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 DEADLINE FOR THE JANUARY NEWSLETTER IS
 DECEMBER 20

H A P P Y H O L I D A Y S

BULLETINS-----
HOLIDAY HOURS

	<u>down</u>	<u>up</u>
Christmas		
Lauderdale	1800 22 Dec	1800 26 Dec
ExpEng	2400 21 Dec	0800 27 Dec
New Years	1600 30 D	
Lauderdale	1600 30 Dec	1800 01 Jan
ExpEng	2400 29 Dec	0800 02 Jan

QUARTER BREAK CONSULTING SCHEDULE

ExpEng 10AM - Noon & 1PM - 3 PM
 Dec 14,15,18,19,20,21,27,28,29, Jan 2

Lauderdale 1:30-3:30 PM
 Dec. 14,15,18,19,20,21,27,28,29, Jan 2

Normal consulting hours will resume Jan 3.

UCCG newsletter

VOLUME 12 NUMBER 12 DECEMBER 1978

Editor : A. Koepke

Comments about the content of this newsletter, or suggestions for changes may be directed to the editor, 235a Experimental Engineering, 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, age, or national origin.

There are three innovative areas to which I would like to direct your attention this month.

1. UCS, UCC, and SICL/UCC are moving strongly ahead in the area of microcomputers. Several cross processors are resident on our large computers, research into the systems and applications software for microcomputers is advancing, and we have, in-house or on-order, several different microcomputers for evaluation and comparison. We hope to tell you more in a special edition of this newsletter some time during Winter Quarter. The Review Committee on Small Computers and Terminals is active in this area and can be contacted for more information. Professor Donald Riley (Mechanical Engineering) chairs this committee.
2. The Computer Service Center (CSC) concept is proving to be a good workable way of bringing service even closer to you. The Twin Cities campus now has two: the West Bank Computer Service Center and the Health Sciences Computer Service Center. UofM-Duluth has both a computer center with its own Cyber 171 and a Computer Service Center which brings UCC services to users in Duluth. UofM-Morris has a Computer Service Center and UofM-Waseca is developing one. We will describe the management and service capabilities of each of the CSCs in the near future.
3. A Long-Range Planning Committee was set up to examine user needs and usage projections after 1980. This committee has been divided into two subcommittees. The Hardware Subcommittee is chaired by Professor Richard Kain of Electrical Engineering. The User Needs Subcommittee is chaired by Professor Russell Hobbie of Physics. As a University computer user, you may receive a survey questionnaire in the near future. If you feel that your computing requirements should be considered in plans for the future, please respond to the survey, or make your ideas known to Professor Hobbie directly, or through User Services in UCC.

User Services, since its inception, has used an informal process of visiting with users to determine how they are using the University's computers and what they need to help them use the computers more easily and perhaps more efficiently. We plan to continue this informal process. However, user needs can be separated into short term and long term needs. User Services is concerned with the user's needs in the immediate and the near time frame. The Long-Range Planning Committee has been set up to determine user's needs for a more distant future.

Consequently, we will continue to visit with you and to ask questions about the near future at the same time that you may be asked questions by members of the Long-Range Planning Committee. Don't be discouraged; all of this effort is pointing toward improving UCC services now and simultaneously planning for an even better Center in your future.

The field lengths as described last summer have now become the field lengths users should expect. There was a discrepancy between what we said and what we did, due to a bug which has now been fixed. Please check your LIMITS report for the current accurate CM limits. Note that two different limits may appear on your LIMITS report.

CM WRDS/100B (CM) = nn.....

is applicable to your batch usage if you have batch access.

TELEX MEMORY (TF) = nn.....

is applicable to your timesharing usage if you have TELEX access.

T.D. Hodge, 373-4599

Library Changes

The following routines are being changed for FTN and MNF on December 15, 1978:

BANSOL	If only the determinant is requested and the determinant was zero, BANSOL was changed to return without any further action.
EIG3	Recompiled because of FTN bug.
FINV	Code cleanup only.
ICPA	Code cleanup only (new version from Tim Hoffmann).
MXTRIDI	Recompiled only.
NONLIN	Code cleanup only.
PERMUTE	Correct case when error message printout was garbled.
PLOTPAC	Save and restore A0 register around SYMPLOT calls.
SYMBOL	Corrections for ASCII character set.
SKALE	Correction to allow INC. GE. 2 and INC. LT. 0.
SQALE	Corrected to allow one interval (internal routine used by SKALE).
PLOT3D	Corrections for ASCII character set.
QRSYM	Code cleanup only.
TTEST	Code cleanup only.
XCEINT3	Code cleanup only.
ABNORM	Changed to call DUMPGPM.
DUMPGPM	Changed name from DUMP to prevent name conflict (GPM).
SYMBOL2	Deleted; no longer used by PLOTPAC.

