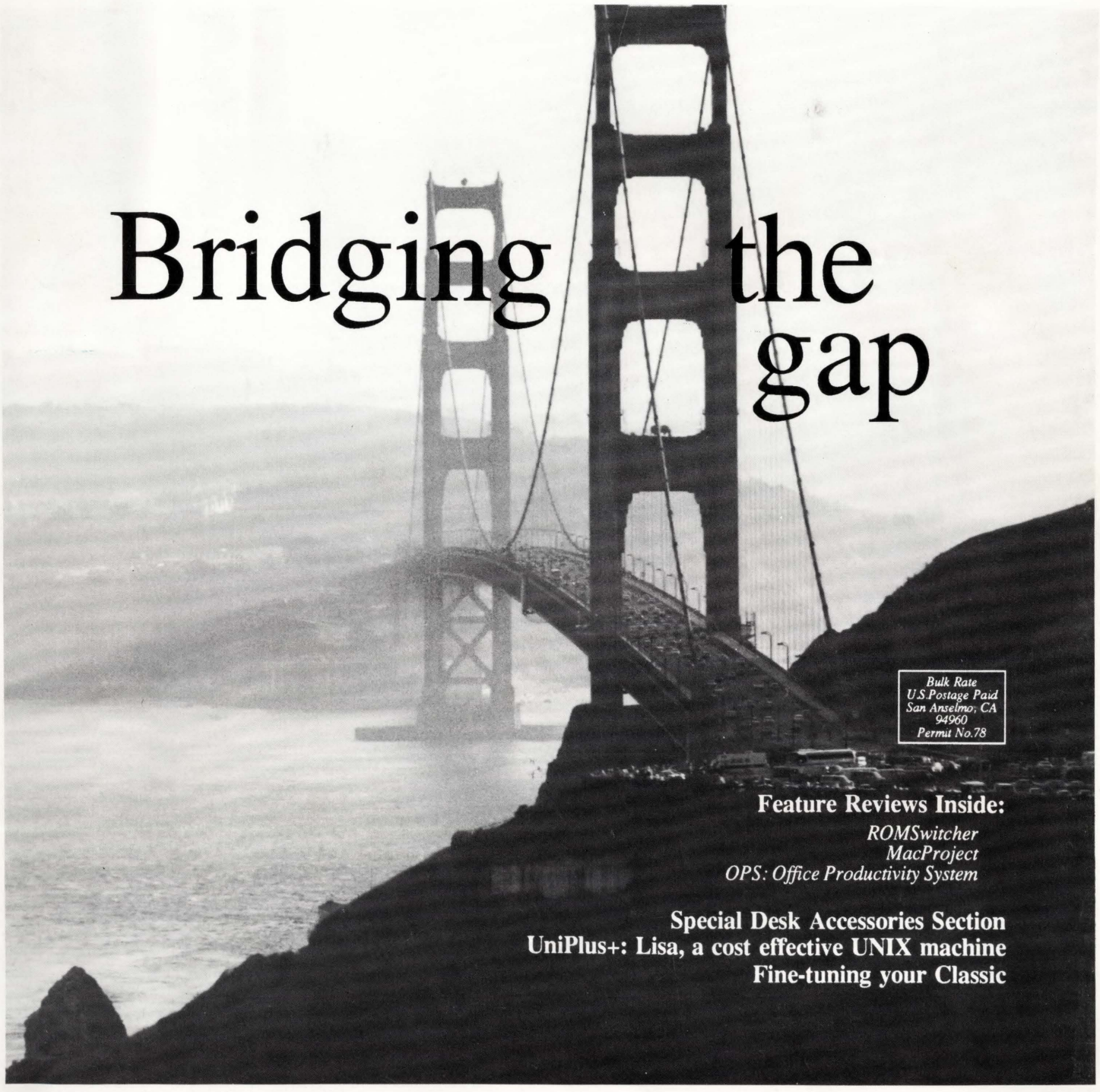
A SERVICE AND SUPPORT JOURNAL

The LisaTalk Report

INFORMATION ON OPTIMIZING YOUR LISA & MAC XL COMPUTER SYSTEMS

Fall '86: Vol. 2, No. 3 $10.50



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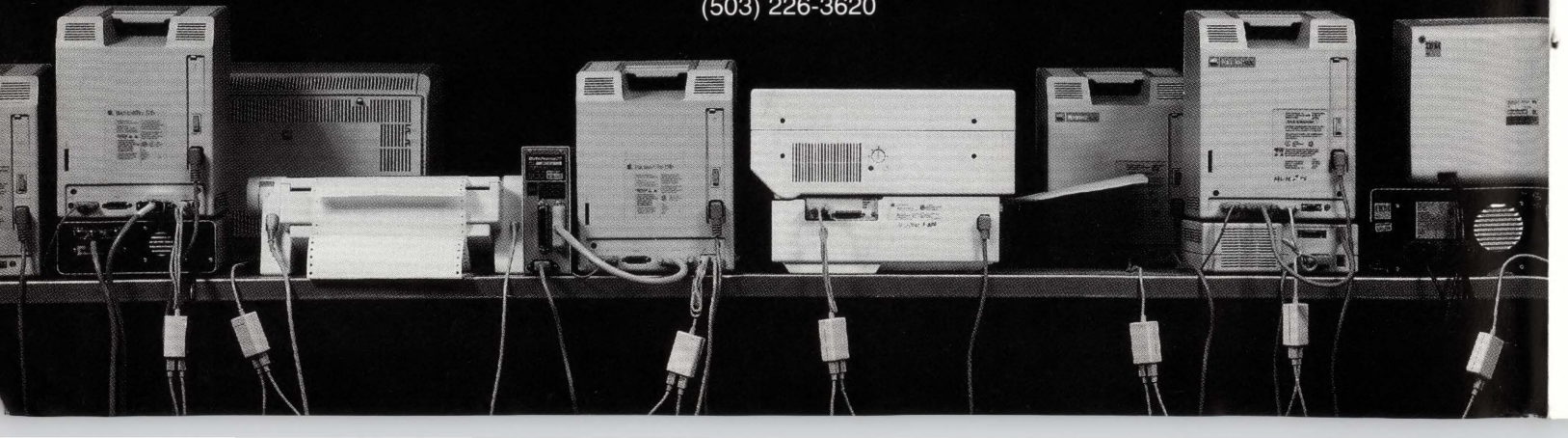

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Turbo Pascal™ 2.0 Compiler	14.1	20
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ZBasic ™ Compiler	**7.0**	**10**
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Space does not permit showing the speed of ZBasic on all computers but the relationships are about the same. All times in seconds. *The Run-time is the time it takes a language to execute 10 iterations of the Sieve benchmark in Byte Magazine, January 1983. **Time required to create a stand-alone application (double clickable on Mac. .COM file on MSDOS™ systems).

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The LisaTalk Report

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On the cover:

Cover design by Martha de Mey. Photograph of the San Francisco Golden Gate Bridge by Guy Clow.

The LisaTalk Report is published on a quarterly basis by The NetWorkers on the premises of NetSolutions Micro-Computer Service & Sales Center, a division of The NetWorkers, in Marin County, California, USA.

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POSTMASTER: Send address changes to: The NetWorkers, 8 Mariposa Ave., San Anselmo, CA 94960.
(Bulk Permit Number 78)

U.S. SUBSCRIPTION: Printed in the USA. $32.00 per year for four quarterly issues. Single copy price: $10.50. Should you reside outside of the Continental U.S. (with the exception of Europe), contact The NetWorkers at:

The NetWorkers Business Offices:
8 Mariposa Avenue, San Anselmo, CA 94960. Telephone: 415/454-7607. All subscriptions from this date shall be sent to the above address; all telephone inquiries shall be directed to this phone.

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ADVERTISING: Rate cards available from the above address. Vendors, ask about The NetWorker's special Product-Support Exchange program for Lisa/Mac XL-compatible products.

TOOLS USED TO PRODUCE THIS ISSUE: This issue was written and produced using the personal computer hardware and software as follows: Lisa 2, 2/5, 2/10-Macintosh XL, Macintosh Enhanced, and MacPlus; Peripheral Land 20MB drive; the new *ROMSwitcher*/ Orphan Technology; BitFixer/All Star Computer Services; Apple LaserWriter printer; and Allied Linotronic printer (in few cases). Software: MacServe/ Infosphere, Inc.; PageMaker/Aldus Corporation; and Word and Excel/Microsoft Corp. In addition, original author's files included: MacDraft/idd, inc.; JustText/Knowledge Engineering; MacPaint/MacWrite/MacProject & MacDraw by Apple Computer, Inc.; MORE/Living VideoText. Design and format of this issue of *The LisaTalk Report* created and produced by Roxane M. Schwabe, who is grateful to Martha de Mey, Patricia Dines, Lewis Guice, Larry Moss, and Richard Ozer, for their productive input and/or system support.

publishers' forward

by Roxane M. Schwabe & Lewis Guice

Welcome 1987, and best wishes to the world of Lisa and Mac XL! And, welcome, everyone, to ***The LisaTalk Report,*** a unique publication serving one of the most sophisticated end-user communities in the forefront of the microcomputer age.

Survivors, one and all, we are one of the first families of computer consumers, the first "true" beta-testers to recognize and apply the concepts, once only dreamed of, which have fast become the technological "norm." Our chal-lenges have been great, and with few exceptions, rewarding. We are celebrating our greatest achievements in personal and business productivity: for many of us, our complex records and systems are, for the first time, manageable and coherent; our manual financial and scientific analysis and reporting methods are replaced with powerful, yet easy-to-use, computing tools; our words are efficiently and creatively shaped and stored for easy transference; our very ideas, the seeds of the future, are quickly organized, analyzed, and graphically depicted. Indeed, for many of us, it is hard to understate the significance our Lisa/Mac XLs have played in our present-day productivity, both personally and professionally.

Yet, we face great challenges in extending and maintaining our existing investments in the wake of *tomorrow's* advancements. As rapidly as our workaday lives continue to change in the dawn of the information age, so, too, will the industry from which our new-found autonomy was conceived. Where once our industry leaders stood by in devotion to our consumer family, there now grows impatience and indifference to our needs, as they exist *today.* Alas, our technological forefathers have made their path clear: to propel but other new-user generations into the computer age.

But let our witnessing not become a preoccupation with the negative or focused on demeaning our technological founders, for enough of both has been done, and without much reward. Rather, let it be heard that we are learning from our experiences, defining our own paths, and taking responsibility for the directions each of us individually must take to achieve continued productivity with our existing technology!

We hope you will enjoy this fourth edition of *The LisaTalk Report*, and we hope you will find worthwhile support and practical inspiration to fulfill and last another quarter (next issue due out late February).

By the way, if you haven't noticed (we shudder to think of it) beginning with this issue, there are NO MORE ORPHANS (or widows, for that matter)! We delight in bringing you not only useful, specific information, but also information that is ever more pleasing to read! Your comments have been heard, and we appreciate them. We hope you'll remember that as you go to flip through the Users' Mailbox this month and find none. We apologize, but we promise next issue will feature ***a lot*** of useful questions, answers, and bug reports! Meanwhile, settle in for another special issue. Thanking you for your support, we are sincerely,

The NetWorkers
Publishers of The LisaTalk Report

Discontinued computers: From rapid innovation emerges new solutions, new problems, and new markets

We Lisa/Mac XL owners continue to benefit from the aggressive, competitive pace set by Apple; we can hardly disagree that the Lisa directly precipitated many of today's innovations in computer use and graphics production, including "desktop publishing." Yet, since the Lisa's discontinuation, user concern about obsolescence, and keeping up with new expensive upgrades and equipment, has been common in the Lisa/Mac XL community. This is unfortunate when, more often than not, users' existing equipment is still providing the solutions for which it was purchased, and it will continue to do so for quite some time to come.

Here's what we call this terrible misconception which has caused so much tension over the past year, along with some sound advice for treatment:

Ob´´so•les´cence anx•i´et•y (ob´se-les´ ens ang-zi´ e-te) *noun*: the uneasiness of mind from apprehension that one's computer might lose its usefulness while being outdated by its manufacturer. Predominant in the 1980s, this preoccupation began striking large numbers of users who, in the 70s and 80s, dared to challenge the first "user-friendly" technology of this century.

Common symptoms include guttural mutterings every time a user reads about new product developments in an all-new issue of "Computer Frenzy" (if you will); the user's inclination to believe what manufacturers/dealers (who never seem to be able to support the users) say about their machines (between snickers); and the user's extreme satisfaction when he learns new users experience bugs and glitches in the "latest" technology.

The cure, like the diagnosis, is simple. Users are urged to sit down, consider the results they are currently achieving with their systems, and how, if they are not achieving optimum results, they can pursue solutions. They should then ask themselves about existing available upgrade paths. If the user cannot answer with certainty, his/her next order of business is to get more facts! Without correct information, users will continue to feel ill at ease with their decisions!

But really, all kidding aside; this is not to say that technological advances cannot enhance and increase the power of existing technology; but there is a fine line between useful advances and "frills." To the business user who has already invested a lot of time and money into a particular solution, the "latest" gadget is less important than meeting his specific needs in the most cost-effective way, including some guarantee of long-term usefulness.

With the advent of the *Lisa-Macintosh* user interface, the user base has become more knowledgeable and more articulate in demonstrating its demands. We as users are learning quickly that this industry's constant focus on "new" technology is not always in our best interest. In short, we have learned to trust we know what we want, and we are not as susceptible to glitzy advertising as in the past.

Indeed, developers and manufacturers are being forced to contend with a whole new set of issues. Once the front line of a rapidly rushing "blitzkrieg" industry that had little reason or time to deal with the issues of discontinuation and the associatedcustomer support factors, manufac-turers and dealers are now being forced through customer demands to address this problem.

An excellent example of products developed to meet this complicated combination of needs is the *Apple IIgs*. Not only does this wonderful new piece of equipment offer the user the benefit of the latest technology, particulary at the user interface level, it also provides the existing *Apple II* user base with an inexpensive fully-compatible upgrade path. We can thank Steve Wozniak for that.

Finally, with users realizing how important the factors manufacturer commitment to support are in making purchase decisions, the more aware manufacturers will be of the significant role that support will continue to play in sales throughout the entire industry.

With this in mind, we predict we will see a sharp increase in computer businesses continuing the usefulness of existing technology by developing "bridges" to connect existing and new technology. Emerging service companies will play key supporting roles in providing existing users with information and products to keep them up to date.

But, both the amount and clarity of users' requests and the flexibility and foresight of the manufacturers will influence how quickly and how precisely this new orientation comes to meet the true user need. Users should clearly indicate their needs to manufacturers, and support those manufacturers and third parties that really offer what they seek. With the phenomenal growth this industry has been experiencing, it will not be long before manufacturers will have to realize the limitations of their current business structure, and *welcome* the support of third parties for their products.

We are at a crucial turning point in a powerful and quickly-evolving industry. The game is changing from that of ever-increasing technical advances to one where the users' need for stability is included. We support this shift, and that is why we've dedicated ourselves to supporting the users of useful but discontinued technology. Already we have been encouraged by users who feel that we are speaking their true feelings and serving their true needs. As time goes on, we think our position will become even clearer...

Computing in the fast lane

by Sam Neulinger

Apple's trade-in program (which met with only moderate success), is now past, and we can get on with the business at hand: improving and obtaining maximum productivity from what we have. Hardware enhancements are only a partial answer; they provide efficient and direct solutions to particular problems, but in some cases they also require software integration in order to permit operation under the Lisa or MacWorks (or both) Operating Systems.

In talking with the many owners who phone, I am repeatedly surprised and delighted with the great numbers of them who are still doing most of their work under Lisa 7/7 software. We owe it to those users, who were the pioneers in the Lisa environment, to see to it that as much of the new technology as possible operate under the Lisa mode, as well as under MacWorks.

In this column I want to bring you up to date on the current status of new product development. Also, I want to share with you some tips and recommendations on obtaining significant operating speed improvement and avoiding trouble spots.

New Products

XL800K Drive:

The *XL800*™ internal replacement double-sided drive, developed by The NetWorkers and marketed by NetSolutions and Dafax, has finally arrived, enabling much more efficient disk and data management. (Introductory price is $495.) Now users can back up 800K at a time, rather than 400K, doubling disk-space usage, reducing the number of disks needed for backup, saving backup time, and allowing backup of larger files (i.e., over 400K and less than 800K). In addition, Mac XL users can read 800K disks formatted under MFS (Mac Filing System).

Although we are still diligently working on Version 2.0 of *XL800*, we expect this version will be able to read Mac+ HFS (Hierarchical File System) formatted disks. Also, we expect this version will provide Lisa 7/7 and Pascal Workshop users 800K capability. So, for example, developers who are writing programs under the Pascal Workshop on the Lisa will be able to port programs larger than 400K directly to the Macintosh. We'll keep you posted on this as it develops.

In the meantime, for XL users who are also using Mac+, here's an easy trick for formatting a double-sided 800K disk as MFS on a Mac Plus or 512E. Simply start up with a disk that has the old version of the System on it, i.e., System 2.0 and Finder 4.1, insert a double-sided disk, and select "**Erase Disk**" from the "**Special**" menu under the Finder.

Aspect Ratio Fix:

The ***ROMSwitcher***™ sold out of its initial production run, but by the time you read this article it should again be available from NetSolutions and Dafax at $239, including the required 3A ROMs. We were pleased to learn from those who purchased *ROMSwitcher* that, contrary to original expectations, in almost all cases screen alignment under each of the operating systems was perfect without any adjustment of the pots (potentiometers). It would seem there was not as much manufacturing variation in the Lisa/XL line as originally thought.

20Mb IRHDA (Internal Replacement Hard Disk Assembly):

Thanks to Sun Systems Remarketing, Inc., for the development and marketing of the **IRHDA,** NetSolutions and Dafax will not only be able to replace the internal 10Mb hard disk assembly (HDA) in the Lisa 2/10 (XL), but will also be able to install it in a Lisa 2, thereby essentially converting it into a 2/20 (XL). The **IRHDA** is considerably faster than the standard HDA and operates under both the Lisa OS and MacWorks. This is the drive that I referred to in my last article as the 30Mb replacement drive. Actually another 20Mb drive could be installed in the space provided, and as the new controller card has 2 ports, that option will be available later as an add-on.

Another option will be a 40Mb HD or any combination of the two i.e, a 20/20, 20/40 or 40/40, with tape backup as a probable later option. At this time, if two hard disk drives were installed, they

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New Products
(continued)

would act as logical drives, and both would be recognized under the same operating system. A future enhancement will be the ability to choose between the two drives so one can be configured under the Lisa OS and the other under MacWorks.

Installation is relatively simple. The front panel of the computer is removed, and the entire HDA assembly which consists of the 10Mb HD and 400K micro diskette drive, is unplugged and slid out of the chassis rails intact. The new **20Mb IRHDA** with its 400K drive is then slid back in and reconnected to the same cables. The **20Mb IRHDA** can also be ordered with the *XL800* already installed, instead of the 400K drive, thereby doubling the computer's total capacity at the same time. Lisa 2 upgrades will connect to the built-in parallel port at the rear of the mother board, where the ProFile™ is usually connected. The cost of the **IRHDA** is $1199, with the following **rebates** offered:

10Mb HDA with 400K drive
$400 (in working condition)
$300 (non-working)

10Mb ProFile w/ 400K drive
$400 (in working condition)
$300 (non-working)

5Mb ProFile with 400K drive
$200 (in working condition)
$150 (non-working)

As I mentioned in my last article, I feel it is absolutely necessary to partition the **IRHDA** into smaller volumes, using either **Finder's Helper** (more about that new product follows) or **MacServe** (Infosphere, Inc.). The Macintosh Filing System (MFS) simply cannot deal with the increased capacity of a 20Mb hard disk without help. (As most of you know, the standard 10Mb HDA also tends to bog down when there are too many files on it.)

Disk Management:

Finder's Helper is a new disk management program developed for The NetWorkers by Infosphere, Inc., and marketed exclusively by NetSolutions and Dafax at $100 as an enhancement to MacWorks XL. Many stand-alone users not requiring networking options felt that MacServe, although a powerful program in its own right, had features that had to be paid for that were not required by them. Finder's Helper is basically MacServe™ without its networking server capabilities. It has volume partitioning, disk cacheing, and backup and print spooling features. It can also act as a user on an AppleTalk™ network but cannot act as a server. Lewis Guice feels it is a fix to MacWorks XL, allowing for efficient disk management without overburdening the Finder, at a reasonable price.

continues

Operating Tips (Some Old, Some New)

Some of the most frequent causes of System bombs and quirks are:

1. The failure to close all open windows prior to quitting an application.
2. Too many open windows on the desktop. (Symptoms frequently appear when you try to insert a disk that you know has been initialized, but you are asked if you want to initialize it, or when you try to intialize a disk and you are told that initialization failed.)
3. Desk Accessories (**DAs**). The first question we ask when someone calls with a problem is, "What DA was being installed?" Many of the Public Domain DAs can create real problems if they are not written to exact Apple protocol.
4. Failure to use the "**Shut Down**" command under the "**Special**" menu on the desktop.
5. Not providing **adequate AC line voltages** to your computer. If possible, use a dedicated outlet. If not, make sure that you don't have photocopiers or other such equipment on the same circuit. Low and fluctuating voltages can create havoc with HDA's and ProFiles. The expensive alternative remedy is an uninterruptable power supply (**UPS**).

Operational Enhancements

Two products that do a remarkable job of improving performance on the Mac XL under MacWorks XL are (by the way, these work equally well on the Macintosh):

TurboCharger™ 2.0 Rev. D, by Nevins Microsystems, is a RAM cacheing program and more. Its "Quick Quit" feature permits you to return to the desktop immediately under most applications. It can be used with MacServe, provided volumes are opened "Private," as opposed to "Shared." With 1Mb, Turbo Charger offers considerable overall speed improvement; with 2Mb installed, the speed improvement is remarkable! **(Be sure you get Revision "D" or later.)** List Price: $59.95

DiskExpress™ Vn. 1.06 by ALSoft, Inc. Disk fragmentation is a major cause of floppy and hard disk blues. The more you use your floppy and hard disks and save back to them, the more fragmented they become as information is scattered over the many areas of the disk. This results in longer seeks by the heads to recover all the information from the various blocks on the disk. *DiskExpress* alleviates this problem by rearranging the blocks that have been scattered and putting them into contiguous blocks. Further, it puts all unused blocks together for optimum performance. It has many other features too numerous to name.

Be sure you get Vn. 1.06 or later. Also, be sure to back up your files or volumes before using *DiskExpress*—if a disk is copy-protected or power is interrupted, permanent loss of data could occur.

—SN

Products in Development

SCSI Adapter Card:

One of the problems inherent in developing new products is that more than one company might be working on the same or a similar product. In most cases, this is fine and the consumer is the ultimate beneficiary. In other cases, the immediate effect is a dilution of the market potential and perhaps spreading one's resources too thin.

Orphan Technology, who was working on a SCSI card, has decided to drop that project and concentrate on their *ROMSwitcher*. product instead. In this particular case, the **20Mb IRHDA** and the new **20Mb & 40Mb ProFile™ Upgrades** (more about those products follow) do essentially what a SCSI interface would have done. More importantly, these products will provide the much-needed larger hard disk capacity under the Lisa Operating System which the SCSI interface, as it was being designed, would not allow. Further, it is felt that a SCSI interface would operate much more efficiently and speedily with at least part of the Mac's 128K ROMs structure as part of MacWorks.

As envisioned, the SCSI would have operated off a patch to MacWorks similar to 2Port Disk Install (2PDI), but the fact that MacWorks had to be on the internal HD before the SCSI interface could be operative, would have slowed it down too much. Also, the SCSI interface as it was being designed, did not allow for interface under the Lisa Operating System, whereas these new products do. I believe we will have SCSI in time, and hopefully under Lisa as well, but we will have to be patient. Bridge Technology, a new company in the Lisa/XL field, will include the SCSI interface as one of a new series of products it will be developing.

4Mb Upgrade:

The **Bridge Technology Ultra 4Mb Upgrade** is close to the point where it can be released but still requires a bit of fine tuning. Hopefully it will be demonstrated at the NetSolutions/ Dafax booth #506 at MacWorld Expo January 8, 9 & 10, along with the other products previously discussed. Two upgrades are planned. The first is a 4Mb capability for MacWorks XL only, (with *ROMSwitcher*, 2Mb under the Lisa OS); the other, at a later date, is 4Mb for both the Lisa OS and MacWorks XL, a combination which will also require *ROMSwitcher*. Both upgrades will probably require a retrofitting of the card cage.

Upon receiving the upgrade, you would remove your card cage, replace it with the new one, and send back your card cage for a rebate. AST RamStak™ owners would receive an additional rebate if they had previously purchased a 1.5Mb or 2Mb RamStak. Those users who already have 2Mb know what a difference the additional memory has made for them, and they are principally the ones who have been asking for additional memory beyond 2Mbytes.

20Mb & 40Mb ProFile Upgrades:

The **Bridge Technology 20Mb/40Mb ProFile Upgrades** will be available after the January 1987 MacWorld Expo, and will be marketed exclusively by NetSolutions and Dafax. The 20Mb unit should be faster than the standard ProFile and available first at $1049.

This upgrade will also enable all ProFile owners to upgrade their units on an exchange basis, resulting in a lower net cost to them. Rebates for ProFiles™ and HDAs will be the same as offered under the rebate schedule outlined above for the **IRHDA**. They will connect through the built-in parallel port of the Lisa 2 or through the Apple 2Port Parallel Card in the expansion slot of both the Lisa 2 or the 2/10 (XL). The nice feature about these units is that they will also operate under the Lisa Operating System (7/7, Pascal Workshop, UNIX and Xenix), as well as under MacWorks XL.

8Mhz Clock Speed:

In its preliminary research and development stage, the **Bridge Technology Mach 2 Upgrade** is probably the most exciting product that is being worked on. We have all long complained that the Lisa/XL was not up to the speed of the Macintosh, and now the MacPlus. I have argued that although that is true in the literal sense, it is not so under most practical operations. Within any application Macs are considerably faster because of their higher clock speed and built-in ROMs.

The Lisa/XL has a slower clock speed and is emulating the Mac under MacWorks, and therefore runs unavoidably slower. However, in any application where the file being worked on exceeds the standard window size of the Mac and scrolling is necessary in order to enter information or perform tasks, the fact that the entire window is visible and accessible under the Lisa/XL, compensates for her slower operating speed and in most cases the overall result is a speedier "apparent" execution on the Lisa/XL. Nevertheless, increased speed on the Lisa/XL would be most welcome.

The 68020 route was thought to be the only one to follow, since aside from increased speed, 4Mb could also be addressed relatively easily. However, since the 4Mb upgrade problem seems to have been solved in principle, other more economical approaches could be considered, especially since a 68020 option would require much more development time. The **Mach 2** is essentially a 68000 running at close to 8MHz, compared to the almost 5MHz at which the Lisa/XL now runs. It would involve swapping of some boards, but would be a relatively easy, user-installable upgrade. Hopefully this product will be available in the first quarter of 1987 at a relatively modest cost.

continues

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The Lisa/XL large screen size has up to this point been its major advantage over the Macintosh. Now with the advent of the add-on full-size screens for the Mac, and the new Mac with its larger screen coming in 1987, Bridge Technology is researching incorporating a full-size high resolution screen into the Lisa/XL. Also being considered is an external large screen monitor option, offering switchable horizontal and vertical modes depending on the position of the external screen on the desktop.

The internal retrofit would require a major overhaul of the computer chassis, resulting in new sides, back and front panel, with the major benefit being the same desktop footprint, ***plus*** added internal space to the right of the new screen for additional components, such as tape backup units and other goodies.

16MHz Clock Speed:

For those users requiring maximum processing speed and power, a **16MHz 68020/68881** incorporating major enhancements at much higher cost than the **Mach 2** is being considered.

LaserWriter Driver for Lisa7/7:

The product most frequently requested by 7/7 users, a LaserWriter Driver is under consideration, and I will report on its progress in my next column.

Sam Neulinger is President of Dafax Processing Corp., a value-added retailer, providing hardware and software support specific to the Lisa/Mac XL and the Macintosh Office. An avid admirer of the Lisa since its birth, Sam now uses a Lisa 2/10 exclusively and is Chairperson of the New York Macintosh Users Group (NYMUG) Lisa/XL SIG.

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The ROMSwitcher

Macintosh graphics in their true perspective

by Walter T. Brooks

SUMMARY: *ROMSwitcher is a new aspect ratio switch which allows Lisa/Mac XL users to use the Apple Mac XL Screen Kit for a properly proportioned full-size MacWorks screen, without losing access to the Lisa Operating System. Here, Walter Brooks demonstrates how ROMSwitcher is especially useful for architects and graphic artists.*

Hardware Requirements
Lisa/Mac XL 2/10

Software Requirements
None

Recommended for applications such as:
MacPaint, FullPaint, MacDraw, MacDraft, or other CAD Software

Suggested Retail Price
160^{00} ... 239^{00} w/ 3A ROM Kit

***ROMSwitcher* Distribution & Sales**
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At last we can see the Macworld in its proper proportions! For a long time the good old globe that appeared as a fully blown basketball in Lisa, appeared as a deflated football in MacWorks, its air removed by the change in pixel configurations between the two environments. Squares appeared as rectangles, rectangles as squares, circles as ellipses, everything just a little out of proportion in a computer hall of mirrors. THE PROBLEM IS, OF COURSE, OUR OLD NEMESIS, THE PIXEL, the aspect ratio thereof, the width versus the height of the dots that compose the computer screen. Because the Mac XL has rectangular dots while the Macintosh software expects them to be square, configurations on the screen appear to be out of proportion.

There used to be only two solutions to this screen distortion problem. One could: (1) install the *Apple Macintosh XL Screen Kit* (3A ROMS), migrate all data to the MacWorks environment, and accept that they could no longer run any Lisa software; or (2) install *BitFixer*, another aspect ratio device (by All Star Computer Services) that allows proper screen proportion and use of both worlds, but limits screen size by as much as 40%. Good choices? Hardly!

But now there is a third solution, one of those "Why didn't I think of that?" devices that gives one the best of both worlds, and each of them true round. Called *ROMSwitcher*, it consists of an external toggle switch, installed conveniently and discreetly beneath the Lisa/Mac XL's screen, and a separate piggyback board that attaches to the CPU board inside the Lisa. Installation is relatively easy for a good technician. In spite of the six pages of excellent installation instructions, supplied by Orphan Technology for user installation, I would not recommend it. It's worth an hour of installation time, and considering the 20,000 voltage hazard in the picture tube, I advise users hand the screwdriver to the technician and stand clear! The end result is worth it!

What *ROMSwitcher* is doing is exactly what the name suggests: giving you a choice between the H ROMs of the Lisa and the 3A ROMs of MacWorks. But you will still need to install the Apple *Macintosh XL Screen Kit*. (If you have already converted to the *Screen Kit* ROMs, then F, G, or H ROMs and the original video chip that run your Lisa 7/7 software are also required.)

Installation Procedures

Installation consists of:

(1) Unplugging the Lisa and removing the card cage.
(2) Installing the new 3A ROMs and video chip on the *ROMSwitcher* Board according to the diagrams in the instructions.
(3) Removing the high and low ROMs and the ID chip from the CPU Board and installing them on the Piggyback board.
(4) Installing the piggyback board.
(5) Installing the flat ribbon cable to replace the Video ROM.
(6) Removing the top of the computer and Installing the Switch itself.
(7) The trickiest part of all: Discharging the CRT glass tube by draining off the charge. (This is where we need the experts!)
(8) Installing the Transformer from the Apple Screen Kit.
(9) Inserting the CPU Board back into the cage and inserting the connector into its pins.
(10) Replacing the rear and front covers. The *ROMSwitcher* is installed, the Lisa Switch position on the left, the Mac switch position on the right.

(11) By starting up the computer in both the Lisa and Mac modes, the video pots on the video board can be adjusted to give approximately square pixels in both environments.

(12) Installing the front cover. Installation complete. Now let us examine the end results:

Remember, on the old Lisa screen a LisaDraw circle looked like this:

And, on the old MacWorks screen, a circle looked like this:

Now on the Lisa Screen, using *ROMSwitcher*, a circle looks like this:

And, on the Mac Screen, using *ROMSwitcher*, a circle looks like this:

Not Bad! Now what you see is *really* what you get.

