

# Lawrence Berkeley National Laboratory

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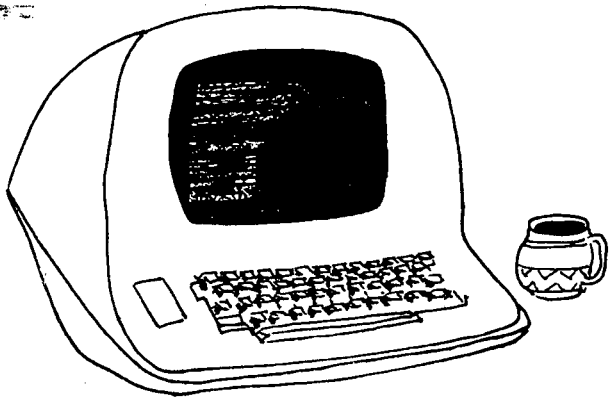
Lawrence Berkeley National Laboratory

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# LBL COMPUTING NEWSLETTER

Lawrence Berkeley Laboratory  
University of California, Berkeley

Vol. 20, No. 3, March, 1983

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To get on the mailing list for the LBL Computing Newsletter, contact Dortha Hines, 50A/1148, x6094.

Newsletter Closing Date is the 15th of the month.

Address all communications for the Newsletter to Maggie Morley, Editor, 50B/1245A, (415) 486-5529; or to login **mam** on any VAX and/or UNIX.

Publication Number 429

LBL COMPUTING NEWSLETTER

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PUB-429

## NAMES AND NUMBERS TO KNOW

From on-site, dial <xxxx>  
From FTS line, dial 451-<xxxx>      From off-site, dial 486-<xxxx>.

### COMPUTER POLICY BOARD

50D/106	x6722	William A. Lester, Jr., <i>Chairman</i>
50A/4112	x5511	Walter D. Hartsough
50B/3238	x5313	Paula K. Hawthorn
50A/4119	x5131	George L. Pappas
90 /3215	x6286	Henry Ruderman
50 /137	x7087	Mark Strovink
90 /1106	x5728	Chin-Fu Tsang
71 /259	x4825	Michael S. Zisman

### OFFICE OF COMPUTING RESOURCES

50A/4112	x4764	Robert J. Harvey, <i>Head</i>
50B/2258A	x5739	James A. Baker
50B/2258B	x7344	David F. Stevens
50B/2258C	x7083	Kenneth G. Wiley

### COMPUTATION DEPARTMENT

50B/2232E	x5224	Paul Rhodes, <i>Department Head</i>
50B/2232A	x5775	Howard White, <i>Deputy Department Head</i>
50B/2232B	x6287	Margaret Yamada, <i>Administrator</i>
50B/2232C	x6296	Everett Magnuson, <i>Budget Manager</i>
50B/1232C	x5455	F. Marvin Atchley, <i>Computer Operations</i>
50B/2232D	x5351	Eric Beals, <i>Consulting &amp; User Relations (both)</i>
50A/1211A	x5692	Robert Fink, <i>Networks</i>
50A/1127A	x5568	Jerry Borges, <i>Operating Systems &amp; Product Set (both)</i>
50 /209A	x6019	John Colonias, <i>Applications</i>

### DEPARTMENTAL SERVICES

50B/2232	x5871,2	Central Office Number
50B/1245	x5981	Consultants' Office
50B/1245A	x5529	Computation Department Library: Maggie Morley
50B/1215	x6211	Operations
	x5311	Coke/Cope Operator
50B/2249B	x6205	Expediter Services: Irene Bernal
50B/2215A	x6256	Keypunch Service
50B/2249	x6219	PSS (Program Storage System): Tape Services
50B/1245	x6094	GSS Tape Repair Service: Dortha Hines
50B/1245	x6094	Sticky Label Service: Dortha Hines
90 /3136	x6494	Building 90 Remote Job Entry (RJE) Station
50B/2262C	x6310	To open or change an account, Fran Permar
50B/2232	x5654	Guest cards, locker space, & parking permits: Gean Broughton
50B/2266	x6713	To connect a remote terminal (RJE or interactive): Sig Rogers
50B/2259	x5354	Terminal or Port Repair: Electronics Maintenance
50B/1245A	x5529	Introductory seminars: UNIX: Maggie Morley
50B/1245	x6094	WRITEUPS & HANDBOOK on fiche: Dortha Hines

## 7600 GOING AWAY

The Laboratory has decided to retire the Control Data 7600 computer. The scheduled release date has been set for October 1, 1984.

