



University Computer Center Newsletter

UNIVERSITY COMPUTER CENTER

UNIVERSITY OF MINNESOTA-TWIN CITIES

MINNEAPOLIS, MINNESOTA 55455

contents

LIBRARY CHANGES AND ADDITIONS	p. 58
M77 libraries and MINNLIB, MEXPLOR and	
IMSL changes	
SPECIAL FORMS	p. 59
service initiates July 1	
PERFORMANCE MONITORING	p. 60
annual presentation on equipment	
performance	
SPSS 8.0	p. 63
improvements and additions summarized	
WRITEUPDATE	p. 63
our monthly feature on writeups	
BUSINESS DATA PRODUCTS	p. 63
increased consulting hours	
WONDERFUL WORLD OF COLOR	p. 64
new video tapes	
MICROCOSM	p. 66
photo visit to last month's conference;	
Terak keyboard modification; July	
workshop in Morris	
PRELIMINARY SURVEY RESPONSES	p. 68
some comments on our first few responses	
SHORT COURSES	p. 69
STATISTICS	p. 70
OPERATIONS	p. 71
PHONE NUMBERS	p. 72

DOWN

UP

Lauderdale	0400 FRI(7/4)	1000 SAT(7/5)
ExpEng	2400 THU(7/3)	1000 SAT(7/5)

return your 1980 survey

return your electrostatic
plotter survey!

UCC newsletter

Volume 14

Number 6

June, 1980

Director: Peter C. Patton

Editor : Naomi Miner

Comments about the content of this newsletter, or suggestions for changes may be directed to the editor, 235a Experimental Engineering, or call 612/373-7744.

The University of Minnesota adheres to the principle that all persons shall have equal opportunity and access to facilities in any phase of University activity without regard to race, creed, color, sex, national origin or handicap.

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hardware dividends still available

library changes and additions

As of June 15, you can use UCC libraries on the Cyber 74, 172 and 170-720 with M77. The appropriate statement is:

```
FETCH,library/V=M77.
```

where library may be MINNLIB, IMSL, EISPACK, TEKLIB, HTEKLIB, UTEKLIB, CALCOMP, ALMAP or SIMPLX. The FUNPACK, BESPAC, MEXPLOR, BSPLINE and YSMPLIB libraries are available only on the Cyber 74 and 172.

See WRITEUP(LIBSET) for background information on libraries. For more information on a particular library, see WRITEUP(LIBINDEX) or the User Manual Supplement, Guide to User Libraries.

M. Frisch, 376-1636

MINNLIB changes

The following changes are being made to the FORTRAN libraries on June 15.

CHSQ internal error value made smaller.

CNTOUR recompiled with latest compilers; no change to code.

FINV internal error value made smaller.

FREQDSN recompiled with latest FTN; no change to code.

MEANVAR recompiled with latest FTN; no change to code.

MERGE2 recompiled with latest FTN; no change to code.

MERGE4 recompiled with latest FTN; no change to code.

MXMOV error message corrected.

NORMAL corrected an error that caused overrun of the random number array and a slightly incorrect sequence. THIS CORRECTION HAS CHANGED THE RANDOM NUMBER SEQUENCE IN THIS VERSION OF NORMAL.

NUMBER recompiled with latest compilers; no change to code.

PLOTPAC an error with SYMLOT has been corrected. Additions have been made to conform to latest documentation.

PLOT3D recompiled with latest compilers; no change to code.

POLYGN recompiled with latest FTN; no change to code.

PRNPLOT ! character changed to ^ character.

PROCER corrected a problem with FTN when no message should be printed.

PROCTLX corrected a problem with a common block that generated a loader error when used with MNF.

QRSYM internal error value made smaller.

QSORT corrected occasional error when two words are being sorted.

RAN2F recompiled with latest FTN; no change to code.

RK improved error checking plus changes to handle special cases.

SCLPLT ! character changed to ^ character.

SYMSOLU will check for attempts to divide by zero.

SYMSOLV will check for attempts to divide by zero.

VTHICK new routine added; described in latest PLOTPAC documentation.

XCEINT3 recompiled with latest FTN; no change to code.

other library changes

SHOW MEXPLOR library routine corrected to use XPAND2 instead of XPAND.

UERTST moved from IMSL to IOL libraries.

MSUIO several system routines were replaced by their current versions from the SYSLIB library. This corrects a problem with nonfatal loader error messages. Since all the routines are upward compatible, nothing else will be affected.

M. Frisch, 376-1636

special forms

Beginning July 1, 1980, we will provide a number of special forms for user output, including mailing labels and 8 1/2 x 11" paper. Additionally, service for user provided forms is being expanded and users will be able to request that cards punched on our on-line punch be interpreted before being returned. We encourage you to try those services that are of interest to you and believe that you will find them to be cost-effective when compared to similar services available elsewhere.

Special forms and card interpretation are requested by using the forms code (FC) parameter on the ROUTE control statement. The remainder of this article describes the types of forms available and outlines the procedures involved and the costs for these services.

In general there are two kinds of forms, user supplied and UCC supplied. User supplied forms are specialized forms, such as letterheads, non-standard labels, or other forms whose use is limited to one or a few users. Users are expected to obtain these forms and can submit the forms with a batch job and a special request slip requesting that the output be printed on the supplied forms. We recommend this procedure for forms that are used very infrequently (fewer than four times a year) and for forms which are used for only a short period of time (less than three months).

Another way to use special forms is to arrange in advance to store a supply of forms at Lauderdale and assign a unique forms code to the form. All you need do then is route the output file using the assigned forms code and the proper form will be mounted for the job.

We will be stocking other forms which are determined to be of interest to a broad range of users in addition to the default output forms. You can have your output printed on the desired form by routing your output file with the appropriate forms code. See the summary below to find out which special forms we supply.

Charges for special forms will include a setup charge (based on form size, format tape requirements, and ribbon quality requirements) and a per page charge (based on forms cost, personnel costs and maintenance and other costs). Card interpretation charges will include a setup (minimum) charge and a charge per 1,000 cards or portion thereof in excess of the amount covered by the minimum charge. A summary of forms information including charges appears below.

If you wish to print an output file on 8 1/2x11" paper and pick it up at Experimental Engineering, you should route the output file as follows:

ROUTE,OUTPUT,TID=BC,DC=LP,FC=AH,BIN=*EA.

If you wish to copy a mailing list to 9-line labels and pick up the output in bin 50 at Lauderdale, you should route the output file as follows:

ROUTE,OUTPUT,TID=BC,DC=LP,FC=AL,BIN=50.

Suppose you wish to copy an output file to 4-part paper which you are supplying. You submit a batch deck with a special request slip (indicating on the slip that the output is to go on the forms supplied) and the forms at Lauderdale or at a location where our shuttle service makes pickups. Assume, for this example, that the deck and forms are submitted at the Experimental Engineering I/O station and that you want the output to be returned to the alphabetized routed output bins at Experimental. Your route statement should look like the following:

ROUTE,OUTPUT,TID=BC,DC=LP,FC=ZZ,BIN=*EA.

It is important that you format your output file to suit the form requested. It is also important that user provided forms be compatible with our hardware. WRITEUP(FORMS) has more information regarding these concerns. Programming assistance for jobs using special forms may be arranged with our Professional Services Division.

