DISCLAIMER

AUGUST
1990

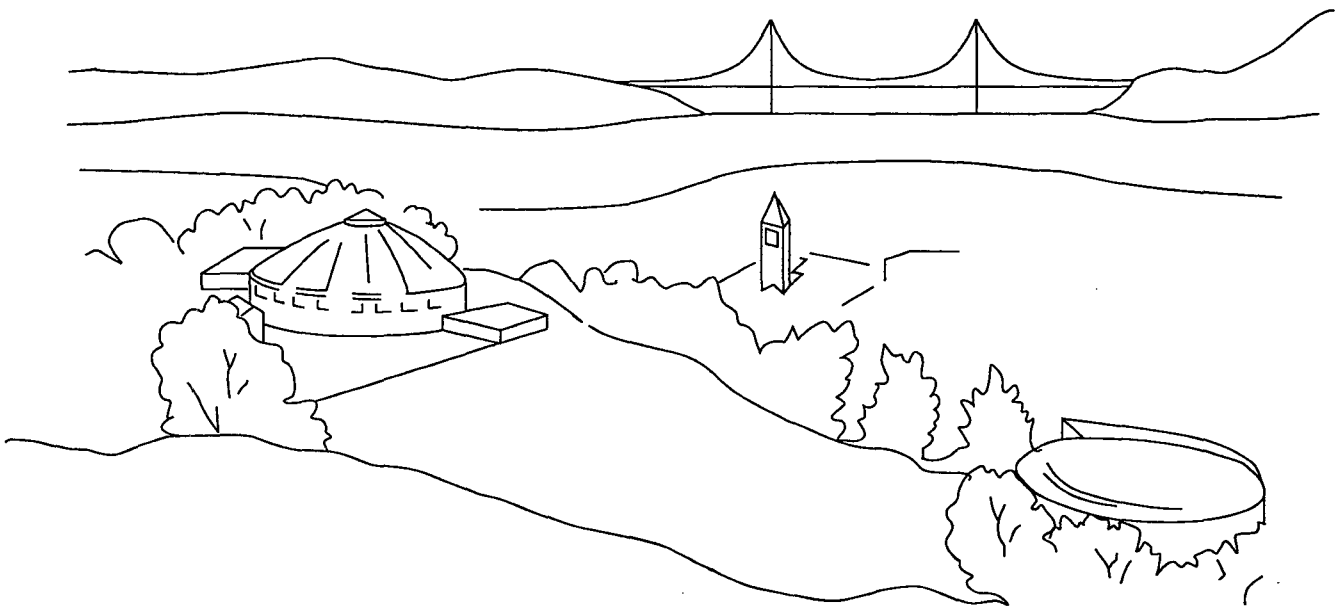
COMPUTING NEWSLETTER

STOCK CATALOG: ON-LINE ORDERS

NEW COLOR POSTSCRIPT PRINTER

LIBR8

QUICKMAIL SITE LICENSE



LAWRENCE BERKELEY LABORATORY
BERKELEY, CALIFORNIA . . . 94720

PUB-429

Newsletter Closing Date is Wednesday, August 15, 1990

Address all communications for the Newsletter to login nooz@ux1.lbl.gov
or put in Maggie Morley's Drop Box in the Workstation Group File Server

Editor: Maggie Morley

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

Lawrence Berkeley Laboratory is an Equal Opportunity Employer

PUB 429 8/90 2100

TABLE OF CONTENTS

GRAPHICS NEWS

HERE'S VERSION 3.2 OF ATC'S GKS

Nancy Johnston

Version 3.2, a new iteration of ATC's GKS, is now available for testing on both the VAX/VMS cluster and the Computing Services' Unix machines (UX1/3/5). This new version will replace the previous version on August 27, 1990. For VMS only, the older version will be retained under

sy_graphics:[old_atcgks]

after August 27, until users convert to DECWindows.

Differences between the new and old versions are:

1. The PostScript driver now supports color (see "Using Color PostScript" below for some important information).
2. There's a new driver for the Tektronix 4111 (4115 & 4125).
3. Shared libraries are available for Suns (they're loaded by default).
4. The CGM output workstation types have changed.
5. Arbitrary polygons, to define protected areas, are available.
6. The device driver names have changed for the Sun. The new filenames are of the form
   libgksw<*wtype*>.a or **libgksw<*wtype*>.so**
   where *wtype* is the main workstation type number for each graphics device. For example, the PostScript driver is now **libgksw1900.a**, the X11 driver is **libgksw5300.a**. Type **man gks** for more information.
7. The GKS vendor no longer supports the VWS/UIS driver (called the GKS VAXStation driver — workstation type 4300) for VMS workstations. DEC has told us unofficially that VWS/UIS will not be distributed as part of the VMS system in Release 5.5 (coming in January 1991). We have also been told that UIS emulation will be available under DECWindows, probably in Release 5.4 (sometime this summer). (See the "VWS/UIS Conversion" below for alternatives.)

See **man gks** on Unix and **HELP GRAPHICS GKS** on **VMS** for further changes and use. A new Installation and Workstation Manual is available (cost, $40, charged to your Computing account) from Pat Bean, Bldg. 50B, Rm. 1232B, x7008. This manual replaces the separate handouts that were available before for each graphics device and installation.

Using the New Versions

To access the new versions before August 27, one of the following needs to be done:

On VMS, execute the following DCL file:

$ @sy_graphics:[new_atcgks]newgks

which will reset all the GKS logicals to point to the new version:

On Unix, you need to redefine "gksdir" by

% setenv gksdir /usr/local/lib/atcgks/NEW_ATCGKS/

then add "-L$gksdir" to your f77 or cc line before you make reference to the GKS libraries. Now the loader will know where to pick up the new libraries.

VWS/UIS Conversion

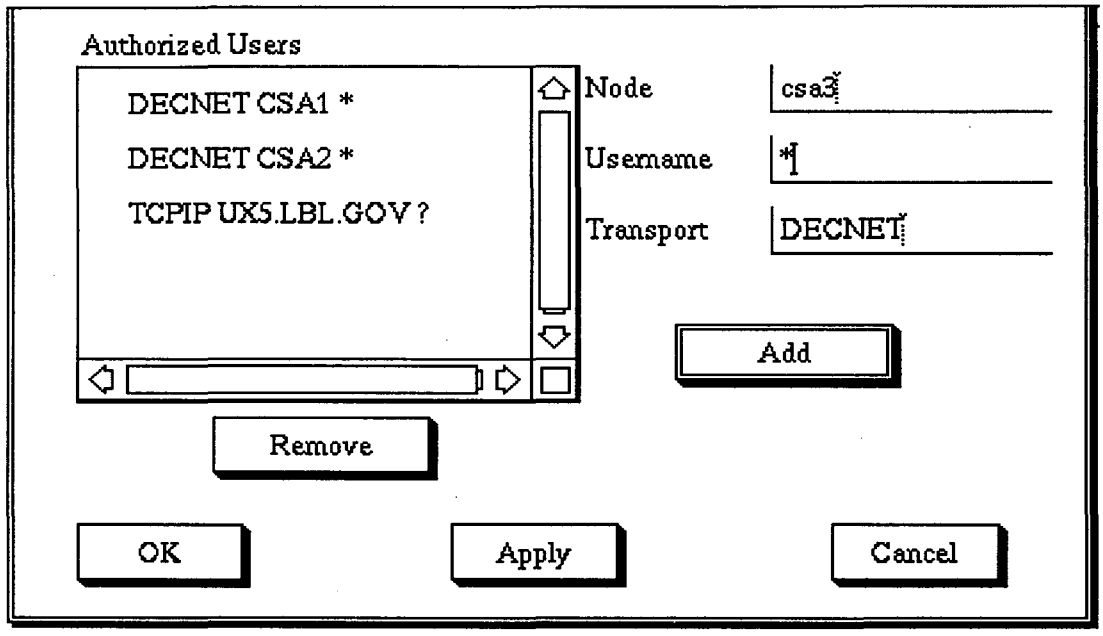
Because the ATC GKS VWS/UIS driver is no longer available with GKS 3.2, you will need to do one of the following.

1. Convert your workstation to use DECWindows and use the X11 driver (workstation type 5300 or 5350). If you can convert to X11, you will get the maximum flexibility. (See "Using the X11 driver" below for more information.)
2. Within VWS, use
   - the GKS VT240 driver (workstation type = 2601) in a VWS Regis window or
   - the GKS Tektronix 4014 driver (workstation type = 2500) in a VWS Tektronix window.

Using the X11 driver

Using X, you can run on almost any machine and display the output on any workstation running X, or an X terminal. For example, you could run PAW on the cluster and plot to either a VAXStation running DECWindows or to a Sun workstation running X.

To execute your program on CSA1 and then display the output on your VAXStation, you would first grant access to CSA1 to plot to your VAXStation. You grant access by modifying "security" under the "customize" heading within the Session Manager window. When Security is selected, the following window is displayed and you can specify which machines and users can display X11 windows on your VAXStation. In the following example, note how you specify both VMS and Unix machines. All users have been selected (using * for VMS, and ? for Unix). You can limit it to specific users by typing in a user's name instead of one of those characters.



Then on the Cluster do:

$ set display/create/node=<workstation name>
$ run <your program>

It will open a window on your VAXStation and do all plotting in it.

To plot to a Sun, you must first execute the following command on your Sun workstation to allow your program on the VAX Cluster (or any other user and machine) to plot to your Sun workstation. (To find out how you can allow access to your workstation more specifically, do "man xhost".)

% xhost +

then, on the Vax do:

$ set display/create/node=<hostname.lbl.gov>/
transport=tcpip
$ run <your program>

Using Color PostScript

The PostScript driver handles both color and monochrome PostScript devices. If you run your program using the GKS PostScript driver, and you make use of color, you will have a nice color picture if you send the file to a color PostScript printer (e.g., qp2 or tp1). This same file can also be sent to a monochrome PostScript printer. The different colored lines and areas will be dithered to produce different grayscaled lines and filled areas.

As stated elsewhere in this Newsletter, the full area of the color PostScript printer is not available for printing. The following piece of code, when added to your program, will center your picture(s) so the whole picture will be plotted. If you are already using the whole 8 ½"x 11" printing area, you cannot use this code: you'd lose part of your picture on the QMS or Tektronix..

