics technology for 27 years, also provides quality papers to make your color presentations look even better.

Fulfill your dream of desktop publishing in color today for just $995, the suggested retail price of the KroyKolor processor. KroyKolor film is available in boxes of 10 or 100 sheets and is priced at about 50¢ per sheet.

For information or to place an order call toll free:
800-521-4997
In Arizona 602-951-1593
Weekdays 8am-5pm MST

The KroyKolor processor accepts materials up to 12" wide. KroyKolor transfer films are slightly larger than an 8½"x11" page, providing edge-to-edge coverage.

A product of Kroy Sign Systems
7520 East Redfield Road
Scottsdale, Arizona 85260
of elements representing an object such as a door or a valve that is used repeatedly. In other systems symbols are called cells, library parts or figures.

Symbols are used similarly to the Clipboard/Scrapbook technique of MacDraw and MacPaint, the main difference being in how the program keeps track of the symbol contents and locations. In MacDraw, when you paste something into the drawing, all of the elements in the Clipboard are copied into the drawing.

With EZ-Draft symbols, only key information is stored each time the symbol is inserted. Key information includes such things as the scale at which the symbol was inserted, the angle and the XY location. The actual elements of the symbol are stored in the library area of the drawing. This allows the program to update the screen quicker, and gives you more flexibility.

Let's say a hex bolt pattern was stored in the drawing's symbol library and the hole drawn was too small. The Change Instances command allows you to change the elements stored in the library for a particular symbol. All occurrences are updated.

Another important command on the Other menu is Projections. This command allows you to project key elements from one view into another view, working with the orthogonal names given to each view. The major problem with it is its complexity. In order to properly project an element into another view you must set up such parameters as depth of projection, whether edges are to be created, and so on.

**DETAILS, MERELY DETAILS**

Once the geometry has been created, the next step is detailing the drawing. To speed up a usually tedious part of drafting, EZ-Draft has a whole menu full of useful commands. Straight text is handled with two commands: Notes and Notes from File. Notes allows you to insert text freeform, anywhere on the drawing, much like the text mode of MacDraw. Note, however, that the text is entered in the command area of the screen and is often cut off from view before you can see all of it. This can cause problems when trying to judge where to break text.

Notes from File accepts text from a text file on disk. The only drawback to this command is the text file must have the filename extension "TXT" to work properly, an indication of EZ-Draft's "big system" heritage. Text inserted into the drawing can be modified by the Edit Text command of the Edit menu. Text height, width, slant (i.e., italics), justification and text content can be changed. But you can't change fonts! You're stuck with the default font. The ability to specify and change fonts is very important, and should be near the top of Bridgeport's wish list for the next version.

The most important part of the whole drawing process is dimensioning. It must be done with the greatest care. Nothing scares a job leader more than finding a worker applying a ruler or scale to a blueprint.

Dimensioning is an area where (continued on page 192)
YOU WOULDN'T DRIVE A CLUNKER TO THE OFFICE.
What BMW has done for the automotive industry, Mirror Technologies has done for the hard drive industry. We don't simply crank out drives to meet current demands. We carefully engineer them to exceed yours.

Our products are extremely quick — taking you from 0 to 60 pages in a heartbeat. They handle like a dream as they wind through desktops of information. And their reliability is unmatched. Built to go full throttle day after day. So you can overtake the pack. Instead of just running with them. So don't settle for a hard drive riddled with compromise. But rather, choose a drive built by a company that looks on compromise as a 4-letter word.

**WE'VE GOT A GREAT TRACK RECORD.**

Before you buy a drive from a company, you should take a look at their history. Ours is quite impressive.

We were the first to introduce an 800K drive for the Macintosh. First with the 20 meg tape backup. And first with the 85 meg, 172 meg and 340 meg hard drives.

Our products are selling to companies like Honeywell, AT&T, 3M and Apple. Yet we've also pleased some companies that you probably haven't heard of. Like Doris Dog Service, Anderson's Nursery and Himalayan Expeditions. Who knows, maybe now that they have the right tools, these companies, too, will become household words.

**MAGNET 20X, 30X AND INTRODUCING THE 40X.**

Here are all the choices for storage you need (20, 30 and 40Mb). The 20X, perfect for everyday use. The 30X, 50% more storage for the price of our competitor's 20 meg drives. And introducing the 40X, offers all the storage you need for power computing. All cooled by our extra quiet fan. They sit beside your Mac, so the system won't heat up. Daisy chain up to 7 units. They come with backup utilities and optional MacServe networking software (a $250.00 value). Preformatted, so just plug them in and run.

**THE MAGNUM 800.**


**MAGNUM TAPE 20, INTRODUCING THE MAGNUM TAPE 40.**

For the serious user who can't afford to lose data. These "safety nets" keep a portable, permanent record of your data. So reliable, the Library of Congress uses us to backup their most critical data. Free software update policy so your tape drive can be updated as we update ours. We're the only one to deliver file by file, volume and incremental backup. With incremental, you backup only the data you've changed since your last backup. These totally secure systems run silent and cool. When we designed the new Tape 40, we worked side by side with Apple and 3M so it would be compatible with any products released by Apple in the future.
THE MAGNET 40/40.

A very fast 40 Meg hard drive with dependable 40 Meg tape backup as a "safety net." Sits under your Mac so it doesn't take up extra space. The premier drive/ tape backup combination in the market. Backup file by file, volume or incrementally. With incremental, you can usually backup your daily data in under 4 minutes. Comes standard with MacServe ($250.00 value) to allow you Multiuser, Multitasking. This drive is based on the NEC drive and the 3M Tape 40 — two leaders in their respective industries.

WHEN YOU WORK IN THE FAST LANE, YOU CAN'T AFFORD TO BREAK DOWN.

To win in today's fast and furious corporate arena, you need a drive that can survive the grueling pace. You need a well built machine.

Well you'll be happy to know that our drives are so well built that we were the first to introduce a full-year warranty. And of course this warranty is still policy today. Plus each unit comes with a Quality Assurance Report detailing every step of production. And finally, before a drive is allowed out the front door, it is tested for 24 continuous hours to insure its durability.

Our "pit crew" is equally dependable. If you ever have a problem, we have trained experts standing by. Just give us a call, toll free. And we'll have you up and running in no time. Flat.

WE'RE REVVING UP FOR THE FUTURE.

The Macs of tomorrow are just around the corner. And with Mirror Technologies, you can hit the ground running when they arrive.

Currently, we're shipping more drives than any other company except Apple. Like the 85X, 172X, the MagnNet 40/40 and tape drives, too.

When File Servers hit the streets in January, we were there with big enough hard drives to tie dozens of Macs together. Other drives would blow an engine trying to do that.

And it's no secret that Apple is about to introduce bigger and better machines. We're ready for them, too. Because we're not waiting for the future to come to us. We're going out half way to meet it. That way, we come back with products that'll let you blow the doors off all those who remained standing still.

Peripherals Plus, Inc.
350 des Erables, Lachine, Quebec. H8S 2P9
(514) 367-3060
EVERY YEAR AS TAX TIME AP­
proaches, a lot of people are
hunched over stacks of paper and
receipts spread over their dining
room tables. This year was probably
no exception and next year, thanks
to the new tax laws, promises to be
even more fun. I, on the other hand,
spend tax time merely copyi ng totals
from a neat pile of printouts gener­
at­
ated by MacMoney. Maybe it's time for
you to think about taking an easier
way out, too.
MacMoney is a fine-tuned version
of an already highly rated financial
management package, Home Accountant for the Macintosh (see "Bread
and Butter Budgeting," MacUser,
April 86). The authors of both pro­
grams, Mike Farmer, Colin Jameson,
George W. Lee and John Tinsman
had previously licensed the code to
Arrays, Inc./Continental. Now
they’ve rescinded that license, re­
fined their program, revised the doc­
umentation and released the im­
proved product under a new name.
Superficially, MacMoney looks
very much like HAMac; however,
more than 30 changes have been
made. The changes that are particu­
larly significant to current HAMac
owners and potential buyers are:
• MacMoney requires a 512K Mac;
HAMac could be used with a 128K
Mac and an external drive.
• MacMoney works with the Mac
Plus;
• LaserWriter support is included.
• If you have a Mac Plus and a
two-sided disk, you can increase the
number of transactions in one year
from 3000 to 6000.
• MacMoney is not copy protected.
The original Home Accountant was,
although the protection was re­
moved from the most recent version.

SMALL FIX FOR A BIG PROBLEM
Perhaps the most important
change is a small bug fix that you
might never notice. If, for some
reason, you exit MacMoney without selecting QUIT there is now a 90 to 95 percent chance that your data will remain intact. The reason is Mac-
Money’s new database integrity runs a check when you start up the program to make sure your End of File markers are in the right place.

NOT JUST AN ELECTRIC CHECKBOOK

MacMoney is much more than an electronic checkbook or ledger; it is a financial management system with powerful planning tools. Its three categories are: data entry, data retrieval (reports), and “what if’s.” And you get the program’s power without complexity. MacMoney is faithful to the Macintosh interface so it’s easy to get started. All of the data entry prompts are logical and in plain English.

MacMoney is a standard double entry accounting system, that all related files are properly updated when you enter data. For example, if you write a check to a credit card company, MacMoney deducts the amount from the checking account’s balance.

GETTING STARTED

New users can pick up their checkbook stubs, boot up MacMoney, put in a blank disk for data, select the default category “Personal Checkbook” and immediately start to enter information. Checks are automatically dated and numbered, (deposit slips are also numbered automatically) and your current balance is always displayed. You enter the payee, amount and category information — category and amount are required entries. I don’t recommend this, but if you want to, you can create categories “as you go.”

One of the more convenient new features is that the date of the last transaction appears on the check when you open an account instead of defaulting to the current date. Since I always start where I stopped, it’s much less bother.

Also new in this version are different backgrounds for the check and the deposit slips to help people remember which they are entering. In the old program they looked a lot alike. This helps when you’ve just recorded a deposit and then forgotten to switch back to the withdraw-

To get started. The only solution in the earlier version of the program is to use the Transaction Register to change all the deposit amounts to zero and then re-enter the information correctly. The different backgrounds should at least give you fair warning to switch to the appropriate part of the program before you get bogged down in a time-consuming workaround.

CATEGORIES

Although you can create categories on the fly, it makes more sense to sit down before you start entering data and make a list. MacMoney’s manual includes suggestions to help you get started.

MacMoney allows you to create up to 200 categories of seven types. Each one must be designated as expense, bank account, credit card, asset, liability, cash or income. Once created, their names can be changed, and balances can be changed by selecting ADJUSTMENTS from the Transaction menu. The only thing you cannot do is delete a category once a transaction has occurred involving it. You will have to decide which type you want each category to be, and it’s not always cut and dried. For example, you might assing the type “credit card” to your gasoline cards. The problem is that MacMoney doesn’t include credit cards in your Income and Expense reports. To get around this, create a credit card category for each card and other categories called “Gasoline,” “Maintenance,” etc. to assign to each credit card transaction.

You can also prepare a budget for a category. Just select the category from the list and type COMMAND/B. If you decide to prepare a budget, your report and graphs will show you whether you are over or under budgeted amounts.

Most people write checks to cover more than one type of expense. Mac-
Money provides a means for dealing with these situations through split transactions. At the bottom of each check or deposit transaction, there is a Split button which expands the transaction form to accommodate up to ten separate amounts and categories. Use Split transactions when you pay your mortgage or other loans so that you can keep track of how much you are paying on the principal and how much goes to interest or insurance.

Another common Split Transaction is when you write checks at the grocery store, partly for food and partly for cash. Recording this as a Split Transaction gives you a more reasonable idea of how much you’re really spending on groceries.

A major problem with Split Transactions is the lack of a space for a memo or ID code. Also, a transac-
tion must be entered as split the first time it’s entered, even if you don’t have the correct information at that time. You won’t be able to come back later and split up the information, although you can, of course, come back and correct it.

One of the nicest features of MacMoney is that it allows you to save data by the month without closing a previous month’s transactions, as the old Apple II version of Home Accountant required you to do. When statements come in from past months, simply enter the appropri-
ate date and the information. The register lists all items, checks, deposits, charges in the order that you entered them. The Custom Transaction Report, however, will allow you to sort items by date.

One important feature under the File menu is Start New Year. Mac-
Money transfers the previous year’s data to the new System, as well as all your categories, names, ID codes and budget information. At the start of each year, it’s important to review categories and make any changes before starting new transactions. Once a transaction is made, the category cannot be deleted. Mac-
Money saves the totals from the previous year in each category for each month and the year as a whole to use in comparisons in the reports and graphs.

Each time you launch MacMoney you’ll be told when you last used the program, how many automatic transactions from the list you previ-
ously created are due and how full your transaction file is.
BANKING ON YOUR MAC

Select a bank account such as Personal Checkbook, one of the system's default categories to begin using MacMoney. Each transaction must have an amount and a category. Click on the Split button to assign amounts to as many as ten different categories.

Because the deposit slip is similar to the check, the background pattern is different to help users distinguish between them. Deposit transactions can also be assigned an ID Code and can be Split among as many as 10 categories. Category lists can be kept on display for easy reference. Click on a category and it automatically appears in the category frame on the check or deposit slip.

Type a unique name and enter a starting balance if desired. Select a type and click Save to create a category. Category types cannot be changed, and once a transaction has been assigned the category, it cannot be deleted.

Enter an estimated budget amount for each month in which you expect an expense to occur. When you assign a transaction to the category, MacMoney will post the information here. Reporting options allow you to compare "actuality" to budgeted amounts. You can also use the budgeting feature to calculate the amount you expect your assets will appreciate or depreciate.

For those bills you pay each month in the same amounts, MacMoney's Make Automatic feature serves two purposes. First, it's quicker; second, it provides MacMoney with information so that it can remind you when bills are due. Ideal expenses to make automatic are mortgage and loan payments, insurance premiums and bank charges.

You create your Automatics at the time you write a check. You fill in all the details (payee, amount, category, etc.) and then select MAKE AUTOMATIC from the bank account menu. You'll also indicate which days and months the account normally comes due. Every time you open MacMoney after that, it will notify you if there are any Automatics due. Select AUTOMATICS from the Transaction menu and MacMoney will fill out the checks, deposits or service charges for you. Keep in mind that MacMoney selects the next check in your register and numbers it accordingly. However, you can edit the check number, amount and other data if it becomes necessary.

READ IT AT YOUR LEISURE

Reporting is one of MacMoney's strongest features. In fact, creating the many varieties of pie charts and bar graphs that are possible can get to be addictive. One handy feature is the ability to plot trendlines on all your graphs. Simply select TRENDLINE from the Report menu, and a trendline will appear on all graphs you create. MacMoney senses even slight trends and can alert you that your utility bills are on the rise far before you'd ordinarily notice.

There are several default reports that you get simply by pulling down menus and clicking buttons. These include the Income and Expense Statement, the Personal Balance Sheet, This Month's Activity and a Bill Payment Summary. The Bill Payment Summary lists all your Automatics and the status of each. You can also create customized reports and graphs. You might wish to list out all medical transactions or all charitable contributions, for example, and use these reports as attachments to your income tax return.

One of MacMoney's few limita-
Click on the Split button and the Split window appears. Enter up to 10 categories and amounts. The total must add up to the amount entered. You may enter amounts and let MacMoney total the list for you. Then click in the transaction’s amount window to record the total.

MacMoney's opening screen informs the user the date the System was last used, the number of automatic transactions due and the status of the transaction file.

To create an automatic transaction enter information on a check and then select Make Automatic. Select the day of month and months when the payment is due.

MacMoney compares utility bills for two years. The graph depicts obvious weather differences between the two years. April 1985 was cold and so were October and November. In 1986, July was cool while August and September were unseasonably hot. MacMoney also senses a downward trend in the overall cost of utilities as illustrated by the Trendline.

PLANNING THE FUTURE

Although you'll mostly use MacMoney’s data entry and reporting features to keep your actual books, there are planning features to make the true finance-a-holic burn the midnight oil. Some of the “what if” capabilities include Retirement Planning and Future Value/Goal.

Even the most down-to-earth user will appreciate the Plan’s menu Loan Planning option. It lets you quickly calculate the payment and cost of loans with various amounts, lengths and interest rates, and print out accurate amortization tables that you can use to split mortgage and loan payment into appropriate categories. MacMoney’s current formula produced a loan schedule for me which was accurate to the penny when matched with my bank’s figures.

TRADING IN DATA

Small business owners will appreciate MacMoney’s new ability to export data to several popular Macintosh applications. Each report offers three options for presenting the data: screen, printer and file. MacMoney text files can be opened and displayed within MacWrite, Word, Multiplan 1.1, Excel, ReadySetGo and Helix. Specific instructions for each application are included in the manual.

Also, any previously entered HAMac data is completely compatible. Just start up MacMoney with your old data disk. MacMoney will make the required conversions. Even if you have completed last year’s transactions before you convert to MacMoney, you’ll want to “Start New Year” with the previous year’s data files to make yearly comparisons.

One of the best things about a financial package is help in preparing your tax returns. You set up the categories and enter the information, and MacMoney will report your income, withholding taxes and other...
BANKING ON YOUR MAC

Customized reports and graphs are easy to set up and provide many options. Select a category type, a specific category or several categories. Compare data to a previous year or to budgeted values.

deductible items or categories. For additional help at tax time, financial planners will be happy to know that MacMoney is also compatible with the 1986 MacIntax.

THE CRASH OF '87

Customer support for your financial package may be more important than for other kinds of applications. Over the years as I used Home Accountant on my Apple II, then on the Macintosh, I've twice had occasion to call for help because I lost data and didn't want to enter nearly an entire year's transactions over again. (No one can emphasize enough how important backing up is with financial data.) A system crash has the potential for wiping out not only the data you just entered but making the entire disk unusable.

Even though it's usually your fault if you lose a year's work just before taxes are due, good customer support is available by telephone. Survivor Software loses a couple of points because they don't have a toll-free number. They gain points, however, because the authors themselves answered the phone and take a sincere interest in your problems.

MacMoney's user friendliness derives from the fact that the authors are constantly using information they receive from their customers and other sources to enhance and update their product. Prior to the current update, they reviewed all the suggestions made through customer support requests. From that list, they initiated approximately 30 of the most-needed changes in MacMoney.

Since they are making a list for their next upgrade, customers should let them know what kinds of changes they'd like. Here's my wish list.

- Make it possible to sort and print transactions right from the checkbook. I'd like to see my transactions in order by date, even though I don't enter them that way.
- Give the user the option to decide whether to use budget figures from the previous year or the actuals from that year. This was a feature in the Apple II version of Home Accountant that I miss. According to the authors, some people did not like

(continued on page 194)
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Improving on the program that started the desktop publishing revolution was not an easy task. So, before we even began working on it, we added a few people to our programming team: the 50,000 or so folks who use PageMaker® to produce everything from annual reports to zoo brochures. Many of them took the time to write to us with suggestions on how we could improve PageMaker. We took the four most-requested features, added quite a few of our own, and made them all a reality.

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THE CORPORATE WORD FOR 1987, at least in the computer industry, is “connectivity.” Unlike last year’s corporate word — “leverage” used as a verb with little regard for meaning — connectivity indicates a specific and significant concept. Connectivity (correctly pronounced with emphasis on the first and third syllables, by the way) is a marketing term for the ability of different computer systems to talk to one another. For Apple Computer, connectivity is one way to bash down the doors of America’s corporate buyers and further ensconce the Macintosh and other Apple equipment in the offices of Fortune 1000 companies.

Two major computer companies, Digital Equipment and Apple, are “leveraging” their ability to connect to other systems in order to make assaults on IBM. DEC and Apple are in fact working closely together to provide “solutions” (another corporate word) for big businesses with widely varied needs. For Apple, connectivity forms the backbone of their networking and communications marketing thrust, called desktop communications.

HOOK ‘EM UP, RAWHIDE

Networks. When I was a retail computer salesman and trainer a few years back, one of the biggest problems I had was explaining to customers what personal computers couldn’t do. At the time, it was not at all uncommon for people from small- and medium-sized businesses to come into the store looking for a network. I remember particularly well, two owners of a small import/export business in New York. They desperately needed a system to control inventory, handle their billing and other accounting functions and generally keep track of their business.

When they came into the store, they knew pretty well what they needed — a large data base application residing in a central location, with files that could be accessed by data entry people in the separate areas of sales, accounting and shipping/receiving. They needed a network with multiuser software, and, having read about all the new tech-
nology in networks, they came to see what was available. Unfortunately, at that time, there was nothing available for their needs short of a minicomputer system costing many thousands of dollars. For a while, we had to educate our customers away from personal computer networks because they really couldn’t do the job.

The education process continues, but the problem is now reversed. Personal computer networks are real — computers from different manufacturers and with different operating systems can talk to each other. The Macintosh and other personal computers can connect to minicomputer or mainframe systems, acting as intelligent terminals. With the introduction of a boatload of new products at the Seybold Desktop Communications Conference in January and the AppleWorld Conference in March, Apple and third party manufacturers are striving to make networking the Macintosh almost as simple as cut and paste, and to educate consumers about the potential benefits of Macintosh networks.

SEE-THROUGH NETWORKS

One goal of the Macintosh was to provide transparent and easy access to information. To accomplish this, Macintosh required a unique melding of hardware and software with a standard set of operations to provide a simple and consistent user interface. From Apple’s point of view, a network should provide a transparent and easy way for people to access, use and control the communication of information. A Macintosh network requires an even more complex melding of hardware architecture, software protocols and “enabling technologies” with a standard set of operations to provide transparent access to information and at the same time maintain the Macintosh user interface.

TALKING APPLES

If you’ve been using an AppleTalk network to share a LaserWriter or run an electronic mail program, you may wonder what the big deal is. After all, aren’t you already networked? In fact, aren’t there more than 50,000 AppleTalk networks in use now? What’s so complicated about networking? You just plug the AppleTalk connectors into your Mac and the LaserWriter and it all works. Maybe it’s a little slow sometimes, but it works.

AppleTalk works as easily as it does because most of what it’s doing is invisible to the user. This is what Apple means by transparent access. All the hard work has gone into the system before you ever see it. AppleTalk is much more than a set of cables and small white boxes. In fact, as Apple Computer is quick to point out, AppleTalk (the network) is a distinct entity (a concept and an architecture, nothing physical at all) from The AppleTalk Personal Network, which consists of the familiar white connecting cables and boxes. A confusing distinction, to be sure.

In order to make the concept of Macintosh work, Apple had to establish a set of standards that third party developers could follow in order to keep their products consistent. Initially, with the Macintosh a closed, self-contained system, it was fairly easy to establish and maintain those standards. The user benefits by having a variety of packages with a similar look and that work in a consistent fashion. With networks there is much more groundwork and supervision that must be done by Apple, because now there are other computers in-
TALKING DESKS

involved, with their own methods, operations and standards. This is one reason that Apple's file server (announced as hardware in January 1985 and delivered as software in early 1987) was delayed for so long. A file server of generic variety could have been finished long ago, according to Gursharan Sidhu, the project leader for AppleTalk. But to make it work with the ease and style that is associated with the Macintosh took much longer than expected. What Apple has been able to do in that time, though, is strengthen the AppleTalk base to provide a communications framework.

CABLE CAR TO HELL

People often get caught up in cables when they mess about with networks, worrying intensely about the differences between twisted pair wiring and coaxial cable. Networking actually requires much more than the proper set of cables. In fact, this physical layer is actually just the base of a much larger structure that starts with cables but extends all the way up to network-intelligent applications.

AppleTalk, for example, is more than a set of cables; it is a standard communications system that fills needs in all levels of the network structure (see Figure). As we have discovered with PhoneNET and other optional carrier systems, AppleTalk doesn't need the Apple connectors to work. In fact, AppleTalk can use almost any structure as a carrier, including coaxial cables, fiber optic cables and PBX systems. You can run AppleTalk on 3Com's Ethernet, a widely installed network in the PC world.

AppleTalk can also be run on IBM's Token Ring network, across PCNet. And with the assistance of a product called AlisaServer and AlisaTalk, AppleTalk can provide the Macintosh with very high level connectivity with DEC systems. Odesta even has a DEC version of the Helix multiuser database that uses Macs as a front end to a VAX system.

WHAT! ME NETWORK?

The sharing of information is critical to the smooth running of any business. Decision makers need the most up-to-date and accurate data they can get in order to keep up with today's fast-paced world. If you use an AppleTalk network, you may be one of the people crying out for a file server because you saw the potential there while recognizing that the most important links were missing.

The key links are a file server that can keep files in a central location and provide access to the network users, and software that recognizes the network and knows how to deal with more than one user. For some applications, the software must allow more than one user to access an application or a file at the same time.

With the arrival of Apple's file server, the upgrading of AppleTalk to support true file sharing and accessory products from Apple and third parties, the links are now in place — and the benefits are enormous. It's now possible to link more than one Macintosh and share files. With an AppleTalk PC card you can now link IBM PCs or clones and Macintoshes on the same AppleTalk network and share the same files; put a Macintosh II with a third party coprocessor on the network and you can use the same applications.

And Apple has made it possible for developers of hardware and software to provide the quick, easy and transparent access to necessary information by maintaining the consistency of the Macintosh interface and by providing similar standards of operation for networking. The support third parties have shown for the AppleTalk Filing Protocol (AFP) standard is phenomenal.

Is there a network in your future? If you are a member of a work group of almost any size or type, the answer is almost certainly yes. There are too many advantages to networking to let the opportunity go by. Just start chanting "connectivity" and watch what happens. But don't stop using "leverage" either. Sprinkle it liberally throughout your conversation and you'll be amazed at how far leveraging your connectivity can get you.