M.J. Frisch, 376-1636

Systems / Operations

CYBER 172 PERFORMANCE

In this newsletter's production summaries, you will find that the Cyber 172 actually logged more central processor hours than the Cyber 74 (209 to 203). Since the Cyber 172 has two central processors with about half the power of the Cyber 74's central processor, a more useful comparison is SRU totals, which include central processor time, central memory, mass storage, and magnetic tape transfers. That ratio is approximately 1 million on the Cyber 74 to a half million on the Cyber 172, which shows that the Cyber 172 has taken on a significant portion of the University's computing load.



EQUIPMENT CHANGES

In order to give a perspective of the equipment changes that have taken place since July 1977, and to extrapolate into future years, we have prepared the table that appears below.

Memory:

The Cyber 74 cannot have any further memory expansions, since the last 32K addition (that cost \$270,000) brought it to the maximum 131K. The Cyber 172 can be expanded to 262K; this memory is approximately 1/4 the cost of Cyber 74 memory.

Mass storage:

For the combined systems, we have gone from 3100M characters to 5000M characters currently. We have put out a bid request on new mass storage devices that hold 2 1/2 times the information of the current disks at approximately 1 1/4 times the price. This will have two advantages to UCC: it may give us the opportunity to reduce mass storage costs to the user, and fewer drives for the same storage capacity will alleviate the power and space requirement at Lauderdale.

Magnetic tape:

In the past year, our tape usage has changed. A year ago, most tape usage was 7-track. Now, most usage is on the 9-track units. We encourage all users to continue changing current projects to 9-track and to plan all future magnetic tape use on 9-track drives. (See page 96) There are two reasons for this. The current 607 7-track drives are over 12 years old and show some signs of age. In fact, CDC's latest NOS software (release level 4) does not support 607 drives. Also, we would like to provide the 9-track 6250 density tape drives and only by eliminating some of the 607 units would this be feasible in the limited space at Lauderdale.

Printers:

We have successfully retired the old 501 printers with the CDC Scientific 64 character set. They have been replaced by standard ASCII 95 character upper and lower case printers, both at Lauderdale and Experimental Engineering. The printer change to ASCII, along with the keypunch conversion, has made order out of the chaos that existed among the various input and output devices on the Cyber systems.

Communications:

There has been a slow growth in the 2400 baud remote job entry systems since most UCC users seem to be doing their new projects using interactive devices. We plan that the addition of the Cyber 172 will allow a tripling of the number of ports previously available on the Cybers plus an additional 64 ports on the 6400.

MACHINE/EQUIPMENT	JULY 1977	CURRENT		FUTURE	
	Cyber 74	Cyber 74	Cyber 172	Cyber 74	Cyber 172
Memory	131K	131K	131K	131K	198K
Mass storage controllers	4	4	3	5	4
Mass storage capacity in characters	3100M	3100M	1900M	4300M	3100M
Magnetic tape controllers	2 7-track 1 9-track	1 7-track 2 9-track	1 7-track 1 9-track	1 7-track 2 9-track	1 7-track (or 0) 2 9-track
Magnetic tape drives	7 7-track 3 9-track	5 7-track 5 9-track	2 7-track 2 9-track	3 7-track 7 9-track	2 7-track (or 0) 4 9-track
Printers	3 CDC 64 char	3 ASCII 95 char 1 ASCII 64 char		3 ASCII 95 char 1 ASCII 64 char	
Communications ports	3 40,800 baud 18 2400 baud 64 110,300 baud	3 40,800 baud 20 2400 baud 64 110,300,1200 baud	41 110,300 baud	3 40,800 baud 22 2400 baud 64 110,300,1200 baud	128 110,300 baud
Terminal (MERITSS) capacity ports	440M char 192 110,300	565M character 256 110,300 baud		690M character 256 110,300 baud	

Power generation:

Hidden equipment, from the user's point of view, are the motor generators that supply power to the Cyber computers. The current system has a 1/2 second ride-through that has not prevented power fluctuations from causing the computers to be down too frequently this past year. For the future, we are working with University Physical Planning to obtain motor generators with larger capacity and ride-through fly wheels, plus additional devices which should reduce the occurrences of equipment down time due to power failures.