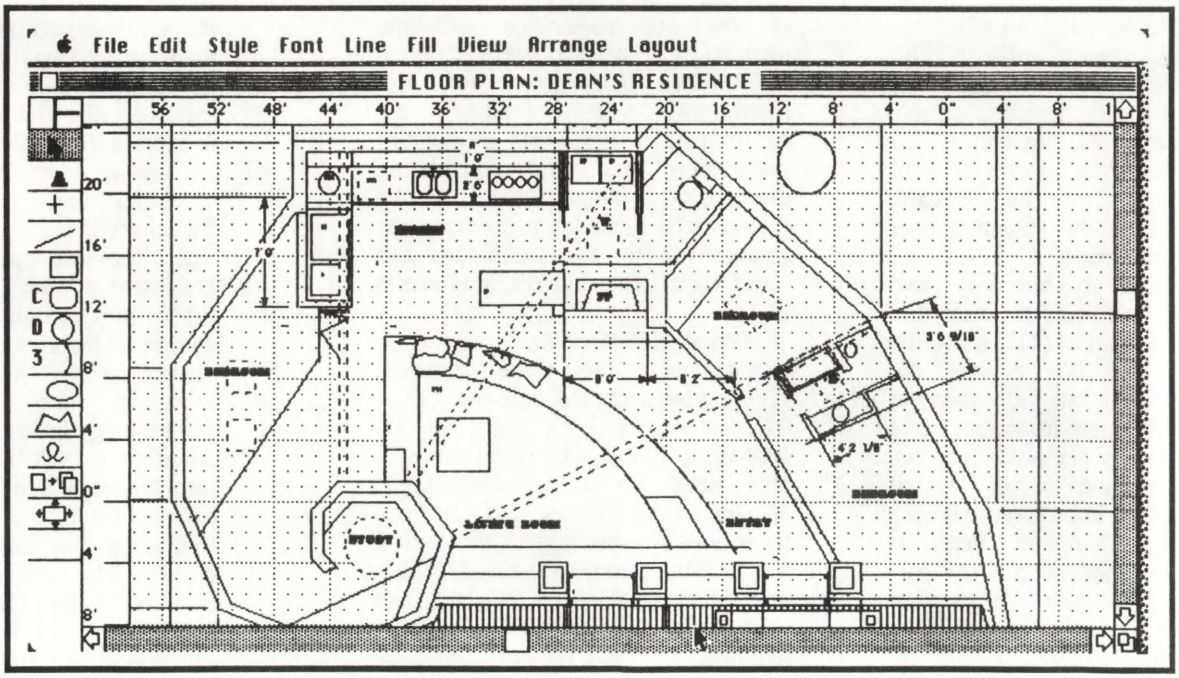
"What is the practicality of all this," you ask? Well, if we go into the real world of concrete and steel (as seen through the abstraction of architectural drawings) we can find our use. *Diagram A* shows a screen dump of a residence floor plan, originally drawn using the *MacDraft* software and prepared on MacWorks without the *ROMSwitcher*. Notice the general elongation of the plan (the large circle in the upper right-hand corner of the drawing shows as a vertically elongated elipse on the screen itself). This proportion is even more pronounced on the screen itself, and it is for this reason that we install *ROMSwitcher*. (Compare this screen dump with the printed version, *Diagram C* on page 16, where circles are in fact circular.)

Diagram B, on the other hand, shows a screen printout of the same floor plan using the same saved *MacDraft* drawing, only this time booted up to the newly-installed *ROMSwitcher* (with the switch in the MacWorks position). Lo and Behold: a wider, shorter screen! Now the vertical scale is the same as the horizontal scale, the screen itself, the screen dump, and the final printout are all in the proper proportion, and what you see is really what you get! Who said a picture is not worth a thousand words!

When *ROMSwitcher* is installed, it has two positions: one for MacWorks, the other for Lisa 7/7. While you must flip the switch to the Lisa mode in order to use Lisa 7/7 software, Mac software can be used when switched in either position. However, when using Mac applications in the Lisa position, there is, again, screen distortion. (Unfortunately, we can show no diagram to actually demonstrate this screen distortion; however, it is quite pronounced. The horizontal ruler at the top of the drawing will not match the vertical scale at the side. It is only upon printout that

Diagram A:
Screen printout of MacDraft Document without ROMSwitcher

Notice the general elongation of the plan, where circles are not true round and squares appear rectangular.



the rulers eventually match up.) Fortunately, this screen distortion is an illusion that disappears upon printout, where things eventually straighten themselves out. So, if for some reason you wanted the original *out* of proportion, the wider Mac XL screen can still be accessed with MacWorks while the switch is in the Lisa position. (The Lisa screen, on the other hand, displays garbage if it's opened in the MacWorks position).

With some applications, there are still sometimes advantages to this wider screen even if the pixels aren't square. For example, a spreadsheet can display more columns, a chart can show more rows, a drawing can show more detail in a horizontal position. For this reason, it might even be reasonable to install *ROMSwitcher* on a Lisa that is totally configured in Macintosh.

IMPORTANT: It is not possible to switch between the two sets of ROMs while the machine is up and running, even if the hard disk is shared. Doing so could theoretically damage the hard disk and/or the ROMs.

Also note that *ROMSwitcher* does not help improve the screen or printout distortions of the *PenMac Works XL Digitizing Tablet* as discussed in my review in *The Summer 1986 LTR*. (This will have to be addressed as a change in the screen aspect ratio in the Softweaver's *PenMac* software.)

Positives

There are lots of positives:

1. Aldus Corp.'s PageMaker automatically recognizes the 3A ROMs in the Screen Kit and adjusts to them, showing an improvement in general screen appearance and in the process of kerning (the proportional spacing of characters).

2. The screen size in both the Mac and Lisa modes essentially stays the same (Full Screen). *See note below under Negatives.*

3. The 3A ROMs in Apple's Screen Kit have can refer to 4Mb of memory, while the Lisa H ROMs currently only refer to 2Mb.

Diagram B:

Screen printout of MacDraft Document with ROMSwitcher in Mac mode

Notice that circles are now true circles and squares are true squares.

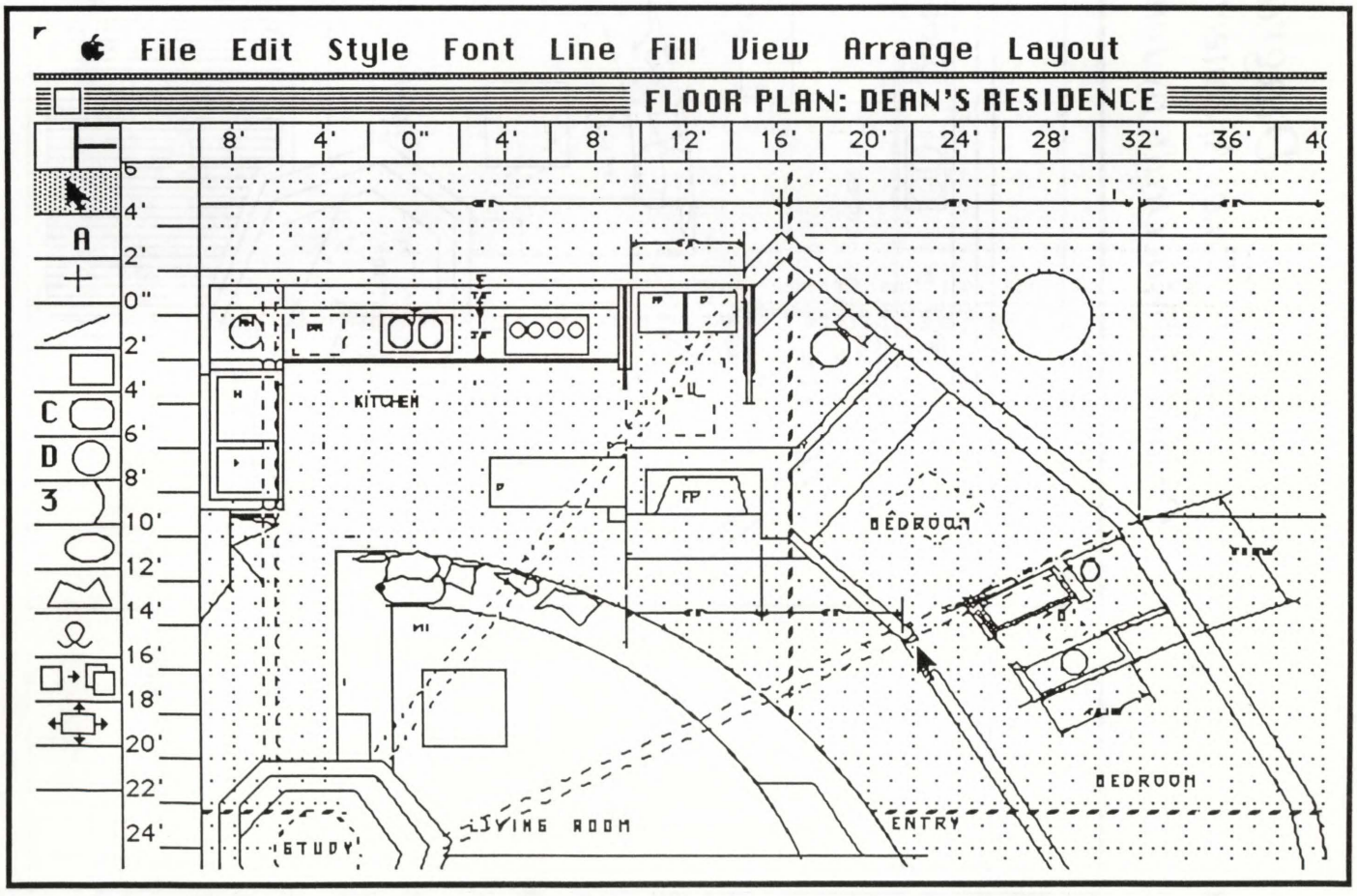
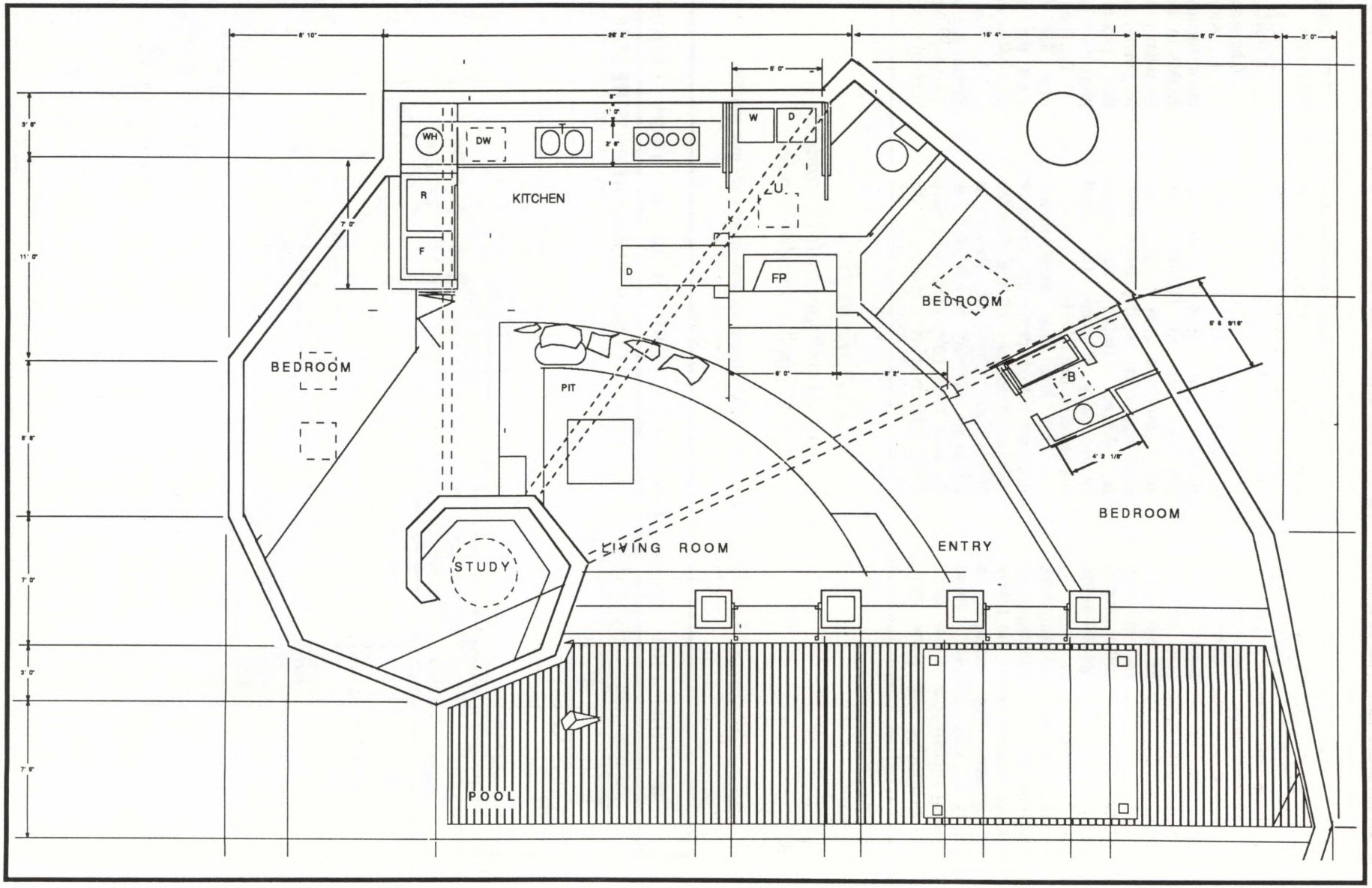


Diagram C:

Final Architectural Printout

Created in MacDraft, by Innovative Data Designs, Inc.



Editor's Note:

Although the *Apple Macintosh XL Screen Kit* provides XL users with correct Macintosh screen proportion, installation requires removal of Lisa's H/88 or H/A8 ROMs, and thus precludes the use of any Lisa OS software. Even all-MacWorks users will find these ROMs necessary if their machine ever breaks down, as all Diagnostic Tests used to test the Lisa/Mac XL for hardware failures (i.e., CPU board, I/O board, hard disk, and internal drive) were created in the Lisa Operating System.

Machines lacking the Lisa H/88 or H/A8 ROMs cannot be effectively tested, and many companies which provide Lisa/Mac XL service warranties will not warranty machines without these ROMs. *ROMSwitcher* therefore provides the benefits of the Screen Kit (adjusted screen ratio) without the cost of losing the Lisa ROMs.

4. Because the *ROMSwitcher* supports the Lisa ROMs, it also supports the Pascal Workshop, UNIX, and XENIX, as well.

5. There is, as mentioned above, the added potential of having a choice of two display sizes on the screen in the MacWorks environment, allowing the screen to be tailored to a particular software application.

Negatives

There are just a few negatives:

1. On some Lisas, when the MacWorks diskette is booted, a blank screen appears displaying a list of each module as it is loaded. After all the modules are loaded, another message appears telling the user to click the mouse to continue booting. But, because of the new 3A ROMs, these messages may appear garbled. Do not despair. Click the mouse button again, and MacWorks will boot normally.

2. Although the screen area is essentially full-sized, there are small, black borders visible in both environments which, on the 9-1/2'' x 6-3/4'' screen, amounts to a slight screen loss, i.e., up to 5/16 inches in some cases, although it varies on individual machines. Of course, the Mac XL screen is still 200% larger than the Macintosh Plus screen. Let us not be greedy!

Conclusion

For anyone who draws charts, drawings, maps, technical plans, or graphics of any sort, *ROMSwitcher* is a must — the next best thing to a crystal ball. As in the rest of life, it is important to have the illusion, or share the delusion, that things are being seen in their proper proportion. The problem is that, with Life, it takes a long time to get the printout.

Walter Thomas Brooks, a practicing architect out of Berkeley, California, is the designer of many national award-winning buildings. His work, exhibited at major universities, has been published nationally. The plans shown here are for a constructed earth-sheltered residence in Brentwood, California.

GETTING THE HIGHEST QUALITY FROM YOUR LASERWRITER

by John Armstrong

The recent appearance of command-driven Macintosh typesetting programs such as *JustText* has opened the door for the highest quality page layout available for Macintosh and Macintosh XL users to date. This is especially true for users prepared to do direct programming in PostScript.

PostScript is the page description language by Adobe Systems, Inc., which Apple supported as a standard for both their LaserWriter and for higher-resolution typesetting devices by other manufacturers. With the adoption of this PostScript standard by both printer and software manufacturers, Mac XL users have been able to create enhanced Mac-formatted documents and print them on a wide variety of PostScript devices (i.e., the LaserWriter, the Allied Linotronic typesetting machine, etc.). As part of the printing process, the receiving PostScript output device automatically converts the text and object-oriented graphics into the resolution of the device. In this way, the MacXL can be used to develop documents for later high quality or typesetting printout on a number of different devices.

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The vast majority of Mac PostScript software has been based on the notion of **WYSIWYG** (What You See Is What You Get), where the document's appearance on the screen is very close to its appearance when printed out, regardless of the specific output device. The advantages of this approach include:
1. The ability to preview and adjust documents before printing; and
2. Greater user control over graphic and text size and spacing without the user actually needing to know the PostScript language.

The disadvantage of WYSIWYG is that the user cannot specify text or object placement any more precisely than the resolution of the screen, i.e., 72 d.p.i. (dots per inch). This prevents the user from creating more subtle and exotic designs, even though this ability exists in PostScript. For example, the power of arbitrary scaling and rotation offered by PostScript cannot be accessed from within current WYSIWYG graphic applications software, such as *MacDraw*, or is severely restricted in its implementation.

On the other hand, with the new command-driven programs such as *JustText*, users get the precise control of the PostScript programming language, although they trade for that the ease of WYSIWYG. For instance, one might use the {ps} **pass-through** command in *JustText* for those document sections (such as customized letterheads, logos, or other business graphics) that cannot be handled to the user's satisfaction by the normal options of either *JustText* or other page layout software currently available.

With the PostScript language, any two-dimensional graphical form (including text as a specific case) can be defined, processed, and manipulated. Each object or element can be handled independently, and limitations of resolution appear only at the final conversion to **"device-space,"** when printing on a specific PostScript printer is commanded. The clear advantage of this approach is that the maximum possible resolution of a particular printer is achieved, while the work is fully portable between different PostScript printers with varying resolutions (e.g., the Apple LaserWriter at 300 d.p.i. or the Linotronic 100 at 1,270 d.p.i.). It also means that individual object definitions can be scaled as required for use in differing situations. By the way, *JustText* is fully compatible with the Lisa/Mac XL running under MacWorks.

JustText can be used on all or part of a document. A *JustText* document can be written from scratch; or existing text, *MacPaint*, and QuickDraw files can be converted into *JustText* code, and then modified to the user's specifications.

It is a sad fact that the essential friendliness of the brilliant user interface of the Macintosh operating system effectively bars the user from obtaining full use of his even more powerful, though dedicated, LaserWriter computer.

The solution to this dilemma is to move away from total devotion to WYSIWYG and to use the tools available in the best way possible for each particular task. For most purposes, WYSIWYG will remain the optimum choice but, where the highest possible printing quality and power is required, the full capability of the LaserWriter must be used, regardless of the loss of user friendliness involved.

While *JustText* does not give you the expected WYSIWYG behavior on your Lisa or Macintosh, it does give you the most remarkable control of text printing on the LaserWriter that I have yet seen. It gives automatic control of such

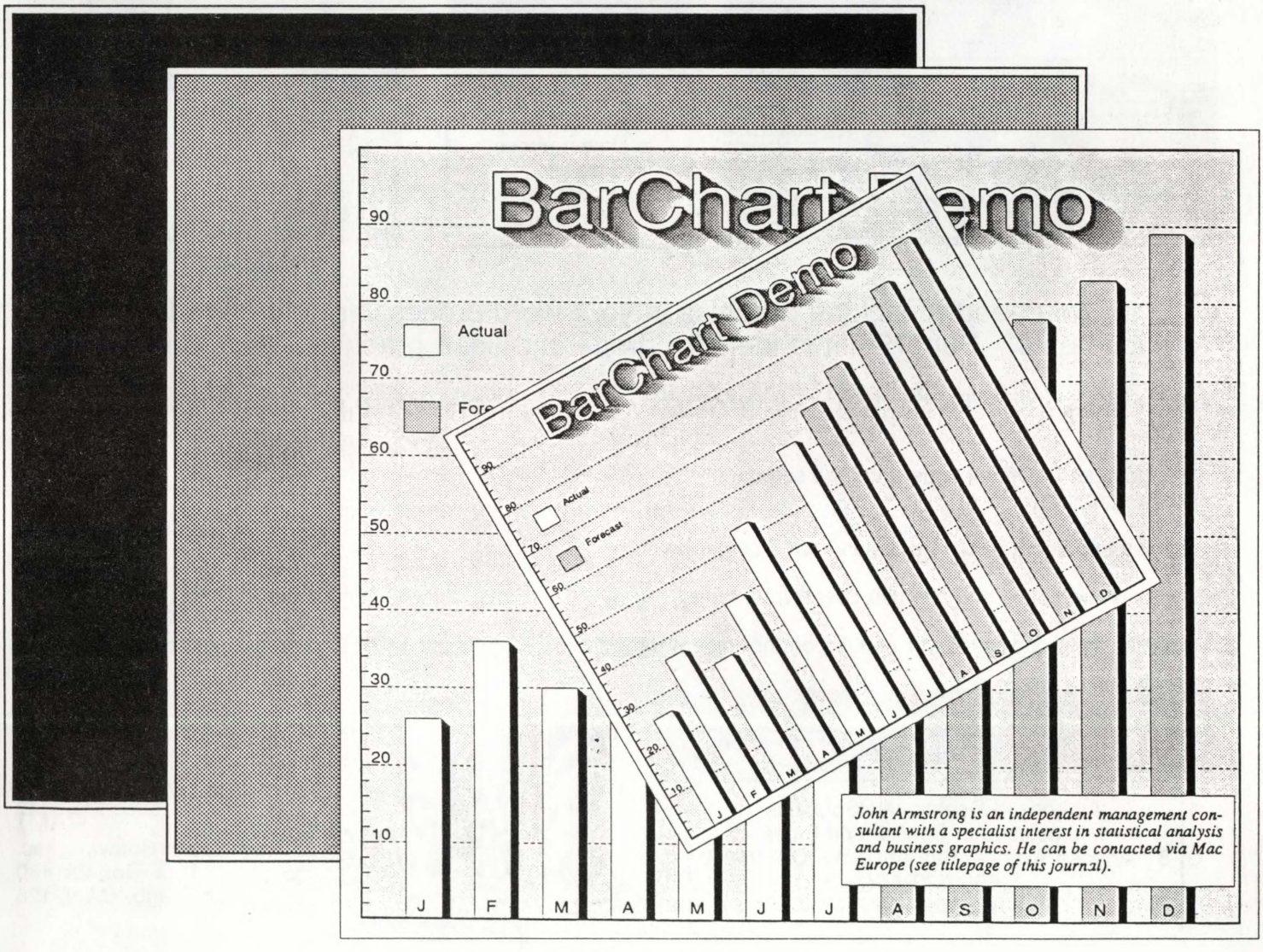
things as kerning, leading, both vertical and horizontal font sizes, drop capitals and much, much more. It does all this to a theoretical accuracy of one thousandth of a point, which far exceeds the resolution of the LaserWriter and should, therefore, enable that printer to be controlled to its limit by any user prepared to learn its secrets.

The area in which I have been making most direct use of PostScript is that of business graphics. While many commercially available applications, such as *Excel* and *Chart* from Microsoft, and *Jazz* from Lotus Development Corp., provide a very wide range of user-friendly graphics routines, such programs are inevitably limited by trying to cover efficiently all normal requirements. Where the highest quality and the greatest design flexibility for a particular purpose is required, it can be well worth writing a specific PostScript graph definition to achieve the best results.

As indicated earlier, PostScript allows one to treat individual graphics elements separately and to scale and manipulate them as required. It is comparatively easy, therefore, to build elements to form bars, lines, pies, and other forms and then to manipulate and scale them according to data brought into the program. If a particular graph specifica-tion is to be used on more than one occasion, with different data, then the graph specification can be written around a data **array,** and the new figures can then merely be pasted into the array to generate the new graph.

It is often said that a picture paints a thousand words, so I close with an illustration of a simple bar graph that was specified in PostScript by use of the **pass-through** command in the *JustText* script of this article. Having specified the graph, three simple commands translated, scaled, and rotated the same graph before final printing. I hope that the result achieved brings home all that I have tried to say through the printed word!

[*JustText* is just one of a number of programs coming out that give the user access to the more sophisticated PostScript routines. We at *The LisaTalk Report* will keep you informed of any new ones that catch our eye. One of particular interest to us is called *CricketGraph*...stay tuned...]



John Armstrong is an independent management consultant with a specialist interest in statistical analysis and business graphics. He can be contacted via Mac Europe (see titlepage of this journal).

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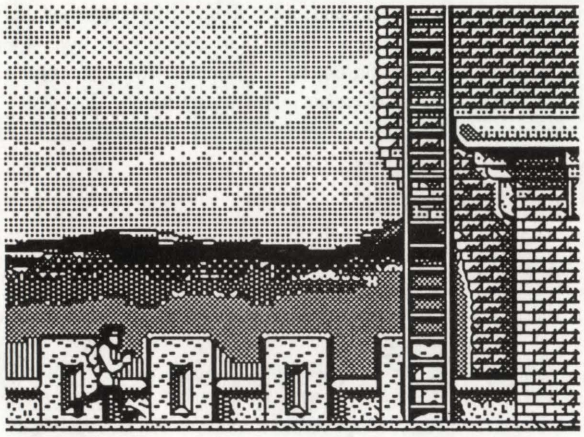
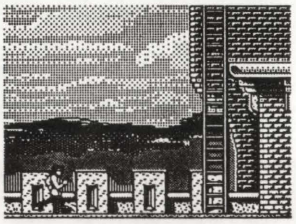
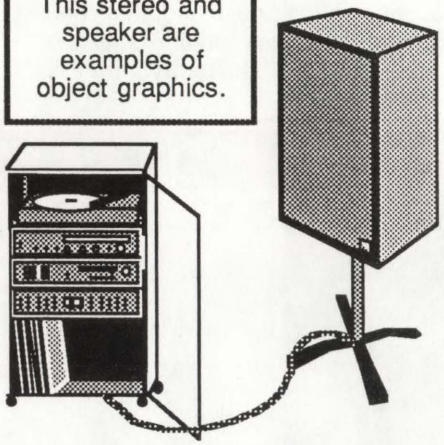




The bit-map graphic on the left is shown above, scaled to half its original size.

This stereo and speaker are examples of object graphics.



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Lisa lives on...

by Rob & Barbara Graner

Life has a funny way of opening new doors as old ones seem to close and become impassable. As we reported in our last article, our favorite Apple sales and service store closed permanently. As we were despairing of finding a suitable replacement, we received an invitation to The NetWorkers October 10th Grand Opening of their new store, *NetSolutions Micro-Computer Sales & Service Center* (8 Mariposa Avenue, San Anselmo, California 94960, 415/454-7607).

Rob was able to make the trip from Long Beach for the festive occasion while Barbara held down the fort, *Migration Services*, two teen-age sons, and "Gretchen the Dachshund", the mightiest possum hunter on four paws (yes! amazingly enough, we have possums in the teeming metropolis of Long Beach, California). A 9:00 a.m. flight from the Los Angeles International Airport to San Francisco gave Rob plenty of time to rent a car and drive north towards San Anselmo, (Marin County) before the party started at 3:00 p.m. He made a short detour to Palo Alto to visit our ever faithful, efficient friends at ComputerWare (109 California Ave., Palo Alto, CA 94306 (415) 323-7557). They have always been so terrific about shipping us disks, software, and books, we couldn't be so close without popping in to say "Hi"!

The countryside was beautiful and green, and the towns in the area were charming. The Grand Opening party was festive and enlightening. Though geographically distant for us, this new service outlet has everything we need to support our Lisa as close and as quick as UPS, Federal Express, DHL, and the U. S. Postal Service will allow. It is reassuring to have expert technical advice as close as the phone, and most important of all ... and what will surely be music to the ears of users who rebelled Apple's trade-in offer and kept their cherished Lisa/XLs:

"Parts Available for the Lisa/XL!"

Founding partners, Lewis Guice and Roxane M. Schwabe, were a super host and hostess who went out of their way to make sure Rob and all well-wishers felt welcome and comfortable. We wish them GOOD LUCK and continued success and applaud their further support of our friend, Lisa.

continues

Take Note

• The most recent update to the Lisa Office System is version 3.1. The most recent *MacWorks* update remains version 3.0. Contact your dealer or NetSolutions for more information.

• If you'd like to convert from the Lisa version of the *BPI Accounting Software* to the Macintosh version, we suggest users call or write BPI to let them know. Currently, it seems they have no plans to offer a conversion package. For this reason, we will not recommend the Macintosh version of the *BPI Accounting Software* until BPI corrects this lack of support to Lisa users. *How about it, BPI?!* –RG & BG

Lisa	MacWorks
LisaWrite	• **JAZZ**, Lotus Development Company, with **Spellchecker MacWrite**, Apple Computer, Inc. • **Microsoft Works** and **Microsoft Word**, Microsoft Corporation, with a spellchecker like **MacSpell+**, Creighton Development, Inc. • **MORE** thought processor, Living Videotext
LisaList	• **OverVUE**, ProVUE Development • **Reflex for the Mac**, Borland International (formerly Interlace) • **Omnis 3+**, Blyth Software • **Double Helix**, Odesta Corp., Inc. • **FileMaker Plus**, Forethought, Inc. • **Microsoft Works**, Microsoft Corp., Inc.
LisaCalc & LisaGraph	• Microsoft **Multiplan**, Microsoft **Excel**, and **Microsoft Works**, Microsoft Corp., Inc. • **JAZZ**, Lotus Development Company • **CricketGraph**, Cricket Software
LisaDraw	• **MacPaint** & **MacDraw**, Apple Computer Inc. • **MacDraft**, Innovative Data Design • **FullPaint**, Ann Arbor Software • **SuperPaint**, Silicon Beach Software
LisaTerminal	• **MacTerminal**, Apple Computer, Inc. • **SmartCom II**, Hayes • **RedRyder**, (shareware), Scott Watson
LisaProject	• **MacProject**, Apple Computer, Inc.

Migration Services Shortcuts & Tips

1. If you have two hard disks and a parallel card, make one hard disk all Lisa and the other all Macintosh. Migrate from hard disk to hard disk. This will save approximately 30% of your migrating time.

2. The migration tools seem to corrupt the hard disk; be sure to repair the hard disk often.

3. Throw away saved *LisaCalc* documents after transferring. Saved text files take up a surprisingly large amount of space.

4. Having multiple *LisaDraw* documents open simultaneously, and by reducing their window size, cuts down on the address time to the Lisa tool and speeds up migration.

5. The *LisaCalc* tool must be on the hard disk when you install the migration program. It alters the *LisaCalc* tool to enable you to make a text file from the File menu.

On this page we offer a list of Macintosh programs which run under *MacWorks* and are comparable or similar to Lisa's 7/7 system.

Rob and Barbara Graner provide migration support and consultation to Lisa/Mac XL users, and they keep a watchful eye on new Macintosh developments, through Migration Services, a division of McMatt Computer Consulting.

Time and resources:
The critical path

A Review of *MacProject*

by J.E. Benjamin

Introduction

Effective project planning and control is immensely difficult when resources, tasks, and personnel interact in large numbers. Recognizing that planning is often the difference between success and failure, managers faced with responsibility for major, complex efforts need effective tools. Two such tools are MacProject, a project management package for the Macintosh which is also compatible under MacWorks, and a book entitled "Planning Big With MacProject." The following discussion will: 1) provide a brief summary of the project management history on which these tools are based; 2) develop a simplified project to illustrate their use in design, implementation, and control; and 3) present a short comparison of MacProject with LisaProject. A brief review of "Planning Big with MacProject" is also presented.

Background

PERT, which stands for "Program Evaluation and Review Technique," is the methodology on which MacProject and virtually all other project management methods are based. Developed by the Navy for its Polaris weapon system in 1958, the technique has repeatedly proven its value.

One year earlier, in 1957, a similar project control technique was developed jointly by Remington Rand and DuPont for applications in private industry. Called CPM (for "Critical Path Method"), this approach has evolved along with PERT — each borrowing from the other — until today the two terms are often used synonymously.

Concept

The basic idea pioneered by PERT/CPM is to identify individual tasks, resources, and sequences and then perform calculations which allocate the resources and schedule their related tasks for optimal results. The resulting network of information can then be translated into GANTT charts which show where each task or resource starts and ends against a common time scale *(see Figures 5 and 6 on page 26 for example.)* [The GANTT chart was named after Henry L. Gantt, who developed the first-ever production-chart system earlier this century. Ed.]

After many computations, a "critical path" reveals the key sequence of jobs which may neither take longer than planned nor start later than scheduled without delaying the entire project. Thus, the project manager is able to focus strictly on those plan exceptions which threaten on-time completion of the whole effort. Further, with knowledge of the non-critical jobs and resources, adjustments (such as overtime), and reassignments from non-critical areas can be easily made.

