

MLW  
1/13/74

# University Computer Center newsletter

227 EXPERIMENTAL ENGINEERING  
UNIVERSITY OF MINNESOTA  
MINNEAPOLIS, MN 55455  
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## CDC 6600 USAGE FOR DECEMBER

Jobs run:	40,534
from ExpEng	29.2 %
from Lauderdale	15.2 %
from West Bank	12.6 %
from other remotes	38.0 %
for maintenance	5.0 %
Average times:	
on input queue	23.4 minutes
at control point	8.0 minutes
on output queue	6.1 minutes
printing	1.9 minutes

## DISK STORAGE USAGE ANALYSIS

The new user disk drive, UCC104, has been added to the system and once again UCC is ahead in the race against the paraphrased Parkinson's Law "Mass storage requests expand so as to fill the drives available." Steve Nachtsheim of our staff has analyzed in Table I the "recentness" of the accesses to our current disk drives. Note that over 10% of the subdirectories were not accessed during the Fall Quarter. If you have some of such files, you will save money and aid others by copying your files to magnetic tape (if they will be needed later) or by purging dead files.

TABLE I  
Access Analysis of Disk Packs

<u>Time Since Last Access</u>	<u>Record Blocks</u>	<u>%</u>	<u>Subdirectories</u>	<u>%</u>
Less than 1 week	6731	84.	293	74.8
1 week	1131		46	
2 weeks	259		20	
3 weeks	318		24	
4 weeks	183	5.5	10	9.7
5 weeks	175		13	
6 weeks	70		15	
7 weeks	120		12	
8 weeks	27	2.9	4	4.8
9 weeks	70		5	
10 weeks	141		10	
11 weeks	47		6	
4 months	449	4.5	31	6.0
5 months	89	1.0	17	3.3
6 months	166	1.6	6	1.1

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We Should Correct an Error... In the November, 1973 issue of this newsletter we announced the availability of the BCTRY system for cluster and factor analysis. The sample deck setup was incorrect. A deck should be set up as follows:

```

Jobcard (with CM120000)
Bin card
BCTRY.
Δ(7-8-9 card)
/START
:
:
/END
□(6-7-8-9 card)

```

For more information on the system, see S. P. Yen, Room 215 ExpEng, 373-4886.

## TO ALL REMOTE TERMINAL USERS

1004 USERS

As you may have noticed the 1004 is now set up to read and print at the same time. If you have experienced any problems with this setup, please send your complaint along with any supportive evidence to Richard Franta in Room 214 ExpEng. Any other comments are also welcome.

200UT USERS

All users of any 200UT must now supply a password to gain access to the system during dial-up. Please see your local supervisor for details on dial-up procedure.

WHEN THE SYSTEM GOES DOWN

When the system goes down we are sometimes able to dump the large jobs on the input queue to tape before restarting the system. Subsequently, they are reloaded into the input queue. However, if this occurs, these jobs will not appear on the input (H) display for a period of time after the system is restarted although many small and medium jobs will appear on the display.

The user who has submitted a large job should not panic for at least half an hour after system recovery. Please do not immediately assume that your job has been lost. Please, please do not call the operator who is busy recovering the system and your job(s). Give him and the recovery features of the system a period of grace before you assume that your job is lost and before you resubmit a large job.

## SHORT COURSES

This announcement supercedes and makes obsolete the announcement in the December newsletter. We have added two courses and changed the schedules of others because of conflicts. Changes are starred. See the December newsletter for descriptions of the courses.

ROOM 18 MECHANICAL ENGINEERING  
1:00 - 3:00 PM

Introduction to the Computer Center  
January 4  
R. Franta

Beginning FORTRAN  
January 7,8,11,14,16,18  
R. Franta

Advanced FORTRAN  
January 21,23,25,28,30,February 1  
R. Franta

Beginning COMPASS  
February 4,6,8,11,13,15  
B. Fox

\*Introduction to SNOBOL  
\*February 20,22,25  
A. Mickel

\*XMIT/SEND  
\*February 27, March 1  
R. Williams

KEYPUNCH WORKSHOPS

Room 223 ExpEng  
8:30 - 9:00 AM  
3:30 - 4:00 PM  
January 7,8,9,10,11,  
14,15,16,17,18  
P. Gerlach

