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# User Services External Report

Lehigh University

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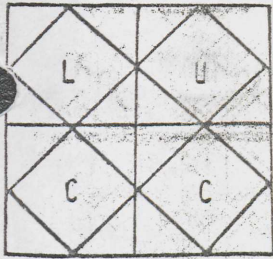
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# USER SERVICES EXTERNAL REPORT

LEHIGH UNIVERSITY COMPUTING CENTER  
CDC CYBER 170 MODEL 720 (CM 128KW, ECS 1/8MW, NOS/BE)  
DECSYSTEM-2060 (512KW MEMORY, TOPS-20 V4)  
PDP 11/34 (112KW MEMORY, RSTS/E V7.0)  
IBM 4331 (DOS/VSE, RELEASE 2)  
Vol. IX, No. 6  
May 1, 1982

## COMPUTING CENTER DIRECTORY

### Information About Policies and Plans

Office of the Director  
Director 861-3830  
Dr. Ben L. Wechsler  
Associate Director 861-3990  
William R. Harris

### Information About Bills Received

Administrative Assistant 861-3825  
Joseph P. Holzer  
Annette L. Ruhe

### User Consultants

Timothy J. Foley 861-3994  
Sandra L. Johnson 861-3992  
Monica A. Newman 861-3995  
Kevin R. Weiner 861-3991

### Information About Programs in the Computer Libraries

Data Processing Librarian 861-3993  
Janice A. Ealer

### Systems Status, Technical Information

On-duty Consultant 861-4141

### General User Information

User Services Secretary 861-3990  
Judy K. Allio

### Information About Operational Policies

Operations Manager 861-3989  
Carol D. Rauch

### Information About Tapes and Supplies

Operations Admin. Assist. 861-3986  
Kathy M. Horwath

### On-Campus Computer Access (110/300 Baud)

CYBER 720 Ext. 4000  
DEC 20 Ext. 4020  
PDP 11/34 Ext. 4011

### Off-Campus Computer Access

CYBER 720 (110/300 Baud) 691-5800  
(1200 Baud) 691-5806  
DEC 20 (110/300 Baud) 868-2250  
(1200 Baud) 691-0506  
PDP 11/34 (110/300 Baud) 868-9350

## STAFF CHANGES

On April 26, Dave Anderson left Systems Programming for a position with Control Data Corporation in Rockville, Maryland where he will provide systems programming support for CDC customers. We wish Dave happiness and good luck in his new position.

## DIRECTOR'S DISCOURSE

by Dr. Ben L. Wechsler

There are two topics on which to report progress in this issue.

The first is the matter of unauthorized use of computing facilities which I am happy to report has declined significantly since the beginning of the school year. I am convinced that the principal deficiency in this area was a failure on our part to inform the user community of the nature and implications of unauthorized use. I have concluded that our reliance on the responsibility of the user community was correct, since now that the problem has been communicated the matter has all the earmarks of being resolved. All of us must remember, however, that each year we have a large turnover in the user community and we will have to insure that the newcomers are properly informed so that the problem is kept under control.

The second topic concerns our major upgrades. The CYBER 720 has been performing well, although a manufacturing deficiency led to problems in its first month. We are in the process of evaluating whether or not an incremental through-put upgrade is required for next year.

The IBM 4331 is in production and additional administrative systems are being tested and installed. Although the conversion efforts for administrative systems on the CYBER 720 are somewhat behind schedule, administrative systems are being off-loaded from the CYBER as they are



converted. In the meantime, the IBM 4331 has been incrementally upgraded from a model 1 to a model 2 and another disk drive has been added to the system.

There has been a modification to our planned public site upgrade actions. Because of possible building renovations to Taylor Hall, it has been decided not to convert that site for 82-83. Instead, the Grace site will be expanded by 16 more terminals and the Christmas-Saucon site will be renovated and expanded by nine more terminals. Both of these actions have already started although they will not be completed until after the summer break. The Taylor site will be closed for the 82-83 school year.