The technology and architecture used in the CDC 7600 system are outdated and it is no longer a cost-effective research instrument. We have set the shut-off date as far into the future as is economically practical and still allow time for users to transfer computer codes and data to other systems.

The Computer Policy Board and the Office of Computing Resources are in the process of making plans for future LBL computing facilities. You will be kept informed as these plans develop.

... Robert J. Harvey, *Head  
Office of Computing Resources*

### VAX TROUBLE REPORTING

There is a new procedure on IGM, NMM and PDM for making suggestions or reporting VAX troubles. Any user message will be forwarded to all persons responsible for the daily operations of these computers.

To send a message, type:

*Trouble p1 p2*

where **p1** = subject of message.

(If this parameter is more than one word, then enclose it in quotation marks)

and **p2** = file containing message to be transmitted.

If **p1** is omitted the prompt will be:

**Enter the subject of the message:**

Now type in the subject.

*SUBJECT SUBJECT SUBJECT SUBJECT*

(Do **not** enclose it in quotation marks.)

If **p2** is omitted the prompt will be:

**Start your message and type a single  
<carriage return> as last line**

Now type your message.

*MESSAGE MESSAGE MESSAGE MESSAGE  
<carriage return>*

If no errors occurred, the following messages are displayed:

**End of message assumed.**

**Your mail has been forwarded.**

If an error occurred, you receive the final message:

**Your mail was not forwarded because  
an error occurred or your mail  
message file did not exist**

... Edna Williams, x5093

PUB-429 12-82/1050

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

## TERMINAL SWITCH ACCESS NAMES

COMPUTER	DEVELCON DIRECTORY NAME	--- GANDALF ACCESS CODE ---		
		300 bps	1200 bps	9600 bps
VAX Program Development Machine	PDM	na	na	na
VAX Numerical Modeling Machine	NMM	na	na	71
VAX Interactive Graphics Machine	IGM	na	na	73
PDP 11/70 (UNIX 1)	UNX1	15	na	11
PDP 11/70 (UNIX 3)	UNX3	55	na	51
CDC 6600B, 6400C	RECC	05	03	.01
IBM 4341 (UCB)	CCDB	na	na	na

- (1) **na** means NO DIRECT ACCESS. However, Indirect access from Gandalf to all computers is available via Develcon.

Gandalf access code **67** connects you to Develcon.

(Then) enter **rs** so that Develcon can determine your terminal speed.

Develcon responds with **Request**.

(Then) you enter your Develcon directory name and a carriage return.

(If you use this method more than occasionally, please contact Sig Rogers, x6713).

- (1) **Note:** There are many additional hosts operated by other groups that are available on the terminal switches. To gain access, you should make arrangements directly with the appropriate group representative.
- (2) **DIAL-UP ACCESS** to Develcon is available.
- 486-4959 -- 300 BPS  
486-4979 -- 1200 BPS  
VA-3400 & 212A equivalent.

... Sig Rogers, x6713

### DEVELCON DATASWITCH CHANGE

On Friday, April 1, 1983 at (about) 0800 the *scheduled changeover* of the Dataswitch auto-baud speed determination characters (from *RS* to *CARRIAGE RETURN*) will take place. No interruptions of existing connections are expected. After this change, typing a single *CARRIAGE RETURN* should get you the **Request:** prompt. If you experience any difficulty, please contact Service at x5354.

... Sig Rogers, x6713

### CSAM COLLOQUIUM

Speaker at the CSAM Colloquium on March 4th is Prof. **Sham Navathe**, University of Florida. His subject:

*DISTRIBUTION DESIGN OF LOGICAL DATABASE SCHEMES*

Meeting Place: Bldg. 50B, Rm. 4205 (Conference Room). Time: 10:30 AM to noon. For info, contact ...