For a FORTRAN program, add this code after you open GKS (GOPKS) and the workstation (GOPWK).

```
c
c  If you are using the PostScript driver, center the plot.
c     wtype = workstation type (1900 for portrait mode
c                or 1901 for landscape)
c     iwkid = workstation id
c

  if (wtype .ge. 1900 .and. wtype .lt. 2000) then
    call gqdsp (wtype, ierr, dcunit, rx, ry, lx, ly)
    if (rx .gt. ry) then
      offset = (rx -ry)/2.
      call gswkvp (iwkid, offset, ry+offset, 0, ry)
    else
      offset = (ry -rx)/2.
      call gswkvp (iwkid, 0, rx, offset, rx+offset)
    endif
  endif
```

The logic is the same for C but the GKS routines and parameters are different.

Forward comments and questions to me at x5093 or

Unix or Software Tools Mail:	**NEJohnston@lbl.gov**
VMS Mail:	**lbl::NEJohnston**

NEW COLOR POSTSCRIPT PRINTER

Bill Benson

As announced in the June Newsletter, the Tektronix 4693D printer has been upgraded to a Phaser PX color PostScript printer. The location is the same - Bldg 50B, Rm 1275. It can be accessed both from Macintoshes and from the Distributed Printing System.

General Information
The imageable area is somewhat smaller than that of a regular laser printer. It is also somewhat different than the imageable area of the QMS ColorScript.

Two media sizes - letter and legal - are available. Both paper and transparency media are available for each size. Note that these supplies are different than those used by the ColorScript.

Legal size paper will normally be loaded, since the imageable area on legal size media is much closer to what can be achieved with letter size on the LaserWriter. The sizes and areas for both color printers are given below for comparison.

media size	Phaser PX imageable area	ColorScript imageable area
8.5"×11"	8.13"×8.48"	8.1"×8.9"
8.5"×14"	8.13"×10.82"	-
11"×17"	-	10.6"×14.9"

VMS/Unix Users:
The color_tek queue has been discontinued, and files generated with the 4693 drivers in Disspla, Tellagraf, or GKS can no longer be printed.

PostScript drivers should be used instead, and the output files printed with **lpr** via the distributed printing system.

To access the printer from Unix and VMS hosts, type:

lpr -Ptp1 <*name of your PostScript file*>

Color PostScript output can be produced from Disspla, Tellagraf, and GKS.

With Disspla, use the following call to nominate the PostScript device:

call dev("postscript_all_general",ierr)

With Tellagraf, use the following in your tagpro.dat file:

secondary device is postscript.

For more infomation, see
help graphics ca-disspla device postscript
help graphics tellagraf device postscript

See also the GKS article in this newsletter.

Macintosh Users:
For Macintosh users, the printer name is "50B-1215 Phaser PX tp1", which can be selected after clicking the LaserWriter icon and the **lbl** zone in the Chooser

The LaserWriter 6.0 distribution is required to get color or gray scale output. The distribution consists of three files, LaserWriter 6.0, LaserPrep 6.0, and PrintMonitor 1.3, which should be copied to the System Folder, replacing previous versions.

The distribution is available from the Graphics folder on the **WKSG Server 1** AppleShare server in the **lbl** zone.

The distribution has been updated to include page sizes for both printers. If you already have a copy of LaserWriter 6.0, be sure to get a fresh one. Note also that these page sizes are not available in LaserWriter 6.0.1.

For most applications, specify the desired page size by selecting the "Page Setup..." menu under the File menu. Press the "Tabloid" popup menu for additional sizes.

If printing to the Phaser, select one of these:

Phaser Letter ..... for 8.5"×11" media
Phaser Legal ..... for 8.5"×14" media

If printing to the ColorScript, select one of these:

ColorScript 100 US Letter ..... for 8.5"×11" media
ColorScript 100 Tabloid ..... for 11"×14" media

Forward comments and questions to me at x5703, or

Software Tools Mail or Unix: **WHBenson@lbl.gov**
VMS Mail: **lbl::WHBenson**

HARDWARE MOVES

Maggie Morley

- Computing Services is putting ten Sun workstations in the Computing Services Training Room (Bldg. 50B, Rm. 1237). These workstations, along with the seven IBM PCs already there, will be user training machines.
- To make room for them, we are moving the VT200 series terminals from Rm. 1237 to Bldg. 50B, Rm. 1232 (the "old" Graphics/Workstation lab). We'll install more documentation racks there too.
- We are moving all the workstations and the graphics hardware now in Rm. 1232 to Bldg. 50B, Rm. 1275 (the "new" Graphics/Workstation lab). You can get into that room with the same key card you use to get into Rm. 1232.

POSTSCRIPT PREVIEWERS ON SUN WORKSTATIONS

Martin Gelbaum

Two PostScript previewers for the Sun workstation, one for X Windows and one from SunView, are now available on UX1/3/5.

XPS

XPS, a previewer for PostScript documents on monochrome and color Sun workstations running [Release X11r4 of] X Windows, is now up and running on UX1/3/5. This public-domain program, whose original version was written by Crispin Goswell of Rutherford Appleton Laboratory, conforms closely to the PostScript Language Manual. The X11 driver was written by Terry Weissman of Digital Equipment Corporation. The program also works on monochrome and color Solbourne workstations although there are still some small problems with the color Solboune workstations.

Sample usage (on your SUN "myws" running X windows - what you type is in **boldface**):

myws% **xps -c A4** ***myfile.ps***

To create a window of letter (8 ½" × 11"), replace "A4" with "letter".

REMOTE USE

You need to set the environmental variable DISPLAY correctly if you are using XPS on a "remote" machine. This applies to those times when, for example, you are running X-windows on your workstation ("myws") and you log in to UX5. In such a case, you need to tell XPS the name of your X-windows "display". Do this by setting the DISPLAY environmental variable as follows:

ux5% **setenv DISPLAY** ***myws*:0.0**

XPS can also be run interactively, as in the following example:

```
ux5% xps
>PS A4
>PS (/usr/local/lib/postscript/demos/sinecurve.ps) run
        % draw some sine curves
>PS erasepage
>PS newpath 100 100 moveto 500 500 lineto stroke
        % draw a line
>PS quit
```

SUNPS

A companion program, SUNPS, also written by Crispen Goswell, runs under SunView on Sun workstations (color and monochrome). The command syntax is the same as for XPS.

Sample usage (on your Sun workstation "myws" running SunView):

myws% **sunps -c A4 myfile.ps**

If you are using SUNPS on a remote machine you need to set the environmental variable POSTSCRIPTDEVICE correctly. For instance, when you are running SunView on your workstation ("myws") and you log in to UX5, you need to tell SUNPS the name of your SunView display. Do this by setting the POSTSCRIPTDEVICE environmental variable as follows:

ux5% **setenv POSTSCRIPTDEVICE "|rsh** ***myws*** **viewer"**

("myws" MUST have the program VIEWER, which is in /usr/local on UX1/3/5.

Both XPS and SUNPS read a number of definitions from a standard library file "psrc" in the directory whose default value is

/usr/local/lib/postscript.

"psrc" contains PostScript macros, etc., used by XPS and SUNPS. You may use your own psrc file; in that case, you must set the environment variable POSTSCRIPTLIB to point to the directory that houses your psrc file. XPS and SUNPS also look for but do not require a file named ".postscript" in the users HOME directory. This may contain any useful startup routines you always need.

See **man xps** and **man sunps** for more information.

Forward comments and questions to me at x4749 or

Unix or Software Tools Mail:	**martyg@lbl.gov**
VMS Mail:	**lbl::martyg**

FOCUS NEWS

PLACE YOUR STOCK CATALOG ORDERS ON-LINE

Esther Schroeder
Nick Armstrong

A new feature has been added to the FOCUS Toolkit on the VAX. With a valid cost account, you can now place online orders for any item in the LBL Stock Catalog that is not controlled. Controlled items (where signatures are required) are excluded.

All orders placed during the day are collected in a file that is transmitted to Building 7 each morning at 7 AM. There the orders are sorted by site and by the storeroom which stocks them. An item stocked at Building 7 will be entered directly into the Pick system and a Picking label will be produced. A Stock Material Order will be produced for each item stocked elsewhere and a printed Stock Material Order will be produced for it. The order will then be processed in the same manner as is a mailed-in order.

Use of this online system should speed up the processing of Stores Orders by bypassing the laboratory mail and transmitting the orders directly to Building 7.

You must have a VAX account to access the system. As FOCUS is only licensed for CSA1, log onto that machine. Once on the VAx, enter the FOCUS Toolkit by typing (at the CSA1 prompt)

focus

then type (at the FOCUS prompt, (">>"))

ex tkit

After a few seconds, a menu of many available options and reports will appear. You access the online Stock Order Entry system by selecting the "Stores" option from this opening Toolkit menu, "Inventory Management System" in the next menu, and "Place a stock material order" from the third menu.

To be able to place an order, you must have a valid cost account and you must know the full 9-digit catalog number of the desired item. If you are unsure of the catalog number, you can get it by running the report that lists all items containing a particular description (the third option under Reports in the Inventory Management System menu).

At each stage, **help** screens are available that explain each of the options in considerable detail. For a hardcopy user's guide for Stores Order Entry, please call Nick Armstrong at x5361 or Esther Schroeder at x5306.

Forward comments and questions to me at x5306 or

Unix or Software Tools Mail:	**ECSchroeder@lbl.gov**
VMS Mail:	**lbl::ECSchroeder**

UNIX NEWS

SUN FORTRAN 1.3.1

Dave Cleveland

Version 1.3.1, the latest release of Sun FORTRAN, is now on UX1, UX3, and UX5. It fixes bugs in the direct-access I/O of FORTRAN 1.3.

A description of Sun FORTRAN 1.3 and its features appeared in the July 1990 issue of this Newsletter.

Forward comments and questions to me at x5336 or send e-mail to DHCleveland@lbl.gov.

. . . LIBR8

VAX/VMS LIBRARY EMULATION ON SUN UNIX SYSTEM

Dave Cleveland

A new version of the LIBR8 Run-Time Library Routines and System Services is now on UX5, our 22 MIPS Sun SPARCserver. The LIBR8 software, a product of the Accelr8 Technology Corporation, provides procedures designed to emulate the VAX/VMS Run-Time Library Routines. This latest version includes two new files, **libcbind.a** and **libfbind.a**, which are the C and FORTRAN bindings, respectively.

The LIBR8 Run-Time Library routines can be used with programs written in C and FORTRAN. The following examples illustrate the use of the random-number generator, MTH$RANDOM, with the required linker options, -lcbind or -lfbind, -llibr8 and -L/usr/5lib.

C LANGUAGE EXAMPLE:
The following program, **ranc.c**, is compiled by the "cc" command

```
cc -o ranc ranc.c -lcbind -llibr8 -L/usr/5lib -lm
```

```
#include <stdio.h>
main()
{
    static int seed = 1;
    float random, mth$random();

    printf("seed = %d\n", seed);
    random = mth$random(&seed);
    printf("random = %20.5e\n", random);
    exit(0);
}
```

Note: if a C compilation requires any Unix system "include" files, use the -I/usr/5include compiler flag because LIBR8 is System V oriented.

