DISCLAIMER

Volume 23, Number 12
December, 1986

LBL COMPUTING NEWSLETTER

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"Do not peer too far."
. . . *Pindar*

PUB-429 12-86/1600

Newsletter Closing Date is Tuesday, December 16, 1986 . . . and no later.

Address all communications for the Newsletter to login **news** on UX8.

Prepared for the U.S. Department of Energy under Contract DE-AC03-76SF00098

DECEMBER 1986

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
Head: Leroy Kerth (LTKerth) .....7474 50B - 2232E
Deputy: Sandy Merola (AXMerola) .....4389 50B - 2232C

OFFICE OF COMPUTING RESOURCES
Head: Ken Wiley (KGWiley) .....7083 50B - 2258E
Ethernet Manager: Sig Rogers (SGRogers)..6713 50B - 2258G

ADVANCED DEVELOPMENT PROJECTS
Head: Dennis Hall (DEHall).....6053 ...50B - 3238
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Group Leader: Richard LaPierre (RLLaPierre)....4692.....46A - 110

COMPUTING SERVICES
Head: Marv Atchley (FMAtchley) .....5455 50B - 2245
Asst.Head: Dennis Hall (DEHall).....6053 50B - 3238B
Central Office .....5871,2 50B - 2239

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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.arpa
Software Tools: JASmith@lbl.arpa

DEVELCON

DEVELCON **Access Names**

[VAX 8600's (GENERIC).....CSA]
VAX 8600 (VMS) CSA1
VAX 8600 (VMS) CSA2
VAX 8650 (VMS) CSA3
VAX 8600 (VMS) CSA4
VAX 8600 (VMS) CSA5

VAX 11/780 (UNIX4).....UX4
VAX 11/750 (UNIX5).....UX5
IS V-24 (UNIX8).....UX8

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

Oakland	430-2900	Vallejo	707-644-1192
Walnut Creek	938-9550	Concord	685-6003
Pleasanton	462-8900	Fremont	490-7366
San Francisco	974-1300	Antioch	754-8222
Santa Clara	408-986-0646	Palo Alto	415-366-1092

MFE Consulting Number is 422-1544

COMPUTER CLASS SCHEDULE

Jerry Borges

The following computer classes are to be offered by the Computing Division. With the exception of the TEX class (see article below), there is no charge for these classes; to enroll, obtain your supervisor's approval and then contact Pat Bean (×**7008**). If you have questions about what's being offered, or suggestions for other computer-oriented topics, contact Jerry Borges (×**5568**).

1986			
DATE	TIME	DESCRIPTION	INSTRUCTOR
Dec 1, 2, 4	9 AM - NOON	Introduction to VAX/VMS	Rosemary Allen
Dec 9	11 AM - NOON	Electronic Mail	William Jaquith
1987			
Jan 6, 8, 13, 15	9:30 AM - NOON	C Programming	Marty Gelbaum
Jan 15	11 AM - NOON	Electronic Mail	William Jaquith
Jan 26, 27, 29	9 AM - NOON	Introduction to VAX/VMS	Rosemary Allen
Feb 3, 5, 10, 12	9 AM - NOON	Introduction to VAX/UNIX	Dave Cleveland
Feb 23-27	9 AM - 4 PM	Intermediate and Advanced TEX	See Below

TEX CLASS

Jerry Borges

A one-week class in TEX will be given at the Laboratory during the week of February 23-27, 1987 by an instructor from the TEX Users' Group.

The material to be covered will be the same as that presented in the two-day Intermediate and three-day Advanced TEX classes given periodically during the year at various academic institutions by the Users' Group.

Cost of the class at LBL depends upon the number of students, and will probably be between $400. and $500. per student. The equivalent classes taken at Stanford University would cost $850. per student.

Space is limited to a maximum of 12 students; be sure to enroll early to save a spot.

For more info, contact Jerry Borges (×**5568**), or

VMS Mail: **lbl::JTBorges**

UNIX or Software Tools Mail: **JTBorges@lbl.arpa**

FOCUS NEWS

Bert Albrecht

- **FOCUS USERS' GROUP**

The first meeting of the FOCUS Users' Group will be from 2 to 3 PM on Tuesday, December 9 in the Bldg. 50F Conference Room.

This will be an organizational meeting.

- **FOCUS CLASSES**

Signups are being taken for a Beginning FOCUS class which would be held in early January if there is sufficient interest. Cost for the class is approximately $300. Interested users should contact Pat Bean (×**7008**) to sign up.

Additional classes in Intermediate FOCUS, Advanced Techniques in FOCUS, and FOCUS Internals are also available. If you're interested, contact Bert Albrecht (×**6280**) or send electronic mail to

VMS Mail: **lbl::HGAlbrecht**

UNIX or Software Tools Mail: **HGAlbrecht@lbl.arpa**

ELECTRONIC MAIL CHANGES

William Jaquith

There have been changes in CSA cluster electronic mail during the month of November. The changes were to the Software Tools Mail system, which is the primary mail system on the CSA cluster. The modifications were to update the Software Tools mail system so that it deals with the upcoming Milnet/ARPA "domain" type mail addressing and to permit users the ability to control the forwarding of their electronic mail.