MICHAEL WESLEY IS MACUSER'S WEST COAST EDITOR.
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LONG AGO AND FAR AWAY (AT least from our New York City offices), Apple Computer announced their soon-to-be ready file server — a piece of serious business hardware, with serious (and necessary) business software built in. And a Mac community that was just finishing an exciting, but rough, first year rejoiced. For a file server was a real business tool. There's nothing fun or toylike about one. The next two years were spent speculating about the soon-to-be-available file server and exactly when it would make it to dealers' shelves, but it was never seen outside of Apple. Software difficulties and rapid changes in hardware technology combined to keep the file server constantly “under development.”

Now, just as we went to press, Apple's file server was finally released. It's called AppleShare and it's a software-only package that buyers combine with their own (dedicated) Mac and hard disks. Various versions of it have been floating around since late last fall, but only with its release version were all its features locked in enough to be tested.

AppleShare is not the product announced two years ago, but an entirely different and much improved product. Gone is the emphasis on the box and the connections, replaced by the more useful idea of information sharing in small groups. AppleShare is simply software that facilitates this operation. It's intended for small local workgroups.

While Apple claims that AppleShare handles networks of up to 25 users simultaneously, don't take that claim too seriously. Given the limits of the AppleTalk Personal Network (required as the physical connecting mesh) and the limits of version 1.0 of AppleShare, you'll see performance degradation with as few as six users accessing the network regularly. In fact, AppleShare seems designed for and nearly ideal for the workgroup size (three to ten people) that Apple has identified as being most common in the workplace.

AppleShare also lacks many of the bells and whistles of larger mini- and mainframe packages. However, it works (and works well), is relatively cheap (even when the cost of the necessary hardware is factored in), and has a very full complement of features in areas that are important, like security.

THE DETAILS OF SHARING

AppleShare comes on two disks and has two distinct parts. One disk has the actual server software and is used by the network administrator to set up the whole system and the other disk is copied by each user on the network and used to install the workstation software in each machine on the network.

Special server software must be installed on a dedicated Mac Plus, Mac SE or Mac II (if you have a spare). Also required is a hard disk. You can add as many hard disks as your system will allow to the server Mac, but all storage units must be attached to the server Mac. And the whole network must be tied together by an AppleTalk protocol connecting system (AppleTalk, EtherSC, AppleTalk Optical, PhoneNET, etc.). And there should be a system administrator (see “AppleShare for All?” below).

The user interface at workstations is simply the Finder (or whatever Finder substitute you use). The designers' goal was to make AppleShare as transparent to the ordinary user as possible, and they've been very successful in that respect.

The first step is to get AppleShare software installed on your work System. It's a simple operation. You simply run an installer program that places AppleShare in your System folder and at the same time updates your System software to System 3.3 and Finder 5.4. Those versions (or higher numbered ones, as they are released) are required to be on every station connected to the server. The process is quick and relatively painless as long as you have a hard disk or a spare 100K or so on your}

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**BY STEVEN BOBKER**
System floppy. If neither is the case you're going to have to create a System disk with the required amount of room.

Once the software has been installed, access is easy. Just select the AppleShare icon in the Chooser, the desk accessory also used to select printers on the AppleTalk network. Selecting a server will not affect any current printer selections; they also remain in effect. (AppleShare can also be accessed from other AppleTalk networks that are bridged to it). Then enter a single password to use the server. Once you've correctly identified yourself, AppleShare manages all further access.

**ISSUES OF ACCESS**

The access control features in AppleShare allow each user to selectively share the information stored on the server. Users can determine by looking at the folder icons in the Finder what the restrictions are for each folder on the server. The access controls are easy to use since both the Finder and a new desk accessory called Access Privileges provide the ability to edit access privileges.

Users control their own folders, deciding what information they want to share and with whom — whether it be everyone on the network, a select workgroup or no one at all. Access levels can be controlled as well, with some users being able to modify information in a folder while others are only allowed to read the information.

One useful form of special access is the drop folder. This is a folder where any person on the network can put documents, but only the person with owner privileges can retrieve, see and use them. For example, a supervisor could use a drop folder to collect private comments from all the workgroup members.

**SHARING SOFTWARE**

AppleShare is compatible with most of the software currently available for the Macintosh. In the future, new applications taking full advantage of AppleShare's capabilities will be available. Two examples are multi-launch applications that can be used by several users simultaneously and multi-user applications that allow several users to update the same data file at the same time, using their own application software. Necessary features such as file and record locking and security are a part of the various applications, not of the server software. Some applications already fall into these categories, and more are appearing on a weekly basis.

The ability of many users to access and use a single application does pose some legal problems. Most applications are licensed or sold for use by one user on one computer. AppleShare's ability to let all users use applications seems to violate these agreements. Whether these agreements will hold up remains to be tested. Meanwhile several vendors (see "Bumper Crop" in this Supplement) have announced special versions of their software that will be usable, both physically and legally, by all AppleShare users on a single network.

**APPLESHARE FOR ALL?**

Apple has chosen not to mass market AppleShare. It will be available only from specially selected and trained dealers and VARs (value added resellers). The 300 or so dealers will be required to have all their AppleShare selling personnel attend a
special Apple course. They will also offer a special network administrator's course for customers.

While a network administrator is not a strict necessity, you should plan on having one person assume that role. It's by no means a full time job, even with a large network, and should take only a few hours a week (mostly doing backups). John Sculley has said that if you don't accept the need for a network administrator, then you haven't fully accepted the need for networks.

AppleShare software lists for $799 and requires at least a dedicated Mac Plus and hard disk. At current street prices, a used Mac Plus and new 20-meg hard disk can be bought for about $1750. Add in some AppleTalk or PhoneNET connectors and you're looking at $2600 to $3000 investment for a medium-size workgroup. Considering the power of the system, that's not a bad price.

**APPLESHARE**

The new Chooser (version 3.0) can select printers, file servers, modem servers, mail systems and more. To enter your workstation in an AppleShare network, select its icon here, then select a server. You'll then be asked for a password. Once you have entered that correctly, simply close the Chooser and the AppleShare icon will appear.

If you need to check on or change folder privileges while working in an application, select the Access Privileges DA. This is what it looks like. Here a drop folder, where others can leave you private notes, has been created.

In the Finder, privileges are checked and changed by selecting the GET PRIVILEGES command in the File menu.

AppleShare helps by effectively using disk space. It automatically allocates and recovers disk space on server volumes to obtain maximum space usage efficiency. This allows users to start small, increasing their storage capacity as needed by adding more hard disks.

You might want to consider starting with one of the bigger drives though. For example, Mirror Technologies offers very quiet 85- and 172-meg drives, designed specifically for server use. They're a specially good deal now since (for a limited time) Mirror will rebate the full cost of AppleShare software to purchasers of the 172-meg drive and half to those buying the 85-meg unit.

You'll need to check that any SCSI hard disks you currently have work with AppleShare. Apparently not all do. The Apple units obviously do as do the big Mirror units. We'll be publishing full drive compatibility lists as we develop that information over the next few months.

**STEVEN BOBKER IS THE EDITOR IN CHIEF OF MACUSER AND ALL THAT ENTAILS.**

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**APPLESHARE**

**Overall Rating**

Follows Mac Interface  
Printed Documentation  
On-screen Help  
Performance  
Support  
Consumer Value  

**Comments:** Good true file server with a nearly transparent user interface. **Best Feature:** So transparent that you forget it's there. **Worst Feature:** Slows down noticeably under heavy load. List Price: $799. Published by Apple Computer, Inc., 20525 Mariani Avenue, Cupertino, CA 95014, (408) 996-1010. Requires dedicated Mac Plus and hard disk, connects to network via AppleTalk protocol devices. Version 1.0 reviewed. Not copy protected.
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Completely compatible with the AppleShare environment
The Mac and the IBM PC can work together digit-to-digit.

FROM THE VERY FIRST GASP of the Mac in its 128K infancy we have been raised to regard IBM as the Alien Empire, and it was an empire to strike back at—as was shown in Apple’s famous “1984” TV commercial. And today? It’s time to kiss and make up. The Macintosh Plus has won a growing acceptance by the business community, and it’s no longer unusual to see Macs cheek-to-cheek with PCs in offices.

The next Macintosh generation (covered in MacUser last month) finally have slots that can accept MSDOS coprocessors, enabling them to recognize and run many IBM PC programs. Instead of fighting, they'll be able to switch.

SO LET’S TALK

This new revisionist diplomacy is already operative, and it’s the TOPS. TOPS for the Macintosh is a local area network (LAN) and translating system that can act as a distributed file server for multiple Macs. It’s a software program and permits machines linked over AppleTalk to share any hard disk or printer on the network. Now, with the availability of the TOPS hardware/software package for the IBM PC, Macs and PCs can talk, swap and share data in almost any configuration. It’s as if the Berlin Wall were suddenly made of Swiss cheese.

TOPS FOR THE MACINTOSH

TOPS resides as a desk accessory on the Macintosh. Your Mac remains a standalone machine until you activate TOPS, and then it becomes a Mac station that can communicate with other machines or stations on the network. Installing TOPS in the System on a floppy or a hard disk is both quick and simple, although the documentation is not as clear as it might have been on performing the hard disk installation process.

When you open TOPS, you are asked to “sign on” the network, and the name you choose will be seen by other stations on the network as another “client.” You will need a separate, original copy of TOPS for each station. If you copy the application on another station and then attempt to sign on, a warning box will appear admonishing you that “another copy of this TOPS (serial# — ) is already in use.”

One of the other things you will notice upon opening TOPS is a reference to InterBase, with its tree-chart icon. InterBase is the “ambassador” function that mediates between Macs and IBMs. Without it, your intermachine dialog will be very limited. If you are working with a Mac-only network, you can save a bit of memory by deleting InterBase.

From the very beginning, the transparency, straightforwardness and ease of use of TOPS is impressive, especially considering that more horror stories have emerged from the information management and networking worlds than any others in the industry. With TOPS, what you see is what’s really there, and you can usually get at what you see.
The TOPS desk accessory dialog box is just what you'd expect. On the left is a directory of the volumes within your station, on the right you'll see a list of the servers on the network and those volumes in the station you choose to select. In the center are the command buttons, for Open, Copy, Mount, Publish and Help.

HELP AT THE TOP
Six help screens are always available. They're valuable not only for using TOPS, but also provide inside information on any selected volume you choose. They can reveal its system type, size and condition. A sample of the data is usually included. Though it's not always legible as text, it can help identify the nature of the data, and assure that "something is in there."

By choosing what files you "publish," you determine what you wish to be accessible to other clients on the network. When you publish a volume, its icon changes to the TOPS symbol, and will be seen that way by other stations. It's just as easy to "unpublish" a volume by invoking a similar command, or dragging its disk icon from the desktop to the trash.

You can publish a folder of files, a volume of folders or an entire hard disk with one command. You cannot publish a single file alone. If one file is all you want to put out there, create a new folder or volume with a publishable name to wrap around it.

If you want to know which clients are using one or more of your published volumes, select it and then click on HELP. One of the Help windows provides a Client List. If you select your station name, the list will extend to reveal the users of each of your volumes. There are few secrets on the TOPS network.

WHAT'S THE PASSWORD?
Foreseeing the concern for security, one of the major issues of networkers, TOPS includes a password system. If you hold down the Option key when you click on the PUBLISH button, the password dialog box will appear, offering three levels of access restriction. You can choose to make your document write-protected, limit it to one writer or leave it open to many. The system isn't perfect, and there have been reports that files can be invaded, and even passwords changed in some instances.

To access a file or application from another station that is published, you select MOUNT from the Command menu. If the file is not restricted, the act of mounting connects you to that document.

If you decide that you want a copy of a volume, folder or application within the memory of your own station, then the Copy command will perform that function. Not only can you copy a published remote file to one of your local disks, you can copy one of your files out to a remote disk that is open. Holding down the Option key when copying will bring up the TOPS copy conversion box, enabling you to choose to strip the control characters from an MS-DOS document, allowing it to be accepted as a Macintosh text file.

TOPS FOR THE PC
IBM PCs and their compatibles are certainly different from Macs. It's
a lot more work to tell them what to do, and they often need some prodding to reveal whether or not they have actually done it yet. But TOPS for the PC is as comparatively easy to install as TOPS for the Macintosh.

The first big difference is the addition of printed circuit board that must be installed inside the computer. For those of you who are seasoned Apple II veterans, plugging in a board will seem like old times. For the rest of us, let's consider it as practice for the shape of Macs to come. We took the cover off the CPU unit of our PC clone, and the TOPS board inserted cleanly into an empty expansion slot. Its socket was at the rear panel for connection to an AppleTalk compatible cable. Your PC will need at least 512K of RAM for the TOPSKRN1 memory-resident routine, and could really use 640K to run large applications without strain. As with the Mac version, PC TOPS can be installed on a hard disk or operate off a floppy, and is not copy protected, but is serial number protected.

Installing the TOPS program in a PC is smooth and rational. DOS programs need to reside in files, but the TOPS installer goes about creating and housing the necessary files automatically, all cued by on-screen prompts, concluding with the TOPSMENU screen. Like so much of the newer PC software, this is somewhat Mac-like in its menu-driven interface. There is also direct access to DOS commands for those already fluent in PC-ese.

From the TOPSMENU, most of the functions that you mouse with the Mac—showing server names, selecting a server and seeing the volumes published by that server—are accessed from the PC's keyboard. The Menu Instructions on-screen Help window provides a list of basic commands. On the Mac you publish a volume with a couple of mouse-clicks. The PC requires typing in a command like; "TOPS PUBLISH \d:/path AS vol /[R|RW] [P [password] ] [/U]." It's actually pretty easy, except that one character out of place invalidates the command.

Files from other PCs on a TOPS network appear as other volumes and directories, and Mac files appear as additional disk drives. Mac names longer than eight characters will be compacted, but at the volume-viewing level, there is a menu command for seeing "the long names of Mac files."

TRADING PLACES

Now that you have two different species of machine talking to each other, how good is the conversation? TOPS enables the Mac and the PC to share information, but there are limits. It is best at straight text files without specialized formatting. TOPS acts as a basic character-stripper (removing all the formatting information), accepting and moving files from one word processor to another. Once received, the unformatted file can be formatted to conform to the needs of the final output. Some programs manage to keep the formatting intact. For example, with MacLink Plus, a file conversion utility from DataViz, users have reported being able to even transfer desktop publishing documents intact.

The ability to utilize remote volumes, hard disks and even RAM disks and mainframes for storage and backup has made TOPS valuable for many organizations. But even if the hard disk on your Mac is full of many megabytes of files from an MS-DOS program like Ventura Publisher or Symphony, you can't actually use them there. You can use Mac-compatible files that are residing in a PC's storage if the application is somewhere on the TOPS network, and vice versa.

It is an eerie experience to see MacWrite copied to a PC through TOPS, then trashed from the original Macintosh host. You'll still be able to create and use MacWrite files on the Macintosh even though the application itself is floating in a remote PC.

While most programs are compatible, within the constraints of storage and use, there are some that become cranky and unreliable in TOPS. A "smart" application like Excel can open, read and write to a Lotus 1-2-3 file on a different machine type. But anything that influences the system or resources of the Mac, like ResEdit, Font/DA Mover or Switcher, should be invoked well outside TOPS.

Centram's telephone support, when these issues and others crop up, is always helpful and detailed.

MR. AMBASSADOR: MACLINK PLUS

If your Mac to IBM diplomatic needs go beyond the basic character-stripping of TOPS' conversion function, there is a powerful and versatile utility that you can enlist. MacLink Plus is a file transfer and translation utility that cuts through the thick of word processing programs that usually present insurmountable barriers between the Mac and the IBM PC. In fact, it can be equally valuable in translating between programs within the same machine environment.

MacLink Plus can tie together Macs, but its specialty is unifying a Mac and a PC. The complete package includes software for the Mac, the PC and a cable with an adapter for a 512K Mac or a Mac Plus. Since we already had our machines networked with TOPS, all we had to do was install the MacLink Plus.
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And each folder will contain the most recent versions of the work within. Because the system is constantly updating itself.

ALL TOGETHER NOW.

Apple Desktop Communications can do wonders for productivity, beyond merely sharing folders.

Using a program like InBox, one person can easily send electronic mail to anyone on the network. Or just as easily, to a pre-defined list of people. And these messages can include complete documents, such as those created by Microsoft Word or Excel.

With this new power, Apple Desktop Publishing becomes a whole new ballgame. Because quickly and electronically, you can collect the information you want to publish. Even from people who don't use Macintosh.

Put a document into a folder and it's available on the network. Instantly.

In fact, to use AppleShare, you need only a fleeting familiarity with two of the most basic Macintosh skills: Pointing. And clicking.

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software for the Macintosh, where it resides as an application.

Once the remote IBM PC is up as a station open on TOPS and has volumes that are published, MacLink Plus can mediate between the two. You can select and control the translation processes through four different windows.

The Mode Selection window lets you choose between MacLink, Local Desktop or Special Communications Modes. The MacLink mode is the default for Mac-to-PC, and the Communications window sets transfer speeds and additional settings necessary for linking machines by modems.

The Set Translators and Select Files are the windows you will use the most. In Translators, the real magic is revealed. You can choose the direction between machines that you want the translation to go. The menus look like a United Nations of computer languages, but just click on your choices—for example, a translation between MacWrite and WordStar—and the alternatives are automatically shown.

In the Select Files window you choose the source and destinations for the translation, often creating a named but empty file as a receptor for a straight translation. Otherwise, just wait for the New File Name dialog box to appear after you have clicked the CONVERT AND TRANSFER button. In most cases, the translation will be effected with all formatting of the original file intact, including desktop publishing documents. There will be some adjustments you will have to make for programs that do not share certain structures, but MacLink Plus is a welcome addition to the brave, new and more open world of desktop communications.

GETTING DOWN TO BUSINESS

The computer systems of most big businesses are not totally interconnected, visions of corporate Big Brother notwithstanding. Computing tends to be distributed in a variety of local work group environments from ten to fifteen users. It's not unusual for an employee in one group to know more about what's happening in Afghanistan than to know what colleagues in a work group in the next building are doing.

Many Macs, after being invited in the door for their desktop publishing talents, have been quickly utilized for other office tasks. The need for a means of sharing work between them and the established IBM PC systems becomes more and more urgent.

TONY RENEAUX IS THE EDITOR OF COMPUTER PUBLICITY NEWS, AND WRITES THE "MACINTOSH EXPLORER" COLUMN IN COMPUTER CURRENTS IN THE BAY AREA.
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THERE IS AN UNPUBLISHED BUT VISUALLY VERIFIABLE STATISTIC ABOUT OFFICE WORK THAT ELECTRONIC MAIL COMPANIES SHOULD EXPLOIT IN THEIR ADVERTISING CAMPAIGNS. IT MAKES ELECTRONIC MAIL A CLEAR AND PRESENT NECESSITY. THERE IS NO ONE, FROM THE RECEPTIONIST TO THE PRESIDENT, WHO WOULD BE WILLING TO GO WITHOUT AN ELECTRONIC MAIL SYSTEM.

After our company used inBox and InterMail for several weeks — even though there were a few hitches — no one, from the receptionist to the president, would be willing to go without an electronic mail system. It's not perfect — we still shout at people over the tops of cubicle walls if they don't pick up their messages right away — but the savings we've made in the number of Post-It pads purchased makes it all worthwhile.

MAIL BOXING

InterMail and inBox have the same basic capabilities. They both let you send messages electronically from Mac to Mac across an AppleTalk network. Every Macintosh user on the network has his or her own mailbox, to which any other user can send memos, phone messages, and files. Both programs will alert the recipient when a message comes in, and both will store messages for later reference. If the addressee isn't on the network when the message is sent, the message will be held until the addressee logs in.

Although they do the same thing, InterMail and inBox have somewhat different personalities. InterMail is a plain, utilitarian program that seems best suited to the fast-paced style of a young company on the move. InBox, on the other hand, is refined and elegant, more likely to be at home in the offices of the Fortune 500.

REGISTERED MAIL

Installation of InterMail is simple. It requires all the Macs that are to be hooked up to be on an AppleTalk network. Once the network is set up, Apple's Font/DA Mover is used to install the InterMail desk accessory into the System file of each Macintosh on the net. Then the InterMail file from the InterMail master disk is copied into each System folder.

Next, one Macintosh is set up to act as the mail server for InterMail. The mail server is the host for all InterMail traffic. It (and its hard disk — electronic mail quickly overwhelms regular disks) stores all messages and coordinates mail activity for all the other Macs on the net. Busy as it is, the server Mac can still be used for other work because InterMail runs in the background. You'll notice some drop in performance level when mail activity is going on, but otherwise the server works just like any other Macintosh.

Setting up the server is as easy as copying the InterMail Server from the InterMail distribution disk into the System folder of the designated Macintosh and restarting the machine. Although InterNet says you can use a floppy based Mac as a server, you'll definitely need a hard disk. After just a few days use on our small network, InterMail's data file had grown to over a megabyte.

After installing the server, the network manager (it can be anyone on the net) sets up the mail center by naming all the users on the net and assigning them passwords (if desired). If possible, the user names should be the same name that is specified in the Chooser DA as the user name. It took no more than half an hour to install and configure an InterMail system for ten users.

InterMail takes up about 54K on each user's diskette. It consumes 34K of memory in each user's machine, and an additional 60K in the server's RAM. The amount of space on the server's disk dedicated to InterMail varies, but expect it to use a megabyte or two.

Setting up inBox is a little more difficult, but it should be easy enough for anyone with Macintosh experience. InBox is also AppleTalk-based. However, the current version requires a dedicated Mac as the server machine. (Future versions, which should be out by the time you read this will let you put the server on any Mac on the network that has sufficient disk space available.) InBox requires you to start up the mail center before you can do anything else. Unlike InterMail, inBox has two different kinds of disks, Administrator disks and Connection disks. You must use the Administrator disk to do any system maintenance. To get things going you'll have to enter a password. The password is saved onto your master disk, and there's no going back, so don't forget it. I did and it took me some frantic phone.
calls to Think Technologies to crack the code and get my mail system running again.

Once the administrator password is entered and a data file created for inBox, it's time to set up the address list. Every list starts with a bulletin board that all users have access to, and each list can contain up to 100 more names. Each name has a corresponding password for security.

As with InterMail, you can create routing lists. For example, you can designate a Shipping Department address that, when selected, will send a message to each of the people in Shipping who are connected to the network.

After the address list is built you'll have an opportunity to set the date and time and enter a news flash. Everyone on the net sees the news flash when they first log in.

Until inBox 2.0 ships, once the inBox message center is running, you might as well put your mail server Macintosh in a closet away from tampering hands. It will continue to run the message center, until it is turned off. Even the system administrator must maintain the message center remotely from his or her own machine.

The next step in the installation of inBox is to obtain Personal Connection disks for each Macintosh on the network. The Personal Connection disks are serialized, so you'll need to purchase a separate disk for each user. Like InterMail, inBox installs as a desk accessory.

Installing inBox's Personal Connection on a disk takes up about 90K. inBox consumes 40K of RAM on every machine on which it's installed. The server disk will require 50 to 100K of disk space for each user.

P.O. BOX MAC

Although inBox and InterMail do pretty much the same thing, each has features the other lacks. For example, inBox has a bulletin board address for public messages. It also lets you customize its phone message form to add check boxes that best suit your needs. (That can be done in InterMail only as an extra cost option.) inBox can automatically print all the phone messages from any station. And it supports network wide log-on notices.

On the other hand, InterMail provides an additional message type, the assistance request. It's designed to help a user get assistance from the Network Manager. For an additional cost InterMail can also support graphic messages, a network reminder system and cross zone messaging.

InBox messages can be 30 (smallish) pages long — InterMail messages are limited to 32,000 characters. It comes to about the same thing. For both programs, longer messages can be created with a word processor and sent as an attached file. But both systems only allow you to send one file with any given message.

InBox and InterMail have slightly different ways of alerting you to an incoming message. InterMail rings a European style tone, opens an alert window, and flashes a small icon in the upper right hand corner of the screen. InBox rings a bell and scrolls a message across the menu bar. You can turn any of these features off in both programs. InBox does support repeated reminders for waiting messages — a feature missing (but perhaps not missed) in InterMail. Both programs support return receipts and the familiar “While You Were Out” telephone messages.

InBox and InterMail can each display a directory of messages waiting in your mailbox. InBox's window gives you a good deal more information about the messages, though. It will tell you if a return receipt has been requested for a message (InterMail keeps it a secret). InBox also marks messages you've sent yourself and messages you have yet to read.
PLAYING POST OFFICE

InterMail only shows whether the message is a memo or a telephone message. When all the features are tallied up, inBox has a slight lead.

EASE OF USE

InBox is a more attractive and polished program, and so seems easier to use. It's also a little harder to trip yourself up with InterMail, for example, if you try to close a message window before sending the message, InBox will warn you that you are about to lose the message, and give you a chance to backtrack. InterMail, on the other hand, allows the message whole without a word.

InterMail also has a problem with attached files. If you receive a message with a file attached and delete the message before saving the file, there's no way to recover the file. You'll have to ask your correspondent to re-send it, and the way the InterMail window is set up it's very easy to lose a file.

In general, InterMail's user interface isn't as well thought out as inBox's, so score this round in favor of InBox.

PRINTED MATERIAL

InBox comes with two kinds of manuals, one for the system administrator, and one for each user. Even though both manuals are small, they contain most of the information you'll need. Each is indexed and liberally illustrated. It's a nice touch to have a manual for each user.

InterMail, on the other hand, comes with a single, unindexed manual intended for the network manager alone. But InterMail solves the problem of having only one manual by putting a very complete tutorial on-line for each user.

Although InBox scores for its quality manuals, InterMail's built-in tutorial is a strong point in its favor. Score this round a draw.