In summary, we have four central processors with 327K words of central memory attached, 11 mass storage controllers having 5565M characters of disk storage, and six tape controllers with nine 7-track and seven 9-track tape units. Communication includes three Telpak 40,800 baud lines, twenty 2400 baud synchronous lines, and 361 110, 300, and 1200 baud asynchronous lines. Unit record equipment includes 3 high-speed ASCII printers along with a STATOS 42 200 points/inch electrostatic plotter and a 3M Electron Beam Recorder for producing microfilm.

SOFTWARE ←

We are running a NOS level 3 release software on our Cyber machines with the full disk tracking of release 4 being used on the Cyber 172. Software products yet to be implemented on release 3 are:

1. Auto divert (this mechanism diverts large printer listings from local RJE stations to a station with a higher speed printer).
2. The delay queue and its enquiry utilities are not yet converted.
3. Users still cannot set page limits to control runaway output charges.

We are investigating the requests to change to NOS release 4 next August. Current problem areas are:

1. With level 4, CDC has dropped support for the 607 tape drives. They have also changed the RESEX and MAGNET routines that we have modified heavily for our TAPES routines and express tape function.
2. CDC does not have any NOS release 3 manuals; if you order NOS manuals from CDC, you get NOS release 4 documentation. Thus, to obtain documentation corresponding to our software, either we must put out a document showing where our release 3 differs from the obtainable release 4 manual, or we must move to release 4.
3. Does the user community and the systems staff really need one more conversion effort!!!!

L.A. Liddiard, 373-5239

NOS

THE MULTI-MAINFRAME FACILITY, PART II

In the September newsletter, we mentioned the multi-mainframe facility (MMF) of the NOS operating system. We noted that the statement

WRITEUP,UPGRADE=MMF.

produces a document describing the MMF facility at the University Computer Center. That writeup has recently been expanded to explain how input and output queue files are handled under the MMF scheme. These features are important primarily to Cyber 172 users.

The new features can be summarized as follows:

1. ROUTING:

There is no longer a printer on the Cyber 172. Files must be routed to the 74 for processing. This is handled automatically by the ROUTE mechanism. The statement

ROUTE,LIST,DC=PR,BIN=23.

will route file LIST as a print file to the Cyber 74. It will print at Lauderdale, since no TID (terminal ID) was specified.

ROUTE,SAM,DC=PR,TID=49.

will route the print file SAM to the 1004 at site 49. Any routing which is legal on the Cyber 74 is now legal on the 172.

2. JOB SUBMISSION:

There is no card reader and no RJE network on the 172. Thus, jobs on the 172 are timesharing, submitted, or transferred from the Cyber 74. For timesharing and submitted (with the SUBMIT control statement) jobs, any printed, punched, or plotted output must be routed to the Cyber 74 as described above. But now, jobs can be read in at Lauderdale, the high-speed stations, and at the SUPIO stations for the Cyber 172. This is accomplished with the MI parameter on the job card.

The job card

MYJOB,Txxx,MI72.

tells the system that the job is supposed to run on the 172. Note that the parameter is MI72, not MI=72. This job will run on the 172, and its OUTPUT file will come back to Lauderdale, the high-speed station, or the SUPIO terminal automatically. There is no need to ROUTE the file named OUTPUT from these jobs.

If the MI parameter is used on a job card for a job submitted with the SUBMIT control statement, the MI still specifies the machine on which the job will run. (There are exceptions; see WRITEUP,UPGRADE=MMF.) MI72 and MI74 are the only legal MI options on job cards.

3. AROUTE and ASEND:

The AROUTE and ASEND statements, used for dealing with the 6400, will eventually disappear. AROUTE is already obsolete on the 172, since ROUTE can be used in its place. The AROUTE statement will be replaced on the 6400 by an as yet unnamed statement for bringing files to the Cyber 74 for printing. The SEND statement will then be changed so that files can be sent to the 6400 from either Cyber. The AROUTE and ASEND control statements will issue informative dayfile messages for at least two weeks before they disappear. The message will indicate where to find documentation for their replacements. When AROUTE goes away and SEND is redone, the annoying extra record will no longer be appended to files sent to the 6400.

