UNIVERSITY COMPUTER CENTER newsletter

Director: Peter C. Patton

227 EXPERIMENTAL ENGINEERING
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN 55455

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235a ExpEng
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contents

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OPEN USERS MEETING --

ALL CYBER 74 AND CDC 6400 USERS ARE INVITED TO ATTEND AN OPEN USERS MEETING ON NOVEMBER 20, 1975 FROM 2:00 - 5:00 PM IN ROOM 225 AERO ENGINEERING BUILDING. BRING SUGGESTION & QUESTIONS; THE AGENDA IS FLEXIBLE.

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H O L I D A Y H O U R S H O L I D A Y H O U R S H O L I D A Y H O U R S H O L I D A Y H O U

THANKSGIVING

ExpEng I/O, SUPIO, TELEX:	down @ 12:00 Midnight	Nov. 26 ;	up @ 8:00 AM Nov. 29
Lauderdale :	down @ 4:00 AM	Nov. 27 ;	up @ 6:00 PM Nov. 28
CDC 6400 (MERITSS) :	down @ 2:00 AM	Nov. 27 ;	up @ 7:30 AM Nov. 29

CHRISTMAS

ExpEng I/O, SUPIO, TELEX:	down @ 4:00 PM	Dec. 24 ;	up @ 8:00 AM Dec. 27
Lauderdale :	down @ 6:00 PM	Dec. 24 ;	up @ 6:00 PM Dec. 26
CDC 6400 (MERITSS) :	down @ 5:30 PM	Dec. 24 ;	up @ 7:30 AM Dec. 27

NEW YEAR

ExpEng I/O, SUPIO, TELEX:	down @ 4:00 PM	Dec. 31 ;	up @
Lauderdale :	down @ 6:00 PM	Dec. 31 ;	up @
CDC 6400 (MERITSS) :	down @ 5:30 PM	Dec. 31 ;	up @

U R S H O L I D A Y H O U R S H O L I D A Y H O U R S H O L I D A Y H O U R S H O L I D A Y

tape news

--by W. Elliott & R. Dykstra

The 9-track tape units finally went on-line for general use on Thursday, October 23, 1975. At the same time, a revised set of tape driver routines was installed. These routines contain the code required for the proper operation of the 9-track units. The following article outlines some of the differences which the user must take into account when using 9-track tapes. A complete writeup detailing the use of 9-track tapes is available as a WRITEUP record named NINETK. This writeup is only 4 pages long and we recommend that every tape user get a copy. See page 9 of this newsletter for a list of the WRITEUP records and instructions on obtaining copies.

TAPE STORAGE

UCC announced in the October newsletter that 9-track tape storage must be requested separately from 7-track tapes. These tapes are stored in separate locations at Lauderdale and the operators have been instructed not to cross-mount tapes; that is, they will not mount 9-track tapes on 7-track units, and vice versa. If a user wishes to use a stored 7-track tape on a 9-track unit, he must work through the Tape Librarian. There are several reasons for this. 9-track units cannot read tapes created on 7-track units and vice versa; therefore the system is incapable of verifying information in the labels (if any) and providing the required protections. Another important reason is in regard to tape quality and is detailed below.

TAPE QUALITY

A significant concern has been the problem of edge damage on older tapes. Many of the tapes in the UCC library are acceptable for 7-track usage but would be unacceptable for 9-track, because the 9-track units read/write very near the edges of the tape, whereas 7-track units do not. The user should, therefore, be very careful in his selection of tapes for use on the 9-track units. UCC recommends that new or almost new tapes be used on the 9-track units and will not be responsible for damage or information loss on pre-1971 tapes.

CONTROL CARD CHANGES

Two new parameters have been added:

(1) An NT parameter must be added to both the LABEL and BLANK control cards to get a tape mounted on a 9-track unit. Without this parameter, 7-track assignment (MT) will be assumed.

(2) A CV parameter may be added to the BLANK control card to enable the user to write labels in EBCDIC codes as well as ASCII codes. This parameter functions exactly like its counterpart on the LABEL card. Select EBCDIC conversion by including the CV=EB parameter, along with the other parameters (including the NT parameter) on the BLANK card.

When the NT parameter is included on the LABEL and BLANK cards, the following are defaults:

tape density: D=PE 1600 cpi (phase encoded)
conversion : CV=AS ASCII

CODE CONVERSION

Code conversion is selected for 9-track tapes exactly as for 7-track tapes. See the NINETK writeup for more information.

KNOWN BUGS

(1) EXAMINE does not do label checking or format processing correctly for 9-track tapes. Information as to the structure of the file may still be obtained.
(2) REBLOCK does not recognize 9-track tapes. A new version will soon be available. Watch SYSNOTES.