THROUGH RAIN OR SLEET OR SNOW

When you add any program on top of a network, it's important that the program be reliable, because a crash could bring down more than just your computer, it could bring down the entire net. Both InterMail and InBox seem fairly reliable on this count. They never affected network operation, and were easily able to handle the loss of any client system on the net. Of course, neither program will work when the mail server goes down, but they won't crash your net, either.

One program that can give electronic mail fits is MacWrite. It won't tolerate having a dialog box pop up while characters are being typed. It crashes when that happens. So if you use MacWrite a lot, disable the dialog box alert in InterMail.

Neither program is without flaw, however. The InBox desk accessory does not work with Excel, Jazz, ThinkTank or OverVUE. Think Technologies doesn't consider this a bug, but it's definitely not a feature. InterMail seems to work with all programs that support desk accessories. InBox can also be tough to install and run off old (64K) ROM machines without hard disks. It will work, but often wants more space than is there.

For its part, InterMail 1.0 has a serious bug that can cause your system to crash. For some reason if an incoming message alert window is ignored, InterMail will start devouring your memory at the rate of about 1K per second. Eventually your Macintosh will run out of memory and bomb. This bug is easy enough to work around — just turn off the alert window feature — but it's a little scary.

Aside from that one bug, InterMail seems pretty reliable. It's a much newer program than inBox, though, so you can expect to see a few more kinks in the program.

Both programs peacefully coexist with file servers running on AppleTalk. We tried them with MacServe, TOPS, and HyperNet running, and experienced no difficulties attributable to the presence of the network software. We have a variety of machines on our network, ranging from unenhanced Macintoshes, to Macintosh Plus with and without SCSI hard disks attached, to Hyper 2000 Macintoshes with high-speed 68000s, floating point processors and 2 megabytes of RAM installed. Both programs worked equally well on all machines. Their memory requirements are too much for the old 128K Macintosh models, however.
A LOCKED BOX

InBox and InterMail each prevent unauthorized access to the message base through the use of passwords. Neither program requires you to use passwords if you don’t feel they’re necessary.

Think Technologies claims the copy protection on InBox is also for your security. In this case they may be right. Although it’s an annoyance, it does add an extra layer of protection. Even someone with the system administrator’s password, won’t be able to log in without the key disk.

Both passwords and copy protection can be easily bypassed by someone who is clever enough, so neither option is fool-proof. Even someone with the system administrator’s password, won’t be able to log in without the key disk.

COST OF MAIL GOING UP

As befits products that will be used on a large number of machines, both InBox and InterMail are expensive. The InBox Starter Set contains one Administrator disk and manual and three Personal Connection disks and manuals, and sells for $299. Each additional Personal Connection costs $75.

InterMail works a little differently. The InterMail programs themselves are preconfigured for the number of users you’ve licensed. For one to four users the price is $299.95. Five to ten users cost $499.95, 11 to 20 cost $749.95, and for 21 or more users InterMail costs $949.95. No matter what your configuration you’ll get one 800K diskette and one manual. Your disk can be upgraded at any time for the difference in price. InterNet also offers several optional features ranging from $59.95 to $199.95 per server.

InterMail works out to be much less expensive, about $50 per node compared to $75 per node for InBox. There’s no question this round goes to InterMail.

ELECTRIC PONY EXPRESS

Both programs do the job they are intended to do, and do it well. Any difficulties encountered in the use of these programs are more than offset by the convenience and efficiency of an electronic mail system.

The InBox interface is definitely superior, and it has the advantage of maturity and a strong company behind it. On the other hand, we’ve decided to stick with InterMail in my office. It does the job we need to do with a minimum of fuss, and it’s more economical. Nor were we blind to the fact that InterMail works with Excel, while InBox does not.

By the time you read this, both companies plan to have released new versions of their programs which will fix bugs and add new features. InterNet plans to add Telex and modern autodial capability to InterMail. InBox 2.0 will eliminate the requirement for a dedicated Macintosh, and combined with InBox PC will allow Macs and IBM PCs to communicate over AppleTalk.

Whichever system you choose, the improvements in interoffice communications will be dramatic. The electronic office doesn’t entirely eliminate paper, but you can certainly reduce the number of little yellow message pads used.
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THERE HAS BEEN AN EXTRAORDINARY AMOUNT OF PRODUCT DEVELOPMENT GOING ON RECENTLY, INCLUDING A HUGE SHOWING OF SUPPORT FOR APPLE'S FILE SERVER, APPLESHARE, AND THE APPELTALK PROTOCOLS THAT MAKE APPLESHARE POSSIBLE. A LARGE NUMBER OF COMPANIES HAVE ANNOUNCED SUPPORT FOR AFP, APPLE'S FILING PROTOCOL, AND THE APPLE COMMUNICATIONS FRAMEWORK, BOTH AT THE SEYBOLD CONFERENCE ON DESKTOP COMMUNICATIONS, AND TO COINCIDE WITH THE LAUNCH OF THE MACINTOSH SE AND MACINTOSH II COMPUTERS.

ALTHOUGH THE FOLLOWING LIST IS NOT EXHAUSTIVE, WE WANTED TO LET YOU KNOW ABOUT AS MANY OF THE PRODUCTS AS WE COULD. COMPANY ADDRESSES AND PHONE NUMBERS CAN BE FOUND IN THE SUPPLEMENT DIRECTORY.

**Alisa Systems**

Alisa Systems announced support of AFP in the next release of their file server for VAX/VMS. The Alisa product, called AlisaServer, is part of the AlisaTalk package currently marketed to users of DEC VAX systems who want to put their VAX superminis on AppleTalk networks. AlisaTalk is connected to AppleTalk via 3COM's Ethernet network and FastPath bridges, from Kinetics.

**Apple Computer**

The biggest announcement at the Seybold Conference was AppleShare, the Apple file server. AppleShare is a workgroup file server that provides transparent and easy access to shared information over AppleTalk networks. AppleShare is now available and costs $799.

Apple also announced the AppleTalk PC Card, a half-size printed circuit card for MS-DOS systems that lets MS-DOS machines access the Apple LaserWriter via AppleTalk networks. The AppleTalk PC card contains a 65C02 microprocessor (same one found in the Apple IIc and IIe), and has AppleTalk protocols in ROM.

Apple and several third parties announced plans to develop software for the AppleTalk PC card that will let MS-DOS computers access AppleShare. Included with the Card is software that converts MS-DOS generated text to PostScript. The card supports WordStar, 1-2-3, MultiMate, Word, Diablo 630, ASCII and PostScript file formats. The AppleTalk PC card sells for $399.

Along with AppleShare, Apple announced a LaserWriter print spooler called LaserShare, which offloads the laser print queue to the server, retaining control of your Mac quickly even if there are several documents queuing up to be printed. LaserShare should be available in the second quarter of this year at a price of $299.

Apple, obviously a very busy company lately, also announced DCA Filter Software that translates MS-DOS word processing documents to MacWrite format. DCA, Document Content Architecture, is IBM's standard for word processing docu-
ments. Available through a special release in the second quarter to coincide with Apple’s announcement of a card, external disk drive and software that let the Macintosh II read IBM PC data disks, there is no charge for the DCA product (no kidding — no charge).

Again from Apple comes a product called AppleLine 3270 File Transfer, a utility for transferring files from an IBM 3270 mainframe environment and Macintosh via Apple’s protocol converter, AppleLine. Scheduled to be available in the second quarter, this product will sell for $99.

Finally, Apple will be offering, through participating Apple dealers, a Network Administrator’s Course. This will be a two-day, $1200 course to teach non-technical people how to act as a network administrators, maintaining an AppleTalk network on a daily basis.

**Applied Micronetics**

Applied Micronetics announced the availability of version 1.30 of Office Productivity System (Ops), an integrated invoicing, job costing and accounts receivable system that utilizes AppleShare to provide for multiple concurrent users of a single large database. Ops sells for $475.

**AST**

AST, a very important company in the IBM PC add-on market, announced several multifunction boards for the Macintosh SE and Macintosh II.

The first board, MacPack — for the SE — is similar to the popular 6-pack card for the IBM PC. MacPack offers 1 to 3 megabytes of RAM on board, with a buffered connection for a daughter board. AST will publish the specifications of the daughter board, and hopes to use MacPack as a platform for themselves as well as other developers to generate additional cards for the SE.

The first additional card will come from AST themselves. It will be a daughter board with two serial ports and an optional 5 1/4-inch floppy disk controller.

AST also announced the Integrated Communications Processor Board for the Macintosh II. This card works with UNIX and will allow a user to hook up to four dumb terminals to a Macintosh II running UNIX.

Another board for the Mac II, the RM4, is a memory board, offering 1 to 4 megabytes of RAM that is available not to the user directly, but to other cards in the NuBus slots (UNIX, for instance). It could also be used to provide extra RAM support for optical scanners and other devices that require large memory.

Perhaps the most interesting cards from AST, though, are the coprocessor cards which will allow the Macintosh SE and Macintosh II to run MS-DOS. For the SE, AST announced the Mac 86 card, an 8086-based card with a 5 1/2-inch floppy controller on board. The Mac 86 will not have any memory of its own, but will provide MDA and CGA type graphics support.

The Mac 286 provides an 80286 coprocessor option for the Macintosh II. Like the Mac 86 card, the Mac 286 will have a floppy disk controller on board. But the 286 also provides 1 megabyte of its own RAM, a DMA, and is slotted for an optional 80287 math coprocessor. Mac 286 supports MDA, CGA and Hercules graphics options.

AST will offer MS-DOS with the boards, either bundled or for an extra charge. Prices had not yet been decided at the time of writing.

**Centram**

Centram Systems announced full support of Apple’s communications framework, and the AppleTalk PC card. In addition, Centram announced two other significant products. The first, TOPS REPEATER, is a box that extends the maximum length of and number of machines on an AppleTalk network by receiving incoming network signals, regenerating them and retransmitting them at full voltage.

The second is TOPS STAR, which transforms bus networks, like AppleTalk, into a star configuration. It is designed to sit in a company’s phone closet and connect directly into the building’s telephone lines. TOPS REPEATER sells for $189; TOPS STAR, $1500.

**3COM**

3COM has announced the signing of a letter of intent to acquire Centram, with plans to market TOPS as entry level distributed server. They also announced 3+ Mac, a dedicated file server offering file service, name service, print service and 3+ electronic mail to users on AppleTalk and EtherNet. 3+ Mac will allow Macs to connect to 3+ networks with IBM PCs. Users will be able to
dial into and access the network from a remote location via modem. 3+ Mac automatically maps MS-DOS file extensions (.x:xx) to Macintosh file creator types, making it easy to pass files. Users can bridge AppleShare and 3+ networks, and 3COM will offer a token ring board for the server that will hook Macs into a token ring (IBM's standard) network.

**Corvus**

Corvus announced that OmniNet will provide full support of Apple's Filing Protocol and AppleShare. This will allow OmniNet users to access all AppleTalk software and should be available in mid-1987.

**Diversified I/O**

Diversified I/O announced SoftBackup software that supports AFP. SoftBackup allows users of individual Macs or Macs on a network to backup files to tape or diskette. It backs up at volume, folder and file levels. Features include timed backups, so the System can back up automatically, and scripts for repeated backups of selected items. SoftBackup is scheduled for an April ship date at a cost of $69.95 for the standalone version, $139.95 for the AppleTalk version.

**DuPont**

DuPont announced a fiber optic LAN (local area network) for AppleTalk. Developed for their own in-house use, the DuPont fiber optic LAN is modular, connecting each computer through an optical/electric signal converter. The fiber optics cabling allows users to add fiber optic links to an existing copper wiring network, or design one that is completely fiber optic.

There are several advantages to fiber optics, including increases in speed, distance and number of users. More than one hundred stations can be linked with individual nodes as far as 4900 feet apart. The system gives network designers the freedom to configure AppleTalk networks through walls, across floors and between buildings. It will be available at selected dealer outlets and directly from DuPont.

**Farallon**

Farallon, the PhoneNET people, announced the PhoneNET Star controller, software and management card that allows very large AppleTalk networks to be set up in star topologies using a building's existing telephone wiring.

Farallon also announced the PhoneNET Repeater, a box that boosts signals on AppleTalk networks, and TrafficWatch, a set of network analysis and debugging utilities.

**Flexware**

Flexware announced a full range of multi-user high-end accounting applications supporting AFP and AppleShare. Flexware Accounting works across Macintoshes, IBM PCs and VAX minicomputers running the VMS operating system.

**GCC**

General Computer Company redefined the existing HyperNet distributed file serving software as compatible with and co-existent with AppleShare, and announced plans to extend HyperNet's capabilities to cover all leading hard disks, not just HyperDrive.

**Imagine**

Imagine Software, makers of Appointment Diary and Smart Alarms, announced Multi-User Appointment Diary with Smart Alarms. Multi-User Appointment Diary will work as a desk accessory, and will allow everyone on an AppleTalk network to write and/or view schedules for up to 21 people in an office, and still set personalized reminders. The product will work with AppleShare, MacServe and other server software. The price is $149.95 plus $10 per node.

**Infosphere**

Infosphere announced ComServe, an AppleTalk Modem Server. ComServe lets many users on a network share modems and other serial devices over AppleTalk. The cost is $195 per server and the product should be available in the second quarter. Infosphere also announced support of AFP and said that they will add AFP support to MacServe.

**Layered**

Layered announced that Insight accounting software will be made multi-user, fully supporting AppleShare and AFP.

**Letraset**

Letraset announced full support of AFP and said that future releases of ReadySetGo 3 will be fully compatible with AppleShare.

**Microsoft**

Microsoft, a company riding high these days, announced that Word 3.0 will take full advantage of AppleShare, making it the first word processor optimized to take advantage of Apple's networking strategy. Word 3.0 is designed to work in a networked environment, which means that it will support file sharing, as well as the ability to share style sheets, glossaries and dictionaries across a network. Word 3.0 sells for $395.

**MindWork**

MindWork announced that MindWrite supports the Apple communications framework, and that Mind-
Write is fully compatible with AppleShare.

Odesta

Odesta earlier announced a VAX version of Multi-User Helix. At the Seybold Conference, Odesta also announced plans to provide support of MS-DOS in its Helix VMX application. Helix VMX runs on any VAX computer under the VMS operating system, with Macintoshes as intelligent "guests" of the host server. It provides distributed processing for data base applications.

Odesta also announced that Multi-User Helix, Double Helix and Helix VMX will support AFP and AppleShare. Multi-User Helix will run concurrently with AppleShare.

PCPC

PCPC, makers of MacBottom hard disks, announced a multi-user version of their HFS:Backup hard disk backup utility for AppleShare.

Reach Technologies

Reach Technologies announced NUCLEUS, a family of network servers. NUCLEUS contains a microprocessor, memory and software for $1595. A NUCLEUS 20 MB server will sell for $2595 and the 40MB model for $3395. Both have external SCSI ports so you can add on additional SCSI hard drives. Reach also announced that NUCLEUS family and Keeper Plus will fully support AFP.

SoftView

SoftView announced the release of an update that makes MacInUse compatible with AFP and AppleShare.

Solana Engineering

Solana Engineering showed a network cluster controller that lets you link Macs on a network to a variety of peripheral devices or other networks. The Solana cluster controller will sell for $595.

Solutions

Solutions announced that Glue, their image sharing software, will let users "print" reports from most Mac applications directly to the file server disk. Reports will then be available to all users of the server.

SuperMac Technology

Like Apple, SuperMac Technology has been extremely busy in the past few months. At the Seybold Conference, SuperMac Technology announced full support of AFP for their line of hard disk products. SuperMac Software announced a multi-user version of DiskFit, a hard disk backup utility shown first at the MacWorld Expo in January; multi-user SuperLaserSpool, a LaserWriter spooler also announced in January, and Sentinel file encryption software.

Tangent Technologies

Tangent announced PC/Mac-Bridge AFP, software that allows IBM PCs to access AppleShare. Available in March for $150, it works with PC/MacBridge ATB, an AppleTalk board that includes PC Print software.

Think Technologies

Think Technologies announced inBox 2.0, an upgraded version of their electronic mail package that doesn't require a dedicated Mac to act as the mail center. Think also announced inBox PC, an IBM PC version of inBox that supports AppleTalk and AppleShare, and connects Macs and PCs over AppleTalk. InBox PC sells for $195 per connection.

WOS Systems


Although many of these products may seem esoteric right now, networking applications will be the norm in the near future. And the amount of support shown by third party developers for the Apple networking framework bodes well for increased large business support of Macintosh. And this is only the beginning of what Apple and the Macintosh community will reap from the opening up of Macintosh.

MICHAEL WESLEY IS MACUSER'S WEST COAST EDITOR.
**Directory**

THE FOLLOWING LIST DOES NOT include the full range of modems and telecommunications software for single users, but is a gathering of multi-user, networking applications for desktop communications.


**MacPack**, multifunction expansion card for Macintosh SE (No price announced at press time.) Daughter board for MacPack with 2 serial ports and an optional 5½-inch external floppy disk controller. (No price announced at press time.) Integrated Communications Processor Board, lets you attach up to four dumb terminals to a Macintosh II running UNIX. (No price announced at press time.) RM4 for the Macintosh II offers 1 to 4 megabytes of RAM for use by other NuBus cards. (No price announced at press time.) AST Research, 2121 Alton Ave., Irvine, CA 92714. (714) 863-1333.

**OmniNet**, Local Area Network providing high speed transmission, up to 64 nodes and up to 4000 feet between stations. Conrus Systems, Inc., 2100 Corvus Drive, San Jose, CA 95124. (408) 559-7000.

**MacLink Plus** provides file conversion from Mac to a variety of systems, including IBM DCA format documents, Wang. (No price announced at press time.) DataViz, 16 Winfield St., Norwalk, CT 06855. (203) 866-4944.

**FT100** contains a half-height, IBM-compatible floppy disk drive. Allows file transfer directly from IBM data disks to Macintosh applications. (No price announced at press time.) 50 S. Main St., Salt Lake City, Utah 84144. (800) 531-0600.

**SoftBackup**, networking version of hard disk backup utility, $139.95. Diversified I/O, 1008 Stewart Drive, Sunnyvale, CA 94086. (408) 730-2171.

**FastNet**, hardware device that provides an intelligent connection between SCSI ports and Ethernet or other Local Area Networks. (No price announced at press time.) AppleSystem Corporation, 1200 N. 23rd St, Wilmington, NC 28405. (919) 763-7918.

**Fiber Optics Local Area Network for AppleTalk.** Allows over a hundred stations per network, more through bridges. NODES can be up to 4900 feet apart. (No price announced at press time.) DuPont Connector Systems, 515 Fishing Creek Rd., New Cumberland, PA 17070. (717) 938-6711.

**PhoneNET**, AppleTalk cabling system using telephone wiring and modular jack connectors. $49.95 per node. **PhoneNET STAR** controller, software and management card lets you connect an AppleTalk network in a star topology using existing telephone wiring, $1500. Centrum Systems West, 2560 Ninth St., Berkeley, CA 94710. (415) 549-5900.


**3+ Mac**, file server and Ethernet Local Area Network system for Macintosh that connects to 3+ networks using PCs. (No price announced at press time.) 3COM Corporation, 1365 Shorebird Way, Mountain View, CA 94043. (415) 961-9602.

**InterBridge** bridges multiple AppleTalk networks, also allows access to AppleTalk via modem from a remote location. (No price announced at press time.) Hayes Microcomputer Products, 705 Westech Dr., Norcross, GA 30902. (404) 449-8791.

**Multi-User Appointment Diary with Smart Alarms**, a networking version of the popular scheduling and reminders desk accessory. Works with a variety of networking software, including **AppleShare**, **TOPS**, **MacServe**. $149.95. plus $10 per node. Imagine Software, 19 Bolinas Rd., Fairfield, CA 94930. (415) 453-3944.


**EtherSC** is a hardware box plus software that provides direct connection from a Mac Plus SCSI port to 3COM’s Ethernet network, $1250. **FastPath** is a similar box used to bridge AppleTalk networks to Ethernet, $2500. Kinetics, 2500 Camino Diablo, Walnut Creek, CA 94936. (415) 947-0989.

**MacMENLO** software includes a variety of packages that connect Macintoshes to Tandem Computers, and Tandem to AppleTalk networks. Menlo Business Systems, 334 State St., Los Altos, CA 94022. (415) 948-7920. Software is also supported and marketed directly by Tandem.

**Multi-User Helix and Helix VMX**, high end relational database and applications management software for Macintosh. Mac to VAX. **Multi-User Helix** sells for $695, including **Double Helix** and three multi-user nodes. Additional nodes are $100 each. Odesa Corporation, 4996 El Camino Real, Suite 205, Los Altos, CA 94022. (415) 962-8661.

**AllegroServer** software for Macintosh that connects Macs and other personal computers to the Wang VS Office System. Sold in a variety of options. Prices begin at $495.
OmniGate, 351 California St., Suite 1000, San Francisco, CA 94104. (415) 781-6464.


**Keeper Plus** file server, a true dedicated file server for AppleTalk networks. **NUCLEUS** file server with microprocessor, memory and software for $1595. **NUCLEUS 20 MB** file server for $2595, **NUCLEUS 40 MB** for $3395. Reach Technologies, PO Box, 9802, Suite 925, Austin, TX 78766. (512) 280-1977.

**Multi-user Project Billing and Legal Billing II**, network versions of time billing packages that allow simultaneous entry of time and expenses by any user on *AppleShare*. (Prices not available at press time.) Satori Software, 2815 2nd Ave., Suite 590, Seattle, WA 98121. (206) 443-0765


**PC/MacBridge AFP**, software that lets IBM PCs access *AppleShare* on AppleTalk networks. $150. Tangent Technologies, 5720 Peachtree Parkway, Suite 100, Norcross, GA 30092. (404) 662-0366.

**inBox 2.0**, upgrade of *inBox* electronic mail software that is *AppleShare* compatible, no longer requires dedicated Mac. $350 for a starter kit and $125 per connection. **inBox PC**, electronic mail for PC on AppleTalk. $195 per connection. Think Technologies, 420 Bedford St., Lexington, MA 02173. (617) 863-5590.

**Netway 1000A**, 3274 Gateway provides IBM host system access for Macs on an AppleTalk network. Software options provide terminal emulation and file transfer support. (No price announced at press time.) Tri-Data, 505 East Middlefield Rd., Mountain View, CA 94043. (415) 969-3700.

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### Hardware

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<td>ADON 30400 MEG SCSI, HD</td>
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### Music

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### Languages

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**LAYOUT WAS DONE IN READY SET GO 3.0**
MUSICAL APPLICATIONS WERE probably not foremost in the minds of the earliest software and hardware developers — certainly it fell way behind such things as analyzing election returns and flowcharts. Computers were obviously the province of science; no one ever expected the arts to move in and take over to the extent that they have. There are several programs that support more or less formal musical composition; now there's one that lets you jam. **Music Mouse** is the kind of application that leaves you feeling completely charmed. Created by Laurie Spiegel, who has worked at some of the great citadels of computer music (such as Bell Labs), it turns your Mac into a unique musical instrument. Laurie describes *Music Mouse* as “an intelligent instrument.” Most of you will call it just plain fun. This is a music program unlike any other ever written for personal computers. *Music Mouse* is computer-assisted improvisation, automating parts of the improvisation process, leaving you free to shape and direct the flow of the music.

Unlike *MusicWorks* or the Deluxe *Music Construction Set*, this is not a notation program, or a sequencer (note storage and playback program). *Music Mouse* is a real-time performance application. Launch it, grab your mouse, and you're immediately involved in playing music. You'll be drawn into it before you know what's happened. Even if you've never touched a musical instrument before, you'll be able to make all kinds of interesting musical sounds right away. If you have some musical background, you'll be able to get still more out of it.

Laurie Spiegel is a composer of avant-garde leanings, so *Music Mouse*'s forte is not melodies like “Jingle Bells” or “Three Blind Mice.” Although you can use *Music Mouse* to play tunes, that's not its intended purpose. What *Music Mouse* does most naturally and idiomatically is to create abstract sound patterns. As you play, you control, shape and direct those patterns in real time. With an unusual degree of insight, Spiegel has made some musical choices that restrict the range of possibilities, keeping you from making truly ugly sounds. At the same time, the remaining choices permit you to express your musical feelings spontaneously. It is, after all, an intelligent instrument.

With *Music Mouse*, you can play complex four-voice sounds and all the notes are within the pitch set selected — no “wrong” notes. You can play slow, arching melodies with rich harmonic accompaniment. Or you can play glittering, shimmering textures with rapidly cascading inner patterns. The *Music Mouse* helps you express yourself by selecting the right notes for the chords, and by generating the automatic melodic patterns, leaving the driving to you and your mouse.
DO, RE, MOUSE

Music software forces you to use a keyboard to play it. Even the Deluxe Music Construction Set, which lets you drag notes onto a two-staff piano notation template, basically behaves like a piano. Music Mouse, however, is the kind of electronic musical instrument meant for die-hard old analog knob twisters. One of the first things that attracted me to electronic music back in the 1960's was the fact that twisting knobs on control panels could produce meaningful music. The keyboards came later, when the academic types, and still later, the rock bands, took over. After that, every new electronic musical instrument ended up as a glorified electronic piano.

Keyboards limit your musical imagination to the things that keyboards do. Every instrument has its own unique, idiomatic way of being played. Thus composers must write differently for the violin, bassoon or the piano. What's easy to play on the clarinet, for example, might be impossible on the piano.

That's the point. Keyboards alone are not the complete answer. Music has many other expressive possibilities besides what keyboards provide. All are useful, and have an important place in the way we express musical thoughts. Music Mouse opens up some new ways to control your instrument — including MIDI instruments.