LBL uses the Software Tools mail system so that the CSA cluster can communicate with the electronic mail world outside of the DECnet community. Software Tools mail will communicate with Milnet/ARPA, UNIX, and gateways which include Bitnet, CSNET-RELAY and UUCP. The VMS Mail Utility will not communicate outside of DECnet Mail except through gateway mailers like Software Tools.

MAIL FORWARDING

By default, all mail is now coming into the Software Tools mail system, MSG.

(1) You can route all your mail into the DEC VMS Mail if you prefer.

- Create a file in your home directory called **$forward.** (Be sure to include the period so that the file is not created as a default ".lis").
- In that file put your userid with a plus sign:

  +userid

  What you would see if you were to type the file **$forward.** is

  ```
  CSA> type $forward.
  +userid
  CSA>
  ```

(2) To forward your mail off the CSA cluster use the **$forward.** file and install an address of the following form:

userid@theory	(to a HEPnet/DECnet site)
userid@ucbcmsa.bitnet	(to a Bitnet site)
userid@sri-nic.arpa	(to a Milnet/ARPA site)

The **$forward.** file is the correct way to handle mail forwarding on the CSA cluster.

NOTE: all users of the CSA cluster will have to remove any forwarding address that they have installed within VMS Mail. To do this, use the **set forward ""** command within VMS mail, e.g.,

```
MAIL>
set forward ""
```

(Be sure to type this exactly as shown, that is, **set forward** *space quote quote*).

MAIL ADDRESSES - SOFTWARE TOOLS

Users of the Software Tools Mail on the CSA cluster can now address mail to "domains". Several examples follow:

To: userid@ucbcmsa.bitnet
To: userid@opal.berkeley.edu
To: userid@slacvm.bitnet

MAIL ADDRESSES - VMS MAIL

Users of the VMS Mail on each machine of the CSA cluster can now use the domain addresses if they choose. The address will be similar to those that are listed above with the address enclosed in quotes and preceded by **st%**. Several examples:

To: st%"userid@ucbcmsa.bitnet"
To: st%"userid@opal.berkeley.edu"
To: st%"userid@slacvm.bitnet"

MAIL ADDRESSES - BITNET

There is no change in the access to the Bitnet on the CSA2 computer using the "jnet" software from Joiner Associates. Remember that CSA2 is known as "LBL" in the Bitnet. Mail can be sent using the existing pattern:

To: jnet%"userid@bitnetsite"

Files can be sent from CSA2 into the Bitnet using the **bsend/file** command. Files are received using **breceive**. There is help on-line from within VMS HELP. Topics to read are

- **Bitnet**
- **bsend**
- **breceive**
- **LBL_networks**
- **Milnet_ARPA**

Forward comments and questions to me (**x4388**) or

VMS Mail:	**lbl::WDJaquith**
UNIX or Software Tools Mail:	**WDJaquith@lbl.arpa**

REPORT FROM FIRST ANNUAL ENERGY RESEARCH COMPUTING CONFERENCE

Maggie Morley

Ninety-three representatives, from participating sites in the U.S. and Europe, attended the First Annual Workshop on Energy Research Computing held October 27-28 at LBL. It was, according to ICS Division Leader Roy Kerth, a "very good exchange."

Workshop topic was **The Future of Intersite Networking**.

John Cavallini from the Department of Energy Office in Washington, D. C. was the keynote speaker.

(1) He cited the **importance of networking** to scientific research.

- It enhances collaborative research efforts across institutions
- It provides access to remote research facilities
- It provides access to centralized scientific information banks
- It provides access to supercomputer systems.

(2) A **Congressional Network study** to look at all US research-related (and non-Defense related) needs is under way. The timetable:

- Requirements and plans received by December 1, 1986
- White papers and requirements analysis concluded by January 15, 1987
- Workshop at San Diego Supercomputer Center on February 17-19, 1987
- Plan completed by March 15, 1987
- Final report to Congress completed by April 10, 1987.

(3) He also discussed the recently-announced **Energy Sciences Network** (ESNET). The goals of ESNET are

- to provide interoperability for all Energy Research programs;
- to standardize DOD routing protocols - TCP/IP - as an interim to ISO standards;
- to use the existing MFENET backbone for ER requirements where possible;
- to redesign MFENET to open architecture, using IP gateway technology;
- to manage ESNET as an ER Internet through the ER scientific computing staff;
- to coordinate requirements and activities through an ER-wide steering committee.

Intent of the Workshop was to give users of scientific networks an opportunity to describe their problems in the presence of computer scientists and Energy Research program managers who provide the networking services that support the ER scientific computing community. Goal was to identify strategies to meet future networking needs.

"The work of this group is only just beginning."