... Frank Olken, x5891

## Performance

We have completed the conversion of the two disk drives on Unix-3 so that they pretend to be RM05 drives; the Unix-1 conversion is in process. It is still too early to know how much of a difference the change will make. Actually, we may never know, because the change took place at the same time the Versatec plotter went into production, causing the load on the machine to increase significantly. Each job for the plotter requires the running of three or more cpu-bound processes, only one of which is run serially with the plotter. The other two (*troff* and *vtrot*), along with the various text processing programs (*tbl*, *eqn*, *neqn*, and *nroff*), constitute the major load on the cpu of the system, and are straining system performance beyond tolerable limits. However, some help is on the way.

We are rewriting *vtroff* so that Versatec jobs will be queued in an unprocessed form; they will have all **.so filename** lines interpolated, but no further *tbl**neqn**troff**trot* processing. We will then be able to ensure that only one such string will be running at any one time. This has a further benefit: files will be queued so that they can be processed the same way on the Versatec and on TID's phototypesetter.

We also will teach *nroff* and, if necessary, *neqn* and *tbl*, to decrease their cpu-priority so that they interfere less with the editors. If that doesn't help enough, we may be compelled to take the Draconian measure of restricting the total number of *nroff*s running at one time, perhaps even to as few as two or three. Alternatively, we could disable direct use of these commands, and compel use of the slower but less-intrusive queued services described below. We would like to know which of these unpalatable choices our users prefer.

We would like to offer two new commands, a *droff*, which would queue files for *nroff*ing to one or more letter-quality printers, and an *froff*, which would queue files for subsequent *nroff*ing to a user file. These would both behave like *vtroff* in that each would have only one chain of *tbl**neqn**nroff* going at a time. We hope to have these available sometime in April.

Eventually, we would also like to offer a *tidroff* which will queue files for TID's phototypesetter. It, too, would behave like *vtroff*, and would allow text-processing for all devices to be handled in a consistent fashion.

It is difficult to assess, and virtually impossible to predict, exactly how a system which is saturated in all its resources will behave when we trade cpu-demand for disk-demand. It is our goal, however, to trade decreased performance on cpu-intensive tasks for improved responsiveness from the editors.

## Text-processing Macro Packages

In conjunction with TID, we intend to standardize the *-me* and *-ms* macro packages on all three PDP11/70 Unix's. We now have available an *-me.new* and an *-ms.new*; they are and will remain identical on Unix-1, -2, and -3. The *-me* package is essentially a version of the current *-me* (which was not very different across the three machines), but with a few bugs removed, and TID's version of the **.lo** command added. The *-ms* package is a new version from Campus, with a few important features added; a writeup is available from the Computer Center Library. It is a minor variant of their current production version, which is also known as *-mx* [sic]. We would like to urge users on all three machines to try them out. Output should be identical to (or better than) the current versions. A few weeks after the last deficiency or difference is resolved, we will change the default to the new versions, but leave the current versions available as *-me.old* and *-ms.old*. The intransigent, if any, among our users may switch to these unsupported versions now.

We would also like to invite *-me* users to contemplate switching over to *-ms*. The latter is maintained on Campus; the former is not. We are considering writing a version of *-me* which would be *-ms* internally, but have the common and compatible macros renamed from upper-case to lower-case. Some incompatibilities would remain and require hand-conversion. We would like to know any non-historical reasons why our users prefer *-me* so that we can assess the feasibility of this approach.

## *nroff* and *troff*

In preparation for the new device-independent *troff*, (which has been on order since last June, with no arrival yet in sight), we are tailoring the *troff* character set, and tuning the Versatec characters so as to more closely match TID's phototypesetter output. The present version of *troff*: (a) uses a character set quite specific to Ma Bell's needs (including the family crest); (b) contains a remarkable number of bizarre dependencies on the brand of phototypesetter they bought in the early 1970's; and (c) consists of about 150 pages of code with hardly a comment in sight. We are contemplating either removing the set-theoretic symbols, which we think are not used at LBL, and replacing them with others more useful here, or adding some kind of escape mechanism to fool *troff* into dealing with more characters. Please inform us of your favorites, and, if possible, we will install them.

Although *nroff* and *troff* have quite a lot of code devoted to figuring out how to hyphenate words, they still make too many mistakes. There is a provision for special-

casing individual words known to be mis-hyphenated. We would like our users to inform us of such mistakes, so that we may improve the two programs.

One additional note: although examples in the reference manuals show otherwise, users who wish to use fonts other than the defaults should refer to font changes by number, not name. The new macro packages discussed above do so, so that use of the **.R**, **.I**, and **.B** macros is no problem, but users who have constructions such as **.ft I** or **\fB** in their input files should use **.ft 2** or **\f3** instead.