FORTRAN LANGUAGE EXAMPLE:
The following program, **ranf.f**, is compiled by the "f77" command

```
f77 -o ranf ranf.f -lfbind -llibr8 -L/usr/5lib -lm
```

```
      INTEGER SEED
      DATA SEED / 1 /
      REAL RANDOM, MTH$RANDOM

      PRINT '(' 'seed = ' ',I)', SEED
      RANDOM = MTH$RANDOM(SEED)
      PRINT '(' 'random = ' ',E20.5)', RANDOM

      STOP
      END
```

Note: VMS-type header files are in the directory

/usr/local/lib/accelr8/include.

the ***.h** files are for C programs;
the ***.f** files are for FORTRAN programs.

DOCUMENTATION:
The set of Reference Manuals for VAX/VMS System Routines serves as the basic documentation for the LIBR8 routines. In addition, the Accelr8 Technology Corporation publishes the LIBR8 Reference Guide, available from Pat Bean (Bldg. 50B, Rm. 1232B).

LIBR8 Run-Time Library Routines and Systems Services (Version 1.2)
Order number: 8-800-0060

Call x7008 to order a copy. The cost will be charged against your Computing Services account.

Forward comments and questions to me at x5336 or

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

. . . Winnowing

"SINCE" — A NEW UNIX COMMAND

Ed Sheena

You can now list Unix files that you modifiedon a given date using the Unix command **since.** Here's how.

To see the list of files you modified today (say, August 12), type

% since

It responds

```
ls -alt | fgrep -i 'Aug␣12'
drwxr-xr-x 2 esheena     1024 Aug 12 09:35 .
-rw-r—r— 1 esheena       593 Aug 12 09:22 report3.out
-rw-r—r— 1 esheena       676 Aug 12 09:30 report4.out
```

To see a list of files modified on a given day, (say, April 5) type

% since "apr␣␣5"

Note well: In this case, there are two space marks (space mark indicated by "␣") between the month and the day. When the date is a single digit (April 5), you must put in an extra space before it. Note also that that argument must be surrounded by single or double quotes.

It responds

```
ls -alt | fgrep -i 'apr␣␣5'
-rw-r—r— 1 esheena       493 Apr  5 15:13 report1.out
-rw-r—r— 1 esheena       576 Apr  5 15:11 report2.out
```

When the date is a double digit (July 19), your command looks like this:

% since 'Jul␣19'

It responds

```
ls -alt | fgrep -i 'Jul␣19'
-rwxr-xr-x 1 esheena     297 Jul 19 09:40 t
drwxr-xr-x 2 esheena    1024 Jul 19 09:35 .
-rwxr-xr-x 1 esheena   24576 Jul 19 09:22 since
-rw-r—r— 1 esheena      482 Jul 19 09:22 since.c
```

To see a list of all Unix files containing a given character string, (say, "report,") type

% since report

It responds

```
ls -alt | fgrep -i 'report'
-rw-r—r— 1 esheena       493 Apr  5 15:13 report1.out
-rw-r—r— 1 esheena       576 Apr  5 15:11 report2.out
-rw-r—r— 1 esheena       593 Jul 20 09:22 report3.out
-rw-r—r— 1 esheena       676 Jul 20 09:30 report4.out
```

Note well: The argument can be a whole or **partial** name of the file.

To see a chronologically-ordered list of all the files you've modified, regardless of date, type

% ls -atl

Forward comments and questions to me at x5176 or

Unix or Software Tools Mail:	**EHSheena@lbl.gov**
VMS Mail:	**lbl::EHSheena**

FORTRAN EXTENDED

Users' Responses to the Questionnaire

D. F. Stevens

The only firm conclusion to be drawn from the response to the Fortran questionnaire in the May issue of our Computing Newsletter is that LBL users don't care what the compiler writers do. Only three people bothered to send in their opinions and one of those (respondent ③) plans no new Fortran projects. I promised to summarize the response, but in view of its paucity it is simpler to give you the whole story. (Note that I have paraphrased the questions to achieve a modicum of compression, removed all vendor specificity, and replaced all references to *Fortran 90* with references to *Fortran Extended*, the Official name for the new language.)

		①	②	③
1.	Are you tracking Fortran Extended?	Yes	Yes	No
	Would you attend a vendor-sponsored seminar?	--	Yes	Maybe
2.	Rank the following features in order of importance:			
	f) performance	2	1	--
	d) array syntax and features	3	1	--
	g) translation tool from Fortran 77 to Fortran Extended	1	5	1
	b) new data typing	5	3	--
	c) new "module" facilities	4	5	--
	a) new source form, control structures	7	3	--
	e) I/O changes	6	5	--
3.	Will you do new development in Fortran Extended, as opposed to Fortran 77?	Yes	Yes & No	Neither
4.	Will you convert existing programs or continue to use Fortran 77?	Convert	Both	Fortran 77
5.	Would you prefer a single complier supporting both variants, or separate compilers? (*: "only if the Fortran 77 mode were fast")	Single	Single*	--
6.	Do you expect Fortran Extended to become a required item for hardware vendors? By when?	Yes	Yes; 1993	--
7.	What training requirements? What kind of training?	None	Self-train	--
8.	Rank the following possible extensions to Fortran 77 in order of desirability.			
	a) better debugger	--	1	1
	h) *flint*	1	1	--
	b) debug optimized code	--	1	--
	e) listings with line numbers	--	1	--
	f) Fortran-Extended-style compiler	--	1	--
	c) parallel primitives	--	6	--
	d) syntax-directed editor	--	6	--
	g) bindings to arbitrary libraries	--	6	--

Respondent ② noted that more informative compiler output would be helpful.

9. General comments. Respondent ① remarked that the questionnaire was too long.

LBLnet NEWS

Bob Fink & Sig Rogers

Stanley Hall on LBLnet
Work continues on the connection from Stanley Hall to LBLnet. The fiber pull from Evans Hall to Stanley is completed. Building wiring is now underway. It is now anticipated that this work will be completed sometime in August. When complete, Stanley will be part of the 131.243.32 subnet along with Donner and Calvin Labs.

Network Traffic Data

50LAN Statistics

Statistics for a 6 day interval, 9 July - 15 July 1990:
Packet rates averaged over interval:

Packets/Sec	454.6 pps
Collision rate	3.1 %
Broadcasts/Sec.	1.4 pps
MultiCasts/Sec	24.2 pps

Packet size as percentage of total packets:

64-127 byte packets	50.4 %
128-255 byte packets	15.4 %
256-511 byte packets	0.7 %
512-1023 byte packets	8.5 %
1024-1518 byte packets	24.9 %

Packet Type as percentage of total packets:

LAVC	47.4 %
IP	43.8 %
DNA	7.3 %
LAT	.4 %
ARP	.2 %
XNS	.2 %

FDDI Supplier Now Public Information
As has been reported for several months, LBLnet has been using an FDDI (Fiber Distributed Data Interface) token ring 100 Mbps local area network LAN for its Bridged Backbone.

Up to now this has been a test of new products under a confidential agreement with Digital Equipment Corp. As of 10 July 1990, Digital has announced these products, based in part on the success of field trials at LBL, CERN and the University of Pittsburgh. This releases LBL from its confidentiality responsibilities.

The new product is the Digital LANbridge 500, which provides Ethernet-to-FDDI bridging functions. This equipment will stay installed in LBLnet and eventually replaced by production components (the units in LBLnet are pre-production units).

Bevalac Bridged LAN to Split
The BEVLAN bridged subnet will soon split into two major pieces. One part will become the 131.243.192 routed subnet, and the remainder will stay as a bridged subnet under 128.3.252.

The BevCntl routed subnet, previously known as subnet 128.3.224, will be attached to the routed subnet portion and will have a subnet number of 131.243.144.

Until another cisco router can be procured (which is in process), an extra Ethernet subnet interface will be added to the *ir2gw* router.

This change is taking place to allow Bevsun, the BevCntl subnet router, to switch to a standard release of Sun OS. Previously, Bevsun had to run under a modified system to allow "split subnet masks," among other special features. "Split subnet masks" allowed Bevsun to break its 6-bit subnet number, 128.3.224, into multiple other subnets for use with local VME based VxWorks intrumentation controllers.

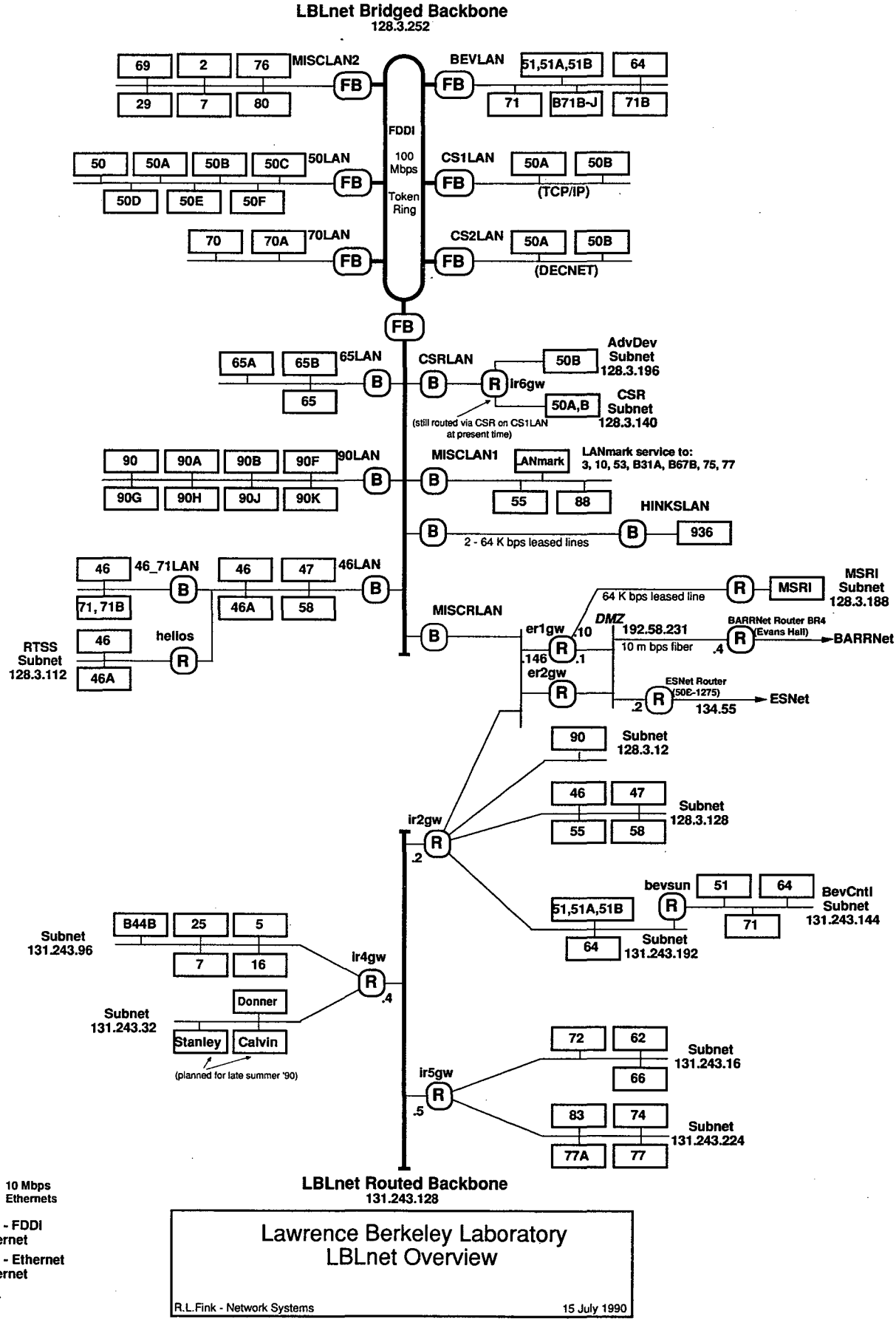
This gave the BevCntl subnet the appearance of having a different sized subnet mask than the rest of the 128.3 subnets comprising LBLnet. As the standard Sun OS doesn't yet support this feature, it became important to switch it over to the 131.243 routed LBLnet to allow the use of multiple 8-bit wide subnet numbers.