4. EXTRA COPY CHARGE:

Now that we know about ROUTE from the Cyber 172, it should be noted that all 172 files that are to be printed, punched, or plotted on the 74 must reside on shared mass storage devices. A shared device is one that can be accessed by either Cyber machine. For routing, queue files are written on the 172 and read from the same disk on the 74.

If I have been writing on a file (L, for example) and wish to route it from the 172 to the Cyber 74, I could use the statement

```
ROUTE,L,DC=PR,TID=...
```

In most cases, however, L will not have been on a shared device. The ROUTE control statement will recognize this fact, and copy the file L to a shared device. You may notice the dayfile message

```
ROUTE FILE COPIED TO SHARED DEVICE
```

This just means that ROUTE performed the copy operation described. For longer output files, you may wish to place the file on a shared device to begin with. This will save you the SRU costs associated with the copy operation at ROUTE time since, when the file is on a shared device, obviously no copy is needed. This can easily be done by using the deferred route feature described in the September newsletter. The statement

```
ROUTE,L,DEF,DC=PR,TID=...
```

establishes file L as deferred routed print file. When this statement is executed on the 172, the file L will be created on a shared device. Note, however, the warning on "deferred routing cautions" which follows.

to the file. I can execute the statement

```
ROUTE,MYLIST,DEF,DC=PR,TID=...
```

to establish file MYLIST as a deferred routed print file. Data can then be written to file MYLIST, which will print at the end of the job.

However, caution is needed when using one of the UCC processors that copies files to a scratch file and then renames the scratch file. UNPAGE and XEDIT are the most used such processors. For example, when I say

```
UNPAGE(F=MYLIST)
```

I expect file MYLIST to have the page ejects replaced by lines of asterisks; but here is what program UNPAGE really does internally. File MYLIST is read, and a scratch file is written. On the scratch file, the page ejects have been replaced by asterisks. When the entire file has been processed, UNPAGE renames the scratch file MYLIST. The old MYLIST is returned at the same time. However, the scratch file has no deferred route status, and thus MYLIST, after the UNPAGE, has lost its deferred route status.

The same sort of problem can occur with the control statements XEDIT and PACK. In both these cases, a scratch file is renamed to the original file name.

The simplest solution is not to use deferred routing in these cases. An immediate route performed on the file avoids all the difficulties. One can also specify different file names on the UNPAGE and PACK processors. For example

```
UNPAGE(I=file1,O=file2)
```

unpages from file1 to file 2 with no rename operation. Also, the XEDIT command

```
QUIT,C
```

will copy the edited file (which is on a scratch file) back to the original file instead of performing the rename operation.

One final note: all the processors mentioned could be changed so that the resultant scratch file is copied back to the original file, rather than renaming the original file. This would mean that each user would be paying for an extra copy operation when, in most cases, a quick rename would suffice. We are investigating a change in UNPAGE which would allow it to detect that it was processing a deferred routed file. If a copy operation were always done by UNPAGE for deferred routed files, this would be a good solution. We will keep you informed.

K.C. Matthews, 376-5602

DEFERRED ROUTE CAUTIONS

In the September newsletter, I proclaimed the advantages of using the deferred routing feature of the NOS operating system. A deferred ROUTE (the DEF parameter on a ROUTE statement) is one which specifies where a file will be routed after the job completes. One normally does a deferred route on a file to create it, and then writes data

Engineering Services

EQUIPMENT PURCHASE

The Engineering Services Division of UCC has special requisitions, through the University's Purchasing Department, for the purchase of various types of computer terminals and modems. Staff evaluation and usage has determined that this equipment best meets the general usage requirements of the University while providing a dependable terminal at the most reasonable price. The Purchasing Department allows other University departments to purchase this equipment, without going through a redundant bid process, because of vendor price commitments and our evaluation process. Contact Amy Koepke, UCC Reference Room, 373-7744, or, Dan Whealdon, 210 ExpEng, 373-4877, for data sheets describing the equipment, pricing, etc., as well as a sample requisition form.