We are interested in your comments and suggestions regarding these services. If you have comments or questions call

J. Larson, 373-7538.

CODE	DESCRIPTION	SETUP	UNIT CHARGE	COMMENTS
AA	Back (unlined side) of default (14 7/8" X 11") form	\$3.00	3¢/Page	
AD	2 Part, Carbonless, 14 7/8" X 11"	\$3.00	4¢/Page	Alternating 1/2" green/white barred background
AH	1 Part, 9 7/8" X 11"	\$4.00	3¢/Page	Final size, 8 1/2" x 11"
AL	Mailing Labels 1 7/16" X 4"	\$5.00	8¢/Page	9 Line label at 6 LPI
AM	Mailing Labels 15/16" X 3 1/2"	\$4.00	6¢/Page	6 Line label at 6 LPI
AP	Punched Cards to be Interpreted	\$4.00	2.00/1000 cards if over 2000 cards	
Assigned	Any User Supplied Form	Variable	2¢/Page	
ZZ	Any User Supplied Form	\$5.00	2¢/Page	

performance monitoring

At this time each year, we customarily present data on the current performance of the Cyber 74/172 system for a selected busy day in April or May. Performance monitoring helps us plan for new growth, monitor current usage and analyze how well the current equipment configuration performs.

So that you can see each machine's performance on that specific day, six full-page graphs showing data for each machine are condensed onto the next two pages. The bottom axis of each graph gives the time of day from 7:30 AM on May 12 to 3:30 AM on May 13 in 12-minute intervals. The vertical axes represent:

1) Number of interactive terminals logged into the system; the - symbols represent minimum and * symbols the maximum terminals for that time interval.

2) The total percentage of central processor unit (CPU) utilization. The S symbols represent the percentage of CPU dedicated to system overhead, which includes RJE and MIRJE interactions and monitoring of Central Memory allocation and Magnetic Tape functions. The * symbols show the CPU power delivered to user jobs and sessions during that interval.

3) Average number of free pool Peripheral Processing Units (PPU's). Each Cyber system contains small processors (PPU's). Some are dedicated to system tasks (such as driving timesharing and remote batch controllers and the operator display console); the remaining PPU's are allocated to a pool that any user or system task can draw from. Of the 14 PPU's on the Cyber 74, 5 are dedicated and 9 are placed in the pool. Of the 10 PPU's on the Cyber 172, only 4 are dedicated and thus 6 are placed in the pool.

4) Central Memory available for user jobs. Of the 400k octal control memory on the Cyber 74, 310k octal is available for user jobs. Of the 600k octal central memory on the Cyber 172, 510k octal is available for users.

5) Response time for medium (20 to 50k octal) jobs in seconds. This response time is the measured time for an interactive job from the instant that the user presses the carriage return until the system starts to roll in the interactive job. For our machines an additional 100 to 250 milliseconds (.1 to .25 seconds) must be added for completion of the rolling in and for the system to start working on that job.

6) Response time for large (greater than 50k octal) jobs in seconds. (See notes under 5).

Our analysis of these graphs points out that:

1) There is an inverse relation between CPU utilization and the amount of memory available to allocate to users. In addition, the Cyber 74 is definitely memory-bound for large periods during the day.

2) There is an inverse relation between the number of interactive users and the number of free pool PPU's to allocate. There is a weaker inverse relationship between interactive terminals and allocatable central memory.

3) Response times are better for both medium and large job timesharing interactions, if surplus central memory can be allocated. Since central memory is a heavily used resource on the Cyber 74, response time of 1-2 seconds for medium jobs rises to 4-6 seconds for large jobs. Therefore we limit interactive field length for the Cyber 74 to a maximum of 61k octal so users still may obtain acceptable response times. Since we are looking at the busiest day (so far) in April or May this year, we can assume that on a more representative day a response time of 2-3 seconds on the Cyber 74 during peak periods. Contrasting the 172 to the 74, both medium and large users experienced .8 to 1.5 second response time.

4) The Cyber 74 and Cyber 172 response time graphs have isolated single intervals of abnormally long response times. Our analysis of the Cyber 74 showed that the 23:00 hour intervals were due to the activation of the DELAY (PO) job queue. In order to eliminate these poor response times we will limit the number of DELAY priority jobs in the system at one time, as we already do for the NOFRILLS job queue. The unusually long response time on the Cyber 172 was caused by the unavailability of a PPU. To alleviate this condition we plan to put two faster disk controllers onto the Cyber 172 in the month of June. These controllers for the fixed module disks will return a PPU back to the pool more speedily since they transfer data 33% faster than do the current ones on the 172. In addition, we will decrease the number of pool PPU's that can be assigned to one user's task from four to three.

In last year's performance monitoring article the number of interactive jobs, their average size and time to roll were presented for the prime hours of 14:30-16:30 Monday, April 23, 1979. Data in the same categories are presented this year for the period 13:50 to 15:50 on Monday, May 12, 1980.

			Ave. PRU			
Date	Cyber	Rolls	Length	Time	Users	*
-----	-----	-----	-----	-----	-----	-----
23Apr79	74	9,422	70.8	.1905	33	2.38
23Apr79	172	17,229	125.3	.1891	56	2.56
12May80	74	12,146	92.4	.2048	37	2.74
12May80	172	20,820	110.4	.1423	67	2.59

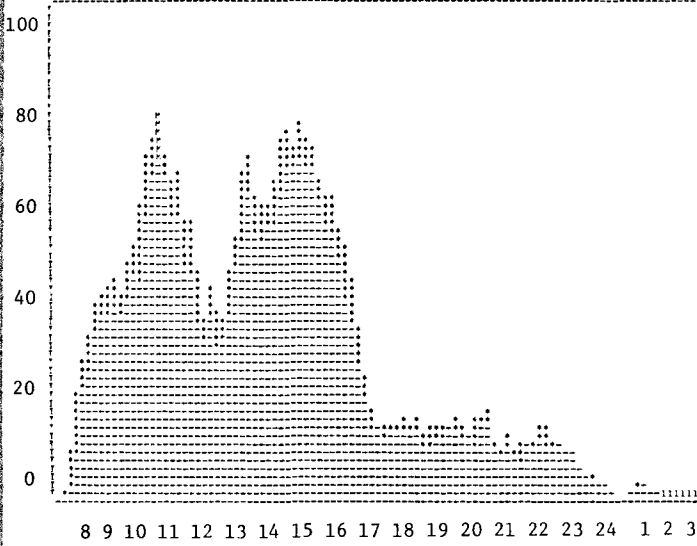
* Users Rolls/User/Minute

The user "happiness" index of rolls/user/minutes is above the 2.5 that we have empirically determined to be needed by interactive users on our Cyber systems. Two rolls or less per minute has meant unhappy users.

