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LBL
COMPUTING
NEWSLETTER

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For Reference

Not to be taken from this room

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NAMES & NUMBERS TO KNOW

From on-site, dial <xxxx> From off-site, dial (415) 486-<xxxx> From FTS line, dial 451-<xxxx>

INFORMATION & COMPUTING SCIENCES DIVISION

Director: Stewart Loken (SCLoken)7474 50B - 2232E
 Deputy: Sandy Merola (AXMerola)7440 50B - 2232C

COMPUTING AND COMMUNICATIONS RESOURCES

Head: Ken Wiley (KGWiley)7083 50B - 2258E
Office of Computing Resources:
 Dave Stevens (DFStevens)7344 50B - 2258F
LBLnet Manager: Sig Rogers (SGRogers)6713 50B - 2258G
Telephone Services: Sam Gibson (FSGibson) 4234 80A - 103

ADVANCED DEVELOPMENT PROJECTS

Head: Dennis Hall (DEHall).....6053 50B - 3238

WORKSTATION GROUP

Group Leader: Richard LaPierre (RLLaPierre)....4692 50B - 2245
 Software Evaluation & Acquisition.....6858 50B - 2231

COMPUTING SERVICES

Head: Marv Atchley (FMAatchley).....5455 50F - 104
 Asst.Head: Serge Polevitzky (SIPolevitzky) ...4389 50F - 142
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Eric Beals (ERBeals)5351 50F - 143
 System Manager (GPJohnson)6211 50B - 1225

UNIX SYSTEM

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 (PGMurray).....5354 50B - 2259

COMPUTING APPLICATIONS

Applications Group
 Head: Jerry Borges (JTBorges).....5568 50F - 144

CENTRAL ELECTRONIC MAIL FACILITY

FIRST INITIAL-MIDDLE INITIAL-LAST NAME is the standard recipient format in Lab-wide mailing address.

Examples: VMS: lbl:JASmith
 UNIX: JASmith@lbl.gov
 Software Tools: JASmith@lbl.gov

DEVELCON

DEVELCON Access Names

[VAX 8650's (GENERIC)CSA]
 VAX 8650 (VMS)CSA1
 VAX 8650 (VMS)CSA2
 VAX 8650 (VMS)CSA3
 VAX 8650 (VMS)CSA4
 VAX 8650 (VMS)CSA5

 SUN-3 / 280 (UNIX1)UX1
 SUN-3 / 180 (UNIX3)UX3
 SUN-3 / 180 (ISD)ISD

Dial-up Access Numbers

All Machines - 300 BPS 486-4959
 All Machines - 1200 BPS 486-4979
 All Machines - 2400 BPS 486-4969

Local TYMNET Access Numbers for DEVELCON

	1200 bps	2400 bps
Oakland	430-2900	633-1896
Walnut Creek/Concord	935-0370	935-1507
San Francisco	974-1300	543-0691
Santa Clara	408-980-8100	986-0646
Palo Alto	415-366-1092	361-8701
Vallejo	707-644-1192	
Antioch	754-8222	
Fremont	490-7366	
Pleasanton	462-2101	

MFE Consulting Number is 422-1544

Newsletter Closing Date is Friday, December 9, 1988

Address all communications for the Newsletter to login nooz@ux1.lbl.gov.

Editor: Maggie Morley

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SCHEDULES FOR COMPUTER CLASSES

IN THE TRAINING ROOM, BLDG. 50B, RM. 1237

OR

IN THE BUILDING 50F CONFERENCE ROOM

Jerry Borges

The following computer classes are to be offered by Computing Services. There is no charge for these classes. To enroll, obtain your supervisor's approval

and then contact Pat Bean (x7008). If you have questions about what's being offered, or suggestions for other computer-oriented topics, contact Jerry Borges (x5568).

DATE	TIME	DESCRIPTION	INSTRUCTOR
Dec. 14, 1988	10 AM - NOON	Electronic Mail: Survey	William Jaquith
Jan. 10, 12, 1989	1 - 4 PM	Intro to VAX/VMS	Marty Gelbaum
Feb. 6, 1989	9 - 11 AM	UNIX: Bare Bones Intro	Ed Sheena
Feb. 7, 1989	9 AM to Noon	UNIX: vi	Ed Sheena
Feb. 8, 1989	9 - 11 AM	UNIX: Continuing Intro	Ed Sheena
Feb. 9, 1989	9 - 11 AM	UNIX: Text Formatting Intro.	Ed Sheena
Feb. 7, 9, 14, 16	10 AM - Noon	C Programming	Marty Gelbaum

IN THE MAC TRAINING ROOM, BLDG. 50B, RM. 1229

Carole Casaretto

The following computer classes will be offered by the Workstation Group. There is no charge for these classes. To enroll, obtain your supervisor's approval and then contact Carole Casaretto, (x6858). Those classes with asterisks (*) appended are already full.

Call Carole now to sign up for classes later in the year. For more information, see **THE WORKSTATION SCENE** in this Newsletter. If you have any questions regarding these classes or suggestions for other computer-oriented topics, contact Richard LaPierre (x4692).

DATE	TIME	DESCRIPTION	INSTRUCTOR
Dec. 5, 7, 9	1-3 PM	Beginning EXCEL Spreadsheet*	Nancy Travis, A. Soulsburg
Jan. 10, 12, 17, 19	1-2:30 PM 3-4:30 PM	Beginning MS WORD 3.01	Karla Savage, T. Pope Claudia Madison, J. Wolslegel
Jan. 11, 13	1-3 PM	Basic Intro. to FileMaker*	Claudia Madison, C. Casaretto
Jan. 18	10-11 AM	Introduction to HyperCard	Bruce Burkhart
Jan. 23, 25	10-11:30 AM	HyperCard -- Creating Cards and Stacks	Bruce Burkhart
Jan. 23, 25, 27	1-3 PM	Beginning EXCEL Spreadsheet*	Claudia Madison, A. Soulsburg
Feb. 1, 2, 3	10:30-12 noon	Introduction to MacDraw II*	Karla Savage, Carole Casaretto
Feb. 8, 10	1-3 PM	Basic Intro. to FileMaker*	Claudia Madison, C. Casaretto
Feb. 14, 16, 21, 23	1-2:30 PM 3-4:30 PM	Beginning MS WORD 3.01	Karla Savage, Tom Pope Claudia Madison, J. Wolslegel
Feb. 27, March 1, 3	1-3 PM	Beginning EXCEL Spreadsheet*	Nancy Travis, Carole Casaretto
Mar. 8, 10	1-3 PM	Basic Intro. to FileMaker*	Claudia Madison, C. Casaretto
Mar. 1, 2, 3	10:30-12 noon	Introduction to MacDraw II	Karla Savage, Carole Casaretto
Mar. 27, 29, 31	1-3 PM	Beginning EXCEL Spreadsheet	Claudia Madison, A. Soulsburg
Apr. 5, 7	1-3 PM	Basic Intro. to FileMaker	Claudia Madison, C. Casaretto

LBLnet NEWS

Bob Fink
Sig Rogers

Policy on Attachments to LBLnet

From time to time a question concerning what may or may not be attached to LBLnet arises. The following LBL Policy and Procedure Administrative Memo was issued June 22, 1988 (Volume XIV - No. 20) to provide answers to such questions. It reads as follows:

ATTACHMENT OF USER EQUIPMENT TO LBLNET

LBLnet (the Laboratory-wide Ethernet) is managed and developed to meet the networking needs of all LBL programs as efficiently and cost-effectively as possible. To this end, LBLnet currently supports multiple communications protocols and methods of physical connection for user equipment. The widespread availability of LBLnet compatible products has resulted in many different types of computers and workstations coexisting in relative harmony without the need for a rigid approval process for connection to the network. LBLnet support of the widest range of user equipment, with the least regulation possible, is the goal for LBLnet.

However, there are now and undoubtedly will be future products designed such that although they will connect to and function on LBLnet, they should not be allowed to do so. This may happen when a manufacturer decides to use the same technologies used in LBLnet but does not design a product appropriate for use in such a large heterogeneous network. Such a product may function on the network but cause serious operational, reliability or maintenance problems for the rest of the network and its users. Similarly, improper management or configuration (e.g. network address or name assignment) of otherwise acceptable hardware and software can produce the same results. Effective use of LBLnet also requires participation in one or more user communities defined by higher level protocol and application suites. There is a growing number of such communities at LBL and each one is coordinated by an Administrator (e.g. Internet

(TCP/IP) Administrator, DECnet Administrator). The appropriate Administrators should be contacted prior to acquisition of equipment and request for connection to LBLnet. Therefore there are three basic requirements that must be met for attachment of user equipment to LBLnet:

- The hardware must be compatible with the LBLnet service.
- The software must be compatible with the LBLnet service.
- The management and operation must conform to the requirements of all applicable user communities.