The key to successful project planning lies in accurately specifiyng the different tasks involved in a

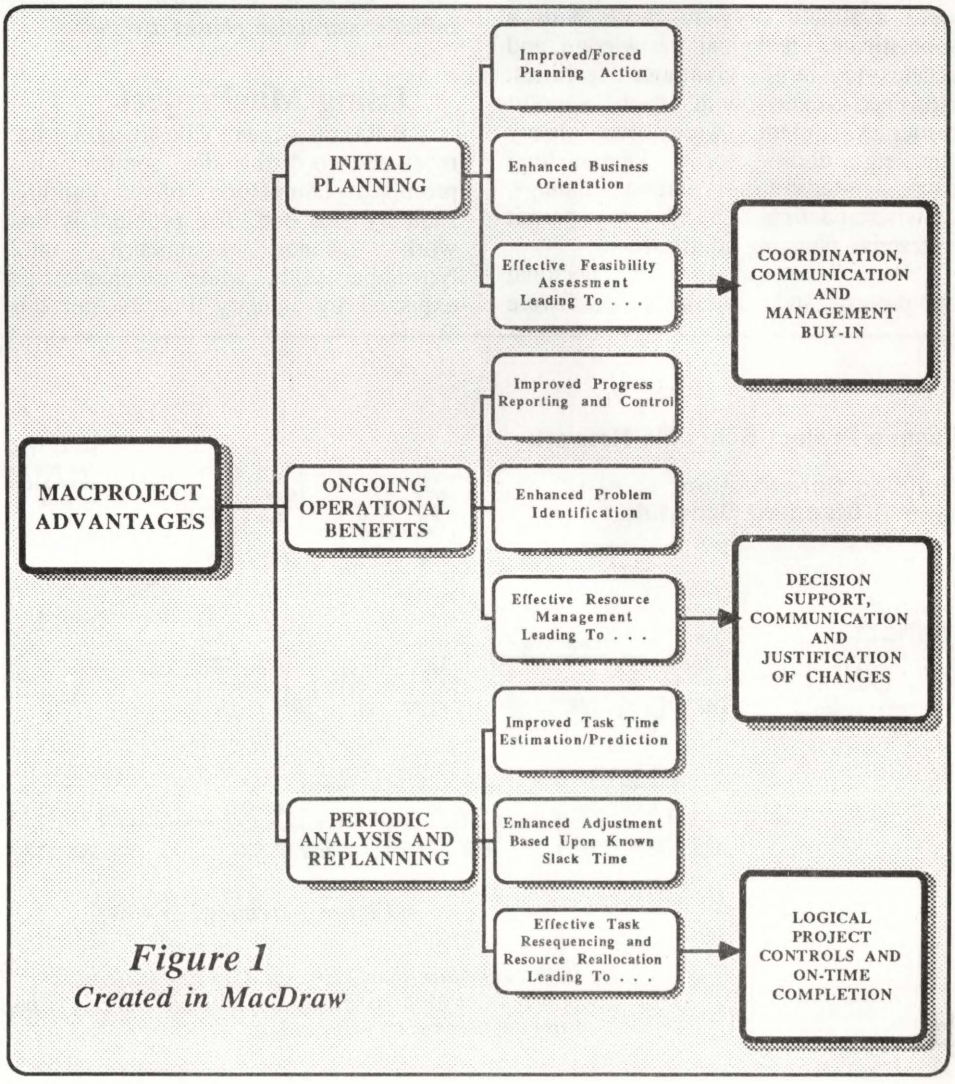


Figure 1
Created in MacDraw

project and the resources required to accomplish each task within a specified time. This is accomplished by understanding the present situation and then determining the approach to be used in reaching the goal. Applied both to the entire project and to sub-objectives and tasks along the way, the conceptual methodology is represented by the following questions:

1. **Where are we now?**
2. **Where do we want to go?**
3. **How do we want to travel?**
4. **When must we arrive?**
5. **Who is going to drive?**
6. **How much can we spend?**

Application

Until recently, if a project needing control was large enough to gain value from PERT methods, then it was too large for practical manual solution. Thus, the benefits of PERT planning were available only to those with a sophisticated technical knowledge and access to large computer facilities. However, even with such support resources, there were too many steps(e.g., coding forms, keypunching cards, interpretting output listings, drawing/updating charts) to permit interactive planning adjustments.

With the advent of personal computers and interactive software about five years ago, PERT planning finally became a practical alternative for those without mainframe support. Even so, until the Lisa and LisaProject, and then the Macintosh and MacProject, arrived, users were still faced with major obstacles. (Note that IBM PC-based programs presented steep learning curves. Further, output restrictions and poor screen resolution limited interactive usefulness.) As a consequence, truly useful PERT planning remained out of convenient reach for a majority of those who might otherwise benefit.

With MacProject under MacWorks on the Lisa/Mac XL, complex projects can be managed without the disadvantages just mentioned. As illustrated in *Figure 1*, approval, control and happy endings are in sight for users of this sophisticated tool.

The following scenario illustrates usage by a building contractor. Tasks are somewhat simplified, and only initial construction phases are shown.

Using MacProject

Bill, of Apex Construction, has received word that his company has promised completion of a building shell by year-end. The problem is that work cannot commence until November 20th, while completion is expected by January 1st. To get this contract, Bill's company agreed to late penalties of $10,000 for each day after January 1st if work is not completed. In order to meet this deadline, Bill is coordinating two crews. Les' crew of 25 handles the steel and its erection at a straight time cost of $5,000 per day, while Joe's crew of 25 handles the concrete and forms at a daily cost of $3,500.

Bill's intuition has warned him that no standard schedule will finish in the time allotted and that he will need to do a lot of adjusting to get a schedule that will meet the deadline — but that was why he chose MacProject in the first place. Due to a severe shortage of planning time, he has not had time to read the manual; nevertheless, input has been slick and easy.

Working from the "Chart" menu on the opening screen to enter task information, he proceeds intuitively, with brief looks at the "About MacProject" help screens and no need to dig through the manual:

- To draw and name task boxes, he drags diagonally from the top left corner to the bottom right corner of the box and types the task's name.
- To create milestones, he draws a task box, selects it, and chooses "Milestone" from the Task Menu.
- To connect dependent tasks and milestones, he simply drags left to

continues

Sample Project Schedule Network

Building Construction
Plan 1: Standard Schedule

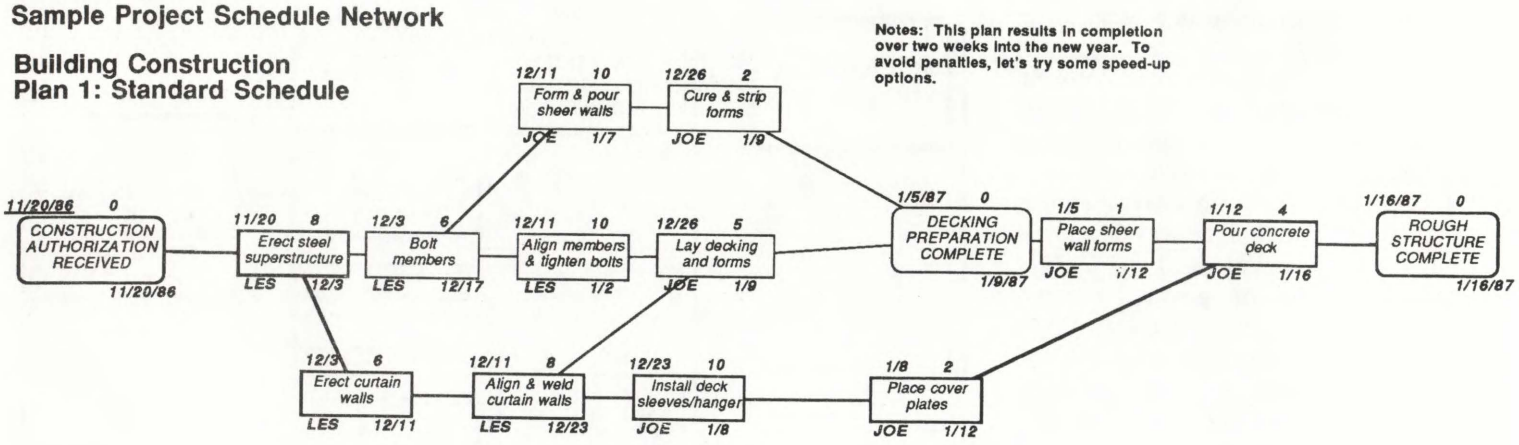


Figure 2 (reduced to 40%)

In this schedule chart view, the dark line indicates the "Critical Path" referred to by the "Critical Path Method". If any of these critical tasks run late, the project will run late.

MacProject Versus LisaProject

As Lisa was used as a development tool for the Macintosh, so LisaProject was used as a prototype for the development of MacProject. Thus, the two bear a very, very strong resemblence.

My first exposure to LisaProject was while I was a Lisa beta-tester in 1983. At that time I used LisaProject to assist in planning software and hardware development for a multi-million dollar bank branch automation project. I found the software to be as easy to use as the others in the original desktop package. My network contained hundreds of tasks, covering a span of more than thirty months. As I worked with the network and made numerous adjustments, there came a time when a revision shortening a task created an even *later* finish date. Afterwards, a critical look at several other changes revealed that adjustments were not consistent. When I contacted Apple, I was told that there was a "bug" in the program, that it had not been located, and that I should "work around" the problem. Fortunately for me, another organization took charge of the project planning needs. In any case, I have not had occasion to use LisaProject since.

Setting aside the putative "bug," the accompanying table *(Usage Comparison Summary)* provides a comparison of ease-of-use differences between the two project planning programs. On balance, in my opinion, MacProject is the better of the two. This is as it should be, since program developers had the advantages of experience in dealing with operational complaints, as well as design deficiencies with LisaProject. The primary advantage of LisaProject lies in the slick 7/7 Lisa/Mac XL operating system, the hard disk, and the larger screen. -JB

[Ed. Note: See also *The Summer 1986 LisaTalk Report: LisaProject-Project Planning Made Simple* for more info. on LisaProject.]

A Usage Comparison Summary

(Shading Indicates areas of advantage.)

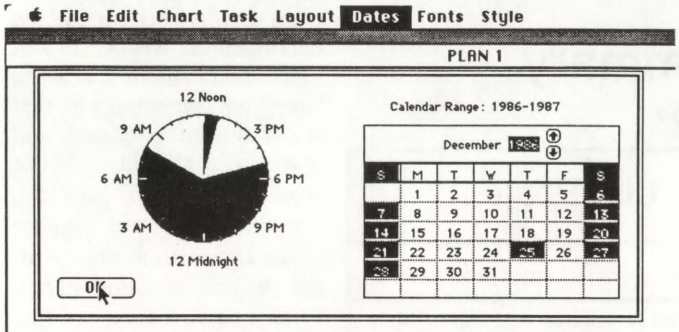
Function Category	MacProject	LisaProject
Set-up & Start-up	Both are easy	
Calendar	Input and scale setting are most convenient.	Holidays require text input. Not possible to indicate weekend or overtime work (but can show a six or seven day work week).
Time Scales	Gantt chart scales may range from minutes to months.	Scales in weeks only.
Ease of Use	Both are extremely convenient and intuitive.	
Task Input	Task box for description, separate box for resource and completion time estimate.	All input to task box.
Time Estimates	Single estimate for task.	Estimate applies to each resource assigned to the task.
Task Information Display	Early start & finish. Latest start & finish. Task name & resource name. Duration estimate. Cost or income.	Early start & finish. Latest start & finish. Task name & resource name. Duration estimate.
General Display Options	Unlimited fonts and styles.	Two fonts only.
Network Building	Both work exactly the same. Both are very easy. MacProject will automatically add connecting lines. This is not necessarily better, since sometimes the lines must be removed.	
Task Volume Per Project	Up to 2,000.	Not specified.
Maximum No. of Resources/Tasks	Up to six.	Up to five.
Maximum No. of Resources/Projects	Up to fifty.	Not specified.
Maximum Chart Size	Both allow up to 54 pages.	

Plan 1 – Cash Flow Table

Starting	Costs	Income	Ending	Cumulative
11/20/86	525000.00	1550000.00	11/27/86	1025000
11/27/86	325000.00	0.00	12/4/86	700000
12/4/86	25000.00	0.00	12/11/86	675000
12/11/86	57500.00	0.00	12/18/86	617500
12/18/86	84500.00	0.00	12/25/86	533000
12/25/86	14000.00	0.00	1/1/87	519000
1/1/87	24000.00	0.00	1/8/87	495000
1/8/87	57500.00	0.00	1/15/87	437500
1/15/87	3500.00	0.00	1/22/87	434000

Note: Penalties of $10,000 per day for 15 days will reduce our net by $150,000, leaving $284,000.

Figure 3



Setting Working Hours and Days

Figure 4

Adjusting the details of the work day and work calendar is done quickly with the mouse; all other schedules will then readjust automatically. Note that you are actually defining the average work day length for the entire span of the project.

right, from inside the first task box to inside the task box that depends on it.

• To enter Task Information for each Task, he selects the task, chooses "Show Info" from the Task Menu, and types the duration and resources.

• To set the Calendar, he chooses "Calendar" from the Dates Menu.

• To set the project's range in years, he clicks to set working hours and days.

• To set a task's earliest start or latest finish, he selects the task and chooses "Set Earliest Start" or "Set Latest Finish" from the Dates Menu.

• To display dates, durations, costs, etc., he selects "Show Dates" from the Dates Menu and clicks the information he wants displayed around each task.

• To enter costs, he chooses "Task Cost" and "Resource Cost Entry" from the Chart Menu and types in the costs.

• To make annotations, he clicks and types in any white space other than inside boxes.

As Bill stares at his first schedule on the screen *(see Figure 2)*, he notes that his suspicion was correct — with a standard schedule, he would incur 15 days of late penalties. But MacProject looks like it's going to help. It only took two hours to reach this point and making changes now should be a snap. Now, under the "Chart" menu, he selects "Cash Flow Table" *(see Figure 3)*. Noting 15 days of late charges, he performs a few quick calculations with his calculator desk accessory, adds a note to the chart emphasizing the need for replanning, and decides to see what a full crash overtime effort will do.

From the file menu Bill chooses "Save as..." *Plan 1* and begins to make some changes, knowing that the original version is now preserved for later reference. In the Dates Menu he chooses "Calendar" and, with a few clicks, adjusts the working day to ten hours and indicates production occurring on both Saturday and Sunday *(see Figure 4)*. Now the only idle days shown are Thanksgiving and Christmas. Next he selects "Resource Cost Entry": at full overtime, Les' crew costs jump to a new average of $11,250 per day, and Joe's crew costs

continues

The Book: "Planning Big with MacProject"

(Osborne McGraw-Hill, copyright 1986 by James Holcomb, 353 pages, $16.95)

Although not essential for effective use of the MacProject program, this book offers a well-presented and solid approach to project planning.

Specifically, Mr. Holcomb details project definition and implementation methods in five steps:

1. How to define the objective (and get agreement from management and co-workers).
2. How to assure that all necessary tasks are identified.
3. How to improve control by defining and relating project milestones.
4. How to describe, display and relate tasks in the information network created.
5. How to estimate task times and costs.

Who would gain the best advantage from this book? In general, all business professionals, including engineers, marketing managers, financial analysts and manufacturers faced with a need to manage a large, one-time effort. Benefits are great for first-time project managers — especially those in big organizations.

The book is well-illustrated and contains clear, step-by-step instructions for practical use. What makes the book unique is the author's method of placing software use into a business context. He focuses on actual project end objectives, introducing program features as they relate to the desired outcome. Further, the book also provides some ideas for incorporating other Macintosh-based software to assist with brainstorming and communication (i.e., ThinkTank, MacDraw, MacTerminal).

Unfortunately, the ten "case histories" given at the end of the book contain little substance. As presented, they are essentially product endorsements by satisfied users. More *real-world* sample networks, especially from the ten sources noted, would have been of value.

Nevertheless, if you must design and manage a project — and you are feeling lost — this book will make a fine companion. –JB

become $7,875 per day. (Whew! Time-and-a-half and double-time rates add up *fast!)*

Now, from his instantly-updated Schedule Chart *(not shown)* Bill finds that the new completion is ten days early! He then adds a note to the chart to remind him of the excessive overtime hours this plan would incur and saves it as *Plan 2*. To eliminate the most expensive overtime — Sunday — he saves a third plan *(not shown)* which indicates no Sunday work in the Date/Calendar menu item, and he adjusts the Resource Costs downward to $8,750 and $6,125 for Les and Joe. Again, Bill realizes the latest finish for this plan is still early, this time by four days. Going for the last nickel, he creates *Plan 4*, which decreases the workday to nine hours and reduces the average crew costs to $7,625 and $5,338. Indeed, *Plan 4* seems to generate the best schedule at the lowest cost.

As a final step, Bill calls up the weekly cash flow table for *Plan 4* and notes that the "bottom line" shows a net of $361,456 (compared with $284,000 for *Plan 1*, $270,800 for *Plan 2*, and $352,400 for *Plan 3*). Satisfied, Bill then types a reminder to take a look later at other possible crew assignments-task schedules and balancing

continues

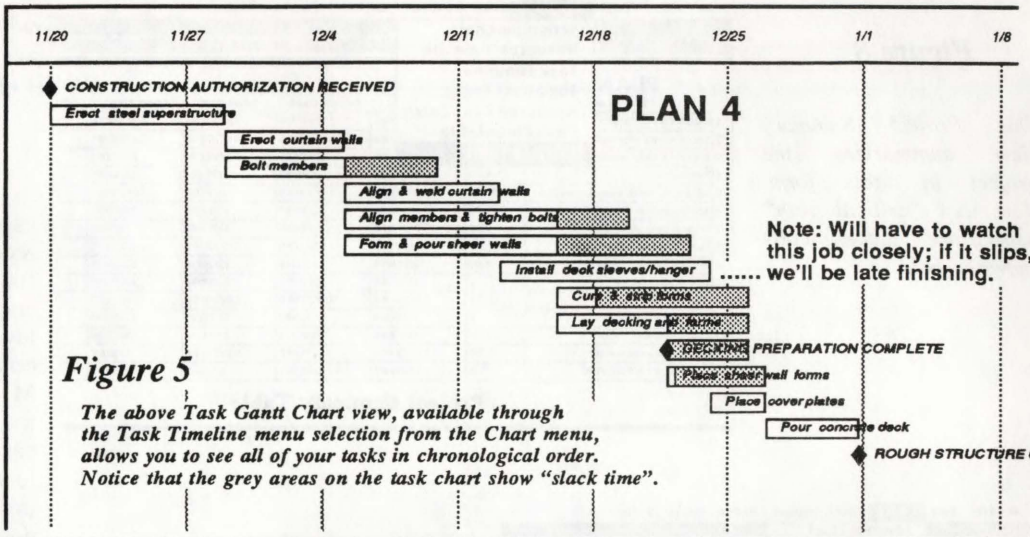


Figure 5

The above Task Gantt Chart view, available through the Task Timeline menu selection from the Chart menu, allows you to see all of your tasks in chronological order. Notice that the grey areas on the task chart show "slack time".

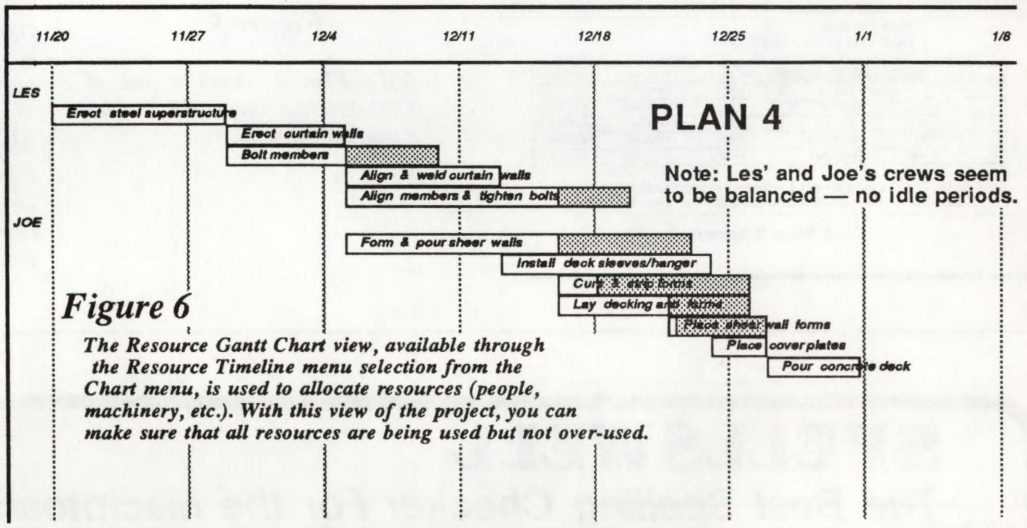


Figure 6

The Resource Gantt Chart view, available through the Resource Timeline menu selection from the Chart menu, is used to allocate resources (people, machinery, etc.). With this view of the project, you can make sure that all resources are being used but not over-used.

Sample Project Schedule Network
Building Construction
Plan 4: MiniCrash Schedule

Notes:
MiniCrash schedule: 9 hours/day and 6 days/week
This approach finishes right on time
(provided nothing slips)!!

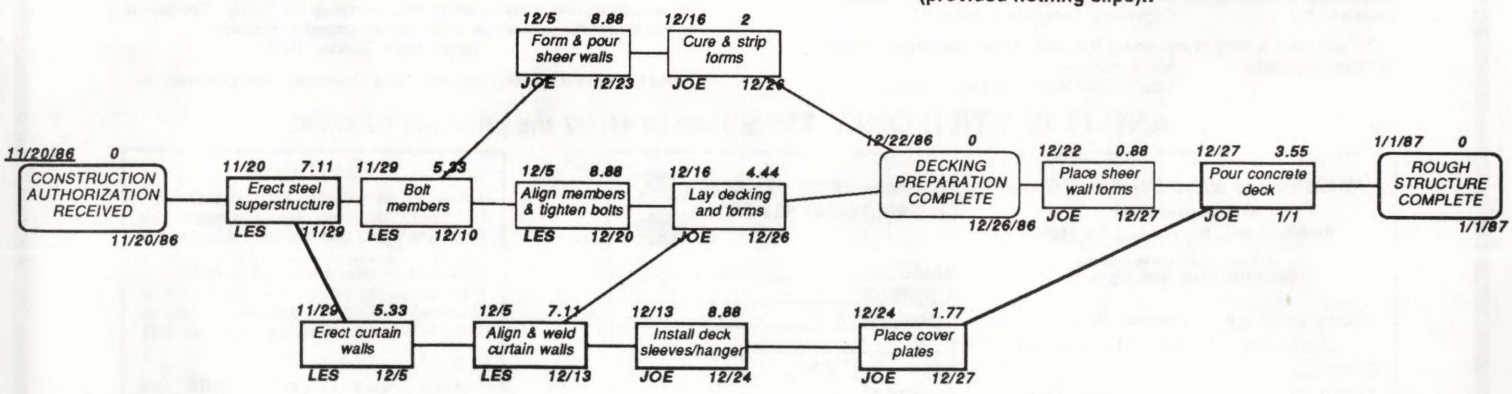
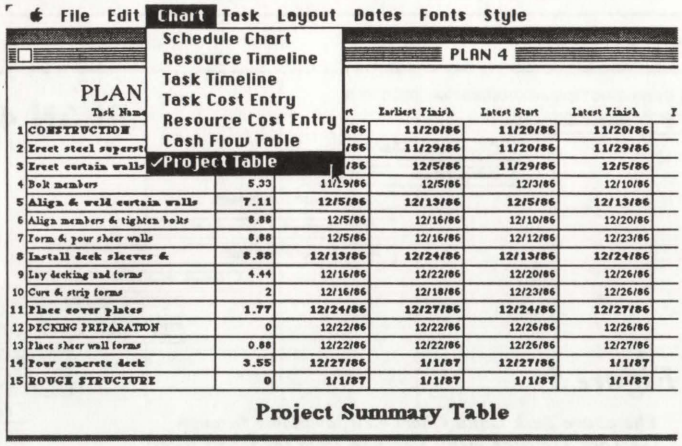


Figure 7 (reduced to 40%)

Figure 8

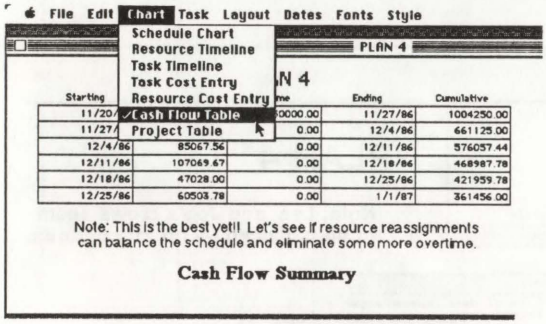
This Project Summary view summarizes the project in table form. Note that "critical path" items are automatically shown in bold.



PLAN

	Task Name			Earliest Finish	Latest Start	Latest Finish	F
1	**CONSTRUCTION**		/86	11/20/86	11/20/86	11/20/86	
2	**Erect steel superst**		/86	11/29/86	11/20/86	11/29/86	
3	**Erect curtain walls**		/86	12/5/86	11/29/86	12/5/86	
4	Bolt members	5.33	11/29/86	12/5/86	12/3/86	12/10/86	
5	Align & weld curtain walls	7.11	12/5/86	12/13/86	12/5/86	12/13/86	
6	Align members & tighten bolts	8.88	12/5/86	12/16/86	12/10/86	12/20/86	
7	Form & pour shear walls	8.88	12/5/86	12/16/86	12/12/86	12/23/86	
8	Install deck sleeves &	8.88	12/13/86	12/24/86	12/13/86	12/24/86	
9	Lay decking and forms	4.44	12/16/86	12/22/86	12/20/86	12/26/86	
10	Cure & strip forms	2	12/16/86	12/18/86	12/23/86	12/26/86	
11	Place cover plates	1.77	12/24/86	12/27/86	12/24/86	12/27/86	
12	PICKING PREPARATION	0	12/22/86	12/22/86	12/26/86	12/26/86	
13	Place shear wall forms	0.88	12/22/86	12/22/86	12/26/86	12/27/86	
14	Pour concrete deck	3.55	12/27/86	1/1/87	12/27/86	1/1/87	
15	**ROUGH STRUCTURE**	0	1/1/87	1/1/87	1/1/87	1/1/87	

Project Summary Table



N 4

Starting			me	Ending	Cumulative
11/20/			0000.00	11/27/86	1004250.00
11/27/			0.00	12/4/86	661125.00
12/4/86	85067.56	0.00		12/11/86	576057.44
12/11/86	107069.67	0.00		12/18/86	468987.78
12/18/86	47028.00	0.00		12/25/86	421959.78
12/25/86	60503.78	0.00		1/1/87	361456.00

Note: This is the best yet!! Let's see if resource reassignments can balance the schedule and eliminate some more overtime.

Cash Flow Summary

Figure 9

Bill's Plan 4 shows a net of $361,456^{00}$, compared with $284,000^{00}$ in Plan 1.

adjustments and prints out a complete set of project summary documents *(see Figures 5, 6, 7, 8, and 9).*

Conclusion

If you are planning a large project, especially if it's your first time, I recommend MacProject. If you work for a big organization and must gain cooperation of associates and high-level decision makers, then you should consider the book "Planning Big with MacProject". I have seen no better tools for this purpose in functional ease of use and, especially, ease of learning. Considering project investment costs, the consequences of delays or even failure, and the low cost of these project planning tools, it is not difficult to justify their purchase.

An industrial engineer by trade, Jon Benjamin offers specialized business and computer consulting services to Apple Lisa/Macintosh and IBM users in the San Francisco Bay Area.

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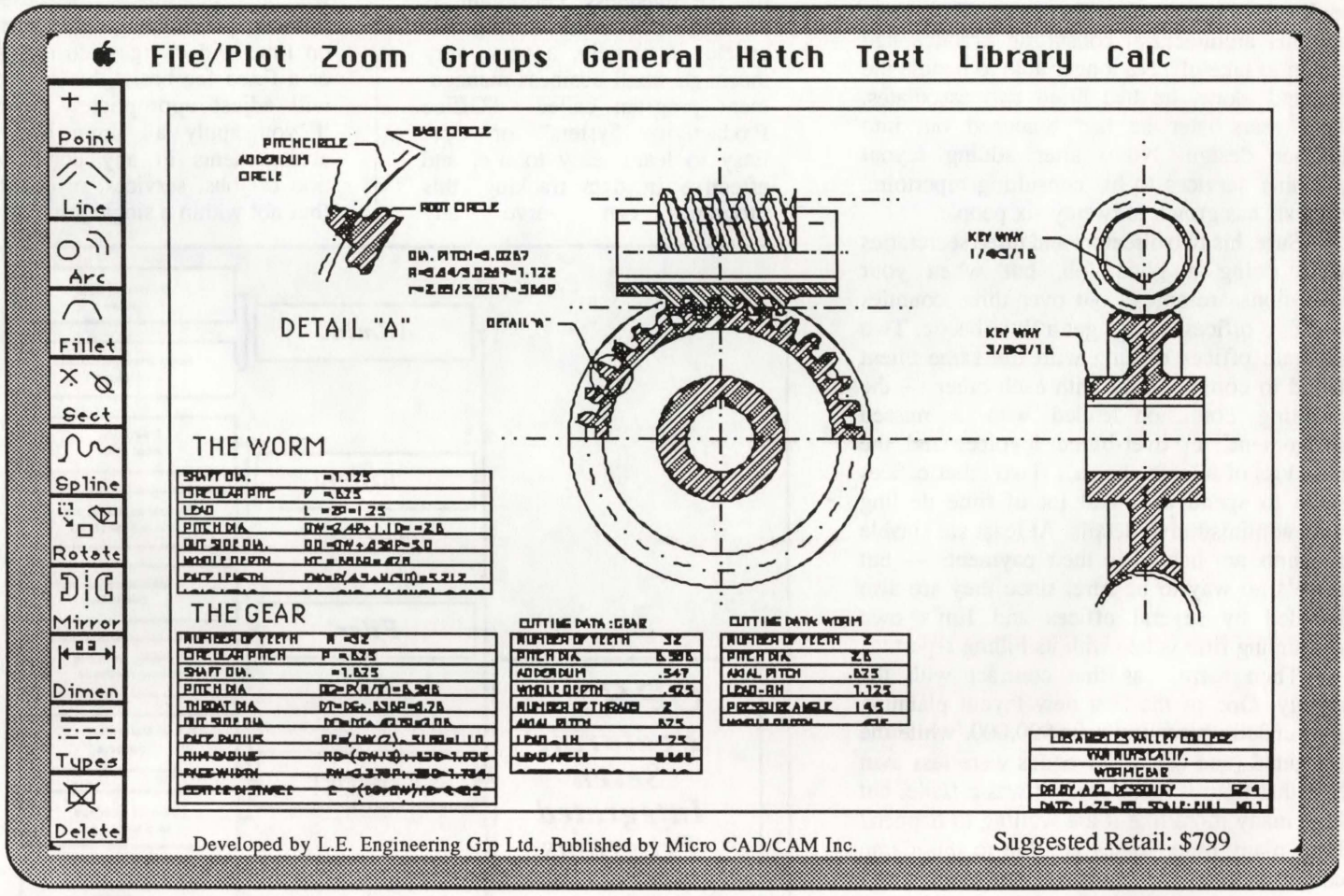

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A Review of *OPS*

by J. E. Benjamin

The Problem

Jim was troubled. As he cast his eyes across the desk littered with notes, reminders, and unanswered messages, his worried thoughts reviewed the penalties of success. Five years ago his architectural consulting practice had begun to take off. No longer able to handle the demand alone, he had hired two associates. Two years later he had branched out into interior design. Now, after adding layout planning services to his consulting repertoire, his staff has grown to twenty-six people.

Sure, his two directors and three secretaries were doing a good job, but when your operations are spread out over three counties and five offices, things get a little hectic. Two separate offices dealing with the same client failed to communicate with each other — the resulting confusion ended with a missed assignment, an over-billed invoice, and the near loss of a large contract. Two other offices seem to spend an awful lot of time dealing with administrative details. At least six sizable accounts are behind in their payments — but there's no way to be sure, since they are also handled by several offices and Jim's own accounting firm is late with its billing report.

Then there was that contract with the county. One of the first new layout planning jobs ended up costing over $20,000, while the budgeted (and actual) revenues were less than half that figure. Fortunately it was a fluke, but how many more like it are waiting to happen? How many other losses are due to this damn confusion?!

Trying to think of answers, Jim ponders, "Should I hire another secretary? Another clerk? With five offices, which one should get the assistance? Should I find another accounting firm? Do the billing myself?" With a sigh of resignation, and muttering the familiar phrase, "Physician, heal thyself", Jim resolves to call in a business consultant.