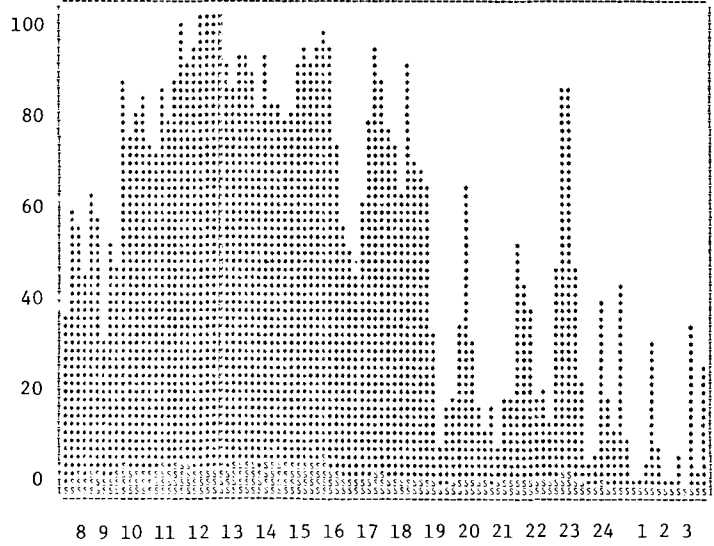
L. A. Liddiard, 373-5239

CYBER 172 PERFORMANCE STATISTICS FOR MAY 12, 1980

NUMBER OF INTERACTIVE TERMINALS

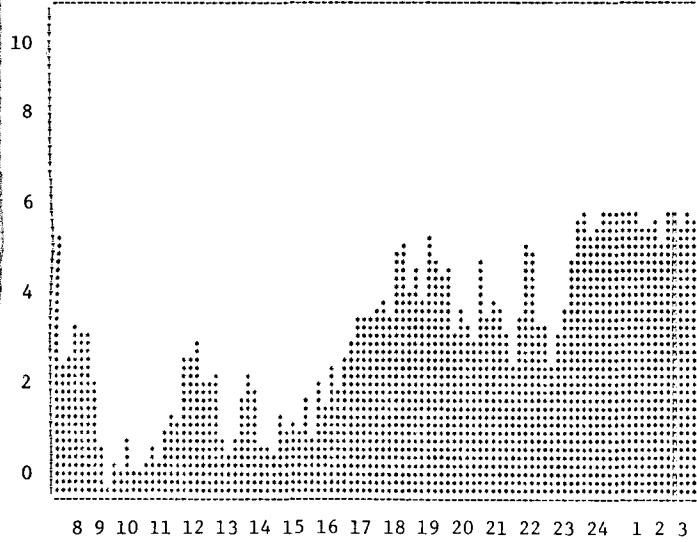


PERCENTAGE CPU UTILIZATION

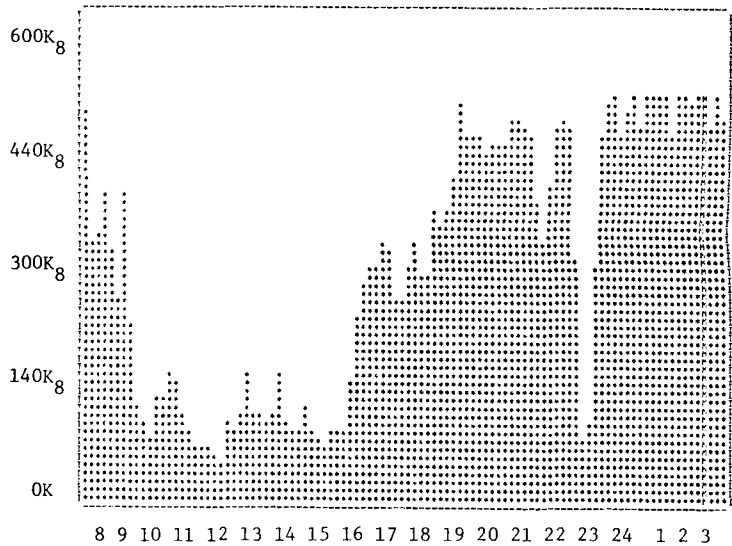


NUMBER OF FREE POOL PPU'S

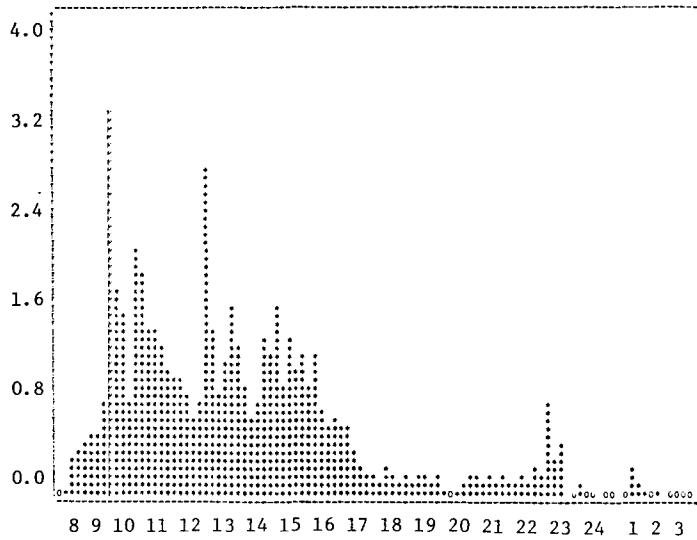
P CHARACTER INDICATES MAXIMUM COLUMN FOR THIS GRAPH
 P23 = 0.0 P17 = 0.0



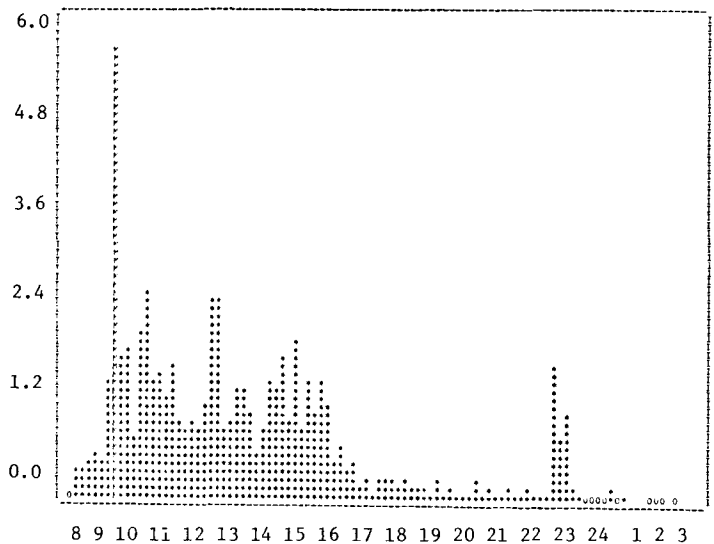
CENTRAL MEMORY AVAILABLE TO ALLOCATE TO USER JOBS



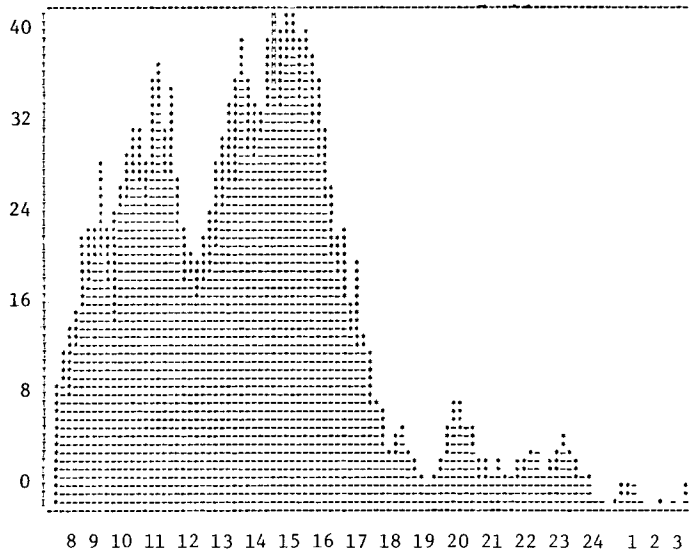
RESPONSE TIME FOR MEDIUM JOBS IN SECONDS