PARALLEL GROUP DISCUSSIONS AND DISCUSSION SUMMARIES

Following presentations, attendees adjourned to smaller discussion units and returned with summary findings. As follows:

- "No scientist wants networking to be in the way of his scientific computing. The closer a network is to being totally transparent, having infinite bandwidth, and being very cheap, the more appealing it will be to the ER scientific community."
- "What we can do on Local Area Networks today is indicative of what we wish to be able to do on wide area networks."
- "Just as we expect a computer to perform as if we are the only user, we expect the network to give that same appearance."
- "Full screen editing and byte echoing must be supported such that remote terminal access appears as if it were local. The data path should be fully transparent and support the full 8-bit character set."
- **File Transfer**: There should be both prioritization and interleaving of files such that long files do not leave short files waiting for their completion. Delayed scheduling of long file transfers should be permitted for the same reason. Regarding CRAY access: a network must able to deliver 20 Mbytes every 10 minutes to give the user the feeling that the CRAY is online.
- **Mail**: Mail systems must support name servers, mail forwarding, receipt confirmation, and ease of mail sorting. Mail conferencing is seen as a useful facility in support of scientific collaborations.

job purge ability.

- **Interprocess Communications**: Networks should allow for process-to-process communications, permitting direct access to the network at the user level. Distributed editing & computing would certainly allow more effective use of existing facilities.

- **Network Applications**: Many applications are so integrated into the network that they are seen as network services. A future network must not simply allow, but must indeed support, such facilities as: distributed code management, standardized distributed graphic systems, and a full range of printers, including laser printers. The bottom line is that the network must be very transparent, and that networking services be developed to fully support distributed facilities.

- **Network Management**: Network management is important to insure the operability of all distributed resources. Those responsible for operating the network must be fully trained as to its total configuration, and must have the tools at their fingertips to isolate problems and project future networking needs.

- **The Future**: The work of this group is only just beginning.

The Second Annual Workshop for Energy Research Computing has been tentatively scheduled for October, 1987. More details will be made available as plans firm up.

Copies of viewgraphs and summaries of concluding discussions are available at the ICS Office (50B/2232).

UNIX6 IS GOING AWAY

Maggie Morley

On December 12, 1986, UX6 will be shut down. Resident users are encouraged to have their files transferred to another machine, preferably UX8, as soon as possible.

UX6 users will NOT be automatically transferred to other machines at the time of the shutdown; they will have to request the move, so that an account can be opened thereon and they can get some help in transferring their files.

See the HELP article TRANSFER for more information.

COMPUTER CENTER HOLIDAY SCHEDULE

Marv Atchley

There are no planned shutdowns for the CSA cluster and the UNIX systems during the Christmas holidays (from December 20, 1986 to January 5, 1987).

In general, the systems will be available for interactive use, and the center input/output and terminal rooms will be accessible via cardkey.

The HELP DESK will be closed.

There will be minimal user file backups performed during the holidays, and no operator-provided services such as tape mounts. Operators check in daily for hardware problems.

Forward comments and questions to me (×**5455**), or

VMS **Mail:**	**lbl::FMAtchley**
UNIX **or** **Software Tools Mail:**	**FMAtchley@lbl.arpa**

HERE'S THE HELP DESK

Maggie Morley

The HELP DESK is open for business.

- NEW HOURS
  Located next to the I/O area on the First Floor of Building 50B, (×**5981**), its new hours are 9 AM to noon and 1 to 5 PM, weekdays only.
- STAFF
  Staffed by Marty Gelbaum, Dan Van Zile, Ed Sheena, and Gilman Johnson, it is designed to be the buffer zone between the users and the computer specialists. It is anticipated that most normal user questions can be handled there.
- NEW FEATURES
  Handouts, including "Current VMS Charges", "Current UNIX Charges", "Names & Numbers to Know", "Tape Handling Procedures" and"Using KERMIT at LBL", are currently available at the HELP DESK.

DI-3000 GRAPHICS UPDATE

Edna Williams

On December 10, 1986, versions of Precision Visuals Inc. products which have been accessed on CSA2 by using the symbol

DI3

will be removed from the system. Please use the symbol

PVI

to get the latest versions of **DI-3000, CONTOURING, GRAFMAKER, DI-TEXTPRO, PICSURE** and the **METAFILE SYSTEM.**

As of January 5, 1987 the Computing Services Department will discontinue supporting the following

HP2647/8 plotter
HP7221 8-pen plotter
IBM PC
Tektronix 4114
Trilog (C-100, C-60, C-144) printer
VT125

since there does not appear to be any use of these DI-3000 device drivers.

Forward comments and questions to me (x**5093**) or

VMS Mail:	**lbl::EEWilliams**
UNIX or Software Tools Mail:	**EEWilliams@lbl.arpa**

EUNICE & JOB LOGICALS

Lam-hing Wong

A new version of Eunice has been installed on the cluster. It's faster, & has fixed some bugs associated with *Vi* and suspending processes. For details, type

type st_man:neweun.doc

The new Eunice handles multiple translations of VMS logical names defined ABOVE process level. Because of this users are advised to define their logical names at job level. The default command qualifier for DEFINE currently is "/process". So use "define/job" to define your logical names, i.e.,

define/job mydisk lbl104

will define the job logical name "mydisk" to point to disk "lbl104".

Forward comments and questions to me at x**5739**) or

VMS Mail:	**lbl::LHWong**
UNIX or Software Tools Mail:	**LHWong@lbl.arpa**

UNIX WORKSTATION USER GROUP MEETING

Alan Biocca

The first meeting of the proposed UNIX Workstation User Group is scheduled for 12:30 to 2 PM Tuesday, December 16, 1986 in the 50B 4th floor Conference Room (Rm. 4205).