HANDS-ON MOUSING

The Mac-turned-intelligent-instrument offers simple two-handed operation. You control pitch by moving the mouse with one hand. Four voices are available, and you can divide them up with two voices controlled by horizontal movement and two by vertical motion, three against one, or one against three. A trackball is recommended instead of the mouse if you want really fine control over the individual notes.

With the other hand on the Mac keyboard, you can adjust everything else: volume, tempo, tone quality, pitch collection, transposition, and all the MIDI parameters. On the keyboard, the commands are always single keystrokes, with no Option, Command or shifted key combinations, making it truly a one-handed operation.

Speigel has grouped the key controls together to make them easy to remember, though most are arbitrary and not mnemonic. The pull-down menus remind you of key functions if you forget, but pressing the keys is preferable, because moving the pointer up to the menu bar would disrupt your music-making. The keys change the sounds instantaneously and without causing any obnoxious switching noises.

The notes are distributed between the X and the Y axes, and you play the instrument by moving the mouse inside the two-dimensional universe of sounds they provide. If you don't like your current universe, you can change it by pressing one of the Mac's keys. Music Mouse has a very pleasurable high-touch, kinesthetic response. Moving the mouse makes music. Motion equals change. Very quickly, you learn how to become a part of this feedback loop, and you find yourself totally immersed in the process of creating music.

TRAINING YOUR MOUSE

As with any instrument, though, practice improves your performance. A good beginning exercise, using the default settings, is to keep the horizontal voice constant while moving the three vertical voices melodically. Listen to the changing pitches and relate them to the amount of distance you have to move the mouse to get that change. After awhile, the relationship becomes instinctive. Then, reverse the process and keep a three-voice chord constantly drifting while playing solo melodies on the horizontal voice. For the more daring, the next step is to change the chords occasionally, after every few notes of melody. Later, you can experiment with the effects created by moving the mouse in various curves, circles, and other patterns. All the time you're doing these exer-

MIDI Connections

If you have a MIDI port on your Mac, and a MIDI synthesizer, Music Mouse turns your Mac into an extremely flexible MIDI instrument, with an alternative controller. All the MIDI sound modification devices are usable (if your synthesizer has them): foot pedals, modwheels, breath controllers, and so on. All the MIDI expression parameters are available too — vibrato, tremolo, key touch sensitivity, portamento, sampled sounds and instrument definitions. Once you've gained access to MIDI, a whole new world of sounds, and more elaborate control over them, becomes possible.

Some synthesizers have expander modules, which are less expensive than the complete instrument with keyboard. Music Mouse can control those expander boxes directly. Also, since MIDI synthesizers are still playable while they are being operated by MIDI commands, one person can play the synthesizer normally, while another plays it from the Mac, using Music Mouse. If you're searching for new ways to make music, Music Mouse offers a dramatically new approach to controlling your synthesizers, and playing them in real time. Its "computer-assisted improvisation" approach is for performing music, not for noting it, so it can make improvising on a MIDI system easy and enjoyable by giving you a helping hand.

Music Mouse is the kind of electronic musical instrument meant for diehard old analog knob twisters.
The Mac's keyboard is divided into eight groups as follows:

1. **q w e r t y**: Pitch collection controls the possible notes played by the mouse, and rejects those outside the pitch collection. Among the pitch collections are pentatonic (like all the black keys on the piano); diatonic (all the white keys); chromatic (both the black and white keys), a Middle Eastern scale; the cycle of fourths, and a continuous (or microtonal) pitch set.

2. **z x c**: Transposition by half-steps up, down and clear (return to normal).

3. **a 1 2 3 4 5 6 7 8 9 0**: Substitutes melodic patterns for static pitches. Each numbered key has a different pattern, and the “a” toggles them on/off. Pressing the mouse button will stop the repeating patterns until you release it.

4. **s d f g**: Voicing. The “s” key toggles between parallel and contrary motion for the voices added by the numbered keys. The “d” key toggles the motion for the mouse-controlled voices. The “g” key changes the format (two voices against two, or one against three) as controlled by the mouse. The “g” key controls the grouping (all voices play together when on, each voice plays alone when off).

5. **u i o p**: Expression and tone quality. The keys select a waveform, square wave (like a clarinet) or sawtooth wave (string and brass sounds). For MIDI instruments, the “o” and “p” keys turn vibrato and portamento (sliding between notes) on and off.

6. **Spacebar < > /**: Volume. The spacebar turns the sound on and off. The “<” and “>” keys turn the volume down and up (shift not necessary). The slash key toggles between legato (smooth connection between notes) and staccato (broken connections).

7. **- +**: Tempo. These keys slow down and speed up the tempo of the melodic patterns added by the numbered keys.

8. **vb hj nm kl**: MIDI controls for key velocity, modwheel and foot controllers.

That's an enormous amount of musical flexibility to have under your fingertips while you're pushing the mouse around. Despite the relative simplicity of the design, **Music Mouse** does quite a lot of different things. By pressing just one key, you can make a dramatic or a subtle change in the sound without interrupting the flow of your improvisation. For each of these eight sets of controls, there's a default setting so you can begin playing immediately. To return to the default settings, just press the SHIFT-I combination (the only exception to the no shift key rule).

Before you realize it, you are playing a rather pleasant form of avant-garde music. On this instrument, the main variables are not pitch and loudness, but tempo and articulation. What's really fun is discovering how easily you can express yourself in this non-traditional way. Many other conceptual instruments are possible, and you can move from one to another effortlessly.

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big difference in the sound — instantaneously. For example, the slash key ("/") changes the articulation from legato (connected) to staccato (detached). The plus and minus keys speed up and slow down the tempo. Just playing with the tempo and articulation keys without moving the mouse can do some amazing things when you have the automatic pattern generators turned on. Just punch a key and you've changed the way your instrument operates.

**AGAIN, LATER**

Music Mouse can't save your better (or worse) efforts, but Tempo can. Tempo is a desk accessory for creating macros, or strings of commands initiated by a single command. Also, Tempo will record all your keystrokes and mouse movements, and replay them, so you don't have to think too hard to create your macros. For recording Music Mouse improvisations, that's just the ticket. With Tempo, you can record a long series of mouse movements and have them played back automatically. During playback, you can slow down Tempo's tempo. If you punch keys on the Mac during the recording, Tempo will reproduce all of the changes they create — or you can punch keys during the playback for added thrills and chills. Since Tempo macros can call other Tempo macros, you can nest lots of short macros to create really complex effects, all played back automatically.

Music Mouse also works with Switcher, so you can transfer the MIDI data it generates over to other MIDI applications, such as note storage and editing programs. And, since Music Mouse only occupies 26K, you can put it into a Switcher set with a word processor or a data base manager. When your regular work gets tedious and boring, you can switch applications. Take a break and have fun playing some music.

**DOWN SIDE OF THE MOUSE**

Music Mouse would be even more interesting if you could alter some of the presets. For example, the ten melodic patterns available from the numeric keys are fine as they stand, but a more creatively inclined user might prefer to edit them or substitute completely different ones. Also, the durations of the notes in these melodic patterns are equal note values. The real fun comes when you can create interesting rhythms for these sequences. The preset pitch sets are good choices and present plenty of possibilities. But, the ability to substitute other pitch sets of your own choosing would be a nice addition. Spiegel, who is in real life a busy composer, hopes to find time to write enhancements such as these.

You can't record, within the Mac, the things you play. You can of course, record the audio output on any tape recorder, but being able to play another musical sound along with a previous recording would be a nice capability. According to Spiegel, the Amiga's multitasking environment can run several copies of Music Mouse simultaneously, and that makes extremely dense, complex sounds possible. The same would be possible on the Mac if a multitasking System and Finder were available.

**STEVE BIRCHALL IS A COMPOSER, TECHNICAL WRITER AND FORMER EDITOR-IN-CHIEF OF DIGITAL AUDIO. HE IS DIRECTOR OF PUBLISHING SERVICES FOR KOTTITZ & ASSOCIATES IN MERRIMACK, NH.**

**Music Mouse**

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**Comments:** One of the more innovative music programs available for any personal computer. **Best Feature:** Immediately immerses you in the act of making music. **Worst Feature:** You can't edit the ten melodic patterns, or create new pitch sets. **List Price:** $59.95. Compatible with all Macs, System 3.2 and Finder 5.3, as well as Switcher and Tempo, it occupies only 26K. Published by OpCode Systems, 444 Ramona, Palo Alto, CA 94301, (415) 321-8977. Not copy protected.
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Microsoft BASIC branches off in two directions: a new Compiler and version 3.0 of the interpreter.

BACK IN THE JULY 1986 ISSUE OF MacUser, you were warned: Microsoft would release its BASIC Compiler and let you think you had a development tool in your hands — but you wouldn’t, really, because you would also need the machine language libraries from Clear Lake Research to get at the Mac’s Toolbox. Well, the Compiler’s here, and guess what? So is the 3.0 version of BASIC, which includes — you guessed it — the CLR Toolbox libraries. Microsoft apparently reads MacUser.

Okay, so you might have a developer’s tool now, but how good is it? Let’s take a look at both the Compiler and the 3.0 BASIC upgrade.

THE COMPILER

A compiler has to be reviewed on two counts: the process and the end product. With this compiler, the end product is very good, but the process is...well, “dismal” comes to mind. How anyone could write a compiler for the Mac without ever reading Inside Macintosh is beyond me. Or, maybe they read it and decided to break every Macintosh interface rule on purpose.

Here’s what you have to put up with for the thrill of creating a double-clickable application of your own from a BASIC listing. You run the compiler and you’re faced with...nothing. There’s just an empty gray screen and a File menu. When you realize you ought to do something, you select OPEN from the menu and choose a BASIC program to compile. A window opens with your compile options, and you find yourself in (gasp!) a modal environment. That means you’re in the window only: no File menu choices, no desk accessories available, nothing. You’re in the Compiler for better or for worse. You check your options (more about them later) on or off, and press the COMPIL button.

As the program compiles, you get ongoing reports in the window. (How can you trust an application that prints only in Monaco?) If you have more than a few errors, the window starts scrolling — and you can’t scroll it back. A list of errors can be saved to the disk for later printing, and you can pause the scrolling (with an unfriendly COMMAND-S and COMMAND-Q for pause and continue) but neither of these options is as direct as a scrollable window.

Okay, so you have only one minor error in the “source code” — the original listing. How can you fix this minor error? Quit the Compiler, open BASIC, fix and save the program; quit BASIC, open the Compil-
er, and try again. Of course, you can set yourself up in Switcher, or use the TRANSFER command in the File menu to bypass the desktop to make it a little easier on yourself. If you're smart, you'll get a DA editor like MockWrite from CE Software or miniWriter from Maitreya Designs, and do the text editing from under the Apple menu (when you can get at it, after the compile errors are listed).

There are lots of other interface insults: you can wait all day, but never see the wristwatch icon; when compilation is complete, there's no way of knowing except by observing that the printout has stopped; creating a Compile list (a list of programs to be compiled in one fell swoop) is an exercise in computerese that's archaic on the Mac, full of slashes, semicolons and cryptic single-letter commands.

So much for the Compiler's environment — you get the idea. It's like working on any computer other than the Mac. Still, what the Compiler does is probably more important than how it does it (although I'm not entirely convinced of that).

WORKING WITH THE COMPILER

To compile a simple program listing, all you have to do is: run the Compiler, select the BASIC program with the OPEN command, click the COMPILE button, and sit back and wait a few seconds or a few minutes depending on the length of the original program. If there were no errors found in the program you compiled, the disk has a completed double-clickable application created from your BASIC listing. It can be as easy as that.

Of course, it can also be a lot more complicated, even if you don't encounter errors. The compiler offers ten options for the compilation process itself, for instance. And, there are four "metacommands" that you can include in your listing to direct the compiler's actions. In addition, there are a few "extensions" to BASIC that the compiler can handle that the interpreter can't: Case Select structures and recursive subprograms. So, although a simple program can be run through the compiler with little or no alteration, and few or no options activated for compiling, there are also a lot of things that can go into the preparation of source code.

METACOMMANDS

Elementary preparation of your listing for the Compiler consists of getting rid of a few commands that make no sense in a compiled application: LIST, for instance, or STOP or TRON. More sophisticated preparation of the source code includes the use of metacommmands.

Metacommmands are commands embedded in the BASIC listing that the interpreter ignores because they are preceded by a REM statement, but the Compiler uses as instructions in the compilation process. The metacommmands are:

- **SINCLUDE**, which directs the compiler to stop compiling the current code, compile a named file and insert it into the main code, then return to the main code to finish it.
- **SIGNORE ON**/ **SIGNORE OFF** instructs the compiler to ignore
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any statements between the ON and OFF statements; this lets you use interpreter-specific commands in a listing that will later be compiled.

OPTION is used to turn compiler options on and off within the listing so they affect part of the source code regardless of the options set in the compiler itself. Although this can be an extremely useful tool, its implementation is poor, since it uses such cryptic syntax. If, for instance, your OPTION statement is to indicate that array-boundary checking is off and long addressing mode is on, the command in your listing would read:

`OPTION -C or OPTION +A` instead of something simple like:

`ARRAY ON or ADDRESS ON`

SPACE is an embedded command in a source code that will force a page break at that spot when you print a compiler listing file.

OPTIONS

There are ten options presented in the main compiler window, any of which can be used for a compilation, and any combination of which can be stored as the default combination for other compile procedures. Of these ten options, the N option and the R option are probably the most important.

The N option is the option to process RunTime events. You can hardly write a Macintosh program without using this option, since it refers to such things as errors and menu, mouse and dialog events. Even if you were willing to do without error checking (in which case you'd be in trouble when the disk was full or the printer wasn't turned on), the other events aren't event traps (ON MOUSE..., ON DIALOG...), but any use of an event check (WHILE MOUSE(0)=0...).

Using the N option slows down the running of the completed program somewhat, as does using event traps in the interpreter, since the computer is constantly checking for specific events in between other statement executions.

The R option is the option to include the "RunTime modules" within your application. If you do, you have a standalone program. If you don't, you have an ersatz double-clickable application that needs the RunTime library file at its beck and call all the time. You might wish to have the RunTime file separate, however, if you were creating a group of programs that would all be on the same disk. Instead of enlarging each by the RunTime module sections they need, they could share the simple, separate file from the disk. This is probably not much of a consideration in these days of 800K disks.

THE END PRODUCT

If all you want from a compiled version of your program is a standalone application, you'll be happy with the final product. If what you were looking for was a lot of extra speed, your happiness quotient may depend on the kind of program you compiled; the Compiler speeds up some things more than others (see sidebar).

There's one major problem with the overall look of your compiled application, and a few minor ones. When your application runs, the first thing you get is a menu bar with Default File and Edit menus showing on the menu bar; an Untitled document window flashes open, changes to your application's title, and then the window closes and your program begins. This is tantamount to putting a disclaimer in front of all of your programs ("Hi. I was written in BASIC and then compiled"). There's absolutely no excuse for this setup — the interpreter begins programs this way, too, but that is not an acceptable excuse.

A nice touch that might turn into a minor problem is the fact that the compiler creates an About box for each application; you'll find it under the Apple menu when you run your program. The menu item says "About Application" and the dialog box that comes up says "Created by BASCOM" (BASIC Compiler). These are minor details that you can fix in ResEdit, but no mention is made of it in the documentation.

The Compiler apparently is not meant for the dilettante programmer. Aside from the outrageous $199 price tag, the environment is not Mac-ish enough, and the documentation assumes a certain level of expertise. On the other end of the spectrum, serious developers probably won't mind the hostile environment, but they won't like the default menus and windows flashed at the opening of their programs, or the fact that the code won't boil down into something that can be used as a disk accessory, or a library that can be called from BASIC. Some middle-of-the-spectrum programmers might be happy enough with the compiler as it stands, but, speaking as one, I'm annoyed by both sets of problems.

TOO LITTLE, TOO LATE?

If the Compiler had come out a year or two ago, it might be forgiven some of its flaws; if it were less than half the price that's being charged,
Ten thousand pages, take it or leave it.

For those of you going places, here's a little something that solves big storage problems in the time it takes to say "who has the Farnsworth financial files?"

Introducing Totem:

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NOT SO BASIC

that also might be a saving grace. But, being both long-awaited and expensive means it should be a lot better than it is. Buying BASIC and the Compiler runs about $300 retail. TML Pascal and Turbo Pascal are a third of the price and can do more serious, heavy-duty program development. What it comes down to is how much you’re willing to pay (monetarily and psychologically) to be able to develop in BASIC, the language we all know and many of us now love.

BACK TO BASIC

The version number for the latest BASIC has jumped from 2.1 to 3.0 not because of the intrinsic changes to the interpreter, but because of the addition of Clear Lake Research’s machine language libraries to the package (see sidebar). In fact, there’s so much to the upgrade, it comes on two disks, with a third available direct from Microsoft for registered users. Besides the usual two versions of BASIC (decimal and binary) and the Toolbox libraries, you get Run-Time BASIC, a run-only utility that you can give out with your programs so people without BASIC can run your programs. Yes — you’re allowed and encouraged to make copies and give them away.

The changes in the interpreter are not immediately apparent, except for the TRANSFER command in the File menu that lets you bypass the Finder — presumably to launch the Compiler. Unfortunately, the environment hasn’t been tweaked a bit; not that it’s awful, but it sure would be nice to use cursor keys in a List window. There are a few new commands, however, and some 2.1 problems were fixed.

BASIC now works fine under HFS. You can access files nested down in folder levels, and the FILES function returns a complete path-name to the chosen file. You can also print with the LaserWriter from BASIC.

NEW STATEMENTS

In addition to the terrific routines available from the Toolbox disk, there are a few new ones in BASIC itself. By far the best addition is the block IF-THEN statement which lets you nest IF-THENs, and list the commands to be executed in a given condition.

There are four new “types” of edit fields. The current four types (1 to 4) are various combinations of framed/unframed and Returns allowed/not allowed. The four new types, numbers 5 to 8, use the same combination of attributes but do not highlight the default string in the field when it is created.

Other new keywords are specialized for more advanced programming, like SADD, to get a hold of a changeable string address, and CHDIR (change directory) to set the default volume to something other than the disk that BASIC is running from.

BASIC, like any language, is continually evolving. This latest step in its evolution is terrific.

SHARON ZARDETOU AKER IS A MACUSER CONTRIBUTING EDITOR AND AUTHOR OF MANY GREAT COMPUTER BOOKS. HER LATEST IS MACBITS: UTILITIES AND Routines FOR THE BASIC PROGRAMMER.

The Toolbox Libraries

The machine language libraries provided with BASIC, and with the Compiler, add about 150 new statements to the language, providing such things as scroll bars, Command-key equivalents in the menus, and control over resources — icons, pictures, cursors, alerts and dialog boxes. There are additional routines beyond those in CLR’s original ToolLib package, such as:

• An enhancement that lets you slow down the scrolling done with the scroll bars; this is handy now, and will be a necessity with the new, faster Macs. (The scroll bar is the only complaint I have about the Toolbox libraries; the strings in the scroll area are spaced too far apart, and the final line of pixels in letters with descenders are not selected properly when the string is highlighted.)

• CmdKey and SetItemStyle routines that let you add keyboard equivalents and use type styles in your menus.

• GetMouse gets the current mouse coordinates without using the MOUSE function.

• A group of statements that lets you manipulate Dialog boxes, putting them on the screen and checking what the user has input or selected. You can’t, however, create Dialog boxes except with ResEdit.

• PtlnRects lets you test if a point is in any of a number of rectangles. (This is in addition to the original PtlnRect command.)

The Toolbox library will keep you busy for a long time, but when you need more adds, CLR is still selling their MathStatLib package and a new collection of routines that lets you use VideoWorks movies in your programs.

BASIC 3.0

Overall Rating 1 1 1 1 1
Follows Mac Interface
Printed Documentation None
On-Screen Help None
Performance 1 1 1 1 1
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MACWRITE

The widest right margin that can be used in MacWrite is 8 1/4 inches. Due to a problem with MacWrite, this margin can only be used temporarily. Printing will work OK, but the document will never save properly.

Expand the MacWrite window to its largest size, where you are able to see the 8-inch ruler mark. This is done by dragging the window to the left and enlarging the window as far to the right as possible. Now drag the right margin icon (on the ruler) to 8 inches (where it will automatically stop). Then click on the very bottom right corner of the icon and it will move 1/16 of an inch to the right. Do this three more times and the right margin will be set to 8 1/4 inches.

You can print the document with this ruler, but you cannot save the ruler or document successfully. Everything will seem normal the first time you save the document. However, when you attempt to reopen it you'll get a bogus I/O error. To get around this, set the ruler and print the document. Then, set the right margin back to 8 inches (or below) before saving the document.

TIM NEVELS
RATOWN, MO

Using MacWrite, or any word processor, there are times that you are not able to get all of the words you want on one line, with the last word wrapping to the next line as you type the last letter. Instead of changing your margins and hoping for the best, select the spaces in between the words and reduce the font size (of the spaces) as small as possible. This works most of the time.

JEFF FIBER
WANTAGH, NY

MICROSOFT BASIC

When you paste in a large segment of code, you can easily lose track of where the newly inserted code begins and ends. You can avoid possible confusion by inserting a dummy label prior to pasting in the new code. Later, you can find the block of code by typing "LIST LABEL" in the Command window. For example, insert the label "NEWCODE:" prior to pasting in the new code. Later, you can find the new source code by typing "LIST NEWCODE" in the Command window.

H. DOUG MATUSO
HONOLULU, HI

SUPERPAINT

You can get LaserWriter quality output without having to use the memory hungry LaserBits function. First, paint your graphic at four times the desired size. Select the image and select COPY TO DRAWING from the Edit menu. Then, on the drawing layer, select the image and scale it to 24%. This will maintain the proper ratio of 72 pixels per inch on the screen to 300 pixels per inch. Although the screen version of the graphic won't always look good, the LaserWriter output will be sharp.

JIM McSPIRIT
SAYREVILLE, NJ

THUNDERSCAN

The Thundescan software allows for a direct transfer to MacPaint by choosing it under the Tools menu. If, however, you use FullPaint, ComicWorks or another painting application, change the name of your application to MacPaint and it will be launched directly from Thundescan.

This can only be accomplished if Thundescan and the application are on the same disk (or in the same folder for HFS).

BILL BALDRIDGE
RIVERDALE, MD

PAGEMAKER

PageMaker does not allow you to easily create dotted lines between text, such as might be used in a table of contents. Most fonts will not print dots a fixed distance apart.

A simple workaround to this problem is to use the box drawing tool. Draw a box as short vertically as possible, its length being the desired dotted-line length. Choose NONE from the Lines menu, and choose one of the "vertical strip" patterns from the Shades menu. You have just produced a line of fine dots. Change the size of the box and the patterns to get the dots to your liking.

CARL A. SCHUETZ
BALTIMORE, MD
MACDRAW/LASERWRITER

The following walk-through tip will show you how to use MacDraw and an Apple LaserWriter to produce professional quality disk labels. Additionally, you will require the MacDraw document discussed, Laser Disk Labels. You can obtain this document either in this month's Strip Show (which requires a Cauzin Softstrip reader) or through the CompServe, GENie or Delphi computer networks. The other required materials can be acquired at most major art supply stores. The following list of materials have been found to be the best, however you may substitute.

1. In the Finder, obtain a screen dump of the disk contents using COMMAND-SHIFT-3. Enter into a paint application or DA and individually copy each icon you want on your label and place it onto the Scrapbook. Attempt to lasso the icon, eliminating the "white space." When you bring the icon bitmaps into MacDraw you can resize them as desired. If MacDraw and the painting program are on different disks you must now move the Scrapbook file to the MacDraw diskette.

2. Enter MacDraw and open the file "Laser Disk Labels." Notice that all of the items, including text, are enlarged to twice the size of a normal disk label. Before printing confirm that Page Setup... has the reduction set to 50% so that the label prints at normal size. In addition, note that on the edge of the label the name of the disk is printed right side up and upside down. This is so the disk name is always visible regardless of whether the disk is in the floppy drive or in storage.

3. Start by changing the disk name. There are four places on the label where the disk name appears. Two of these four are upside down. The ones that are upside down must be rotated two times (to the right or left) in order to edit the text. After the four titles are changed, rotate the two upside down items back to their proper orientation. You will probably have to adjust the text's position within the label due to the fact that the disk name is a different size than originally. In the grayed area, change the text to a short description of the disk contents.

4. Remove the icons found in the center of the label. Open the Scrapbook file and cut and paste each icon into the document. After all the icons have been pasted into the document, resize each as large as possible and align them in the icon area. Make sure to make the icons as large as possible because this document is twice the size of the actual label.

5. You now have the label ready for printing. Before printing, check that the LaserWriter is selected for printing (using the Chooser DA) and make sure that the reduction in Page Setup... is set for 50%. You should print sample labels and make corrections as desired. Use Save As... to save your finished label under a different name so that the template is not altered.

6. Cut the Pantone paper, resizing it so it may be fed into the LaserWriter. Print your label on the Pantone paper. In the future, due to the costs of the paper, you may wish to include multiple labels for printing on the paper. Cut the label to size and attach the double coated adhesive tape to the underside. Finally, use a clear "fixative" or clear mat spray to give the label a finished look. The spray should not be sprayed anywhere near the computer or printer. Most sprays stay airborne and travel great distances.

(Editor's Note: Due to some idiosyncrasies of LaserWriter fonts and various versions of MacDraw, you might find that your file does not look exactly like ours. It is possible that you have to change the fonts and/or move the text into position. Correct the disk label to your liking. We used the Helvetica and Courier fonts for our label.)
You've probably felt the frustration. All of that graphic power just waiting to be tapped, without software to unleash the potential. Frustrate no longer—Cricket Draw is here.