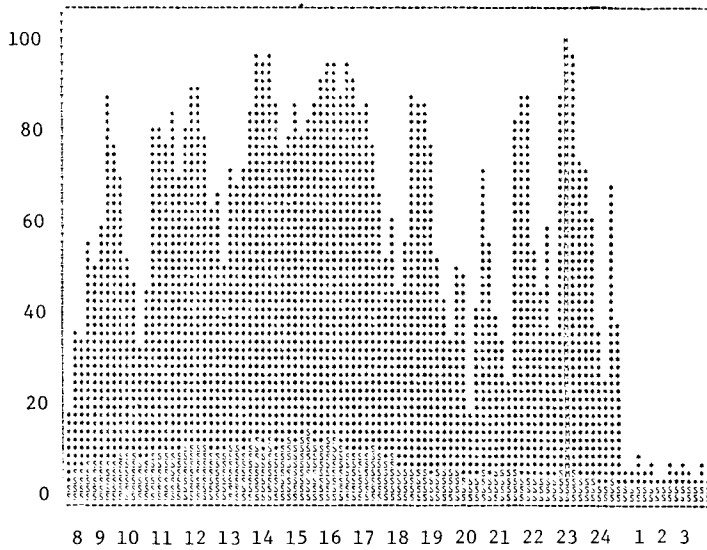
RESPONSE TIME FOR LARGE JOBS IN SECONDS



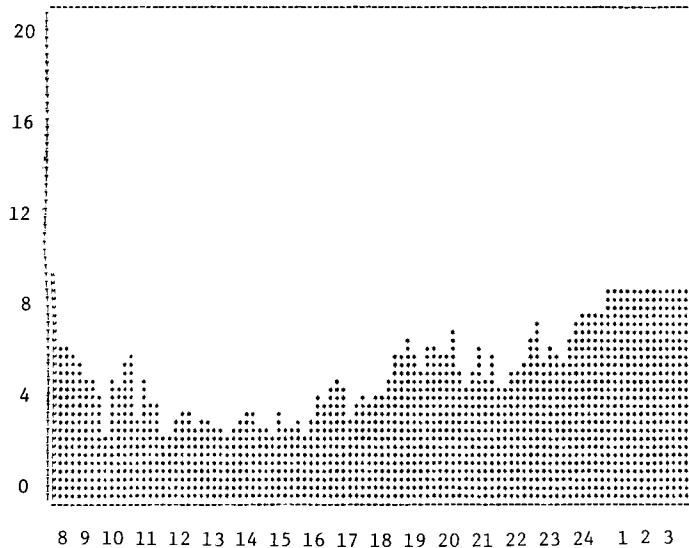
NUMBER OF INTERACTIVE TERMINALS



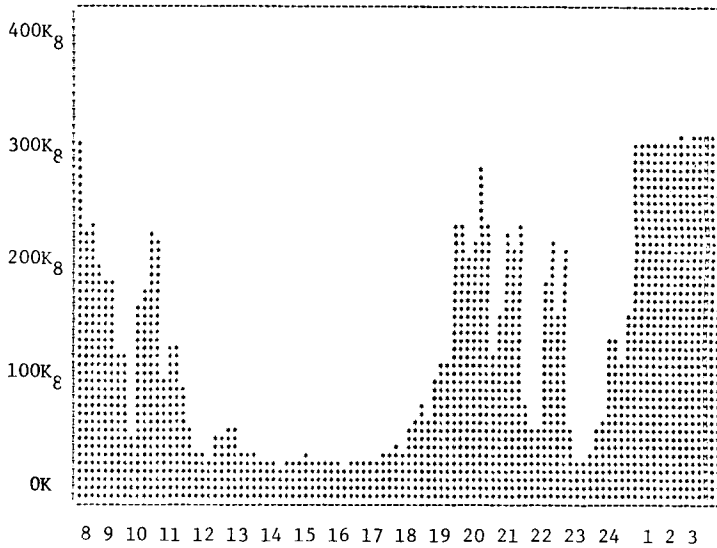
PERCENTAGE CPU UTILIZATION



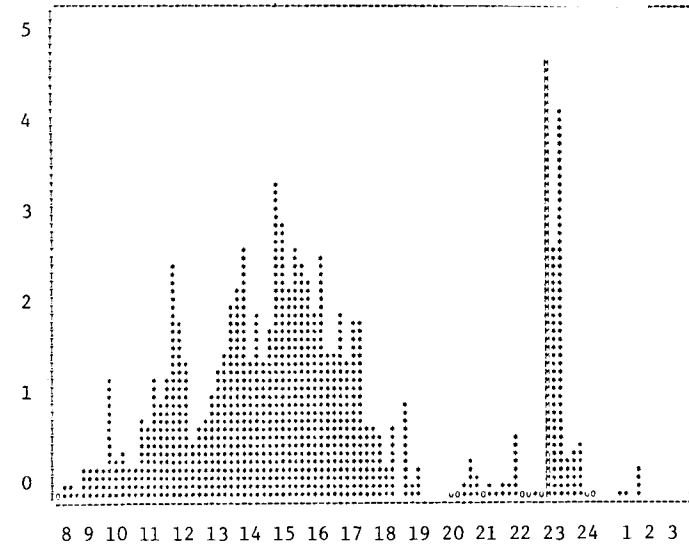
NUMBER OF FREE POOL PPU'S



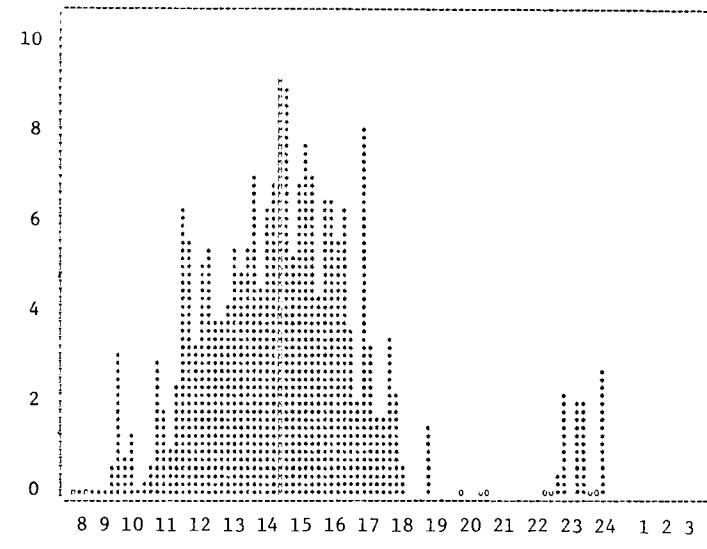
CENTRAL MEMORY AVAILABLE TO ALLOCATE TO USER JOBS



RESPONSE TIME FOR MEDIUM JOBS IN SECONDS



RESPONSE TIME FOR LARGE JOBS IN SECONDS



SPSS 8.0

SPSS Version 8.0 is now the current version on all systems. Version 7.0 can still be accessed with the following control statements:

```
PAST(SPSS)
SPSS.
```

Version 8.0 includes the following changes to existing features: a completely rewritten discriminant procedure; a different treatment of domain errors when they occur in transformation statements; a change in the RUNS test and output format for some tests in the NPAR test procedure; and different defaults in the reliability procedure.

Improvements and additions in Version 8.0 include: abbreviated batch and online output; additional statistics and a new option for the ANOVA procedure, and five new options for the Crosstabs procedure.

DO IF, ELSE, ELSE IF, and END IF control statements permitting conditional execution of a series of data transformations have been implemented; three new options have been added to FREQUENCIES; a new STATISTICS has been added to PLOT.

A new procedure, called REPORT, computes a number of summary statistics for subpopulations and prints the output in a user-specified format.