The Nuclear Science Division's data acquisition systems will be left on the bridged LBLnet subnet so that they can continue operation without disruption.

This change is a complex one, requiring the interaction of many different groups of people. When complete (hopefully, as you read this), it will provide the Bevalac Control Systems project with more options than before, since the 131.243 network can provide more subnet numbers in a standard fashion.

The Nuclear Science Division's experiments will also benefit by remaining behind to take advantage of the high-performance FDDI Bridged Backbone for communication with other Nuclear Science systems not located at the Bevalac. Also, planned high rates of utilization will now not affect the Bevalac Control Systems project development as they will be on different subnets.

If you have questions about the resultant configuration at the Bevalac, please call either Bob Fink (x5692) or Alan Biocca (x7700).


LBLnet Bridged Backbone
128.3.252
FDDI
100 Mbps
Token Ring
MISCLAN2
69
2
76
29
7
80
BEVLAN
51,51A,51B
64
71
B71B-J
71B
50LAN
50
50A
50B
50C
50D
50E
50F
CS1LAN
50A
50B
(TCP/IP)
70LAN
70
70A
CS2LAN
50A
50B
(DECNET)
65LAN
65A
65B
65
CSRLAN
50B
AdvDev Subnet 128.3.196
ir6gw
50A,B
CSR Subnet 128.3.140
(still routed via CSR on CS1LAN at present time)
90LAN
90
90A
90B
90F
90G
90H
90J
90K
MISCLAN1
ANmark
LANmark service to: 3, 10, 53, B31A, B67B, 75, 77
55
88
HINKSLAN
2 - 64 K bps leased lines
936
46_71LAN
46
71, 71B
46LAN
46
47
46A
58
RTSS Subnet 128.3.112
helios
MISCRLAN
64 K bps leased line
MSRI
MSRI Subnet 128.3.188
DMZ
er1gw
.10
.146
.1
192.58.231
10 m bps fiber
.4
BARRNet Router BR4 (Evans Hall)
BARRNet
er2gw
.2
ESNet Router (50E-1275)
134.55
ESNet
90
Subnet 128.3.12
46
47
55
58
Subnet 128.3.128
ir2gw
.2
bevsun
51
64
71
BevCntl Subnet 131.243.144
51,51A,51B
64
Subnet 131.243.192
Subnet 131.243.96
B44B
25
5
7
16
ir4gw
.4
Donner
Subnet 131.243.32
Stanley
Calvin
(planned for late summer '90)
72
62
66
Subnet 131.243.16
ir5gw
.5
83
74
77A
77
Subnet 131.243.224
LBLnet Routed Backbone
131.243.128
10 Mbps Ethernets
FB Bridge - FDDI to Ethernet
B Bridge - Ethernet to Ethernet
R Router
Lawrence Berkeley Laboratory
LBLnet Overview
R.L.Fink - Network Systems
15 July 1990

NEWS OF PHYSICS LIBRARIES

Werner Koellner

● **PHYSICS UTILITIES**
On the CSA Cluster, and on LAN workstations, if the required disks are mounted, you can access the Physics Utilities, including the CERN Library, the PAW (Physics Analysis Workstation) Library, and the various Physics Utilities HELP Libraries by executing the DCL command

@Physics$Manager:Setup_Phys

We recommend that you include this line in your Login.Com file.

ON UX5

● **CERN LIBRARY**
Selected CERN Libraries should now be available on UX*n* Suns and Sun SPARC Stations. Work is in progress to port selected libraries to Silicon Graphics and Stardent workstations as well. Note that porting libraries to IBM RISC-6000 and Convex machines is also supported at CERN.

For information about the status of these efforts, as well as instructions to use these libraries, type

man cernlib

More specific information on using PAW and other packages will be available in additional "man" entries. Announcements will appear here and also in "man cernlib."

The following libraries, at least, are or will be available:

LIBRARY	PACKAGES
KERNLIB	kerngen, kernnum
PACKLIB	epio, ffread, hbook4, iopack, kapack, kuip,minuit, zbook, zebra, zcedex
GENLIB	gen
GRAFLIB_ATC	hplot5, higz_atc, gkspack_atc
GRAFLIB_SUN	hplot5, higz_sun, gkspack_sun
PAWLIB_ATC	paw_atc, comis, sigma
PAWLIB_SUN	paw_sun, comis, sigma
JETSET64	LUND Monte Carlo (previously announced)

ON CSA

● **HELP**
When you type

Help @Physics_Utilities

you'll see a list of utilities for which help text is available under "Additional information available." You may also type

Help *'subtopic'*

where *'subtopic'* is one of the utilities listed, to get help directly on a particular utility. A newly added subtopic, **WHAT**, is intended to help you find specific utilities by listing available ones under very general topics. Type

Help What

to see what is available under the auspices of the Physics Division.

● **APS_LaTeX**
Submit articles to the PHYSICAL REVIEW in machine readable LaTeX compuscripts by using the APS "compuscript toolbox." Type

Help Mis_Phys Aps_Latex

for more information.

● **APS_WHATS_NEW**
Weekly news capsules, issued by Robert Park, of the American Physical Society, are available in APS_WHATS_NEW. Please type

Help Mis_Phys Aps_Whats_New

for further information.

● **CERN LIBRARY**
Object libraries are updated at unpredictable times. Changes are documented in the "Program Library News" section of the CERN Computer Newsletter. Past, current, and sometimes future issues can be found in **Cern$Inform:PROGLIB.CNLxxx**. Of particular interest are news items regarding the status of obsolete routines. Additional information can be found in various files in **Cern$Inform**, in **Cern$CernHlp**, and via online HELP for selected products. In some cases a previous version of an object library is available as **xxxx.OLD**.

NOTE: Some individual object libraries will no longer be available as such, but rather will be packaged into more standard object libraries. Please see the listing in the UNIX section above for the affected files. The particular *.Olb files will be removed by the end of August.

The following object libraries and programs have been updated recently.

CMZ	Version 1.32/02
COMIS	Version 1.10/03
GRAFLIB5_DI3000	Hplot5, Higz_Di3000, Gkspack_Atc
HBOOK4	Version 4.10/05
HERWIG45	Version 4.5 (see also below)
HIGZ	Version 1.10/03
HIGZ_DI3000	Version 1.10/03 LBL Vers. 1.10
HPLOT5	Version 5.09
ISAJET	Version 6.31
JETSET73	Jetset73 and Pythia54 (see also below)
KUIP	Version 1.64/03
PAW	Version 1.09
ZEBRA	Version 3.64

● **CERN_NEWS**
CERN News is a facility which allows remote access to News Items (for instance, the latest LEP News), posted by a number of research groups at CERN on either the VAX or IBM machines at CERN.

To see the list of available News Groups, type

Cern_News/INQ

To scan news of the LEP group, type

Cern_News LEP

and follow the instructions. Once in CERN_NEWS, you may simply send the current news item to the default printer, or fetch the file into your default directory.

For additional information, including an important disclaimer, type

Help Cern_News

● **COJETS**
A new user manual is available as

Cern$Inform:Cojets.Doc

● **COMPUTER PHYSICS COMMUNICATIONS**
Computer Physics Communications of Belfast, Northern Ireland, maintains the CPC Program Library, a large collection of Physics-related programs. Indexes of added programs can be found in

Cern$Inform:Cpc_Lib_mmyy.Index.

● **GEANT**
GEANT, a system of detector description and physics simulation tools, is available as part of the CERN Libraries. A sample Program, using ATC_GKS to demonstrate graphics and other capabilities, is available. Although, the full release of Version 3.14 has not occurred, the default, via the logical name **Cern$Geant_Lib**, is a partial release of Version 3.14 (GEANX). The recommended link procedure is

Cern$Library:Geant.Lnk

using linker options files **GEANTxy.OPT**, where **x** is either I or B, and **y** is either <null> or _ATC, depending on the answers to the questions that **Geant.Lnk** asks. The graphics interface for Geant is ATC GKS, but Geant is also available with the DI3000 graphics interface. To link that version, on CSA2 only, use **@Cern$Library:Geant_Di3000.Lnk**. METAFILE graphics output is available. Type

Help Geant

for additional information.

● **HERWIG**
This is a Monte Carlo event generator for simulating Hadron Emission Reactions with Interfering Gluons. A new user manual for this Version (4.2) is available as

Cern$Inform:Herwig.Doc

But see Herwig45, below.