EQUIPMENT	PRICE	VALID UNTIL
Astrocom 1100 modem 0-300 baud acoustic coupler	\$ 175.00	June 30,1979
Decwriter II (LA-36) 110-300 baud hard-copy terminal	\$1265.00	December 28,1978 (note 2)
Teletype model 43 110-300 baud hard-copy terminal	\$1005.00	August 31,1979
Texas Instruments 745 110-300 baud portable hard-copy thermal printer	\$1610.00	November 6,1979
Xerox 1760 110-1200 baud hard-copy terminal	\$2660.00	May 22,1979
Bell 212A 0-1200 baud modem	(note 3)	

Note 1:

Prices listed are for the basic terminal only and do not include shipping, options, installation, etc.

Note 2:

This will be re-bid by UCC during December at which time the data sheet will be revised.

Note 3:

The Bell 212A is ordered via a memo from the requesting department to University Telephone Services; they should be contacted for pricing. There are a large number of options that must be specified when ordering this data set. We therefore recommend that you get a copy of the options list from UCC.

UCC Engineering Services provides maintenance agreements for the equipment listed above, except the Bell 212A, at a reasonable cost. Dan Whealdon (373-4877, 376-4889), can provide more information regarding this service.

We will provide similar information about state contracts that can be used by the University to purchase microcomputers and other equipment in subsequent issues of the UCC Newsletter. We will also discuss, in future issues, the type of maintenance service which is available through UCC Engineering Services.

A FREE TERMINAL

UCC's Engineering Services division has an Inktronic terminal manufactured by Teletype Corporation available for only the shipping costs; you must take it as is. Call Abe Franck for information (376-7291 or 376-1023).

EQUIPMENT LEASING

Teletype model 33 KSR terminals will be available to either staff members or students for their personal use on a rental basis. Again, call either Dan Whealdon (376-4877) or Abe Franck (376-7291).

A. Franck, 376-7291

Tapes

If you are using 7-track tapes, you should consider switching to 9-track tapes. There are several reasons why you might want to do this:

1. Our 9-track tape drives can record information at more than 2 1/2 times the density of our 7-track drives. This means that you can get twice the amount of information on a given tape (or use a smaller reel of tape for a given amount of information).
2. We have adjusted our information transfer charges to favor 9-track tape use. Specifically, it costs 25% more to transfer a given amount of data to a 7-track tape than it does to transfer that data to a 9-track tape or to a disk.
3. Our 9-track tape drives are more reliable than our 7-track tape drives. They get fewer parity errors and other types of errors. This is due, in part, to about a decade of technological advancement separating the two types of tape drives.
4. The 9-track tape drives transfer data faster than the 7-track drives. They are physically faster and we have more 9-track controllers than we have 7-track controllers. Thus, jobs finish sooner and turnaround is better with 9-track tapes.

In summary, 9-track tapes hold more information, are cheaper, more reliable, and faster than 7-track tapes! As you purchase new tapes or replace existing ones, we suggest that you consider using them as 9-track tapes. You do this simply by specifying "9-track" when you have new tapes stored or certified.

If you have any questions, please call

J.J. Drummond, 373-4573

Card conversion

As previously described in the August newsletter, we are providing a card deck conversion service for those users who need to convert existing card decks from 026 to 029 subset ASCII cards. Users are not being charged for this service. Please keep in mind, however, that this service is intended only for decks used on our computers. Also, decks (particularly data decks) punched with only alphabetic (A-Z) or numeric (0-9) characters do not need to be converted and therefore should not be submitted for conversion. Binary decks cannot be converted by this service. Please see WRITEUP(UPGRADE=CHAR) for complete details on the character set change.

We are now about half way through the 6-month period designated for this conversion. We have converted over 400,000 cards to date. During the remainder of the conversion period (through February, 1979), card decks will be converted as they are received. If you have a large quantity of cards to be converted, more than 5 boxes or 10,000 cards, please call me to discuss arrangements for handling them. For smaller quantities, use the following procedures:

1. Bring decks to 131 ExpEng or to the User's Room at Lauderdale. Decks should be securely bound with rubber bands. Decks of 500 or more cards should be submitted in boxes.
2. A 'card deck conversion' slip should be filled out for each deck to be converted. This slip is available at the I/O counter in 131 ExpEng and at the I/O table at Lauderdale.
3. The completed slip should be attached to the deck and the deck should then be submitted in the tray marked "DECKS FOR CONVERSION."
4. We will punch a converted copy of the decks and will then interpret the copy. Turnaround time should generally be one week or less. If you so request, we will call you when your deck is finished, and you can pick up the original and the copy at either 131 ExpEng or at Lauderdale.