These changes, additions and the new procedures in SPSS are documented in SPSS-6000 Version 8.0 Update and in SPSS Report. Documentation is available at the Computer Cupboard and at the Minnesota Book Center in Williamson Hall. For questions, call

S. P. Yen, 373-4886

writeupdate

While there were not many changes to WRITEUPS in May, a few that did occur are worthy of note. Here is a partial list.

ARCNOTE (74/172) - This gives a description of problems you will have encountered if you used FUTURE(ARCHIVE) (then version 4.1) from April 29 to May 1. The problems are complex and serious, so read this if you think you may have used this control statement during this period.

CLASSES (ALL) - Enter WRITEUP(CLASSES=FUTURE) for the schedule of short courses to be offered this summer.

DOCLIST (ALL) - This gives you a complete list of the documentation for our systems, including vendor-supplied publications. Where applicable, current prices are also included.

LIBSET (74/172) - Although this writeup describing the changes to the FORTRAN subprogram libraries has been up for a couple of months, it has recently been updated to

include important information on the use of the libraries with the M77 compiler.

If you are accessing a writeup from an interactive terminal, you may want to make use of the scrolling feature of the utility. Simply attach the parameter "SR" to your WRITEUP control statement to print one page of text at a time. For example,

```
WRITEUP(INDEX/SR)
```

J. Jaynes, 376-5262

business data products

In an effort to enhance its services, our Business Data Products department has increased consulting hours in the afternoon. The new hours are:

Monday through Friday, 10:00-11:00 AM
1:00- 3:00 PM

Please call 376-1761 for telephone consulting.

J. Cosgrove, 376-1761

wonderful world of color

The University Computer Center has been producing instructional video tapes for several years. Until now, they have been produced with rather primitive equipment. Although the films have had good content and organization, technical deficiencies and black-and-white film have detracted from their quality. During the last six months we have been producing a whole new generation of instructional video tapes. With the help of the Department of Media Resources, an arm of Continuing Education and Extension, we have produced five new, high quality (in terms of content and production technique), color video tapes. Some of the new tapes are replacements for old ones, and the rest cover new topics.

What follows are titles, synopses, dates and running times of the video tapes we now offer. Note that the new offerings are included in the list and old tapes replaced by new ones have been stricken.

INTERACTIVE PROCESSING: PART 1 - OR WHAT REALLY HAPPENS WHEN YOU USE A TERMINAL (1980, color, 53 minutes). Replaces "Introduction to Timesharing: Part 1." Introduces a beginning student to interactive processing at the University Computer Center. Tape includes tour of MERITSS computer system, demonstration/instruction on use of several types of terminals; logging into the computer system; and running games to familiarize students with terminals.

A VIDEO TOUR: LOOKING AT UCC COMPUTER SYSTEMS (1980, color, 37 minutes). Replaces "A Video Tour of the Cyber 74." Viewer is taken on an in-depth tour of the computer systems, in particular, the Cyber 172 and its peripheral equipment. This tape gives the facts and figures about each piece of equipment.

SPSS: PART 1 BASIC COMMANDS FOR A SIMPLE JOB (1980, color, 55 minutes). Replaces "Introduction to SPSS, Part 1." Introduces student to the statistical packages for the Social Sciences using our computer systems. The film discusses the general format of the SPSS statement, and outlines statements for running a simple job. A complete example of a job is presented.

SPSS: PART 2 DATA MANIPULATION STATEMENTS (1980, color, 40 minutes). Explains most of the SPSS statements for selecting data, rejecting data, changing data, creating data, and grouping data. Assumes basic knowledge of SPSS.

SPSS: PART 3 USING SPSS SYSTEM FILES (1980, color, 50 minutes). Explains how to use SPSS system files and how they interface with our operating system. Topics include creating, adding data to, changing data in and, writing SPSS files.

THE UNIVAC 1004 RJE TERMINAL - ITS OPERATION (1978, black and white, 20 minutes). Instruction/demonstration of the different aspects of operating a 1004 RJE terminal - powering up/down, dial up procedure, card reading, clearing card jams, paper changing, and problem procedures.

THE HOW-TO'S OF KEYPUNCHING (1979, black and white, 45 minutes). Instruction/demonstration on the operation of the 029 keypunch. The tape does not include instruction on use of programmed keypunching or verifying.

INTRODUCTION TO DATA BASE MANAGEMENT SYSTEMS AND SYSTEM 2000 (1978, black and white, 28 minutes). The tape covers the general concept of data base management systems and their uses and structure. An overview of System 2000 is presented discussing its structure modules and capabilities. A CRT demonstration shows how to define and create a System 2000 data base, query it, modify it, back it up on tape, and generate reports about it.

UNIVERSITY OF MINNESOTA COMPUTER SYSTEM CONFIGURATION (1978, black and white, 45 minutes). A discussion of our operating system including why it operates as it does; what the job queues are; and how the priority system works. The movement of a job through the system and the queues are illustrated.

You can view these tapes in the Learning Resources centers on campus at: Walter Library Learning Resource Center, 204a Walter Library; Biomedical Learning Resources Center, 525 Diehl Hall; St. Paul Instructional Resources Center, Temporary South of Coffey; Engineering Library, 128 Lind Hall. You may find the tapes on the Duluth, Morris, Crookston, and Waseca campuses. You should check with your local computer center for specific tapes available and viewing locations. The video tape list and viewing location information is also available on WRITEUP(VIDEO).

If you want your own copy of a video tape, we can provide most common video tape formats. The fees for copying are listed in a table below.

Please specify the following when requesting copies: video tape format, color or black and white, number of copies per title, titles of tapes to be copied, and address for mailing and for billing (including fee for copying, tape costs and postage). You may enclose the blank tapes for your copies with your request, or we will sell you the necessary tapes. The following table lists the prices for 3/4" and 1/2" formats.

The following topics are possible subjects of future video tapes: SPSS ON-LINE, INTERACTIVE PROCESSING: PART II, USING THE UCSD PASCAL SYSTEM, SPECIAL COMPUTING EQUIPMENT, USING THE ARCHIVE UTILITY. If you have suggestions for future topics, or about the current video tape offerings, or questions, call or write

L. Fetcher, 376-1637

Television Videotape Duplication 1979-80 Price List

Top row of each category is University rate.

Bottom row of each category is non-University rate.

Prices are subject to change without notice.

1980-81 prices will be higher and will be published when we receive them.

	SINGLE COPY			TWO COPIES		
	1/2 hr.	3/4 hr.	1 hr.	1/2 hr.	3/4 hr.	1 hr.
2" QUAD/1" Type C to 2" QUAD/1" Type C	15.61	23.41	31.22	18.72	28.08	37.44
	22.17	33.24	44.33	26.58	39.87	53.16
HELICAL*to 2" QUAD/1" Type Cw/TBC**	14.28	21.42	28.55	17.38	26.07	34.77
	20.28	30.42	40.54	24.68	37.02	49.37
2" QUAD/1" Type C to HELICAL	13.40	20.10	26.80	14.08	21.12	28.16
	19.03	28.54	38.06	20.00	30.00	39.99
HELICAL to HELICAL	7.78	11.67	15.55	8.66	12.89	16.91
	11.05	16.57	22.08	12.00	18.00	24.01
FILM to 2" QUAD/1" Type C	15.05	22.58	30.10	18.16	27.24	36.32
	21.07	32.06	42.74	25.78	38.67	51.57
FILM to HELICAL	9.56	14.34	19.30	10.34	15.51	20.66
	13.58	20.36	27.41	14.68	22.02	29.34

* Helical Formats=1/2" reel-to-reel; 1/2" Cassette (Beta VHS); 3/4" U-Matic; 1" old Ampex

** Time Base Corrector

Video Tape Purchase Prices

	30-minute	60-minute	120-minute
3/4" U-Matic	\$17.22	\$24.24	
	24.45	34.32	
1/2" Reel-to-Reel	10.45	17.82	
	14.84	25.30	
1/2" Beta-Max	10.52	13.97	
	14.84	19.84	
1/2" VHS	11.12	15.40	\$21.38
	15.79	21.87	30.36

microcosm

University Computer Services held its annual microcomputer conference on May 14, 1980 at the Earle Brown center on the St. Paul campus.