The LBLnet Manager (Sig Rogers, x6713) will keep files of known compatible products, incompatible products and products scheduled for testing. A product will not be declared incompatible without referring it to the Network Advisory Group for advice, but the LBLnet Manager may temporarily disallow its connection based on evidence of incompatibility until its status is resolved. The LBLnet Manager will also maintain a list of the Administrators of all LBLnet user communities.

Questions regarding this policy should be directed to the head of the Computing and Communications Resources Department, ICSD (Ken Wiley x7083)

Leroy T. Kerth
Associate Laboratory Director
for General Sciences

Policy on Modifications to LBLnet

In addition to the policy on attachment of user equipment to LBLnet is the issue of modification of LBLnet itself (e.g., rearrangement of cables or manipulation of network equipment). This is covered in the LBL RPM (Regulations & Procedures Manual, Pub 201), Section 1.04, COMMUNICATIONS SYSTEMS.

From Part A., COMMUNICATIONS MANAGEMENT: "Unauthorized personnel may not install, remove, or modify wiring or equipment on the LBLnet, ..."

Both of these policies are intended to insure that the primary goal for LBLnet (as stated in the first sentence of the Administrative Memo reprinted above) is met.

When in doubt about the interpretation of any of the foregoing, call Bob Fink, Sig Rogers, or Ken Wiley.

Network Contact Information

LBLnet new installations:
Ted Sopher, x4559 or x5354

LBLnet trouble calls: x5354

LBLnet comments or trouble reports:
lblnet@lbl

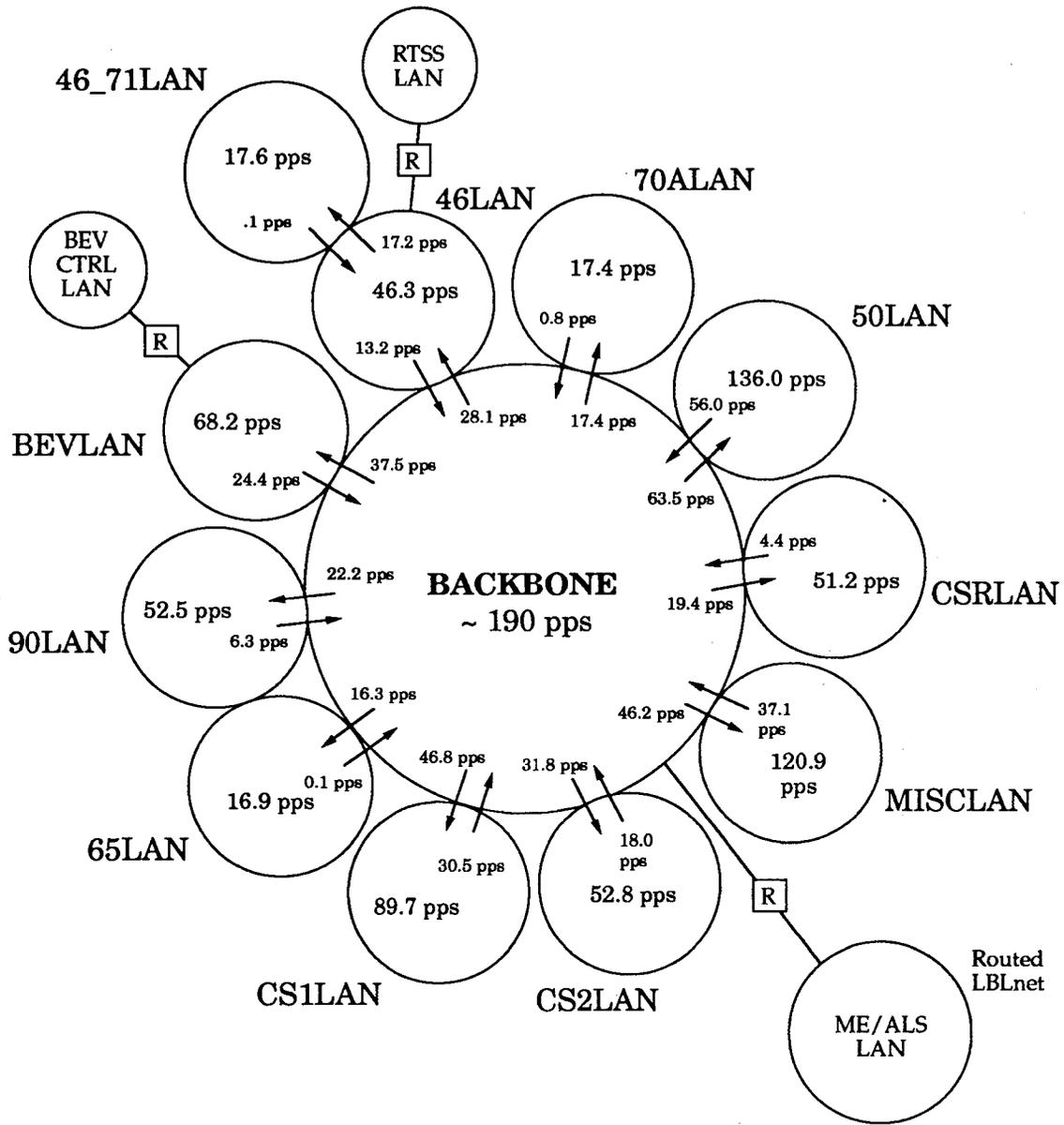
For Decnet administration:
William Jaquith, x4388

For Internet administration:
Darren Griffiths, x6966

For IBM PC and Macintosh network administration:
Richard LaPierre, x4692

To contact the Network Advisory Group (NAG):
nag@csam.lbl.gov

If you are in doubt about whom to call, call:
Bob Fink, x5692,
Serge Polevitzky, x4389,
Sig Rogers, x6713



R = IP Router

pps = packets per second; all figures are monthly averages

arrows represent packet flow through a bridge from one LAN to another

Note: Each circle shown above is a separate Ethernet that is interconnected to the others via a bridge (or router if indicated) that provides forwarding of packets based on address.

LBLnet Activity October 1988

ICSD/CCR

Fink/Rogers

THE HELP DESK

SOME LOCALLY-DEFINED COMMANDS

Marty Gelbaum

What follows is a list of some of the locally defined commands on the CSA cluster. These commands let you know such things as (1) how to see the load on the CSA system, (2) the electronic mail address of other users on CSA, (3) the status of your disk storage.

RESOLVE name	shows the home directory, full name, etc., of the CSA user "name"
LOOKUP name	checks the LBL Electronic Post Office database for the electronic mail address of "name"
CERNDIR name	checks the electronic mail database at CERN for "name"
DISKSPACE [name]	reports the amount, location, and type of your CSA disk storage or that information for the CSA user "name"
DISKLOG [name]	reports the location and type of your CSA disk storage or that information for the CSA user "name".
BITNETLIST host	reports the BITnet address of "host" if "host" is on BITnet (LBL's BITnet address is LBL.)
DECNETLIST node	reports the DECnet number of "node" if it is connected via DECnet to CSA.
CSALOAD	reports the number of users and batch jobs per CSA machine, as well as the average priority and "load average" for these machines over the last 1, 5, and 15 minute intervals. "load average" means the average number of jobs that were computable over those intervals;

thus, it is some measure of how many jobs were waiting to use the CPU.

BILLACCO [month] reports the computer center charges for your account for the current month or the specified month. See the HELP article RECHARGE, subtopic **Displaying_Rates**, for details.

BILLUSER [month] reports your computer center charges for the current month or the specified month. See the HELP article RECHARGE, subtopic **Displaying_Rates**, for details.

Forward comments and questions to me at x4749 or

VMS Mail: lbl::M_Gelbaum

Unix or

M_Gelbaum@lbl.gov

Software Tools Mail

PCA NOW ON CSA2

Jon Forrest

We've moved the PCA (Performance Coverage Analyzer) from CSA3 to CSA2 so that DI3000 users can profile their programs.

We realize that there may still be users of other node-specific programs that won't be able to use PCA but, given the expense of licensing PCA on other nodes, we won't be able to satisfy everyone.