CONCLUSION

Two 9-track units and seven 7-track units are now available. Please report any problems encountered immediately to a consultant or to the HELP-line (376-5592). If the error looks to be caused by the system routines, fill out a Program Trouble Report (available at the consulting stations). In most cases it will be necessary for UCC to have access to the particular tape causing the problem, therefore, if the tape is not already stored with UCC, please consider putting it into temporary transient tape storage so the problem can be investigated. Keep in mind that UCC cannot fix problems unless the user identifies them for us -- so please keep us informed.

PF news

--by T.W. Lanzalotta

Five new permanent file utilities were recently added to KRONOS on the Cyber 74. These utilities are useful for maintaining large numbers of permanent files. Documentation for these utilities is available as WRITEUP records. See page 9 of this newsletter for a list of the WRITEUP records and instructions for obtaining copies.

ABCLIST - Similar to the CATLIST utility but produces an alphabetical listing of permanent files on a user-specified file. The output file may be used as input to CHANGER and PURGER.
CATLSYS - Similar to the CATLIST utility with an abbreviated header, including totals. This program will be enhanced in the future to include permanent file costs.
CHANGER - Similar to the CHANGE utility but reads file names from a user-specified file. Used in conjunction with ABCLIST.
GETSAVE - Useful for transfer of permanent files between user numbers.
PURGER - Similar to the PURGE utility; used in conjunction with ABCLIST.

special language processors

--by A. B. Mickel

PASCAL PROJECTS

The PASCAL compiler which is available at the University of Minnesota (on both the Cyber 74 and the CDC 6400 computer systems) was modified successfully during the summer months. Three major improvements were made:

(1) An interactive PASCAL subsystem was created.
(2) The core requirements for the compiler were reduced.
(3) Updates (through Level 9) from Zurich were incorporated and a working DISPOSE procedure was implemented.

Creation of the interactive PASCAL subsystem involved the following changes:

(1) Providing the ability to prepare programs on a file and then to compile and execute these programs with a simple "RUN" or "RNH" command.
(2) Displaying source lines with compile errors and providing an error message summary at the bottom of the listing. (This new compiler error message summary is also provided to those jobs accessing PASCAL in Batch mode.)
(3) Allowing compile options to be specified on the PASCAL control card. Previously, these were only allowed within the program text.
(4) Creating a new compile option, G±, which specifies "load and go," that is, execute automatically after compiling.

The command, PASCAL, is now valid under TELEX. To access PASCAL in the BATCH subsystem, use the command X,PASCAL.

Core requirements were reduced by 2K, enabling larger programs to be compiled in a field length of 54000. We plan to work (in cooperation with Urs Ammann in Zurich) on further improvements in this area. Release 2 of the compiler, which should be available later this year, will include changes to make the compiler at least another 1K smaller.

Updates through Level 9 fixed several bugs and included two features available under PASCAL 6000. The standard files INPUT and OUTPUT may now be specified to be segmented, and the standard procedures READ and WRITE can now be applied to files of any type, not just to textfiles.

A detailed description of these changes and an explanation of the new DISPOSE procedure can be found in a WRITEUP record named PASCAL. See page 9 of this newsletter for a list of the WRITEUP records and instructions on obtaining copies.

A utility routine, PSCXREF, which gives cross reference listings of PASCAL programs, is also now available. The standard call to this program is PSCXREF(sourcefile,listingfile). For example, instead of an ordinary PASCAL command sequence of

```
PASCAL.
LGO.
```

you may use this sequence to compile and get a cross reference of all identifiers:

```
PSCXREF.
BKSP(INPUT)
PASCAL(/L-)
LGO.
```

SNOBOL PROJECT

A new version of Colorado SNOBOL (Colorado SNOBOL is recommended for classroom and debugging use) is now accessible by these commands:

```
FUTURE(SNOBOL)
SNOBOL.
```

In this FUTURE version, a correction was made to properly dump the OUTPUT file buffer on time limit aborts so that SNOBOL no longer appears to be "time limiting" during the compile phase.

NEW PROJECTS

During the 75-76 academic year, we plan to complete the following projects:

(1) Produce new documentation for SNOBOL, MIXAL, PASCAL, and UTALGOL.
(2) Provide an improved MIXAL assembler. This will probably be installed as the current version during the winter quarter break.
(3) Provide an updated PASCAL compiler (including Level 10 to Release 1); again, probably during winter quarter break.
(4) Make UTALGOL available.

As part of the continuing PASCAL project, we plan to make improvements to the compiler; for example, reducing the compiler size and investigating a value initialization facility. These improvements, of course, are made in cooperation with the PASCAL people in Zurich.

DOCUMENTATION/EDUCATION

If you are new to the University (or if you were gone over the summer) and are interested in the special language processors, you may wish to refer to these three articles which appeared in previous UCC newsletters:

(1) PLANS FOR PASCAL AND SNOBOL (July '75, page 3)
(2) YEARLY USAGE STATISTICS FOR LANGUAGE PROCESSORS (August '75, page 5)
(3) THE SUGGESTION BOX: PASCAL consulting (September '75, page 6)

A new edition of the book PASCAL: User Manual and Report Study Edition by Jensen and Wirth (Springer-Verlag Publ. Co., 1974) is now available in the University bookstores for a reduced price of $5.90.