ROOM 18 MECHANICAL ENGINEERING  
3:00 - 5:00 PM

Introduction to MERITSS  
January 7,9,11  
R. Williams

XEDIT Under MERITSS  
January 14,16,18  
D. Mears

Introduction to SPSS  
February 1,4,6,8  
B. Center

Introduction to EMD  
February 11,15  
B. Center

\*Introduction to KRONOS 2.1 (6600)  
\*February 20,22,25,27  
R. Franta, *et alia*

\*Control Cards Under KRONOS 2.1, KCL (6600)  
\*March 1,4  
T. Lanzatella

\*Permanent Files Under KRONOS 2.1 (6600)  
\*March 6  
K. Matthews

\*Tapes Under KRONOS 2.1 (6600)  
\*March 8  
R. Gulbranson

\*ROOM 315 MAIN ENGINEERING  
\*1:15 - 3:00 PM

\*COBOL  
February 4,6,8,11,13  
S. Nachtsheim

\*SCOPE INDEXED SEQUENTIAL (SIS)  
\*February 20,22  
S. Nachtsheim

\*SYSTEM 2000  
February 25,27, March 1,  
4,6,8  
S. Nachtsheim

## BRIEF NOTES

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*A Job is Available...WANTED...*A computer programmer (for LKB/9000 GC-M5 facility). This position involves interfacing a mass spectrometer with a DEC PDP-8 computer system and transferring information to the CDC 6600; creating a library of mass spectra of natural products from fungi. Position is full time; applicant should demonstrate ability in FORTRAN or a similar language and have experience with assembly languages. Contact C.J. Mirocha, Plant Pathology at one of these numbers: 373-1353 (office) 373-1367 (lab).

*Order Analysis Program Available...*A new version of an order analysis FORTRAN program for the CDC 6600 computer is now available from Ms. Audrey Buhr in Room 13 Pattee Hall (373-4955). The technique of order analysis was developed by David J. Krus of the University of Minnesota Research, Development and Demonstration Center as an alternative method to factor analysis. The program uses dominance matrices in lieu of factor analysis' correlation matrix and will not analyze patterns of random variation as factor analysis does. It provides for graphic construction of both manifest and latent structures of your data matrix.

Order analysis is written as an SPSS overlay and knowledge of the SPSS control cards allows you to run this program instantly. The available manual contains a detailed explanation of the theory behind order analysis and sample job decks.

*UOFMOPL To Be Resequenced...*The MODIFY permanent file UOFMOPL will be resequenced on February 5, 1974 in order to save space. Users of decks from UOFMOPL will have to follow the new sequence numbers if they wish to make changes.

*New Key punches...*Four new additional open shop 029 keypunches are due for installation in Room 223 ExpEng, the second open shop keypunch room. We have not been told a delivery date yet, but it is something nice to look forward to as we face the long winter.

*The New I/O Routines...*We have fixed the reported bugs in the new I/O routines and will remove the old routines when a sufficient period with no new bugs reported has passed. If anyone knows of bugs in the new routines, please report them so they can be fixed. Bugs should be reported to Betty Stahl, 203 ExpEng, 373-2522.

*To Reduce and Print Your Computer Output...*The MAPS installation on the St. Paul campus has a Xerox machine which they will make available to UCC users. This machine can reduce printouts to 8 1/2 x 11, has a continuous feed, and copies may be collated. For more information call 376-7003.

*SYSTEM NOTES...*The following System Note appeared on Thursday December 13, 1973 (SYSNOTE # 53)

COPYU users:

Users will note that a defective version of COPYU has been on the system for the last week. A new corrected version is available and may be accessed in the following manner until Tuesday, December 18, 1973:

P,A,SYSFIX,SYSTEM.

All users:

A change has been made in the UCC operating schedule for December 31, 1973. The new hours will be:

Lauderdale	8:00 AM - 6:00 PM
ExpEng	Closed
West Bank	Closed

\*SUPIO will be up\*

*SYSTEM NOTES...*The following System Note appeared on Thursday, December 27, 1973 (SYSNOTE # 54)

All users:

On January 2, 1974, a new job routing facility will be partially implemented on the MOMS operating system. The routing facility will make it possible for users to submit a job at any terminal and subsequently receive the output at any other terminal. In order to effect the implementation of job routing, UCC will have to change the format of the BIN card. The new format will be:

BIN,XX,NNNN.

where

XX = site code  
NNNN = bin number

The bin number must be a 4 digit decimal number from 0000 through 9999. A list of site codes is available in the October 1973 UCC newsletter. Bin cards for locally bound jobs will continue to be supplied at ExpEng, Lauderdale and West Bank.