J. Larson, 373-7638

MICROS

By January 1979, there will be about 30 TERAK microcomputer systems on the University's campuses. If there is enough interest UCC will give a short course on the TERAK in the near future.

The following course outline has been suggested. It should be useful to new TERAK users, prospective TERAK users, or anyone who is just curious about these systems.

1. Hardware; structure, processor, memory, disk system, keyboard, peripherals, interface with other computer systems.
2. Operating systems; RT11, Pascal, file handling, disk handling, interfacing with other computer systems.

3. Languages; Pascal, BASIC, assembly language (coming with Pascal 1.5).
4. Capabilities; graphics, software character set, screen oriented editing (with demonstrations).
5. Future; Pascal 1.5 OS, assembly code, independent compiling and linking, Pascal/assembly language interface, BASIC/assembly language interface.

Some knowledge of Pascal or BASIC, and some experience with other computers will be assumed.

If you are interested in such a course or have suggestions for course content, please call or write to me at 227 Experimental Engineering.

For those of you who already have experience with TERAKs, and would like to learn more about them, please call me with your requests and suggestions. If there is enough interest in a more advanced course, we will try to give one.

L. Fetcher, 376-1637

Job Available

Clive Schofield, who has very handily taken care of MNF documentation and distribution along with the MANTRAP and MSUIO installation, has taken a position with Queen Mary College Computer Centre in London.

His departure means that we have a position available. We are looking for a person who is capable of handling the following tasks:

1. Do MNF compiler maintenance.
2. Write MNF internal documentation and maintain correspondence with the 70 other installations using MNF.
3. Maintain MANTRAP and the Michigan State Record Manager.

This person would also be expected to assist in the following projects:

1. Install a current PL/I compiler.
2. Further development and testing of M77, the Fortran compiler that conforms to the 1977 American National Standard for Fortran.

This person should have experience in evaluating the performance of compilers.

This person must have the ability to communicate well, both verbally and in writing, with users and other members of the UCC staff.

The consequences of error in this position are extreme and thus the person must be able to work accurately.

A personnel requisition has been posted. Applicants should go to the University's Personnel Department, 2651 University Avenue.

L.A. Liddiard, 373-5239

PRODUCTION USAGE SUMMARIES: Cyber 74/172

	Cyber 74 October, 1978	Cyber 74 October, 1977	Cyber 172 October, 1978
System resource units (SRU)	858,291 (997,884)	-	247,304 (515,521)
Batch jobs and MIRJE sessions	96,378 (102,818)	98,737 (101,049)	11,432 (16,980)
Central processor hours inc. DELAY	177 (203)	151 (194)	95 (209)
DELAY queue processor hours	56 (57)	44 (47)	9 (27)
MIRJE terminal hours	6,235 (6,612)	6,455 (8,020)	3,825 (5,504)
Mass storage transfers (KPR)	243,049 (267,916)	207,071 (272,531)	118,154 (199,834)
Magnetic tape transfers (KPR)	5,380 (9,198)	4,496 (6,533)	1,238 (3,491)
Pages printed, charged from UCC	889,642 (972,987)	733,768 (832,250)	54,104 (104,264)
Cards punched	557,427 (714,096)	352,702 (439,422)	-
Microfilm frames produced	30,620 (31,826)	10,646 (283,153)	0 (375,058)
Statos plotting production (feet)	9,363	5,983	-
Tapes mounted	8,873	8,733	3,384
Average file storage (char)	1,630.6 million	962.8 million	435.8 million
Mean time between failures	27.8 hours	36.9 hours	88.0 hours
Available during scheduled hours	99.0 percent	99.3 percent	99.9 percent
SUPIO uptime during available hours	98.1 percent	97.4 percent	-

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

DOWNTIME SUMMARY: November, 1978 (Column 1, Cyber 74 : Column 2, Cyber 172)