Cricket Draw is an object-oriented drawing program that brings a whole new dimension to the WYSIWYG environment.

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WORKS

When using the word processing module for a paper with a title page, the manual neglects to tell you that even though choosing TITLE PAGE from the Format menu eliminates the first page number (for the title page), your next page will be page number two. It is simple to get the first page of text to be page number one. Here's how.

Make sure to SET PAGE # from the Format menu and set the number to zero (0). This will invisibly set the title page to zero and number (visibly) the first page to one. Kevin C. Brislin

PHILIP BORENSTEIN
BRIGHTON, MA

MACPASCAL

When doing a large number of remarks, one after another, hit the Return key after the end of each line, instead of typing a right brace. MacPascal will automatically type the right brace as well as the left one for the new comment line on the line below.

JIM McSPIRIT
SAYREVILLE, NJ

ANCIENT ART OF WAR

After a unit has entered combat both its food and, more importantly, condition are lowered. This can be rectified by detaching one man from another unit that has a higher condition and have him join (absorb) all of the weaker unit. The new unit that is created will now be at the strength of the detached man.

ARTHUR HENRICK
PALO ALTO, CA

GLUE

What if you own Glue and you want someone who doesn’t to view your output? If they own MacWrite, you can use the following steps to give them any Glue output in MacWrite form.

1) Print to disk any output, using the Glue ImageSaver.
2) Open the image with the Glue Viewer.
3) Select the entire page and copy it to the Clipboard or Scrapbook.
4) Open MacWrite and paste the copied Clipboard or Scrapbook image into a MacWrite document.

MacWrite owners should now be able to view/print any documents.

BRUCE LONG
TEMEPE, AZ

PRO 3D

If you use the custom lighting feature, but are not satisfied with the resolution of the sphere that is drawn (Sphere 2), hold down the Command key while selecting CUSTOM LIGHTING from the Light menu. Pro 3D will now produce a Sphere 3 so you may fine-tune the lighting.

GORDON CARSKADON
STARKVILLE, MS

If you wish to issue a number of commands, you have to wait for the drawing to redraw after every command. When you hold down the Command key as you choose menu items, Pro 3D will not redraw the screen after each command. Constantly holding down the Command key will allow you to do a number of things without waiting for the screen to refresh itself. To get the screen to draw itself again, click on the Redraw icon.

GORDON CARSKADON
STARKVILLE, MS

RESEEDIT

Hold down the option key to override ResEdit’s templates to open all resources in hexadecimal format. For example, hold down the Option key while double-clicking a LC/N resource to get the hexadecimal representation, instead of the icon editor.

PHILIP N. LEROY
DORAVILLE, GA

ACTA DA

It is easy to spilt off a portion of a long topic in a single keystroke. Simply click at the start of the text to be split off, then press OPTION-ENTER.

BILL LAYMAN
LACRESCENTA, CA

MINIWRI TER DA

While using the “Smart Quotes” feature in miniWriter, you can force miniWriter to type standard quotes without having to open the “Options...” dialog to turn off the Smart Quotes feature. You can override the Smart Quotes feature by holding down the COMMAND key while typing a quote(‘) or a double quote(“).

BILL LAYMAN
LACRESCENTA, CA

Don’t just sit there waiting for us to get around to your problem or question. Copies of the deluxe, spiral bound edition of The Power User’s Manual: Over 1,000 Hints and Tips for the Macintosh are now available for a mere $19.95, which includes shipping and handling. The manual has two cross-referenced indexes to help find tips fast and covers over 100 of the most popular Mac programs and peripherals. It’s worth its weight in gold mice, and just happens to be published by the same folks that bring you MacUser. Make your checks payable to Power User’s Manual and send the order to: Power User’s Manual Offer, 831 Federal Road, Brookfield, CT 06804. Bulk rates for clubs, organizations and schools are available from the same address.

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Now that software companies have discovered Mac's graphics interface, their products have become a lot more useful. Because now you can add pictures to your documents. And you know what they say about one picture.

That's where ThunderScan really becomes valuable. Because ThunderScan can turn most printed images into high-resolution Macintosh graphics. Which means you can insert quality graphics into your files. Making your programs perform like never before.

Programs like PageMaker, GraphicWorks and ReadySetGo for desktop publishing. With ThunderScan you don't have to rely on your own artistic abilities or someone else's clip art disk. Instead, you can illustrate your words with just the right graphics (even one-of-a-kind items like your logo or your own portrait). Improving both the professional appearance and readability of your publications.

Use ThunderScan with Business Filevision's dBASE Mac or Filemaker's Plus to add pictures and photographs to your data, for more complete, more informative databases. It's perfect for research, real estate portfolios, personnel files — any time you're working with more than words or numbers.

For those who view Mac as a blank canvas, ThunderScan is an exciting new artistic tool. Not only can you create elegant works of art with ThunderScan's powerful image enhancement software, you can really get wild with SuperPaint and FullPaint. And that's just the start. ThunderScan can boost the performance of MacDraw, MacDraft, MacPaint — Mac Anything! Plus Thunderware's new optional $29 connector makes ThunderScan Mac Plus compatible without a wall plug. So if you want to make the best of Mac software even better, take a gander at ThunderScan. At just $229 there's no better way to give your software a goose.
Find the answer for anywhere else? Apple is your answer straight from the source! you or me explained? Something you can’t.

Answers From the Mac Team

Got a Mac problem? Something that you’d like explained? Something you can’t find the answer for anywhere else? Apple’s Dan Cochran will answer your questions every month in this space. When the questions are too tough for him, he’ll get the answers from other members of the Mac team. So ask what you need to know and get your answers straight from the source.

Send your questions to Dan care of MacUser, 25 West 39th Street, New York City, NY 10018. Dan will read all of your questions, but, unfortunately, he may not be able to answer individual queries.

HD-20 PROBLEMS

Q. I have a 512K Macintosh with an external disk drive and an Apple HD20 hard disk. To use the HD20, I have to insert the HD20 Startup disk in the internal drive when I start up the Mac.

Until recently, the Startup disk would automatically eject after the HD20 started as the manual says it will. Now it has stopped ejecting. If I select “Eject” from the File menu it will eject but requires me to reinsert the Startup disk before I can use an application. As long as the Startup disk is in the drive the HD20 works fine. Do I have anything to worry about or should I just go ahead and use the HD with the Startup disk in the drive?

Two weeks ago I called the local Apple office and was referred to my Apple dealer for help. I called the dealer and they said they’d get me an answer. I have received no answer.

E. R. LUTER

DALLAS, TX

A. I’m assuming you have a standard 512K “Fat Mac,” not a 512K Enhanced. The HD20 Startup disk includes a System folder that contains the Finder, a System file, an ImageWriter Driver, and the HD20 Driver that allows the Macintosh and the HD20 to communicate with each other.

When you boot your Macintosh with the HD20 Startup disk, the startup software will look for your HD20 and then it will look for a copy of the HD20 Driver on the hard disk. If it finds this file the startup floppy will eject and transfer control to the HD20. At this point you no longer need to have the Startup disk inserted in your internal drive as the HD20 contains the software necessary for your Mac and hard disk to communicate. If the HD20 Driver file isn’t present on your hard disk, or if it can’t be found, the startup disk in the internal drive must remain mounted. For some reason your HD20 Driver file can’t be located by the startup software. You’ve either deleted it, it’s buried in some obscure folder, or you have multiple copies of your System folder on your hard disk.

You could certainly continue to work with this arrangement but performance will suffer and you won’t have easy access to the internal drive without having to swap disks all the time. Fortunately the fix is easy.

First, you probably have an old HD20 Startup disk with outdated versions of the System, Finder and HD20 files. Go to your dealer and get a copy of System 3.2, Finder 5.3, ImageWriter 2.3, and HD20 1.1.

Put all these files on a newly initialized 400K disk in a folder called “System Folder.” This will be your new HD20 Startup disk.

Boot up your Mac and HD20 with your new Startup disk. Open up your HD20 and throw away your current System folder as well as any other versions of the Finder, System or HD20 files that are on the disk. Now copy the entire System folder from your newly created Startup disk to the HD20. Despite what the HD20 manual says, make certain that you only have one System folder on your HD20. When the copy is complete reboot your machine using the newly created Startup disk. The startup software will find the HD20 Driver on your hard disk, your disk will eject and you’ll be back in business.

If you get tired of using the Startup disk you can have your dealer transform your 512K Mac into a 512K Enhanced. Your 400K drive will get swapped for an 800K drive and you’ll get new ROMs that can boot directly from the HD20 without the need for the Startup disk. A relatively minor and inexpensive operation with very worthwhile results.

MAC PLUS COMPATIBILITY

Q. I am a new member of the Macintosh family, with a brand new Mac Plus. As I learn about software, I find that I am not sure what programs are compatible with it. Even reviews are confusing at times. For example, in the Quick Clicks section of the December 1986 issue, the review for Thunder 1 says that 512K+ is required. Does this mean that the minimum memory requirement is 512K and, thus, it works with the Mac Plus? Can I assume that other programs with this designation mean the same thing? Other reviews, like those for MicroPlanter Plus, don’t even mention requirements; others, like CalendarMaker, say Mac Plus compatible.

My confusion extends into the review articles and the MiniFinders as well. How can I know which programs are available for my Mac Plus? Would it be possible to include some uniform requirement designation in your reviews? It would sure help me.

LOGAN JONES

CHAPEL HILL, NC

A. With one megabyte of memory the Mac Plus is Apple’s flagship product. As such, most any program that will run on a 128K or 512K machine will certainly run on a Mac Plus. Your confusion is rooted in historical bias and since you are a relative newcomer to the Mac scene I can easily see where it comes from.

When Apple introduced the Mac Plus we also introduced a new System and Finder (the software files you see contained in your System folder), and radically changed the software contained within the ROM chips on the machine itself. As a result of these changes a number of programs that used to work on the old 512K machines would not operate properly with the Mac Plus. The new System software was responsible, rather than the increase in memory.

During this transition period, when some software authors were struggling to make their programs compatible with the new machines, reviewers as well as advertisements would often explicitly state whether or not the program in question was Mac Plus compatible. As they say, “Time heals all wounds,” and by now any program written for the Macintosh had better be Mac Plus compatible.
compatible if the author wants to stay in business. I think you can safely assume that all of the products you see featured in magazines like MacUser are Mac Plus compatible. Not necessarily useful, but compatible.

[Editors’ Note: Good answer, Dan. 512K+ means that the program will not run on a 128K Mac. Those reviews that still mention Mac Plus compatible generally mean that some earlier version of the program was not Mac Plus compatible, and the current version is compatible.]

USE LOGS & PROGRAMMING

Q We need a utility program that will keep track of the time users spend on each document or each program throughout the day. Then at the end of the day we could print out a sheet with information such as: Document name, Program name, Time Open, etc. Do you know of such a program?

Also I am interested in programming, but I know zero about that subject. Where do I begin? Books? Programs? Languages?

Kirk Chandler
Sevierville, TN

A SoftView, authors of my favorite (and indispensable) tax preparation program MacInTax, have a new program called MacInUse that does exactly what you want. The program installs on any floppy or hard disk and runs silently in the background. Every time you use any application, MacInUse records the application name, date, start time, and duration into a file which you can later print out. You can also include a comment whenever you quit an application. The comment is also added to the usage file. I haven't used it personally so I can't vouch for the program. [Editors' Note: We have, and it works beautifully.] I can, however, vouch for the company. You can reach SoftView at 4820 Adorl Lane, Suite F, Camarillo, CA 93010. Their phone number is (805) 388-2626.

Another option is a desk accessory called Time Logger written by Lofty Becker. Recent versions come with an accessory (called an INT) that causes the DA to always be active. Time Logger functions much like MacInUse, although it's a bit simpler in its reporting abilities and a bit more work to install. It's shareware, which means you can get it from a friend, a users group or an electronic bulletin board, and try it out. If you keep it, you should send $10 to the author. If you want the latest version and documents, send him a $15, a blank disk and a stamped (39c), self-addressed envelope. Lofty can be reached at 41 Whitney Street, Hartford, CT 06105.

Programming is a wonderful discipline whether it's your hobby or your profession. Although there are many intricacies, tricks and magic to the art, the basic concepts are easily learned and once mastered can be...
FORGET BACKUPS!

With Peak Systems' hard disk and tape drive units, you get automatic, "set it and forget it" backups of all your hard disk data.

Just set the time you want a backup to take place (midnight, for example) and Peak Systems' unique software-controlled tape backup system makes a complete copy of all the files on your hard disk. It's the most painless way ever to make those important backups of your valuable information. You'll have the backups you need without all the hassle of backing up to floppies and without using up boxes of disks.

Peak offers a wide selection of SCSI-based hard disk drives and tape backup systems. If you like, you can start with an inexpensive hard disk now and add the tape drive later. (We've even got an add-on SCSI port that lets you use Peak drives and tape units with your 512K Enhanced Macintosh™.)

Peak's PLUS™ Drives are single hard disk drives in 20, 30, 45 and 65 megabyte capacities. Our PLUS-20T tape drive backs up any hard disk drive you use with your Macintosh. And if you want both a hard disk and tape now, consider the SIERRA™ — our newest addition that offers a hard disk and a tape system in one compact cabinet.

All Peak Systems hard disk drives come complete with utility software to perform data backup and system diagnostics. Our products are 100% Macintosh-compatible (including AppleTalk™ applications such as MacServe™), have FCC approval and are covered by a one year warranty.

For the dealer nearest you, call Peak Systems at 800-225-7509. In Texas call 512-329-1020.

Requirements: Macintosh Plus or Macintosh 512K E with SCSI port.

Apple is a trademark and Macintosh is a trademark licensed to Apple Computer, Inc. PLUS and SIERRA are trademarks of Peak Systems, Inc. MacServe is a trademark of Infosphere, Inc.
applied to any programming language. The subject of which programming language to use is as volatile a topic as religion or politics. I still think that Pascal and BASIC are great for beginners.

Many people can pick up the fundamentals on their own but I recommend you enroll in a beginning Pascal or BASIC programming course at a local community college. From there you’ll have enough of the fundamentals to explore on your own. If you decide to study Pascal as your first language pick up a copy of Macintosh Pascal, a gentle yet powerful introduction to the language. If you end up studying BASIC I’d recommend ZBASIC, Microsoft BASIC, or True BASIC, all of which are available for the Macintosh. The documentation provided with any of these language products should be sufficient to get you started.

Good luck!

TOP OF FORM

A few months ago I purchased an Epson DX-10 daisywheel printer to use with my Macintosh. I also have a serial to parallel converter. For software, my dealer recommended the Mac Daisywheel Connection from Assimilation Process. The software works enough to indicate that the hardware is probably OK, but the results are far from satisfactory. I have contacted Assimilation and received no satisfaction. The dealer can’t make the software work either.

Does this software work? Can it be fixed? It certainly seems that a sophisticated machine like the Macintosh could run a simple daisywheel printer.

GEORGE E. GLASS
BOULDER, CO

A Top of Form is under the control of the individual application and really has nothing to do with the printer driver. If you have two applications that seem to use identical Top of Form settings it’s either a coincidence or they were written by the same company (as are Word and Excel). My only suggestion is to manually adjust the printer or fudge with your document before printing.

DAISYWHEEL CHAPTER

A I don’t have pleasant news. Assimilation doesn’t work properly with the new Macintosh System 3.2. You may have some luck if you go back to using an earlier version of the System file. Microsoft offers a variety of printer drivers for daisywheel support. Check the drivers that come with Word. Microsoft also produced a device called the MacEnhancer that serves as a multiple printer connection box as well as a serial to parallel converter. It contains drivers for several daisywheel printers. I don’t think it is still being made, but you should still be able to find one at a good price. Remember to try it out at your dealer before you buy it.
January '87
Best products of 1986 - ThinkTank · Delphi review · The Great Language Face-Off · MacPaint · MacPaint Cookbook Pt. 1 · DA's with assembly language · Testing the front DA · Jumping act

February '87
Power User's Manual - The LaserWriter Revealed · Function Keys · Apple's H1024 NFS · MacDraft vs. MicRoSource · Environment · Rogue · Subway simulators reviewed · Basic Pt. 4

March '88
The Mac Plus · Hologram II vs. Panum Chess · Odyssey 3 · MacProject and Micro Planner review · Multiplan · C Pt. 1 · Clipboard · NotePad and Scrapbook 

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Softstrip reader · ReadySetGo! · Astronomy software roundup · The Home Accountant · The Ghost Sheet · The Ancient Art of War · a relation of Bargain · C Pt. 2

May '88
Upgrading your Mac · Secrets of Word · StarWorks &StarView - Easy 3D · Tee off with MacGolf · Borrowed Time · Kids games with Slide Show · Magician and VideoWorks - C Pt. 3

June '88
Special Desktop Publishing Issue · Newsletters · Fontographer and LaserWriter fonts · PageMaker 1.2 · Directory · MacSpin · Switcher and RAM disks · FM · Pascal · Wizardry - C Pt. 4

July '88
Tempo - Microphone · Smartcorn and Red Ryder · CLR Libraries · Games that will make games · Quartet and Ensemble · Mac-a-Mug · Pascal Pt. 1

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Mac systems in the office · Your First Utilities · Radio Shack Model 109 and Mac Software · The colors of Silicon Press · On-line services · Pascal Pt. 2

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Professional Desktop Publishing Issues · Effective Charting · Power View Processing · The Electronic Connection · MacUser II - SCSI hard disk round-up · MORE · Uninvited

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Microsoft Works · As the Double Helix::twists · Nine spell checkers reviewed · Archon · Word games galore · Exploring MAUS · Full-Painting · Finder basics · Pascal Pt. 3

November '88
Radius monitor · Works · PowerPictMaker techniques · Beginners' telecommunications · Cricket Graphing · Flight Simulation Order · StoryBoarder · Shangri La surprise · Pascal Pt. 4

December '88
Mac user looks at the HIMS · InBox — AppleTalk Electronic Mail · Inside Insight · MacPro - Session · PhoneNET · GlobQuest · Secrets of Pascal · Z-basic · StarView 512K · Smart Games

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Special Desktop Productivity Issue · Jazz vs. Microsoft Works · 3rd Annual Editor's Award · Desktop Publisher of the Year · MapMaker · MacPaint · Dungeon of Doom

February '89
Dynamic preview · It's SuperPaint super-HardBall, a great baseball game · Get more out of MORE · SCSI drive comparison · Design your own Mac screen · LightSpeed Pascal

March '89
Word processors round-up · Word 3.0 · WriteNow · database Mac preview · Financial and tax programs · Buffers go head to head · MacPro Football review · Pong — AI for the Mac.

April '89
Two new Macs · Page processing with Ragtime · Guide review · Clean copy with MacProof · Create a world with WorldBuilder · Dark Castle review · DAS cables · LightSpeed C review
We'll make it easy

Face it. You're a job hopper. Constantly skipping from one kind of crisis to another.

With that in mind, we are pleased to announce a program that can change gears as fast as you do: Microsoft® Works. A one disk program which gracefully integrates the four fundamental tools you need at work:

- Word processing, for writing memos, reports, presentations.
- A database tool, to keep track of clients, jobs, vendors.
- A spreadsheet with charting abilities, to compute, analyze, interpret, and then graph anything to do with finance or numbers.
- Finally a communications tool which lets you get stock quotes, make travel reservations, do research, and send reports across the country, right over the phone line.
Microsoft Works lets you juggle all these jobs, move swiftly and easily between them, while transferring and combining their information as you please. Because you do all these jobs with one, easy to learn, totally integrated program.

**Quick study. Quick change.**

The first job is the easiest. Learning to use Microsoft Works. It's a snap. The overall program and each tool within runs Macintosh™ style. Which, as you probably know, is a natural, common sense, point-at-what-you-want system.

And Microsoft Works is seamlessly melded together. You can have all four tools on screen at once. Jump instantly from one to another. And later combine work done in each part of the program on a single printed page.

This easy exchange of data makes jobs go faster and easier. One practical example being mass mailings of form letters where you need to combine names from the database with text written in the word processor.

All in all, Microsoft Works is a superb solution for day to day, get-it-done problems. An inspiring display of convenience, efficiency, and utility.

And, of course, it's a product of Microsoft, the preeminent developer of programs for the Macintosh. Which is not a claim, it's a fact.

If you’re in a business that won’t let you stick to one thing, check out Microsoft Works. The program that can change jobs as fast as you do.

**Microsoft® Works**

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MINIFINDERS

Have you often wished for a personal assistant to help in picking software? These MiniFinders may not breathe and move, but they do tell you what products are hot and, better, what these products do. Each of these items has been carefully reviewed and selected by the MacUser editorial staff. Each has been rated from 1 to 5 mice. Ratings are relative within categories, and they can change as categories expand and new products advance the state of the art. You won't see many low ratings or bombs, since we're telling you about the cream of the crop, but we will warn you about the really bad products so that you don't spend your money on them. Red names indicate this month's bombs, since we're telling you about the really bad products. The letters at the end of the entries indicate whether a product is copy protected (CP) or not (NCP). CP? Indicates that we don't know. If a product has been reviewed or QuickClicked in MacUser, the date of the review is shown. Next time you have to find products you can count on, count on MacUser!

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INTEGRATED SOFTWARE

Crunch is an icon-driven relational spreadsheet that features versatile charting and database capabilities. Strong financial logic, date and mathematical functions. Spreadsheets can be linked. The manual is clear and concise written. Macros are not supported. $195. Paladin, 2655 Zanker Rd., San Jose, CA 95134. CP (Jan 86)

Excel is THE power spreadsheet. Of the Mac, the world. Has 256-columns by 16,384-row capability. Features include a powerful macro function (with a recorder to make creation simple) and elaborate charting facilities. 512K+ Mac and external drive required. $395. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6396. CP (Pren)

Jazz provides well integrated modules for word processing, graphs, spreadsheets, databases and communications. HotView, is best feature. Requires 512K+ and external drive. Version 1A requires 800K drive. $595. Lotus, 55 Cambridge Parkway, Cambridge, MA 02124. CP (Pren)

Microsoft Works is an integrated application that includes word processing, database, spreadsheet and telecommunications functions. The telecommunications module includes background uploading and downloading. $295. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. NCP (Oct 86)

Quarter is an integrated program that works on a 128K Mac, built around a powerful spreadsheet with a full range of functions. It can also be used as a database and provides good quality charts from spreadsheet data. Documentation is adequate, but not too well organized. $139. Haba Systems, 6711 Valjean Ave., Van Nuys, CA 91406. CP

BUSINESS ACCOUNTING


BPI General Accounting is an easy to use system. Six journals, AR, AP, Payroll and GL on one disk. Offset amounts automatically post to ledgers. Up to 8000 accounts. Detailed records, wide range of reports. Switcher and HFS compatible. $425. Requires 512K+. BPI Systems, 3001 Bee Cave Rd., Austin, TX 78746. NCP (Aug 86)

CheckMark is a Ledger with five preset journals: Cash Disbursements, Receipts, Sales, Purchases, and AP. Menus and data entry are very straightforward. Flexible summary reports are built in, but customer and vendor information is very minimal. $295. CheckMark Software, PO Box 860, Fort Collins, CO 80522. CP

Hardisk is a complex integrated hard disk system that does not use Mac interface. Boxed is detailed but complicated, with a few pages that make it Mac-specific. Requires hard disk and printer. $695 per module. Great Plains, Box 9739, Fargo, ND 58109. CP (Dec 84)

Insight is a high-powered accounting program for the small to medium size business. At present, two modules are available: Accounts Receivable and General Ledger; others are in the works. Requires 512K+ Mac and hard drive. $395. Layward, 85 Merrimac St., Boston, MA 02114. NCP (Dec 86)

Rags to Riches is an integrated accounting modules (General Ledger and Accounts Receivable) uses Mac interface to the hilt. Information entered in one window automatically transfers. No detailed or flexible reporting. Very easy to use, but it can be confusing with several windows on screen. Requires 512K+ and printer. $199.95 per module. Collins, CO 80522. CP (Dec 85)

Rags to Riches Professional Billing tracks and bills professional services. Batches activities for individual timekeepers. Use as standalone, or integrate with R modules. $399.95. Charg Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. CP (Dec 86)

Strictly Business General Ledger features clear, well-outlined set-up procedures and operations. Very flexible, up to 99 profit centers with up to 100 departments each; and customized reports. Program print spools. Requires 512K+, printer and external drive. $395. Future Design, 13661 Williamette Dr., Westminster, CA 92683. NCP (Dec 85)

PERSONAL FINANCE

Dollars & Sense is a bookkeeping program. Easy to use, with a good manual and excellent on-screen help. Will handle up to 250 accounts or money categories. Uses standard double-entry accounting techniques. Will work on 128K, $1.49.75. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. CP (Mar 87)

Forecast is a tax estimating and what-if program designed to work with and use Dollars & Sense files. Straightforward, easy to use program. $69.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. CP

MacTAX is an excellent tool for preparing tax forms. Intuitive, easy to use. Accepts data from leading personal finance programs. Good built-in help. Liberal upgrade policy for current owners. California forms set also available. $99 federal: $45 California. SoftView, 4820 Adohr Lane, Suite F, Camarillo, CA 93010. NCP (Mar 87)

MacMoney is a complete and easy to use personal financial system. Intuitive data entry. Integrates with MacTAX.
Databases

Business Filevision is a masterpiece of Macintosh programming. The only true graphic database on any micro. Much more powerful than the original, accepts MacPaint graphics. $395. Telos Software, 3420 Ocean Park Blvd., Santa Monica, CA 90405. CP (Feb 86)

Double Helix is an environment to generate custom applications built around a data base type framework. Contains enhancements to Helix 2.0. Includes custom menus, sub form windows, password protection and a universal dump and load parser. Ability to store pictures as data files. $495. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Oct 86)