The new four-color .002 inch resolution plotters are providing excellent service for about 98% of our plotting needs. They do not, however, provide as high a publication quality plot as is sometimes desired. The Center is working with the Industrial Engineering Department to see if it is feasible to establish an electronic link from the Computing Center to the liquid ink plotter in the CAM Lab for this additional high quality requirement. Additionally, we have been informed by the vendor that the plotter utility, DISSPLA, has been converted to FTN5 and so, in accordance with the Users' Subcommittee recommendation, that utility has been ordered.

Progress with the networking study is reported in the article which follows.

The one major item that is significantly behind schedule is the installation of a word processing utility on the PDP 11/34. After an exhaustive test of MUSE on the DEC 2060 last summer, and the vendor's promise to have that utility converted for our PDP 11/34 before January, the Users' Subcommittee recommended its installation for use in the second semester of this school year. The vendor has not completed the conversion and, it now appears, has no intention of doing so in the near future. We are now evaluating other packages which do exist for the PDP 11/34. A large part of this work is being done by two students in the Industrial Engineering Department and six students in the Computer Society. Our target is to have a utility installed before the end of the fiscal year. The word processing utility, SCRIBE, continues to be available on the DEC 2060.

#### NETWORKING STUDY

The Computing Center Advisory Committee (CCAC) formed an Ad Hoc Subcommittee in September, 1981 to study the networking alternatives for Lehigh University. The Subcommittee is chaired by Professor Bruce Fritchman of the Electrical and Computer Engineering Department; a complete list of the Subcommittee members appears at the end of this article.

The Subcommittee's charge is to investigate alternative communications network arrangements for Lehigh University computing services and to make recommendations to the CCAC as to which alternative

the University should pursue. Included in this charge is the investigation of:

- feasible alternatives for the local terminal and remote job entry network which currently utilizes a combination of Bell dial-up and hard-wired facilities
- feasible alternatives for establishing a network between the computers in LUCC as well as a network between laboratory computers and at least one mainframe in LUCC
- expanding the utilization of public networks, i.e., TELENET, TYMNET, etc.

The Subcommittee is considering the publication of a Request for Proposal and an evaluation of vendor proposals in its investigation, culminating in its recommendations to the CCAC.

To date, the Subcommittee has discussed the networking problems at Lehigh, the relationship of the Lehigh telephone system to data communications and, in turn, the potential impact of increased data communications on the telephone system.

Aspects of a computer network not related to data communications are also being taken into consideration. These include such applications as voice communication, video transmission for use in security systems and closed circuit television, and energy management systems.

The Subcommittee has had presentations by and discussions with the following companies:

Amdax Corporation (Cablenet)  
Control Data Corp. (Loosely Coupled Network)  
Xerox (Ethernet)  
Digital Equipment Corp. (DECnet)  
Sytek (Localnet)

These products are representative of the state-of-the-art in networking as well as of different approaches. One of the primary considerations of the study is the desirability of a broadband system, using CATV (Cable TV) technology, versus a baseband system. Each of the systems investigated so far, with the exception of DECnet in most cases, uses coaxial cable for the communications medium. However, the method of signal modulation and, in some cases, the type of cable differ among the systems. The advantage of using a broadband system is the capability of supporting non-data services, such as video and voice transmission.

In early May, some members of the Subcommittee plan to visit Brown University to discuss its new network. Brown has installed a network using CATV coaxial cable and the Sytek system to connect 110 buildings on campus. The Subcommittee expects Brown's experience with networking to be helpful in its investigation.