In the morning, Michael Collins talked about the history of microcomputers and Michael Timmerman gave a talk on applications of microcomputers describing University support services for micro users. A brief presentation comparing the Terak and the Apple II was followed by a question and answer period.

Demonstration sessions were held in the afternoon on Apple peripherals, composing music on the Apple and playing it through a stereo, Apple graphics, nutrition applications, and agri-business applications. The Terak was used in demonstrations of technical word processing, prose text formatting and engineering graphics.

M. I. Crow, 373-7744

Terak keyboard

Many Terak microcomputers have too rapid a keyboard repeat rate for the software. Engineering Services has a modification that allows you to vary the repeat rate, eliminating this problem.

You should note that Terak has informed us that this modification voids the 1-year warranty. We will perform the field change for \$55.00 on systems covered by a UCC Field Engineering service agreement. If you do not have a service agreement, we can give you documentation for the change. If this is of interest to you, call

D. Parkes, 376-7067

workshop

The University of Minnesota, Morris Computer Services Center will be presenting a one week workshop on the use of the Apple II microcomputer. The workshop will be conducted July 7 through July 11 in Camden 14 from 8:00 AM to 4:30 PM. The workshop will be taught by Dr. Van Gooch, Assistant Professor of Biology. Dr. Gooch has had experience with an Apple II in both the classroom and the research laboratory. The workshop will be particularly suitable for faculty members in the sciences, but it will be open to any University of Minnesota faculty member. There will be no charge for the workshop. They hope to have one Apple microcomputer for every two participants. For further information and an application form, write:

Dr. A. A. Lopez,
Director,
Computer Services Center
University of Minnesota, Morris
14 Camden Hall
Morris, Minnesota 56267



l.-r., Dr. T. Hoffman, Dr. F. Verbrugge and Dr. M. Luker at Terak demonstration.



l.-r., Bob Olson, Sharon Folk, Bud Crewson at nutrition demonstration.



l.-r., Sharon Folk, unidentified participant, Mark Zierdt watching Apple drive Hplot and other equipment.



l.-r., Mike Frisch, Tom Hoffman, Steve Bruell, trying out technical text processing on the Terak. See last month's Newsletter for more information.



Dorothy Gross and the musical Apple.



The Earle Brown center where the conference was held.

photos by R. Hotchkiss

preliminary survey responses

In last month's newsletter we printed our 1980 Services Survey. We asked you what computation needs you would like to see us provide and what you like or dislike about our services. In order to encourage additional response to the survey and to provide a preliminary analysis, we have tabulated the first twenty-five surveys. Brief summaries of the response to the three questions as well as four preliminary UCC responses to the survey are presented below.

In the replies only two areas were specified more than once: longer hours on weekends for interactive use and more evening and weekend hours for a West Bank facility. Single answers are grouped in the following categories.

computation needs not currently provided SOFTWARE AND HARDWARE

- 1) A student-oriented implementation of FORTRAN 77.
- 2) A student-oriented implementation of RPG II.
- 3) Full ASCII character processing in FORTRAN.
- 4) A more sophisticated version of Pascal with string manipulation and random access file capability.
- 5) Basic software that is upward-compatible at source and binary level so that production programs continue running.
- 6) SCSS to replace SPSS On-line.
- 7) Better documentation for MODIFY and plotting packages.

TERMINALS AND COMPUTER OUTPUT

- 1) Interactive terminals for non-student users.
- 2) Graphic terminals in Instructional labs.
- 3) More micro terminals and graphics on the West Bank.
- 4) An APL terminal on the St. Paul campus.

GENERAL COMMENTS

- 1) Faster computer for numerical hydrodynamics.
- 2) Large grants for large-scale scientific computing, easily obtained before but difficult to get under new policies.
- 3) A state-of-the-art computer and lower cost computation.

services particularly liked

In this group, the HELP-line was named in nine replies and documentation and WRITEUPS were named in seven replies. At least four replies were received in each of the following: consultants, short courses, stable and reliable hardware and system, competitive pricing/low cost, and friendliness. These users view our service orientation very positively. Single answers are grouped as follows.

SOFTWARE AND HARDWARE

- 1) Software developed at the University
- 2) XEDIT
- 3) Wide assortment of high-quality languages
- 4) DICOMED processing

SERVICE

- 1) Good hours
- 2) Fast response time compared to another university
- 3) Good turnaround time

- 4) Microcomputer group
- 5) Referral to higher level if consultant is unable to answer question
- 6) Helpfulness of the account staff
- 7) Grants for thesis work
- 8) SSRFC consultant

services particularly disliked

In this group the UNIVAC 1004's used as remote batch terminals tied with keypunch unreliability and downtime were mentioned as areas disliked by at least three users. At least two different replies mentioned each of the following areas: turnaround for batch jobs at Lauderdale and Experimental Engineering sites; the hordes of users in I/O areas at the end of the quarter; too little consulting and not enough weekend and night hours at West Bank sites; and system changes which require additional maintenance of "production" (fully debugged programs one expects to run problem free for the life of the current machine) software. Single answers are grouped in the following categories:

FUNDING AND ACCOUNTING

- 1) Lack of complete funding for large, deserving, academic research projects, even those that use NOFRILLS service exclusively.
- 2) Confusing grant information.
- 3) "Supporting and subsidizing all those students with my research money."

SERVICE

- 1) Out-of-date documentation including the APL manual at St. Paul and manuals at West Bank and Classroom Office Building terminal centers.
- 2) Incorrect information supplied by consultant who did not refer to someone knowing the answer.
- 3) Difficulty of getting help with infrequently used subroutines.
- 4) Terrible CDC documentation (not UCC's fault but UCC did choose the manufacturer).

HARDWARE

- 1) Difficulty of using non-UCC-produced magnetic tapes.
- 2) Magnetic tape compatibility and readability problems.
- 3) Busy signals on a SUPPIO service number.
- 4) Small number of interactive terminals.

response

We are already working to solve some of the problems noted above. Below, four responses to the survey are discussed in detail. Next month we will address additional topics and do a final tabulation of the 1980 survey.

RJE

According to our maintenance data the UNIVAC 1004's have performed as well or better than other RJE terminals of the seventies' era, but their age is starting to show and repair parts are getting harder to find. We have been developing a new RJE for the past year and a half. The first new RJE is currently installed at Lauderdale on a trial basis, the second one will soon be at Experimental Engineering, and an additional four are scheduled

more

survey con't

to replace UNIVAC 1004's before July 1, 1981. Several of these will be Terak-based and will eventually allow floppy disk transmission of information to the Cyber. The plan of replacing four to five UNIVAC 1004 remote job entry stations per year depends on funding. We do not plan to replace those sites that have low usage, but high volume stations will be switched from 2400 baud to 4800 baud service, which will improve throughput by 60%.