This group is initially targeted at UNIX Workstation System Managers and Advanced Users and is intended to facilitate system and application debugging by pooling user experience and resources. Since UNIX crosses hardware boundaries and users share common problems on different machines, this group is expected to cover SUN, MicroVAX, and other UNIX-based systems.

To get on the mailing list contact Alan Biocca (x**6536**) or send mail to

VMS Mail:	**lbl::AKBiocca**
UNIX or Software Tools Mail:	**AKBiocca@lbl.arpa**

CERNLIB & PHYSICS UTILITIES

Werner Koellner

The following utilities, either CERN libraries or Physics Utilities, are offered to general CSA Users.

FACILITY	LOGICAL NAME TO ACCESS	DESCRIPTION
CLI	physics_utilities$root:[cli]	Command language interface.
DISPLAY	physics_utilities$root:[display]	Interactive Graphics Display Program - output to many devices.
HBOOK	physics_utilities$root:[hbook]	Histogramming Package.
HPLOT	physics_utilities$root:[hplot]	Graphics Plotting Package.
CERN Libs.	physics_utilities$root:[cern.cernlib]	Selected libraries from CERN, e.g. GENLIB, KERNLIB, PACKLIB, HBOOK, HPLOT, etc.

Additional logical names, allowing more convenient file and directory access to these utilities are available by invoking the following DCL command:

CSA> **@physics$manager:shared_lnm add lnm$physics_utilities system**

which adds the table

lnm$physics_utilities

in the search list just before the system logical name table.

Maintenance of the software will be restricted to keeping sources & libraries accessible as always and updating sources and libraries when it becomes known that new official versions are available. It will not include tracing problems, bug finding, detailed help to users, etc., or providing satisfactory documentation to users.

Documentation for these products is maintained as follows:

- CLI: Type
  type physics_utilities$root:[cli]cli.mem
- DISPLAY: Type
  type physics_utilities$root:[display]display.mem
- HPLOT: documentation (CERN long writeup Y251) soon available in the Computing Library (50B/1232).
- HBOOK: documentation (CERN long writeup Y250) in the Computing Library (50B/1232).

CHANGES IN COMPUTER SECURITY POLICY

Marv Atchley

Because of continuing attempts to penetrate our computer system, we are implementing the following policy changes. They are effective immediately.

(1) PROBLEM: Shared logins in several cases have been uncontrolled, and have resulted in unauthorized persons using the computers for questionable purposes.

POLICY SOLUTION:
Sharing of logins is prohibited. Computing Services will provide information/training on how to share files (as they do now).

(2) PROBLEM: There have been several incidents where users stored logins and passwords **in clear text** on Computing Services and other **networked machines**. This information was read by a hacker and used to compromise other machines.

POLICY SOLUTION:
Retention of logins and passwords in clear text in on-line files in any networked computer at LBL is prohibited.

(3) PROBLEM: There are, without a doubt, unauthorized persons using logins on both VMS and UNIX. We know of many that were created by our recent breakin, but there are probably others.

POLICY SOLUTION:
All logins must be verified by their division or administrative unit. The division administrator will be given a listing of logins by account number. Each login must be checked by the division to verify that the listed owner is the actual user. Unverified logins will be disabled.

(4) PROBLEM: Poor password practices on UNIX have allowed easy hacker breakins to our UNIX systems.

POLICY SOLUTION:
Password management similar to that used on VMS is being introduced to UNIX. Included are:

(a) prohibition of login/password duplication,
(b) forced changing of passwords every 6 months,
(c) prohibition of easily-guessed passwords (as found by a modest password cracking program)

(5) PROBLEM: TYMNET passwords have been circulated or easily guessed, and this network has been a primary access path to LBL for hackers.

- POLICY SOLUTION:
  Tymnet access and passwords will be issued on a divisional basis. Computing Services will administer issuing and changing of passwords. Forward comments and questions to me (×**5455**) or

VMS **Mail:**	**lbl::FMAtchley**
UNIX **or** **Software Tools Mail:**	**FMAtchley@lbl.arpa**

ACCOUNTING UPDATE

Eric Beals

- SETACCOUNT is a new VMS command which allows the current logged-in user to change the account number being charged to another properly-authorized account for the remainder of the current session or job. The new account number is supplied on the command line following SETACCOUNT and a blank. For example:

SETACCOUNT **123456** (or SETA **123456**)

To change the set of account numbers which you are allowed to use please call Pat Bean, (×**7008**) and supply her with your LOGIN name and your new or altered set of properly-authorized account numbers.

- MYLOGIN is a new VMS command which displays information about the current LOGIN name, including the set of allowed account numbers. It can be abbreviated to MYLOG.

- BILLUSER has been changed to display all of the charges for the currently logged-in user for all accounts which have been used. This makes BILLUSER run much slower, searching all accounts. It can be abbreviated to BILLU.

- BILLLOGIN is a new VMS command which displays all charges for the currently logged-in user and account. This is fast because only one account is searched. It can be abbreviated to BILLL.

UNIX MACSYMA UPDATE 309.2

Bob Rendler

The *Symbolics Macsyma* on UX4 has been updated from Release 309.1 to Release 309.2.