File is a flexible data manager. Creates files for a variety of data, including simple graphics. Files are created in simple row/column format, but reports and forms are easily customizable by moving field names around on a blank form. $195. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. CP (May 87)

FileMaker Plus retains features of FileMaker and reads FileMaker data, also displays up to 8 files, uses “look up” to retrieve data from other files. Enhanced calculation with many additional functions. Scripts automate a sequence of actions. Mac Plus compatible. $295. Requires 512K+. Forethought, 250 Sobrante Way, Sunnyvale, CA 94086. NCP (Mar 86)

Filevision is a simple database that can change the way you think about data and data organization. Records are based around user created graphics screens. Screens and records can be linked in complex ways. $195. Telos Software, 3420 Ocean Park Blvd., Santa Monica, CA 90405. CP

Helix is a relational database that makes extensive use of icons. Setup is easy due to adherence to the Mac interface. The manual is clear, thorough and well-indexed. Complicated for simple database applications, excellent where a relational power is needed. Requires 512K+ and external drive. $395. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Mar 86)

MacRoster is a relational list manager that stores data in a column format. Files can be related by sharing a common field. Flexible design for reports. Screen display is sometimes strange. Easy to use but not obvious to learn. $99.95. 512K required. Arrays, 6711 Valjean Ave., Van Nuys, CA 91406. NCP (Jan 87)

Omni 3 is a power database, featuring concurrent multiple file management. Can handle 24 files. 12 at a time, and is fully relational. Create custom environments including user-defined menus, commands and dialogs. $495. Byth, 2655 Campus Dr., San Mateo, CA 94403. CP (Mar 86)

OverVue is a power-packed relational database that has extensive sorting, summarizing and report generation capacity. Has macros and a charting function. Good manual. It can exchange files with a very wide variety of other programs (including IBM software). $295. ProVue, 222 22nd St., Huntington Beach, CA 92648. NCP (Nov 85)

Professional Bibliographic System is a specialized data base storing and retrieving bibliographies. Redesigned templates (20) simplify creation. Version 2.6 offers improved speed, flexible formatting, $295. Personal Bibliographic Software, Box 4250, Ann Arbor, MI 48106. CP (Feb 87)

Professional Record Holder is a flexible, easy-to-use form-oriented data manager. Set up is particularly simple and the search features are powerful. $49.95. Software Discoveries, 99 Crestwood Rd., Tolland, CT 06084. NCP (Apr 86)

Reflex for the Mac is a flexible relational database. Excellent report generator gives full control over appearance, style of output. Requires 512K+, second drive or hard disk. Highly recommended. $99.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95068. NCP (Nov 86)

Writer’s Workshop maintains orderly records for writers. It can track manuscripts, income and publisher. Based on and includes Runtime Helix. $99.95. Futuresoft System Designs, PO Box 132, New York, NY 10012. NCP (Apr 87)

Number crunching

DesignScope is a construction kit for digital and analog circuits. Up to 254 components can be utilized in a single circuit, and the equivalent of a dual trace oscilloscope plots output in real-time. Good for testing basic (and not-so-basic) circuitry without touching a breadboard. $249.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP

MacCalc is a fast, competent, full-featured spreadsheet with impressive built-in functions, font control, on-line help ability to expand columns and rows and read/write SYLK or WKS files. The worksheet is 125 columns by 999 rows. Cell names, printing power make MacCalc a very flexible pure spreadsheet. $99.95. Bravo Technologies, c/o DFAS, PO Box 1, Gilroy, CA 95021. NCP (Sep 86)

MacSpin is a unique and powerful graphic data analysis program. Handles multivariate data in a highly visual manner. Nothing else like it for any micro. $199.95. D2 Software, PO Box 9546, Austin, TX 78776-9546. CP (Jun 86)

MindSight is a professional level decision support and business planning package. Can work with IFPS on mainframes, and is able to transmit models in both directions. Powerful and easy to use. Requires 512K+ $195. Execucom Systems, PO Box 9758, Austin, TX 78776. CP

Multiplan, the first Mac product from someone other than Apple is beginning to show age. Still a very capable basic spreadsheet with simple sorting, 63 columns by 255 rows, many built-in functions, other standard spreadsheet features. $190.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. CP (Mar 86)

StatView 512+ is a very intuitive statistical analysis program with tools needed to understand any set of data. Holds data in a spreadsheet-like form. Full-featured, fast and accurate. Extremely wide range of analyses possible. Requires a minimum of 512K of RAM & 800K of disk space to operate. $349.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (Dec 86)

StatWorks is a general-purpose statistics package that is both powerful and easy to use. Handles all standard tests and procedures. Single variable and multivariate statistics are supported. $125. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (May 86)

Trapeze is a very powerful spreadsheet program that functions through use of blocks similar to page layout programs aligned on a user-definable grid. Blocks can contain the usual spreadsheet-type cells, rows or columns, text, pictures and any type of special graphics. Includes financial, conversion and transcendental functions. $295. Data Tailor, 1300 S. University Dr., Fort Worth, TX 76107. NCP (May 87)

Graphs & Design

CalendarMaker creates monthly calendars in a variety of formats. Users can incorporate their art and daily notes. Note files can be imported from a variety of DA calendars and outlines. Shareware and precissenced versions available. $30. CE Software, 801 73rd St., Des Moines, IA 50312. NCP (Dec 86)

Chart can easily create area, bar, column, line, pie, scatter and combination charts. A total of 42 styles are provided. Limited to 100 data items (64 in a series) on a 128K Mac.
MINIFINDERS

approximately twice that on a 512K Mac, $125. Microsoft, 16011 NE 36th WAY, Redmond, WA 98052-6399. CP
CliclArt Special Effects is a MacPaint enhancement desk accessory. Allows the user to distort, stretch, rotate and use perspective on MacPaint documents. A necessary addition for all serious users of MacPaint. $49.95. T.Maker, 2115 S. Old Highway Dr., Mountain View, CA 94043. NCP (Apr 86)
ColorPrint allows you to print FullPaint, MacPaint, MacDraw and MacDraw documents in color using the ImageWriter II or ImageWriter I. Paint files set up as overlays are read into ColorPrint, and the program controls proper positioning and registration. $29.95. I/O Design, PO Box 156, Exton, PA 19341. NCP (May 86)
ComicWorks is a graphics wonder. Manipulate bit mapped graphics as independent objects, with up to 64 layers of matting. An airbrush, multiple page capacity, full-screen drawing, and two disks of gorgeous artwork round out this package. Needs better LaserWriter support. $79.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. NCP (Nov 86)

CriclDraw is an object-oriented drawing program that will produce stunning, high-quality output. Designed to print on PostScript-compatible devices such as the LaserWriter. Making shadows and flowing fountain effects are just a point and click away. $295. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (May 87)
CriclDraw Graph easily generates 12 graph types. Multiple windows can be displayed. Graph prints up to 8 colors with up to 16 patterns. Self-generating macro formatting, Switcher, HFS, LaserWriter and plotter compatible. $195. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (Jun 86)

Easy3D is a three-dimensional, solid modeling masterpiece. Four variable light sources, powerful sculpting tools and an exquisite user interface make this a must-have for graphics enthusiasts. Requires 512K+. Enabling Technologies, 600 S. Desoto Blvd., Los Angeles, CA 90045. NCP (May 86)
EZ Draft is a high-level CAD application. Does things usually only found on minicomputer programs. Uses "pop-up" menus to supplement a full set of pull-down menus. Comes with an additional set of printer/plotter/monitor drivers. A real powerhouse. $1995. $500 for EGCS module to link to other CAD programs. Bridgeport Machines, 500 Lindley St., Bridgeport, CT 06606. NCP (May 86)

Fluent Fonts is a two-disk collection of fonts. Forty-nine different fonts included. All install easily in user Systems. Most are well executed and some are extraordinarily nice. This is a real bargain for font lovers. $49.95. Casady, PO Box 223779, Carmel, CA 93922. NCP
Fontastic is the best font editor now available for the Mac. It features a unique grid system with a grid to make positioning easy. Select letters to edit by clicking on a matrix of the font. Allows scaling of existing fonts and previewing the various styles (italic, bold, etc.). $49.95. Altys, PO Box 865410, Plano, TX 75086. NCP (Dec 85)

Fontographer is a complex, but excellent laser font creator. The fonts created can have 300 bits per inch resolution. The fonts are actually downloadable PostScript files. $395. Altys, PO Box 865410, Plano, TX 75086. CP
FullPaint is an expanded version of MacPaint. Features include full-screen drawing, multiple documents open simultaneously, brush editing, movable tool palettes, special text effects and much more. It fills the gaps left by MacPaint. $39.95. AppleSoftWorks, 306th St. State St., Ann Arbor, MI 48104. NCP (Jun 86)

GraphicWorks is a powerful bit-mapped graphics program using Windows Dr. Mountain View. $49.95. Ann ArborSoftWorks, 306th St. State St., Ann Arbor, MI 48104. NCP (Jun 86)

GraphX indexes MacPaint and MacDraw format graphics without removing them from their original documents. Indexed graphics are retrieved via the GraphX Index. Can modify an indexed graphic without affecting the original. Best for bit-mapped (Paint format) images but the design is questionable and the execution imperfect. Requires 512K+. $124.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (May 87)

GridMaker is a tool for artists who use perspective. The program automatically generates a series of three-dimensional planes that can be pasted into MacDraw. Sizes and viewing angle options easily modified. $49. FolkStone Design, Inc., PO Box 86982, North Vancouver, BC V7L 4P6, Canada. NCP (Nov 86)

Japanese Clip Art is a two-disk set of extraordinary Japanese clip art. Consists of MacPaint documents and separate fonts. Volume I, Heaven, covers mythological subjects; Volume II, Earth, has secular subject matters. $69.00 each volume; $119.95 set. Enzan Software, 150 W. Acton Rd., Stow, MA 01775. NCP (Apr 87)

LaserFonts are new fonts for the LaserWriter. Users download them to their machines. Very high quality and very simple to use. Willamette looks like Avant Garde. MicroFonts provides tiny, expanded and condensed versions of the LaserWriter's own fonts. $29.95 each. Century Software, 2306 Cotner Ave., Los Angeles, CA 90025. CP

LaserWorks is a high-resolution font and graphics editor, producing LaserWriter-compatible end products. Its numerous well-designed features make it suitable for users of all levels, from beginners to pros. Requires 512K+ and external drive or hard disk. $299. EDO Communications, 63 Arnold Way, Hartford, CT 06119. CP (Sep 86)

The Mac Art Dept. is a collection of over 150 graphic images ranging from foods to hands holding signs to borders. Best suited for letterheads, memos, other business use. $39.95. Simon & Schuster, Computer Software Div., 1230 Ave. of the Americas, New York, NY 10020. NCP (Mar 86)

Mac-a-Mug is an identikit type program for creating faces from facial feature files. Allows scroll bars that are slow and jerky. Lots of creative fun. $125K+ Mac required. $59.95. Shaherazam, PO Box 27731, Milwaukee, WI 53226. CP (Jul 86)

MacDraft is an object-oriented graphics program. It sports advanced features such as variable scaling, single degree rotation, complex arcs and a FatBits-like magnification mode. Best used to complement MacDraw, not replace it. $129.95. Innovis Design, Inc., 2975 Willow Pass Rd., Concord, CA 94520. CP (Feb 86)

MacDraw is an object-oriented structured graphics program. Can be used to design forms, create presentation materials and do technical illustrations. Drawing sizes up to 8 feet by 10 feet are possible. Text can be easily generated and integrated in the graphics. $195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

MacModel is an economical 3D package with shading. Somewhat sketchy Mac interface, shading speed slow (but acceptable), grainy image resolution. On-line help screens are a welcome addition. Frequent updates and low price make this a reasonably good buy. $40. A.P.P.L.E. CO-OP, 290 SW 43rd St., Renton, WA 98055. NCP (Aug 86)

MacPaint is the graphics program that started a whole new genre. It's the best freehand graphics tool. Version 1.5 supports Macs and the LaserWriter. Multiple tools, patterns and features too numerous to describe. A work of art for artists. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

Mac3D 2.0 is a feature-laden 3D program with a MacDraw-like interface. PostScript-resolution shading with six variable light sources, user-definable tools, and many more features make this a graphic powerhouse. $249.95. Challenger Software, 18350 Redzio Ave., Homewood, IL 60430. NCP (Jan 87)

MapMate produces maps and analyses of related geographical data. Additional data disks available. Documentation could be better. Requires 512K; second drive recommended. $295. Select Micro Systems, 2717 Crescent Dr., Yorktown Heights, NY 10598. NCP (Jan 87)
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MGMS: Professional CAD for Macintosh offers more than 200 text editor functions. Very complete, capable program. Powerful tools like Groups, Dimension, Libraries etc. are standard. Sometimes confusing to follow—designed for experienced, professional CAD user, not the novice. Full plotter support. Good manual and tech support. $512K, Mac Plus or Lisa/Mac XL. $799. Micro CAD/CAM, 5910 Noble, Van Nuys, CA 91411. CP

MockPackage is a set of extremely powerful DAS. Includes a text editor, text printer (supports LaserWriter), chart, terminal and EZmenus. HFS compatible. $35. CE Software, 801-73rd St., Des Moines, IA 50312. NCP (Mar 87)

PageMaker is an advanced layout and makeup program. Can easily create multiple page documents. Output is optimized for LaserWriter. Good documentation. $495. Aldus, 411 First Avenue South, Seattle, WA 98104. CP (Jun 86)

Phoenix 3D is an economical 3D drawing package, with features that belong in a more expensive program. Multiple light sources, fine object placement and orientation control, and a good selection of shapes. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Oct 86)

PictureBase is a program and accompanying desk accessory for organizing MacPaint and MacDraw files. Graphics are organized into libraries, and can be searched for by keywords, $69.95. Symmetry Corporation, 761 E. University, Mesa, AZ 85203. NCP (May 86)

Portfolio: Designs for Newsletters provides over twenty templates for 2-page newsletters with preset columns, headlines, graphics and captions. Documentation provides excellent tutorial in page design. Includes DA called Wzyzy which optimizes screen fonts and copyfit. 512K (512K E to use Wzyzy DA) or Mac Plus; PageMaker. $79.95. Aldus Corp., 411 First Avenue South, Suite 200, Seattle, WA 98104. NCP (May 87)

The Print Shop makes it easy to create greeting cards, banners, letterhead and signs in minutes. Offers full access to fonts, styles, graphics. Can pull images from MacPaint files or off the Clipboard. Don't get near a hard disk. $79.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Dec 86)

Ragtime is an "Integrated Page Processor" with text, graphics and built-in spreadsheet. Flow text automatically from one frame to another. Spreadsheet has a full set of functions. Excellent, easy to use program. Requires 512K+, $395. Orange Micro, 1400 N. Lakeview, Anaheim, CA 92807. CP (Apr 87)

slide Show Magician 1.3 is useful for creating full screen audiovisual presentations on the Mac. It includes branching, capturing and editing capabilities, external cassette recorder synchronization and digitized sound capabilities make this much more powerful than the original. $59.95. Magnum, 21115 Devonshire St., Chatsworth, CA 91311. CP (Mar 86)

Storyboarder produces working animated storyboards for use in film and video production. Imports graphics from MacPaint; allows screen masking to simulate television, 35mm or 70mm screen widths. $495. American Intelleware, PO Box 6980, Torrance, CA 90404. CP (Nov 86)

Sunshine Graphics Library is a collection of 36 400K disks (to date) with a wide variety of high-quality digitized images stored as MacPaint files. Each disk comes with a laser catalog, $20/disk; discounts scale for multiple purchases. Sunshine, Box 1027, Austin, TX 78760. NCP (Feb 87)

SuperPaint is a powerful, easy-to-use graphics program with all the best features of MacPaint and MacDraw—and then some. Among the new features, LaserBits provides 300 dpi magnification and there are 40 editable brush shapes. Requires 512K+, $99. Silicon Beach, 9580 Black Mountain Rd., PO Box 261403, San Diego, CA 92126. NCP (Feb 87)

World-Class Fontals comes in two volumes of three disks each. Incluudes all the Mac the Knife fonts and a lot more, including 2 useful utilities. This is now the best collection of ImageWriter fonts available. Each volume: $39; both volumes: $59. Dubli-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP (Dec 86)

COMMUNICATIONS

AppleShare is the long awaited file sharer from Apple. Software-based, AppleShare requires you to dedicate a Mac and a hard disk to run it. Allows users on the network to protect things from other users on the folder level. Interface to network is provided at a revised Finder. $799. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (May 87)

HomePak is a package consisting of HomeTerm, an excellent simple telecommunications program with strong macro features; HomeFind, an electronic filer as bad as HomeTerm is good; and Apple's Edit, a simple, non-HFS-compatible text file editor. $49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario L4B 1B5, Canada. NCP (Aug 86)

Inbox is an easy to use mail system. It's called up from a desk accessory. Has a very slick interface. Current version requires a dedicated Mac to run as storage for the mail. $299 for starter set which includes one Administrator disk and three Connection disks. Additional Connections cost $75 each. Think Technologies, 420 Bedford St., Lexington, MA 02173. CP (May 87)

InTalk comes with its own communications command language capable to do unattended sessions. Supports Xmodem and MagMac. Has a macro key function. Many sample set up documents and command language files provided. $145. Palantr, 12777 Jones Rd., Houston, TX 77070. CP (Prem)

InterMail is an electronic mail system that runs under AppleTalk. Supports file transfers across the mail system. Full on-line help facility. Also includes "While you were out" messages. Desk accessory based. Prices determined by number of users licensed. One to four users, $299.95; 5 to 10 users, $499.95; 11 to 20 users, $749.95; 21 or more users, $949.95. Interactive Network Technologies, 20 Amy Circle, Waban, MA 02176. NCP (May 87)

MacTerminal provides basic telecommunications and terminal emulation for the Mac user. Doesn't have macros nor any sort of auto redial/auto logon capability. Best for those needing faithful VT100 or IBM 3278 emulation—it is superb at those. $99. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Prem)

Microphone is a high-powered terminal program that's easy enough for novices. Very powerful command language allows full automation of communications, if desired. $74.95. Software Ventures, 2907 Claremont Ave., Berkeley, CA 94705. NCP (Jun 86)

Red Ryder is a full-featured telecommunications program that supports MacBinary, Xmodem and Kermit. Remote service procedures, auto procedure writer and keyboard macros allow automation of many operations. It is shareware and a real bargain. $40. The FreeSoft Corp., 10828 Lacklink, St. Louis, MO 63114. NCP (Jun 86)

Smartcom II balances power and ease of use. Capable of unattended operation and has a very powerful command language. Supports MacBinary, Xmodem and Hayes Verification protocols. The large screen buffer can easily be archived. $149. Hayes, 5923 Peachtree Industrial Blvd., Norcross, GA 30092. NCP (Prem)

Teleoscope is the power telecommunications terminal program. Can be configured to emulate any terminal. $125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Jun 86)

TOPS is a file server that is designed to network computers with different operating systems. The current system will support Macs, MS-DOS and UNIX. Access to files and subdirectories is transparent to the user, they appear as Mac folders. Only handles ASCII or Text files. $149 for Mac version. $389 for PC's (comes with add-on card). Centrum Systems West, 2560 Ninth St., Berkeley, CA 94710. Serial number protected. (May 87)

VersaTerm is a full-featured telecommunications program that supports MacBinary, Xmodem and Kermit. Remote service procedures, auto procedure writer and keyboard macros allows full automation of many operations. It is shareware and a real bargain. $40. The FreeSoft Corp., 10828 Lacklink, St. Louis, MO 63114. NCP (Jun 86)

VortexTerm includes DEC VT100 and VT52, Tektronix 4014 graphics terminal and Data General DG200 emulation.
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Supports Xmodem and MacTerminal Xmodem protocols and MacBinary. VersaTerm is easy to use and well documented. $99. Peripherals, Computers & Supplies, 2457 Perkiomen Ave., Mt. Penn, PA 19606. (Penn)

VersaTerm-Pro is a very powerful terminal program with several special features. Does one of the best VT100 emulations available and specializes in high-quality Tektronix 4014 and 4105 emulation. A pro’s tool. Requires 512K+. $295. Peripherals, Computers & Supplies, 2457 Perkiomen Ave., Mt. Penn, PA 19606. NCP (Apr 87)

WORD PROCESSORS

Document Compare allows users to compare any two MacWrite 4.5, ASCII or MDS documents. Differences in spelling, punctuation, formatting and word usage are detected. Documents can be printed out with differences highlighted. $99. The Monon Company, 48 Wellington Street East, Toronto, Canada M5E 1C9. CP (May 86)


Just Text is a professional level word processor and page makeup program that generates PostScript output. Comes with a set of LaserWriter utilities that allow total manipulation of text and text. Requires LaserWriter or other PostScript compatible output device. $195. Knowledge Engineering, GPO Box 2139, New York, NY 10116. NCP (Oct 86)

Laser Author is a high-powered, technically oriented word processor. Good math setting capability. Has style sheets, word count and page layout capability. $199.95. Firebird Licenses, PO Box 49, Ramsey, NJ 07446. NCP (Mar 87)

Liberty Spell Checker is a fast, effective interactive checker. The 50,000-word dictionary is smaller than average, but well chosen. Unfortunately, it has a few misspellings. $59.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Oct 86)

MacGAS is a DA spelling checker with both a small and extended dictionary. Its best point is the excellent thesaurus, provides synonyms & glossary. A slow checker. $99. EnterSet, 410 Townsend St., San Francisco, CA 94107. CP (Oct 86)

MacLightning is an interactive spelling checker in desk accessory format. Text can be checked on the fly or by selecting sections. Works within many applications, and options include a thesaurus, medical and legal dictionary. $99.95. Target Software, 14206 Southwest 136th St., Miami, FL 33186. NCP (Oct 86)

MacProof is a grammar, style and spelling checker that's like having your own personal copy editor. Grammar rules are fixed, and you may not agree with the choices. The program only suggests corrections, it doesn't make them for you. And the checking process can be slow if your document is long. $195 for standalone version; $2500 for networked version. Requires 512K+. $499.50. Batteries Included, PO Box 33, Mulgravia St., San Francisco, CA 94107. NCP (Sep 86)

Macspell+ (version 1.1.0) is a spelling checker that installs as a disk accessory. Works easily with MacWrite 4.5 and 2.2 and Word, but has some drawbacks. New version just available. Requires 512K+, two drives or hard disk. $99. Creighton Development, 16 Hughes, Irvine, CA 92718. NCP (Apr 87)

MacWrite is the basic Mac word processor. While it doesn’t have every bell and whistle, it is more than adequate for most users. $12.95 for a computer, 20525 Mariani Ave., Sunnyvale, CA 94089. A must-have for those who do outlining. $59.95. Symmetry, 761 E. University Dr., Mesa, AZ 85203. NCP (Jul 86)

Calliope is a new type of outlining program. Chunks of information are manipulated as small “light bulbs” containing text. Related elements can be graphically connected, and their text information viewed in hierarchical order. Text files can be created for MacWrite editing. $59.95. Innovation, PO Box 1317, Los Altos, CA 94023. NCP (Sep 86)

DecisionMap organizes data to facilitate decision making. Unique weighting abilities make this a powerful tool. The decision analysis process is long and some times complex, but never difficult. $145. SoftStyle, 7192 Kalanianoe Hwy., Honolulu, HI 96825. CP (Nov 86)

Design is a powerful organizational tool. It goes beyond mere flowcharting. Complex, detailed program aimed at software pros. $200. Meta Software, 55 Wheeler St., Cambridge, MA 02138. NCP (Apr 87)

Guide allows you to "cross-reference" from within a document using hypertext. You can set up words or sections of the document so that double-clicking brings up explanatory material, graphics and other useful items. The word processing and formatting functions, however, are limited. $135. OWL International, 14218 NE 21st St., Bellevue, WA 98007. NCP (Apr 87)

MacProject allows a user to plan and track a project from beginning to end. Uses CPM to produce schedules with start
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and finish dates for each task. Can report on resource
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$125. Apple Computer, 20525 Mariani Ave., Cupertino, CA
95014. NCP (Mar 86).

MacSpee is a specification writing tool, a cross between word and
outline processors. Can automatically number and indent
headings, and renumber everything when lines are moved.
Text under headings is handled and formatted as though in a
simple word processor. HFS-compatible. $199.95. LM Soft-
ware, PO Box 93, Belmont, CA 94002. NCP (Oct 86).

MicroPlanner Plus is a great project management system with
a major enhancement to MicroPlanner. Outstanding analysis
capability. Memory based, making it much faster than the
original. Includes a font menu. Even saves reports out in
MacDraw format for further work. Uses standard print
drivers. HFS compatible, Micro Planning Software USA, 235
Montgomery St., San Francisco, CA 94104. CP (Dec 86).

MORE is an incredibly powerful outline processor with gobs of
great features: instant charts, math capabilities, multiple
windows, font and style control, templates and more. Prints
outlines in any of several standard formats, even in color.
Requires 512K. + $295. Living Videotext, 2432 Charleston
Rd., Mountain View, CA 94043. NCP (Sep 86).

ThinkTank 512 is a very fast and intuitive organizational tool. Full
keyboard control is possible. Can store and paste graphics
into outlines. Slide show features allow high-quality pre-
sentations to be created. Good report formatting and printing
capability. $195. Living Videotext, 2432 Charleston Rd.,
Mountain View, CA 94043. CP (Jan 86).

Vollat is a full-featured outline in desk accessory format. Head-
lines can be edited like normal text. Reads and writes text
files. Word, MacWrite, ThinkTank and MORE documents. An
excellent value. Requires 512K+. 800K drive or external
400K drive. Mac XL not supported. $99.95. Target Software,
14206 SW 136th St., Miami, FL 33186. NCP (Mar 87).