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List Price: $475 Vn. 1.30

The Solution

The answer recommended by the business consultant is also my reason for writing this article — namely, a very, very thorough small business management program called "Office Productivity System" or *Ops*. Easy to learn, easy to use, and effective in data tracking, this program can serve any small to medium-sized business which provides fee-based services. Whether you operate on time and charges, cost plus, or a fixed fee basis, this system will adjust appropriately, even if you apply all three billing arrangements in any combination of jobs, services, or clients (but not within a single job).

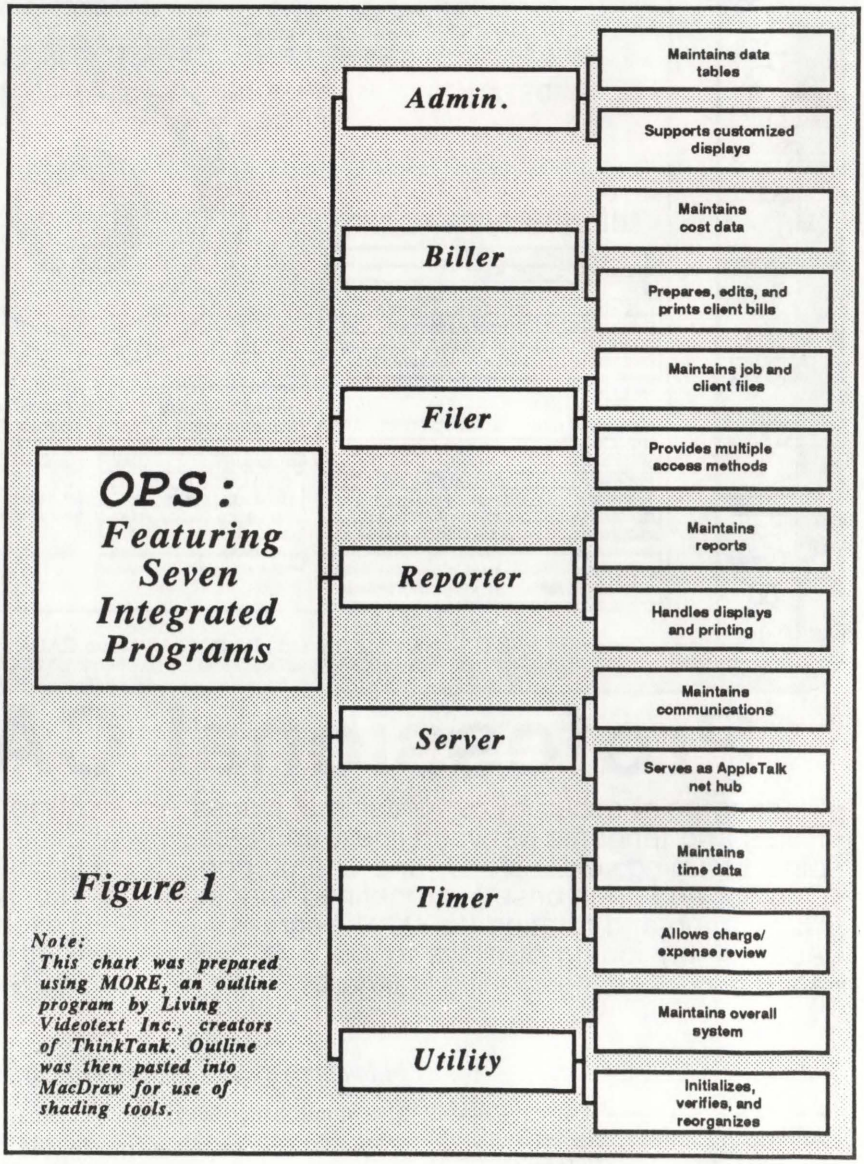


Figure 1

Note: This chart was prepared using MORE, an outline program by Living Videotext Inc., creators of ThinkTank. Outline was then pasted into MacDraw for use of shading tools.

The Source

Ops was developed by Applied Micronetics, Inc. (AMI), itself a small business located in Lafayette, California, twenty miles east of San Francisco — just across the bay from Silicon Valley.

Developer George McLain founded AMI in 1983 after nearly twenty years of designing and directing mainframe accounting and management information systems. In 1984, McLain was asked to build an administrative and accounting program for Earth Systems Incorporated, a medium-sized organization with offices in northern and southern California. Their objective was to link their operations via easy-to-use Lisas and Macintoshes — thereby providing current input and output in order to avoid the types of problems described at the beginning of this article.

The Environment

Ops provides seven integrated programs on five 400K disks. Summarized in *Figure 1*, these applications may be simultaneously resident on a hard disk (the most functional configuration). For a very small operation it is also possible to use *Ops* without a hard disk.

When the Macintosh, MacPlus, or Mac XL also has AppleTalk available, with the *Ops* multi-user software it is possible to link up to thirty-one units (including Laser Writers). Since the system allows three password authorization levels, some employees may be recording their own personal time (level 1), secretaries may be recording time for others "on the road" (level 2), and at least one person will have the ability to make major changes (level 3).

Since the *Ops* software is the same when under single or multiple user conditions, future expansion up to the program limit of fifty people and 1,000 jobs is easy.

The Functions

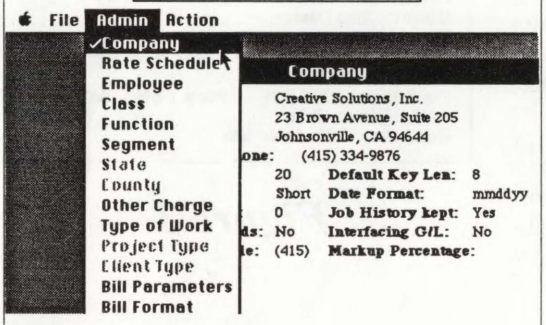
Remarkably thorough and well integrated, *Ops* could easily be characterized as a menu-driven, business-oriented relational database. Changes in one element are automatically reflected in all related fields. (For example, if you change the labor rate, the unposted amounts due adjust accordingly.)

Ops has eight primary functions which are briefly described below.

Client Reference

The client company database may hold up to ten information items: 1) Name (up to 40 characters); 2) Address; 3) Telephone number; 4) Loading rate (the percent overhead added to direct cost charges); 5) Job format (whether bills are summarized or itemized); 6) Default key (a system generated search aid); 7) Map indicator (*Ops* allows optional use of geographic location coordinates in several useful ways); 8) Number of trade indicators; 9) Actual trades used (examples are Civil Engineer, Builder, and Architect); and 10) Default area code. *Figure 2* shows a sample menu selection along with its resulting summary screen.

Company Menu Choices



Company Data Screen

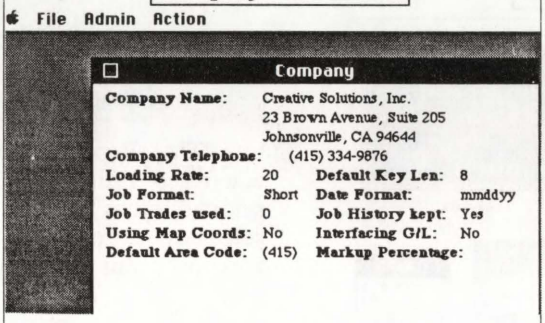


Figure 2

Job Reference

Although *Ops* limits the number of active jobs to 1,000, it is possible to maintain another 500 in historical (completed) files. Thus, the maximum is 1,500. (Users who eventually reach this limit will use the program's utilities to remove old data.) There are many ways to access job data: *Figure 3* illustrates one approach. The lower box in *Figure* 3 shows two segments, "Research" and "Report". Up to nine user-defined segments may be employed, each of which will display budgeted, billed, and unbilled expenditures. Finally, as with client-company data, job data may be referenced by map coordinates.

Time Recording

Extremely convenient click-selection procedures are employed for recording time. As shown in *Figure 4* — select employee, select date, select function, and the displays respond quickly. Fifty employees may make up to 150 entries, using as many as fourteen hourly rates during each billing cycle. Recorded time may be designated as billable or non-billable. If changes or adjustments are needed later, they can be accomplished by clicking on the appropriate item when it is visible on screen.

Job Costing

The system maintains a current job cost file for items not yet billed. A second perspective, called "Job History," shows summaries of actual costs, billed charges and actual payments received. Each job may be budgeted in up to nine segments. Additionally, cost definitions may include a user-selected overhead or "load" percentage. The job cost data report *(not shown)* then provides column which:

summarize: 1) Job/job segment; 2) Each employee charging to the job; 3) Actual hours; 4) Actual costs; 5) Load dollars; 6) Billed units (usually hours or mileage); 7) Billing rate; and lastly, 8) Billed dollars. Summarized and totalled data for each job allows comparison of expenditures with income to produce the famous "bottom line."

Accounts Receivable, Service Invoicing, Billing Review

As mentioned earlier, *Ops* supports fixed fee, cost plus, or time and charges invoice arrangements for up to 1,000 simultaneous jobs. Invoice documents are professional in appearance, providing a standard location for your company name and address. Terms and finance charge print locations are also standard. Invoices automatically show previous balance, deposits on account, and payments by date. Moreover, adjustable sales tax rates and finance charges are applied at the user's option. Finally, many fonts are available — as any Macintosh XL-Mac owner knows. A sample process is illustrated in *Figure 5*, while *Figure 6* shows the resulting bill.

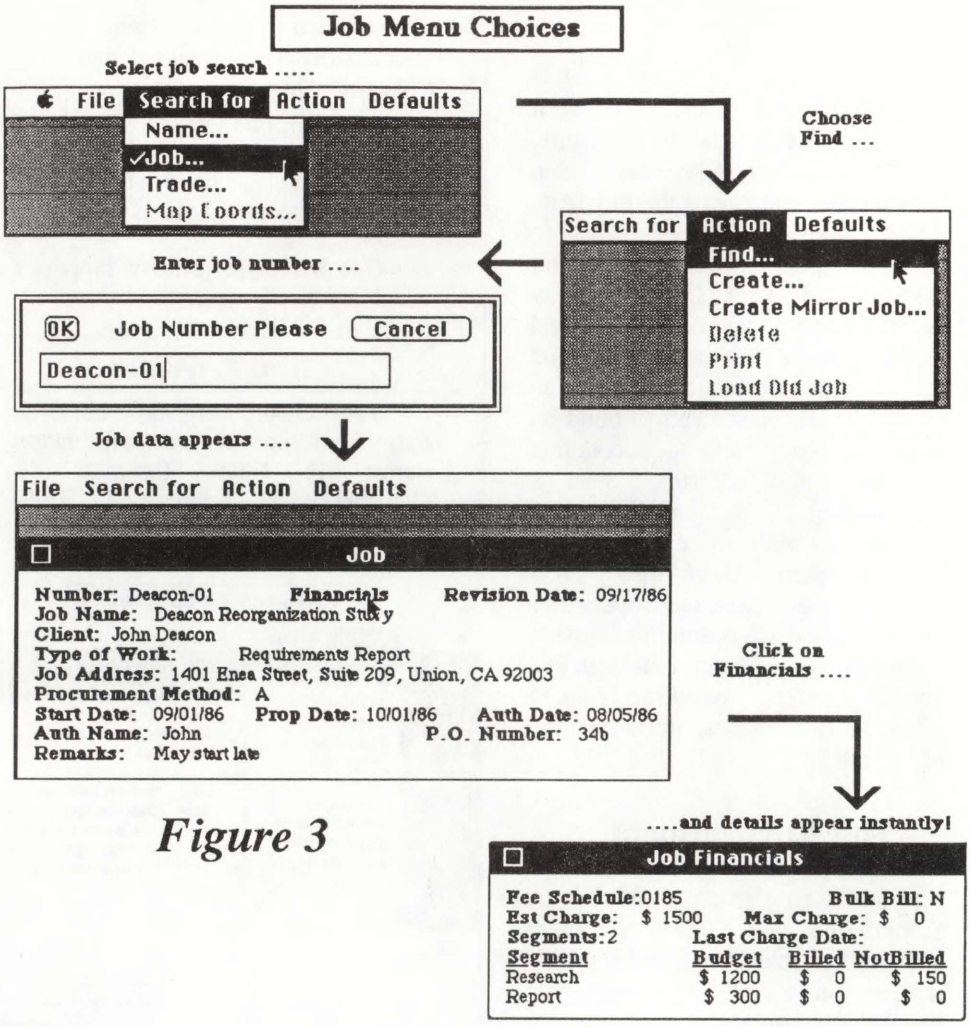


Figure 3

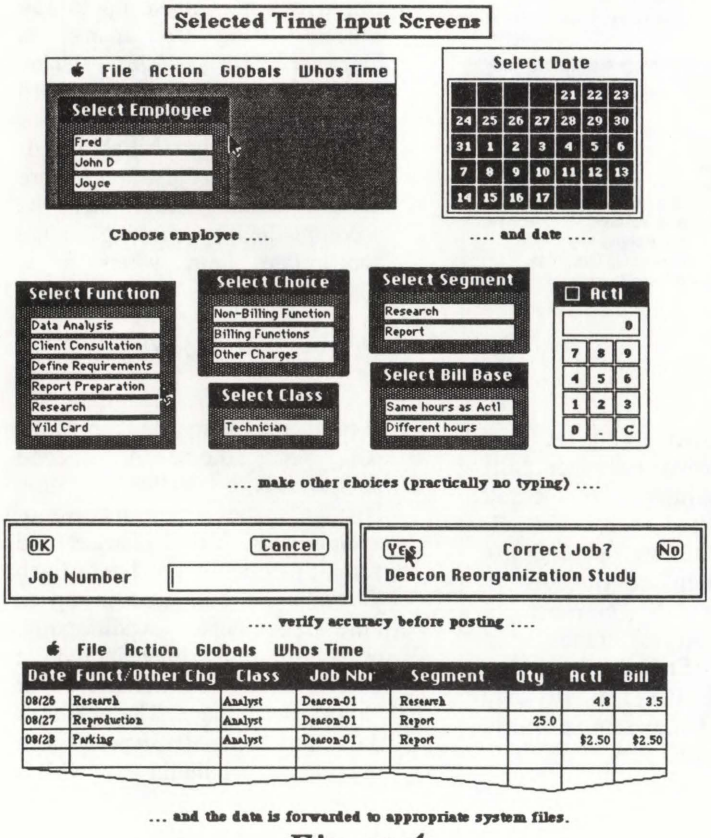


Figure 4

Database Reporting

"The Reporter" allows automated listing of all (or selected) jobs and all (or selected) clients. In addition, this portion of *Ops* can generate an employee productivity report (not shown) which summarizes actual hours and percent of total hours expended on both direct and indirect activities.

The report also shows averages from previous months for the same activities. Interestingly, the Reporter is capable of creating MSWord documents which can be later modified and printed by MSWord (this does not apply to the invoice itself). In fact, *Ops* can be used to merge data and addresses from its own files to create volume mailings — including labels and envelopes. *Figure 7* shows some of the menus used in these processes.

Function Summary

Figure 8 offers a condensed summary of the many features provided by *Ops*.

Usefulness & Justification

It is fortunate that this product's weakest aspect is its manual. I use the term fortunate as a way of emphasizing two points: 1) The program is so intuitive

and easy to use that most people will learn by doing rather than by reading; and 2) The program's author is very prompt and caring in returning calls, making adjustments, and giving advice to his customers.

Documentation

Visually, the manual is attractive and physically well-constructed. It contains about 100 spiral-bound pages sprinkled with numerous illustrations, selected graphic menus, and example reports. There is a table of contents and a useful index. Unfortunately, some of the wording is a trifle technical. Further, the content is organized by program function (a developer's perspective) rather than by user action. There are numerous typos and, probably due to the living, changing nature of *Ops*, manual graphics and action sequences sometimes do not agree with the actual on-screen happenings. On the other hand, the sample company files provided with the program were extremely useful in the learning process.

A User Reaction

I contacted the user with the longest *Ops* operating experience, Pat Jackson, with the accounting firm of Jackson & Cates of Concord, California. Pat's firm uses two Macintoshes with external hard disks and a MacPlus. They have seven employees servicing about 800 clients. Before switching to *Ops* in January, 1985, they had been using an outside service to handle their billing. Since they were paying an average of $300 per month for the service, they justified the $475 cost of *Ops* in less than two months!

I asked Pat how she liked the system and how well it had served their needs. Her answer: "We had a lot of bugs at first, but the developer fixed them all very quickly. The program does lots more than just billing. We use it for time logging, performance tracking, and basic cost accounting. I've found both program and programmer response to be very good."

Performing some quick arithmetic during our conversation, I asked, "Would you agree that purchase of the system has saved you over $3,000 per year?" She responded, "That's true, but the benefit is really greater than that because our production decisions are a lot better." At the close of our conversation, I asked if there was a program capability which she found especially useful. She said, "Yes, we really like the feature which tracks actual time for non-billable items."

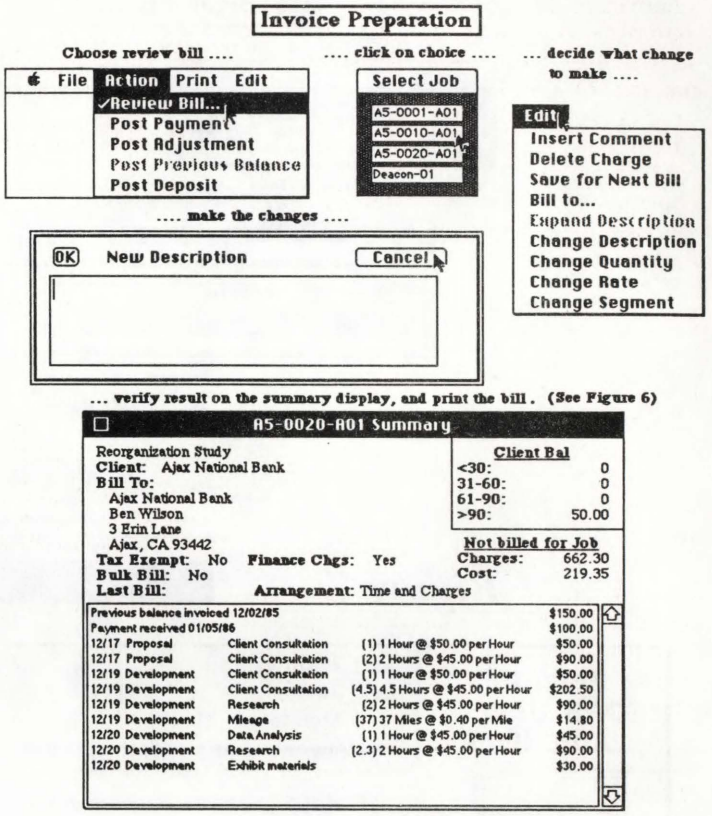


Figure 5

Creative Solutions, Inc.
23 Brown Avenue, Suite 205, Johnsonville, CA 94644 (415) 000-4141

Invoice
File Number: A5-0020-A01
Invoice Date: 01/09/86

Ajax National Bank
3 Erin Lane
Ajax, CA 93442
Attn: Ben Wilson

For professional services rendered through 12/20/85

Previous balance invoiced 12/102/85					$150.00
Payment received 01/05/86					100.00
Proposal Segment					
12/17	Client Consultation	Principal	1 Hour @ $50.00 per Hour		50.00
	Client Consultation	Sr. Analyst	1 Hour @ $45.00 per Hour		90.00
Development Segment					
12/19	Client Consultation	Principal	1 Hour @ $50[00] per Hour		50.00
	Client Consultation	Sr. Analyst	4.5 Hours @ $45.00 per Hour		202.50
	Research	Sr. Analyst	3 Hours @ $45.00 per Hour		90.00
	Mileage		37 Miles @ $0.40 per Mile		14.80
12/20	Data Analysis	Sr. Analyst	1 Hour @ $45.00 per Hour		45.00
	Research	Sr. Analyst	2 Hours @ $45.00 per Hour		90.00
	Exhibit materials				30.00
Finance charge on overdue balance of $50.00					0.75
Current Charges SubTotal					$663.05
6.0% Sales Tax					$ 1.80
Total Current Charges Due					$664.85
Net Amount Due					$714.85

This bill is due upon presentation and is subject to a service charge of 1.5% after 30 days, annual percentage rate 18.0%.

Figure 6

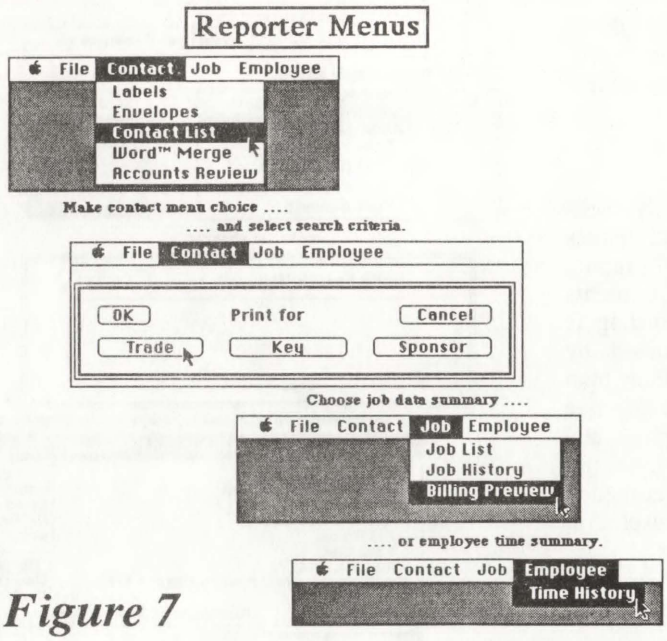


Figure 7

Potential *OPS* Users And Uses	
	Δ Attorneys Δ Engineers Δ Doctors Δ Accountants Δ Architects Δ Consultants Δ Anyone who bills for services or time
FUNCTIONS PERFORMED: Client Reference	Δ Find client by name, business or trade type, job, or contact name Δ Multiple search matches are shown, one click selects Δ No limit to volume of clients stored (disk capacity) Δ Extract name and address fields for bulk mailings
Job Reference	Δ Find job by number, by client, or by geographic location Δ Budget and track work for up to nine job segments Δ Tie in associated firms to one job Δ Handle up to 1500 jobs with 1000 active in one billing cycle
Time Recording	Δ Up to 50 employees on the system Δ Up to 150 entries per employee per billing cycle Δ One person may use up to 14 different rates
Job Costing	Δ Time and charges billing accumulation Δ Data locked to unauthorized personnel Δ Adjustable provision for cost + load and overhead Δ Budget and track cost vs actual for up to nine job segments Δ Historical reports show previous billings, costs, and payments
Service Invoicing	Δ Bill by detail or by bulk (consolidated functions and charges) Δ Prepare invoices at any time (in or out of cycle) Δ 1000 simultaneous active billing jobs
Billing Review	Δ Change item rates, quantities or descriptions interactively Δ Add comments as and where desired Δ Make selected comments invisible to clients Δ Delete, delay, or transfer charges to another job or billing cycle
Accounts Receivable	Δ Post and track client payments, adjustments and deposits Δ Each invoice shows previous job balance Δ Report client balances in 30 day past due Δ Add or change finance charges, user selected percentages Δ On screen review or trial print copy available
DataBase Reporting	Δ List all jobs Δ List all clients Δ Prepare mailing labels Δ Mail merge names and addresses Δ Print employee productivity report or review on screen

Figure 8 *(created in MacDraw)*

Future Enhancements

George McLain told me about five improvements now in progress:

1) Rate schedule expansion: Presently, *Ops* supports two schedules, each with fourteen rates.

For 1987, there will be six; thus, the current total of 28 rates will grow to 84.

2) Accounting interface: Next year, George plans to implement an interface with the BPI General Accounting Package. *Ops* will then have the ability to create data which can be forwarded to BPI, to be used for Income, Cash, and Accounts Receivable processing.

3) Remote access: Plans are underway to add the user ability to dial into the system from a remote location, reducing the need for clerical support or additional hardware in some circumstances.

4) Host processing: The present program requires a dedicated Mac as a server in multi-user situations. Changes to the way the server program now functions with Inphosphere's MacServe will eliminate the need for a dedicated Macintosh.

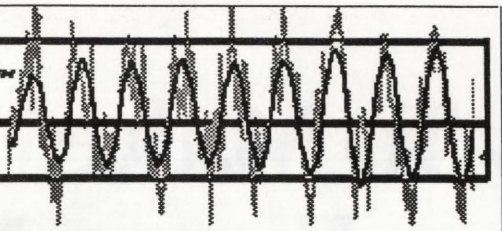
5) New manual: Problems with the manual are being addressed, and Applied Micronetics Inc.'s plans release of a new manual by April, 1987.

Conclusion

In reviewing this system I've found that it performs very well indeed. The many functions described in this article really do support the management goals of a small-to medium-sized service company. You are likely to have to change the way you manage your information to get the full advantage of this system, but the changes are also sure to improve your understanding of what is profitable and what is not.

An industrial engineer by trade, Jon Benjamin offers specialized business and computer consulting services to Apple Lisa/Macintosh and IBM users in the San Francisco Bay Area.

DesignScope™

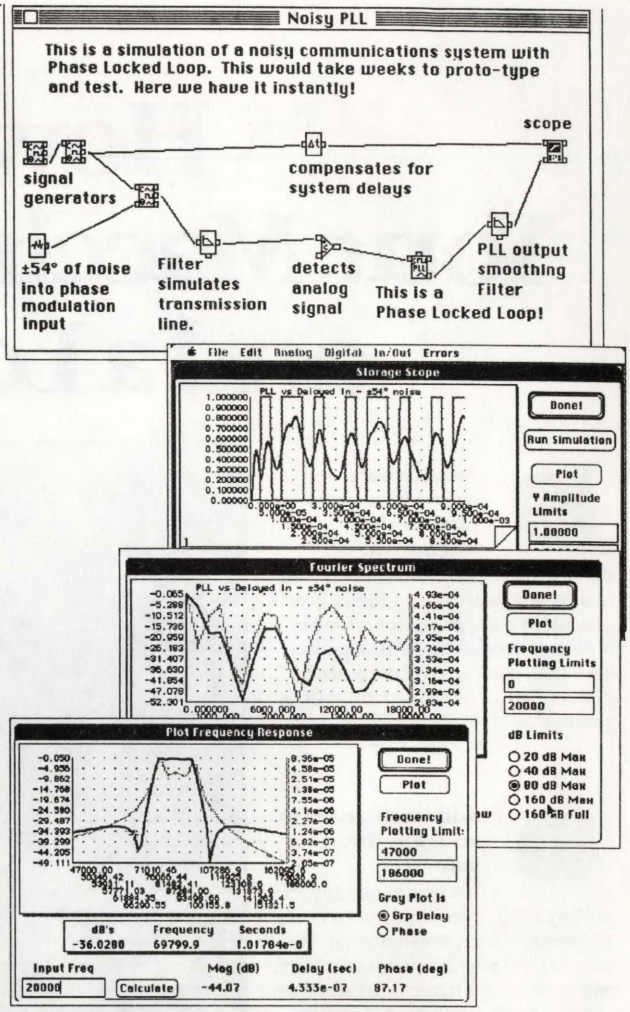


DesignScope is the first electronic system-design simulation that you use before designing component circuitry. Develop an optimum system without knowing component values in advance!

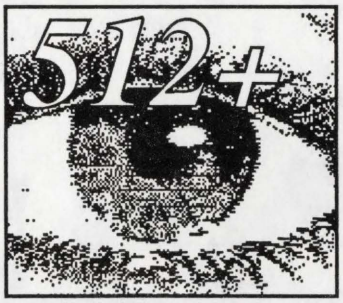
DesignScope allows you to place system blocks in a Mac window, connect them into a block diagram, assign them parameters, and finally, run a system simulation and view the waveforms (including filter responses and Fourier transforms). All this without specific component values or a prototype circuit design! The entire system can be changed in seconds and a new simulation run.

Version 1.1 allows data to be imported and exported using the clipboard or text files. Modules include: filters; VCO's; phase locked loops; oscilloscopes; differentiators; integrators; d flip–flops; amplifiers; one–shots; digital logic gates; comparators, and many more.

DesignScope requires 512K. It is $249.95. Demo disk: $10.00.



StatView 512+



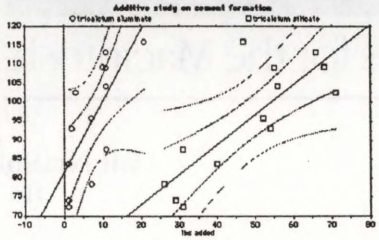
StatView *512+* is the most powerful Macintosh statistical analysis package available. In StatView *512+*, variables are defined, analyses are run, and graphic views are produced in a matter of minutes. Analysis results can be viewed in either paging windows (one page per variable set) or in a composite view (where results from different variables are placed on the same axes).

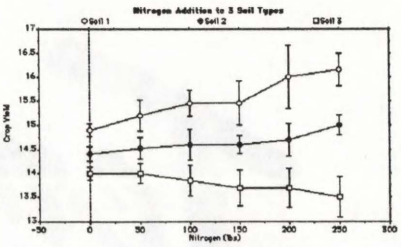
Interactivity is an often misused computer term. But with StatView *512+*, changes made without leaving the full–screen result window are reflected in the analysis results which automatically recalculate.

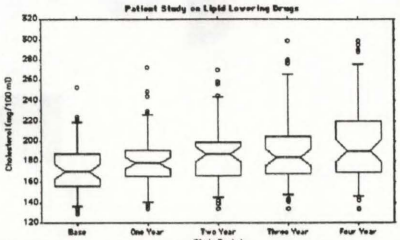
SAS, BMDP, and SPSS files can be imported as text files.

StatView *512+* requires 512K and 800K of disk drive capacity. It runs on new and old ROM's and takes advantage of extra RAM.

StatView *512+*
$349.95







mean; standard deviation; standard error; variance; coefficient of variation; median; mode; frequency distribution (up to 1,000 intervals); kurtosis; skewness; geometric mean; harmonic mean; percentiles; sum; sum-squared; count; minimum; maximum; missing values

one and two sample paired/unpaired t-tests; correlation coefficient; 1 through 16 Way ANOVA; Scheffe tests for One Way ANOVA; simple regression; mulitple regression; polynomial regression (with ANOVA tables and residuals); for regressions: confidence intervals, standardized beta coefficients, adjusted r^2, and Durbin–Watson; stepwise regression with repeated measures; contingency tables (1600 cell); user specified confidence intervals (t and normal distribution); compare percentiles

Chi-square (cross tabs; contingency tables); Wald-Wolfowitz Runs; Mann-Whitney U; Kolmogorov-Smirnov; Wilcoxon signed-rank; Kendall rank & Spearman rank-order correlation coefficient; Kruskall-Wallis; Friedman

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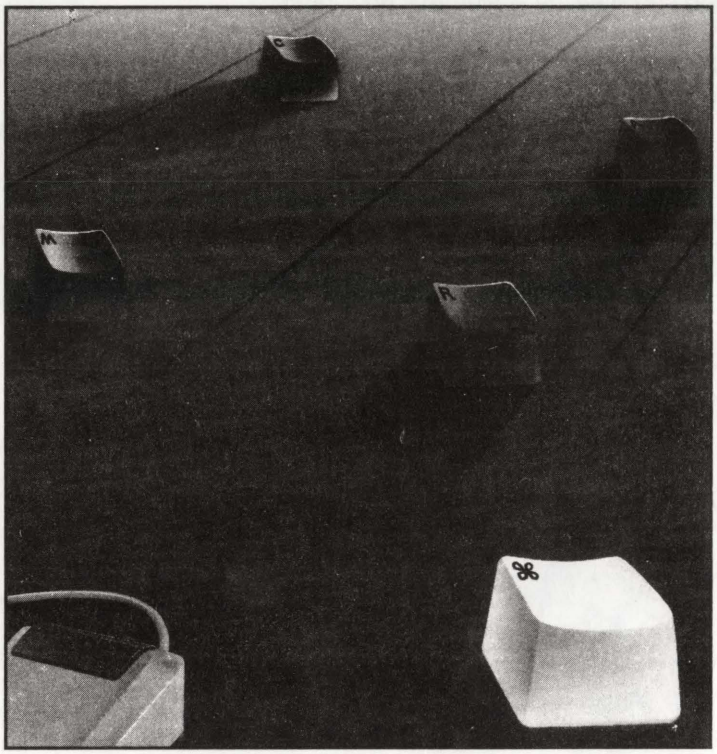

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Making your life easier with
Desk Accessories

by Patricia J. Dines

Exhausted from running around buying wonderful Christmas gifts for your friends and compatriots? Ready to buy yourself a little something, something to bring a smile, to get the year off to a good start, and to make your work at the computer a little easier?