... Marty Itzkowitz, x5893

### BAYVAX TO MEET AT LBL MARCH 17

**BAYVAX**, the Bay Area VAX User Group, will meet at LBL on Thursday, March 17. Schedule is as follows.

9 to noon - General Meeting - Speakers  
50B Auditorium

1 to 3 PM - Question & Answer Session  
Bldg. 70A, Rm. 3377

3 to 5 PM - Informal Discussion

For more information, contact ...

... Noel Brown, x4387

### NEW DATATRIEVE MESSAGE FILE

There is a new **DATATRIEVE USER GROUP** Directory on **PDM**. Send mail (trouble, comments, suggestions, questions, cries of help) to "**DUG**" on **PDM**.

**INTRO** will give a directory of files there and what they contain.

... Noel Brown, x4387

### 1983 VAX MAINTENANCE SCHEDULE

#### IGM

5/22	.....0000 - 1200
3/23	.....0000 - 0800
4/20	.....0000 - 0800
5/23	.....0000 - 0800
5/24	.....0000 - 0800
5/25	.....0000 - 0800
6/22	.....0000 - 0800
7/20	.....0000 - 0800
8/22	.....0000 - 0800
8/23	.....0000 - 0800
9/21	.....0000 - 0800

#### NMM

4/24	.....0000 - 1200
7/24	.....0000 - 1200
3/25	.....0000 - 0800
4/25	.....0000 - 0800
4/26	.....0000 - 0800
4/27	.....0000 - 0800
5/27	.....0000 - 0800
6/24	.....0000 - 0800
7/25	.....0000 - 0800
8/26	.....0000 - 0800
9/23	.....0000 - 0800

#### PDM

3/12	.....0000 - 1200
3/13	.....0000 - 1200
6/11	.....0000 - 1200
6/12	.....0000 - 1200
4/13	.....0000 - 0800
5/11	.....0000 - 0800
6/13	.....0000 - 0800
6/14	.....0000 - 0800
7/13	.....0000 - 0800
8/10	.....0000 - 0800
9/12	.....0000 - 0800
9/13	.....0000 - 0800



## NEWS OF LOCAL USER GROUPS

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### GETTING STARTED

Lab folks who are interested in establishing a Local User Interest Group on site should contact Sally Shlaer, x4687.

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### DATATRIEVE LUG NEWS

26 people attended the February 14 meeting of the Datatrieve Local Users Group. Sally Shlaer talked about the mechanics/benefits of establishing/nurturing a LUG; Virginia Sventek gave a summary of the present status of Datatrieve at LBL, and talked a bit about The Wombat. There was some discussion concerning the present availability of Datatrieve expertise and how to augment it most economically.

The next meeting of the Datatrieve User Group will be held at 1:30 PM Monday, March 21, in the Bldg. 70A Conference Room (70A/3377). For more information, contact LUG facilitator,

Valerie Sherriffe, x5362  
or x4460

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### GRAPHICS LUG NEWS

Users who are interested in organizing a GRAPHICS Local Users Group at LBL are requested to contact Maggie Morley (x5529) or Jerry Borges (x5568).

... Jim Miller, x6255

### RT-11 LUG NEWS

The next meeting of the RT-11 User (Lunch) Group will be held at noon on Tuesday March 8th in the Bldg. 46A Conference Room. Randy Michelson will continue his report on the Fall '82 DECUS symposium. (Note: Normally the RT-11 Users' Lunch Bunch meets on the first Thursday of the month. This March meeting date is a one-time change). For more info, contact facilitator,

Mike Green, x5598

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### VAX LUG NEWS

The next meeting of the VAX Local User Group will be held at 2 PM Tuesday, March 15 in the Old Directors' Office (50/154). Bob Upshaw will talk about Software Tools. For more information, contact LUG facilitator,

Nancy Deerinck, x4680  
or x6411

---

A Euclidian triangle  
is an imaginary thing.

... Petroleum V. Nasby

---

There is a web of meaning of this earth,  
This shaggy planet, lush, in disarray,  
There's purpose in our random sojourn here,  
An unmarked course,  
we shall not lose our way.