MNF Users:

As stated in the December 1973 UCC newsletter, new versions of MNF and MNF BATCH will be placed in the system on January 2, 1974. Users should note that the main feature of the new versions is that the default form of input/output will be ANSI standard (not CDC). For details about differences between ANSI and CDC I/O, see Chapter 9 of the MNF manual.

## THE SUGGESTION BOX

[Questions may be re-worded for clarity. Unsigned cards are not considered.]

- Q/S Please install a bill changing machine at Lauderdale!
- A See the UCC newsletter; volume 7, #2, p. 8 and volume 7, #6, p. 7.
- Q/S How about putting a MERITSS terminal in the users' room at Lauderdale? With the transmit feature, through the ECS link, having a TTY or CRT handy would be a good service.
- A A DATASPEED 40 (CRT and printer) which communicates directly in a card image manner with the 6600 will have appeared in the users' room at Lauderdale by the time you read this response. (How's that for speed!) Instructions for using it will be posted nearby. We do not at this time plan to place a 6400 terminal at Lauderdale.
- Q/S Why don't you reward users who report software bugs with a nominal amount of funny money added to their account? This might make up for the time lost because of the error.
- A Interesting suggestion. UCC staff members have come up with some additional proposals such as: the UCC consultant would be paid for each obvious error he finds in a user program and coin operated key-punches and remote job entry machines would be installed for additional revenue.
- Seriously we strive to be a professional organization whose main concern is to give equitable and excellent service that will allow users to do useful computer work. Since our staff is human, software is programmed, and machines sometimes fail, we know in advance that there will be cases where we are at fault.
- We hope that each year we can improve service to users without going to a penalty-reward or adversary relationship with our users. We might add that there is no "funny money" currently in the UCC system, as subsidized money represents real university and state money that is ultimately obtained from you, the taxpayer.
- Q/S Who and what determines when a job gets rolled out during an execution? Since this sometimes involves large programs, the user pays for the PP time taken to roll the job in and out.
- A The PP and CP time required for 'rolling' a job on the MOMS system is not charged to the user but to system overhead. If you have documented proof that a rolled out job costs more CP and PP time than a non-rolled job, please bring it to a consultant.
- Who and what determine when a job gets rolled? The operator rolls a large memory job that is CP or I/O bound and is impeding the flow of normal jobs through the system. The system rolls jobs when the job requests more memory than is currently available (e.g., going from a COPY control card to an MNF card).
- Q/S Can one ask for a low priority to get charged less? For example, a long job for which I am willing to wait would be cheaper for me and could be used to fill in blocks of time during which there is little I/O traffic.
- A Your question and suggestion lie in two different fields. A low priority to be charged less? Our reply must be that a certain percentage of the jobs on the CDC 6600 are paid for by federal funds and if federal funds are involved the government requires uniform charging for all users.
- There are possibilities of instituting a differential charging scheme when the KRONOS system is installed if prior approval of the university and federal auditors can be obtained. Already there will be different chargeable items on the KRONOS system compared to MOMS (e.g., PRU's transferred rather than PP time). In general we would like the simplest and yet the fairest possible charging algorithms.
- In multiprogramming the operating system runs best if it can schedule all of the jobs available at a particular instant of time using the memory, I/O and processor requirements of each job. The most difficult jobs to schedule are those that require all of central memory and are either processor or I/O bound. Thus a truism is that multiprogramming occurs only if more than one job is running at a time. In our system, large memory jobs which are I/O bound are the least desirable (that is, least revenue per real time and most obstructive to other users).
- Q/S Would it be possible to obtain the procedure for determining priority?
- A The main basis for determining priority is the amount of central memory stated on the job card. The smaller the request the better the priority. If CM is less than 100000g, priority is not usually a problem. Other factors are the amount of CP time requested (smaller is better) and number of tape drives needed simultaneously. Each requested tape drive over 1 cuts the priority by 1/(n-1) where n is the total number of drives requested.
- Q/S Would it be possible to allow the loader to accept library directives (e.g., COMPASS pseudo-instruction LCC) from relocatable? Could FT3 be modified so that the loader would recognize the need for FT3LIB when loading without outside direction? I often forget the control card LIBRARY,FT3LIB.
- A Both these will be satisfied by LDSET which is in KRONOS 2.1. This is another reason we are changing to the KRONOS system.
- Q/S Please lower the temperature in ExpEng by about 20 degrees. It is so hot in Room 140 that I almost fainted and it isn't any cooler upstairs.
- A We appreciate and regret your discomfort. ExpEng is an old building and the temperature is not easily controlled by area. A request was made to lower the temperature in the building as a whole.