NEW FEATURES

- The **share** libraries have been consolidated into a single **share** directory. Formerly the libraries resided in the directories **share, share1,** and **share2**.
- **playback** now accepts an option **output**, analogous to the **input** option.
- The site file **mac.309.site** has been renamed to **mac_309_site** for internal consistency.
- The **ode** demos in the **demo** directory have been renamed as follows:

  ode1.dem renamed to **first-order.dem**
  ode2.dem renamed to **second-order.dem**
  ode3.dem renamed to **difficult.dem**
- **ctensr** is now available and resides in the **tensor** directory.
- **facsum** is now available. Load (*facexp*) to use it.
- **expt** and **ncexpt** now exist. **expt** performs exponentiation, and **ncexpt** performs non-commutative exponentiation.
- All of the demos in the directory **/usr/macsyma.309/demo** now run.
- A manual page is now available for UNIX. Type

  man macsyma

  at system level.

IMPROVEMENTS

- **save** is now better-behaved under certain error conditions.
- The description of **sum** has been updated in the **describe** database.
- The definition of **eulerpoly** has been changed to assure that eulerpoly returns polynomials in its first argument.
- The default editor is now the MACSYMA editor.
- Assigning a value directly to **features** is now illegal. The list **features** is now one of **infolists.**
- **delfile** now exists.
- The MACSYMA command **primer** now works.
- a['f](y):=1; now signals a correct MACSYMA error.
- When a function under trace is redefined, the new definition remains under trace. Formerly, redefinition automatically removed the trace.
- The *dskuse:true* scheme now works.
- The lisp sources are no longer included in the distribution.

BUGS FIXED

- Bugs have been repaired in several mathematical packages.
- The MACSYMA database is now restored to its initial state after the user aborts a computation that has resulted in temporary database modification.
- **linel** can now be set by the user.
- The function **timedate** now exists.
- A better error message is now given for setting **pagepause** to **true** which is illegal under UNIX.
- There is a new updated copy of the **example** database. Corrects a synchronization problem.
- There are four new demos for **ctensr**, plus new demos for **dice, facexp, nisimp, rough, rpart, sin, specfn** and a new general demo.
- The following **share** files have been tested:

  absimp, atrig1, bessel, declin, delta, elim, ellipt, facexp, invert, lrats, nchrpl, ntrig, nusum, ode2, optmiz, polsol, rncomb, spangles, sqdust, stopex, trgsmp, and **vect.**
- **aplot2.1** has been repaired, so that **plot** now works.

Forward comments and questions to

VMS **Mail:**	**lbl::RERendler**
UNIX **or Software Tools Mail:**	**RERendler@lbl.arpa**

THE WORKSTATION SCENE

[23.12.1].....

● 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.arpa

We hope this alternative (to the telephone) will be of assistance to users who have problems or would like to forward helpful hints.

[23.12.2].....

● WORDPERFECT UPGRADE TO VERSION 4.2

WordPerfect 4.1, the popular word processing program, now has a successor, 4.2. This new version has many enhancements including Document Summary, Non-printing Comments, and some features for the legal folks that include line numbering and a Table of Authorities function.

Despite correcting and fulfilling many of the current user's "wish list" in 4.2, this version does not open the door to integrating graphics and other components for true desk-top publishing. A future version, 5.0 is reported to address these needs.

The upgrade to 4.2 is now available from SSISoftware Corp for $35. Additional copies of the upgrade are $15 each with the $35 order.

SSISoftware has also made available a "file server" software license for $245 per server, plus $75 per station.

For more info, contact Richard LaPierre (x**4692**), or Bruce Burkhart at the Workstation Lab (x**6858**).

[23.12.3].....

● LASERPRINTER TRANSPARENCIES

Jim Manning, our Hewlett Packard account representative, has called to our attention the fact that HP LaserJet users, (and Apple Laserwriter users), can produce ViewGraphs **directly** from their laser printer.

Up until now, we used the HP "R" cartridge with 14- to 18-point BOLD fonts to create our presentations. We ran the paper output through a copy machine loaded with transparencies to produce our ViewGraphs.

Printing ViewGraphs directly on the LaserPrinter seems to improve the presentation quality; however, this observation is based on results obtained using a sample packet of transparency film. The quantity price (per 100 sheets) comes in at around fifty-five cents per ViewGraph, so you will want to defer this process to the final stage of generating presentation material.

The transparency film is available from Hewlett Packard, part #9225J, 50 sheets per box. For more info, contact Jim Manning at 3-119-460-1503.

[23.12.4].....

● ON-LINE LBL PHONE LIST

Here's more info on the on-line phone list.

This is proving to be a very popular feature. It was intended (when we installed it) to be downloaded to a PC and used there for searching on the local machine. Many users have found it useful to search on the CSA cluster as well. We have added two of the utilities we like for searching on the PC to the directory wherein it resides. The entire sub-directory will fit on a 360K PC floppy disk. (Remember that the command to get to it is

set default ibmpcphone

FGREP and LIST are now in the sub-directory. Neither of these utilities can be used on the cluster. They both are executable only on a PC (IBM or clone). The phone file itself is extracted from the SPIRES database.