How about a Desk Accessory? Useful, relatively inexpensive, easily installed, adding functionality to nearly any other software package, one of the truly unique aspects of the Macintosh environment... Sounds good! Ummm — but, ah, which one? There are so many!

And so there are. So I've gathered together for you a totally unscientific list of those Desk Accessories (or DAs) that to me stand out for their usefulness. Plus some important facts about DAs in general. In addition, Christie Benjamin offers a review of two DAs that struck her fancy — the *Smart Alarms* appointment calendar/reminder and *Le conjugueur* for conjugating French verbs. Dave Redhed also offers his review of the *MacLightning* spellchecker, along with tidbits about other spellcheckers.

And may all your DAs
be happy ones!

Commercial DAs*

• ArtGrabber:

Allows you to cut-and-paste MacPaint documents without exiting your program. Can select up to the size of screen. Includes Body Shop, clip art of various body parts. (Also on MacroMind Utility Disk.) *MacroMind; 1028 West Wolfren, Chicago, Illinois 60657; (312) 327-5821; List: $49.95*

• Calculator Construction Kit:

If the standard calculator Desk Accessory simply will not do — run this program to *build your own!* A large number of calculator functions available for creating a personalized calculator DA. *Dubl-Click Software; 18201 Gresham St., Northridge CA 91325; (818) 349-2758; List: $59*

• FileFinder:

To copy, delete, rename, and get info about files without leaving your program. (Includes the Font/DA Mover, for copying DAs.) *Nashobi Systems, Inc.; 175 Sudbury Rd., Concord Mass. 01742; (617) 371-2029 or (800) 842-4250; List: $24.95*

• QuickPaint:

From wherever you are, you can modify and copy-and-paste from a Paint document. Can scroll for a full page copy. Includes clip art files. *Enterset; 410 Townsend Street, San Francisco CA 94107; (415) 543-7644; List: $49*

• Sidekick:

Nine DAs, including a financial and business calculator with paper-tape printout, calendar, reminder alarm, phone log summary, credit card tracking file, simple text editor, and text file print spooler. This product takes a lot of disk space; a hard disk is recommended. Use version 1.1 or above. *Borland International, Inc.; 4585 Scotts Valley Dr., Scotts Valley CA 95066; (408) 438-8400. List: $99.95*

• Tempo:

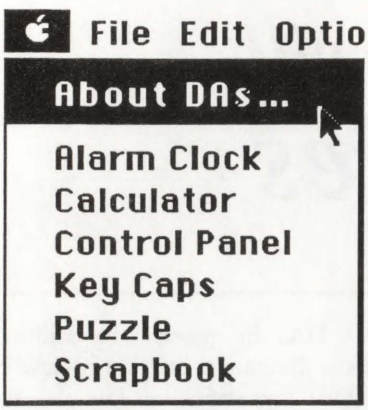
For those "power users" in the group, or anyone who wants to make their Mac work faster or easier, Tempo allows you to "program" those Apple/Command/Option key combinations that you've seen in other Mac XL programs. With Tempo, you define what series of keystrokes or mousestrokes you want to replay when a certain key combination is pressed (say, Apple-A). (These series are called "macros.") *Affinity Microsystems, Ltd.; 1050 Walnut St., Suite 425, Boulder CO 80302; (303) 442-4840 or (800) 367-6771; List: $99*

• Top Desk:

Seven DAs: Screen Saver (dims screen when not in use), View (to open four MacWrite or text documents at a time, and cut-and-paste between), Back Print (spools print jobs to ImageWriter I or II and lets you do other work while they are printing), Shorthand (macro program, to program a string of characters), Menu Key (used to define Command key equivalents for menu items), Encryption (for coding and decoding files, for security reasons), and Launch (Finder bypass program). Seems pretty bug-free. *Cortland Computer; P. O. Box 9916, Berkeley CA 94709; (415) 845-1142; List: $59.95*

continues on page 39

* All of the manufacturers of these commercial products say that their product has been tested on Mac XL and that there are no known problems.



Usage tips & hints

1. Desk Accessories are the software tools that are available to you when you pull down the Menu.
2. Apple shipped the Mac with seven standard Desk Accessories (or DAs): The Calculator, Clock, Note Pad, Scrapbook, Control Panel, Key Caps, and Puzzle. But it wasn't long before third-party developers started adding to these options. A lot. There are now available numerous DAs of many different varieties.
3. Some DAs are commercial products, some shareware, and some public domain. The commercial products cost more, but tend to be more polished and bug-free. Shareware products are often distributed through user groups, but payment is requested by the author if you find the product to be useful (and this sometimes gives you access to support and updates).

   Public domain programs are "in the public domain" (i.e., free) and are therefore likely to be less polished with possible bugs. These are often also available through user groups. One user group with a large selection of these shareware and public domain programs is Berkeley Macintosh Users Group, or BMUG (1442A Walnut Street, Berkeley, California 94709, (415) 549-2684). There are numerous other user groups with these programs, and you can also get many through *Compuserve*.
4. When you get a DA, your first step is to install it on the System disk from which you want to access it, or onto your hard disk.
5. Desk Accessories are (usually) installed onto a System disk using the Font/DA Mover program. Most DAs include this program. The Font/DA Mover is straightforward and simple to use. (Yes, it is also used for installing or removing fonts.)
6. When Desk Accessories are installed in the System File, they do increase the size of your System File. Therefore, you might want to delete those DAs that you do not use, to get more space. There is a hazard of crashing if your System File gets too large — be aware!
7. Always leave one DA in your System; there are harsh consequences if you ever delete the very last one.
8. When Desk Accessories are installed in the System File, they are available when, and only when, you start up the computer from that System File. This can be an asset – only install the Desk Accessories where you expect to need them – or you'll be in for a surprise – "I thought I had installed that one ... ? Oh, it was on another System!" (On a hard disk, this is not an issue, as there is only one System.)
9. It's possible to install a DA (or a font) directly to a program rather than directly to the System, and some people recommend this. Here's how: Go into Font/DA Mover and hold down the Option key while clicking Open. *All* files in the disk will then be listed, including program files. You can then copy a DA (or font) directly to the program. This technique avoids overloading the System and is best used when the DA or font is especially appropriate for that program (such as a spelling checker attached to a word processing program).
10. To access a Desk Accessory once it is installed, you merely pull down the Menu from wherever you are. What happens then depends on the DA – perhaps the Clock or Calculator will come up, or a dialog box, or some new items on the menu bar. Once in a DA, you can often cut and paste to the underlying application. The DA will also include a way to exit (perhaps with a Quit selection, or by clicking on the close box), at which point you will be returned to where you were when you summoned it.
11. **CAUTION:** There are two issues to consider when choosing a DA – its appropriateness for your needs AND the technical quality of the programming. There is some technical skill needed to make a program work while another is working; if this is not handled perfectly in development, there is a chance you might experience technical crashes, etc. If you're not sure about a new DA, it is a good habit to save (or even back up) your work before summoning up the DA. Also, it's useful to talk with someone who has used the DA and ask them if they have had any technical problems with it. (This is especially true with public domain and shareware programs.)

— PJD

Two smart DAs for the Mac XL: Smart Alarms & Le conjugueur

by Christie Benjamin

Smart Alarms is a personal reminder system and appointment calendar available from Imagine Software. I say *personal* reminder system because *they* do, but I see no reason why this useful desk accessory shouldn't be equally valuable in business, particularly for those who use their computers a great deal and must depend on themselves to remember their appointments. It runs on the Mac 512, MacPlus, and Mac XL. The system is really two desk accessories: a reminder accessory called *Smart Alarms* and an appointment calendar accessory called *Appointment Diary.*

Smart Alarms Developer
Imagine Software
2000 Center St. #1260
Berkeley, CA 94704
(415) 769-4033

Smart Alarms

Like many others, I am the type of person who is very good at writing down all the things that I am supposed to remember and never looking at them again. This does not work. *Smart Alarms* provides me with just what I need. It comes to *me*, tapping me on the shoulder as it were, and refuses to go away until I do something about it. Whether an application program is running at the time or not, the reminder appears in a dialog box *(Figure 1)* and the computer beeps. The audio reminder is particularly valuable for people like me who are not always at their computer at the appropriate moment. *"Smart Alarms"* allows up to 1,600 reminders to be stored at a time, from minutes to years. Reminders can be set for one time only, or can

continues

Shareware/Public Domain DAs**

• Delete File:

If all you need to do is delete files from your programs, this will save you space (it takes about 6K). *Shareware (Available: CompuServe; various user groups, including BMUG (Berkeley Macintosh Users Group), #60 Disk)*

• DiskInfo:

Full-featured Finder management DA — file searches, rename, delete, sort by name and date, etc. The many features are great, though they do make it a rather large DA (about 12K). (Note: This product and the prior one have been found to be pretty bug-free; there are other similar shareware products which have been reported to be less stable, so caution is advised.) *Shareware, by David Dunham (Available: CompuServe; various user groups, including BMUG (#11 Disk, DA Disk))*

• Fade to Black:

Dims screen when not in use, to you to set automatic screen dim time, in seconds or minutes. *Public domain; Brian L. Matthews (Available: CompuServe; various user groups, including BMUG (#11 Disk, DA Disk))*

• miniWriter:

Like MockWrite, but can change fonts. Includes on-disk documentation and templates. *Shareware, by David Dunham (of DiskInfo) (Available: CompuServe; various user groups, including BMUG (#42 Disk))*

• MockTerminal:

Basic terminal communication program. Does nearly everything you want — XMODEM, auto dial. Can use modem from whatever program you're in. Large DA. Fairly fast. Can't scroll back to see lines during session. *Shareware, by CE Software, Don Brown's company (Available: CompuServe; various user groups, including BMUG (#11 Disk, DA Disk))*

• MockWrite:

Simple text editor, single font, with tabs. Can create text files while within any application. *Shareware, by CE Software, Don Brown's company (Available: CompuServe; various user groups, including BMUG (#11 Disk, DA Disk))*

• Multi-Scrap:

The standard Scrapbook enhanced. Create different scrapbooks in different volumes for different purposes. Avoid the system slowdown that occurs when there are a lot of items in a single scrapbook. Also includes an option to store a smaller version of a graphic (unlike the standard scrapbook). *Shareware, by Bob Luce (Available: CompuServe; various user groups, including BMUG (#11 Disk, DA Disk).)*

Patricia J. Dines is Assistant Editor of The LisaTalk Report and has been writing articles to serve Lisa and Mac users since 1984. She would like to thank Steve Costa of BMUG for his assistance in writing this article.

** Steve Costa, BMUG's "Software Librarian," has used all but "Fade to Black" on the XL and knows of no problems. We at *The LisaTalk Report* have heard of conflicts between "Fade to Black" and games with startup screens. Backing up your hard disk before installation is especially recommended with this program.

recur from daily up to yearly, and there is even a "Don't bother me now, I'm busy" feature which returns the message automatically at a pre-determined time. Advance warnings can also be set *(Figure 2)*. Reminder messages are limited to 96 characters, which is more than sufficient for the vast majority of them. Longer entries are easily stored in the *Appointment Diary* accessory.

Appointment Diary

The Appointment Diary consists of the Calendar, the Note Page, and the "Diary" Menu *(Figure 3)*. The Calendar allows the user access to any day, month, or year desired. A Note Page is available for each day on the calendar. Each Note Page can be set up individually, or a uniform layout can be created and installed on all blank pages using the Auto Layout feature. The 32K available for each page makes the word "diary" appropriate for this accessory, and there is no significant slow down as the amount of text increases.

Unfortunately, when a date is chosen from the Calendar, the cursor goes to the *bottom* of the Note Page for that day. If the Note Page is more than one screen in length, one sees only the bottom of the page. I called Imagine Software to ask about this problem and found them to be very courteous and helpful. The problem is a bug in the program, and while it is a bit of a nuisance to have to scroll to the top of the page, it does not effect the overall performance of *Smart Alarms*. The company representative suggested using full page **width,** rather than **length,** when formatting the Note Page as a way around the problem. The Menu choices include About the Diary (basic company and copyright information), Auto Layout (used to create uniform Note Page formats), Set Reminder (used to convert diary entries into reminders), Print Day (which creates a hard copy of any day's Note Page), and Find (which searches all pages for any word, name, or string of text).

Documentation is generally sufficient, although the instructions for installation of the package will probably be confusing for anyone who is not well-acquainted with their own system, and there is no reminder that it is a good idea to back up the files, particularly the appointment file. Edit functions (cut, paste, etc.) work on the Note Page, but the package could be improved with the addition of Style types (bold, italic, etc.).

One other aspect of the *Smart Alarms* package points up Imagine Software's sensitivity to user needs. Included in the package is a copy of the public domain accessory "Sleep" which allows the computer to be left on for extended periods without creating screen burning problems. Reminders take precedence over "Sleep," and the computer will beep intermittently until it gets your attention.

I like *Smart Alarms* very much. It's easy to use and does exactly what it is intended to do. It is well worth the $49.95 price tag. Happy organizing!

Figure 1

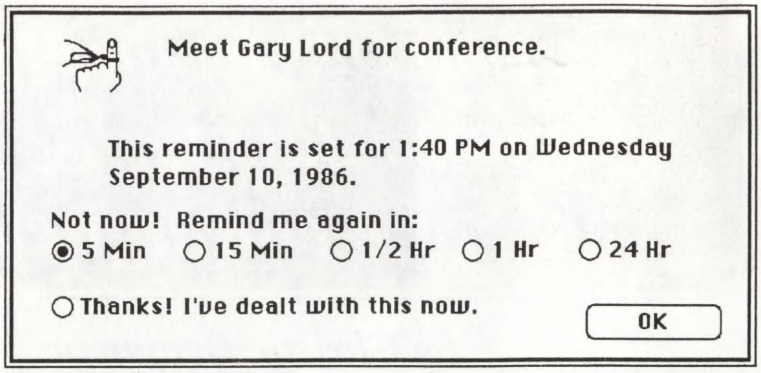


Figure 2

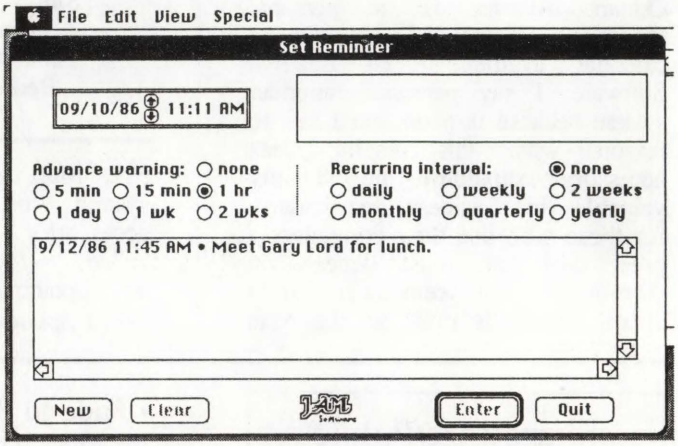
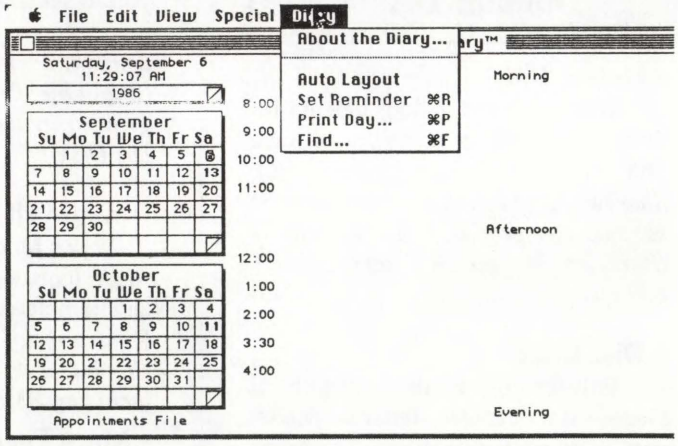


Figure 3



DA reviews continue

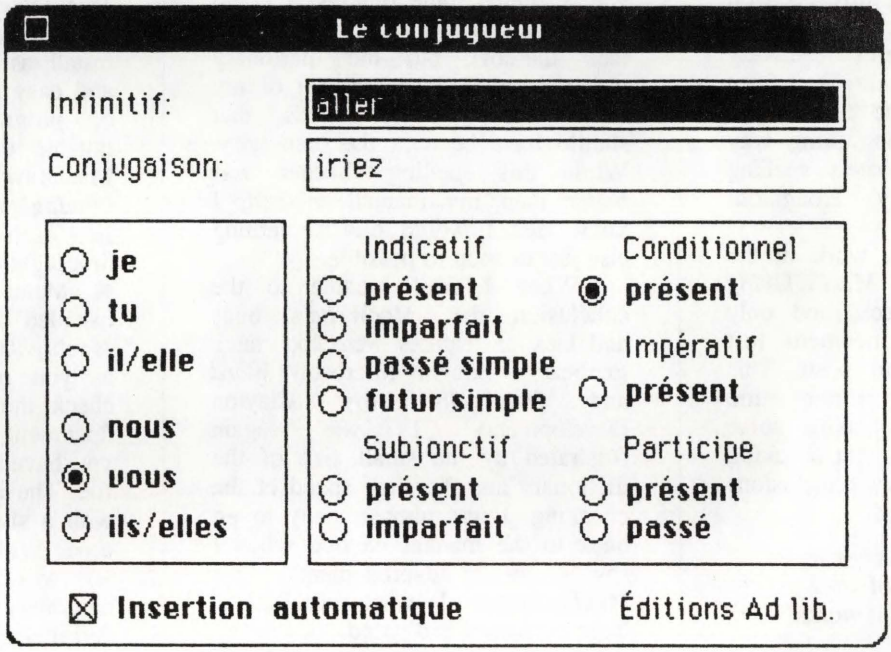
Le conjugueur for your Mac XL

If you write, translate into, or are studying French, you might find *Le conjugueur* desk accessory to be of value. From within any application program (like MS Word, Apple MacWrite, or Lotus Jazz), you can call up *Le conjugueur* to get the appropriate conjugation of a French verb. Simply type in the infinitive form of the verb, and mouse-select the person and tense desired.

Le conjugueur was written by a research team at Université Laval in Québec and was designed for and is of most use to those who have an ongoing association with the French language and some working know-ledge of it. All my work with *Le conjugueur* was done on a Macintosh XL with a 10-megabyte hard disk and a 2-megabyte RamStak memory expansion board. The program, however, was de-signed to run on any Macintosh.

Le conjugueur is installed through a program residing on the *Le conjugueur* disk (rather than the Mac system, which usually oversees installation of desk accessories). The installation into the menu is no particular problem, and the program is 24K, using 8K of memory when operating. Documentation is adequate both for installation and for use of the accessory. Although the original documentation is entirely in French, an English translation is provided. Screen messages are also entirely in French, but there are very few of them, and they will not be a problem for the type of user for whom this desk accessory was designed. The "Insertion automatic" feature or "automatic insertion" feature is particularly handy and time-saving, but can only insert one verb per opening of the accessory. This means that it must be reopened for each part of a compound verb.

Le conjugueur is fast and easy to use. Open the accessory and type in the infinitive of the verb that you want to conjugate. Click on the person and tense you desire, and the proper form of the verb appears instantly. Click on "Insertion automatic" feature and the verb appears in the text at the cursor location *(see illustration)*.



Le conjugueur uses conjugation rules and algorithms rather than a database of verbs. Although this markedly reduces program size, it also creates some significant but manageable problems. For example, if the infinitive of the verb to be conjugated is misspelled (either with an incorrect letter or a wrong or absent accent mark) *Le conjugueur* might not tell you. It might accept the infinitive as a different or new verb. The result, if you do not catch it, is a misspelled word in your text (i.e. "espere" instead of "espère", "appellez" instead of "appelez"). The advantage of not having a database is that, since all new verbs coming into the French language end in -er, *Le conjugueur* will conjugate any word ending in -er as though it were an existing verb, making this desk accessory far more flexible than most.

One or two semesters of college-level French or the equivalent are a minimum background requirement in order to use *Le conjugueur* to its best advantage. Since it handles only simple tenses, the user must have some knowledge of compound tenses (e.g., which auxiliary verb to use, what form of the auxiliary verb to use to produce the desired tense, what endings to use on the past participle, and when to use them, etc.).

Overall, I found *Le conjugueur* to be fast and easy to use, well worth the $49.95 purchase price. Over the last few months I have used it to type personal letters to a friend in France, to edit the manuscript for a textbook written in French, and to study verb formation for one of my own French classes. It has been of value in all of these endeavors without being intrusive or cumbersome. Anyone who uses French in their work, in their studies, or just for fun, will find *Le conjugueur* a valuable reference tool.

Le conjugueur Developer
Editions AD LIB
970, av. Salaberry
Quebec, QC G1R 2V3
Tel: (418) 529-9676
$69.95 CAN/$49.95$ US

Christie Benjamin has been an avid computer user for five years, using the family's Mac XL and Epson for general word processing, editing a French textbook, and other assorted projects.

DA reviews continue

MacLightning is OK,
but Houghton-Mifflin, where are you?

A review of *MacLightning*

by Dave Redhed

MacLightning
Target Software
14206 SW 136th Street
Miami, Fla. 33186
List: $99.95

Ever since I realized that I personally had to abandon *Lisa 7/7* for most of my writing, I have been in search of a good spelling checker under MacWorks. For those of you who have been on the same search, I will tell you right now that I haven't been very successful. *MacLightning™*, from Target Software, is the best I have found, but it is a long, long way from matching *LisaWrite*'s spelling checker (written by Houghton-Mifflin).

I now do all my work in the interactive mode of *MacLightning* and perform one check, and only one, of the entire document just before I am ready to print. This keeps me from getting too frustrated, while still making some use of the whole-document checking facilities. My summary conclusions about *MacLightning* are:

1) it has a very good dictionary;
2) its interactive mode of spell-checking is fast and it works reasonably well;
3) its speed of checking spelling in all or part of a document is acceptable; and
4) its facilities for correcting errors found while checking all or part of a document are unbelievably awkward and time-consuming.

I have heard of people who actually move documents from Mac to Lisa for spell-checking and then move them back to Mac. I can't believe that this approach would be faster than using *MacLightning*, but it certainly would be less trying on the nerves. Now for the full story of how I reached these conclusions, and others that I tried along the way.

My first encounter was with *Mac SpellRight* from Assimilation Process (while I was still using *MacWrite**). When I installed it, it came up as as a new menu item, raising my hopes for an experience similar to *LisaWrite*. My dream was shattered quite quickly. I could have lived with the speed (or the lack thereof), but the dictionary was too small. I spent most of my time fighting with words that should have been in the dictionary. While this spelling checker was better than my manual method, I knew that I would buy something else just as soon as possible.

When I finally came to the conclusion that *MacWrite*'s bugs and lack of features were too much to bear I bought Microsoft *Word* and *MacSpell+* (by Clayton Development). I was again frustrated by the small size of the dictionary and the slow speed of the checking. I was almost ready to go back to the manual method when I saw an advertisement for *MacLightning*. I was promised a large dictionary and speed.

I installed Version 1.0 of *MacLightning* in my XL and was eagerly awaiting this lightning-fast spelling check when the system hung. I tried several different approaches, but each time I tried to do the checking, it hung the system. I finally decided to read the manual and see what I was doing wrong, and I read the most dreaded words for all XL owners ...

"*MacLightning* does not support the Lisa or Macintosh XL."

I called Target Software and they assured me that version 2.0 would support the XL and that I would be receiving the upgrade very soon. It turned out to be a couple of months, but who's counting. They did make it work on the XL, but the statement to the contrary is still in the new manual. *MacLightning* is not as fast as advertised (60 words per second! Not even close!), but all of its functions work as advertised and, since I received the new version, I have never had a system hang due to *MacLightning*.

MacLightning is as easy to install as any other desk accessory and easy to activate from a number of programs (to me, the only notable exceptions are ThinkTank, MacDraw and MacDraft). Using *MacLightning* is a two-step process. In each session, you activate *MacLightning* via a selection in the Menu. A new menu is then installed for *MacLightning* options. *MacLightning* will check spelling as you type (interactive checking), check the spelling of the complete document or in a selection of text you have made, or check a text-only file. The interactive mode is toggled with a single menu selection at any time. With a megabyte of memory you will always run with the entire dictionary in memory, and this is definitely the preferable mode of operation.

Interactive Checking

In the interactive mode of checking the program checks each word as you finish it (when you type a blank or nonalphabetic character), and beeps if there is an error. For those who are apprehensive about this kind of checking (as I was), I can only advise that you to try it for a while. You might like it better than you thought. I do not believe that you will be able to detect any slow-down of the system because it does the checking as you type.

After hearing a beep, typically, you will observe the error and just backspace and correct it. If you wish, you can ignore the beep and finish the sentence and then go back and fix the problem. If you are not sure what the problem is, you can get the checker's help with a two-or three-step process using Command-keys. These steps go about as quickly as one would expect that they could. Certainly it is much, much faster and more convenient than thumbing through a dictionary in book form.

My biggest problem with the interactive mode is the way *MacLightning* handles certain problems. Here's my list of complaints:

(1) If I get a beep, type at least one additional letter after the misspelled word, backspace to the offending letters, and re-type, it beeps again. This is because it requires that I re-type the whole misspelled word, not just from the mistake forward; e.g., having typed "sqme as" instead of "same as", and backspaced to the "q" and corrected, it will now think that I have typed "ame" as a word. Had I backspaced before typing the "as", I would not have received a beep when typing "ame" for "qme".

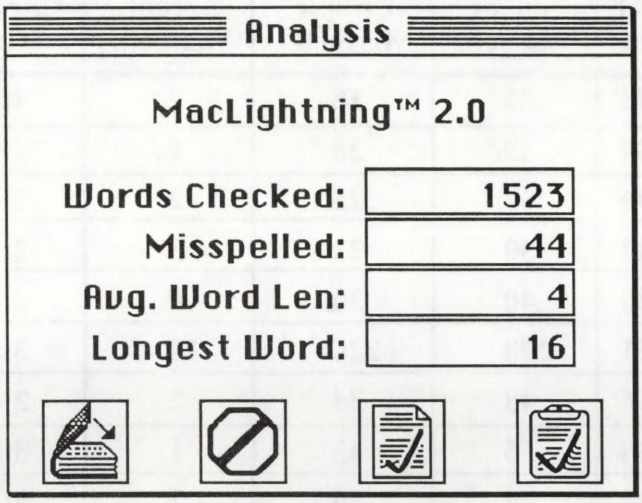
(2) If I use the mouse to go back and correct an offending set of letters which do not form a legitimate word, it will beep, for the same reason as described in (1).

I have come to prefer the interactive mode, but I spend more time than I should ignoring beeps.

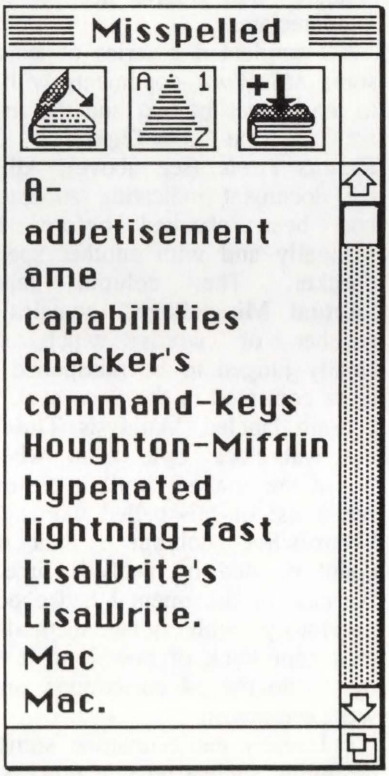
Ed. Note: Although we have not tested for 100% compatibility with *MacLightning* on the Mac XL, we believe the following programs are running well on the Mac XL with *MacLightning:* ***MacWrite, MS Word, MacPaint, MS File, OverVUE,*** *and* ***Jazz.***

Check Selected Text

The second mode of checking will check the current selected text in a document. While it is checking, this is the dialog box that is displayed:



When it has finished, the misspelled words are shown in this display:



This list may be scrolled to allow you to get a general idea of what was found. The initial list has each occurrence of a misspelling in the order found, and clicking on the A-1-Z icon will sort the words in alphabetical order and remove all duplicates. At this point, you can search the list to locate all items that you determine are actual misspellings or items that you wish to add to the dictionary. Should you be so foolish as to have misspelled a word and now wish to correct it, here are the steps you must go through:

(1) Double-click on the word in the "**Misspelled**" window, which will result in a display of a segment of the dictionary with *MacLightning*'s best guess at the correct spelling highlighted.

(2) If you like their guess, click on it. If you do not, you may look through the dictionary until you find the right word and click on that one. Or, if you now know what it should be, you may edit the line in the top of the dictionary display.

(3) Next you click on the icon in the dictionary display which indicates that you are ready to paste the correction into the document. This brings up the standard "**Change**" dialog box with the misspelled word and the corrected word already in the appropriate places.

(4) You should click on "**Find,**" and the search facility will locate the first occurrence of the misspelled word in the selected portion of the text. This allows you to observe the word in its context.

(5) If it is misspelled, you should click "**Change, then find**" to change this one and look for the next occurrence. Of course, if you conclude that this occurrence is not a misspelling, you can just "**Find**" the next one.

(6) This sequence must be repeated until the "**Change, then Find**" cannot find another occurrence. **Special note:** If you are brave enough, you can replace steps 4, 5, and 6 by selecting "**Change All.**" You might not get what you want, but it certainly will speed up the process.

MacLightning Test Results Table

No. of Char.	No. of Words	No. of Misspell.	No. of Unique Misspell.	Actual Misspell.	Checking Time	Average Wds/Sec
19,979	3,243	22	18	2	1:48	31.7
22,163	3,684	49	38	1	2:06	29.2
24,754	3,396	37	25	2	1:53	30.0
25,816	4,347	30	23	3	2:30	29.0
29,097	4,780	40	30	0	2:46	28.8
*32,350	4,651	278	226	14	3:30	22.2
33,489	4,666	48	34	2	2:40	29.1
35,006	5,858	56	43	1	3:24	28.7
51,869	8,874	74	56	3	5:17	28.0

(7) Once the corrections for a word are done, you must go to the Menu and select the "**Misspelled**" item (or you can issue a Command-5).

Probably the most significant problem with this process (other than its length) is that each misspelled word will require a search of the entire document, regardless of how many occurrences of the misspelling or where they are placed in the document. The instruction manual is careful to explain that the search facility used is the one belonging to the word processor, and *MacLightning* is not responsible for its speed. That might be, but *MacLightning* is certainly responsible for such an abominable design for correcting misspellings.

I have observed what I think is a bug of some sort in *MacLightning*. If a misspelled word occurs at the end of a sentence, it shows up in the misspelled list with the period at the end of the sentence attached to the word. *MacLightning* finds the appropriate best-guess, but when it is pasted in, the replacement has no period and you have to type it in yourself. On second thought, maybe this is a "feature" that I have not yet come to appreciate.

I conducted a series of tests on some *MS Word* documents with six to ten pages of text and the results are in the ***MacLightning Test Results Table*** (see above). All but the document indicating an asterisk had been checked before, both manually and with another spelling checker. The column labeled "**Actual Misspellings**" contains the number of words which were finally judged to be misspelled and were corrected in the document. The column labeled "**Analysis Time**" is the wall-clock time from when I began the analysis until it presented me a list of misspelled words. The "**Words/Sec**" column is their word count divided by analysis time. In the case of document I had checked previously with other methods, I also kept track of how long it took me to do the 14 corrections, and it was 20 minutes!

I really can't imagine someone designing such a terrible process for correcting spelling errors. So, I have speculated that the Desk Accessory interface to the word processor has constrained the designers. I am now waiting for a built-in spelling checker for *MS Word*, hoping that I can return to the capabilities I had two years ago with *LisaWrite*. Version 3.0 of *Word* seems to promise what I want, but I have not yet had an upgrade offer.

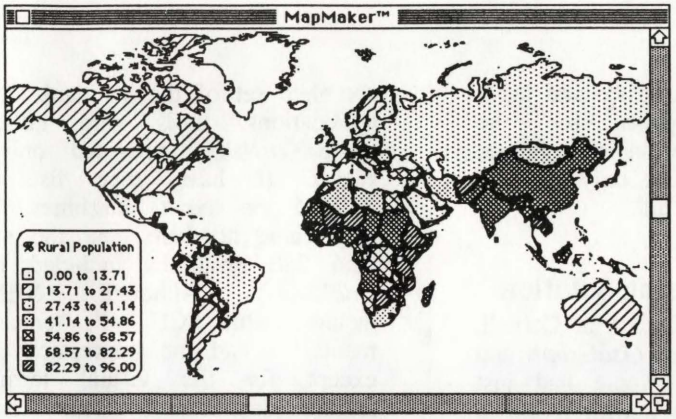
Since I have not presented you with a comprehensive review of *MacLightning* I should mention my omissions. I have not tried the capability of checking text-only files. *MacLightning* has a phonetic spelling look-up facility which I tried in their tutorial example, but have not used since. There is a very nice facility for looking up words in the dictionary much as you would using a dictionary in book form. Target Software also has other dictionaries and a thesaurus which I have not tried either. As I said earlier, until something better comes along, I will make do with *MacLightning* — but all the while I will be muttering, "Houghton-Mifflin, where are you?"