A PASCAL short course will be taught this quarter. See page 8 of this newsletter.

MNF news

--by L.A. Liddiard

The PARAMETER statement in MNF is a new statement which allows a constant to be given a symbolic name (it is equivalent to the EQU pseudo-instruction in COMPASS). The statement is a normal MNF FORTRAN source statement and is of the form

PARAMETER $P_1=C_1,P_2=C_2,\ldots,P_n=C_n$

where

P is a FORTRAN name, and
C is a constant of any type (including Hollerith).

The statement should appear with the declarative statements at the start of the program unit.

Each name (P) becomes the name of the constant (C), and the name may be used in any MNF statement where a constant (of the same type as C) would be allowed. The type of P is the same as the type of C, and is independent of the first letter of the name P. Names used in PARAMETER statements should be used only as parameters, and not as variable names. To illustrate:

(1)
```
PARAMETER I=2
I=3
```
(Not allowed; it is the same as writing "2=3".)

(2)
```
PROGRAM XGEN(INPUT,OUTPUT,TAPE1,TAPE2)
PARAMETER LENGC=2000
COMMON DYNAM(LENGC)
```
(The dimensioned length of the array DYNAM in blank COMMON is 2000 words.)

(3)
```
IMPLICIT INTEGER(A-N),LOGICAL(L)
PARAMETER DIM1=10,DIM2=20,MC=3HCDC,X=2.7D0,L=.TRUE.
DOUBLE DP(DIM1,DIM2)
DO 2 I = 1,DIM1
DO 2 J = 1,DIM2
2 DP(I,J)=X
LOG=.NOT.L
    :
```
(The IMPLICIT statement has no effect upon the types of the PARAMETERs.)

downtime summary

SEPTEMBER 21 THROUGH OCTOBER 28, 1975

	Monday-Friday 0800 - 1600		other		total	
Total possible scheduled uptime hours	260		369		629	
Total downtime hours (see schedule A)	15.8		9.2		25	
Total uptime hours	244.2		359.8		604	
Uptime percentage	93.9	percent	97.5	percent	96	percent
Average downtime per occurrence	14.2	minutes	33.2	minutes	18	minutes
Mean time between failures	3.9	hours	21.2	hours	7.5	hours
Subsystem failures						
SUPIO	23		7		30	
TELEX	1		0		1	
EXPORT	9		7		16	

Schedule A: downtime hours

	number of occurrences	total hours down	average minutes downtime
1) Preventive maintenance over-runs	3	2.27	45.3
2) Software related problems	13	2.85	13.2
3) Hardware related problems	38	9.47	14.9
4) Indeterminate software/hardware problems	28	3.73	8.0
5) External problems	2	6.90	207.

The two external problems were due to hardware maintenance by the customer engineers in an attempt to find the scope blanking problem.

R. Dykstra

MECC news

--by T.D. Hodge

M U A -- MECC INSTRUCTIONAL TIMESHARING NETWORK USER'S ASSOCIATION

The fall MUA meeting was held on Saturday, October 18, at St. Thomas College. A full report will be forthcoming in the MECC Timesharing Newsletter. However, of interest to University users of the MECC facility is that Professor Thomas R. Hoffmann, Department of Management Sciences, is a member of the MUA Executive Committee. A new Special Interest Group on Higher Education was established with Professor A.A. Lopez as chairman. Professor Lopez is the Director of the UofM-Morris Computer Center.

DEMAND mode was also discussed at the MUA meeting. See the following item.

DEMAND DOCUMENTATION *(contributed by Ron Hellenthal)*

"Until Real Time Fortran (RTF) becomes available in January of 1976, users wishing to try Univac FORTRAN must do so in "Demand Mode." Demand processing is somewhat comparable to the TELEX BATCH subsystem in that it allows access to the majority of system commands, compilers, and utilities. Access to Demand mode requires special account validation. [The writeup] is based to a large extent on the trial and error experiences of one beginning user of the MECC Univac 1110 system over the past several months, and should be regarded as an unauthenticated description of commands and operations which appear to have worked for me."

(The above is the introduction to a short writeup contributed by Ron Hellenthal. Copies of this writeup are available from the UCC Reference Room, 235a Experimental Engineering, 373-7744.)

UNIVAC 1110 OPERATING SCHEDULE *(excerpted from MECC Timesharing Newsletter)*

"It is essential that production (user access) and development coexist on the U1110. To accomplish this goal ... the following scheduling arrangement holds until December 19, at which time it will be reviewed ..."