● **HERWIG45**
This pre-release of HERWIG Version 4.5 has been obtained privately. It includes the Form Factor file **Cern$Library:Herwig45.Sud.** The user manual for this version is

Cern$Inform:Herwig45.Doc

To run an example please see

Cern$Inform:Test_Herwig.Doc

For your convenience, the source files HERWIG45.FOR, HERWIG45.INC, and TEST_HERWIG.FOR are in **Cern$Inform.**

● **JETSET73**
This pre-release has been obtained privately. For your convenience, the source files JETSET73.FOR and PYTHIA54.FOR are in **Cern$Inform.**

● **PAW**

At LBL, the program PAW is primarily being maintained in the full GKS version, named PAW_ATC, although the mini-GKS version, as well as a DI3000 version, are available. PAW_ATC uses the ATC-GKS interface, whereas PAW_DI3000 uses the Precision-Visuals DI3000 interface, which can be used only on CSA2. Both versions make a large number of output devices available to the user for graphics output. Standard executable programs of PAW_ATC, METAPAW, PAW_DI3000, as well as PAW, are available in **PAW$LIBRARY**. If desired, users may link their own versions by using or modifying the procedures

PAW$LIBRARY:PAW_ATC.LNK or
PAW_DI3000.LNK or
PAW.LNK

These procedures use corresponding linker options files, e.g. PAW_ATC.OPT. With PAW_ATC, graphics output may be directed simultaneously to the screen and to a Metafile for subsequent processing via the program METAPAW, and also simultaneously, and selectively, to a PostScript file.

Most recent PAW_ATC improvements are documented in files **Cern$Inform:Paw.News***. The latest of these is PAW.NEWS1081. Manuals for PAW, including a fancy new User's Manual, are available from the Computer Center Librarian (Bldg. 50B, Rm. 1232B - x7008). Type

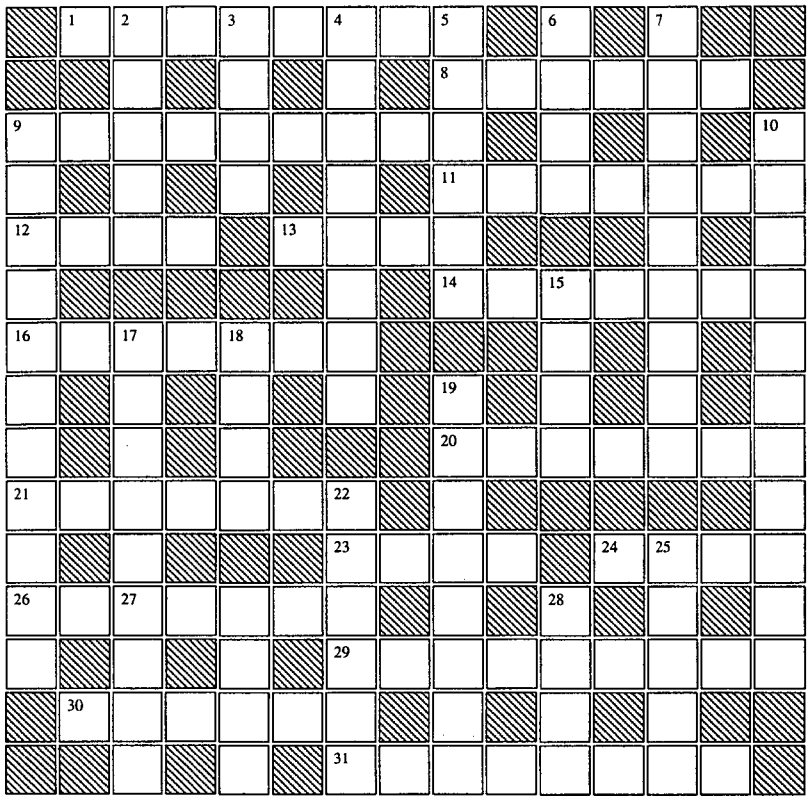
Help Paw

for more information.

Forward comments and questions to me at x4398, or

Software Tools Mail or Unix: **WOKoellner@lbl.gov**
VMS Mail: **lbl::WOKoellner**

CRYPTIC CROSSWORD



by Dave Stevens

In a cryptic crossword, each clue is a small word puzzle in its own right, containing at least one definition of the word sought, plus a subsidiary indication that may involve partial words, puns, reversals, homonyms, other meanings, abbreviations, or any other trick that appeals to the setter. Punctuation and capitalization are not to be trusted, but the clues contain no extraneous information.

Across

1. Nurse must be two places at once in the royal residence, in a manner of speaking. (8)
8. Hidden devil's in trouble about a point. (6)
9. One's in one Asian country or another. (9)
11. Strange code precedes odd propriety. (7)
12. Quarrel causes endless business reversal. (4)
13. Fever's fuzzy after losing five. (4)
14. Astral plain, and also fancy with the Spanish replacing one. (7)
16. Spicy and energetic about the Queen. (7)
20. Old note left in the oven will survive. (7)
21. Bewildered divine taking a short comic nap in beer. (7)
23. Forage among the grapes. (4)
24. Crush-left residue. (4)
26. French girl can run back to engine shelter. (7)
29. Annual prank of pallor I found twisted. (5, 4)
30. Fireman rockets off after putting candle out. (6)
31. Shout due to be tinged with age. (8)

Down

2. Loki's victim found decapitated in a tree. (5)
3. Join the Left and write. (4)
4. Pries around bright posies. (8)
5. Our era's in First Lady's dodges. (6)
6. Record half of find. (4)
7. Aerial gun explodes, causing much pain. (9)
9. Writer of Latin in Notch is uncommitted. (11)
10. The devil, the right, the law, and me about about fifty; it'll never work! (11)
15. Revise flow, for example, on the rise. (4)
17. Plucked pie holds 99 close to the wind. (9)
18. Letters from Israel ultimately mean a month in Israel. (4)
19. Bodily work up in the pen. (8)
22. Lug in, using no mortar; it's tedious. (6)
25. There's love trouble about. (5)
27. Pigment from Geneva, for example. (4)
28. Tybalt often carries a high part. (4)

Notes to Solution

Across:
1. pa(R)la(N)ce
8. devil*(anag)* + E
9. Ind(ones)ia
11. code*(anag)* + rum
12. trad(e)*(rev)*
13. (v)ague
14. (a)stral*(anag)* + el
16. pepp(ER)y
20. o(ut + l)ast
21. D[a[ZZ]le]D *(ZZZ = sleep in comics)*
23. (g)rape(s)
24. cram*(rev)*
26. [elle can]*(rev)*
29. [of pallor I]*(anag)*
30. ro(c)kets*(anag)*
31. yell + owed

Down:
2. (B)alder *(Norse mythology)*
3. l + ink
4. nose(gay)s
5. Ev(AD)e's
6. disc(over)
7. [aerial gun]*(anag)*
9. inde[pen + de]nt
10. imp + r + act + I + ca + L
15. tide*(rev)*
17. pizz(IC)a + to
18. (Isra)el ul(timately)
19. cor[op*(rev)*]ral
22. dr(ear)y
25. ado + re
27. Lake Geneva
28. (Tyb)alt o(ften)

THE WORKSTATION SCENE

[27.8.1]
TRADING POST

Items advertised here are for Laboratory use only and must be purchased with a valid account number. If you have items you wish to advertise in the Trading Post or if a Contact name does not appear with an ad below, call Bruce Burkhart, x6858.

1. For Sale: Apple Tape Backup 40SC unit, w/SCSI cable & data cassettes, it's slow, but reliable, $350.

2. For Sale: Apple Universal Monitor Stand, for the color or small mono monitors, $49.

3. For Sale: PLI "Turbo Floppy" 1.4 MByte external floppy drive, read/write 1.4 MByte floppies only, includes Mac SCSI cable, $199.

4. For Sale: IBM XT personal computer, 10 MByte Hard Disk, & CGA Color Monitor, $549. Contact: Richard LaPierre, x4692.

5. For Sale: IBM XT personal computer, 10 MByte Hard Disk & Mono Monitor, $549. Contact: Richard LaPierre, x4692.

6. For Sale: *PageMaker* 4.0 for the Macintosh; unopened-unused, $250. Contact: Robert Jahnigen, x5579.

7. For Sale: Sun MicroSystems Software: *Sun Paint-Write-Draw v1.1*, 1/4" tape, for Sun workstations, $199.

8. For Sale: DaynaTALK network Interface box for LocalTalk, 3 ea, brand new, Half Price! $70 ea.

9. For Sale or Trade: AST Premium 286 PC-compatible computer, 40 MByte HD, Mouse, VGA 12-inch mono monitor. Trade for MacSE/30. Contact: Erwin Friedlander, x4135.

[27.8.2]
ASHTON-TATE NEWS

✔ ***dBASE IV*** **1.1** upgrade announced for some time now will hopefully ship in August. Features and enhancements include a dozen new commands, fewer memory requirements, and more speed - resulting in better quality performance.

The upgrade from Version 1.0 to 1.1 is **free**; registered users will receive a notice by mail with instructions on how to apply for the upgrade. Cost for upgrades from any earlier version to 1.1, will be in the $100-150 range. Cost of the upgrade for the developer's version may be somewhat higher.

Under development: a *dBASE* IV version (1.1) that will run in *Windows* 3.0; it should be available later this year. Remember **dBASE Mac**? No, it hasn't died. They've sold this comatose program to New Era Software Group, Inc. of Miami, Florida, who plans to resuscitate it. Hopefully, it will have record compatibility with its big brother DOS. No timetable!

✔ ***Full Impact*** **2.0** upgrade is now shipping. This spreadsheet presentation application major upgrade includes

- 3-D graphs
- Excel data import & export
- Presentation enhancements
- Intelligent recalculation
- Developer tools - buttons.

Upgrades (from Version 1.0 or 1.1) are available for $50 to registered *Full Impact* users; call Customer Service at (800) 2-ASHTON for an upgrade form.

✔ ***Control Room*** **1.0**, a brand new product, is also shipping (LBL Price: $99). This product will check out your DOS machine and list dozens of internal settings as well as attached external devices. *Control Room* will also work on a network, allowing an administrator to check remote workstations.

For **telephone support**, registered users of *dBASE IV* should call 213-329-0086. You can get support for other Ashton-Tate products at 408-268-1711.

The Workstation Group Laboratory, home of several Workstation members as well as the Workstation Evaluation Library is located in Bldg. 50B, Rm. 2231. The hours are:

Mon	8 AM - 1 PM
	3 PM - 5 PM
Tues - Fri	8 AM - 5 PM

You can also reach us from the Computing Division's Unix machines or the VMS cluster by sending mail to:

Unix or Software Tools	WKSG@lbl.gov
VMS Mail.	lbl::WKSG

We're here to help; please call us at x6858.

[27.8.3]

DOS MAKEOVER
NEW HARDWARE, NEW SOFTWARE: WHAT WORKS & WHAT WON'T

. . . WKSG Member Claudia Madison evaluates her DOS lift

Windows 3.0, TOPS 3.0, a 386SX board, and 3Com network software are all part of my DOS makeover.