* *MacSpellRight only works with MacWrite.*

One of the first Lisa 7/7 and ToolKit users, Dave Redhed has organized and published periodicals for ToolKit users and has contributed numerous editorials on behalf of Lisa/Mac XL users in The MACazine Orphan Support column and The LisaTalk Report.

MapMaker Gives You The World

Introducing MapMaker for the Apple Macintosh 512K, Plus, Mac XL and Lisa, by Select Micro Systems



Complete Map Making System

The MapMaker package includes everything you need to produce professional quality maps in minutes. Create maps of the United States by any individual state, group of states, or the entire country. Create county maps for any state or group of states, or entire countries of the world separately or in any combination.

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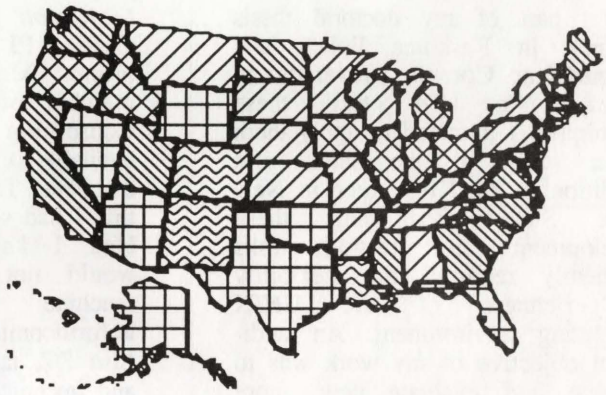
Macintosh Simplicity

Point and click — that's all it takes to create a map with MapMaker. Click on the areas you want to include, the patterns and colors to be used, and the fonts and styles for text and labels. The screen shows exactly how your map will appear when printed.

Advanced MapMaker Features

- Includes "Boundary Files" for the U.S. by State, States by County, the World by Country, 90 U.S. metro (MSA) area points, 169 World Capital City points (4 disks)
- Includes assorted Census population data
- Can create custom map areas by combining states, counties, etc.
- Reads/Writes MacPaint™ files, Imports/Exports data files
- Flexible map display scaling/positioning
- Interactive "Zoom" feature
- ImageWriter, LaserWriter, and FULL COLOR PRINTING on the ImageWriter II
- Complete on-line help, 63-Page user manual, and more!



Your Data Or Ours

MapMaker comes with 58 demographic and population statistics for each state, 13 for each and every county in the U.S., and 20 more population statistics for each of 176 countries of the world. Many other map "boundary files" and population data sets are available. Also, you can enter your own data or "import" it from other Macintosh data bases and spreadsheets.

Any Size, Any Page Location

Just specify a rectangle on the page, and let MapMaker create a custom map of the areas you need in the exact page location and size you need (up to full 8-1/2" x 11"). Even customize with pasted-in MacPaint™ drawings, logos, clip art, etc.!

To Order: Send check or money order for $295.00 (CA State residents add 6% tax) to NetSolutions Micro Service & Sales, 8 Mariposa Avenue, San Anselmo, California 94960, or phone in your order to (800) 523-6549; in Calif. (415) 454-7660.

Name _____

Company _____

Address _____

_____

City _____

State _____ Zip _____

Manufactured by: Select Micro Systems, 2717 Crescent Drive, Yorktown Heights, New York 10598

Lisa: A cost-effective UNIX machine

Analysis of soil erosion and land use in the Tennessee Valley

by Wolfgang Naegeli

SUMMARY: *In this article, Wolfgang Naegeli describes his experience in designing, implementing, and using a Lisa-based system, including UniPlus+, Lisa 7/7, and MacWorks XL, to analyze data from the National Resources Inventory and to prepare reports and visual materials to convey the results to planners and decision makers.*

Computing Objectives Require UNIX

In the spring of 1984 I was developing techniques and procedures to analyze data from the *National Resources Inventories (NRIs)* part of my doctoral thesis research in Resource Policy and Planning at Cornell University in Ithaca, NY. To test these techniques, I intended to apply them in a study of the status and condition of land resources in New York State. Performing these development and testing tasks efficiently required the flexibility and richness of the UNIX computing environment. An additional objective of my work was to develop and evaluate new, more effective means to communicate the resulting resource information to regional planners, decision makers, and the general public. This part of the work required high-quality graphics and drafting capabilities.

A workstation from Sun Microsystems would have been ideal for the project because it offered professional quality graphics under the UNIX environment. Unfortunately the cost of a Sun workstation with all the necessary hardware and software, about $30,000, would have been prohibitive. Moreover, I was concerned about the risk of purchasing from an up-start company like Sun that might not survive in the marketplace and leave me without support for the expensive machine in the future. Soon, I realized that only Apple's Lisa 2 would fit my bill.

Lisa: A Promising Solution

I had access to a Lisa 1 at Cornell, and I liked the way *LisaGraph* and *LisaDraw* worked. Apple had just introduced the Lisa 2 with promises of a great deal of wonderful software and hardware to follow. The Lisa 2 was the only reasonably-priced micro system with a good UNIX implementation and capable of producing high-quality color graphics through the combination of *LisaGraph* and *LisaDraw* with the Canon PJ-1080A color ink jet printer. Moreover, Cornell was a member of the Apple University Consortium and the Lisa was available to me at a substantial discount. Today, I am embarrassed that I had so much trust in Apple... Had I known then that Apple would not only discontinue the machine but also be so unforthcoming with bug fixes for *Lisa 7/7*, updates to *MacWorks XL*, and technical specs for third-party developers, I probably would have leased a Lisa to do the graphics and bought other hardware to run UNIX.

Choosing Between XENIX and UniPlus+

Once I made the decision to purchase the Lisa, I had to choose between *XENIX*, from the Santa Cruz Operation (SCO), and *UniPlus+*, from UniSoft (distributed by UniPress). After doing some research on both products, I was convinced that *UniPlus+* had a clear edge over *XENIX*, particularly for research applications. For one thing, *UniPlus+* provided an almost complete set of the standard UNIX applications, tools, and utilities, while *XENIX* provided only a subset. (I have seen lists for XENIX on other machines, and they came nowhere near the more than 250 programs included with *UniPlus+*.) Although XENIX includes what SCO calls "enhancements," I had the impression that, except for the virtual terminal feature (described by Tim Monroe in the last issue of *The LisaTalk Report*), these would be of special value to novice users only. Menus, for example, tend to become cumbersome as you gain experience and learn how to work faster by issuing commands directly or by writing your own *shell* scripts. *Shell* scripts provided by SCO facilitate some system administration tasks, but it is relatively easy to write similar scripts that more closely match your unique needs. *UniPlus+* did not have as broad a selection of application packages as *XENIX*, but of the types of software I really needed (which I will describe below) *UniPlus+* had the best.

In addition, *XENIX* was based on UNIX *System III*. *UniPlus+* had already been upgraded to *System V*, an indication that UniPress was trying harder and probably would make other new releases available sooner than SCO. (*System V* is now a de facto industry standard. SCO never released a *System V*-compatible version of *XENIX* for the *Lisa*.) People answering the telephone at UniPress were generally friendlier, much more responsive, and better informed than those at SCO. UniPress had an 800 number, a fact which I interpreted as an indication of concern for customer satisfaction. I understand that SCO now also provides an 800 hotline as part of their maintenance agreement.

One of the key reasons for my choice of *UniPlus+* was the availability of *EMACS*, "the extensible, customizable, self-documenting display editor," under *UniPlus+*.The evolution of *EMACS* resembles the evolution of UNIX in many respects. *EMACS* was conceived by Richard Stallman and his colleagues at the Massachussetts Institute of Technology. It was first implemented on a PDP-10 (mini-computer) under *ITS*, MIT's *Incompatible Timesharing System.* Like UNIX, *EMACS* was made available to universities and research institutions, which in turn provided feedback for its further development, implemented it on a variety of machines, and added to its rich function library.

EMACS, the Power Editor for UNIX

The UniPress version of *EMACS* was originally written for UNIX by James Gosling at Carnegie Mellon University. *UniPress EMACS* provides one of the most powerful editing environments available on any computer. UNIX commands can be issued from within *EMACS*, and UNIX or user programs can be called to process or manipulate text being edited. For example, when writing a program using *EMACS*, you can compile without leaving the editor. Error messages are displayed in a separate window, and *EMACS* automatically moves the cursor to the objectionable instruction in the source window. After correcting it, a keystroke moves the cursor to the next error, etc.

EMACS allows editing of multiple files in multiple windows. It provides virtually every feature found on any other editor. In addition, specialized functions that are not provided can be implemented by the user with relatively little effort. In many respects, *EMACS* windows are more useful than the virtual terminals of *XENIX*. As many windows as will fit on the screen can be displayed simultaneously. Thus you can see several files simultaneously, whereas only one virtual terminal screen can be seen at a time under XENIX. Moreover, it is very easy to move text between windows and files. Furthermore, one of the *EMACS* windows can be a *shell* window, which essentially is a virtual terminal. It runs as a second process. In this window you can issue UNIX commands, edit their output, and cut and paste anything from it into the documents you are editing in other windows. If you make an error in a complex UNIX command, you don't need to retype it. Just use the normal editing features to correct it. You can also use windows to manage files by editing directory listings, to review help in a very comprehensive on-line help datbase, or to add your own help text and notes to the database.

The latest release of UniPress EMACS even allows you to have multiple shell windows. Thus, you get virtual terminals courtesy of EMACS rather than the console driver, and they have all the additional power provided by the editor. While this version is available for a number of UNIX machines, UniPress unfortunately has no plans to upgrade the Lisa version unless there is more demand for it. Perhaps, a Lisa UNIX user group could change this. [Wolfgang has corresponded with several Lisa-UNIX users about organizing such a group. If you would like more information, contact *The LisaTalk Report*, (415) 454-7607. Ed.]

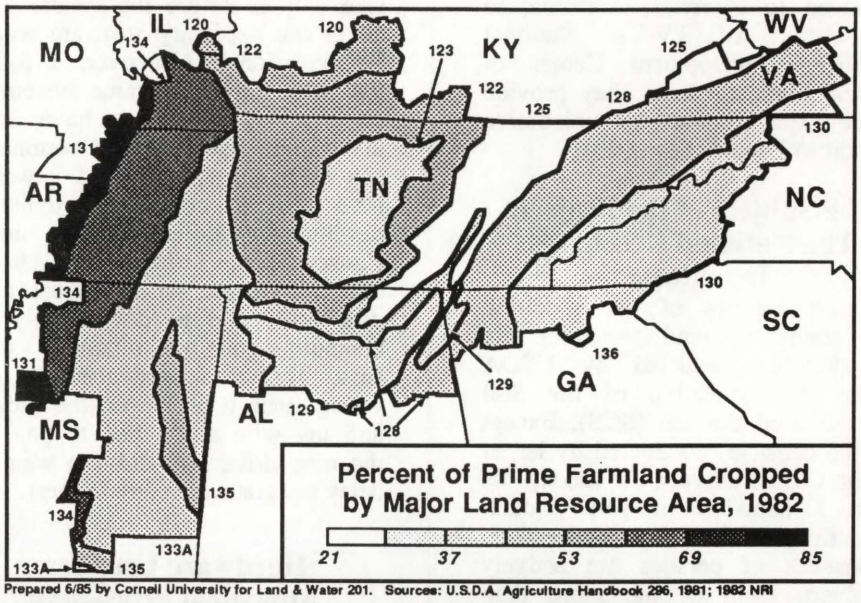


Figure 1. This map was digitized with the mouse in LisaDraw. A transparent acetate grid overlay on the original was used to visually reference state and Major Land Resource Area boundaries to the LisaDraw screen grid. Annotations and shading were added after reduction to about 15 percent of original size. For printing on the LaserWriter the map was moved to MacDraw via the Lisa scrapbook tool.

Changed Research Plan Demands Greater Performance

Between my ordering the Lisa and its delivery, the Tennessee Valley Authority (TVA) approached me with a request to support Land & Water 201, a cooperative resource conservation program of the seven Tennessee Valley states, the U.S. Department of Agriculture, and TVA. They offered me a research grant if I was willing to focus my model study on the 201 counties in the Tennessee Valley Region rather than on the State of New York. This implied more than a doubling of the amount of data to be processed, which seemed excessive for the capacity of the Lisa. However, TVA promised access to their mainframes and to a *VAX*

11/750. I accepted, and my wife and I moved to Florence, Alabama, to be close to TVA's National Fertilizer Development Center in Muscle Shoals; there, they provide office space and administrative support to Land & Water 201.

The Subject of the Project: The National Resources Inventories

National surveys of the condition and status of land resources are periodically conducted by USDA under the leadership of the Soil Conservation Service (SCS). Except for the censuses conducted by larger nations, these surveys are among the most l abor-inte n sive data-collection efforts ever undertaken. Thousands of persons are actively involved. Each of the more than 3,000 SCS offices must absorb a heavy workload in addition to its regular duties. Work on the most recent of these national surveys, the *1982 National Resources Inventory*, is estimated to have cost $17 million dollars during 1982, the peak year of data collection, with lesser amounts spent before and after that year.

For the *1982 NRI*, field observations of some 60 variables were made at more than 840,000 locations, and about as many additional variables were computed or compiled from other sources in the office. Meetings with experts from several other agencies were held in every county to assess potential land uses and efforts that would be required to implement them. For each of its national resource surveys, SCS publishes a statistical bulletin of summary information. However, NRI data can answer many questions not addressed in these bulletins. Therefore I obtained the raw data on magnetic tapes.

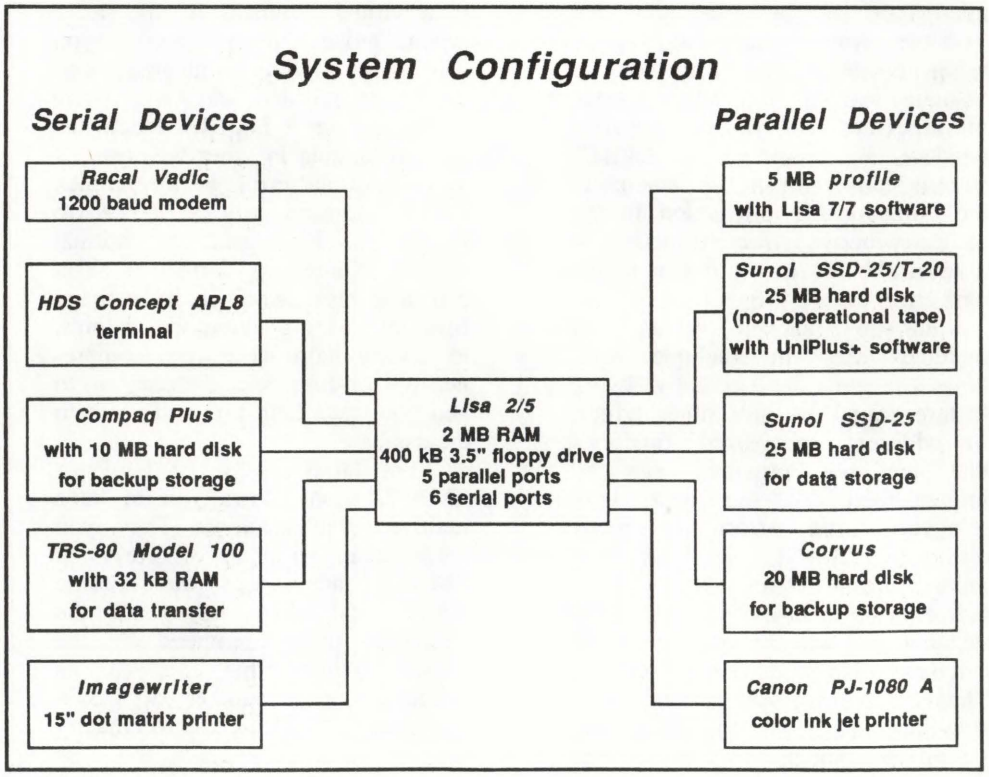
Lisa Had to Do Most of the Work After All

I intended to develop processor-intensive programs on the Lisa and to transfer them to the larger TVA computers for execution. However, installation of the promised VAX hardware was delayed, and my first experiences with the TVA bureaucracy indicated that it might take months before the system with all of the necessary software would be operational. Moreover, I found the IBM 3081 mainframe system to be overloaded and to have such dismal response time and communications that I soon figured it would take years to complete a dynamic development project such as mine. Consequently, I had little choice but to purchase an additional hard disk drive and to do virtually all computing on the relatively slow Lisa. This was particularly aggravating since it prolonged the project and my wife and I had to pay for the disk drive (we did not want to delay my graduation any further).

Hardware Used for Analytical Processing

The Lisa 2 was configured with 1 MB of RAM (later upgraded to 2 MB with an AST RamStak board), an internal 400 KB diskette drive, and five parallel and six serial communications ports (using two Apple 2-port parallel expansion cards and one TecMar 4-port serial card). Peripherals included two Sunol 25 MB hard disk drives, a 15'' Imagewriter printer, a Human Designed Systems Concept APL8 terminal, and a Racal-Vadic 1200 Baud modem. One of the disk drives contained about 12 MB of UNIX and other commercial software (which I will describe below), about 2 MB of my own software, and a 2 MB swap area. The remaining space was allocated to temporary file storage. Project data was stored on the second disk drive. To fit it all into this limited space I had to use several data compression techniques. It was particularly difficult to handle the large volume of data because UniSoft failed to deliver the promised driver software for the Sun*Tape quarter-inch cartridge tape drive. I therefore had to use a Corvus 20 MB hard disk drive and the 10 MB hard disk of a Compaq Plus borrowed from Land & Water 201 for back-up storage.

I used the Concept terminal for most of the program development and word processing, while the Lisa screen and keyboard served primarily as a system console. The Concept terminal is popular among UNIX power users because of its advanced capabilities, which include networking among up to three host computers through independent



screen windows, multi-screen memory, and a large number of programmable functions. For example, my customized *EMACS* detects when I am logged in on the Concept and instantly programs it for word processing, assigning 60 *EMACS* functions to its function keys. This configuration allows much faster editing than is possible with the Lisa keyboard.

Preparing the Data for Use on the Lisa

Because of the quantity of the data and because of some technical problems, it was a major challenge to import to the Lisa all the data elements I needed. I received the data for the entire U.S. from the Soil Conservation Service on 9-track tapes. The Lisa, of course, could not read this type of tape. To reduce the huge amount of data to what I needed and to a quantity the Lisa could handle, I pre-processed the EBCDIC tapes under *MVS* on one of TVA's IBM 3081 mainframe computers in Chattanooga, TN. It proved to be quickest to develop FORTRAN programs and job control language for the IBM on the Lisa and to enter them from Florence via a TELENET dial-up link through *TSO*.

Pre-processing consisted of the following:

- Selecting the desired fixed-length data records
- Selecting the desired fields (or data categories) from these records
- Testing the data for data integrity and consistency
- Converting to variable-length fields
- Recoding for increased storage efficiency and response time
- Formating for /rdb, the data base management system on the Lisa
- Sorting by record type and geographical area into a number of different files
- Writing these files to a standard ASCII 9-track tape to get a more generic format that I could easily read on most minicomputers.

To perform these and some related tasks, I wrote a modular program on the Lisa in FORTRAN 77 using*SVS FORTRAN* by Silicon Valley Software. SVS FORTRAN is available for a number of 68000 machines and MS-DOS. The Lisa version is sold by UniPress who is also responsible for user support. I got an upgrade once that fixed a few minor bugs and perhaps improved performance a little bit. I don't think UniPress would port any further updates to the Lisa, but the current version is OK. I had no major problems compiling the code on the IBM 3081, but to my surprise, I found that IBM's VS FORTRAN had more restrictive system limitations.

Importing the Data to the Lisa

Moving the data into the Lisa itself was the trickiest part of the whole process. Because of the large volume of data, transmitting it over the phone lines with a 1200 Baud modem would have taken more than one day's time. Furthermore, error-free data was absolutely essential, but I lacked the time to implement *Kermit*, an error-checking telecommunications program. For these reasons I wrote the selected and pre-processed data records back to tape instead of attempting to transmit it directly to the Lisa.

My main problem, however, was a serious bug in UniSoft's implementation of *UniPlus+* on the Lisa. Probably because of inadequate buffering and interrupt priority of the serial communication ports, a fraction of the incoming data is inevitably lost if it arrives much faster than at the rate of rapid typing. After various trials my final solution was a two-step procedure:

Step One: I heard that the International Fertilizer Development Center in Muscle Shoals had a VAX. Rex Clayton and Cynthia Zickos, who operate that computer, were very kind and offered their help despite their many other duties. I gave them the latest releases of *VMS Kermit* and *MS-DOS Kermit* and brought in a Compaq Plus (an IBM PC-XT compatible portable computer with internal 10 MB hard disk). In the first step they transferred as much of my data as would fit on the Compaq's disk.

Step Two: I then used *Crosstalk XVI* on the Compaq and *cu* on the Lisa to upload the data. *Crosstalk* has an 'echo wait' transmission mode in which it stops after sending each character until the host echos it. Thus, the effective transmission speed was reduced from 9600 Baud to about 1500 Baud, but the echo assured that not a single character was lost. Normally, *cu* is required on both machines to transmit files. Because it was not available for MS-DOS and I had no other communications package on the Lisa, I had to fool *cu* into thinking that it was receiving data from another *cu* by manually issuing from the Compaq the escape and file redirection sequences that a sending *cu* would automatically have produced. Albeit cumbersome, the whole procedure worked flawlessly.

To import all the data, the two steps had to be repeated. To preserve enough working disk space on the Lisa, I compressed the raw data with *pack*, which reduced file size by more than 60 percent.

Software Used in the UNIX Environment

The */rdb* database tools by Rod Manis, distributed by UniPress, were the backbone of the software for manipulating the data. Designed to allow implementation of fully relational databases, */rdb* provides some 50 utilities, most of which can act as filters in a pipeline. (A UNIX pipe is a mechanism for interprocess communication in which output from one program is channeled to become input for another program, whose output may in turn be channeled into a third program, and so on. Such programs that act upon a stream of data flowing through the pipeline are often called "filters." For example, the steps or filters of a simple pipeline might do the following: Select all observations

for close-grown crops; compute annual soil loss for each observation; sort observations by crop species; sum soil loss and compute average for each species; replace species code by species name; format output for printing. The */rdb* filters can be interfaced very easily and effectively with standard UNIX utilities, such as *pcat, awk, sort, sed, grep, cat, head, tail, paste, wc, csplit,* and custom filters written in *C*.

I performed most of the processing and querying of the database with modular *Bourne* or *C-shell* scripts, which typically initiated a series of pipelines, each invoking six to twelve filters. This approach turned out to be very powerful and flexible in handling the huge database. Solutions to most new problems usually required little programming effort. Often I only needed to customize and recombine existing scripts and modules. In developing and testing new procedures, *SCCS, make, UniPress EMACS, more,* and *see* were among the most important packages and utilities that I used in addition to those already mentioned.

The *Q-calc* Spreadsheet

The standard UNIX arbitrary precision arithmetic package *dc,* and *Q-calc,* a very powerful spreadsheet package from QSP (distributed for the Lisa by UniPress) served for quick interactive analyses. *Q-calc* has 999 rows and more than 18,000 columns. Available RAM precludes the use of all 18 million cells, but under the current *UniPlus+* version (with the 2 MB RAM system configuration), nearly 1.4 MB are available as data space, which allows for a very sizable spreadsheet.

If the rich set of *Q-calc's* built-in functions and its macro and linking capabilities are not enough, you can invoke from within *Q-calc* UNIX utilities or specially written programs residing under UNIX to process the value in a cell or range of cells. For example, if you had the names of your 20 most important customers in one column of your *Q-calc* spreadsheet, you could invoke a database retrieval program that looks up all the orders received from each of these customers during the past two years. You could then pipe this output into another UNIX program that computes quarterly averages for each customer and places the results into the next eight columns of your spreadsheet. Given that data, you could use *Q-calc* to quickly do a series of what-if projections of your future sales.

Text Processing

To prepare reports, I used *EMACS* in conjunction with the table preprocessor *tbl,* the formatting program *nroff,* and a custom-written postprocessor that enabled Imagewriter output of tables and special foreign language characters. (I created downloadable characters with umlauts since I didn't like the appearance of those contained in the Imagewriter's native fonts.)

tbl allows you to specify the general outline of a table and to enter text and data without having to struggle with its arrangement in each row and column. *tbl* will do the nitty-gritty work for you. If you have ever created a table on a typewriter or even in *LisaWrite* or *MS Word,* you will appreciate this service very much. It is particularly convenient if you have several tables with the same basic outline.

In modern usage you might call *nroff* a specifications-driven desktop publishing program. So-called "dot commands" are interspersed with the input text to tell *nroff* how to format it. For example ".p" could mean "start a new paragraph." Definitions for the exact meaning of the dot commands, such as how much to indent the first line of the paragraph, spacing, etc., are kept in a separate specifications file. By using specifications files containing different definitions of the same dot commands, you can print out a text in different formats without changing the original text file. Such specifications files are comparable, but generally more powerful than the "style sheets" available in some of the newer Macintosh word processors. *nroff* and the macro packages that come with it include formatting for multiple columns, footnotes, indexes, tables of contents, and automatic hyphenation.

nroff's twin program, *troff,* creates output for typesetting machines. Adobe Systems, Inc., sells *Transcript,* a program that converts *troff* output to *Postscript* output, which could be sent to the LaserWriter. *Transcript* is not available for Lisa UNIX, but it should be easy to import and compile the source code written in C. However, Adobe wants $1700 for the source code. A Lisa UNIX User Group might be able to work out a deal with Adobe to make binary *Transcript* available to its members for a reasonable price.

A Hard Working Lisa

My typical analyses involved the computing of median soil erosion factors and erosion rates for many different kinds of land use, soil types, and geographical areas. Each analysis took between 5 and 60 hours of processing time, and I chained them so that a new analysis would start as soon as the previous one finished. While these jobs were running at lowest priority in the "background," I used high-priority interactive processes to screen results, program and test new analyses, and write reports. Thus, the Lisa was running around the clock at close to 100 percent of its CPU capacity for nine months, except for frequent power failures which sometimes shut the system down for a few hours when I was not present. Running all my analyses on an IBM 3081 would have cost more than $50,000, and programming them in and for the IBM environment could easily have taken two years—assuming good system response times.

Power supply in the semi-rural neighborhood was very unreliable. The power interruptions that occurred every five to seven days on the average cost me much time and were especially frustrating when they occurred at a time when a background job running for more than a day was near completion. We had actually ordered an uninterruptible power supply for Land & Water 201, but when it

arrived after eight months, we found out that the purchasing officer had made an error and bought a standby power supply instead. Unfortunately, this device did not switch to backup power quick enough to prevent the Lisa and the disk drives from resetting.

Graphics Processing: No Alternative to Lisa 7/7

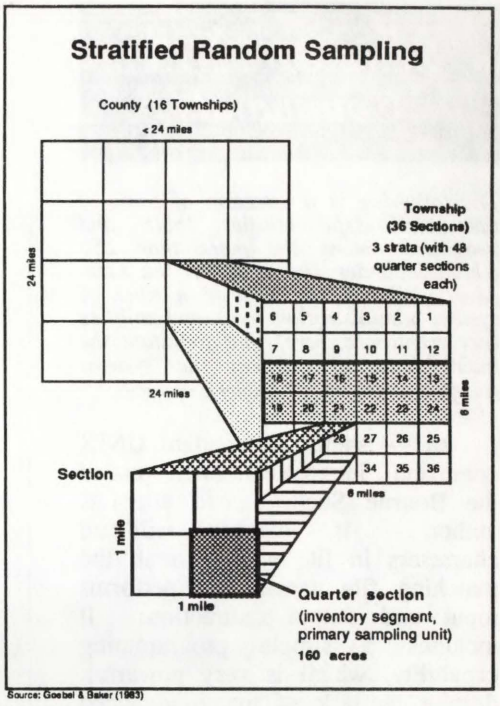
For graphics processing, I used the *Lisa Office System* operating system, installed on an external 5 MB ProFile hard disk. I used a Radio Shack TRS-80 Model 100 picocomputer with 32 KB RAM as intermediary to move data from the UNIX system to the *Lisa Office System* because the two operating systems can neither run concurrently, nor access a common disk, nor read the same media format. To store data in the Model 100, I would simply connect it to the Lisa through a serial port, log in as a user (remember UNIX is a multi-user system), and read the data into the Model 100's RAM. I then reset the Lisa and boot *7/7* to switch from one operating system to the other. Next, I retrieved the data from the Model 100 with *LisaTerminal*. To print graphic output, I used a 15" Imagewriter; for color graphics, I used a Canon PJ-1080A color ink-jet printer. (By the way, after nearly three years, there is still no affordable printer available for the Macintosh that can match the quality of color output achieved by a Lisa with the Canon printer, particularly in area color fill.)

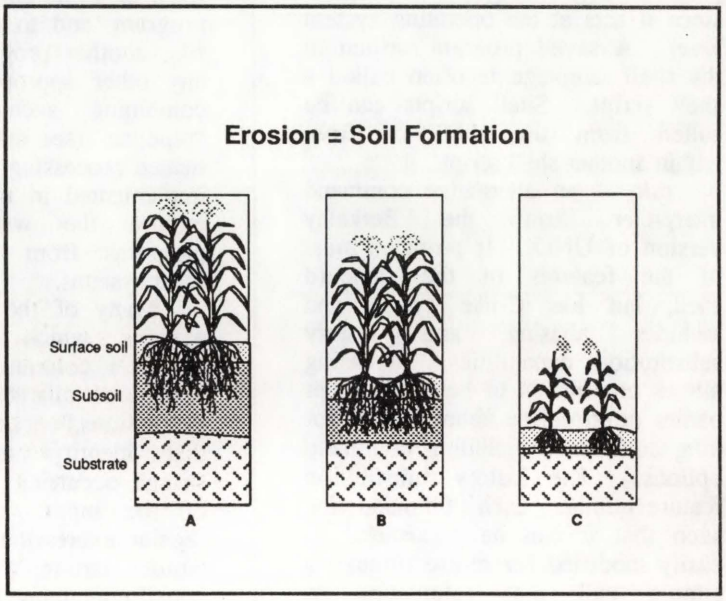
Towards the end of the Tennessee Valley Regional Report project, I would frequently take down the UNIX system during my working hours to prepare the graphics in *Lisa 7/7*. I was very pleased with the results from *LisaDraw*, but I found its response exceedingly sluggish with large complex drawings such as maps *(see Figure 1)*. I sometimes had to wait as long as 12 minutes for some operations, such as the resizing of maps, to complete—seemingly an eternity, particularly when it is necessary to keep holding down the mouse button until the hourglass disappears and the outline of the reduced objects becomes visible for precise sizing.

Conclusion

Despite numerous problems and fairly adverse conditions, I succeeded in finding ways of doing on the Lisa everything I wanted to do. Most importantly, I achieved the goals of the project and identified several opportunities for better soil conservation in the Tennessee Valley Region.

It was invaluable for me to have *LisaTerminal*, *LisaCalc*, *LisaGraph*, and multiple *LisaDraw* windows on the desktop—all at the same time—while working with the still-unparalleled Lisa desk accessory calculator and printing two documents simultaneously, one on the Imagewriter and one on the color ink jet printer. This is one of the reasons why *MacWorks* is still not a true alternative to *Lisa 7/7*. Despite many superior Mac software applications now available, a great deal of functionality is lost due to the inability to have their windows on the screen, side by side.





The *Switcher* is only a partial remedy because it scrolls one application's windows away to show those of another application. We can only hope that *Servant*, Andy Hertzfeld's replacement for *Finder* and *Switcher*, will fulfill its promise before long.