	Monday-Friday 0800-1800		other		total	
	Cyber 74	Cyber 172	Cyber 74	Cyber 172	Cyber 74	Cyber 172
Total possible scheduled uptime hours	200.0	200.0	276.0	275.0	476.0	475.0
Total downtime hours (see Schedule A)	2.1	2.2	0.8	0.0	2.9	2.2
Total uptime hours	197.9	197.8	275.2	275.0	473.1	472.8
Uptime (percent)	99.0	98.9	99.7	100.0	99.4	99.5
Average downtime per occurrence (min)	25.6	44.3	16.0	0.0	22.0	44.3
Mean time between failures (hours)	40.0	66.6	92.0	---	59.5	66.6
Subsystem failures						
SUPIO	22	-	6	-	28	-
TELEX	0	0	0	0	0	0
EXPORT	16	-	21	-	8	-

Schedule A: downtime hours

	Number		Total hours		Average minutes	
	Cyber 74	Cyber 172	Cyber 74	Cyber 172	Cyber 74	Cyber 172
(1) Preventive maintenance over-runs	0	0	0.0	0.0	0.0	0.0
(2) Software related problems	4	1	1.9	1.9	29.5	118.0
(3) Hardware related problems	0	1	0.0	0.1	0.0	2.0
(4) Indeterminate problems	4	1	0.9	0.2	14.5	13.0
(5) External Problems	0	0	0.0	0.0	0.0	0.0

PRODUCTION USAGE SUMMARIES: CDC 6400

	October, 1978	October, 1977
Number of jobs run	227,534	150,298
Central processor hours	123	110
MERITSS terminal hours	26,221	20,175
Number of terminal sessions	56,729	43,588
Maximum number of simultaneous users	128	105
Average file storage (char)	346.0 million	228.5 million
Mean time between failures	243.2 hours	69.4 hours
Available during scheduled hours	99.9 percent	99.0 percent

SUBMISSION SITE USAGE SUMMARY: TELEX EXCLUDED : November, 1978

submitted from	total jobs	%	pages printed	%	cards read	%
Lauderdale	3,597	4.4	365,810	28.1	1,543,743	14.6
ExpEng	7,563	9.2	215,179	16.5	2,326,061	22.0
West Bank	11,939	14.5	138,970	10.7	1,481,940	14.0
6400	749	0.9				
SUBMIT jobs	13,432	16.3				
SUPIO	45,337	54.9	582,965	44.7	5,236,037	49.5
TOTALS	82,617		1,302,924		10,587,781	

PLEASE POST These Short Courses are offered by the University Computer Center. They are free and require no registration. For more information, call Lincoln Fetcher (376-1637) or Rich Franta (376-3963) or see WRITEUP, CLASSES. PLEASE POST

WINTER 1979		UNIVERSITY COMPUTER CENTER SHORT COURSES			WINTER 1979	
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY		
JANUARY 1 HOLIDAY	2	3	4 INTRO TO UCC	5		
8 Intermediate FORTRAN Intro to System 2000	9	10 Intermediate FORTRAN Intro to System 2000	11	12 Intermediate FORTRAN Intro to System 2000		
15 Intermediate FORTRAN Intro to System 2000	16 PLOT PAC (n)	17 Intermediate FORTRAN Intro to System 2000 PLOT PAC (n)	18 PLOT PAC (n)	19 Intermediate FORTRAN Intro to System 2000		
22 Intermediate FORTRAN SPSS Advanced System 2000	23 SPSS	24 Intermediate FORTRAN SPSS Advanced System 2000	25 SPSS	26 Intermediate FORTRAN SPSS Advanced System 2000		
29 PASCAL Programming Style NOS Control Statements System 2000/PLI Intermediate COMPASS	30 SPSS (crosstabs)	31 PASCAL Programming Style NOS Control Statements System 2000/PLI Intermediate COMPASS	FEBRUARY 1 SPSS (regression)	2 PASCAL Programming Style NOS Control Statements System 2000/PLI Intermediate COMPASS		
5 PASCAL NOS Control Statements Intermediate COMPASS System 2000/RW	6 Intro to Timesharing SIR Advanced Graphing (n)	7 PASCAL NOS Control Statements Intermediate COMPASS System 2000/RW Advanced Graphing (n)	8 Intro to Timesharing SIR Advanced Graphing (n)	9 PASCAL NOS Control Statements Intermediate COMPASS System 2000/RW		
12 PASCAL NOS Control Statements COBOL	13 SIR Beginning FORTRAN (n)	14 PASCAL NOS Control Statements COBOL	15 SIR Beginning FORTRAN (n)	16 PASCAL NOS Control Statements COBOL		
19 COBOL MODIFY	20 Beginning FORTRAN (n)	21 COBOL MODIFY	22 Winter Qtr Users Meeting Beginning FORTRAN (n)	23 COBOL MODIFY		
26 COBOL	27 Art Packages Beginning FORTRAN (n)	28 COBOL Art Packages	MARCH 1 Beginning FORTRAN (n)	2 COBOL		
5 DMS-170	6 Beginning FORTRAN (n)	7 DMS-170	8 Beginning FORTRAN (n)	9 DMS-170		