Monday - Friday	8:00 AM - 4:00 PM	Production
Tuesday & Thursday	4:15 PM - 5:45 PM	Workshops
Monday & Wednesday	4:15 PM - 5:45 PM	Development
Monday - Thursday	7:30 PM - 9:30 PM	Production
Saturday	10:00 AM - 2:00 PM	Production

MECC TIMESHARING NEWSLETTER & OTHER MECC DOCUMENTATION

The MECC newsletter will be sent to those requesting it. Write:

MECC Timesharing Newsletter
1925 Sather Street
Lauderdale, Mn 55113

Documentation for the MECC system should be ordered directly from MECC. The address is:

MECC Support Services
1925 Sather Street
Lauderdale, Mn 55113

Copies of the MECC price list can be obtained from the UCC Reference Room, 235a Experimental Engineering.

MERITSS news

--by M.M. Skow

PROTECT YOUR PASSWORD -- Instructional lab users now have a precious commodity at their disposal, namely, dial-up access to the 6400. A block of ports on both the 6-7710 and the 6-7730 rotaries have been reserved for instructional lab dial-up use. To restrict this dial-up usage to a certain number of ports, a system message is issued after log-in whenever the maximum number of dial-up ports of those reserved for the labs is in use. This message is ROTARY FULL - TOO MANY USERS FROM THE SAME PROJECT. It is in your best interests to ensure that only legitimate users have access to these ports. Students who trade passwords with their friends are only making it more difficult for themselves when they want to get on the system.

FILE RE-LOADS WILL BE CHARGED -- Effective immediately, a $10.00 per file charge will be assessed for restoration of files from our MERITSS archives. If all the files from a user number were archived, all the files will be reloaded for $30.00. Remember that files which have not been accessed for 3 months are subject to a system purge at any time and we do not promise to give you advance notice.

NEW PORT RATE -- MERITSS is in the position of having considerably more ports than users. In order to promote usage while staying in the black financially, ports are now available at a reduced rate to both research and instructional users who have interactive applications. This new rate, $170 per month, includes the $20 communication cost, and applies to both 10 and 30 character per second service.

New users or current users who wish to expand their service should call Michael Skow at 373-7745 for more details. Those departments with ports at the old rate will be given a dividend, payable in extra ports. Call and arrange the particular time period to which the dividend will apply.

the suggestion box

Q/S *Your Tape Users Guide is really a good thing, chock full of useful information. UCC management should buy the author a dozen roses or a bottle of scotch or whatever, to encourage this sort of user service. Two minor points:*

(1) Could you summarize, from a FORTRAN point of view, the LABEL cards and FORTRAN statements which are most useful for tapes interchanged with non-KRONOS installations? Itwould be handy to have a short appendix covering record sizes, tape formats, code conversions, etc.

(2) The example on page 31 uses FORTRAN WRITE statements to create a tape which has better than 98.3% chance of being unreadable with FORTRAN READ statements; this seems like a poor programming practice. (October 13, 1975)

A The TAPEUSE writeup will undergo a revision by the end of November. An enhanced section on interchange will be included, along with more explicit information concerning nine-track tape use. The example you refer to purposely avoided using the BUFFER OUT statement to demonstrate the use of the E format and an allied quirk wherein a binary write can be used to produce coded output. Its function was the demonstration of a technique which will be obsolete soon when replaced by a new utility routine (currently in the works), which will perform the inverse function of our current REBLOCK routine. Thanks, I prefer scotch. *(W. Elliott)*

Q/S *Please add a parameter to the DUMPPF control card to suppress the catalog of files copied when the P parameter is invoked. When dumping several indices in a run, the information generated is most often incomplete and not useful. Moreover, if many files and many user indices are involved, then considerable wasted paper is produced. (October 7, 1975)*

A We will try to do this during the next quarter break. *(K. Matthews)*

Q/S *How about implementing a control card which will issue the current date to the dayfile. This will be of immense convenience to the timesharing (and other users) who require the SAVEd dayfile as a permanent record of their computing activity. Incidentally, the format of such a dayfile notation should be adapted to humans, e.g., 9:54 AM 29 SEPT 75. (September 30, 1975)*

A A good suggestion. UCC systems staff will be implementing this feature in the near future. Watch SYSNOTES and this newsletter for news of its availability. *(T. Lanzatella)*

Q/S *For the FORTRAN permanent file routines, why not add an optional parameter of integer output type whose value is the PFM error code; the general idea being that in some situations the user's program may not need to be aborted, but merely informed of the PFM request failure. (August 28, 1975)*

A A good suggestion. Systems staff will install this feature during winter quarter. Watch SYSNOTES and this newsletter for more information. *(T. Lanzatella)*

Q/S *Last year, when the cost of paper rose dramatically, UCC raised the prices charged users from 2¢ to 3¢ a sheet. According to a recent article in Computerworld, paper prices have now declined by about 40%. Does UCC plan to change its charges to reflect that reduction? (September 16, 1975)*