The successful completion of my project proved that *UniPlus+* on the Lisa is a viable system for fairly demanding research applications, despite some problems that UniSoft never fixed. My productivity would undoubtedly have been higher with the much better integration of UNIX and graphics on a Sun workstation, which probably would have saved me three to four months of work. Such workstations are now available for the price that I originally paid for my Lisa-based system. However, reconditioned Lisas are now also available for substantially less money. Thus, if I had to do it all over again, I would not use a Lisa, but for the smaller

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Selected UNIX Commands

The following is a selection of some of the most useful utilities, tools, and programs among the more than 250 available under UniPlus+ on the Lisa. Also available are a large number of system administration tools and utilities (not mentioned here) that facilitate the maintenance of efficient file systems and fine-tuning of system performance.

sh — shell, the standard UNIX command interpreter, often called the Bourne Shell, named after its author. It expands wildcard characters in file names to all the matching file names and performs input and output redirection. It includes a simple programming capability, which is very powerful, despite its lack of many advanced programming language features, since it acts at the operating system level. A saved program written in the shell language is often called a shell script. Shell scripts can be called from the shell or from within another shell script.

csh — an alternative command interpreter from the Berkeley version of UNIX. It provides most of the features of the standard shell, but has *C*-like syntax and includes aliasing and history substitution capabilities. Aliasing allows commands to be given other names or to define abbreviations for long commands including command options. The history substitution feature numbers each command line such that it can be reexecuted or easily modified for re-use through a simple call that references its number.

cc — the native *C* compiler. *C* is a general-purpose computer language that is the choice of many professional implementers because it generates small, efficient applications that are readily ported to many brands of computers. Some people have called it a "portable assembler" because in addition to implementing the structured programming features of other third-generation languages, it also provides complete control over the data in the machine at the bit level.

as, ld, and ***adb*** — the native assembler, link editor, & debugger.

lint — checks *C* source code for potential bugs and inefficiencies and for use of features that are implementation-specific and thus not likely to exist on other machines. Programs that have passed the *lint* tests are usually portable without change to the majority of computers that have a *C* compiler.

sno — an interpreter/compiler for *SNOBOL*-like programs, which are particularly useful for manipulating strings.

Many of the following commands can operate on one or more files at a time. They usually take "standard input" (that is normally the keyboard) and produce "standard output" (normally the screen); but redirection allows input to be taken from one or more files, or from the output of another program, and to direct output to a file, another program, a printer, or any other appropriate device. By combining such "filters" in a "pipeline" (see main article), sophisticated processing capabilities can be implemented in minutes that would require the writing of special programs from scratch on most other systems.

Many of the utilities work on patterns, which include line and character column addresses, simple strings of characters, and "regular expressions," i.e., specifications that identify sets of character strings occurring in specific places of the input. For example, a regular expression could specify all words starting with the characters "pre," containing at least one of the characters "a," "d," or "f," but not "u" or "x," being at least 10 characters long, ending in "ing" and occurring at the beginning of a line, but only between the 21st and 56th, or the 78th and the last line of the input file. Most of the following commands also have many more options than are mentioned.

cat — concatenates and prints files. It is much like the type command on other computer systems. It puts all the files specified (optionally by wildcard symbols) on the standard output. If output is redirected to a file, all the input files can be put into one new file or appended to an existing file.

head — is like *cat*, but it only takes the first ten (or any specified number) lines from the beginning of each file. Convenient if you're are looking for a particular file, but are not sure which one of several it is.

tail — is like ***head***, but it looks at the end of the file(s). Optionally, it will look at the end of a file once per second so that you can observe the progress of a program that writes to a file.

see — is like cat but replaces nonprintable or nondisplayable characters by printable ones. Useful to display hidden control codes in text files.

more — displays its input on the screen, one screenful at a time. You can skip a specified number of lines, screens, or files forward or backward, search for a pattern, and issue other UNIX commands without leaving ***more***.

paste — merges files horizontally, i.e. the first line of each file is appended to the end of the first line of the previous file, then the second lines are put together, etc. Options allow to specify precisely how to do this, e.g., how to separate (if at all) the constituents of the newly created lines. Using appropriate tabs, each file may appear as a column. Another option separates the constituents by a newline character, such that each line from each input file gets a separate line in the output, with all first lines followed by all second lines, etc.

split and ***csplit*** — are the opposite of ***cat*** and ***paste***. They split the input into multiple output files by ranges of line numbers or character column positions, respectively, or by searching for patterns to find the right splitting points.

uniq — removes or reports on repeated identical input lines.

diff, diff3, and ***sdiff*** compare two or three files and list their differences. ***sdiff*** shows differing lines side by side. Optionally a script is generated of all the commands needed by the editor ***ed*** to effect the changes of the other

file(s) in the first file. This is convenient if you have many different versions of a file with only minor differences. After creating such scripts, you can erase all the files except one that served as the master in each comparison. If you need one of the other versions, you can re-create it by applying its script to the master file, thus making it possible to save much storage space.

SCCS — *Source Code Control System.* A file (most commonly a source code or text file) can be put under the management of *SCCS*. Anyone who wants to change such a file needs to check it out from the *SCCS* library and check it back in afterwards. The user is then prompted for information about the changes made. *SCCS* runs ***diff*** on the new and old version, then deletes the old version and stores the script, the comments, and the current version. Thus it maintains a trail that is time-stamped, and can explain when and what changes were made by whom. If necessary, it can re-create older versions. Branching allows the creation of multiple current versions that go back to a common ancestry. *SCCS* is invaluable in team efforts for complex programming or document preparation projects. Without *SCCS*, such efforts have a tendency to lead to uncoordinated, unaccountable changes, uncertainty about current versions, and nagging doubts whether it really contains all the desired changes.

make — links the components (modules, chapters, etc.) of a program or document into the complete product. By having multiple lists containing components in differing combinations, different versions of the product can easily be created and maintained. In the case of pro-grams, ***make*** checks, each time it is called, whether any of the sources of the component-compiled modules has been changed since the last time they were compiled, and recompiles only the changed ones; this alleviates the programmer from having to remember what has been changed and prevents unnecessary and time-consuming recompilation of unchanged modules.

sed — stream editor copies std. input to std. output, applying changes according to a script given as a command argument in simple cases, or as a script file, if many or complex changes need to be made.

grep — searches files for occurrences of patterns. Among its many options are the displaying of all lines that contain the pattern, optionally preceded by the file name and line number, counts of lines containing (or not) the pattern, or only listing names of these files.

awk — a powerful pattern scanning and processing language; in addition to most capabilities of ***sed,*** can conditionally execute complex programs that perform character substitutions and arithmetic operations. Patterns may include arbitrary Boolean combinations of regular and relational expressions.

yacc — *yet another compiler compiler.* Useful for quick development of input parsers.

lex — generates lexical analyzers that save time in the development of programs for lexical tasks. Often used with *yacc.*

wc, and freq — count lines, words, characters and character frequencies in the input file(s).

sort — a general sorting/merging utility that can be used alone but often called by other programs.

pack and ***unpack*** — compress files for more efficient storage and uncompress them respectively. ***pcat*** is a combination of ***unpack*** and ***cat,*** but leaves the input file packed.

crypt — encrypts and decrypts.

find and ***cpio*** — can select files from directories according to a wide range of criteria and copy them into and out of archives, providing a flexible backup utility.

vi — a popular full-screen editor from the Berkeley version of UNIX.

eqn — a preprocessor for ***nroff*** and ***troff*** that allows relatively easy formatting of complicated math formulas with braces, superscripts, subscripts, etc., from specifications that can be entered on terminals on which you cannot enter or display such formulas.

spell — a simple spelling checker. Allows for creation of special dictionaries and can distinguish American and British English.

hyphen — lists all words split across input lines with the actual hyphenation point indicated, for example "hyp-henated." Eases checking of hyphenation errors after the list has been filtered through ***sort*** and ***uniq.***

lpr — a sophisticated printer spooler that can handle multiple printers, print queue ordering, redirection, and accounting by user.

mail — a program to exchange messages and files with other users.

who and ***write*** — list users currently logged in and allows on-screen dialog with another user.

at — executes commands or programs at a specified time and/or repeatedly at specified intervals.

cal and ***calendar*** — show or print a calendar for any month or year between year 1 and 9999 and provide a reminder service.

nice — sets the priority given to tasks (UNIX processes) in allocating CPU time.

sar — *system activity reporter.* A set of programs that maintain and analyze detailed information on the use of system resources.

acct — a set of programs for user and process accounting.

cu — *call UNIX.* A telecommunications package.

uucp — *UNIX to UNIX copy.* Copies files to or from remote UNIX systems, using the services of ***uucp*** on intermediary systems if no direct connection exists.

termcap — coded list of terminal capabilities and control sequences needed to use them. Allows full-screen interactive programs to properly execute on any terminal for which a definition is available. By using the standard codes which are automatically translated to the terminal-specific control sequences, programming for output handling is greatly simplified, and the compatibility of programs with future terminals is guaranteed. Can add your own definitions to ***termcap*** file if your terminal is not listed.

Swap area — a partition on a hard disk that is used by UNIX to temporarily store images of core memory of an inactive task while memory is needed for an active task.

Wolfgang F. Naegeli

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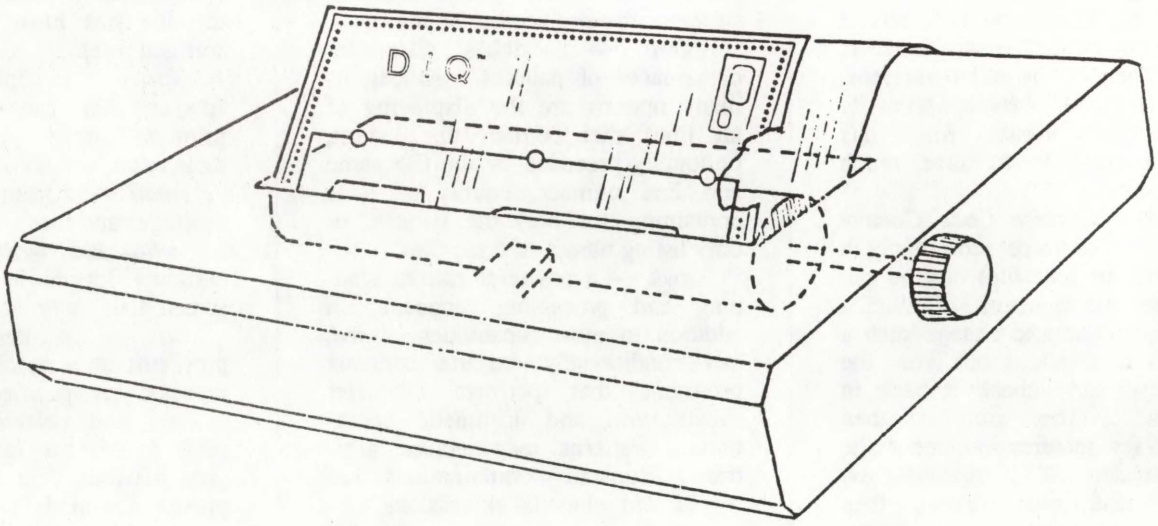

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projects that I tackle on the Lisa now, it's still a good system.

Doing my research project on the Lisa was definitely more cost-effective than doing it on a saturated mainframe. But that is not a very good comparison. It makes more sense to compare the Lisa to UNIX-based workstations such as those from Sun, Apollo, or DEC. In terms of capital investment, the Lisa system is certainly very cost-effective. In terms of efficiency, the Lisa, with its need to reboot from different disk drives when switching to graphics (i.e. from UNIX to *Lisa 7/7* or *MacWorks*), and its slow processor speed, compares poorly with the integrated environment of the other machines. So it all depends on your specific applications and on what your capital and labor costs are.

Without doubt, the Lisa with *UniPlus+* is a good choice for anyone who wants to learn or to experiment with UNIX. In particular, it is an inexpensive way to experiment with UNIX system administration, because you normally would not want to do that on a system used by other users, and most other full-featured UNIX systems are too expensive to dedicate to such experiments.

Wolfgang Naegeli has used many UNIX systems since he first taught himself in 1979 to use UNIX Version 7 and the vi editor. His experience has convinced him that, contrary to a common notion, UNIX is easier to learn to use efficiently than most other systems. Now a Research Associate with the Energy, Environment, and Resources Center of the University of Tennessee, Knoxville, Wolfgang works as a consultant at Oak Ridge National Laboratory in the design and development of environmental decision support systems. He is a member of the Board of Directors of MacClique, the East Tennessee Macintosh User's Group.

Fine-tuning your classic:
tips to maximize Lisa's performance

by Lewis Guice

Enhancing Lisa's speed and performance

In talking with Lisa 7/7 users, we realize that many users are not familiar with the role that the Lisa's standard 1 Megabyte RAM (internal working memory) and the Lisa Operating System's Virtual Memory plays in Lisa's overall speed and performance. While most users do recognize that 1 Megabyte of RAM is necessary under 7/7 to support "multi-tasking" (the ability to have open several applications and/or files at one time), many users take this feature for granted and are bewildered when Lisa's processing speed slows down. The truth is that when many applications and documents are open at one time, whether they are set aside or in use, it isn't long before the Lisa's memory actually exceeds its stan-dard 1 Mbyte RAM. It is at this point that Lisa's Virtual Memory comes into play and allows users to continue working, but at a reduced speed.

In addition to providing the Lisa with a sort of pseudo RAM, Virtual Memory also serves to extend memory capacity within some speci-fic 7/7 applications. For instance, while *LisaCalc* has its own built-in limitation on the amount of cells available, *LisaWrite* takes advantage of Virtual Memory, allowing you to create documents which exceed existing memory limitations. But again, slower response time is the trade-off in putting your Lisa system through extensive use; documents begin to open and close more slowly, and scrolling, at times, slows down to an unbearable rate. Other symptoms include decreased speed of screen redrawing, particulary in *LisaDraw*, and slower recalcs in *LisaCalc*. Following are specific steps Lisa 7/7 users can take to enhance speed:

1) Always try to leave at least 2000 blocks free on your hard disk. This leaves breathing room for the Lisa OS to start up applications and support Virtual Memory while in specific applications.

2) Follow the maintenance guidelines of "Repairing your Hard Disk" below. (Quick reference of this procedures is also accessible under Lisa's "Attributes of your Hard Disk" menu).

3) Avoid "Setting Aside" documents whenever possible. Even though a document is set aside on the desktop, it is still open and resident in memory.

4) Increase memory capacity via *RamStak* memory boards by AST Research, Inc. By increasing your memory to 2 or even 4 Megabytes, your system will become less reliant on Virtual Memory.

Repairing Lisa's hard disk

Repairing the Lisa hard disk once a week, three times sequencially, will significantly increase the speed and performance of your Lisa Office System, as well as increase your available hard disk space. The procedure is as follows:

While the computer is off, insert your Lisa Office System 1 Diskette into the disk drive. Turn the computer on, then, after the first "click" (internal diagnostics test), press both the APPLE and "2" keys to boot the Lisa Office System 1 Diskette. When your Option Menu appears, select "Repair." After Lisa locates the disk, it will prompt you that it has selected the proper disk. *WARNING: Be sure that you select the proper disk you wish to repair—if the Lisa attempts to repair the wrong disk drive, critical data could be damaged.* Once you are satisfied that the Lisa has prompted the proper Hard Disk Drive, select "OK."

The Lisa will then repair the disk within a few minutes. After the Lisa has completed the repair and has determined that the disk drive is okay, select "OK," go back to the Main Menu and select "Repair" again. Now you may either Quit or go to the Office System. Again, follow this procedure once a week, three times sequencially. *Please also note that the current version of Lisa 7/7 is 3.1. If you have not yet upgraded, call The LisaTalk Report, (415) 454-7607, for more info.*

Simply saving and putting away documents which you are no longer working with on the desktop is another simple technique which will increase Lisa's speed and performance.

Sharing hard disks

Sharing your Lisa Office System on the same hard disk drive with MacWorks has been found to cause problems and is not recommended. The best alternative at this point is to install a parallel board and an additional ProFile™, onto your system. (If you are using a ProFile, it is recommended that you use a flat ribbon cable, as opposed to the round cable. The round cable has been found to damage the ProFile on occassion.) In fact, you may run as many operating systems as there are available for the Lisa/Mac XL, e.g., 7/7 Office System, MacWorks, XENIX or UniPlus+, and The Pascal WorkShop. *IMPORTANT: MacWorks must be installed onto*

*the **default** drive, whether it be the drive connected to the lower base parallel port or the internal 10 Megabyte disk drive.*

Correct ROMs

For optimum performance, make sure that your Lisa or Mac XL has the latest ROM configuration. Contact your supporting Apple dealer or The NetWorkers if you require the correct ROMs.

The ROM numbers should appear in the upper right-hand corner of your screen during start-up, after the internal memory and board checks. The numbers that should appear are:

Configuration:	**ROMs:**
Lisa 2/10 or Mac XL	H/88
Lisa 1, 2, and 2/5	H/A8

Enhancing Mac speed on the Lisa/Mac XL

Memory constraints, as discussed above, can also be a direct hinderance to the performance of your Lisa/Mac XL under the *MacWorks* environment. (This is particularly true if you use *Switcher*, which has been reported to bomb on the Mac XL under varying circumstances.) Of course, adding additional memory to your Mac XL will enhance performance, and it will provide more stability if you run *Switcher*. Increased memory via a disk cache system will particularly increase the response time of individual applications. Examples include word processing documents scrolling faster, and graphic objects redrawing quicker.

continues below

MacWorks bug, or what?

For some time now the possibility of a "bug" in MacWorks 3.0 has been the topic of numerous conversations in the Lisa/Mac XL community. The symptoms of this alleged "bug" include the *Sad Macintosh:error number 0F00064* when trying to boot MacWorks 3.0 from Lisa's hard disk; slow system response whenever the hard disk is reading the directory (e.g., when you open a file, quit to the Finder, etc.); disappearance or corruption of desk accessories; and constant system crashes which lead to hard disk failures. Contrary to many users' beliefs that these symptoms are the fault of a "killer bug" in MacWorks 3.0 or an all-around hard disk failure, however, these problems appear to be directly related to limitations of the Macintosh Operating System, specifically in respect to the Finder's inability to manage excessive numbers of files in a hard disk environment.

As you will recall, although the Apple Hard Disk 20 was ready before HFS on the Mac Plus, Apple did not officially announce its Hard Disk 20 was "completed." The reason for this is simple: the Finder is unable to efficiently manage a large number of files. In fact, the Finder starts to reach its limit at about 400K of multiple file space. When the Finder attempts to manage files beyond its capacity, its performance and reliablity deteriorates to the degree that the directory on the disk becomes corrupted. In the case of the Macintosh environment on the Lisa/Mac XL, when you have a lot of files on your hard disk and you are constantly adding and deleting files, the System inevitably becomes fragmented. Put another way, as your disk becomes full, the Finder cannot locate enough contiguous memory space on a disk area to place a complete contiguous file. As a result, the Finder arbitrarily places portions of files anywhere it can find space. The Finder then symptomatically has difficulty finding files, slows down, and in the case of MacWorks, bombs.

While the Macintosh environment under MacWorks does offer

continues on page 58

We thought this would be a good place to include Dave Redhed's review of DiskOrder, a new hard disk back-up utility. On page 42 in this issue, Dave has also reviewed the MacLightning spellchecker from Target Software.

A very short plug for a great utility: >>> DiskOrder™ <<<

Just recently I came once again to that dreaded time when I had to back up my hard disks. On my Lisa I have two 5MB ProFiles devoted to Macintosh, and I organize my files around logical folders, and I try to keep my backup diskettes organized in a compatible way, and I expect that I ought to be able to do a backup fairly easily, and in a relatively small time, and it never works that way and, and, and.....

Maybe you identify with this and maybe not. Maybe you have found a slick way to do backups, and maybe you know of several utilities which solve this problem, but I obviously had not solved the problem.

Then one day DiskOrder™ came into my life and now I expect to live happily through my back-up activities. I don't have to wonder which diskette and which folder has the back-up copy of a file. Nor do I have to wonder if it really needs backing up. Nor do I have to look at a printed catalog and labor through the process of moving icons to back up my files on the appropriate diskette What used to take me the better part of a day, I can now do in an hour or less. Oh, joy, joy, joy!

I don't want to say that this is the *perfect* disk-management utility, for I have suggested a couple of improvements to the author. However, if it never changes, I will still be grateful for the relief it has brought to my life. In the event my enthusiasm has been effective, you can get DiskOrder™ for $50 from Paragon Courseware, 4954 Sun Valley Road, Del Mar, CA 92014; phone (619) 481-1477.

By David Redhed

the ability for you to repair the desktop on the Lisa/Mac XL (by simultaneously holding down your ⌘ <Command> and <Option> keys while your disk is mounting), unlike the Lisa 7/7 "Repair" function, it does not rebuild the directory or place folders back on the hard disk in proper order. Thus, when severe directory damage occurs in the Macintosh OS, the hard disk often seems inaccessible. The new HFS (Hierarchical File Structure) on the MacintoshPlus, however, prevents these problems by treating individual folders (along with their contents) as "little disks," allowing the Finder and System to be primarily responsible for only the "active folders," rather than the overall hard disk. This leaves a more manageable hard disk environment for the Macintosh Operating System. Although there was never any documentation published, that we know of, which spoke directly of limitations of the Finder in handling large amounts of files, our suspi-cions that disk fragmentation is indeed behind the culprit "bug" is further supported by empirical data gathered in Lisa/Mac XL users' reports. Foremost, we found that a relatively low percentage of users have actually experienced these problems, which is an indication that the problem is neither a universal MacWorks bug, nor relative to the Hard Disk Assembly unit. In addition, one or more of the follow-ing characteristics of usage were consistent in these user reports:

- Users had numerous applications and data files on the hard disks;
- Users had shared their hard disks;
- Users had been running software which was either poorly written or which otherwise put excessive stress on the resources of the Macintosh;
- Users had cluttered their hard disks with extensive Desk Accessories and fonts; and
- Users did not practice important hard disk maintenance techniques or utilize disk management utilities to enhance system performance.

As many of you are aware, the previous published workaround to the *Sad Macintosh* when trying to boot MacWorks 3.0 (the current version) from Lisa's hard disk, required booting MacWorks while holding down the <OPTION> key, then booting the MacWorks System disk. At that point the hard disk icon would appear and the user would replace the System folder. However, in many cases the hard disk would no longer appear on the desktop. If your hard disk should fail and disappear from the desktop, a call to your local dealer might be worthwhile. An "unofficial" repair program, called *Hard Disk Mount, Version 2.0*, is being provided by Apple to dealers for distribution to their Lisa/Mac XL customers. (This program is a beta-release program which has no part number. It is not expected that a revised copy will be provided by Apple at a later date.) Use of *Hard Disk Mount* is straightforward:

1) If the system is on, press the Reset button at the back. If the system is off, turn it on.

2) After you hear the first "click," press the <SPACE BAR>. When the system completes its self-diagnostic test, the STARTUP FROM menu will appear at the upper left corner of the screen.

3) Insert the Hard Disk Mount diskette and use the mouse to select the microdisk drive. After about 30 seconds the diskette is ejected from the drive, and the diskette icon with a question mark appears with Hard Disk Mount written under it.

4) Remove the Hard Disk Mount diskette and insert the MacWorks System Disk. When the Hard Disk icon and the MacWorks System disk icon appear, open both icons. Copy the System folder from the MacWorks System Disk onto the hard disk.

Solutions to disk fragmentation

If you wish to prevent the above-mentioned disk fragmentation, we highly recommend *MacServe*, an enhanced version of *XL/Serve*, by Infosphere, Inc. Primarily a disk server/LAN application (under AppleTalk), *MacServe* allows you to partition the Mac XL's hard disk into many separate volumes sized to accommo-date your particular file(s), much like HFS uses folders to partition MacPlus users' hard disks. (Note that *MacServe* does not, however, provide XL users with MacPlus-HFS compatibility.) Although I have found that creating a series of 400K volumes under *MacServe* offers optimum performance, particulary with multiple files, *MacServe* can actually accommodate volumes of up to 16 Megabytes. Large volumes set up for contiguous files larger than 400K, such as a data base files, are also effectively supported.

In addition, *MacServe* enables users to network Lisa/Mac XLs with other Macs with SCSI drives, LaserWriters, etc., on the AppleTalk network, perform incremental back-up of the hard disk, and accommodates ImageWriter print spooling. *MacServe* is available to Lisa/Mac XL users through The NetWorkers-NetSolutions and Dafax Processing Corporation for $249.00.

For users who are not currently in need of *MacServe's* networking capabilities but who wish to utilize its disk partitioning capabilities, an equally effective option, called *Finder's Helper*, is also available, for $100.00, from The NetWorkers-NetSolutions and Dafax Processing Corp. Developed for The NetWorkers by Infosphere, Inc., *Finder's Helper* is upgradeable to *MacServe*.

Another "fix" to disk fragmentation, published for Mac hard disks, was recently brought to our attention by Infosphere, Inc.'s Dave Baasch. Called *Disk Express*, and published by Alsoft for about $29.00, this application in essence picks up all of "the little duckies" on the hard disk and puts them back in a proper row. This can be done on the Root Directory, as well as individual volumes on a partitioned disk. Use of the product is incredibly straightforward and simple, and the resulting increase in performance is more than any personal and/or network user can ask for. We will provide a full in-depth review of this product, and others mentioned here in the very near future.

Lewis Guice is founder and President of The NetWorkers and founding editor of The LisaTalk Report. He has been providing Lisa and Macintosh support since their release, respectively, and he is co-founder of the Peninsula Lisa User's Group.

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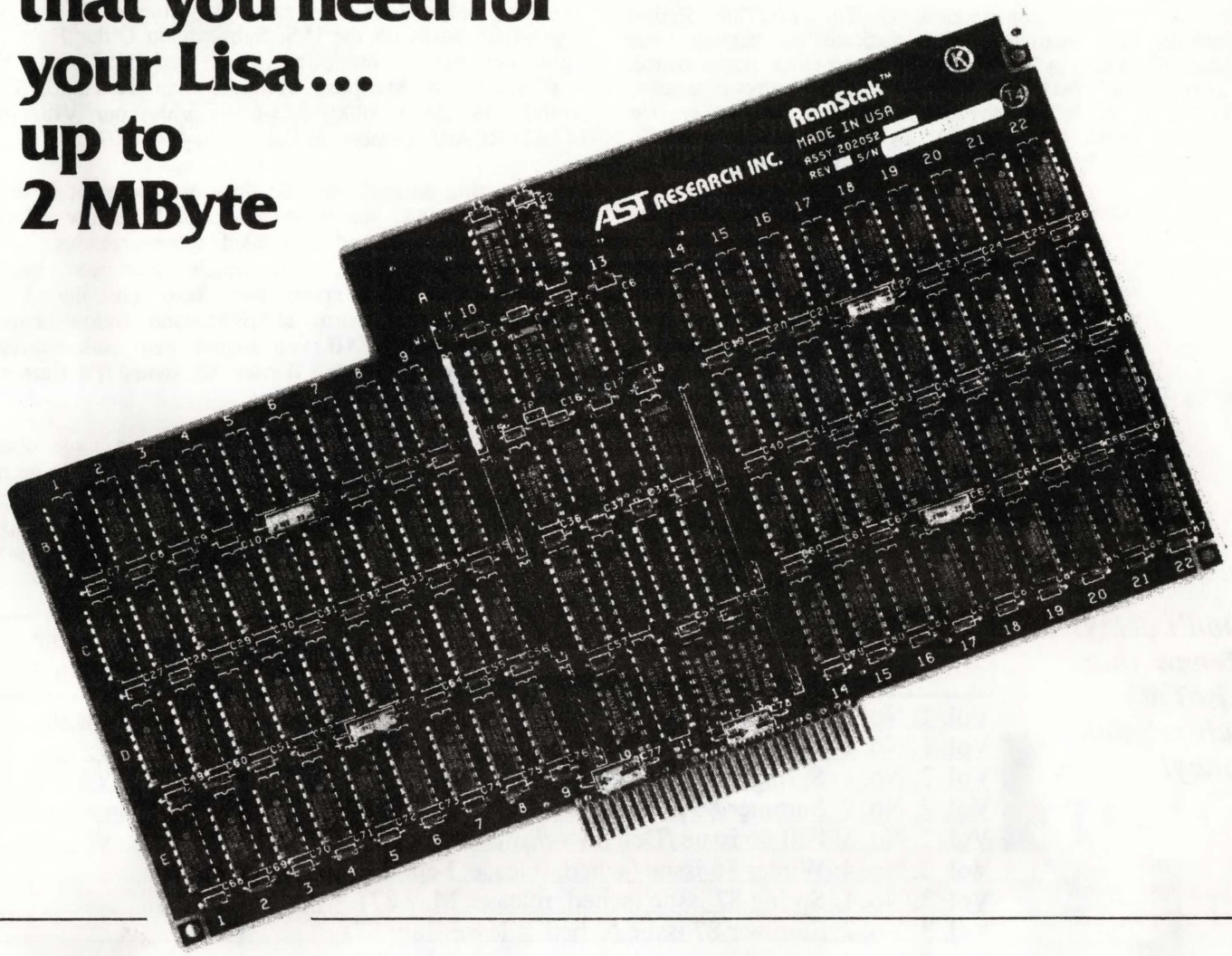

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Trasher: Creates an intercept which queries the user before ejecting a diskette that is placed in the trash. A patch is made to the System file (as an INIT resource) which remains in effect until deactivated by the user. (This code will be upgraded for Lisa later.)

DA/DA Tester: A desk accessory which allows you to test desk accessories without having to run a program. DA Tester will also install a DA into the System file if the user so desires after testing it. DA Tester adds a menu to the current menu bar with options to open and close a DA, to install a DA, or to disengage DA Tester.

RAMdisk: Similar to other RAM disks, with three notable exceptions: Supports multiple RAM volumes concurrently; supports any memory size; and configures the files (if any) which are loaded at startup, and the RAMdisk can be initialized whenever the system is booted.

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User instructions and tips for
2-Port Disk Install
by Bruce Auerbach

Following are brief instructions for installing 2-Port Disk Install, as provided by its developer, Bruce Auerbach.

2-Port Disk Install places two resources in your System File. The first is an INIT #. The second is a Slot driver in the driver file. *2-Port Disk Install* is not very flexible about the numbers that it assigns to these resources. It installs the "slot driver" ID = 19, and the INIT# = 31. Unfortunately you might already have a desk accessory with ID# = 19, and if you have *2-Port Disk Install* installed, you definitely have a resource with INIT # = 31. The Operating System becomes very unhappy if more than one resource occupies the same ID# (i.e., it bombs at the most inopportune times). The solution is to back up your system and then to use *ResEdit** to alter the INIT and Driver numbers of those resources having the same numbers that *2-Port Disk Install* needs.

1. With *2-Port Disk Install* not running, change the INIT # of the *MacServe* (XL/Serve) resource to the #32. (I suggest running *ResEdit* off of a floppy with a System and Finder. Make that floppy the start-up floppy by holding down the Command-Shift buttons as you double click on *ResEdit*). If there is a Desk Accessory in the Driver file with a resource # =19, change that to a new non-conflicting number (i.e., a number which is not already in use by another DA or driver. This should be a number between 12 and 26). This is done by selecting the DA or *MacServe* resource with the number you want to change and choosing "Get Info" from the File menu. Then highlight the ID # and replace it with a different #. Close all windows and select "Save" when prompted.

2. Step two is to run *2-Port Disk Install*. This should be done on the disk with the System you want to modify. (You cannot run it from a floppy with the Start-up System on the floppy, and have it install the driver on the hard disk. This is in direct contrast to *MacServe*, which must be run from a System other than the one you want to modify.)

To run *2-Port Disk Install*, you must already have the ProFile connected and turned on. *2-Port Disk Install* must reinitialize the ProFile in order to install properly. If the ProFile is not already attached and running, shut the Lisa down. If necessary install the parallel expansion card. The general advice I have seen is to install the expansion card in slot 3 and to use the upper port.

My experience with running a MacWorks-only Lisa is that you get an error message (93) on start-up with the only parallel card located in slot 3. I had better results using Slot 2, upper port. In any case, with the ProFile connected to the Lisa and with the Lisa off, turn the ProFile on. The red light should stay on. Then, power up the Lisa and at the first click, hit the space bar several times. The ProFile will alternate between blinking and dark. In a minute or so the Lisa Start-up dialog box should come up. **Wait!** Shortly, the ProFile will resume its self-checks. When the diagnostics are finished (in a minute or two) and the ProFile light is on continuously, start-up from the internal hard disk (for a 2/10) or from the ProFile attached to the built-in parallel port (not from the ProFile attached to the expansion card). If you have MacServe installed, remember to Hit the "M" and the "S" keys simultaneously during bootup so that MacServe is not installed.

3. Now run *2-Port Disk Install*, making sure that you select the correct expansion slot. When *2-Port Disk Install* has finished running, it should return you to the desktop and you should now have access to the ProFile.

continues on third column, page 65

Important tips & other trivia

1. Apparently you will have fewer problems with *2-Port Disk Install* if you close all windows before quitting an application.