★ MEMORY MEMORY MEMORY:
Minimum Requirements for the Makeover[1]

Windows 3.0 is just another pretty face without sufficient memory, and TOPS 3.0 hogs too much conventional memory to be useful.

Both these products make use of *extended* memory, loaded on the mother board or on cards, depending on the computer. Extended memory is useable for *Windows* and TOPS only on PC-AT class machines or above (286/386/486 processors). The Workstation Group has tried two hardware options for souping up old AT's.

★ A MODEST MAKE-DO:
Memory add-on board

The Everex 3000 board discounts to $95 for the board plus $63 per MByte of memory. Having outfitted ours with only 1 extra MByte ($158 total) gives us fair performance in *Windows* 3.0. The 3000 can take up to 3 MBytes, which is what we recommend for those who can afford it.

★ A REAL MAKE-OVER:
New mother board

From Efi's (and our thanks for the board), comes the Mylex 386-16, a mother board with 386SX processor. Ours came with a math co-processor and 4 MBytes of RAM. The cost is $550 for the board, $299 for the math chip, and $320 for the memory. $1169 total. The bios is Phoenix. So far there have been no compatibility problems. Note, however, that you may encounter hardware configuration problems if you are using several full-length adapter cards. The location of the memory modules interferes with the insertion of full-length cards. You have only one slot available if you have 8 MBytes or RAM installed. Dave Edgar, in Administrative Data Processing Services, is looking into alternative 386 sx boards. Call RTSS, x7554, if you have questions about your configuration.

Performance in *Windows* enhanced mode with several applications running is more than acceptable; running a dozen applications (all that I had) did not choke this configuration.

★ *WINDOWS* 3.0

I am firmly on the bandwagon. *Windows* 3.0 looks good and truly does make *Windows* applications such as *Windows Word* work more smoothly.

My only negative experience with *Windows* 3.0 is real mode, which is the pits. Real mode is the way *Windows* runs on PC's and XT's and on any machine with less than 256 KBytes of extended memory. It is also the way users are supposed to run *Windows* for older *Windows* applications which have not yet been upgraded. Make twelve mouse moves, on average, and everything dies. Good luck.

★ 3COM AND *WINDOWS* 3.0? YES, YES, YES

Before *Windows* 3.0, when I loaded 3Com I had too little RAM left to run *Windows* or any large application. *Windows* 3.0 takes care of that bottleneck and recognizes networked drives and printers. It means much less rebooting to shuffle drivers.

★ TOPS 3.0 SOLO? YES, YES, YES

TOPS 3.0 loads itself nicely into 512 KBytes of extended memory, which leaves plenty of conventional memory free for large applications (see below for one notable exception). The new TOPS print services module completely replaces NetPrint, and adds a nice batch printing feature.

★ TOPS 3.0 AND *WINDOWS* 3.0?
Don't even think about it

Loading TOPS into high memory or low memory, loading it before *Windows*, loading it from *Windows*, loading only file services, loading only print services—NOTHING WORKS. The mere mention of *Windows'* HIMEM.SYS in your config.sys file is the kiss of death for TOPS, even when you don't try to run it with *Windows*. (This means having separate config.sys files for TOPS and *Windows* and re-booting to switch from one to the other.)

TOPS support (the company name has changed to Sitka, by the way) is aware of the problem and plans to write a new version to work under *Windows*. They don't know how long this will take.

Meanwhile:

FOR THE DESPERATE (1)

TOPS NetPrint and *Windows* 3.0

Load the ATALK.SYS driver, and make the modifications to WIN.INI detailed in the TOPS documentation for using *Windows* 2.11. Run the NetPrint command from within *Windows* . This works fine for DOS applications running under *Windows* , but doesn't work for *Windows* applications unless you exit *Windows* every time you issue a print command. Tedious.

---

[1] Prices were current as of July 3, 1990, but are subject to change.

FOR THE DESPERATE (2)
TOPS Batch Printing
Create PostScript files from within your *Windows* applications and print them from TOPS later. In the *Windows* Control Panel Printer program, choose File as the Print Port[2]. Then, every time you print, *Windows* prompts you for a file name. Leave *Windows*, reboot for TOPS, and print the files from the Print Services menu. (Do not do PostScript translation—it's already done.)

★ TOPS 3.0 AND 3COM?
Don't get any grand ideas
I should be able to publish my PC networked drives on TOPS for mounting with TOPS on my Mac, or vice versa. No way. Loading TOPS caused my networked drives to disappear. (Not really to disappear, but to appear as directories of 257 (or so) zeroes—very weird.) Unloading TOPS restored the networked drives. TOPS technical support said they had not tried TOPS with 3Com. I don't recommend that you try it either.

★ HOW ABOUT LASERJET & SUPERCARTRIDGES?
Having so much trouble printing over AppleTalk, I reverted to printing on a 3Com-networked LaserJet Series II with a SuperCartridge I. It wouldn't work with any of the *Windows* applications until I admitted that I needed a *Windows* driver for the cartridge. I didn't believe there was a suitable driver file included on the SuperCartridge disk, but what the heck. Without consulting either manual, I started with the *Windows* Control Panel Printers icon and kept pushing buttons (Configure, Setup, Fonts, Add Fonts, etc.) until I was prompted to put a disk in drive A. *Windows* found the file it wanted. The *Windows* /HP LJ II/ SuperCartridge I combination is working flawlessly, and a point is scored for graphical interface ease of use.

★ A FEW LAST BITS
(1) PostScript files created in *Windows* for QMS printer output[3] don't print unless you put them in a word processor (I used *Word* 5) and delete end-of-file symbols (diamond) at the beginning (!) and end (an extra) of the file. Even when I used this method, I did not get consistent results.
(2) *Windows* hot keys to switch from DOS to *Windows* won't work from within BASIC. (*Windows* sets BASIC up automatically. Does anyone use it?)
(3) With 3Com loaded, I tried to run *WordPerfect* 5.1 from within *Windows*, but it complained that there weren't enough file handles. *Windows* 3.0 recommends FILES=30 in config.sys, but I bumped it to 40; *WordPerfect* is happy, and everything else seems happy, too.
(4) Running most efficiently in *Windows* enhanced mode requires lots of disk space. Setting up the recommended permanent swap file cut 2 MBytes out of my disk. In addition, *Windows* applications are disk hogs, too.

[27.8.4]
GOOD SHOW!

✔ ***PowerPoint*** from Microsoft ($198)

PowerPoint for *Windows* is a software package for managing presentations. It features simple charting, drawing, and word processing utilities for creating slides or viewgraphs.

The reason for using a product such as *PowerPoint* lies in the simplicity with which text/graphics/and charting pieces fit together to create not just single slides but complete and well-organized presentations. Organizational tools include slide sorting by graphics or by slide title; notes pages and hand-out pages are an integral part of all presentations.

As is true with the Mac version, the *Windows* version of *PowerPoint* includes templates, color schemes, and a great deal of manual material dealing with the esthetics of creating presentations. It includes import filters for inserting material from other applications. Color is supported (though the shading schemes do not look good on an EGA screen). The QMS color printer is fully supported, as is output for Genigraphic slide production service. A Mac Apple File Exchange translator is available for transfer of *PowerPoint* presentations between the two platforms.

The Workstation Group has an evaluation copy. Drop on by.

[27.8.5]
DATA ANALYSIS ON THE PC

Our thanks to Micromath for evaluation copies.

✔ ***MINSQ*** **3.1** and ✔ ***GRAPH*** from Micromath ($260 for both)

MINSQ **3.1**
MINSQ is a program for doing non-linear curve fitting and parameter estimation. Analyses consist of four parts: model, parameters, data, and plots. Parts are entered, retrieved, and/or saved independently of the others. (The same model file, for example, can be used on more than one data set.) Curve fitting is simplex, for improving parameter estimates, and by least

---

[2] Do not use the EPS file option in the *Windows Word* Printer Setup command; this command is designed for a different purpose and results in printing of only a single page.

[3] I was using TOPS to do this printing, but this one isn't TOPS' fault.

squares according to the Marquardt-Levenberg theorem. Models can consist of a single function or multiple functions fit simultaneously and can be defined by implicit equations or systems of equations, parametric equations, and integral or differential operators. Plotting is straightforward and fast, not fancy. Statistics include parameter estimates, confidence limits, measures of goodness, variance-covariance, correlation information, and analysis of residuals.

MINSQ data set size is limited to 200 points for analysis; maximum array size is 1000 points, which can be put through a sieve process to reduce to the 200 points.

GRAPH

Graph is designed to plot x-y data, error bars, and empirical curves. Polynomial smoothing is done by least squares or cubic spline, rational fraction, or Stineman interpolation. Transforms include log, logit, probit, derivative, second derivative, and integral.

Graph data set size is limited to 1024 points (for plotting) or 200 for analysis. Up to ten sets at a time (though totalling no more than 2048 points) can be considered. Larger arrays can be sieved.

Both *MINSQ* and *Graph* support PostScript and HP LaserJets. Versions for *Windows* 3.0 are under development, which is good because these are the first DOS programs I've found that need more memory than *Windows* 3.0 can provide.

[27.8.6]

***WORDPERFECT* 5.1**
EQUATIONS AND EQN

Thanks to one of our users for pointing this out.

The *WordPerfect* 5.1 equation editor language is pretty much Unix *eqn*. To transfer equations from *troff/nroff/eqn/neqn* files, create a *WordPerfect* file for each *eqn* equation. Include only the code; do not include .eq statements. Link the files to your *WordPerfect* document (Alt-F9, etc.).

[27.8.7]

. . . QuickMail

NOW THERE'S AN LBL SITE LICENSE

The Laboratory now has an agreement with CE Software which sets the cost at $28 per workstation for the *QuickMail* Macintosh electronic mail package. *QuickMail* mail center administrators will be able to purchase licenses in whatever quantity they need. The purchase of new and upgrade *QuickMail* packages will be coordinated through the LBL Purchasing Department and the Workstation Group.

New and upgrade single user *QuickMail* packages will be distributed by the WKSG Lab and recharged to a user's account. We encourage *QuickMail* mail center administrators to contact the LBL Electronic Postmaster, William Jaquith x4388, for information about upgrading and setting up new *QuickMail* mail centers.

WHAT IS QUICKMAIL?

QuickMail is an electronic mail package from CE Software. It is used on AppleTalk computer networks. Presently, there are several hundred *QuickMail* users (on Macintoshes) at LBL. *QuickMail* has a standard Macintosh user interface and is comparatively easy to learn. Macintosh users can use *QuickMail* to exchange messages and Macintosh documents, including graphics, spreadsheets, and formatted word processing documents.