A We certainly thank you for your concern regarding paper costs. We are concerned also, so we looked up the article you referred to. The article, indeed, indicated a stabilizing effect in prices along with some price reductions since October, 1974. In another article, published in the St. Paul Pioneer Press (and released by the American Paper Institute), it was indicated that an another rise in costs was to be expected soon. The prediction was that prices would rise another 61% by 1978, and that there would be another paper shortage. However, as far as is practical and permissable to do, we pass on increases and decreases in our supply costs to our users. Further, we have cooperated with other state agencies for many years in buying in large quantities and then passing these savings on to our users in one form or another. Our costs have not been significantly changed so as to warrant reconsideration at this particular time. *(R. Fleagle)*

Q/S *Make MIRJE log-in ring the bell. If the machine goes down and you turn your back on a CRT terminal, you can miss the log-in procedure when it comes up again. (September 9, 1975)*

A This feature will be installed in the near future. *(T. Lanzatella)*

Q/S *I think you should give more (some?) warning to TELEX users when shutting down; say, for example: 10 minutes, 5 minutes, 1 minute warnings. (September 9, 1975)*

A Operations staff always warn timsharing users with at least a 5-minute warning message when they KNOW that the system will be going down. Unfortunately, the system rarely gives advance notice of a crash, thus making a warning to users impossible. *(T. Lanzatella)*

Q/S *Can a new edition of the SPSS text, which has a subject index, be placed in the ExpEng User's Room?*

A New copies will be supplied. *(A. Koepke)*

(continued on page 7)

(continued from page 6)

Q/S *The NOTE file is an excellent way to get information to users. I think you should try to have MIRJE sign-on messages current and in accord with the date of the latest NOTE addition. (September 22, 1975)*

A The operators have received the request. *(T. Hodge)*

Q/S *The telephone on site number 49 is not working properly; there is often no carrier or a bad carrier. "Bad carrier" also occurs at ExpEng and HCS. Please fix these. No B.S. about "I didn't know that" either. I would also like to see coax put in site 49 since it is only a couple of hundred feet; this would give better service and is cheaper than copper wire. (September 23, 1975)*

A We have the telephone equipment tested and repaired when necessary. According to my records, we have had no service requests for these troubles. Please notify the local supervisor (the supervisors are listed elsewhere in this newsletter) when you feel that a U1004 is malfunctioning. If the problem is not solved, feel free to call me at 376-7067, or call Greg Jensen at 373-2522.

Your proposal to connect the Lauderdale U1004 directly to the Cyber's front-end processor is worthy of consideration and is aperiodically evaluated. In fact, we installed the cable (not coax, by the way) last year and ran performance tests. Unfortunately, to implement this service would require the purchase of short-haul modems (one at each end), or the fabrication of a special interface, and the permanent assignment of one Cyber port to this terminal. Present usage doesn't justify this, particularly since the port in question would have to be removed from the rotary which services all dial-up RJE terminals, thereby degrading port-access for non-Lauderdale users. *(D. Parkes)*

Q/S *The user's room at Lauderdale has been extremely full lately. Is there any way to expand this area? Temporary measures, such as opening the conference room, should be considered. Long term solutions should also be considered. (October 8, 1975: 3 inquiries)*

A Space at Lauderdale is becoming more and more a valued and desired commodity. We appreciate your interest in acquiring more user space. However, a more immediate concern would be to at least maintain what is available to users now, and not lose it for other purposes.

I have discussed the idea of opening the conference room with those who are now using it. On a trial basis, we will leave it open after 5 PM Monday through Friday and on weekends if (1) the room has not been reserved for a meeting, and (2) if it is kept clean and reasonably in order. *(R. Folden)*

Q/S *This concerns the T and RT parameters on the LABEL cards. If I specify a LABEL card:*

LABEL,TAPE,VSN=SN0000,W,T=10,PO=W.

I am absolutely locked out of that tape for 10 days. This could be very unpleasant should anything go wrong with the creation of this tape. I must use another tape on the re-run of this job. I suggest some over-ride capability such as T=10/W. If the T=10 does not match the time on the tape, the re-write of the retention cycle is not allowed. The W requests the over-ride. (October 14, 1975)

A The RT and T parameters of the LABEL card can be used in conjunction with the W parameter to protect information on the tape from being destroyed until the specified retention date has been reached. The problem you cite most likely occurs if an error (yours or ours) occurs while the tape is being created. Subsequent attempts to reconstruct the data will be answered with a fatal "LABEL NOT EXPIRED" error message. Currently, the only way around this is to (1) use a different tape until the expiration date is reached, or (2) have the label destroyed through a special request to the tape librarian, necessitating execution of a BLANK card to re-write labels. Since the RT and T parameters are meant to "save the user from himself," the user should have the option to over-ride this "protection." Rather than the specific solution you suggest, we will probably add a new processing option (PO) to the LABEL card. *(W. Elliott)*

Q/S *I suggest you give the operator(s) on duty some leeway in deciding when a tape has been specified correctly. Running a job ten times, then dropping it because the name was not spelled correctly on the request slip is a little ridiculous. I realize that due caution must be taken, but the operators all are competent enough to know at least if a commonly used tape is being used by its owner. (October 1, 1975)*

A In only two situations are we currently dropping jobs due to incorrect labeling of tapes. The first occurs when the label on the tape and the label the operator sees on the scopes are different. The tape is an unlabeled tape and the user is asking for the ring in. This, of course, is for the protection of all users and is the purpose of having the operator check the label.