2. I have run 2-Port Disk Install on both a Lisa 2/10 (Mac XL) and a Lisa 2/5. My experience has been that it runs better on the 2/5 than on the 2/10! On the 2/10, I experienced problems with *MacServe* on boot-up after the ProFile had been turned off (during one of our not infrequent thunderstorms in Minnesota). When I rebooted after restarting the ProFile, the System bombed before reaching the desktop. The only way to eliminate this System bomb was to boot-up without MacServe (holding down the M and S keys after the Mac smiling Icon appeared), and then to reinstall *MacServe*. I didn't need to reinstall *2-Port Disk Install*, so no data was lost. I haven't had this problem on the 2/5.

3. Remember to backup your System, both before and after installing *2-Port Disk Install*. Keep both backups.

4. Be sure to backup everything on the ProFile. Archiving with *MacServe* makes reinstallation of the files very easy.

–BA

LisaSauce!

by Kay Slagle & Roxane M. Schwabe

Over the past year, feelings of helplessness and disillusionment about Apple's actions have been tantamount in some circles in the Lisa/Mac XL world, and support incidents have not been uncommon. In this story, we follow, briefly, how one particularly determined user fought for, and won, an ironic satisfaction in abandoning his Lisa. Trade-in participants are advised to sit down for this one.

"Mr. Sculley, I want some satisfaction!" So one of our readers addressed Apple Computer's president in a letter in January, when the interchange began.

The reader explained his plight: With unbridled enthusiasm he invested $10,000 in his Lisa 2/10 in early 1984. As he relates his subsequent experience, "Nothing would be worse than owning this lemon!"

The Arrival: After a three-month wait, the Lisa was received with a defective internal disk drive. Repairs, our reader was told, would require another wait. He insisted on new hardware. By the time the new Lisa arrived, the Lisa 7/7 package had been released. Although willing to exchange the earlier version of unbundled, more expensive software from his replacement Lisa, our reader faced a struggle with his dealer to get the Lisa 7/7 software.

Once up and running, the Lisa presented our reader with a plethora of problems. "Around this time, Apple also discontinued its toll-free help line," he relates.

Next Step: MacWorks. In an effort to produce mailing labels and letters, which he understood to be possible using Habadex and MacWorks, our reader next made two software investments. Although the moral support he received from both Haba Systems and Apple was encouraging, the technical end faltered. The new MacWorks upgrade, a promised solution, would be along ...eventually.

Still seeking support, our reader subscribed to TechniCall of Boston, which provided ten solutions for $99. When he turned to TechniCall a few months later for solutions, he was told they had gone out of business. Then, approaching his dealer for support, on Apple's instruction, our reader was told they no longer serviced Lisa.

By now, our reader was feeling, as he states, "totally frustrated, turned off, put through the mill, used and abused." He sought redress with Apple through numerous phonecalls and letters—if only he could find better support, have the bugs in his software fixed, and his sanity restored.

Trading insult for injury: Then he learned of Apple's Trade-In Program. Apple offered our reader, and thousands more, participation in the Mac XL Trade-In Program. As he read the first paragraphs of Apple's Trade-In Program notification, he recalled, he felt "psyched" again, perhaps Apple did care. But, what was this?! It would cost an additional $1,498^{00}$ to participate! "Nothing could be worse than being forced to pay additional money for a trade-in option after I've already invested this heavily."

His reaction was swift. He resolved not to be abused again, and in so doing, he sent a telegram to John Sculley, threatening to protest the abuse in a media event to dramatize the exploitation of Apple's best potential customers. He was prepared to "smash his Lisa 2/10 on the steps of Apple Computer with a load of rotten apples!" LisaSauce!

It was at this point that our reader contacted us. He was tired of trying on his own, and committed to do anything to "get Sculley (who did not provide a personal response to his communications) to come down from the mountain." Though we thought his proposed measures extreme, from a consumer standpoint, we could understand the extremes this user had undergone. Pressed on, we heard him out.

Would we, our reader asked, agree to run an ad for him to solicit Lisa/Mac XL user turn-out or other support of his efforts? No, better yet, so as not to jeopardize delicate discussions between the then-organized Apple Lisa/Mac XL Task Force and The NetWorkers, would we simply offer objective coverage of his story.

Our reader shared in detail how he would stage the event, how he would involve as many major news services as possible, and that he would, at his personal expense, travel from his home on the East Coast, rent a helicopter from which to drop his Lisa, and, of course, invest in a load of "bad apples" on which to smash his lemon Lisa. His public slogan would be "There are two kinds of Apple users: Those who use Apples, and those who get used by Apple." And so we said we'd follow the story, but from the sidelines. We would need to see some documentation first.

This past summer we received photocopies of our reader's correspondence with Apple. He had most certainly been perservering—contained within his letters were the names and comments of many Apple people who were, by now, very clearly aware of our reader's plight. Hearsay is that someone at Apple was seeking authority to honor his personal request for a straight-across trade, behind the scenes. However, no definitive replies were given.

His next resort happened upon him when he turned to the back of his Apple Credit bill. Feeling this recourse was legitimate, he notified the creditor that he reserved the right to not pay—if necessary, he would establish an escrow holding

account for the credit payments withheld. He had, he explained, a problem with the quality of goods he purchased and had tried, as described in his Apple Credit agreement, "in good faith" to correct the problem with the merchant. The response to our reader's claim, however, was negative. Apple contended that the problems "resulted from the incompatibility of third-party products." Our reader had assured us he would keep us up to date.

But weeks, and then months, had passed since we last heard from our reader, so we decided to contact him. Our discoveries were shocking! It seems that, during Apple's Business Tour on the East Coast (in August), our reader had managed to have an interesting tete-á-tete with someone from Apple's Head Office (no names remembered, or at least, disclosed). There, in Times Square, our reader had again explained his predicament and pleaded his case. Careful to detail (we guess), he explained the many incidents when he could not get his computer to work properly; the times when he could not get support; the times he'd been hung up on when trying to reach a decision maker at Apple; and, of course, the steps he was prepared to take, literally and figuratively, at Apple's Cupertino headquarters. "Wouldn't it just be better to give me some satisfaction?" he had pronounced.

Well, these cries must have made some sense which appealed to this Apple person (perhaps sense of company preservation). For, within two weeks, our reader was able to participate in the trade-in program at a local dealer to whom the Apple person referred him. Furthermore, he was able to do so ABSOLUTELY FREE OF CHARGE!! Hmmm...

Well, although, in a strange way, this might not be a surprise to some users, frankly, we realize for others who traded in, for a price, this might be a "bit" disconcerting. We only hope these users are not experiencing the same problems our now-famous anonymous reader is now experiencing with *his* MacPlus. Still in the initial stages of familiarizing himself with Macintosh, he admits that he very much misses Lisa 7/7's multi-window and simpler interface. With Macintosh, he's finding "there's a lot more about the system in which to get lost," and, he's been having a lot of software problems on the MacPlus similar to those he experienced on Lisa, as well as even *more* System glitches. With this in mind, he reflects that the unique Lisa interface could have been ideal for him, had he only sought more support, though he admitted he would have a problem paying for it. As a first-time computer buyer, he was also enchanted with all the Mac applications, and he shared he'd been influenced greatly by magazines for Macintosh users.

Though he regrets he was the exception rather than the rule in getting a straight-across trade, he still maintains that he was prepared to go through with his saucy spectacle. However, given the opportunity to swap for a "more-readily supported" machine, our relentless reader figured it was no longer worth his time or energy to pursue further amends from Apple.

When we mentioned all the strides which, granted, the few, but committed, third parties are making in supporting Lisa/Mac XL users, our reader implied that, when it is all said and done, it was "a matter of principle that he abandoned Lisa."

Needless to say, our reader still thinks Apple was, and is, wrong in its management of the Lisa/Mac XL, and he would have preferred not to go though all that he did. He also remains very skeptical about making further Apple purchases—he has experienced his share of dealers who don't know anything about what's available, or how it works. And, he figures, if he just waits, current high-ticket items in the Mac world will soon also be cheaper.

Perhaps this reader and Apple both have won this one; but, who really got the best of whom? Who certainly did not win were the few thousand users who paid to trade, and, perhaps future (Mac?) users who could also one day be rallied to support the "paid-to-trade-to-upgrade" club. Meanwhile, the rest of us can only chuckle and wonder what "impact" our reader's scheme *could* have had if carried out. Here begins, and ends, *the real LisaSauce.*

continued from page 63

4. The final step is to modify the INIT and Driver ID #'s again, if you wish to use *MacServe*. Run *ResEdit* and this time, change the ID # of the new (untitled) resource that *2-Port Disk Install* has installed to "29," and return *MacServe's* resource ID to "31". While you are at it, you might verify that the Slot driver has been installed correctly at ID = 19 in the Driver file. Close all windows. Save the changes when prompted. Quit *ResEdit***.

Congratulations!
You should now be the proud owner of a two-hard disk MacWorks/Lisa.

In order to remain a proud owner of a two ProFile MacWorks-Lisa, remember to back-up your new System. (Also, do not throw out your old System on the chance that you might have problems down the road.) If your System becomes corrupted, a back-up of the System could save you a lot of time and effort.

From time to time you might lose access to the second ProFile. The simplest way to recover this is to rerun *2-Port Disk Install*. Select the port to which you want the ProFile attached (the one to which it is presently attached). The next dialog box will ask you whether you want to initialize the ProFile, update MacWorks or Cancel. Select **Cancel**. This will return you to the desktop and reestablish connection with the ProFile. It strikes me that this procedure is a reasonable alternative to modifying the System permanently for those who have tried, but failed, to install the ProFile on a permanent basis. It would require rerunning *2-Port Disk Install* after each reboot, but the procedure should not take much more than 30 seconds in all. END

*[*ResEdit is a programming tool which can be obtained from Mac user groups and on-line services. We don't, however, recommend users who are not familiar with these types of tools to use them.*
*** WARNING: Don't close ResEdit by clicking the Close Box of the hard disk window!! Your system will CRASH! Choose Quit under the File Menu. Ed.]*

Lisa's latest

User groups

Association of Apple 32 Users: Lisa SIG

A-32's Lisa SIG includes 300-400 active Lisa/XL owners and users. $20 Membership per year plus $20 enrollment fee. Includes Icon club magazine seven times a year. Checks accepted only; credit cards not accepted. Outside USA memberships are $45 and $25, respectively (US$ currency). Contact: Ken Silverman, P.O. Box 634, Santa Clara, CA 95052, (408) 988-5594, Electronic BBS (408) 988-6693.

Lisa UNIX User Group

If you are interested in bringing to the Lisa: Writer's Workbench, Korn Shell, multiple process windows, access to AppleTalk and beyond, UNIX graphics, troff output to the LaserWriter and high-quality typesetting machines, enhanced system performance or capacity for more users (with a 68020 card and 4 to 16 MB of RAM), this group is for you. Contact:Heidy & Wolfgang Naegeli, P.O. Box 1351, Oak Ridge, TN 37831, (615) 481-3276.

The Mac User Group

MUG has about 55 members, including several enthusiastic Lisa/MacXL users. MUG has no membership dues, but its founder will be sure to put you on his mailing list if you're interested in joining them on monthly field trips to locations where exciting Macintosh applications are used. MUG's efforts included participation in the "power Mac/CAD/Graphics show" by the Design and Industry department at San Francico State University. Contact: Professor Howard L. Waldron, Founder, 175 Villa Terrace, San Francisco, CA 94114, 415/863-5765.

National X/Lisa Users Group

BBS use, which is highly recommended, costs $20 per year. Operated by CSbbs Link, 24 hours each day, Monday through Saturday. Call any time and you may browse free for 15 minutes. If you like what you see, leave a message for the Sysop with your name, address and pasword. BBS membership is validated upon Sysop's receipt of your fee. Special X/Lisa Calculator DA available free to members. Download it from bbs or send disk with application. Contact: Van R. Martin, P.O. Box 450676, Miami, FL 33145-0676. BBS Information: (305) 445-6481.

New York Macintosh Users Group: Lisa SIG

NYMUG Lisa SIG meets monthly in Manhattan to review, discuss and share ideas and information. New York, New Jersey, and Connecticut Lisa/XL owners welcome. Contact: Samuel Neulinger, Chairman, (718) 746-8220.

Peninsula Lisa Users Group

PLUG is the first-ever organized and exclusive Lisa/Mac XL Users Group. Now meets on the second Wednesday of each month beginning at 6:15 (programs start at 6:45) at InfoMax-Opera Plaza, 601 Van Ness Avenue, San Francisco, CA 94102. Regular Membership (receive both notes and notices) $22.00; Associate Membership (receive notes only) $18; Notices Only Membership (reduced LisaTalk rates do not apply) $6.00. Contact: Joan D. Dickey, President/Co-founder, (415) 728-5462.

San Diego Mac XL/Lisa SIG

Meetings held first Wednesday of month, 6 p.m., UCSD Basic Science Bldg., Rm. 200. For more information, call: Keith Adair (619) 453-0616.

New product releases

MS Word, version 3.0 (for both 400K and 800K), $99.00

Microsoft Corporation will release Microsoft *Word Version 3.0* (compatible under MacWorks), in January of 1987. Heralded to be much faster, more powerful, and more versatile than previous versions, *Word 3.0* is Microsoft's answer to "document processing," including:

• Built-in outlining; • Integrated Style Sheets; • Page Preview; • Side-by-side columns of text, graphics within text, built-in hyphenation, double underscore, strikethrough and box features; • Quick-Switch to edit compund documents quickly, including MacPaint, MacDraw and Microsoft Excel files; • Two-way exchange of formatted documents with MacWrite, MS Word (IBM PC), DCA (std. IBM file format), and other formats; Built-in 80,000-word spelling corrector; and • NO copy-protection. Suggested retail: $395.00. For existing *MSWord* customers: $99.00 or less. Microsoft Corporation, 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717. (206) 882-8080. For brochure: Part no. 098-034-227.

–Bill Gates, Chairman

MS Excel, Version 1.03 (for both 400K and 800K), $25.00

To take advantage of the wider variety of hardware now available for the Mac, Microsoft Corp.'s *Excel Version 1.03* new features include: • NO copy protection; • ability to link work-sheets stored in different folders; support for the MC68881 floating-point coprocessor; a copy of the Apple *Switcher* Version 5.0 (sorry, MacXL users, this is HFS, not MFS); • and support for large screen monitors announced for the Macintosh.

If you acquired *Excel* on or after Sept. 1, 1986, this update is free. Otherwise, you can order for $25. To get your update, contact Microsoft Corp. before Feb. 1, 1987, at: 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717. (206) 882-8080.

–Pat Crenshaw
Microsoft Customer Service

New product releases (continued)

Copy II Mac
version 6.0, $18.00

MacTools now supports HFS: It works with both HFS and MFS disks, and it supports both 400K and 800K disks. Version 6 also backs up these additional programs: Full Paint; Mac Robots (using Copy II Hard Disk); Animal Kingdom (using Copy II Hard Disk); and Mac Golf (using Copy II Hard Disk). Central Point Software, Inc., 9700 S.W. Capitol Hwy., Ste. 100, Portland, OR 97219-9990.

Apple stock fall-out

If you bought Apple Computer stock between November 12, 1982, and September 23, 1983, it's important to note a class action lawsuit (of more than 50,000) against Apple is slated for trial on February 16, 1987, in U.S. District Court (San Jose). In addition to 14 current or former Apple employees (including John Sculley, Steve Jobs, A. C. Markkula, and Del Yoccam), Apple Computer, Inc., is charged with making false and misleading statements about the Lisa's success during that period, which subsequently inflated the stock price. The suit concerns specifically the publicity and promotion of the first-year sales record for the Lisa computer, so-described as "phenomenally successful" by Steve Jobs and similarly quoted by Markkula in quarterly reports.

John Grasberger, attorney for the plaintiffs, says these words of encouragement were not supported by fact. Further, he states that Apple officers were aware of hardware and software problems with Lisa that would result in Lisa's not being shipped until June 1983, though introduced in January of that same year. Also, Grasberger says, they knew that Lisa's high price ($10,000) would be bad for sales, and that their comments were responsible for Apple stock soaring to a high $52/share. He further points out that stockholders are very much displeased that Steve Jobs sold 500,000 of his shares during this share high, only one day after the stockholders report was released, netting him $25 million. The suit seeks damages for the stockholders, totaling the difference in price between what the stock was worth and what it was selling for "due to the hype about Lisa," he says. Meanwhile, an Apple spokeswoman had this to say, "Apple and the defendants have denied the allegations and are defending themselves and the company vigorously. We won't back away at all. The suit is without merit."

CONTACT: John Grasberger, Specthrie & Lerach, 2000 Central Savings Tower, 225 Broadway, San Diego, CA 92101 (619) 231-1058.

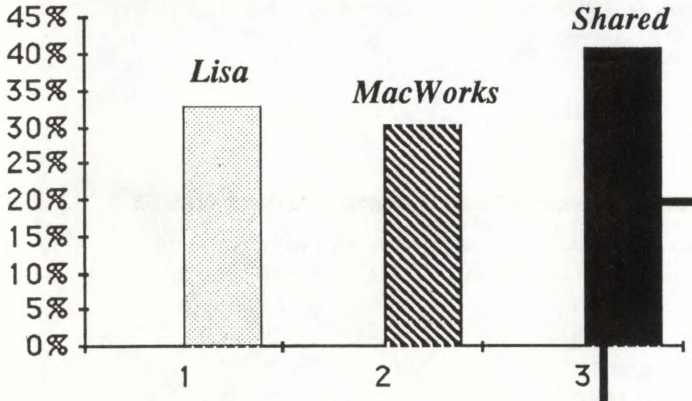
Apple's trade-in program

Unfortunately, to date, Apple has not offered much information about the results of their Macintosh XL trade-in program, promoted to Lisa/Mac XL users from April through August, 1986. This is in spite of the fact that we at *The LisaTalk Report* were informed by Trade-In reps. of a voluminous report being undertaken soon after the program came to its official end, at which time we were told we could review at least some of information compiled for our reporting and support purposes. We have still not seen the report, and it has apparently been available for some time. We will continue to pursue this matter for later discussion.

The report, we've been told, includes comments and results from all Apple departments which played key roles in its Trade-in program, from dealer communications representatives, to accounting and legal departments, to Apple's remarketing division and warehouses, etc.

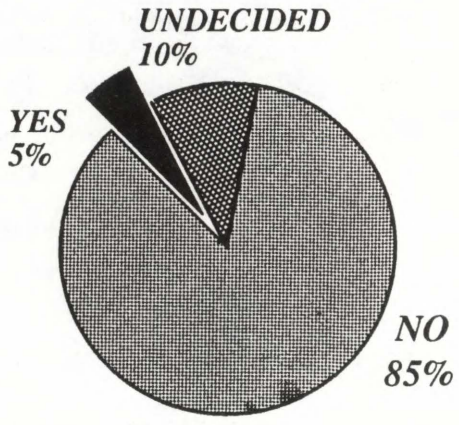
Although not complete, based on information we've received on a monthly basis from Apple during the Trade-in period, and compiled reports of our own survey results over the past four months, a few points are already very clear.

First, it appears that an "underwhelming" majority of Lisa owners particpated in the program, about 4,000, or no more than 10% of the existing



Above: Survey Results Table indicates % of machines (151 total) supporting different operating systems:

Lisa: 33%
MacWorks: 30%
Shared Lisa/MacWorks: 37%



2nd & 3rd quarter 1986 Trade-in Survey Results: % of users considering trading in

customer base. Beyond the very obvious conclusion that most Lisa/Mac XL users did not want to trade for a MacPlus with Hard Disk 20, we believe the low number of trade-in customers is due in part to Apple's $1,500 trade price, or more specificially, the cost of the Hard Disk 20. Perhaps Apple's program would have been more enticing if this had not been a requirement.

Additionally, there was a very low participation by large Fortune 500 companies holding national accounts with Apple; this point is especially interesting asthese accounts were offered, in most cases, straight-across trades, and in some cases, additional free (or exceptional discounts on) products for the MacPlus. These facts came to our attention through many of our own clients who are V.P.s and engineers of large companies. Many of these clients have undeniably (and happily) stood by their original equipment decisions and kept their computers (although some admit doing so has not been without question by members of their organizations). Like most Lisa/Mac XL users, these decision makers recognized that *Lisa*, although discontinued, is still meeting their computing objectives and will continue to do so.

Based on user reports, it also appears the majority of systems traded in were also primarily stripped units which were non-working;. Further, most individuals and companies who participated did not trade in every machine -- owned, or their only machine.

We'll continue to gather information, and keep readers posted on these and other goingson at Apple.

Keep in touch! We're here to help!

Classifieds

To place your classified, send a check or money order in the amount of $25 for 25 or fewer words and 75¢ for each additional word, to: The NetWorkers, 8 Mariposa Avenue, San Anselmo, California 94960.

Items for Sale

Lisa/Mac XLs

Mac XL with 1MB and parallel card. Randy Tsudama, P.O. Box 11962, Fresno, Calif. 93776, or call daytime PST (209) 487–7727. WILL ACCEPT BEST OFFER.

Lisa 2/5 , w/ 1 MB RAM, 5 Meg ProFile, Lisa Pascal, and MacWorks. Asking $1200, or best offer. Reply to: Phil Reese (415) 643-6239.

Looking for something special to add to your Lisa/Mac XL system? Let *The LisaTalk Report* help—we receive sales offers on a daily basis.

Boards & ProFiles

512K Board / 5MB ProFile with cable / Rev. H ROMs: $650 (firm). Reply to: Bill Cox, 68 Campbell Road, Doylestown, PA 18901.

5MB ProFile hard disk AND one 1.5 MB AST RamStak memory upgrade board. Both have worked flawlessly for one year (I traded in); I have original boxes. Reply to: Postelle R. Vaughan, 6929 N. Table Mountain Road, Tucson, AZ 85718.

5 MB ProFile: $300. Reply to: Cathy Murphy-Miles, at (408) 336-5021.

News/Services

24-Hour BBS: MacCircles. (300, 1200, and 2400 Baud) Number: (415) 484–4412. MacCircles is run on Mac XL, using the Red Ryder Host communications program, featuring Macintosh and Mac XL–related news and programs. Contact: Ms. Pat O'Conner or Mr. John Morgan.

We're looking for interesting reviews of Lisa/Mac XL-compatible software/hardware, and also for interesting graphics done on Lisa/Mac XL. If you have something to offer, we'd like to make an offer. *The LisaTalk Report*, (415) 454-7607.

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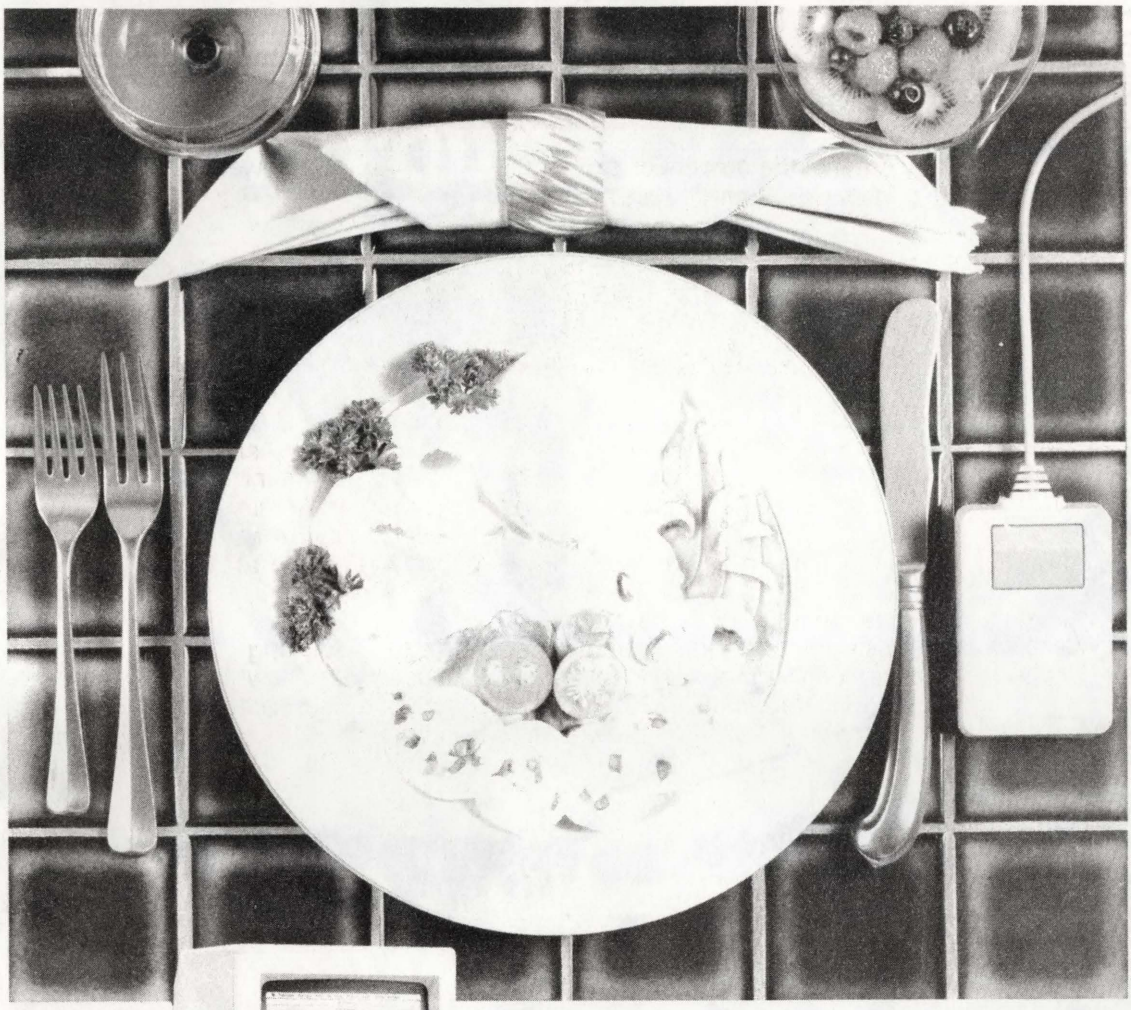

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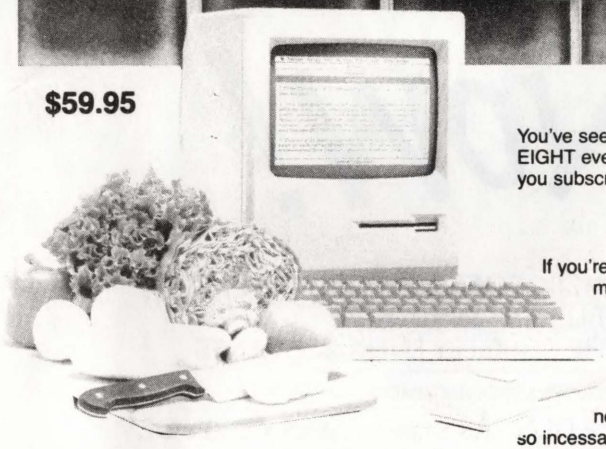

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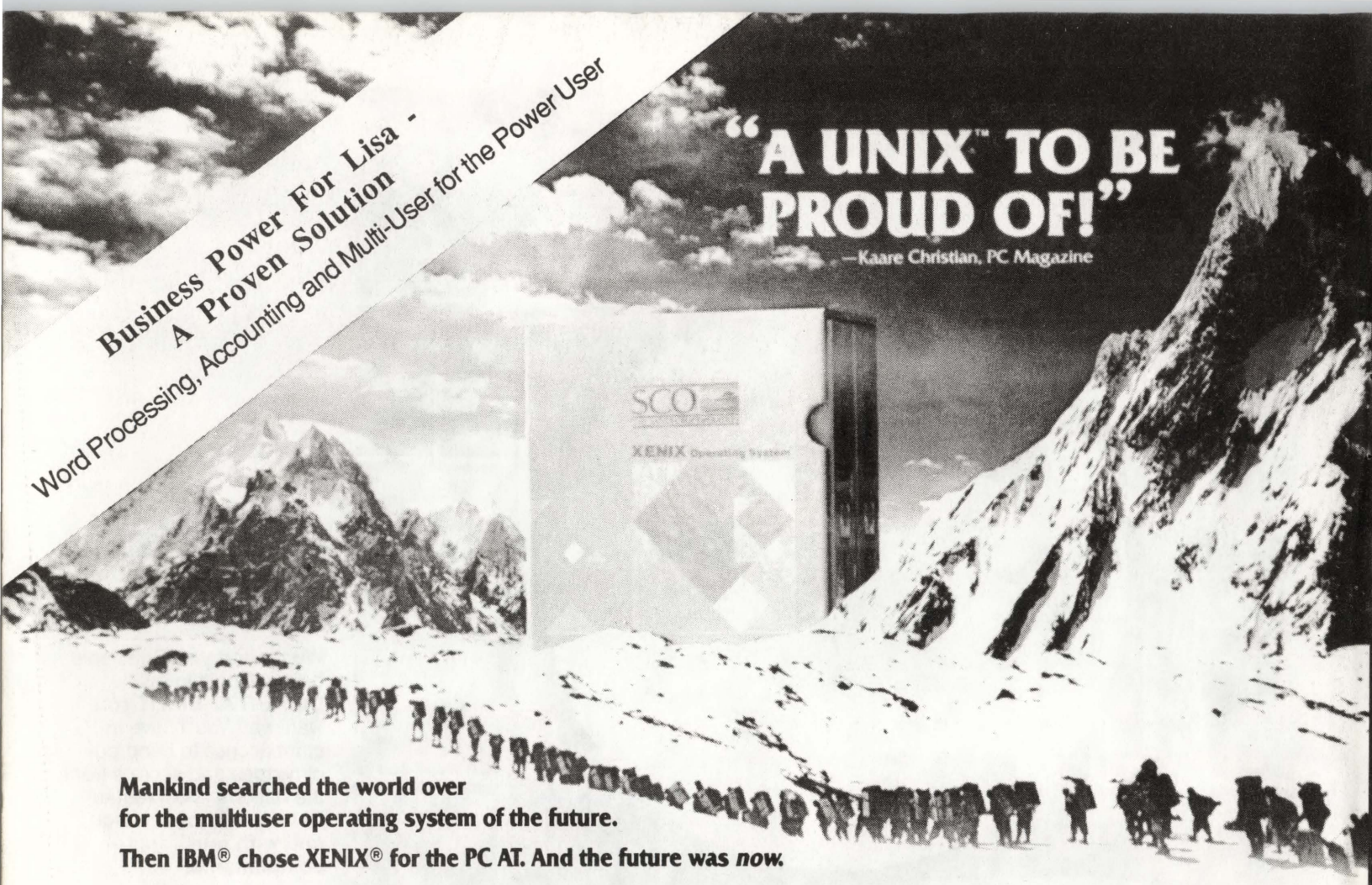

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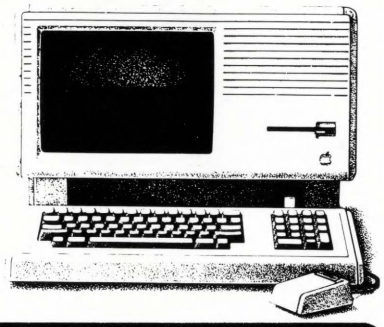

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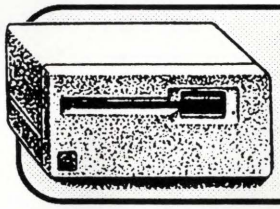

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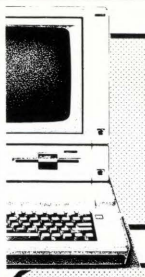

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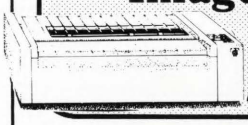

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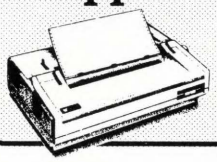

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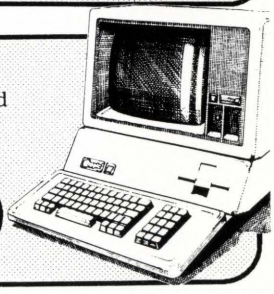

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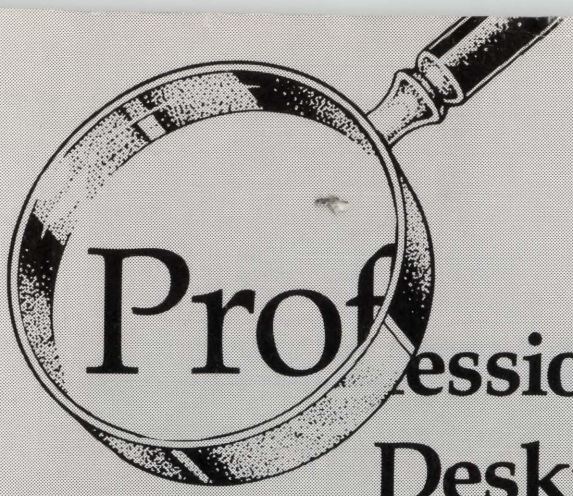

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