Forward comments and questions to me at x6280 or

VMS Mail: lbl::JLForrest

Unix or

JLForrest@lbl.gov

Software Tools Mail

SAVING YOUR SESSION

Jon Forrest

Computing Services is considering making a change in the way the CSA Vax Cluster operates. Consider the following two scenarios:

- 1) You are dialed in through a modem port and you accidentally hang up (or are disconnected).
- 2) You are connected through the Develcon and you push the blue button before logging out.

Currently, the result of these two scenarios is that you are logged off and any programs that you were running, including editing sessions, are aborted. Computing Services wonders if this is truly desirable.

An option exists for us to change the behavior of the Cluster so that when either of these two events occur your session is not deleted right away. Instead, you have a certain amount of time to log back into the node you were logged into before. When you do this, VMS tells you that you have a disconnected "virtual terminal" and asks if you want to be reconnected. If you say yes then your session is continued as if nothing happened. If you say no, then a new session is created for you. If someone else logs in to the same line as you were just logged out from they will NOT be given the opportunity to resume your session. Nor do you have to log back in on the same line; any line will do so long as it is on the same node.

It is clear to us that this ability can save dialup users lots of trouble. What isn't clear to us is if this behavior will bother anyone, especially user who regularly logoff by pushing the blue button on their Develcon box. Before we make the change to this behavior we'd like to know what you think about this. If you have any questions or comments about this, or about any of the details that aren't described in this note, feel free to forward comments and questions to me at x4991 or

VMS Mail: `lbl::JLForrest`

Unix or
Software Tools Mail: `JLForrest@lbl.gov`

UNIX NEWS

The Worm . . .

UNIX SYSTEM SECURITY

Dave Cleveland

On November 2, 1988, several of the UNIX systems on LBL's Ethernet were invaded by a "worm." This worm, which was a small program, invaded VAX and Sun UNIX systems on the Arpanet and Milnet; from those systems it attempted to invade other UNIX systems on local networks such as LBL's Ethernet. It spread across the country, taking advantage of security holes in some UNIX systems' software, namely *sendmail* and *fingerd*. It was a benign worm in that it did no direct damage. However, because of its high replication rate, it saturated some systems with many copies of itself, and that caused a serious slowdown and exhaustion of system resources. Through the valiant efforts of a handful of LBL's intrepid staff members, the worm was controlled the same night. By the next day, fixes for the *sendmail* and *fingerd* programs were discovered, and by the end of the week new versions of *sendmail* and *fingerd* became available for most UNIX systems at LBL. These more secure versions of *sendmail* and *fingerd* are available via anonymous ftp on CSAM, in the directory *fix*.

On November 12, we learned of an additional security bug in *fingerd* that might have permitted unauthorized read access to protected files. As a result, we have updated all of the "fingerd" files in the directory *~ftp/fix* on *csam.lbl.gov* to fix this problem as well.

To access the files on CSAM, use the command *ftp* by typing

```
ftp csam.lbl.gov
```

and enter the login name "anonymous" and the password "guest" when prompted. Next, type the *ftp* commands

```
cd fix
ls
```

to look at the available files. Notice that there are several types of files. The files *fg.src.fix*, *sm.src.fix*, *sm.fg.binaries* and *sm.bin.patch* are all documents; the file *fingerd.c* is the source file for all *finger* daemons and servers, namely *fingerd* and *in.fingerd*; most of the remaining files are replacement binary (executable) files for different Unix systems. The first thing you may want to do is copy the documentary files to your system. The documentary files are:

- *sm.fg.binaries* -- describes how the replacement binary files can be fetched from CSAM and installed on your systems.

- *sm.bin.patch* -- describes how you can patch your own binary *sendmail* in case the version you need is not on CSAM.

- *fg.src.fix* and *sm.src.fix* -- describe how to fix and install the source code for *fingerd* and *sendmail*, respectively.

To fetch each documentary file, type the commands

```
ascii
get <documentary-file>
```

To copy the source file *fingerd.c* to your system, type the *ftp* commands

```
ascii
get fingerd.c
```

To copy "sendmail" and "fingerd" binary files to your system, type the *ftp* command

```
binary
```

and then the commands

```
get <fingerd-file>
get <sendmail-file>
```

When you are finished copying files, type *quit* to disconnect from *ftp*.

We are recommending that the *sendmail* and *fingerd* files on all UNIX systems at LBL be patched or replaced. If you have any questions on how to do this, please send mail to *system@ux1.lbl.gov* or call Dave Cleveland, x5336, or Lam Wong, x4786.

Also, the Computing Services' UNIX staffers always appreciate receiving any information that you might have regarding possible UNIX security problems. Please call me at x5336.

SUN NEWS

Dave Cleveland

- ✓ **INTRODUCTION TO SUN** seminars are being held on December 6 at the Nikko Hotel in San Francisco, and on December 8 in Sacramento. The seminars start at 2 PM and include talks by Sun and demonstrations by 15 software applications vendors. To reserve a seat at one of these free seminars, call Theresa Larrieu at (415) 968-6292.
- ✓ **NEW SUN MATHEMATICA** gives non-mathematicians an easy tool to solve complex calculations interactively. Type an equation and a window opens up with a 3-D color plot of the solution. It runs on the Sun 386i, Sun-3 and Sun-4 with site licenses available. We hope to have *Mathematica* up and running on UX1 sometime this month, and we will give a demonstration on a Sun Workstation in the Graphics Lab, Bldg. 50B., Rm. 1232.
- ✓ **SPECIAL ONE-TIME SOFTWARE UPGRADES** are now being offered at 60 to 80% off the regular price. Until December 31, these special prices will let you upgrade your software to the latest revision level and allow you to put it under normal software support. See LBL's Sun Representative, Mitch Beard (x5781), about your specific needs.
- ✓ **SUN START** gets you going for \$1500. Servers and deskside systems have always included free installation of the hardware and operating system. Now Sun Start gives you the setup of user accounts, electronic mail, backup strategy and much more.
- ✓ **SUN AND 17 OTHER VENDORS** have announced their plans to produce products for UNIX SYSTEM V Release 4.0 from AT&T. This "Archer" group represents 70% of all UNIX systems installed.
- ✓ **SUN HAS INCREASED PRICES** 5 to 9% to help cover the increased cost of memory chips.
- ✓ **SUN INTRODUCES SECURE UNIX OPERATING SYSTEM** for the Sun-3, Sun-4 and Sun's TEMPEST workstation (B1 level of trust).
- ✓ **NEW LIST OF SUN-4 SOFTWARE** includes numerous products from 124 companies and hardware add-on's from 15 hardware companies. Call LBL's Sun Representative, Mitch Beard, at x5781 for information.

- ✓ **SUN INTRODUCES A SPARC SIMULATOR** which emulates SPARC computers for designers prior to prototyping. It runs on Sun-3 and 4.
- ✓ **SUN USER'S GROUP MEETS IN MIAMI** December 4 - 7th. To register call (415) 336-4341 or (415) 336-4112 (\$225 members). Travel discounts are available from Rosenbluth Travel (408) 748-0480.
- ✓ **MINOR RELEASE OF SUN OS 4.0.1** will be shipped automatically to all customers under support during November and December. This patch tape is also available for \$134 for those not under support. This release is available for the Sun-2, Sun-3, and Sun-4; information on 4.0.1 for the Sun386i should appear here in next month's Newsletter. SunOS 4.0.1 is a collection of installable/removable patches which addresses 79 known software difficulties in such areas as: NFS, Yellow Pages, dbxtool (debugger), format, serial communications, SCSI, and Lightweight Process Library. Both Sun internal testing groups and customer beta sites have tested these fixes.

Suninstall bugs are not addressed in 4.0.1. The 4.0.1 fixes should be applied after SunOS 4.0 has been successfully installed. *Suninstall* will be improved in a future release.

Ordering Details

For customers who have software support agreements with Sun (Software Update Service, Answerline Service, Comprehensive, or Basic), 4.0.1 will be shipped automatically and is available at no additional charge. If you have such an agreement with Sun, you should receive the 4.0.1 media by the end of December.