The second case concerns ring-out situations. Here, because a tape cannot be written on, we allow a one and sometimes two-letter deviation between the label on the tape and the label displayed on the scopes, so long as the operator is confident that the right tape is being mounted.

Your specific problem has been taken care of and we appreciate your confidence in our operators. *(R. Dykstra)*

Q/S *Your figure of 99.1% uptime seems to be misleading. One case in point is this morning (October 24) when SUPIO was down until 10:30 AM, but the system was up from Lauderdale's point of view. I suggest that these statistics should be broken down to reflect such happenings. You should also note that your 'slack' time (2000 - 0400) can account for much uptime and that 'prime' time downs look to be much worse from the user's viewpoint. (October 24)*

A We now distinguish between "prime time" (8AM - 4PM, Monday through Friday) and "all other hours." You are correct about the subsystem failures (EXPORT,SUPIO,TELEX); a count of the number of times a subsystem is down does not accurately reflect the situation from the user's point of view. We are working on ways to give you a more accurate reflection of the system's performance each month. *(L. Liddiard)*

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Q/S *An added comment regarding the Q/A on tape unit problems in the August newsletter:*

On September 2, we ran 5 jobs. All used the same input and all were mounted on MT56. There were 39 three-liners and 6 parity errors in the 5 dayfiles. On September 3 we ran the job twice; both times the tape was on MT53 and there were no three-liners or parity errors! Clearly, this proves 56 was unstuck. Putting in a special request slip is no good -- the operators almost always mount the tape on the drive which we ask them not to use! Calling the Operations Supervisor is a poor solution since he will have to tell about 5 or 6 people and some of them will forget. This will probably have to be done daily, or more probably, for each job (knowing how you people think). The only solution is a control card. I suggest

MTNFG,UNIT,DATE,JOBNAME1,...,JOBNAMEN.

where UNIT is the number, i.e., 50 or whatever, not to be used, either for the next LABEL card or for all following LABEL's, whatever is easier. DATE is the date that the unit failed for that particular user. The optional jobname could be passed to the maintenance men in case they wanted to check in detail the dayfiles and see what kind of errors occurred. Since people are unlikely to remove a MTNFG card from a working deck (why take a chance) the system should check the last maintenance date for that specific unit (LMDFTSU). If LMDFTSU is greater than DATE, then MTNFG needs only to issue a dayfile message as a gentle reminder to the user. If DATE is greater than LMDFTSU, then MTNFG would set some sort of flag for the LABEL processor. (September 9, 1975)

A What your data proves is that MT56 was possibly out of adjustment on 9/2; however, this does not mean that on a continuous basis one can say that a particular unit is not functioning correctly. All of our tape units are kept within CDC specifications and are thus considered equal in performance. This is not to say that you will not have trouble with a particular unit on a particular day. If you are having problems with a unit, we would appreciate knowing of the condition as soon as possible so that we can adjust for the situation.

If you find you are having continuous problems with a specific tape and drive, please contact the Operations Supervisor and leave the administration to him. We will accommodate your needs as best we can.

The idea of having a control card for the specification of a tape unit would hurt not only turnaround of your job but many other tape users as well. This type of specification would also be impractical when one or more units are down for preventive maintenance.

In the past few months we have had very few problems, for this reason I feel the solution stated in the August Newsletter is still applicable. *(R. Dykstra)*

Q/S *A word about the operators in the ExpEng I/O room -- super! All are very helpful, nice, courteous, and patient. Here's to a job well done -- thanks. (September 22, 1975)*

A Thanks for the encouraging words. *(J. Larson)*

short courses

PASCAL
November 3,5,7,10,12,14,17,19,21 (18 hours)
3:00 - 5:00 PM
Room 193 ExpEng
Ref: PASCAL: User Manual & Report

SYSTEM 2000 PROGRAMMING LANGUAGE INTERFACE (PLI)
November 18,20,25 (6 hours)
2:15 - 4:15 PM
317 Aero
System 2000 Reference Manual

IMSL
November 11,13 (4 hours)
3:00 - 5:00 PM
225 Aero
Materials from instructor

INTRODUCTION TO DATA MANAGEMENT
November 17,19,21 (3 hours)
3:00 - 4:00 PM
313 Aero
References from instructor