DESK MANAGERS

BatteryPak is a set of 9 handy desk accessories including
scientific and RPN calculators, a background text file printer
and a 250-page note pad with search and phone dialing
capabilities. $49.95. Batteries Included, 30 Mural St.,
Richmond Hill, Ontario, L4B 1B5, Canada. NCP (Dec 85). MyOffice lets you handle your files and papers in much the same
way you did before you got a computer. Excellent use of
graphic symbols makes this program the easiest to use of its
type. $129.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA
91423. CP (Dec 85).

Quickset is a set of desk management and organizational tools
that can be used as desk accessories or applications. Functions include note flier, card flier, calendar, phone
dialer, financial and statistical calculators and a file encryp-
tor. $49.95. EnterSet, 410 Townsend St., San Francisco, CA
94107. NCP (Mar 85).

Sidekick is a set of desk organization applications and accessor-
yes. Functions include phone dialer and logger, desk

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  - Central Point Software, 9700 SW Capitol Highway, Portland, OR 97219.
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- **DiskExpress**
  - Unfragments disk volumes by reorganizing data into continuous sectors and arranging files to slow down further fragmentation.
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  - ALSof, Box 927, Spring, TX 77383.
  - NCP (Feb 87)
- **Disk Librarian**
  - An easy to use shareware cataloguing program.
  - Criteria selection option for generating subcatalogs.
  - Requires 512K+. $20.
  - Bit. 469 Edgewood Ave., New Haven, CT 06511.
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- **Disk Ranger**
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  - Comes with pinfeed labels.
  - Works with regular and hard disks.
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  - Mainstay, 286118 Canwood St., Agoura Hills, CA 91301.
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- **Dubl-Click Calculator Construction Set**
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  - Finished calculators can be saved as installable desk accessories or as clickable applications.
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  - Dubl-Click Software, 18201 Gresham St., Northridge, CA 91325.
  - NCP (Apr 86)
- **Fedia Plus**
  - The file and disk editor for everyone, from newest Mac owner to oldest.
  - It can do more for your disks and files than any other application.
  - Can recover deleted MFS files.
  - $49.95.
  - MacMaster Systems, 939 E. El Camino Real, #122, Sunnyvale, CA 94087.
  - NCP (Sep 86)
- **FlashBack**
  - A utility to backup HFS hard disks onto floppy's.
  - Unique graphic display of the HFS directory facilitates file selection.
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  - $59.95.
  - Mainstay, 286118 Canwood St., Agoura Hills, CA 91301.
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- **Glue**
  - Adds a print-to-disk capability to many programs.
  - Installs as printer driver.
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  - $59.95.
  - Solutions, Box 989, Montpelier, VT 05602.
  - NCP (Dec 86)
- **Hard Disk Util**
  - Uses patch files to allow users to mount and run specified programs on their hard disks.
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currently expanding. $89.95. FWB Software, 2040 Polk St., San Francisco, CA 94109. NCP

HFS Backup ranks as one of the preferred hard disk backup utilities. Backup by folder/selector or last changes. Backup specifications can be saved as templates. Good graphic interface. Reliable program. $49.95. PCPC, 6204 Benjamin Rd., Tampa, FL 33614. NCP (Dec 86)

HFS Locator Plus is the essential HFS disk accessory. It can search for a file by name or date of creation, create folders, move files from one folder to another, set a program to launch while in another application. $34.95. PBI Software, 1111 Triton Dr., Foster City, CA 94404. NCP (Sep 86)

LaserServe is a printer spooler for AppleTalk networks. After installation all operations done via a desk accessory. Works with both MacServe and TOPS. Requires 512K+ and 800K drive or hard disk. $125 per node. Infosphere, 4730 SW Macadam Ave., Portland, OR 97201. NCP (Feb 87)

Mac Disk Catalog II is a utility that will quickly organize a moderate size disk library. Easy to use with powerful reporting and labeling-making features. $49.95. New Canaan MicroCode, 136 Beech Rd., New Canaan, CT 06840. NCP (Dec 85)

MacFlow is a design tool created for programmers. Traditional flowcharting symbols are linked together, and a symbol can be connected to a separate flowchart file. Symbols can't be edited, precluding using MacFlow for other applications. $125. Mainstay, 5211-B Derry Ave., Agoura Hills, CA 91301. NCP (Apr 87)

MacInUse tracks time spent in applications and saves info as text files. Installs on any disk, works in background. MFS, HFS compatible. Extremely valuable for tax purposes, client records, etc. $49.95. SoftView, 4820 Adohr Lane, Camarillo, CA 93010. NCP (Jan 87)

MacLabeler lets users instantly index and print labels for all the disks in a burgeoning collection. Choose border type and orientation of your label; index by folder or document. Starter set of labels is included. $69.95. LisaSoft, PO Box 1540, Fairfield, IA 52556. CP (Prem)

MacLink lets users transfer data between Macs and PCs. Can do special format transfers such as 1-2-3 to Multiview and WordStar to MacWrite. Contains both Mac and PC disks, interface cable is optional. Has Mac and MS-DOS disks. $125, $155 with 8-bit interface cable. DataViz, 16 Winfield St., Norwalk, CT 06855. NCP

MacNosey is a global disassembler. A very advanced user can use this program to look into the code of virtually any program. This advanced tool can take you places no other Mac program could dream of going if you have the skill to guide it. The documentation is sparse. For pros only. $85. Jasik Designs, 343 Trenton Way, Menlo Park, CA 94025. NCP

Mac + II lets you run Apple II software on the Mac. Emulation speed is only 35 to 45 percent of a real Apple II, so graphics especially suffer. Games also run slow. Runs AppleWorks (Apple II integrated software). Good for ex-Apple II owners who have large software collections. $149.95. Meacom, PO Box 272591, Houston, TX 77277. CP

MacSafe is a data file security program that allows you to place multiple files into a "safe", and then you can further protect them through two types of encryption (including DES). Flexible and very easy to use. $69.95. Kent Marsh Limited, Inc., 1200 Post Oak Blvd., Houston, TX 77056. CP (Mar 87)

MacServe converts a Mac and a hard disk into a disk and print server. Uses the AppleTalk network and is easily hooked up. Users can partition the hard disk into multiple volumes. Runs in the background, so users can work on all machines in the network. $250. Requires 512+ or Mac XL. Infosphere, 4730 SW Macadam, Portland, OR 97201. CP

MacZap is a three-part disk and mounting utility. It can be used to recover some damaged files and disks, compare disks, analyze disk structure and make back-up copies of most disks. $60. Micro Analyst, 2505 Roxmoor, Austin, TX 78723. NCP (Jan 86)

myDiskLabeler is an excellent label making program. It can read directories, or use large or small icons, or anything else the user desires. Comes with 54 precut labels on pinfed paper. HFS compatible. $44.95; with color printing ability (on the ImageWriter II), $54.95. Williams and Macias, PO Box 19206, Spokane, WA 99219. NCP (Aug 86)

"Ncryptor is a simple, safe program that lets users password their files. The same program is used for encoding and decoding. This is the best product in its category. $39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

Packit III is an essential utility. Primarily used to temporarily "guzzle" files together, it can also compress and encrypt. Price: $10. $10 for printed manual. Harry R. Chesley, 1850 Union St., San Francisco, CA 94123. NCP (Jan 87)

Quick & Dirty Utilities, Volume One is a disk chock full of the handiest programs you have ever bought. Included are a super disk cataloguer, a desk accessory mover and more. Several desk accessories including a menu bar clock and a terminal are on the disk. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Now 86)

Switcher is Andy Hertzfeld's contribution to Mac productivity. This program lets users run several programs at once (up to 8 on a 1-megabyte or larger machine). Switching between the programs is near instantaneous. Requires 512K+. $19.95 from Apple. free from BBSs, included with some third-party applications. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

Tempo is a disk accessory that allows most Mac commands to be intelligently recorded and played back. Capabilities include pausing, conditional branching and macros that work between applications. $99. Affinity Micro Systems, 1050 Walnut St., Boulder, CO 80302. NCP (Jul 86)

TMON is the debugger for the Mac. This isn't open to question. This is the best debugger. Comes with the latest version of Darin Adler's Extended User Area. $100. COMSimulations, 626 Wheeling Rd., Wheeling, IL 60090. NCP

TurboCharger 2.0 rev. D is a RAM cache utility for 512K and larger. Works on most hard disks and Mac XLs. Dramatically improves any program you use that heavily accesses the disk, like MacPaint, $69.95. MicroSystems, PO Box 1249, Canton, CA 95010. NCP (Jan 87)

TurboDownload is a disk accessory designed specifically to increase the speed of Xmodem data transfers from national databases to your Mac. Speed increases range upward from 50% to over 300% at 2400 baud. $39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

Twelve-C Financial is simply the best. Comes with the latest version of Darin Adler's Extended User Area. $100. ICOM Simulations, 626 Wheeling Rd., Wheeling, IL 60090. NCP

TypeNow is a disk accessory that allows the Mac and ImageWriter II to function as an electronic typewriter. Type can be placed into blanks in complex forms easily. Typing can be recorded and played back. $39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Jan 86)

LANGUAGES

AAIS Prolog is a fast standard Prolog with excellent debugging and error handling. Good for serious program development. Documentation is not as good as the program. $150. Advanced AI Systems, PO Box 39-0360, Mountain View, CA 94039-0360. NCP (Mar 87)

Aztec C is a C language that will appeal to users with a UNIX background. It uses many UNIX conventions and in the more expensive versions comes with standard UNIX utilities.
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Including the VI editor. $199 basic system. $299 development system. $499 commercial system. Mac Software Systems, PO Box 55, Shrewsbury, NJ 07701. NCP (May 86)

**Basic Compiler** is the long awaited compiler for Microsoft BASIC.

The interface is unfriendly, but it gets the job done. Compiled programs run faster, but you can still tell they are written in BASIC. $199. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. NCP (May 87)

**ExperLISP** is a very buggy, but still incredibly useful, programming language for high-level programmers. The more you use it, the more you'll figure out about it. System crashes are too common for a language this useful and expensive. $495. Requires 512K+. Experllelligence, 599 San Ysidro Rd., Santa Barbara, CA 93108. CP

**ExperLogo** is a version of the popular teaching language, Logo.

Features three-dimensional graphics using “bunnies” rather than usual “turtles.” Very speedy, smooth program. Comes with an excellent manual. $149.95. Experllelligence, 599 San Ysidro Rd., Santa Barbara, CA 93108. CP

**ExperProlog II** is a Prolog based on the new Prolog II standard.

Has the ability to handle infinite trees and allows user-defined functions that operate conditionally. Documentation is not the best and Mac interface is nonstandard. $495. Experllelligence, 599 San Ysidro Blvd., Santa Barbara, CA 93108. NCP (Mar 87)

**LAP MacProlog** is a flexible program that supports several Prolog syntaxes, producing a rich programming environment. However, the program’s implementation and documentation are both poor. $295. Programming Logic Systems, 31 Crescent Dr., Milford, CT 06460. NCP (Mar 87)

**Lightspeed C** provides an integrated environment for the development of C. The editor works with the compiler for searches and file management. Can get awkward if you need something outside the environment. $175. Think Technologies, 420 Bedford St., Lexington, MA 02173. NCP (Apr 87)

**Lightspeed Pascal** is a fast, powerful development system for Pascal programming. Fully integrated Mac-like environment. Requires 512K+. $125. Think Technologies, 420 Bedford St., Lexington, MA 02173. NCP (Feb 87)

**MacAsm** is a software development system that allows programs to be written in assembly language. Programmers can assemble, edit and test software, and an integrated resource compiler lets independent applications run from their own icons. $125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

**Mac C** is a good, highly Mac-oriented implementation of this language. Level 1 is a simple, introductory version. Level 2 variables and text files. Can create standalone applications. Several windows can be up with different operations in each, operating concurrently. Documentation is not the best and Mac interface is nonstandard. $495. Requires 512K. Palo Alto Shipping, PO Box 7430, Menlo Park, CA 94026. NCP (Apr 86)

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Macintosh 68000 Development System is a fairly traditional assembly language package. The two-disk set provides an editor (Edit), an assembler, a linker, and an executive and a resource compiler. $195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP.

Macintosh Pascal is Apple Computer's version of this very popular programming language. Loaded as it is with innovative teaching features, this interpreter is an excellent introduction to Pascal. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. CF.

MacScheme is a LISP dialect with "artificial intelligence" capabilities. Has a large appetite for RAM. Interpreted language with Toolbox access limited to a small part of QuickDraw. $125. Semantic Microsystems, 4470 S.W. Hall St., Beaverton, OR 97005. NCP (Jun 86)

Megamax C is an easy to use, full version of C. Has a compiler, linker, disassembler, editor and much more. Good for beginners. Excellent documentation. $299.95. Megamax, PO Box 851521, Richardson, TX 75085. NCP.

Microsoft BASIC was the Mac's first programming language. This interpreter (it's not a compiler) no support the Toolbox and the whole Mac interface can be implemented in your programs. For nonprogrammers there are lots of programs available to run. $150. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6303. NCP.

Personal Prolog is an inexpensive and well-documented program. Has no debugging or search and replace facilities, making it a more appropriate tool for learning than development. Documentation and use of Mac interface are excellent. $64.95. Optimized Systems Software, 1221 B Kentwood Ave., San Jose, CA 95129. NCP (Mar 87)

Prolong/m is a solid Prolog following the Edinburgh standard. Has extensive debugging facilities, but you may need separate Toolbox disk with 58 additional predicates. No true editing or printing facilities. $99.95. Chalcedony Software, 5580 La Jolla Blvd., La Jolla, CA 92037. NCP (Mar 87)

QUD (Quality Editor for Developers) is the ultimate source code editor. Loaded with useful and well thought out features, it will make any programmer's life much easier. It is not a word processor, however. $65. Paragon Courseware, 4954 Sun Valley Rd., Del Mar, CA 92014. NCP (Mar 86)

TML Database Toolkit is an ISAM type database that provides fast and efficient administration of large data files in applications developed with TML compiler. Supports open multiple index files simultaneously. $89.95. TML Systems, PO Box 36126, Melbourne, FL 32936. NCP (Dec 86).

TML (MacLanguage Series) Pascal is a good Pascal compiler. Capable of producing standalone programs. Can use most existing Lisa Pascal programs with only slight modification. Requires TML Pascal, $79.95. TML Systems, PO Box 36126, Melbourne, FL 32936. NCP (Dec 86).

ZBasic is a fast, interactive compiler capable of creating standalone applications that takes advantage of Mac's unique features and abilities. Includes Edit, RMaker, and Macintalk. Requires 512K. $89.95. Zedcor, 4500 E. Speedway Blvd., Tucson, AZ 85712. NCP (Dec 86).

EDUCATION

ChipWits is a combination game and teaching tool. Players create programs to maneuver robots through a set of 8 mazes. The

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MINIFINDERS

programs are written in ChipWit's built-in icon-based programing language (IBOL). $49.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP

KidsTime is a package of five quality educational programs for children between the ages of 3 and 12. The programs all have adjustable difficulty levels. Some use speech and one is a nice introduction to musical notes. Sparse documentation. $49.95. Mapleware Software, PO Box 5847, Stanford, CA 94305. CP (Oct 86)

MacEdge and MacEdge II each contain 8 reading or math drill programs for basic skills. Programs follow one of three formats, a bit contrived. Contrivances are design flaws. $49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP

MacType offers structured typing instruction. Can teach both standard and Dvorak keyboards. Features include certificates for reaching certain levels. Can be used in a multisystem environment. $49.95. Palantir Software, 12777 Jones Rd., Houston, TX 77070. CP

MasterType is proof that learning to type can be fun. In this arcade-style action game words descend from four corners towards the center ship: the user must type them correctly. Features 18 skill levels, tracks errors, recommends lessons and provides comparison scores. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP

ENTERTAINMENT

A Mind Forever Voyaging is a departure in text adventure games. It has more extensive vocabulary and a more involved story than most of the genre. The story here is gripping, but there are only a few puzzles to solve. Requires 512K+ . $44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

Alter Ego simulates the entire lifetime of a fictional character. The player's reaction to each multiple-choice event shapes the character's future relationships, job, health, etc. Spectacular the first time you play: after that there are too many similarities to previous characters. $59.95. Activation, PO Box 7287, Mountain View, CA 94039. CP (Jun 86)

The Ancient Art of War gives users a chance to relight some famous campaigns on both strategic and tactical levels. Campaigns can also be designed from scratch. Very playable, addicting game. Requires 512K+ Mac. $49.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Apr 86)

Archon pits the forces of Light against Dark in a quest to gain control of five Power Points on a checkerboard grid. The shifting cycles of squares colors keeps the balance of power ever-changing. One or two players. $44.95. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Oct 86)

Balance of Power is the world's first computer peacegame. This simulation allows players to become either the President of the United States or General Secretary of the Soviet Union. Extraordinary artificial intelligence routines and general play make this a classic. $54.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60022. CP (Prem)

Borrowed Time casts players as detachives who have to solve their own murder — before it happens. This game requires players to think and act like a detective to solve the game. Good sentence parser, sketchy Mac interface. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (May 86)

Bridge 4.0 provides three other players and the cards for a game of rubber bridge. It's an average (Goren) bidder and a less-than-good card player. Good if it's the only game in town. Plays slowly since it's written in BASIC. $29.95. Artwork Software, 150 N. Main St. Fairport, NY 14450. CP (Sep 86)

Dark Castle is an outstanding achievement in action games which incorporates RealSound and superb graphics. You'll need better-than-average hand-eye coordination, but it's well worth the effort. Requires 512K+ . $39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. NCP (Apr 87)

Deja Vu: A Nightmare Comes True is a graphic adventure that breaks new ground. Innovative use of the Mac interface in truly playable and exciting game. A great introduction to graphic adventure games. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (Jun 86)

Dinner at Eight is a useful recipe filing system that includes a collection of recipes from a nationwide sampling of restaurants. Users enter number of diners and program scales recipes accordingly. $59.95. Rubicon, 6300 La Calma Dr., Hacienda, TX 77522. CP (Jan 86)

Dungeon of Doom is a fairly standard, ultimate-type adventure game of the pick-it-up, cut-'em-down variety. Fun if you like the type. Requires 512K. Version 4 is HFS compatible. Shareware. $25. NCP (Jan 87)

Enchanted Scepters is a surround sound graphic adventure game. It has a limited vocabulary and virtually no story. Offers extensive and varied scenes and utilizes the Mac interface to the fullest. $39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. CP (May 86)

Flight Simulator puts you at the controls of a small plane (prop or jet) and lets you roam North America. As difficult as real flying. Not all features available on 128K. $49.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. CP (Nov 86)

Fokker Triplane is about as near to flying as you can get seated in front of a computer. Very realistic simulation and excellent graphics. Well designed and implemented. $59.95. Bullseye Software, PO Drawer 7900, Incline Village, NV 89450. CP (Feb 87)

Gato puts players in command of an American submarine in World War II. This superb simulation game uses all of the Mac's graphic capabilities to really make you feel that “you are there.” $49.95. Spectrum HoloByte, 1050 Walnut St., Boulder, CO 80302. NCP (Nov 85)

Grand Slam is an absorbing and realistic tennis simulation game. $49.95. Business or play against Mac-controlled players with different styles and abilities on four different surfaces. 512K or Mac Plus. $49.95. Infinity Software, 1331 61st St., Emeryville, CA 94608. CP (Nov 86)

HardBall is a baseball simulation game complete with umpire's calls and crowd sounds. Great graphics and a lot of fun for fans. $44.95. Accolade, 20833 Stevens Creek Blvd., Cupertino, CA 95014. CP (Feb 87)

Leather Goddesses of Phobos is another in the long line of witty and entertaining Infocom text adventures. This one lets you choose your sex and comes with a 3D comic and a scratch 'n' sniff card. It has three levels of play: tame, suggestive and lewd. $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP (Feb 87)

Lode Runner (Feb) is a 150-screen action-strategy challenge that requires a joystick for truly effective play. Move around a grid of ladders and platforms collecting treasure; dig a hole to trap pursuers. Build your own challenges. $39.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP

MacCourses adds four very challenging new courses to MacGolf. $49.95. Courses are swapped on the original MacGolf master disk two at a time. Nice add-on for a good game. Requires MacGolf. $34.95. Practical Computer Applications, 1305 Jefferson Hwy, Champlin, MN 55316. CP (Apr 87)

MacGolf is a dynamic simulation of real golf. Players have an choice of courses and difficulty levels. Superb playability makes this a must for all golfers and gamers. Requires 512K+ . $59.95. Practical Computer Applications, 1305 Jefferson Highway, Champlin, MN 55316. CP (May 86)

Mac Pro Football is a terrific sports simulation that gives you the chance to pit any combination of 38 Super Bowl teams against each other and direct team play. It comes with excellent, detailed (and necessary) documentation. Play selection can get a bit Byzantine. $49.95. Avalon Hill, 4517 South Broadway, Torrington, NY 10581. CP
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MazeWars™ is an interactive, multiplayer game to be played on AppleTalk or through a modem link. Chase opponents through a four level maze. Requires 512K+, AppleTalk or Hayes compatible modem. $49.95. MacroMind. 1029 W. Wolfram, Chicago, IL 60657. NCP (Nov 86)

Mind Over Mac features five games. Entertainment for the whole family. Good graphics paired with synthesized sound and on-screen help. $49.95. Think Educational Software. 16 Market St., Potsdam, NY 13676. CP (Feb 86)

MoonMist is Infocom's latest introductory level text adventure game. This is a typical haunted English castle story, not quite up to Infocom's best. It has four versions, so it's good for more than one play. $38.95. Infocom. 125 Cambridge-Park Dr., Cambridge, MA 02140. NCP (May 87)

NewGammon is animated backgammon that will challenge even good players. Features include variable skill levels and strategies and options to play the Mac or watch the Mac play itself. An arcade-like high speed mode is included. $39.95. Newsoft. PO Box 3046, Newport Beach, CA 92664. CP (Dec 86)

Orbquest is a fantasy role-playing adventure with better-than-average puzzles and an excellent sense of humor. Not as sophisticated as some, but a good value. $49.95. Qware. PO Box 850415, Richardson, TX 75085. CP (Dec 86)

Patton vs. Rommel is traditional-style strategic wargame. It covers events in Normandy in 1944. While complex, it's well designed and very playable. $39.95. Electronic Arts. 1820 Gateway Dr. S., San Mateo, CA 94404. CP (Apr 87)

The Pawn is an unusual British interactive adventure game with text and graphics. The unique interface has some drawbacks, but The Pawn has humor, social satire, is entertaining and is challenging. $44.95. Requires a Mac+. Firebird. PO Box 49, Ramsey, NJ 07446. CP (Mar 87)

Pinball Construction Set lets users create their own pinball games, as elaborate or as easy as desired. Uses MacPaint for backgrounds and has lifelike sounds (on 512K+ Macs). $40. Electronic Arts. 2755 Campus Dr., San Mateo, CA 94403. CP (Jan 86)

Psion Chess is as good a micro chess player as you’ll find. This 1984 World Micro Champion makes superb use of graphics and the Mac interface. Switch between 8 languages for a touch of spice. $59.95. Psion. 40 Lindeman Dr., Trumbull, CT 06611. CP (Mar 86)

Puppy Love is a combined game and teaching tool. As you teach your puppy tricks and routines, you learn the basics of programming logic. Great fun for all ages. Does not run from a hard disk. $19.95. Addison-Wesley, Reading, MA 01867. CP (Mar 87)

Real Poker is five-card draw against five other players with Old West names, distinct personalities and playing styles, in a saloon setting. Dealing and play are very fast. Game evaluates your hand. $39.95. Henderson Associates, 980 Henderson Ave., Sunnyvale, CA 94086. CP

Sargro III is a chess program with 6 levels of play, problem-solving modes, take back, hint, etc. Easy Play blocks Sargon from stealing search time during player’s move, effectively doubling number of levels. Disk stores 107 classic games for review and replay. $49.95. Hayden, 1 Kendall Square, Cambridge, MA 02139. CP (Mar 86)

Shanghai challenges players to clear a board of all 144 tiles, by matching pairs of mah-jongg tiles and removing them.