Sun system owners who are running SunOS 4.0, but who do not have a software support agreement with either Sun or LBL's RTSS, may order SunOS 4.0.1 through LBL's Sun representative, Mitch Beard (x5781). The ordering numbers and prices are as follows:

USS1-4.0.1-01	Sun-4 (SPARC) 1/4" Domestic	\$134
USS1-4.0.1-02	Sun-4 (SPARC) 1/2" Domestic	\$134
USM2-4.0.1-01	Sun-3 (68020) 1/4" Domestic	\$134
USM2-4.0.1-02	Sun-3 (68020) 1/2" Domestic	\$134
USM1-4.0.1-01	Sun-2 (68010) 1/4" Domestic	\$134
USM1-4.0.1-02	Sun-2 (68010) 1/2" Domestic	\$134

New SunOS 4.0 Orders

To address the product quality of SunOS 4.0, SunOS 4.0.1 will ship with all new 4.0 orders for Sun-3 and Sun-4 systems starting in mid-November. A future

SunOS release will fully incorporate all of the SunOS 4.0.1 fixes as well as others.

- ✓ **NEW 688 MB VME/SMD DISK SUBSYSTEM FOR DESKSIDE SYSTEMS.** Sun has announced 688 MB (single disk) and 1.3 MB (double disk) SMD storage subsystems. These new subsystems are being sold in expansion pedestals for desktide systems, superseding Sun's 280 MB and 560 MB subsystems. The new subsystems offer more than twice the capacity of the current subsystems, while reducing the price-per-megabyte by more than 55%. These are high performance subsystems that have twice the throughput of SCSI disk subsystems. Using the maximum number SMD and SCSI disks in combination, Sun desktide systems can now store more than 3.4 GB of data.

The 688 MB drive works only with the new high performance SMD-4 controller, also announced in November. The SMD-4 is a full-height (9U) VME module that replaces Sun's current Xylogics 451 controller. With the SMD-4's full 32-bit data path and 128 KB on-board cache, data throughput can be up to double the Xylogics 451's, depending on the application. The read performance has been optimized for large sequential files typical in graphics and file server applications.

Prices

The new 688 MB SMD 8-inch disk drive subsystem (including the SMD-4 controller, power supply, and standard desktide pedestal) is available for \$13,300. The storage subsystem can also be ordered with two disks in a pedestal, providing 1.3 gigabytes of storage for \$23,100. Each CPU can have two expansion pedestals.

Ordering Details

The 688 MB subsystems may be ordered for existing systems; however, the system **MUST** be running SunOS 4.0. A software feature tape must be ordered at the same time, but there is no extra charge. Depending on which model of Sun system you are ordering for, you will also have to order a Boot PROM (\$50), or a CPU swap (free if ordered before March 9, 1989).

A trade-in program for customers with existing drives is also available through Sun's Customer Service Division. Sun representative Mitch Beard (x5781) will be happy to supply detailed information on this and the other items listed in this article.

- ✓ **NEW SMD-4 VME/SMD DISK CONTROLLER.** Sun has announced the SMD-4, a high performance disk controller which substantially boosts I/O subsystem connectivity and throughput. The SMD-4 controller delivers up to twice the data throughput of the Xylogics 451 and connects up to twice as many disks per controller.

The SMD-4 controller is a full-height, 9U-sized VME module that replaces Sun's current Xylogics 451 SMD (Storage Module Device) disk controller. As a full 32-bit bus controller, the SMD-4's data path is twice as wide as the current 16-bit Xylogics 451. Another improvement over the Xylogics 451 is that the SMD-4 connects directly to the VME buss without any adapter circuitry. The SMD-4 design includes a 128-kilobyte read-ahead cache, read and write optimization, and a pipelined bus DMA architecture. The SMD-4 is supported on all Sun-3 and Sun-4 desksides and servers. The controller supports 10" 575 MB, 9" 892 MB, and 8" 688 disk drives. Up to four SMD-4 controllers can be installed in data center servers. Each SMD-4 can support up to four SMD disk drives in server configurations.

Price and Ordering Information

The new SMD-4 is available for \$3150 (stand-alone controller with disk cables). It is integrated into new packages with no price increase over the corresponding packages with the Xylogics 451. A trade-in program for system owners with the existing controller will also be offered through Sun's Customer Services Division. Note: currently installed systems must be running SunOS 4.0, and they may require a no-cost CPU upgrade. As mentioned in the section on the new disk subsystem above, there is a time limit on the free CPU upgrade, i.e., we will have to pay full price after March 9, 1989. Again, check with Mitch Beard (x5781) for more information. You can also reach him via electronic mail addressed to

mbeard@ux1.lbl.gov.

Forward accolades, brickbats, comments, gripes, and questions to me at x5336 or send electronic mail to

VMS Mail: lbl::DHCleveland

**Unix or
Software Tools Mail: DHCleveland@lbl.gov**

COMMON LISP IS UP ON UNIX

Lam Wong

Release 2.0 of the **Extended COMMON LISP**, from Franz Inc., is now up on UX1 and UX3.

This system, consisting of an interpreter and an optimizing compiler, is a complete implementation of the COMMON LISP language, enhanced with extensions of

- a top level with extensive debugging facilities,
- **Flavors**, an object-oriented language feature for defining abstract types,
- an interface package between LISP and foreign data & procedures (for, among others, C and FORTRAN).

> How to Run it:

To get into Extended Common LISP, just type

`% cl`

> How to Exit:

The expression

`(exit)`

will cause the LISP image to exit.

> How to Compile functions:

There are two ways to compile functions.

1. You can compile the function defined in the interpretive environment as follows:

`(compile 'foo)`

which will replace the interpreted version of **foo** with the compiled version of **foo**.

2. You can write the function(s) to a file with an editor, and then call the "compile-file" function as follows:

`(compile-file "clfoos.cl")`

which will cause a new file called **clfoos.fasl** to be created in **clfoos.cl**'s directory. This file can be loaded into your LISP environment with the **load** function.

> Documentation:

- *Extended COMMON LISP User Guide* (available from the Computer Center Library). Users should read it before using the system.

- *COMMON LISPcraft* (Robert Wilensky, W. W. Norton and Company, 1986). It can be ordered at the Computing Library. Read it if you are new to LISP.

- *Common LISP: The Language* (Guy L. Steele, Jr., Digital Press, 1984). It defines the language COMMON LISP. It can be ordered at the Computing Library.

Forward comments and questions to Lam Wong, x4786, or

VMS Mail: `lbl::LHWong`

Unix or Software Tools Mail `LHWong@lbl.gov`

LBL PAD NETWORK SERVICE

William Jaquith

LBL now has available a PAD (Packet Assembler Disassembler) network service. It is used in conjunction with a private X.25 network called ESnet. The PAD is the entry point for LBL users to get to nodes in the ESnet that provide remote terminal service. Sites that are available in the ESnet at this time include CERN, SLAC, Brookhaven, MITLNS, Fermi, and Caltech. The connections to CERN, SLAC, Brookhaven, and Fermi are to remote dataswitches. By connecting to the PAD service, users can then log onto computers that are available at the remote dataswitches; the connections at MITLNS and Caltech (Citex) are to specific computers.

The PAD service is available from the Develcon directory called X29. The destinations that are currently available are to CERN's dataswitch, and then to either the VM computer or VXCRNB; to Fermi's Micom dataswitch; to Brookhaven's dataswitch; to Caltech's node CITHEX; to SLAC's Micom dataswitch; and to MIT's node MITLNS. As other destinations come available they will be installed. Note that this is a private X.25 network and there is no way to reach computers that are not within the private network.

For more information, see the VMS HELP article PAD.

Forward comments and questions to me at x4388 or

VMS Mail: lbl::WDJaquith

Unix or
Software Tools Mail WDJaquith@lbl.gov

FOCUS NEWS

Bert Albrecht

➔ LBL HOSTS NC FUSE MEETING

Lawrence Berkeley Lab is the host site for the NC FUSE -- the Northern California Focus User's Group -- meeting on December 17, 1988.

All LBL employees are invited to attend this meeting. No dues will be charged and there is no pre-registration requirement.

Meeting will begin with registration and coffee at 8:45 AM at the Bldg. 50 Auditorium. There will be presentations throughout the day (adjournment at 4 PM).

- David Bean of IBI will discuss the **Modify Debugger**.
- Chuck Roller of Howard Share Consultants will give a technique for using CLIST for Menu Creation.
- Neil Conkel will present a tip/technique.
- Bruce Bagnoli of LBL will explain his department's Plant Inspection System.
- P.J. Matarese, ESL, will present a paper on Using DBA to Restrict Viewing in **Modify**.

There'll be a mystery guest and a holiday reception following the presentations. A formal agenda is available from Valerie Sherriffe (x4460) or me (x6280).