QuickMail works with an Internet/SMTP (Simple Mail Transfer Protocol) mail gateway product marketed by Cayman Systems, Inc. Users can take advantage of its **GatorMail_Q** mail gateway to send and receive mail between *QuickMail* and Internet sites. Internet addresses are typically distinguished by such suffixes as .edu (EDUcation), .com (COMmercial), .org (ORGanization), .gov (GOVernment), etc. in the user's electronic mail address.

Users can also take advantage the LBL electronic mail gateway software (Software Tools MSG) to send and receive mail into the Bitnet, the HEPnet/SPAN/DECnet, and the ESnet/MFEnet.

Note that users in the Internet electronic mail environment are only able to send ASCII text messages. The SMTP defines electronic mail transfer for text only. In other words, graphics, spreadsheet files, and formatted word processing documents cannot be transferred using Internet/SMTP mail. Users can save their files as text or use tools like Binhex to convert files to text and then transfer the files through Internet electronic mail.

TECHMAIL

TechMail is a public domain electronic mail package from Massachusetts Institute of Technology. Its Macintosh user interface for electronic mail is very much like *QuickMail*. The principal difference is that *TechMail* users will have to establish an account on a Unix computer that is running the POP (Post Office Protocol) server process. UX3 and CSR are two examples. *TechMail* does copy your mail from the Unix computer to your Macintosh. This can be a problem for someone who works from different Macintoshes during the course of the day. *TechMail* does not have provision for Macintosh graphics or word processing files (*TechMail* is more closely aligned with the Internet/SMTP electronic mail, which is to say ASCII text).

[27.8.8]
TWO MAC UTILITIES

Our thanks to Paracomp for the evaluation copy.

✔ ***DrawTools*** from Paracomp ($59)
DrawTools is a set of DA's to add the following CAD features to *MacDraw* II: construct fillets, extend or clip lines and arcs, compute areas, resize absolutely or as a percentage (from the keyboard), place objects more precisely than allowed even under maximum zoom, and more. A *DrawTools* Help stack links to *MacDraw* II help.

✔ ***Sharpen-Up***, from Somak ($69)
Designed to refine LaserWriter output, *Sharpen-Up* lets you adjust line thickness, gray shading texture, and brightness and contrast of pages. It's particularly useful to refine lines created with *Word's* border command, and also makes *Excel* chart shading schemes less crude. (It does not work for bit-map applications such as paint programs.) Access to the *Sharpen-Up* dialog box is through the standard page setup command.

[27.8.9]
HARDWARE LOCKUPS FOR YOUR MAC

The Workstation Group has been evaluating a number of security devices for Macintosh computers made by PC Guardian Security Products. All the products are made with tough, high quality materials and have a lifetime limited warranty. The company representative was very responsive and all products were shipped in a very timely fashion. Here's the lineup.

✔ **Floppy Drive Lock for internal floppy drive.** The MAC Guardian floppy drive lock ($39.95) is a simple, strong, easy-to-use piece of hardware that blocks access to your internal floppy drive. It's a metal block that fits over the drive opening and locks with a key to prevent anyone from copying software to or from your machine. The slot on an external drive is just a bit too small to accommodate the lock, so it works on internal drives for the Mac SE and Mac II platforms only.

✔ **Keyboard/mouse lock for the Mac SE**
This little device ($99.95) puts an interrupt box between your keyboard and CPU. When it's locked no signal goes to the computer so it's impossible to get any input to it. When it's unlocked the whole thing works normally. This is the perfect setup for demonstration machines that you don't want people messing with. It takes about ten minutes to install and is solidly built.

✔ **Power Lock for the Mac SE** ($99.95) This may be the most useful one of the bunch; it's a metal box that attaches to the back of the Mac and covers up the power switch. To turn on the Mac you need a key which turns a cog inside the box that rests against the power switch. You turn the key and it flips the power switch—nothing fancy but certainly enough to thwart any would-be invaders. Simple, effective and quite a bit safer than software lockouts. Highly recommended.

If you want to know more about these devices or how to order them, call us at the WKSG lab, x6858. If you'd like to see what they look like, stop by the lab (Bldg. 50B, Rm. 2231).

[27.8.10]
LUNCHTIME WORKSHOPS FOR THE MAC AND THE PC.

Here is the schedule of the Microsoft *Word* for the PC, and Basic Mac Classes, coming up for August. No sign-up is required.

Basic Mac Classes
12-1 pm - Bldg. 50B, Rm. 1229
08/15, 22, and 29, 1990

Microsoft Word for the PC
Workshops in August
12-1 PM - Bldg. 50B, Rm. 1237
08/07/90 .Styles
08/14/90 .Glossaries and Macros
08/21/90 .Merge Print

[27.8.11]
MAC TEXT INDEXER

✔ ***Sonar Bookends*** from Virginia Systems ($79)

Our thanks to Virginia Systems for an evaluation copy.

Sonar Bookends is a text indexer which eases (but does not eliminate) the pain of this task.

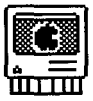
Herewith is testimony from Alisa S. Perrotte, who used it while working with the Seaborg group:

"This application has two forms of indexing: by word frequency and by a word list. While both work well, *Sonar Bookends* seems to be geared more towards word frequency. The manual explains this feature clearly and it is very simple. This is not the case, alas, with the word list feature. Even though it is relatively easy, the manual is so vague it took several calls to Virginia Systems' Technical Support to figure it out.

"In order to do a names index, several various codes must be entered along with the names, so *Sonar Bookends* can find all the various forms of the names as well as list them alphabetically by last name. Once the index has been produced, all of these codes must be deleted. This can be time consuming.

"The application claims to be able to index any length of document as long as there is enough memory available. When trying to index a 354-page document with a 50-page word list, we had to adjust the memory several times to complete the task. We were able to do it but it took a very long time.

"Although *Sonar Bookends* has some drawbacks, it is a great improvement over the indexing feature on Microsoft *Word*."



[27.8.12]
FILEMAKER PRO: DON'T HOLD YOUR BREATH

Marketing and Development divisions didn't communicate well at Claris this year. Despite ads announcing that *FileMaker Pro* is available now, we don't look for it until the fall. We'll announce it loud and clear when upgrades are available.

Pricing for the upgrade: Free to those who bought *FileMaker* II after April 1, 1990. $40 otherwise. Price of the whole package: $85.

[27.8.13]
DISINFECTANT 2.0

✔ ***Disinfectant*** 2.0, a major upgrade to the freeware virus scanning program from John Norstad at Northwestern University, is now available from the Workstation Group. New features include full MultiFinder compatibility, a virus protection INIT, and a redesigned interface. While this new incarnation of *Disinfectant* looks to be the Mac virus panacea we've been waiting for, a couple of things should be noted:

- The *Disinfectant* INIT is designed to recognize intrusions by known viruses only. This should not be a real problem here at the Lab because new viruses tend to be identified and dealt with in new releases of Disinfectant before we are exposed;
- The Disinfectant INIT does not *fix* the WDEF virus that is still quite prevalent on the Hill, though it does identify it and will not allow it to spread. In order to actually kill the WDEF virus you will still need the *Gatekeeper Aid* INIT.

Apart from these limitations *Disinfectant* 2.0 and *GateKeeper Aid* should be all you need. These are available on the WKSG Server, or stop by the WKSG lab with a blank diskette.

[27.8.14]
NEW APPLE LASERWRITER

...WKSG Member Bruce Burkhart has real good news

Apple Corp.'s Personal LaserWriter NT is a full PostScript 300-dot-per-inch resolution laser printer, with 2 MBytes of memory, all of the standard LaserWriter fonts, and networking capability. However, it has a smaller print engine (rated at 4 pages-per-minute) than its big brother, the LaserWriter II NT (8 pages-per-minute).

Bottom line: it's ideal for individuals and for **very** small work groups. The LBL price for the Personal LaserWriter NT (B0325LL/A) is $1983.

[27.8.15]
MAC IIfx UPGRADE OPTION

Do you own the "old" Mac II model? Are you unhappy with its performance anymore? Well, you have a golden opportunity to upgrade it to a screaming 32-bit 68030 microprocessor, 40 mHz machine. The upgrade (which should begin shipping by early August) includes

- Mac IIfx logic board $2039
- FDHD SuperDrive kit $329
- 4Mbytes RAM (3rd Party) $540

Total $2908

A new Mac IIfx HD80/4 MBytes model is currently priced at $5817.

There will also be an installation charge by RTSS, who will be handling the upgrade program. Call Oliver at x5774 for more information.

[27.8.16]
HYPERCARD CORNER

. . . by HyperFan Bruce Burkhart

HyperCard 2.0 ... Oct shipping date?
Well stackheads, last June I optimistically announced that *HyperCard 2.0* would be available "very shortly." Wrong ! Latest rumors indicate anytime **between** the August MacExpo in Boston **and** October 15. The October date will coincide with the debut of the new Mac IIsi computer and System 6.0.6. . . . Any connection?

Reasons for the delay are many and real (and typical for any software developer). Beta testers and developers received their first versions of *HyperCard 2.0* later than scheduled. Lots of bugs were reported. In addition, Apple was (and probably still is) changing

and adding features during the beta process. All this mess will definitely delay putting a solid version of *HyperCard 2.0* in users' hands soon. Reliable sources at BMUG have been heard to say, "look for it around October."

Distribution of HyperCard 2.0 (when released) will vary slightly from previous methods, maybe. It's rumored the new version will not be available on bulletin boards or from other public sources. Versions will only be available from Macintosh retailers or other official Mac sources. In any event, Workstation Wizards will distribute Version 2.0 on disk (no documentation) at no charge (you supply blank disks) at the WKSG lab (Bldg. 50B, Rm. 2231). A package (Product Number M0556/B), will be available from Apple (disks and documentation) for $20. At the lab we'll have a limited number of these packages for resale when available. If you buy a Mac after it's released, HyperCard 2.0 will be included (disks & documentation) with your computer.

RAM memory reminder ... again. Using HyperCard 2.0 with MultiFinder will require 2 MBytes. It's the same story with many of the latest software updates; the software documentation often suggests that the program will run more efficiently with 2 MBytes or more of RAM memory. With the introduction of System 7.0 later this year, 2 MBytes will be the minimum requirement for the new system, with 4 MBytes suggested when using MultiFinder. 1 MByte chips are still in the $70-$90 range - a good buy. Think about upgrading your Mac soon - to 4 MBytes if possible. If you have any questions, please feel free to call the folks at your Workstation Lab, x6858.