SPSS
November 18,20 (4 hours)
2:15 - 4:15 PM
319 Aero
SPSS Edition 2

→ SYSTEM 2000 Version 2.4 FEATURES
This will be a one session seminar on the features of the new version of System 2000 (Version 2.4) and on the changes from Version 2.3. The course will cover conversion measures to be made on data bases for use with the new version.
Monday, November 24 from 2:15 - 4:15 PM in room 25 Arch.

documentation

WRITEUP documents

→ABCLIST	Extended CATLIST utility (1 page)
AMEND	Unit record manager (4 pages)
BLANK	Initial label writing (2 pages)
→CALLPRG	Library search extension (6 pages)
CATALOG	Catalog a file (2 pages)
CATLIST	Catalog a permanent file (3 pages)
→CATLSYS	Extended CATLIST utility (1 page)
CCINDEX	Index to UCC documentation (6 pages)
→CIMSPL1	CIMS PL/1 User Guide (34 pages)
→CHANGER	Extended change utility (1 page)
CONTROL	Control card processor (9 pages)
COPYU	Copy unit record (3 pages)
COST	Calculate job cost (1 page)
DISPOSE	DISPOSE control card (9 pages)
DMPCOR	Central memory dump routine (1 page)
DMPECS	Dump extended core storage (1 page)
→DOCLIST	List of UCC documentation (3 pages)
DRESS	Prepare source file for MODIFY/UPDATE (13 pages)
DUMPPF	Permanent file dump/load utility (7 pages)
ERRMESS	Dayfile error messages (15 pages)
→EXAMINE	Magnetic tape content determinator (4 pages)
FILES	Local file manipulator (4 pages)
→GETSAVE	Permanent file transfer utility (1 page)
ISIS	Interactive statistics instr. system (45 pages)
LIBEDIT	Library editing program (3 pages)
MF501	Output file to microfilm (3 pages)
MODIFY	Source library editing program (11 pages)
→NINETK	Guide to 9-track tape usage (4 pages)
NOTE	Timesharing system notes (cumulative)
PACKMS	Pack random file (1 page)
→PASCAL	PASCAL information file (26 pages)
PFGUIDE	Permanent file user's guide (60 pages)
PFILES	Permanent files request processor (7 pages)
PREVIEW	Preview display dump (1 page)
→PURGER	Extended purge utility (1 page)
PTR	Timesharing version of PTRLIST (weekly update)
PTRLIST	Program trouble reports (weekly update)
REBLOCK	Converts S tapes to internal format (2 pages)
RJECOM	Remote job entry commands (4 pages)
RJDSTAT	SUPIO statistics (daily)
RJMSTAT	SUPIO statistics (cumulative)
SITEBIN	Shelf locations for output distribution (2 pages)
SNOINFO	CAL 6000 SNOBOL (24 pages)
SNPSHOT	Write/restore registers and dump memory (5 pages)
STRATEN	Straighten COMPASS source program (4 pages)
SYSMODS	Latest system changes (cumulative)
SYSNOTE	System notes (cumulative)
TAPEUSE	UCC Tape user's guide (70 pages)
TESTCR	Card reader testing routine (1 page)
TESTLP	Printer and line test program (2 pages)
TIDY	Tidies FORTRAN source program (7 pages)
TSTATS	Tape mounting statistics (daily update)
TYPESET	Text reform program (12 pages)
UNPAGE	Edit carriage control characters (6 pages)
→XEDIT	Extended interactive text editor (14 pages)
1004SET	Univac 1004 character set conversion (4 pages)

→new writeup or recent revision of old writeup.

Get copies of these writeups by using a deck similar to this:

Jobcard with T1 and CM10000
ACCOUNT card
WRITEUP,name.
(6-7-8-9)

where "name" is one of the names listed above. MIRJE users should use the control statement:

X,WRITEUP,name

while in the BATCH subsystem (keeping in mind that a 70-page writeup will tie up a terminal for a l-o-o-o-o-o-ng time).

CDC Reference Manuals

CDC APL*CYBER	19980400C	$ 4.00
CDC ALGOL Version 3	60322900D	5.00
CDC BASIC 2.1	19980300C	4.50
CDC COBOL Version 4	60384100E	10.50
CDC COMPASS Version 3	60360900E	6.75
CDC FTN Version 4	60305600G	9.00
CDC FTN DEBUG User's Guide	60329400B	2.00
CDC KRONOS 2.1 RM, Vol. 1	60407000D	6.75
CDC MODIFY	60281700F	1.50
CDC PERT/TIME	60133600D	1.50
CDC Record Manager	60307300H	5.00
CDC SIMSCRIPT	60358500E	4.00
CDC SIMULA Version 1	60234800E	5.00
CDC SORT/MERGE Version 4	60343900H	3.00
CDC Text Editor (EDIT)	60408200C	1.50
CDC Timesharing User's RM	60407600D	3.00
CDC UPDATE	60342500F	2.00

Reference copies of these CDC manuals can be found in the User Rooms and at the RJE terminal sites. Individual copies may be special ordered through the Engineering Bookstore. Call 373-7744 for further information.