Forward comments and questions to me at x6280 or

VMS Mail: lbl::HCAAlbrecht

Unix or
Software Tools Mail HCAAlbrecht@lbl.gov

PHYSICS NEWS

Werner Koellner

• PHYSICS UTILITIES

Access to the Physics Utilities, including the CERN Library, and the PAW Library (Physics Analysis Workstation), is available, after executing the DCL command

```
@Physics$Manager:Setup_Phys
```

It is recommended to include this line in your Login.Com file. When you type

```
help @physics_utilities
```

you'll see many of the utilities that are available. You can also type

```
help 'subtopic'
```

to get help on a particular utility directly.

• CERN LIBRARY

Object libraries are updated at unpredictable times. Changes are documented in the CERN Computer Newsletter, and sometimes also in the directory **Cern\$Inform**. In some cases, a previous version of an object library is available as xxxxx.OLD. The following Object Libraries have been updated recently, or have been rebuilt, following the crash of Disk\$Physics00.

Note some filename changes:

```
GEANT312.....Version 3.12.25
GEANE.....Version 3.12
GEANH.....Version 3.12
GRAFLIB5.....(Hplot Vers. 5.04/03, Higz
                [mgks], Tvvax [mgks],
                Gkspack)
GRAFLIB.....(Hplot Vers. 4.19, Tvvax
                [Tvpigs], Gkspack)
GKSPACK_ATC LBL. Version 1.2
HBOOK4.....Version 4.04/01
HIGZ.....Version 1.04/03
HIGZ_ATC.....(LBL Version 1.2)
HIGZ_DI3000.....experimental
HIGZ_Phigs.....experimental
HIGZ.....Version 1.04/03
HPLOT5 .....Version 5.04/03
KUIP.....Version 1.47
PACKLIB4.....(Hbook4 Vers. 4.04,
                KUIP Vers. 1.47)
PAW .....Version 1.04/02
PAW_ATC .....LBL Version 1.2
SIGMA .....Version 1.00
```

A number of logical names, of the form CERN\$xxx_LIB, have been defined for selected CERN object libraries. These logical names always translate into the latest standard object libraries. It is recommended that you use these logical names, since they remain independent of the actual filenames.

• GEANT

GEANT, a system of detector description and physics simulation tools, is available as part of the CERN Libraries. For novice users, a collection of sample programs is available.

Version 3.12.25 is the default version. The logical name CERN\$GEANT_LIB points to the appropriate object library file. The files GEANT310.* have been removed. The recommended link procedure is GEANT.LNK using GEANT.OPT. Please type

```
HELP GEANT
```

for additional information.

• PAW

At LBL, the program PAW is available in both minimal-GKS and full GKS versions. The full GKS version, named PAW_ATC, uses ATC-GKS Version 3.0, and makes available a large number of output devices. Linking is done via the procedures PAW.LNK or PAW_ATC.LNK, which use corresponding *.OPT files. Graphics output may be directed simultaneously to a Metafile, which later can be processed via the program METAPAW.Exe to direct the output to any available graphics device. Most recent improvements are documented in the files **Cern\$Inform:Paw.News***. Type

```
HELP PAW
```

for additional information.

Forward comments and questions to me at x4389 or

```
VMS Mail   lbl::WOKoellner
```

```
UNIX or
Software Tools Mail:  WOKoellner@lbl.gov
```

NOTES FROM TROUBLE MAIL

Dana Conant, Computing Services

Following are further examples of typical exchanges from our on-line UNIX and VMS trouble mail facilities.

MESSAGE:

What's the definition of baud rate? Is it bits per second or characters per second? or neither? Thank you very much for the answer to this basic question.

RESPONSE:

By common use, baud rate is bits per second. By definition, baud is the rate of signal transition on a communication circuit. Communications engineers, typically by working with amplitudes and phases in signal transitions, can put more than one bit on a single signal transition. Thus, a 1200 baud (signal change) with 8 discrete amplitudes and phases can carry a 9600 bit per second communication path.

Dixon Doll's book, *DATA COMMUNICATIONS*, discusses signalling rates, baud, and bits on pages 72fff, 158ff, and 198ff.

MESSAGE:

Upon logging in, I received a message that I had a new mail message (in VMS mail—it was not an MSG notification). However, when I entered MAIL to read it, it could not be found in the NEWMAIL folder (which did not exist); only old mail was left.

Do I, in fact, have some new mail somewhere I don't know about? Or is this just some bug or quirk?

RESPONSE:

Your problem stems from a well-known VMS Mail bug, described on page 15 of the VMS Mail Utility Reference Manual.

Correct the count of new VMS Mail messages by invoking MAIL and typing:

```
READ/NEW
and then
EXIT
```

That sequence should correct the count of new messages.

MESSAGE:

How do I get into the Central Electronic Mail database?

RESPONSE:

The following is excerpted from the HELP article LOOKUP REGISTRATION:

To register yourself in this database, you must provide the

following information in a message to LBL::Registrar:

- your full name (First M. Last)
- your division and department
- your LBL mailstop
- your extension
- the account name and host where you want your mail delivered.

All of the standard aliases are of the form

<First Initial><Middle Initial>Lastname

i.e., if the full name is First M. Last, then the LBL alias is FMLast. When your address has been added to the system database, you will be notified by the Registrar.

MESSAGE:

The node at Fermilab that we need to send files via Bitnet has changed, and is now undefined in the route tables here. It is defined within Fermilab. The new node name is FNALD.

RESPONSE:

We have just installed the November update to the Bitnet tables. The node FNALD is not on the list. While LBL could add the entry for FNALD, unless the other nodes in the path (UCBCMSA, CUNY, etc.) also add the entry, files would not be delivered. The Bitnet needs explicit entries in the Bitnet tables at each node in the path. The new entries in the Bitnet tables typically take 2 months to propagate.

Note that FNALD is a HEPnet/DECnet node and you should be able to use the DECnet COPY utility to move files from CSA-LBL to FNALD.

MESSAGE:

A while ago, I had trouble with standard VMS mail forwarding (e.g. SET FORWARD FNALD:) and was directed to use a forwarding address like ST% with a forwarding file in my root directory. This worked, but I deleted the forwarding address and cannot remember it. Is there on-line help somewhere that would answer this question?

RESPONSE:

The HELP article Mail_Local, subtopic Forward_MSG_to_VMS, explains how to forward mail off the cluster.

MESSAGE:

Is there a C++ mode for emacs?

RESPONSE:

There is a C++ mode for emacs now on UX1/3. Create an

“emacs” file in your home directory, if you don't already have one, and put the following line in it:

(load “/user/local/lib/gnumacs/lisp/c++-mode.elc”)

Then just invoke emacs, and type <ESC> x c++-mode.

MESSAGE:

VAX NEWS is unhappy. It says:

%NEWS-F-PANIC, internal NEWS system error.

What's up?

RESPONSE:

This error will occur if one tries to read NEWS at the time a new item is being entered.

MESSAGE:

No one uses the Apple LaserWriter NTX here for big jobs because it prints out the pages in reverse order. Is there a way in *lpr* to print backwards?

RESPONSE:

With the introduction of the LaserWriter NTX, the *lpr* software page reversal is being undone with the new printer design. The NTX has also been designed to output on the back tray which will do the page reversal correctly. If large files are being output on the printer, the back output tray should probably be the one used. If it is opened, it will override the top output tray.

Modifications will be made to the software to recognize the new NT and NTX LaserWriters, and to do the page reversal correctly for these printers.

MESSAGE:

Is there a way to transfer an Excel spreadsheet with its formatting intact from a Macintosh to UX1? I use either *Versaterm* or *telnet* (via *appletalk-Kinetics box-ethernet*) to communicate with UX1. Transferring a “text only” file gets the formatting messed up.

RESPONSE:

To send Excel-formatted files to a colleague via E-mail; the solution is to use a Mac application called *BinHex* that saves an ASCII version of the formatted file. You then “kermit” that file to UX1, and mail it off to your friend, who will have to unpack it using *BinHex*. *BinHex* is widely available commercially.

CORRECTIONS to 11/88 Newsletter (page 14):

To print reports on the Imagen in landscape mode, use the following command:

imprint -PipN -r filename

To add user-supplied information to the CSA FINGER utility, use the file

\$PLAN.LIS

in your home directory to supply such information about yourself. FINGER will read it.

*If you want wider distribution of your comments or questions, we encourage you to send them to **trouble** since it is seen by a wide range of people, including Divisional management.*

*To use **trouble**, enter the VMS, Software Tools, or UNIX mail system and send mail to the address*

trouble<cr>

We won't, of course, include any user's name in the exchanges.

.. Ed.

THE WORKSTATION SCENE

• [25.12.1].....