Members of the Lehigh Community who have input regarding a Lehigh University network are encouraged to contact a member of the Networking Subcommittee. Its members are as follows:

Dr. Bruce Fritchman	Electr. & Comp. Engr.	X4066
Dr. Samuel Gulden	Comp. & Info. Science	X3718
Mr. William Harris	Computing Center	X3990
Dr. Frank Luh	Accounting and Law	X3429
Dr. Louis Plebani	Industrial Engr.	X4033
Mr. Stephen Roseman	Computing Center	X3987
Dr. Wm. Schiesser	Chemical Engr.	X4264
Mr. Paul Sire	Admin. Systems	X3010
Ms. Janet Smith	Telephone Services	X3004
Mr. Donald Talhelm	Electr. & Comp. Engr.	X4075
Mr. William Karrash	Telecomm. Div., Beth. Steel	

FROM THE LIBRARIAN

CYBER 720 - New Software

TIMVAR - Regression Constancy Test (G20038)

TIMVAR is a program which tests for constancy of regression relationships over time. To use TIMVAR, users must obtain a binary deck of the program by submitting LUCC Form 35 to the Librarian in Room 115, Packard Lab. A Users Guide to TIMVAR is available in the documentation rack in the Packard Lab Reference Area.

CYBER 720 - Modified Software

HAZDUD - CRT Display Driver Subroutines (J90033)

HAZDUD is now available in FTN5. HAZDUD is a collection of subroutines which allow a user to control the terminal functions of a CRT display from a FORTRAN program. HAZDUD currently supports only Perkin-Elmer Fox 1100 terminals. Included are various routines to position the cursor, write characters, clear data and perform other assorted functions. Documentation for HAZDUD is available in the Packard Lab Reference Area.

HIDE - Plot Subroutine (J50002)

HIDE, a hidden-line plot subroutine, has been updated to include all known modifications as reported in the Communications of the ACM. They are as follows:

- A Z-axis is now available as an option
- X-axis data are now checked for legality when the number of points is negative

- The problem with NFNS=1 is fixed
- The problem with FNSM1 not being initialized properly is fixed
- The MODE=2 (infinite operand) bug is fixed

HIDE runs under any of the FORTRAN extended compilers. To use HIDE, users must obtain a binary deck of the program by submitting LUCC Form 35 to the Librarian in Room 115, Packard Lab. Documentation for HIDE is available in the Packard Lab Reference Area.

PASCAL-6000 - (L20006)

Modifications have been made to Pascal-6000, fixing a large number of bugs. A copy of the modifications can be obtained from the Librarian in Room 115, Packard Lab. No documentation changes were made.

SENATOR - Text Editor (J90045)

Several revisions were recently made to SENATOR. They are as follows:

- New features
  1. Lines MARKed in EDIT mode are no longer lost when leaving EDIT. This also means that people using the PRC option will not lose MARKs when entering a READY command. Consequently, LIST displays a colon if a line is MARKed; otherwise, a blank is displayed (just like PRINT in EDIT).
  2. System CB5 is available for COBOL 5 programs.
  3. A new command - CPR - has been added. (See on-line HELP.)
- Changes
  1. VETO is now on by default.
  2. PRC is on by default.
  3. EDIT range has been set to 0-999999 on OLD, NEW, and SCRATCH.

- Bug fixes

1. EXECUTE no longer saves the current file. Thus, the command works faster.



2. Remote output buffer size for the RMT command has been increased from 128 to 300 files.

- improved runtime error handling
- a FORDDT which is much easier to use

#### SPICE - Circuit Simulation Program (T40009)

A new release of SPICE was recently installed, updating the program to version 2G.5. A new manual, SPICE Version 2G User's Guide, is available in the Packard Lab Reference Area.

#### DEC 20 - New and Modified TOPS-20 Software

New versions of COBOL-68 (version 12B), COBOL-74 (version 12B), ISAM (version 12B) and SORT (version 4C) were installed on March 9th. They were available for testing until April 20th, after which they became the production versions of the software. HELP files describing the differences between these versions and the prior versions are available on-line and can be accessed in the following manner:

@HELP CBL12B or @HELP NEW-ISAM or @HELP SRT4C

Version 12B TOPS-10/TOPS-20 reference manuals for COBOL-68 and COBOL-74 are available in the Packard Lab Reference Area.