... Robert Louis Stevenson

## VMS DISK SPACE MANAGEMENT

Parkinson's Law, as applied to public disk storage, states that user files will expand to exceed the available disk storage space.

The use of the computer center VMS file systems is now approaching maximum capacity. The generous file quotas that were issued in the past have now been reduced to 1000 blocks per new user; additional space is given with adequate justification.

A delightful VMS feature is that the system retains previous versions of each file unless they are specifically deleted. This can result in the accumulation of large quantities of unused but occupied disk space of which the user may be unaware, or simply choose to ignore. Fortunately, VMS also provides a tool to help manage this problem.

We have enabled the feature that sets the expiration dates of each file in order to track the file's use. Minimum and maximum retention periods for files are specified as delta time values. At the outset, we have chosen a minimum of 7 days and a maximum of 60. The retention periods operate as follows:

Every time a user accesses a file (for either a read or write operation), and that file's expiration date is earlier than *the current date plus the minimum retention period*, the file's expiration date is updated to the current date plus the maximum retention period. Thus, the expiration date of a frequently accessed file fluctuates between the minimum and the maximum retention period plus the current date.

This feature does not remove unused files automatically; it maintains expiration dates that permit us to backup and delete them at selected intervals. We expect to do this on a **weekly basis** beginning in May. The net result of this procedure would be to backup and delete files which had not been accessed within the previous 60 days.

Deleted files can be restored upon request: charges for this procedure are being discussed.

Questions or objections regarding this policy should be addressed to myself or our friendly VMS systems managers, Gil Johnson (x5234) or Randy Bean (x6720).

. . . Marv Atchley, x5455

## UCLBL Computer Center

### PM Schedule

Effective Mar. 1, 1983

**7600 (CDC)** Mondays  
 CDC ..... 0500 - 0800  
 Thursdays  
 CDC ..... 0600 - 0800

**6600B (CDC)** Tuesdays  
 CDC ..... 0500 - 0800

**6400C (CDC)** Mondays  
 CDC ..... 0500 - 0800

**UNIX1** Sunday, Mar. 6  
 RTSG .... 0200 - 0600

**UNIX2** Wednesday, Mar. 16  
 RTSG .... 0200 - 0600

**UNIX3** Saturday, Mar. 19  
 RTSG .... 0200 - 0600  
 Sunday, Mar. 20  
 RTSG .... 0200 - 0600

**IGM** Wednesday, Mar. 23  
 RTSG .... 0000 - 0800

**NMM** Friday, Mar. 25  
 RTSG .... 0000 - 0800

**PDM** Saturday, Mar. 12  
 RTSG .... 0000 - 1200  
 Sunday, Mar. 13  
 RTSG .... 0000 - 1200

**ATL** Thursdays  
 Maint ... 0600 - 0800

**COM** Tuesdays  
 Maint ... 0700 - 0900

**PSS** Wednesdays  
 CDC ..... 0600 - 0800

**SYSTEMS PERFORMANCE  
IN JANUARY, 1983**

**7600**

Systems Availability 95.39%  
Median Service Interval 19.21 (hrs)

**6000B**

Systems Availability 98.58%  
Median Service Interval 74.04 (hrs)

**6400**

Systems Availability 98.36%  
Median Service Interval 60.57 (hrs)

**UNIX1**

Systems Availability 99.05%  
Median Service Interval 52.79 (hrs)

**UNIX3**

Systems Availability 95.60%  
Median Service Interval 23.37 (hrs)

**PDM**

Systems Availability 97.30%  
Median Service Interval 39.66 (hrs)

**NMM**

Systems Availability 96.00%  
Median Service Interval 55.88 (hrs)

**IGM**

Systems Availability 98.76%  
Median Service Interval 32.42 (hrs)