WORKSTATION GROUP ELECTRONIC MAIL

Workstation Group members can now be reached from the VMS cluster or the Computing Division's UNIX machines by sending mail to

VMS Mail. lbl::WKSG

UNIX or

Software Tools Mail: WKSG@lbl.gov

We hope this alternative (to the telephone) will help users with problems or wanting to share helpful hints.

• [25.12.2].....

WHERE WE'RE AT

The Workstation lab, home of several Workstation Group members as well as the Workstation Lending Library, is located at Bldg. 50B, Rm. 2231. It's open from 8 AM to 5 PM Monday through Friday. We're here to help; call us (x6858).

• [25.12.3].....

HELPFUL UTILITY FOR LIFETREE TOTAL WORD USERS

... with thanks to MCSD's Rita Jones, who ferreted this out.

Here's some help for those users of *Total Word* on the IBM PC who need an overstrike capability (to build large symbols, for example, or to create multiple levels of sub- or superscripts):

Total Word does not have such an overstrike feature, but the people at Lifetree have provided a little program to do what needs to be done.

If you want this utility, bring a blank disk to the Workstation Lab.

• [25.12.4].....

3.5" FLOPPY DISKS FOR OLDER IBM PC'S

... from Workstation Group member Dan Van Zile and RTSS Technician David Edgar

Have you ever wondered how to get a little more life from your IBM-PC, XT or AT in an environment which now includes lap-top portable machines and the newer IBM PS-2's with their 3.5 inch floppy (stiffy?) disk drives? If you want to be able to move files between

these two environments, you should consider adding a 3.5 inch drive to your older 5.25 inch drive system. If you have two 5.25 inch drives, you will have to give up the "B" drive to make room for the 3.5 inch unit. The hardware cost is low (~\$150). If you use PC-DOS 3.2 or 3.3, there is no additional software cost. DOS 3.2 supports only the low-density 720 Kb 3.5 inch diskette. DOS 3.3 supports both low and high-density 3.5 inch 1.44 Mb diskettes. In addition to increased storage capacity, the 3.5 inch media provides a storage alternative that is ruggedized and more convenient to handle.

In the Workstation Group, we have been testing different brands of 3.5 inch drives in an IBM-AT. Three drives, Sony, Mitsubishi and Toshiba, appear to work well in our tests.¹ The Sony and Mitsubishi drives seem better designed & built and may be more reliable over time than the Toshiba drive. All three can format both 720 Kb and 1.44 Mb stiffies and can read and write them reliably. These drives can also sense if the disk was manufactured for high-density 1.44 Mb operation.

The true 1.44 Mb stiffy has an extra hole in the plastic case opposite the *write-enable* hole. A small plunger micro switch in the drive senses the presence or absence of this hole. Most 3.5 inch drives can be re-configured to ignore the test although we don't recommend that practice. Interestingly enough, the IBM PS-2 machines already ignore the test. They will allow a 720 Kb stiffy to be formatted and used at 1.44 Mb capacity. We advise against this: our own experience has shown that this is not safe. Low-density diskettes formatted at high density become unreadable in a few months. Until we have more experience, we recommend that you use the right disk, formatted at the right density. We also question the quality of the high-density disks. On several different drives, we have found new high-density disks that would not format properly. There was an article in *PC WEEK*, Oct. 10, 1988, Pg. 18) saying that many manufacturers' 3.5 inch low-density disks failed to meet established quality standards.

One other caveat: You must have a special driver to use high-density 3.5 inch floppies in an AT-class machine. The driver should be ordered along with any order for a 3.5 inch drive. RTSS technicians and WKSG folks have a driver available which will do the job for you. For more information or to perform your own tests on an

¹Different models of AT systems have different recommended drive configurations. Contact RTSS technicians (x6411) before purchasing a drive for your system.

operational unit, contact Workstation Group member Dan Van Zile at x6858.

- [25.12.5].....

DBASE IV UPGRADE

The Workstation group is now accepting upgrade requests for *dBASE IV*. This IBM-DOS software upgrade is available in the **regular** (\$155) or **Developer's Edition** (\$475) version. This latter is an "expanded" version of the regular upgrade. Any older version of *dBASE* is eligible for this upgrade price.

To obtain the upgrade all we need is the Serial Number of your current copy and a recharge account number. Bring or phone this information, along with your disk size preference, to Bruce Burkhart at the Workstation Group lab (Bldg. 50B, Rm. 2231, x6858). A bulk procurement will be made in mid-December.

- [25.12.6].....

CALL FOR PAPERS

Beginning in January, the Workstation Group will begin evaluating TeX and *troff*-based document processing systems for Sun workstations.

This work will be more meaningful if we can get copies of real documents created in *troff* or TeX (LaTeX, too). We are not looking for long documents, but for documents with complex formatting, equations, and/or tables. PostScript graphics files would be useful, too.

Send ASCII files on IBM PC or Mac disks to Claudia Madison, (MS 50B-2239), or E-mail them to CIMadison@LBL. If you use macros other than LaTeX or *Unix* -ms, send the macro files along, too.

- [25.12.7].....

SQUEAKY CLEAN!

If your Mac mouse or IBM pointing device isn't working as smoothly as it should, it might be because the insides need a good scrubbing. Even if you keep your mousepad as clean as possible, the positioning rollers inside your mouse will build up dirt and other substances. What to do?

We have a **Mouse Cleaner Kit** for you; it's available on a one-day loan. This kit is easy to use, has no messy parts, and only takes a few minutes for a complete cleaning. Contact Bruce Burkhart at the Workstation lab, Bldg 50B, Rm. 2231, x6858.

- [25.12.8].....

BEGINNING PAGEMAKER CLASS FOR THE MACINTOSH

If enough people (6-8) show interest, the Workstation Group will set up a Beginning *PageMaker* Class for laboratory employees. This course is taught by an outside instructor and costs about \$150 per person. It is a one-day course going from 8:30 AM to 4:30 PM and is held in the Mac Training Room, Bldg. 50B, Rm. 1229.

Please call Workstation Group member Carole Casaretto at x6858 if you would like to enroll in this class. Currently we have four people signed up, so if just a few more employees call us, we can set up a class.

- [25.12.9].....

NEW IN THE LENDING LIBRARY

• *Kaleidagraph*, for the Macintosh, Abelback Software, distributed by Peripherals, Computers & Supplies, Inc., \$179.

Kaleidagraph is a plotting/calculator program that does Scientific and Engineering Data Analysis and Graphics for the Mac.

It lets you

- create and save algebraic formulas as macros,
- overlay plots;
- plot format options (including no markers on line plots, 2 Y axes, error bars, X-Y probability),
- do curve fitting ,
- and more.

- [25.12.10].....

APPLEFAX MODEM

Many of our customers have expressed an interest in Apple's Fax Modem. We'd like to remind LBL staff that modems will not work with the new ICS digital telephones (ITE-4, 12, 24) to be installed soon. Modem users will either have to use an analog telephone or obtain an additional analog circuit for modem use. Fax modem users will have to request an "analog circuit," at a cost of about \$25-\$35/mo. For additional information, contact Sam Gibson, Manager, Telephone Services Office, at x4234.

- [25.12.11].....

THE WORD 4.0 UPGRADE

As you may have noticed, the planned October ship date for Microsoft *Word 4.0* has come and gone.

Microsoft now says, "before 1989." We've heard that before too.

When it does come, it will have such features as an improved interface, an editable near-WYSIWYG page view mode, table-making capabilities, live data links to other applications, and a word-count command.

Of course, the Workstation Group will hold noon workshops on using the new features.

Microsoft has also announced that upgrade orders will be honored before new user orders are filled. Upgrades from Version 3.02 to 4.0 will be available at the Workstation Lab for approximately \$40. You do not have to contact the Workstation Lab to reserve a copy. We'll put a notice in the LBL CURRENTS when the updates do arrive.

• [25.12.12].....

TYPING EQUATIONS IN WORD ON THE MAC.

As a warm-up to the Mac Equation Typing Extravaganza (to be held in February), the Workstation Group will have noon workshops on using the Microsoft Word Formula Processing feature. Workshops are January 4 and January 18, noon to 1 PM in the Mac Training Room, Bldg. 50B, Rm. 1229. No sign-up is required.

• [25.12.13].....

APPLE MEMORY EXPANSION

As you are aware, "surface mount" 1 Mb SIMM RAM Memory for the Macintosh computer is scarce and expensive. Apple is filling very, very few of the backorders they have for this memory at their old price of approximately \$200 per Megabyte. And there are thousands of backorders.