BMUG's PD-ROM Volume 2 is late too!
The Berkeley Macintosh Users Group (BMUG) is following the lead with Apple's *HyperCard 2.0* with their PD-ROM Volume 2. Various problems have also delayed this project. However, we've heard from reliable sources that it will be demo'd at the August MacExpo in Boston. Volume 2 will cost about $99 and will be available at their new Berkeley address. (BMUG's new office location: 2055 Center St. — just a few doors west of the LBL-BART bus stop). If you want more information about BMUG or want to become a member, stop by the Workstation Lab (Bldg.50B, Rm.2231) or call x6858 and ask for Bruce.

Quick Mail Help Stack
CE Software has developed a HyperCard stack to help you answer the most commonly asked questions about *QuickMail*. This is not a very fancy stack; it's just a simple sequence of cards with questions and answers. Hopefully it will address some of your *QuickMail* questions. *CE* would like to make it a quarterly release, and welcomes your suggestions on how to make it a better tool for users. (See the *QuickMail* LBL site license agreement article in this Workstation Scene section.) This stack is in the Utility Folder on the WKSG server (lbl zone) or pick up a copy in the WKSG Lab (you already knew that you need to bring a blank).

HyperCard Spelling Checker - at last!
HyperSpeller, by Foundation Publishing Inc. ($49.95) is the first batch mode spelling checker for HyperCard. In a review by Steve Michel in the July 10 *MacWeek*, he states, "*HyperSpeller* will soon become indispensable to users who use and store lots of text. I think we might all agree. *HyperSpeller* shows a standard feature set, similar to *Thunder* and *Spelling Coach Pro*. There is a standard Skip button, and a FindChange command that lets you search for specific text and replace it. The Workstation Lab should have a copy in the Evaluation Library soon (we couldn't get a verifiable shipping date at the time of the LBL Computer Newsletter deadline).

Mac & HyperCard Resources
Naturally, the ideal way to learn and put HyperCard to use is to open it up and give it a try. And when you do, be assured that there are lots of places for tips and ideas. Sources include user groups, books, and stack sources.

1. There are lots of **User Groups** : fortunately, one of the very best is very close, and you've heard me mention this bunch repeatedly. Who else but BMUG. They have a HyperCard SIG (Special Interest Group) that meets every other Wednesday, from 6 to 8 PM, in their Berkeley office. Attendance is free for both members and nonmembers (though donations are appreciated). BMUG has members nationwide, but HyperCard SIG meetings are held only in Berkeley. BMUG also offers a collection of freeware stacks. As of June, 1989, BMUG had 160 disks full of freeware stacks. These disks are available to members and nonmembers for $4 each. Disks can be purchased at their Berkeley office or at their weekly meeting on UCB campus in the PSL hall on Thursday evenings at 6:30 PM. For a taped message of general information, call 415-849-9114 or 415-549-BMUG.

2. There are numerous **books** about HyperCard: stop by the WKSG Lab and look over our small but select collection. And don't overlook the excellent HyperCard manuals included with your Mac. They're great for beginners.

3. Again, **Stack sources** are a major component of BMUG. Stacks are also available through commercial sources like *CompuServe*, *ComputerWare* and *Somak Software*. Stacks are offered in magazines such as *Hands On* and *HyperLink*. The *Heizer Software Catalog* is another good resource for HyperCard stacks.

ICSD TRAINING SCHEDULE

August - November 1990

COMPUTING SERVICES CLASSES

Bldg. 50B, Rm. 1237

The following course is offered by Computing Services. There is no charge for this class. To enroll, obtain your supervisor's approval and then contact Pat Bean, x7008.

Electronic Mail: Survey		Aug. 30 10 AM - Noon

If there is sufficient interest (we need to hear from at least 10 people), we'll schedule an **Introduction to Unix** class in late September or early October. Please contact Pat Bean at x7008 to sign up.

WORKSTATION CLASSES

The following courses are 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 (*) prepended are already full.)

IBM-PC: Bldg. 50B, Rm. 1237

Introduction to PC-DOS		Aug. 14, 16 1 - 2:30 PM
		Oct. 9, 11 1 - 2:30 PM
Microsoft Word for the PC	*	Aug. 14, 16, 21, 23 3 - 4:30 PM
		Sept. 11, 13, 18, 20 3 - 4:30 PM

Macintosh: Bldg. 50B, Rm. 1229

Basic Macintosh		Aug. 15, 22, & 29 12-1 PM no sign-up req.
Basic Intro. to *FileMaker*	*	Aug 8, 10 1 - 3 PM
		Sept. 12, 14 1 - 3 PM

Macintosh: Bldg. 50B, Rm. 1229 (cont.)

Beginning *MS Word 4.0*		Aug. 20, 22, 24 10 - Noon
		Sept. 17, 19, 21 10 - Noon
Intro. to *MacDraw II*		Sept. 11, 12, 13 10:30 - Noon
		Nov. 6, 7, 8 10:30 - Noon
Beg. *Excel* Spreadsheet	*	Aug. 27, 29, 31 9 - 11 AM
		Sept. 24, 26, 28 9 - 11 AM
Introduction to PowerPoint		August, 6, 7 1-2 PM

The Workstation Group also offers **noon time classes** (no sign-up required) in the following subjects:

Basic Macintosh Class.....8/15, 22, 29 ..... 50B/1229
Microsoft Word Workshops for the PC.....8/7, 14, 21..... 50B/1239

See Workstation Scene Newsletter Articles for more details on these workshops.

YES, I would like to receive the LBL Computing Newsletter

NAME .....

ADDRESS .....

.....

CITY

STATE .....

ZIP

PHONE .....

Return to ..... LBL Computing Newsletter
Computer Center Library - MS 50F
One Cyclotron Road
Berkeley, CA 94720

Attention: NL MAILING LIST

COMMENTS, QUESTIONS, SUGGESTIONS FOR FUTURE ARTICLES:

Lawrence Berkeley Laboratory
Computer Center Library - MS 50F
One Cyclotron Road
Berkeley, CA 94720
ATTN: Newsletter Mailing List

NAMES AND NUMBERS TO KNOW

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

INFORMATION AND COMPUTING SCIENCES DIVISION

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

OFFICE OF COMPUTING RESOURCES

Head: Dave Stevens (DFStevens)	7344	50B	2270B

ADVANCED DEVELOPMENT PROJECTS

Head: Dennis Hall (DEHall)	6053	50B	3238

COMMUNICATIONS & NETWORKING RESOURCES

Head: Ken Wiley (KGWiley)	7083	50B	2258E

NETWORK SYSTEMS

Bob Fink (RLFink)	5692	50B	2258B

COMMUNICATIONS & NETWORKING FACILITIES

Sig Rogers (SGRogers)	6713	50B	2258F

TELEPHONE SERVICES

Sam Gibson (FSGibson)	4234	50B	2258D

COMPUTING SERVICES

Head: Marv Atchley (FMAtchley)	5455	50F	117
Deputy: Harvard Holmes (HHHolmes)	5742	50F	115
Central Office	5871,2	50F	125

VMS SYSTEM

Eric Beals (ERBeals)	5351	50F	143
System Manager: Gil Johnson (GPJohnson)	6211	50B	1225

UNIX SYSTEM AND DISTRIBUTED PRINTING

Craig Eades (CAEades)	6569	50F	142
UNIX (DHCleveland)	5336	50F	110
Distributed Printing (RERendler)	5629	50F	129
System Manager: Roger Cochran (RJCochran)	5565	50F	127

USER RESOURCES

Jerry Borges (JTBorges)	5568	50F	144
Accounting	7008	50B	1232A
HELP DESK	5981	50B	1215
Math Libraries	4749	50F	114
Library/Document Sales	7008	50B	1232A
Opening a New Account (PSBean)	7008	50B	1232A
UNIX and Cluster: Software Evaluation and Acquisition	5568	50F	144

GRAPHICS

Nancy Johnston (NEJohnston)	5093	50F	145

COMPUTING FACILITIES

Connecting a Remote Terminal	5354	50B	2259
Terminal Repair: Paul G Murray (PGMurray)	5354	50B	2259
Operations Area	6211	50B	1215

COMPUTING APPLICATIONS

Applications Group

Head: Jerry Borges (JTBorges)	5568	50F	144

WORKSTATION GROUP

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

MFE Consulting Number is 422-1544

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

NETWORK CONTACT INFORMATION

LBLnet New Installations & Trouble Calls: Ted Sopher (TGSopher)	4559, 5354	50B -	2266
DECnet Administration: WIlliam Jaquith (WDJaquith)	6966	50F -	146
IBM PC & Mac Network Administration: William Jaquith (WDJaquith)	4388	50B -	2231C
Nancy Travis (NJTravis)	7690	50B -	2231B
Distributed Printing/Kinetics FastPath administration and requests: Bob Rendler (RERendler)	5629	50F -	129
AppleTalk Support	5354	50F -	2259

LBLnet troubles	*trouble@lbl.gov*
LBLnet comments or non-critical trouble reports	*lblnet@lbl.gov*
Internet administration	*ip-request@lbl*
LBL Postmaster for Lab-wide mail	*postmaster@lbl.gov*
Network Advisory Group (NAG)	*nag@csam.lbl.gov*

ICS

ICS Access Names

[VAX 64xx's (Generic)	CSA]
VAX 6420 (VMS)	CSA1
VAX 6420 (VMS)	CSA2
VAX 6410 (VMS	CSA3
SUN-3/280 (UNIX 1)	UX1
SUN-3/180 (UNIX 3)	UX3
SUN-4/390 (UNIX 5)	UX5
SUN-3/180 (ISD)	ISD

Dial-up Access Numbers for ICS

Incoming Baud Rate	Connect Baud Rate	Number
3/12/2400 BPS	3/12/2400 BPS	486-7930
3/12/2400 BPS	9600 BPS	486-7900
9600 BPS	9600 BPS	486-7996

Local TYMNET Access Numbers for ICS

	1200 BPS	2400 BPS
Oakland	430-2900	633-1896
Walnut Creek/Concord	935-0370	935-1507
San Francisco	974-1300	543-0691
Santa Clara	408-432-3430	432-8618
Palo Alto	415-366-1092	361-8701
San Jose	408-432-3430	432-8618
Fremont	490-7366	490-7366
Davis	916-758-3551	
Burlingame	415-588-3043	
Vallejo	707-644-1192	
Antioch	754-8222	
Pleasanton	462-2101	

Lawrence Berkeley Laboratory
Computer Center Library - MS 50F
One Cyclotron Road
Berkeley, CA 94720