WEST BANK

To provide longer evening and weekend hours, we are working with the West Bank Computer Center and Wilson Library to put one of the new RJE's, several Apple II microcomputers, and a complete instructional lab in the library which would provide those hours along with an up-to-date facility.

LIKES

We thank you for the compliments on the HELP-line and on documentation. This praise helps alleviate the frustration of trying to answer fifty to sixty calls during a four-hour stint on the Help-line. Rereading documentation for the fourth or fifth time for errors, readability and content is another needful but tiresome job, but those compliments make it seem worthwhile. All of the system and operation personnel have striven even more in the past three years to provide reliable and stable software and hardware systems.

RESEARCH USE

We knew six months ago that changes to the grants policy by higher University administrators would enable more users to get aid but would drastically reduce aid to large users. To reduce the impact on large users, we instituted the NOFRILLS (Pl) priority in February 1980. The savings to be gained by using Pl in effect give large users a 50% subsidy. In addition, all grant users who had been funded under federal or state contracts at a specific ratio were continued at that ratio for the duration of the contract. In order to better handle those larger jobs, 65,000 additional words of memory were leased for the Cyber 172 system so that 37k octal jobs could be run at the NOFRILLS rate. Central administration requires us to provide services equal to our instructional funding. Thus instructional use is not subsidized by research money, but is paid for with real money by your legislature and by the University.

If these first survey replies have not addressed an area that you feel merits applause or criticism, return your own 1980 survey. Next month's newsletter will continue the discussion.

L. A. Liddiard, 373-5239

short courses

- ^ Introduction to UCC; 3:15-5pm, 19 June (th), Arch 15, RTF
- ^ NOS (system configuration); 3:15-5pm, 23 June (m), Arch 30, RTF
- ^ NOS (files/jobs); 3:15-5pm, 24 June-25 June (tw), Arch 30, RTF
- ^ NOS (permanent files); 3:15-5pm, 26 June (th), Arch 30, RTF
- ^ NOS (program execution); 3:15-5pm, 27 June (f), Arch 30, RTF
- ^ NOS (special topics); 3:15-5pm, 30 Jun-2 July (mw), Arch 30, RTF
- ^ Interactive System Commands; 3:15-5pm, 1 July-3 July (tth), Arch 30, RTF
- \$^Batch Introduction; 2:15-4pm, 1 July (t), Arch 45, MB
- \$ Introduction to System 2000; 3:15-5pm, 7 July-18 July (mwf), AmundH 154, JCC
- \$ SPSS (SPSS basics); 2:15-3:30, 7 July (m), Arch 25, BH
- \$ SPSS (data manipulation); 2:15-3:30, 8 July (t), Arch 25, BH
- \$ SPSS (SPSS files); 2:15-3:30, 9 July (w), Arch 25, BH
- \$ SPSS (On-Line); 2:15-3:30, 11 July (f), Arch 25, BH
- COBOL; 3:15-5pm, 7 July-30 July (mw), Arch 30, DR
- Checkpoint-Restart; 3:15-5pm, 8 July (t), Arch 15, TJH
- \$ System 2000 User Aids; 3:15-5pm, 15 July-17 July (tth), AmundH 158, BC
- \$ SIR; 3:15-5pm, 15 July-31 July (tth), Arch 45, JCC
- \$ System 2000/RW; 3:15-5pm, 21 July-25 July (mwf), AmundH 154, JCC
- \$ COBOL 5.2-5.3 Conversion; 3:15-5pm, 25 July (f), Arch 15, DR
- \$ System 2000/PLI; 3:15-5pm, 28 July-1 August (mwf), AmundH 154, SPN

Apple Pascal (UCSD Pascal),
 UCC Special Summer Course
 Registration required (no fee)
 Call 376-4276 (or 37 MICRO)

\$ Lecture; 9am-12noon, 23 June - 2 July (mwf), Ag Eng 102 (StP), ABM/MT

Lab; 9am-12noon, 24 June - 3 July (tth), Ag Eng 306 (StP), LF/MC

^ prerequisite for other, unmarked course.
 \$ change from first publication.

For more information about these short courses, see WRITEUP(CLASSES) or call
 Lincoln Fetcher, 376-1637

 BASIC courses for the Apple microcomputer will be given in June by MECC. For more information and registration forms, call 376-1122.

statistics

***PRODUCTION USAGE SUMMARIES: Cyber 74/172

	April, 1980	April, 1979
System resource units (SRU)	1,376,663 (1,758,129)	1,251,510 (1,539,868)
Batch jobs and MIRJE sessions	119,276 (130,148)	115,719 (125,855)
Total central processor (CP hours)	161/217 (192/311)	192/133 (208/216)
DELAY queue CP hours	38/41 (38/58)	66/22 (67/32)
Mass storage transfers (KPR)	459,843 (566,755)	379,869 (461,471)
Magnetic tape transfers (KPR)	10,998 (17,857)	7,029 (11,255)
Pages printed, charged from UCC	973,545 (1,101,353)	1,063,708 (1,162,706)
Cards punched	298,129 (339,183)	535,715 (560,953)
Microfilm frames produced	25,927 (479,746)	66,798 (451,442)
MIRJE terminal hours	15,142 (17,536)	12,004 (13,812)
Number of terminal sessions	37,550	28,479
Status plotting production (feet)	8,975	9,600
Tapes mounted	12,565	11,707
Average file storage (char)	2,991.7 million	2,049.0 million
Mean time between failures	42.4/56.6 hours	63.5/127.0
Available during scheduled hours	98.6/99.4 percent	98.3/ 99.7 percent

(totals in parentheses include staff development, accounting, and maintenance runs)

***DOWNTIME SUMMARY: May, 1980 (Column 1, Cyber 74 : Column 2, Cyber 172)

	0800-1800 M-F		other		total	
Total possible scheduled uptime hours	210.0	210.0	317.3	317.3	527.3	527.3
Total downtime hours (see Schedule A)	4.9	2.8	9.6	1.6	14.5	4.4
Total uptime hours	205.1	207.2	307.7	315.7	512.8	522.9
Uptime (percent)	97.7	98.7	97.0	99.5	97.3	99.2
Average downtime per occurrence (min)	36.5	24.1	115.0	32.7	66.7	26.7
Mean time between failures (hours)	26.3	30.0	63.5	105.8	40.6	52.7
Subsystem failures						
SUPIO	9	-	1	-	10	-
TELEX	0	1	0	0	0	1
EXPORT	8	-	0	-	8	-

Schedule A: downtime hours

	Number		Total hours		Average minutes	
(1) Preventive maintenance over-runs	0	0	0.0	0.0	0.0	0.0
(2) Software related problems	4	1	0.3	0.1	4.0	2.0
(3) Hardware related problems	7	7	13.8	4.0	118.1	34.1
(4) Indeterminate problems	1	1	0.2	0.2	13.0	10.0
(5) External Problems	1	1	0.2	0.2	12.0	15.0

***PRODUCTION USAGE SUMMARIES: Cyber 170-720 (MERITSS)

	April, 1980	April, 1979
Number of jobs run	213,281	210,402
Central processor hours	119	142
MERITSS terminal hours	30,033	26,053
Number of terminal sessions	67,586	56,041
Maximum number of simultaneous users	152	127
Average file storage (char)	524.9 million	369.2 million
Mean time between failures	59.3 hours	116.7 hours
Available during scheduled hours	98.8 percent	99.6 percent

operations

CYBER 74/172 OPERATING HOURS

CYBER 170-720 OPERATING HOURS

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S|                                     |$$$$$$$$$$$$$$$|
M|*|                               |<<<<<<<<<<<<<<<<<<<|
T|*****|                         |<<<<<<<<<<<<<<<<<<<|
W|*****|                         |<<<<<<<<<<<<<<<<<<<|
T|*****|                         |<<<<<<<<<<<<<<<<<<<|
F|*****|                         |<<<<<<<<<<<<<<<<<<<|
S|*****|*****|$$$$$$$$$$$$$$$|
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^         ^         ^         ^         ^
0100   0400   0800             1715      2400
  
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<<<<<< Lauderdale, ExpEng, NORMAL rate
 \$\$\$\$\$\$ Lauderdale, ExpEng, DELAY rate
 ***** Lauderdale only, DELAY rate

See WRITEUP(HOURS) for schedule of batch job pickup/delivery service.