In addition, two new programs - "RMS" and "68274" - are now available. RMS is a file/record management system. It provides an interface between the operating system and user-developed application programs. It can be used directly from user programs written in version 12B COBOL-74 and version 2.1 BASIC-PLUS-2. Also, RMS includes a utility, RMSUTL, for creating and updating RMS indexed files. 68274 is a conversion utility to aid in the conversion of legal version 12B COBOL-68 programs to legal version 12B COBOL-74 programs. These new programs are described in more detail in their on-line HELP files, which bear the same names as the programs. A RMS Reference Manual is also available in the Packard Lab Reference Area.

FORTRAN version 6 is now available on DIRECTORY NEW:. Version 6 is a globally optimizing, mainframe class FORTRAN based on the ANSI-66 standard. In addition, it incorporates many features from the ANSI-77 standard. FORTRAN version 6 offers improvements in several major areas, including:

- better memory management, allowing more program or data space
- support for more than 16 files to be open simultaneously
- improved, totally rewritten documentation

To access FORTRAN version 6 at the present time, you must first do the following:

@DEFINE SYS: NEW:,SYS:

However, on May 13th, version 6 will become the production version of FORTRAN, and version 5 will be moved to DIRECTORY OLD:.

A list of differences between FORTRAN versions 5 and 6 is available in a HELP file entitled "FORTR6." A version 6 reference manual is available in the Packard Lab Reference Area.

A listing of each of the HELP files mentioned above, as well as of any other HELP file, can be obtained by doing the following:

@PRINT <HELP>name.HLP

#### DEC 20 - Additions to the Program Library

##### MACSUB - Machine Level Data Manipulation Subroutines (V50001)

MACSUB is a collection of FORTRAN-callable utility subroutines which allow a programmer to manipulate bits and characters within words, previously possible only from assembly language. MACSUB also allows monitor calls. For a complete list of the subroutines currently available and information on how to use them, consult the documentation in the Packard Lab Reference Area.

OPERATIONAL STATISTICS

CYBER 720

	<u>2/82</u>	<u>3/82</u>
Time System Available		
During Scheduled Hours		
(Percentage)		
Batch	99.9	98.3
INTERCOM	99.9	98.2
Mean Time Between		
Interruptions (Hours)		
Batch	399.7	38.2
INTERCOM	133.2	52.4

DECSYSTEM-20

	<u>2/82</u>	<u>3/82</u>
Time System Available		
During Scheduled Hours		
(Percentage)	99.1	99.5
Mean Time Between		
Interruptions		
(Hours)	191.7	72.4

PDP 11/34

	<u>2/82</u>	<u>3/82</u>
Time System Available		
During Scheduled Hours		
(Percentage)	100.0	100.0
Mean Time Between		
Interruptions		
(Hours)	388.8	442.5

USAGE STATISTICS

CYBER 720

	<u>2/82</u>	<u>3/82</u>
BATCH -		
Jobs Processed	40,498	42,427
Central Site	20,910	20,214
INTERCOM -		
Terminal Sessions	15,301	21,123
Terminal Connect Hours	8,272	14,182
CPU Hours - Batch	171.6	225.1
- INTERCOM	58.5	113.3

DECSYSTEM-20

	<u>2/82</u>	<u>3/82</u>
Terminal Sessions	23,566	25,499
Terminal Connect Hours	8,758	10,948
CPU Hours - All Jobs	162.8	172.6

PDP 11/34

	<u>2/82</u>	<u>3/82</u>
Terminal Connect Hours	633	862
CPU Hours	47.9	51.7

USER SERVICES EXTERNAL REPORT

MAILING LIST

- ADD my name to the mailing list
- DELETE my name (include mailing label or complete address)
- CHANGE my address (list both old and new addresses and include Zip Code)

CAMPUS

OFF-CAMPUS

NAME: _____	NAME: _____
DEPT.: _____	ADDRESS: _____
BLDG.: _____	ROOM: _____
	ZIP CODE: _____

RETURN TO:    Lehigh University  
                  Computing Center  
                  RM. 115 Packard Lab, Bldg. 19  
                  Bethlehem, PA 18015