If you find errors in spelling, location or number, please contact TELEPHONE SERVICES (x**6234**) to have the database updated or corrected. The Workstation Group cannot maintain the list. We will update it at least every 3 months and probably more often. Requests have been received for similar files for SLAC, for Campus and for LLNL. These requests are being considered. For more information or to give input on such lists as this one, you may send mail to WKSG (see Item #1 in this section) or call Dan Van Zile (x**5589**).

● MUMM's CORDON ROUGE

Since the list has proved so popular, Roy Kerth has offered a bottle of champagne as a prize for the best program for accessing information from the file on a PC. Here are the rules for the contest.

(1) the program must run on an IBM PC, XT, AT or reasonable clone.

(2) The author must place the program in the public domain.

(3) The program must either accept the ASCII file (available on the CSA cluster in the directory **ibmpcphone**) or supply software for creating an appropriate input file from the phone file.

(4) Any programming language may be used providing license agreements do not restrict placing the program in the public domain.

(5) Entries should be submitted by February 1, 1987 to

ATTN: Roy Kerth, Bldg. 50B, Rm. 2239

The submission must include:

- Well-documented source code.
- A 5¼" diskette containing all batch files, object code, etc. This will be transferred to a subdirectory on a hard disk along with the "phone file". The program must then run when the subdirectory is the default and "phone" is entered at the DOS prompt.
- If the program normally indicates the identity of the author, a copy without this feature must be supplied so that the judging can be blind.

(6) The selection committee's decision is final. The membership of the committee will be anonymous. However, it will be made up of at least two administrative services, two administrator/management and two scientists/technicians personnel. The programs will be judged for their ease of use, speed and general utility when used in an office environment.

[23.12.5]

• VCACHE

We have received a copy of VCACHE, a write-through disk cache program for IBM-PC and PC-AT's from Golden Bow Systems. The philosophy behind the program is that a copy of the last-used disk sectors is maintained in RAM; all requests for disk reads are satisfied from RAM and all requests for writes modify both RAM and the original data on the disk.

VCACHE can use standard RAM, extended address RAM on the PC-AT, or expanded address RAM on the PC-XT for cache buffers. We will be testing the Expanded Address version on an XT as soon as we receive a RAMPAGE-XT card; we have tested the AT version — results are below.

We installed 1.664 Mbytes of extended address RAM on an AT with a 140 Mbyte MAXTOR hard disk and ran the performance test provided with the cache program. This test creates a file of 750 records of 250 bytes each.

	VCACHE ON	VCACHE OFF
Read all records sequentially	2.80 Sec.	7.36 Sec.
Read all records sequentially in reverse order	5.38	20.38
Read 750 random records	6.10	14.66

Bear in mind that the MAXTOR is a very high performance disk; there would be greater improvement with slower disks.

One application that seems to be a "natural" for this program is the case of a 3COM file server. We ran the test program on the same machine operating as a 3COM File Server under EtherShare V2.4.1. Much to our amazement, there was no conflict between this software and the 3COM server software. Similar improvements were observed in the test program. However, network loading also affects the absolute numbers. The results can vary.

Considering its modest price ($80), this looks like a very handy piece of software for anyone doing disk-intensive tasks on an XT or an AT.

[23.12.6]

• TESTING THE BAYTECH PRINT MASTER

In our continuing search for the ultimate printer sharing device, we have tested a BayTech PRINT MASTER Model 708D. Priced at $806, this handy device can connect up to **two computers using serial ports** and as many as **five computers using parallel ports — to one printer**. Other serial/parallel configurations are available. A 256 Kbyte buffer is built in.

This is quite a sophisticated device and we can touch on only a few of the more significant and unique features here.

The PRINT MASTER is readily configured using a simple command language via one of the serial ports. One nice feature is that a "message" consisting of a character string can be associated with each input port: print jobs entering from that port are then preceded by a "header" page which displays the associated message. This is really handy when several jobs from different sources are sent to the printer at the same time, or

when people do not always pick up their output as soon as it is sent to the printer.

A variable time-out is used to determine "end of job"; also, a "trailer" can be attached to indicate an end of job explicitly . The unit can be programmed to issue a "form-feed" between print jobs.

The documentation was, in our opinion, satisfactory.

BayTech's address is

Bay Technical Associates, Inc.
Data Communications Products
Highway 603, Box 387
Bay Saint Louis, Mississippi 39520
(601) 467-8231

In the next few months we will be testing more of these devices. Stay tuned for further developments.

[23.12.7]

● LABEL PRINTING

LaserJet users can purchase specially-designed, specially-treated labels for use in sheet-feed laser-printers. The high temperature encountered in the printing cycle precludes the use of standard adhesive-backed labels.

The following label sizes are available on 8 ½" × 11" sheets:

- 1" × 2 ¾",
- 1 ¾" × 2 ¾",
- 2 ¾" × 4 ¼".

We have found a software package from Polaris that is ideal for producing labels on a LaserPrinter. (See the next item, **23.12.8**, a reprint from a previous Newsletter).

HP ThinkJet users can also purchase specially-designed labels for the ThinkJet printer. The Workstation Group has a limited supply of ThinkJet labels for user evaluation. For a free sample, contact Workstation Group Member Bruce Burkhart (×**6858**).

[23.12.8]

● LABEL PRINTING ON YOUR HP LASERJET

The Workstation Group has been investigating some label programs for use with the HP LaserJet printers.