TWIN CITIES CAMPUS PUBLIC REMOTE JOB ENTRY SITES

SITE	ID	SUPERVISOR	PHONE	*
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>>>East Bank<<<
ElectE 38 4V V. Zahhos      373-5346 2
Elth N640 4W D. Anderson    373-5827 2
ExpEng 130 4B I/O Coordinator 373-4596 1
ExpEng 130 4N I/O Coordinator 373-4596 1
ExpEng 130 3L I/O Coordinator 373-4596 1
FrontH    4E D. Schumacher   373-2740 1
KoltH S191 4Z              4
HS-A 1-752 4C L. Ellis      373-0331 1
MinMet 321 41 R. Larson     376-2668 3
Physics 69 44 L. Whitney    376-7627 3
SpaSci 134 43 A. Perandi    373-7881 1
TerrH W106 4I B. Hackett   373-6621 1
D388 Mayo 24 L. Croatt     373-7714 1
M39 MasonH 2D L. Croatt    373-7714 1
Zoology 314 4J E. Cushing   373-2232 1

>>>West Bank<<<
SocSci 167 4X D. Lund       373-3608 2
SocSci 1009 4K T. Kroening 373-0168 1

>>>St. Paul<<<
BioSci 257A 47 M. Simmons   373-1961 1
ClaOff 125G 48 C. Bingham   373-0988 3
McN H    42 G. Wahlert      373-0939 1
NorH 24   4G J. Colten     373-0990 1
NorH 24   40 J. Colten     373-0990 1

>>>Lauderdale<<<
User's Room 49 Secretary 373-4912 5
  
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*--indicates keypunches at each site. Additional keypunches in 131 ExpEng, 86 BlegH, 140 ExpEng, and 90 BlegH.

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S|                                     |>>>>>>>>>>>>>|
M|                               |>>>>>>>>>>>>>|
T|<>|                         |>>>>>>>>>>>>>|
W|<>|                         |>>>>>>>>>>>>>|
T|<>|                         |>>>>>>>>>>>>>|
F|<>|                         |>>>>>>>>>>>>>|
S|<>|                         |<<<<<<<<<<<<<<<<<<<|*****|
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^         ^         ^         ^         ^
0130      0730/0745       1600   1800       2400
  
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***** up, not attended
 <<<<<< up, attended

See WRITEUP(LABHOUR) for a schedule of open hours in the student computer laboratories.

TWIN CITIES INSTRUCTIONAL COMPUTER LABORATORIES

SITE	SUPERVISOR	PHONE	EQUIPMENT
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>>>East Bank<<<
CentH    R. Rickgarn   3-2289 TTY33(2)
ComH     C. Youngdale  3-2453 TTY43(1)
Dieh1H 535 N. Sauro    6-7005 CRT(2)
Elth 121, D. Anderson 3-5827 TTY33(6)
      125              Hazeltine(3)
                        Teleray(1)
FrontH   D. Schumacher 3-2740 TTY33(1)
HS-A 1-752 L. Ellis    3-0331 TTY33(4)
                        TTY43(2)
                        Teleray(1)
Lindh 25  M. Schneider 3-0137 CDC713(6)
                        Decwriter(5)
                        Tektronix4013(1)
                        Teleray(1)
                        TTY43(11)
MechE 308 D. Riley    3-0340 TTY33(4)
                        Teleray(3)
                        Decwriter(5)
SanfH    M. Kilbury   3-3434 TTY33(1)
TerrH    B. Hackett   3-3567 TTY33(1)
VincentH 4 W. Stenberg 3-2538 TTY33(2)
                        CDC713(2)
                        Decwriter(7)
                        Teleray(2)
WaLib 204* R. Estelle 3-2538 TTY43(10)
                        CRT(2)

>>>West Bank<<<
BlegH 140 D. Lund     3-3608 TTY43(13)
                        Teleray(1)
MdbH    R. Baker     3-9818 TTY33(1)
SocSci 167 D. Lund    3-3608 TTY33(5)
                        Teleray(3)
                        Decwriter(2)

>>>St. Paul<<<
ClaOff 125 C. Bingham 3-0988 TTY33(6)
                        Hazeltine(2)
                        Decwriter(4)

*for CAI use only
  
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phone numbers

Accounting	373-4548, 373-2521	Information, SICL	373-9751
Computer-Aided Instruction	376-2975	Information Systems	373-7878
Computer Hours (recorded message)	373-4927	Instructional Labs	373-5754
Computer Store	373-4877	Job Status, ExpEng (recorded message)	373-4994
Consulting		Lauderdale Operations	373-4920
HELP-line	376-5592	Lauderdale Services	373-7538
9 AM - 5 PM, Monday - Friday		Lauderdale Users' Room	373-4921
Business Data Products	376-1761	MECC, University	373-4573
10-11 AM and 1-2 PM, Monday - Friday		Microcomputers	376-4276
COBOL Language	373-4181	Microfilm Operator	373-4995
10-11 AM, Monday - Friday		Newsletter Subscription	373-7744
Statistics Packages	376-5062	Permanent File Restoration	376-5605
1-2 PM, Monday - Friday		Professional Services Division (PSD)	376-1764
System 2000	376-1761	Project Assistance	376-1764
10-11 AM and 1-2 PM, Monday - Friday		Program Librarian	376-1636
Microcomputers	376-4276	Programming Languages	376-7290
10-12 AM and 2-4 PM, Monday - Friday		Reference Room	373-7744
Contract Programming	376-1764	Remote Batch (RJE) Services	373-5754
Data Base Applications	373-7878	Short Courses	376-1637
Educational Services	376-3963	Shuttle Bus Service	376-3068
EDUNET Interface	373-7745	Tape Librarian and EBR Operator	373-4995
Equipment Purchase or Lease	376-8153	System Status (recorded message)	373-4927
Experimental Engineering I/O	373-4596	Technical Writing	373-2522
Field Engineering	376-7584	User-Numbers	
Graphics Software	376-1636	Instructional Batch	373-2521
HELP-line	376-5592	Instructional Timesharing	373-7745
9 AM - 5 PM, Monday - Friday		Research Batch	373-2521
HOURS-line (recorded message)	373-4927	Research Timesharing	373-2521
Information, Experimental Engineering	373-4360	User Services	373-4599
Information, Lauderdale	373-4912		

RETURN TO:

User Services
University Computer Center
227 Experimental Engineering
University of Minnesota
208 Union Street SE
Minneapolis, Minnesota 55455

UNIVERSITY ARCHIVES
11 WALTER LIBRARY
UNIVERSITY OF MINNESOTA
EAST BANK
117 PLEASANT STREET SE
MINNEAPOLIS

MN

55455