If you can't wait, there are two options.

- (1) Consider re-writing a new Purchase Order for "dual in-line" memory from Apple. (This is for Mac II owners only). The 4 Mb kit, Apple Part No. M0707, is in stock and costs approximately \$1600.
- (2) Contact Purchasing Nora Nichols (x4505) or Melinda Saltzberg (x5461) for the latest pricing and availability of memory from third-party suppliers. Cost is very competitive with Apple's. Generally, the dual-inline memory is recommended only for the Mac II.

• [25.12.14].....

BIBLIOGRAPHY DATABASE² SYSTEMS FOR THE MAC.

... from Workstation Group Member Claudia Madison

- *Pro-Cite* for the Macintosh, Personal Bibliographic Software, Inc., \$295.
- *EndNote*, Niles & Associates, \$129.

By way of analogy, computers and computer software are often compared with automobiles: Toyota and Mercedes, or Chevy and Cadillac. Comparing *Pro-Cite* and *EndNote* is like comparing an eighteen-wheeler, bristling with chrome, to a sleek, zippy sports car. *Pro-Cite* bristles with power and is a little cumbersome to manage while *EndNote* is fast and responsive. As nearly as I can tell, for most users, either would do the job.

Both programs work in roughly the same way: references are entered into the data base. Then, to create bibliographies or reference lists for particular documents, references are indicated in a word processor document and that document is then run through the bibliography program to match text citations to references stored in the database.

Pro-Cite has more features: more reference types, more complex searching capabilities, authority tables for efficient data input, better import/export, etc. *Pro-Cite* also has excellent on-line help (which was all the documentation I had to work the demo--and it was all I needed).

I have two major complaints about *Pro-Cite*: (a) the need to indicate the reference in the document text by typing the author last name and year, and (b) the fact that to create the bibliography the word processed document must first be saved as a plain text (or RFT) document. *Pro-Cite* makes little attempt to work smoothly within the context of word processing.

EndNote, on the other hand, admittedly less feature-laden,³ comes in essentially two parts: A Desk Accessory for quick selection by menu of citations to

2 What is a bibliography database? Basically, it's an electronic note card system to hold references to journals, books, movies, computer programs -- what have you. Users can search for specific entries or groups of entries and can sort them in various ways. Beyond storing the entries, the program also has ways to create reference lists or bibliographies for references cited in a particular document. These lists can be formatted in any of a number of standard ways or users can create their own formats.

3 Whether or not *Pro-Cite's* extra features matter is open to question. *EndNote* strikes me as more than sufficient for most scientific users, but there certainly may be some whose specialized requirements demand the extra power.

place in text and the large application where the data base is maintained and bibliographies are created. *EndNote* accepts *Word*, *MacWrite*, *WriteNow*, and -- soon -- *WordPerfect* files for bibliography creation. You don't have to convert documents to plain text. *EndNote* also has a nifty "Copy as formatted" command whereby a selection of references from the database could be pasted right into a document. *EndNote* may not know it yet, but it does not work with *Word 4.0*; *EndNote* documentation also doesn't indicate knowledge of how *Word* styles work; the documentation goes to great length to describe how to solve a problem that does not occur when a document is properly styled.

If I had to pick, I would pick *EndNote*. Before making their picks, LBL users can borrow a demo of *Pro-Cite* (nearly fully enabled) or a loaner copy of *EndNote*. Drop by the Workstation lab.

- [25.12.15].....

HYPERCARD CORNER

... from HyperFan Bruce Burkhart

✓ **HyperScan and the Apple Scanner**

The big story this month is the *HyperScan* software bundled with the new Apple scanner. Up to now in HyperCard, putting an image on a card has been cumbersome at best. With the new Apple scanner and *HyperScan* it's a snap. There are no printed instructions on how to use *HyperScan*. Instructions and Help are available on stacks supplied with the scanner software. Remember that *HyperScan* is primarily a tool for building stacks, an activity that presupposes a working knowledge of HyperCard.

✓ **New Stacks!**

☞ *Stack Cleaner*, by Softworks Inc., includes several very useful utilities. One automatically substitutes in scripts the standard abbreviation for *HyperTalk* commands, thus "cleaning" a stack's code and reducing its overall size. Another supports the creation of standard Mac menus within a stack, as pop-up menus, submenus or additions to the menu bar. There are other utilities included in this stack. List price is \$49.95.

☞ *Scripts & Buttons for HyperCard*. . MacroPac International has a real winner with this stack. It's intended to be used as a library of ideas and resources, as well as a collection of building blocks which you can use within your *HyperCard* stacks. The library consists of Scripts, Buttons, Fields, Graphics, Utilities, Techniques, XCMDs, XCFNs, ICONs, and CURSors. These resources can be easily imported into your stacks.

List Price is \$69.95. Coming soon, *101 Sounds for HyperCard*.

✓ **Some Good Reading**

Two books from Que Publishers:

- *HyperCard QuickStart: A Graphics Approach* is an introduction to HyperCard with over 100 two-page illustrations.
- *Using HyperCard: From Home to HyperTalk* explores HyperCard fundamentals and advanced features. Mac magazine:

• *Nibble Mac* magazine has been around for awhile, and it's worth a look. Billed as a magazine for Macintosh enthusiasts, it includes more material on HyperCard than the "other" general Mac magazines. There's a a copy for your inspection at the Workstation lab.

✓ **Tip of the Month**

A "flashing" graphic or text area is just what you need to add a little pizzazz to your stack. It's easy. When starting the stack, create a new card at the front. On this card, lay a "new button" (created with the Paint Tools) over your graphic or over a selected text area. In the new button script, name the button "screen flash," check **transparent**, and **non-hilite**. Now open the button script and enter the following HyperTalk code:

```
on mouseUp
  set hilite of me to not hilite of me
end mouseUp
```

Open the card script and enter,

```
on idle
  send mouseUp to card button "screen flash"
end idle
```

When the scripts are finished, exit, then re-enter HyperCard and open your new stack. The "button" area selected will flash until you advance to the next card.

- [25.12.16].....

MACTURKEYFEST '88: A REVIEW

... WKSG Member Bruce Burkhart had a Swell Time.

On Thursday, Nov. 17, the Berkeley Macintosh User's Group (BMUG) put on another successful day of demos, seminars and hands-on computing for the Mac community.

Throughout the day, hundreds of Mac enthusiasts swarmed over the exhibits and applied hands to the Macs set up all over the Pauley Ballroom on UC's

Berkeley campus. There were areas dedicated to Science & Engineering Programs, DeskTop Publishing, Business Applications, Graphics and HyperCard stacks. Demos of products in all these fields were put together by dozens of expert BMUG volunteers.

Apple Computer was present in a big way: Account Reps Nicole Kowalski and Mary Nicely, supported by a small but super staff, made the show the success it was! They furnished 30-40 Mac computers for both demos and for the attendees who wanted to test-drive the software. Apple demo'd the MacIIx and Scanner, both installed with lots of software. At the close of the day, a MacSE was awarded as door prize.

BMUG had invited selected developers to show "latest and greatest" in software applications for the Mac. This year, new developers from Bay Area locations showed interesting products, but most everyone seemed to be interested in the exhibits of just a few of the big vendors.

When the doors closed, the show wasn't over. It was Thursday, BMUG's usual weekly meeting night, and a big event was planned. (Yes, Virginia, Steve Jobs was there). See the next item.

- [25.12.17].....

NeXT AT BMUG

It's MacTurkeyFest evening, at the Physical Sciences Lab lecture hall on campus. It's 7:30 PM, time for the regular weekly BMUG meeting. The hall is overflowing with several hundred expectant attendees. A provocative slide, the colorful NeXT logo, has remained projected on the huge screen for some time now. The benches on the dais have been draped in black, the lights are low, and the stage is set.

Enter stage left, Steve Jobs. After long and wild applause, he begins a two-hour demo of his NeXT computer. His presentation is the same one he gave a month ago in San Francisco's Davies Hall. He begins with a short slide show on what computers are doing now and what they're going to do in the 1990's. Several slides compare NeXT computer specifications with those of existing computers.

Now Jobs takes his coat off, rolls up his sleeves and starts to drive his UNIX-based machine. The speed and technical merits (true multi-tasking) of the one-foot square black box computer constantly draws applause and flurries of raised hands in the audience. The user interface reminds you of the Macintosh, but the look and feel seems somehow new.