The mail-merge feature of most word-processing packages works fine with the roll-type of self-adhesive labels when printing on either a dot-matrix or a daisy-wheel printer. Many offices now want to enjoy the benefits of the LaserJet when printing labels and envelopes. Most of these packages however, don't support printing labels on sheet-fed printers.

We have found a real winner out there from Polaris Software. **Polaris Labelmaker** lets you print labels of any size on your HP LaserJet. All of the popular font cartridges available for the HP are supported. In addition, Polaris allows you to select either

- the printer's resident font
- a font from the currently installed font cartridge, or
- a font from the downloaded soft fonts.

With embedded font selection commands, the user can easily change font selections at any point in the label printing.

For the creative users, Polaris also supports

- subscripts,
- superscripts,
- variable line spacing,
- variable character widths,
- vertical and horizontal line drawing, and
- boxes.

On the LaserJet+ you can also specify the width of lines and the amount of shading or, alternatively, one of six line patterns.

Polaris Labelmaker works with any word processing program or text editor. The text printed on the label can be entered from the keyboard or it can be merged from a word processor's mail-merge file or from a data base file. I tried it out using a Volkswriter mail-merge file.

If you are still not sure about investing in Polaris Labelmaker; how does a 30-day money-back guarantee sound? That is what you get with all Polaris products. Cost: approximately $124. It's not copy-protected. Available from:

Polaris Software
310 Via Vera Cruz, Suite 205
San Marcos, CA 92069
(619) 471-0922

Editors note ... Special label sheets must be used with the LaserJet because of the high temperature used in the printing process. Sheets of various-sized labels are available from HP. For additional information on the Labelmaker program contact Workstation Group member Richard LaPierre (×**4692**).

[23.12.9].....

• LIST — A NIFTY FILE-SEARCHING PROGRAM

ICS Division's Workstation Group has bought a site license for LBL use of shareware program LIST. (We like the SHAREWARE concept and encourage users to support the authors). LIST has proven to be a very useful program for string searching a file or group of files on a PC. It has many features including the ability

- to dump a binary file in hex,
- to change an eight-bit file (read *Wordstar*) into something readable,
- to move back and forth within a file (scroll up and down) and
- too many others to list here.

It can

- display a 'ruler',
- expand tab characters,
- split the screen into 2 parts — holding one and scrolling the other,
- use color effectively and
- use an EGA in 43 line mode.
- It can also be customized for your own particular tastes.

We like to encourage developers to produce good inexpensive software that fills a real need in our Lab environment.

You can get a copy of this program by bringing a blank disk to the HELP DESK, Bldg. 50B, Rm. 1215, or by downloading the executable file and its document from the sub-directory pointed to by the CSA command

set default ibmpcphone

LBL users can ignore the request for a $15 donation.

If you have a favorite Public Domain or SHAREWARE program that you'd like to spread "the word" about, let us know and we'll consider it for similar treatment as this one. Contact WKSG member Dan Van Zile, (×**5589**), with your nomination.

[23.12.10].....

• TOPS

TOPS is a 'Networking' program which allows Apple Macintosh computers connected to an **AppleTalk** network to share disk (either hard or floppy) resources. The manufacturer has also released similar software for the IBM-PC (XT, AT) computers along with an expansion board which can connect a PC to the **AppleTalk** network. The PC then has access to files residing on the Macintosh disks, and the Macintosh can access files on the IBM's disks. *Nota bene*: in some cases there may be compatibility problems with the data formats involved.

In our rather limited experience, the software and hardware all seem to work as advertised, but there are a couple of caveats that we think potential users should note. (This is especially true regarding PC-related features.)

• OVERLOAD

In this data-storage-hungry world, it is not uncommon to put a very large hard disk (read >32 Mbyte) on a PC and use a piece of software called a "device driver" to get around the DOS limitation of 32 Mbytes per disk. We tried this approach on an AT which we wanted to attach to an **AppleTalk** network, and found that loading TOPS on the AT killed the device driver. We were using **DiskManager** from On-Track Software, but we would not be surprised to find that this problem occurs with other similar software. The implication is that, at most, one could have no more than two hard disks of no more than 32-Mbyte capacity on any PC that is to be hooked to **AppleTalk** via the TOPS hardware and software.

• HARDWARE & SOFTWARE INCOMPATIBILITIES

We also attempted to install the **AppleTalk** board and TOPS Software on a PC-AT that was connected to the EtherNet via a 3COM expansion board and EtherShare software. We discovered some hardware and software incompatibilities that we are still investigating.

We intend to follow up on these issues and will publish our findings at a later date.

None of these issues, in our opinion, represent serious flaws in the TOPS software or hardware; in many situations they are of no practical importance. In some cases, however, they could be important and for that reason we want the community of potential users to be aware of them.

TOPS is a product of

Centram Systems West Inc.
2372 Ellsworth Ave
Berkeley CA 94704

[23.12.11].....

• NEW SOFT FONTS FROM HP

Attention Hewlett Packard **LaserJet Plus** owners: HP has just announced the availability of four "Soft Font" packages with a site license

agreement that should set a standard for the industry.

Soft fonts are software font packages that are downloaded to the printer from the PC. This allows many fonts to reside in the printer rather than in a font cartridge.