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Terrific strategic options plus the ability to randomly generate new game boards keep this one fresh. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (Oct 86)

Skifox is a sophisticated 3D shoot-em-up. You're fighting tanks, planes, and enemy cities floating in the sky. Fast graphics, good sound. Slicky, on-board attack computer and many levels of difficulty keep fans of this genre happy all hours. $39.95. Electronic Arts. 2755 Campus Dr., San Mateo, CA 94403. CP (Oct 86)

**Skyline Hit Racquetball** is an accurate and entertaining simulation of a day on the courts. Digitized sound adds to the realism. Includes a hard disk install, unusual for a game. The low price makes this the perfect Mac gift. $19.95. Primera Software, 33 Norwood Ave., Kensington, CA 94070. CP (Dec 86)

**Strategic Conquest** is large scale, strategic conflict on the Mac. This very involved war game will be enjoyed by those who like this genre. $49.95. PBI Software, 111 Triton Dr., Foster City, CA 94404. CP (Dec 86)

**Suspended** is Infocom's latest unique text game. Using a small plastic board and six markers, the player keeps track of six uniquely designed robots which check on damage to a complex's machinery and report back what they perceive as the problem. $49.95. Infocom. 125 CambridgePark Dr., Cambridge, MA 02140. CP

**Tass Times in Town Tone** is a slightly off-the-wall graphical adventure in which you need a flashy harido and a jumpsuit before you can get anywhere, and you pay for things with guitar picks. Decent puzzles, with a sense of humor. $39.95. Activision. 2350 Bayshore Pkwy, Mountain View, CA 94043. CP (Jan 87)

**The Toy Shop** is a construction kit for building 20 different working model toys. Some parts can be customized. Manual gives clear instructions, but many toys are too complex for a child to build. $64.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Nov 86)

**Ultima III** allows up to four characters to cooperate to explore the vast wilderness of Sosaria; dungeons, oceans, and the Moon Gates to help solve the adventure. $59.95. Origin Systems, 340 Harvard Rd., Manchester, NH 03103. CP

**Uninvited** is an icon-based adventure game set in an extremely haunted mansion. Since you access the parser by double-clicking, command choices are always visible — you don't waste time trying to figure out which words the program understands. It has animation and sound. $49.95. Mindscape. 3444 Dunede, Northbrook, IL 60062. CP (Sep 86)

**Winter Games** lets up to eight players compete against each other in Olympic events including figure skating, bobsledding, biathlon and ski-jumping. Excellent animation, good graphics, good theme music. $39. Epyx. 1043 Kiel Ct., Sunnyvale, CA 94089. CP (Mar 86)

**Wizardry** is an outstanding dungeon exploration adventure pitting a party of up to six characters against the guardian monsters of the evil wizard Werdna. Capture his amulet to earn your reward. Even after solving the game, you'll want to go back into the dungeon. $59.95. Sir-Tech, 6 Main St., Goshen, NY 10913. CP (Mar 86)

**WordPlay** is a word game with over 50 crossword puzzles for different levels of expertise. User friendly. It offers on-screen Help menus. A Work mode allows development of new puzzles for the creative. $49.95. Palantir, 12777 Jones Dr., Houston, TX 77070. NCP (Mar 86)

**World Builder** is an adventure game construction set with what mounts to its own programming language. The whole program (including language) is easy to learn and produces commercial quality games. No support for the programming language including)

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MINIFINDERS

language, though. $79.95. Silicon Beach Software, PO Box 261430, San Diego, CA 92126. NCP (Apr 87)

Xyphus is a role-playing game pitting four characters (fighters or
wizard) against multiple scenarios that grow increasingly
tougher. Excellent Mac interface and icon control. $39.95.
Penguin. PO Box 311. Geneva, IL 60134. CP

Zork II is where the adventure continues in the underground
world. A wandering wizard keeps things interesting, though
there's a way to beat him if you persevere. $44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

Zork III is the final battle in the trilogy. Players come up against
the ultimate enemy the Dungeonmaster himself. More
bigger-ended than previous Zorks. $44.95. Infocom. 125
CambridgePark Dr., Cambridge, MA 02140. CP

MUSIC

ConcertWare is an enhanced version of ConcertWare. Has
different instruments and can use any four of a set of eight
at any point in a piece. Can read and use ConcertWare
and MusicWorks files. $69.95. Great Wave Software, PO Box
5847, Stanford, CA 94405. NCP (Nov 85)

Deluxe Music Construction Set is a good general purpose music
program. An active piano keyboard and instant audio feedback
make this program perfect for educational applications.
$50. Electronic Arts, 2755 Campus Dr., San Mateo,
CA 94403. CP (Mar 86)

Music Mouse is a music program in a genre all its own. Called an
"intelligent instrument", Music Mouse gives you instant
musical feedback as you move the mouse and type on the
keyboard, which controls tempo, vibrato, volume, etc.
$59.95. OpCode Systems. 44 Ramona St., Palo Alto, CA
94301. CP (Jan 87)

Listen is an educational tool for ear training. It has both a piano
keyboard and a guitar fretboard for the student to input
notes, and offers a wide range of exercises. It also produces
some beautiful sounds. $69. Imaja. PO Box 636, Middle-
town, CT 06457. CP (Jan 87)

Music Composer is a music composer. It has instant
musical feedback as you move the mouse and type on the
keyboard, which controls tempo, vibrato, volume, etc.
$59.95. OpCode Systems, 44 Ramona St., Palo Alto, CA
94301. CP (May 87)

Performer is a strong contender for the high-end of the MIDI
sequencer market. Only those experienced with MIDI should
get this. Files can be transported to Professional Composer
for editing. No direct track or segment looping. $295. Mark
of the Unicorn, 222 Third St., Cambridge, MA 02142. CP

Professional Composer is aimed at music professionals. Pro-
duces professional-quality sheet music, has only limited
playback facilities. $495. Mark of the Unicorn, 222 Third
St., Cambridge, MA 02142. CP (Prem)

Studio Session consists of two programs, and Editor and a Player.
They produce music with six voices of digitized sound.
Excellent program plus good manual make this a good buy.
$89.95. Impulse. 6800 Shingle Creek Pkwy, Minneapolis,
MN 55445. CP (Dec 86)

HARDWARE & ACCESSORIES

DASCH is an external RAMdisk available in half, 1, and 2M sizes.
Connects to a serial port. Speeds up operations 200 to
300%. Can be used as a printer buffer. Works with all Macs.
$512K, $395; 1M, $450; 2M, $545. Western Automation
Laboratories, PO Box 3438, Boulder, CO 80307. (Feb 87)

Data Frame 40XP is a very fast, very quiet 40-meg external SCSI
hard drive. Comes with a good and complete set of utility
software. About as fast as a SCSI hard drive can be. Requires
SCSI port, $512K+, new ROM. $1995. SuperMac Technol-
yogy, 950 N. Rengstorff Ave., Mountain View, CA 94043.

Ergotron is a Mac (and external drive) holder that allows a full
range of swiveling and tilting. Very strong, this well made
unit is also very easy to use. $99.95. Ergotron, PO Box
17013, Minneapolis, MN 55445. CP (May 87)

FX-20 is a good 20-meg external hard drive. Good utility software.
Reliable, and reasonably quiet. Sits next to Mac, has a
large, oddly shaped case. Requires SCSI port, 512K+, new
ROM. $1199. General Computer, 215 First St., Cambridge,
MA 02142. (Feb 87)

Hard Disk 2050SC is a 20-meg SCSI hard disk. Reliable, fairly
noisy unit. Good utility software, but no backup yet. Requires
controller and terminator ($80). Requires SCSI port, 512K+, new
ROM. $1299. Apple Computers, 20525 Mariani Ave.,
Cupertino, CA 95014. (Feb 87)

MacBottom HD21 is a very low (about 2 inches high). external 20-
meg hard drive. Fits under the Mac. Very quiet, very reliable.
Good utility software, including HFS Backup. Requires SCSI
port, 512K+, new ROM. $1395. PCPC, 6204 Benjamin Rd.,
Tampa, FL 33614. (Feb 87)

MacIntelli is a graphics tablet and absolute positioning device
that replaces the mouse. Various scales are possible. $599.
GTCO Corp., 7125 Riverwood Dr., Columbia, MD 21046

MacNifty Sound Digitizer turns ordinary analog sound input into
digital waveforms which can then be manipulated using the
SoundCap software it comes with. Capable of truly stunning
effects. Requires Macintosh. $129.95. Impulse, 6800 Shingle
Creek Pkwy, Minneapolis, MN 55445

MacNifty Switch allows any port on your Mac to connect to two
peripherals. Turn the knob to switch between the two
devices. $34.95. Impulse, 6800 Shingle Creek Pkwy,
Minneapolis, MN 55445.

Magic Digitizer is a stylus-driven graphics tablet. Users can easily
sketch or trace art using this absolute-positioning device.
Has a working area the size of the Mac screen. Allows
concurrent use of the mouse. $495. Summagraphics Corp.,
777 State St. Extension, Fairfield, CT 06430. (Jan 86)

MacVision is a digitizer that uses an ordinary video camera for
input. Capable of extremely fine results and special effects.
Easy to use and well documented. $399.95. Koala, 3100
Patrick Henry Dr., Santa Clara, CA 95052

Magic Digitizer is a hardware digitizer that works with video
cameras. With LaserMagic software you can generate 300
dpi images (in PostScript). Requires 512K+. Digitizer with
Magic software. $399.95. LaserMagic software, $49.95.
New Image Technology, 10300 Greenbelt Rd., Seabrook,
MD 20706. (Dec 85)

Mouse Mover is a mouse pad-type surface that snaps on to the
mouse bottom of the mouse like a roller sled, freeing it up to glide
over desk or mouse pad with ease. 99 tiny ball bearings at
three strategic points. Mouse glides faster and saves on
mouse wear and tear. $19.95. Magnum Software, 21115
Devonshire St., Chatsworth, CA 91311. (Dec 85)

Mousepad is a fabric covered foam mousing pad. It will increase
the efficiency of your mouse while helping to keep it clean.
Pad comes in a variety of colors. Particularly useful in the
typical office desk top environment. $10. Moustrak, 3047
St. Helena Hwy., St. Helena, CA 94574.

NoLabel System is a plastic permanent labeling system in which
users slide new tabs into a transparent plastic case on the
disk. The tabs stick out of the case slightly, making them
easier to read while in the drive. $19.45. Weber & Sons,
3468 Hwy 9, Freehold, NJ 07728. (Dec 85)

PhoneNET is a AppleTalk-compatible network. Network can be up
to 300' in length. In-place, unused phone cabling can be
used for network, and can be combined with AppleTalk on
the same network. $49.95 per node. Farallon Computing,
1442A Walnut St., # 64, Berkeley, CA 94709. (Dec 86)

ThunderScan replaces the ribbon cartridge in an ImageWriter,
which is required to use it. Laser scanners are used by network
through the ImageWriter; producing high-quality digitized
images. The images can be manipulated as they are created
or afterwards. $229. Thunderware, 21 Orinda Way, Orinda,
CA 94563.
If you're serious about electronic publishing...

...this is the optimum Macintosh display - made possible by the Nutmeg Interface Board...

...works with any Macintosh computer.
This page contains Softstrips: programs and data in a special machine-readable form. The material can range from straight, unformatted data to full-blown Macintosh applications.

To use this material, you'll need a Caunin Softstrip reader. Readers are available from your local computer dealer. Be sure to get the Macintosh accessory kit. They're easy to use, well made and simple to store. If you wish to print your own strips, you must purchase a separate, inexpensive program.

This month's strips are for a MacDraw document entitled "Laser Disk Labels". This document is a supplement to this month's Tip Sheet. In an extended tip, we detail how to use MacDraw and a LaserWriter to produce professional quality diskette labels. The other materials needed besides this file are detailed in the Tip Sheet. This file can also be obtained on the CompuServe and Delphi networks.

We would like to thank Robert T. Coolidge of Centerbrook, CT for providing us with this file and its associated tip. As with the other tips printed in MacUser, Robert will be receiving $25. This file, the Softstrip and the associated text may not be reproduced without the written consent of MacUser magazine.

This month's Strip Show is presenting a second program, to make up for last month. The program is Layout. Its purpose is to modify the Finder's LAYO resource easily. The LAYO resource was discussed in detail in "Inside Improvements" in the September 1986 issue of MacUser. The instructions there involved using ResEdit and a certain amount of trial and error. Layout makes it all easy. The program was written by Michael C. O'Connor and is ©1986 by Leptonics Systems Design Company of 405 Tarrytown Rd., #145, White Plains, NY 10601.
DRAFTING MADE EZ

(continued from page 90)

EZ-Draft excels. EZ-Draft creates what are known as "dynamic" dimensions. When a dimension is inserted into a drawing, EZ-Draft measures the distances automatically and places that information in the dimension's text. This means that you do not have to verify the position of every line in the drawing. EZ-Draft acts as a checker regarding the distance between point A and point B. This ability to verify has justified many large CAD system acquisitions.

Dimensions come in four flavors: Linear, Radial, Diametral and Angular. The flexibility of these commands is awesome. The dimensioning package conforms to the current ANSI Standard Y14.2. That means there are a wealth of suboptions presented when any dimensioning command is invoked. You can specify how such things as tolerances are presented (i.e., min-max, + and −, none). Dimensions are treated any other element on the drawing in terms of editability. You can move, delete and yes, even change what a dimension says (although I wouldn't recommend doing this).

Speaking of editing, EZ-Draft includes a very powerful set of editing commands. You can change just about any aspect of any element in the drawing including getting rid of it altogether. In fact, you can even add color to elements (rather tough to see on the Mac). The real use of this feature is to allow the use of other hardware, such as multipen plotters and color displays like the Vermont Microsystem's VM-8860 color monitor, for which EZ-Draft includes a special set of drivers. EZ-Draft supports a host of output devices in the form of pen plotters, and, of course, the LaserWriter.

EZ-Draft can exchange graphics data with other CAD systems that support IGES. (IGES is a data exchange format supported by all major CAD vendors.) To do so, you'll need Bridgeport's extra cost IGES translator software. The ability to communicate with other CAD systems is absolutely necessary in the pro CAD world.

The IGES translator works well and accepted data ported over from both AutoCad and Computervision systems. However, there appears to be a serious bug in the IGES module when it comes to converting symbols. Fortunately, this is a known bug and is currently being addressed. EZ-Draft also supports the ability to exchange data with MacDraw through the Clipboard.

For all its elegant features, EZ-Draft isn't perfect. The main problems arise from it not being fully incorporated into the Mac operating environment. This leads to annoyances like requiring that all files have a specific MS-DOS-like extension. Overall speed is also on the slow side. The program runs under a Pascal language interpreter that requires a runtime library, a fact made very clear during installation of the software. That probably accounts for the slow response of the program overall.

This programming environment is being abandoned in the 2.0 release, which was in final, or beta, testing at press time. I was able to examine and work with one these test copies, and things are looking up. Gone is the difficult installation procedure. Present is a MacDraw like icon palette and the familiar window controls found in most Mac programs.

The presence of the sizing box may open this program up in terms of flexibility. With EZ-Draft 2.0 and an E-Machine large screen display, for instance, a user could increase the effective work surface considerably. This program would benefit from some sort of add-on math coprocessor product such as General Computer's HyperDrive 2000 or Lecco's Prodigy 4. In fact, EZ-Draft is demonstrated at most shows using the HyperDrive 2000.

·Technical support is available via telephone, but there isn't a free (800) number yet. The support supplied was adequate, although a little frustrating. It took three phone calls — starting with the 800 number (which turned out to be primarily a sales number) published on the cover of the reference manual — to finally get through to someone in product support. Once there, though, the person was very helpful.

Most calls the company receives involve technical problems arising from passing IGES data between systems.

The small manual included with EZ-Draft is much like most Mac manuals, but reasonably thorough, assuming you're familiar with CAD already. It includes a tutorial that takes a first-time user through creation of a complete drawing.

There is copy protection on this product, a fact of life with almost all programs over $1000. It requires a master disk be present in the drive at all times. This is supposed to prevent a two-Mac firm from getting by with one copy of EZ-Draft. Oh well — if you are an engineer, designer or architect and need CAD on your Mac, you should seriously consider this package. In terms of its overall usefulness it is very good. In terms of value, EZ-Draft, at $2500, is in line with the other micro-CAD packages of equal performance, although rather high for the general Macintosh market. And you must sacrifice some of the Mac's niceties that you have grown used to, but it is a small price to pay for a very powerful CAD software package.

FRANK CONFORTI IS AN OPERATIONS MANAGER FOR A CAD SERVICE BUREAU IN DEERFIELD BEACH, FLORIDA. HE HAS BEEN INVOLVED WITH CAD SYSTEMS FOR NINE YEARS.
**Telecommunications**

<table>
<thead>
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<th>Price</th>
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</thead>
<tbody>
<tr>
<td>Red Ryder 9.4 (4111)</td>
<td>$4.99</td>
</tr>
<tr>
<td>Latest update</td>
<td></td>
</tr>
<tr>
<td>It has an astound feature and can store up to 80 telephone numbers. Also allows you to receive faxes automatically in any of 3 modes: AGCI, XMODEM, and RMI.</td>
<td></td>
</tr>
<tr>
<td>Red Ryder Macros (4090)</td>
<td></td>
</tr>
<tr>
<td>Contains Dow Jones™ &amp; E. F. Hutton Quotes. Also contains a listing of area codes.</td>
<td></td>
</tr>
<tr>
<td>Termworks 1.2 (4112)</td>
<td></td>
</tr>
<tr>
<td>Supports Mac/ Mac compatible for storing numbers &amp; phone books. Also included are Freetem 1.8.</td>
<td></td>
</tr>
<tr>
<td>Packet and FModem. Communication Units (4107)</td>
<td></td>
</tr>
<tr>
<td>Blinkit 5.0, Supports the new BNN protocol as well as the old HEX, HXC, &amp; HXG protocols. Pack III 1.2</td>
<td></td>
</tr>
<tr>
<td>(Compress your data for faster transmission). Compact, AppleTalk Chat and more.</td>
<td></td>
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**Hacker Tools**

<table>
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<th>Product</th>
<th>Price</th>
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<tbody>
<tr>
<td>H. Tools (4189) DrawPaint 1.0</td>
<td>$12.99</td>
</tr>
<tr>
<td>(Convert MacDraw files to PaintMac.) TabURL (Text file processor: add or remove tabs) Icon Exchange, Icon Collector, CleanUp, Icon Maker &amp; more.</td>
<td></td>
</tr>
<tr>
<td>H. Tools (4110) Patchdisk (Get into any sector of a disk and modify it!), Purgicons, Disk Test, Answering machine and more.</td>
<td></td>
</tr>
<tr>
<td>Programmer Utilities (4162)</td>
<td></td>
</tr>
<tr>
<td>SoftTools² (Draw many standard software engineering drawings as Dataflow diagrams, flowcharts etc.) Fast Eddie A powerful programmers' text editor. Includes documentation.</td>
<td></td>
</tr>
<tr>
<td>Programmer Utilities (4163)</td>
<td></td>
</tr>
<tr>
<td>MainMenu, MyFinder, FORT Format, PRAM 5, Font, PKEY-DA sampler. (This very useful program will open any font, Desk Accessory or Function Key without having to install them on the system. Also Included: Cleanup, Mac ID, Hex &amp; ASCII Strings.</td>
<td></td>
</tr>
<tr>
<td>Developer Suite (4087)</td>
<td></td>
</tr>
<tr>
<td>ResiCrap: (A Nachtosh application which can convert certain types of resources in a resource file into source code suitable for compiling with RevEd (Apple's Resource Edition) Developer Kit (4085)</td>
<td></td>
</tr>
<tr>
<td>CBL, Systems (7/8 archives and more)</td>
<td></td>
</tr>
</tbody>
</table>

**Music**

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>MacNifty (4124)</td>
<td></td>
</tr>
<tr>
<td>This disk contains realistic digitized sounds that may be altered by changing the sampling rate. Sounds included. Musicworks songs (4123) Includes Musicworks Demo which plays back songs. You can't write your own songs unless you have the commercial Musicworks. Songs included:</td>
<td></td>
</tr>
<tr>
<td>&quot;Tension #1&quot;, &quot;Ballad of the Coyote&quot;, &quot;Born Free&quot;, &quot;For Your Eyes Only&quot;, &quot;Radical of the Last Air&quot;, &quot;The Gambler&quot;, &quot;Lump&quot; and many more.</td>
<td></td>
</tr>
<tr>
<td>Musicworks songs (4123)</td>
<td></td>
</tr>
<tr>
<td>Pop Music songs.</td>
<td></td>
</tr>
<tr>
<td>Customworks™ Songs (4124)</td>
<td></td>
</tr>
<tr>
<td>A varied selection of classical as well as contemporary songs.</td>
<td></td>
</tr>
</tbody>
</table>

**Mid Music Applications**

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>Mid Tew (4117) Mid 2, Mid Mouse, 7 Heavan</td>
<td></td>
</tr>
<tr>
<td>(Use with the Cisco 1210™ Keyboard)</td>
<td></td>
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**Utility Programs**

<table>
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<tr>
<th>Program Name</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>System Utilities (4126)</td>
<td></td>
</tr>
<tr>
<td>BootEdit (After the Welcome to Macintosh message, Change application text, install install resources to your system that will RESUME your programs on a new system boot. Window Changer (lets you customize the Save As &amp; Open dialog boxes) Disk Utilities (4183)</td>
<td></td>
</tr>
<tr>
<td>Disk Cat. Disk cataloging program.</td>
<td></td>
</tr>
<tr>
<td>Disk Test, Display (text file reader), &amp; Scanner Mac (recover files). Diagnostic Utilities (4184)</td>
<td></td>
</tr>
<tr>
<td>Disk Test, Speed Check, Ram Test</td>
<td></td>
</tr>
<tr>
<td>1,2-DuC-ty (Reads directory of &amp; disc then converts it to an outline document for use with the Acts DA.), Ramout HD20 (Remount an Apple HD20 that has been accidentally thrown into the trash).</td>
<td></td>
</tr>
</tbody>
</table>

**Updated Disks**

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redlit 1.2 (4185)</td>
<td></td>
</tr>
<tr>
<td>European Resource editor. This program is excellent for translating Macintosh programs to other languages. It does not affect any of the resources. Switcher 5.0.1 (4186)</td>
<td></td>
</tr>
</tbody>
</table>

**Languages**

<table>
<thead>
<tr>
<th>Product</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Compiler (4101)</td>
<td></td>
</tr>
<tr>
<td>Compiles with documentation and examples. Smalltalk (4090) Disk also includes Ada and a 65000 Disassembler. Xylog 1.4 (4027)</td>
<td></td>
</tr>
<tr>
<td>McAem (4033) 60000 Assembler and linker</td>
<td></td>
</tr>
</tbody>
</table>

Our library contains the most current public domain software. It is updated daily and we are constantly expanding our selection. A free catalog is available at our office. We invite authors to send in new programs. For technical support, feel free to call our librarian-Luis Cambronar.
BANKING...

(continued from page 98)
the HA's automatic use of the previous year's actuals, thus my suggestion to make it a choice.

- Provide a method for capturing graphs in addition to textual data.

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*Desktop Communications Supplement

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One group busted up coke bottles to create knifelike weapons. “We gonna pound all shots,” they shouted. • • •

Hand he waved a document. Broderbund were ecstatic. “Hooray for law and love,” the v

It was a suit over the use of the P&G character and screen. The recent Broderbund vs. Unison case clearly outlines the rights of developers.

I hope everyone agrees that developers have SOME rights. Or do you think that it’s okay to copy whatever you want? Let’s go over some of the facts and concepts used by the winning attorneys in the Broderbund case. I spoke with Attorney Claude Stern about the issues raised by that suit. Here are the some of the misconceptions I discovered (and sometimes harbored).

1. Misconception: If Lotus wins, then all hell will break loose and there will be a rash of lawsuits because of the bad precedent. Not necessarily. Copyright cases are all tied on an individual basis. The law is fairly specific and although both sides use as many old examples as possible to prove their argument, the individual merits are the real determinant. Besides that, Lotus might be sued for its Symphony outlier or who knows what. Suits could be flying at Lotus if they fly at all.

2. Misconception: Apple has been pushing its pull-down menus as proprietary and protected by patent or copyright. Apple should be sued by Xerox for stealing the idea from the Xerox Star! One can hope and dream until you find that Xerox mysteriously owns 2.5% of Apple’s stock. Apparently there was a sweet deal made some time ago, thus giving Apple the rights (and the rights to sue) anyone using an Apple-like interface. Besides that, even if Apple violated someone’s copyright and patent, it doesn’t mean that YOU can, too!

3. Misconception: Well, why doesn’t the copyright holder of VisiCalc sue Lotus! According to the Broderbund lawyer, there is nothing wrong with modifying or enhancing to the extent that it’s no longer recognized as the work you are mimicking. The idea is to protect YOU from someone making an exact copy and selling it as a clone.

Aside: Little known fact dept. Attorneys take note. The reason that VisiCalc used the backlash key to get to the command line was because Dan Bricklin has a genetically inherited bent little finger. “I hate shift and control keys because of my pinkies. They are hard to hit, so I avoid them at all costs in my programs,” he told me. He had to fight like crazy with Bob Frankston to implement them in the final version of VisiCalc. There seems to be no rationale for anyone ELSE using the keys for anything, but I digress.

Okay, let’s get off this boring path and get to the point. It seems that the whole idea of these suits is to see if there is a likelihood of confusion. In fact, that’s what the lawyers call it: the likelihood of confusion test. Will a casual, ordinary and reasonable person (a member of the audience, by the way, who is likely to use the product, not just some jerk off the street) when looking at two products think that one has been negligently copied from the other? Do they look and feel the same? If so, then here comes the judge.

This is the key to these cases. If a myopic judge fails to pick the right so-called “ordinary observer” then the case will fall to pieces. Let’s face it, if you put a New Guinea cannibal in front of a Cray-2 and a Mac Plus, he’d figure that they were copies of each other. His perspective isn’t that of the typical or prospective audience. Remember that the prospective audience for the Broderbund Print Shop product is a naive user of dopey brainless software. I wouldn’t be caught dead making a hokey greeting card with a dot-matrix printer. Spreadsheets are a different story.

Let’s hope it will be a CPA with reasonable experience who is considered the prospective audience for the product. Any decent bean counter is so detail-oriented that he shouldn’t see any similarity between Lotus 1A and Lotus 2 let alone VP Planner or anything else. When I sit down and see the Paperback Software logo appear on the opening screen, I’m sure not fooled into thinking that I have a copy of Lotus in my machine.

So where does this leave the Mac community? With all the limitations of the Mac, most Mac users are not impressed by the whole look and feel scene. “Our machines are so powerful, and there are so many ways to do things that we don’t have to clone anything,” the arrogant Mac owner says. The more honest ones put it differently. “What’s the fuss? The whole scene proves that IBM owners are wimps. In the Mac community, there wouldn’t be a clone like VP Planner. We’d just bootleg Lotus and give out copies free! Who’s to sue?”
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