6 6 0 0 O P E R A T I N G H O U R S

	12:01AM	2AM	3AM	4AM	8AM	4PM	Midnight
Sunday	.....						
Monday	.....						
Tuesday	.....						
Wednesday	.....						
Thursday	.....						
Friday	.....						
Saturday	.....						

/// (LAD,EXP,WB)  
 ||| (LAD,EXP)  
 ... (LAD only)

C O N S U L T I N G H O U R S

Hours are posted at these sites:  
 140 ExpEng            205 ExpEng  
 Lauderdale           N640 EltH  
                          167 SocSci  
                          125G ClasOff

M E D I U M S P E E D R E M O T E T E R M I N A L S

Site		Supervisor
38 ElectE	(East)	J. Guentzel/373-5404 M. Cook/373-3895
N640 EltH	(East)	J. DeWitt/376-7377 N. DeWitt/376-7377
140 ExpEng	(East)	R. Franta/376-3963
S191 KoltH	(East)	T. Faulkner/376-7024 J. Abdallah/373-2348
321 MinMet	(East)	C. Swanson/373-5475 R. Olfke/373-5680
69 Physics	(East)	Bob Scarlett/373-0243 Dave Olson/373-0044
167 SocSci	(West)	G. Lutgen/373-3608
415 CofH	(StP)	D. Nelson/376-7003 T. Ehlen/376-7003
24 No H	(StP)	J. Colton/373-0990 D. Rignell/373-0990
257 BioSci	(StP)	R. Comstock/373-0928 H. Meyer/373-3067
384 HortS	(StP)	J. Heinen/373-1086 M. Brenner/373-0949
125G COB	(StP)	C. Bingham/373-0988
User Room	(Laud)	Shift Sup./373-4940

K E Y P U N C H L O C A T I O N S

(number of punches in parentheses)

East Bank		St. Paul		West Bank		Lauderdale	
38 ElectE	(1)	257 BioSci	(1)	90 BlegH	(2)	Users Room	(4)*
N640 EltH	(1)	125G COB	(1)				
130 ExpEng	(2)	415 CofH	(1)				
131 ExpEng	(1)	384 HortS	(1)				
208 ExpEng	(8)*						
223 ExpEng	(4)						
S191 KoltH	(1)						
321 MinMet	(1)						
69 Physics	(1)						

\*includes 1 interpreting card punch.

T E L E P H O N E S

373-4548	Account Clerk, 6600
373-7753	Account Clerk, 6400
373-4596	ExpEng I/O
376-7584	Field Engineering
373-2521	Keypunch Supervisor
373-4940	Lauderdale Shift Supervisor
373-4995	Microfilm Operator (leave a message)
373-4876	Operations (R. Folden)
373-4994	Recorded Message
373-7744	Reference Librarian
376-3963	Remote Job Entry Coordinator
373-4995	Tape Librarian (leave a message)
373-4360	UCC Office
373-4599	User Services (T. Hodge)
373-4921	User's Room (Lauderdale)
373-3608	West Bank I/O

R E F E R E N C E M A N U A L S

CDC Reference Manuals	
APEX	86615300B
ALGOL Version 2	60306100D
COBOL Version 3	60253000E
COMPASS Version 2	60279900D
FORTRAN EXTENDED Version 3	60176600K
FTN DEBUG Users Guide	60329400B
FORTRAN (RUN/FUN) Version 2.3	60174900F
MIMIC Simulation Language	44610400E
MODIFY	60281700C
PERT/TIME	60133600C
SCOPE Version 3.2	60189400L
SIMSCRIPT Version 2	60178300C
SIMULA	60234800E
SORT/MERGE Version 3	60252600D
6000/7000 Computer Systems	60100000W

BMD: Biomedical Computer Programs  
 BMDX: Biomedical Computer Programs  
 IMSL Library Catalog  
 MNF Reference Manual  
 OMNITABII Programmers Reference Manual  
 OMNITABII, An Introduction to  
 SPSS: Statistical Package for the Social Sciences  
 SPSS Supplement (Version 5.0)  
 UMST: U of Minnesota Statistical Programs  
 UCC Users Reference Manual

## PARTIAL INDEX TO VOLUME 7

Included in this index are articles which may be of long term interest. We have omitted articles such as holiday hours and short course scheduling. An Operations page is published each month with current hours, a list of manuals, telephone numbers, keypunch sites, and terminal sites.

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## RETURN TO:

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