Introduction to UCC.....: 2:15-4pm, Jan 4 (th), Arch 40, RTF
Intermediate FORTRAN.....: 2:15-4pm, Jan 8 - 26 (mwf), ForH 120, RTF
Introduction to System 2000.: 2:15-4pm, Jan 8 - 19 (mwf), MechE 18, JCC
PLOT PAC.....: 7:30-9:30pm, Jan 16-18 (twth), Laud*, KMI
SPSS.....: 2:15-3:30pm, Jan 22-25 (mtwth), MechE 18, BH
SPSS On-Line.....: 2:15-3:30pm, Jan 26 (f), MechE 18, BH
Advanced System 2000.....: 2:15-4pm, Jan 22 - 26 (mwf), ChEng 240, SPN
Programming Style.....: 2:15-4pm, Jan 29-Feb 2 (mwf), ChEng 240, RTF
NOS Control Statements.....: 2:15-4pm, Jan 29-Feb 14 (mwf), Ph 166, RTF
System 2000/PLI.....: 2:15-4pm, Jan 29 Feb 2 (mwf), ChEng 50, JCC
Intermediate COMPASS.....: 2:15-4pm, Jan 29-Feb 9 (mwf), ForH 160, KCM
Pascal.....: 3:15-5pm, Jan 29-Feb 16 (mwf), ForH 120, ABM
SPSS (Crosstabs).....: 2:15-3:30pm, Jan 30 (t), Arch 40, SPY
SPSS (Regression).....: 2:15-3:30pm, Feb 1 (th), Arch 40, SPY
System 2000/Report Writer...: 2:15-4pm, Feb 5 - 9 (mwf), MechE 18, SPN
Introduction to Timesharing.: 2:15-4pm, Feb 6 - 8 (tth), MechE 18, RTF
Scientific Info Retrieval...: 2:15-4pm, Feb 6 - 15 (tth), Arch 40, JCC
Advanced Graphing.....: 7:30-9:30pm, Feb 6-8 (twth), Laud*, KMI
COBOL.....: 2:15-4pm, Feb 12-Mar 2 (mwf), Aero 309, JCC
Beginning FORTRAN.....: 6:15-8pm, Feb 13-Mar 8 (tth), MechE 102, RTF
NOS Control Language.....: 2:15-4pm, Feb 16 (f), Ph 166, RTF
MODIFY.....: 2:15-4pm, Feb 19 - 23 (mwf), MechE 18, RTF
Winter Quarter UCC User Mtg.: 2:15-4pm, Feb 22 (th), Ph 166
Art Packages.....: 2:15-4pm, Feb 27-28 (tw), MechE 18, KMI
DMS-170.....: 2:15-4pm, Mar 5 - 9 (mwf), MechE 18, SAR

* Lauderdale Conference Room, Lauderdale Computer Site, 2520 Broadway Dr.

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meritss

On December 22nd, two changes will be made to the MERITSS system:

1. BASIC Version 3, which has been FUTURE(BASIC) for over a year, will replace BASIC Version 2 as the current version of BASIC. WRITEUP(BASIC) describes the changes that this implies and the new features that are supported. The UCC Reference Room has copies of the BASIC Version 3 manual.
2. In the interest of faster execution for the majority of users, less error prone installation for the MERITSS staff, and less chance of error when moving jobs from one computer installation to another, the MNF library is being shortened to include only those routines generated by the MNF release materials sent out to user sites. Those routines local to the University of Minnesota will be placed on a library called MINNLIB. If you are planning to use your program at a different MNF site, and your LOAD map shows MINNLIB references, you should contact UCC about getting the source for these references. Please call the HELP-line (376-5592) if you have any problems or comments.

W.T. Sackett, 373-4573

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