A high point in the evening (for this attendee) is a short motion picture of his manufacturing facility at Fremont, California. The film gives a close-up look at how the single "mother" board is built, beginning to end, untouched by human hands. Amazing!

By now, Jobs has gone through many of the ten bundled software packages for his machine. His favorites are the digitized iteration of Webster's Unabridged dictionary, complete with pictures, and the sound package. This computer's sound capabilities are extraordinary.

The two hours seem to fly by, and so does the Question & Answer session that follow. Jobs fields the dozens of humorous and technical questions like a master. It's quite an evening.

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The NeXT computer will sell for \$6500 to developers and Educational Institutions. The NeXT 400 dpi postscript printer will be available for that market for \$2000. For additional technical information, check articles in recent issues of *BYTE* magazine, the *Seybold Report*, and many other current computer publications.

- [25.12.18].....

DATASHOW PROJECTION PAD

... from Workstation Group member Bruce Burkhart

The Workstation group has purchased a *Kodak DataShow Projection Pad*, which provides an inexpensive solution for projecting a Mac SE screen image.⁴ The quality of the LCD (liquid crystal pad) is much improved over the displays seen at PC and Macintosh shows in years past. The projection system, which uses a standard overhead projector, can display either white on black or black on white. Units are available for the IBM PC and Mac Plus & Mac SE. Cost on an SE: about \$1270.

To arrange for a demo, or if you wish to borrow the system for your presentation, contact the Workstation Group lab (x6858).

- [25.12.19].....

FONTSizer -- FONT SIZING UTILITY

... from Computing Services' Dana Conant

FontSizer is a neat new application for the Apple Macintosh that lets you create large LaserWriter fonts that look good on-screen, instead of the rough-edged

⁴The projection system can be categorized as being ideal for small informal group presentations requiring interactive computer-generated displays.

ones you're used to. This becomes necessary when you use large PostScript fonts with a screen image projection system such as the Kodak DataShow mentioned above. FontSizer is also nice for those Mac users with large-screen monitors who have become accustomed to WYSIWYG applications.

FontSizer builds a screen font representation of any PostScript printer font in any style (bold, italic, or bold italic) and size (up to 127 points) and uses your printer to scale the entire character set, instead of the crudely-scaled bitmap produced by your Mac. It virtually eliminates character-spacing problems. (Note that it does tie up your Mac and the LaserView printer while it is sizing and imaging each character). After the new fonts are built, you use the Font/DA Mover to install them in your system. The newly installed fonts replace the original screen versions.

I didn't find it worth the time to create the small size (it takes about 3 minutes to build each font style), but it really makes a difference with sizes of 24 points and larger. The one-page Quick Start Checklist was all I needed to learn how to create my favorite fonts, but the manual gives a good summary of printer vs. Macintosh font imaging.

FontSizer is available for evaluation through the Workstation Lending Library (x6858). Cost: about \$80.

• [25.12.20].....

APPLE SYSTEM INSTALLATION

A Cookbook Approach

We frequently get requests from users attempting to install Apple system upgrades. The cookbook approach outlined below is for upgrading to the current version (System Release 6.02).⁵ The procedures were extracted from the *Macintosh System Software Users Guide, Version 6.0*. Apple documentation is some of the best around: keep it handy, it's your friend. This cookbook approach will undoubtedly become outdated with future upgrades).

Why not just slide out the old system folder and slide in the new? Sorry, if you do that you'll lose your particular *init* and *dev*⁶ files, along with the files (like *Word* settings or *PageMaker* preferences) that other applications need.

⁵A complete system software installation on a brand new hard disk would add a few more steps. From the System Utilities Disks, using the Font/DA mover, the desk accessories and fonts would be added to the system folder.

⁶See *Terms of Endearment*, a glossary of Macintosh terms, in a recent throwaway issue of *Macazine*. (Copies of the glossary available at the Workstation lab).

What about Fonts and Desk Accessories? The following installation procedure preserves your existing Fonts and DA's.

Installing the System Tools:

Note: the following procedure is for a Mac/hard disk configuration.

1. With your Mac off, insert the new Mac System Tools disk in the drive.
2. Turn on your Mac.
The System Tools floppy disk icon should now appear just above the Hard Disk icon.
3. Select and open the System Tools icon.
4. Select and open the Setup Folder.
5. Select and open the installer.
Use the Drive button to select the hard disk if it isn't already selected.
6. Select the appropriate computer (i.e., if you have a Mac SE, select "Mac SE" installation.
Wait a moment while the installer figures sizes.)
7. Click the Install button.
The Installer automatically installs the system software onto the hard disk, replacing any old system files. When it's finished, a message "installation complete" appears. Click "Quit" to exit from the Installer. Re-boot (or restart) your Mac.

Installing the Printing Tools

You've installed the required system software. Now you need to install the necessary printer resources for your printer.

First, you need to answer this important question: **Are you on a network?**

If you're on an AppleTalk network connected to a LaserWriter and sharing with other users, be sure that everyone is using the same version of LaserWriter and LaserPrep (Version 5.2 in System Release 6.0.2). If not, you may experience problems with the network. With this in mind, let's continue the printer installation.

1. Turn on your Mac
2. Insert the Printing Tools disk when the desktop appears.
3. Select and open the Printing Tools floppy disk icon.
4. Select the appropriate printing resources. Follow closely
 - a. If you have a LaserWriter, select "LaserWriter" and "LaserWriter Prep." If you use background printing with MultiFinder,

select "PrintMonitor" too.

If you don't plan to use background printing, or if you are using another print spooler, such as SuperLaser Spool, don't select "PrintMonitor."

- b. If you have an AppleTalk card installed in an ImageWriter II or ImageWriter LQ, select the AppleTalk ImageWriter or LQ AppleTalk ImageWriter icon.

Note: The ImageWriter II or LQ model cannot be shared on a network without an AppleTalk card installation.

- c. If you have any other printer configuration, see Pg. 213 of the *Macintosh System Software User's Guide, Version 6.0*
5. Drag the selected icon(s) to the System Folder in the hard disk.
 6. That's it. You have installed the necessary printing resources.

If you need some assistance with this installation process, please feel free to contact the folks at the Workstation lab (Bldg. 50B, Rm. 2231, x6858).

The material for the cookbook version was extracted from the *Macintosh System Software User's Guide, Version 6.0*.

- [25.12.21].....

THE WKSG LENDING LIBRARY

A December Software Update

Because the complete WKSG Software Lending Library is getting so large, we will not print it all every month. Instead, we'll publish a monthly listing showing updated or new applications added to the Library since the last LBL Newsletter. Complete listings will appear periodically.

The Macintosh and IBM PC software in the Lending Library can be borrowed for one week for evaluation. It is not to be copied! The Workstation Group lets you keep these packages for one week at no charge. If not returned after the 8th day, the replacement cost of the software, plus an additional \$100, will be recharged to your account. To check the availability of, or to reserve a particular package, call the Workstation Lab at x6858.

Category	Apple Macintosh	IBM PC-XT-AT
Communications		SmartTerm 240 v2.0a
Database	FileMaker II	RapidFile v1.0
Demo Programs	MacLab PowerPoint ProCite biblio	Lotus Manuscript Persoft ProCite biblio SAS SuperProject Expert
Drawing and Design	Cricket Paint Image Studio v1.5 MiniDraw DA v2.03	
Equation Generators	Expressionist v2.0	
General Languages and Tools	Language Systems: Fortran & MPW v2.0.2	
Math/Statistics	Mathematica 1.01 Passage v(e.02) DataDesk Pro v2.0r1 KaleidaGraph v1.1	
Organizational Tools		GrandView v1.01
Presentation Graphics		Draw Applause v1.0 Master Graphics: Chart Master Sign Master Diagram Master
Technical Publishing and Page Layout		BYLINE v1.0
Utilities	EndNote v1.0 FontLiner v1.0 FontSize v1.0 HFS Navigator v1.0 Nvelope v1.0 PC Tools for the Mac Spelling Coach Pro	DeskSet v1.0 PICNIX PCUNIX Reminder Plus
Word Processing		WordPerfect v5.0

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SIGN UP FOR THE NEWSLETTER

Attention LBL employees: If you use the Computer Center's UNIX or VMS system, or if you are an owner or user of a PC or a MAC, you should sign up to receive the Laboratory's Computing Newsletter. It contains useful information about our systems and has a helpful Workstation News section (supported by the Information and Computing Sciences Division's Workstation Group), offering support and helpful hints for PC users. This is also a place for you to send questions and comments. To add your name to the Newsletter Mailing List, contact Irene Partyka, x4242, or

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