-----  
Total No. of Jobs Processed: **57,023**

6000's - **22,768** : 7600 - **34,255**  
-----

*7600 TURNAROUND TIME*

% of RUSH jobs returned  
**20 min 2 hrs 4 hrs**  
92.76 99.43 99.91

% of ALL jobs returned  
**20 min 2 hrs 4 hrs**  
85.09 94.54 96.81

% returned, CU limit = 100  
**20 min 2 hrs 4 hrs**  
90.42 99.40 99.40

% returned, CU limit = 500  
**20 min 2 hrs 4 hrs**  
91.47 98.45 99.22

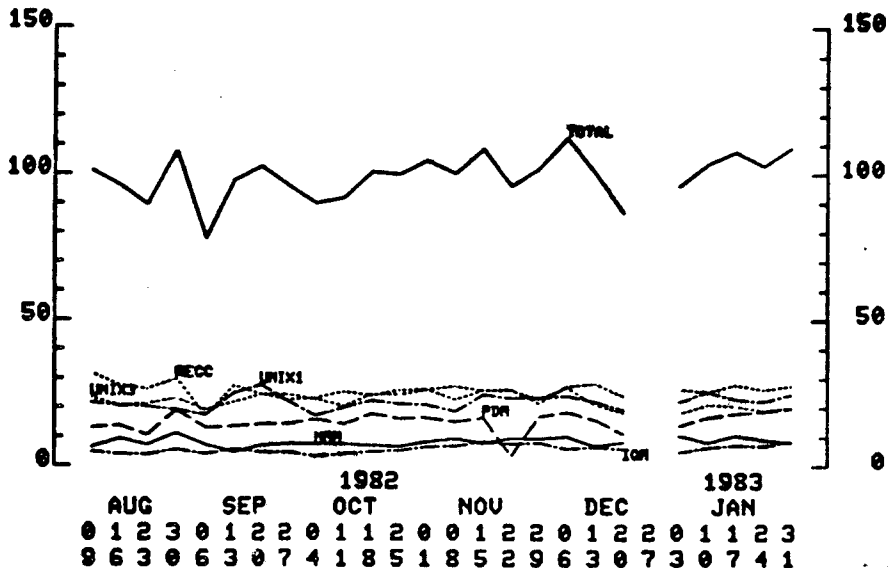
% returned, CU limit ≥ 1000  
**20 min 2 hrs 4 hrs**  
29.39 58.48 66.27

-----  
Computers are not intelligent.  
They only think they are.

# INTERACTIVE STATISTICS

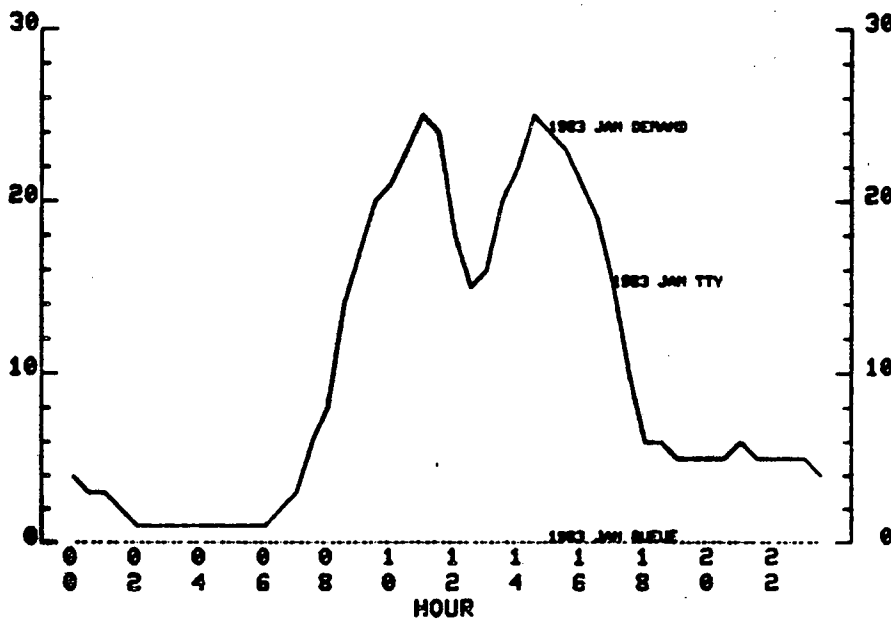
## INTERACTIVE TERMINAL ACTIVITY

AVERAGE NUMBER OF TERMINALS CONNECTED  
 SAMPLED AT HOURLY INTERVALS, PRIME USE PERIODS, WORKDAYS



## RECC CONNECTIONS AND UNSATISFIED DEMAND 6600 AND 6400 COMPUTERS

JAN 1983 WORKDAYS



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One Cyclotron Road  
Berkeley, CA 94720

**For Reference**

**Not to be taken from this room**