For LBL's price of $134 per Soft Font package, the purchaser obtains

- a set of master disks
- a "right-to-use" license for 3 printers
- a set of documentation
- 3 license stickers.

We can also purchase a "right-to-use" license for 100 printers for an LBL price of $1340.

Not all users will find Soft Fonts an acceptable substitute to the font cartridge; however, many will find the advantages of having several fonts in portrait and landscape orientation worth the effort involved to manage the fonts.

The Workstation Group is coordinating the procurement of Soft Font packages to afford individual users the opportunity to participate in HP's multiple-printer license plan. To obtain a copy of the "Soft Font" selection guide and/or to place an order for Soft Fonts, contact the Workstation Group at x**6858**.

[23.12.12]

● LATEST MICROSOFT FORTRAN VERSION

Extracted from the LLNL **Tentacle**, *Nov. 1986.*

If you have been using old versions of the Microsoft Fortran compiler (Version 3.1 or 3.2), you should know that the latest version of the compiler is 3.31. If you haven't received an update sheet from Microsoft, you probably didn't send in the product registration card in the back of the manual. By sending in the registration card you will be informed about the latest version of the product and, once in a while, you will receive a free update. So send in those cards!

[23.12.13]

● INSIDE MACINTOSH

Inside Macintosh is available for perusal or one-day loan at the Computing Library (50B/1232 x**5529**).

Inside Macintosh is a four-volume set of manuals that tells you what you need to know to write software for the Apple Macintosh 128K, 512K, or XL. Although directed mainly toward programmers writing standard Macintosh applications, *Inside Macintosh* also contains the information needed to write simple utility programs, desk accessories, device drivers, or any other Macintosh software. It includes:

- the user interface guidelines for applications on the Macintosh
- a complete description of the routines available for your program to call (both those built into the Macintosh and others on disk), along with related concepts and background information
- a description of the Macintosh 128K and 512K hardware.

You can also purchase the set through the Computing Library.

[23.12.14]

● PRTSCFF - A HELPFUL UTILITY FOR LASERJET USERS

Are you tired of being interrupted every time you invoke **Shift/Print Screen** from your PC, when you have to reset the LaserJet manually to eject the copy?

Well, a member of the PC community here at the Laboratory has contributed a neat little utility to solve this problem.

PRTSCFF automatically appends a form feed to the LaserJet. This short program can be stored away in a directory and initialized via your **autoexec.bat** when you turn on your PC.

You can obtain a copy of this program by contacting Workstation Group member Bruce Burkhart (x**6858**). The files can also be found on the CSA cluster and downloaded via KERMIT from the subdirectory pointed to by the command:

set default ibmpcsoftware

"Decay is inherent in all component things."

The Pali Canon

TRADING POST

The Real Time Systems Group has two Tektronix 4105 color terminals and a 4695 color (ink jet) copier for sale. The copier will print a screen dump from the 4105 terminal.

All three items have seen very little use and are in good condition. Price negotiable. Contact Don Oldfather (x**6411**).

We have an IBM PC with 2 floppy drives, 10 Mb hard disk, 8087 math co-processor, 448 Kb RAM, a Baby Blue card for CP/M operating system program operation, and a Princeton Max-12 monitor that we would like to trade for a Compaq portable computer of similar capabilities. Contact Richard Szydlowski (x**7328**).

Items advertised here are for Laboratory use only and must be purchased with a valid account number. For more info about these ads, contact Maggie Morley, 50B/1232 (x**5529**).

NEWS FROM DECUS ABOUT FPJ11 CHIPS

Randy Michelson

- **THE PROBLEM: FPJ11 CHIPS ARE ALL DEFECTIVE!**

DEC Announced at DECUS that ALL FPJ11 Floating Point Accelerator chips (LLNL Stock # 5975-69277) ever manufactured are DEFECTIVE, and that they should be IMMEDIATELY REMOVED from all systems because they generate incorrect results under certain circumstances, and can also crash the system under certain circumstances.

- **SHORT-TERM FIX: REMOVE FPJ11 CHIPS IMMEDIATELY!**

Please remove any FPJ11 Floating Point Accelerator chips from any systems in your area IMMEDIATELY, label them with the CPU serial number or system DOE number, machine location, your name, mail stop, and phone number, and send them to Jim Harvill, Mail-Stop 46A-1123, LBL. Jim will contact you when good replacement chips are available.

If you prefer to have a technician remove the FPJ11, please call the RTSG Duty Technician (x**6411**) for an appointment.

- **LONG-TERM SOLUTION: NEW FPJ11 CHIPS FREE.**

New chips will become available starting December, 1986 through June, 1987, when DEC expects to have replaced all bad chips. The replacements will be supplied FREE by DEC.

- **IMPACT ON YOUR SYSTEM**

The CPU chip (DCJ11) contains microcode to execute the FPU instructions. So if the FPJ11 Floating Point Accelerator is not present, systems will continue to run all software without change, but the floating-point instructions will execute about half as fast. Forward questions or comments to Randy Michelson (x**6411**) or

VMS Mail:	**lbl::RJMichelson**
UNIX or Software Tools Mail:	**RJMichelson@lbl.arpa**

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(Golda Meir, 1898-1978)

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