Other reference manuals

BMD Computer Programs Reference Manual
IMSL Library Catalog (Library 3, Edition 4)
MNF Reference Manual
OMNITAB II Programmers Reference Manual
SPSS Edition 2
SPSS 6000/Version 6.0
System 2000 Reference Manual
†System 2000 User's Guide
††UMST Reference Manual

Reference copies of these manuals can be found in the User Rooms and at the RJE terminal sites. These manuals are stocked at the Engineering Bookstore as "reference texts."

†being revised -- will be available Fall Quarter '75
††out of print -- will not be reprinted

UCC free publications

Compleat Guide for the Neophyte
Index to Cyber 74 User Software
Instructor's Guide to Batch
Pocket Guide to UCC Facilities
System 2000 User Aids: No. 1 (Accessing a Data Base)
System 2000 User Aids: No. 2 (Designing a Data Base)
System 2000 User Aids: No. 3 (Using the "WHERE" clause)
Student Guide to Batch
MINN Subprogram writeups (see "Index" for complete list)
ISIS User's Manual
XEDIT 2.0
Univac 1004 Operating Instructions

Copies of these writeups can be obtained in Room 140 ExpEng or call 373-7744.

NEW PUBLICATIONS

System 2000 User Aids (No. 1,2,3)	free
SPSS 6000/Version 6.0	$ 2.10
Univac 1004 Operating Instructions	free
Student Guide to Batch (revised)	free
XEDIT 2.0 (October revision)	free

The SPSS 6000/Version 6.0 manual is available in both the Engineering bookstore & in H.D. Smith bookstore. The free publications can be obtained in 235a ExpEng or call 373-7744.

from our readers

ON THE USE OF USE -- *contributed by Adrian Swanson, Department of Pharmacology*

One of the nifty but little appreciated features of the timesharing version of MNF is the USE(lfn) statement. Upon encountering this statement, the compiler is informed that additional FORTRAN subprogram source code statements will be found on local file lfn, and are to be compiled after the current set of program units have been processed. The final effect is such that the separate files appear to be contiguously appended to the original file.

The virtue of the USE statement is best realized by the timesharing user who wishes to assemble source code from FORTRAN program units residing on more than one permanent file. The USE statement dispenses with the time consuming and expensive preliminary step of copying each separate file to a single file on which the MNF compiler can then operate.

To illustrate, suppose we wish to generate the following assemblage of FORTRAN source code:

```
PROGRAM ZIPPO(...)
      :
SUBROUTINE ASSAY(...)
      :
FUNCTION FUN(...)
```

where the main program resides on permanent file ZIPPO, the function resides on permanent file FUNCTI, and the subroutine is to be found on the permanent file CAMPRIA, belonging to user number XYZ1234. Without the USE statement, these BATCH commands would be necessary:

```
GET,ZIPPO,FUN=FUNCTI
GET,CAMPRIA/UN=XYZ1234
CCF,ZIPPO,ZIPPO
CCF,CAMPRIA,ZIPPO
CCF,FUN,ZIPPO
CLEAR,ZIPPO
MNF,K,I=ZIPPO...
```

However, by incorporating the USE statements into program ZIPPO thus:

```
PROGRAM ZIPPO(...)
USE(CAMPRIA)
USE(FUN)
```

the copying operations can be eliminated and the commands reduced to these:

```
GET,ZIPPO,FUN=FUNCTI
GET,CAMPRIA/UN=XYZ1234
MNF,K,I=ZIPPO...
```

A somewhat simpler example, not involving procedure files, is the situation where you might wish to choose one of several variants of a subroutine called SUB , to be called from program X:

```
file BIPPY              file SUB                file XSUB
  PROGRAM X(...)          SUBROUTINE FUN          SUBROUTINE FUN
  USE(SUB)                   .                       .
     :                    (standard version)      (experimental version)
     :                       :                       :
  CALL FUN                RETURN                  RETURN
  END                     END                     END
```

To use the standard version of the subroutine:

```
OLD,BIPPY
GET,SUB
RNH
```

To use the experimental version of the subroutine:

```
OLD,BIPPY
GET,SUB=XSUB
RNH
```

In summary, the USE statement results in more compact and versatile control expressions while, at the same time, reducing the number of PRU's transferred in a job. It therefore tends to encourage the economical use of permanent file storage by permitting the FORTRAN programmer to conveniently retrieve commonly used subprograms as needed, rather than keeping many copies scattered throughout his applications programs.

PATTERN RECOGNITION: A NEW VERSION OF ARTHUR -- *contributed by D. Eggers, Health Computer Sciences*

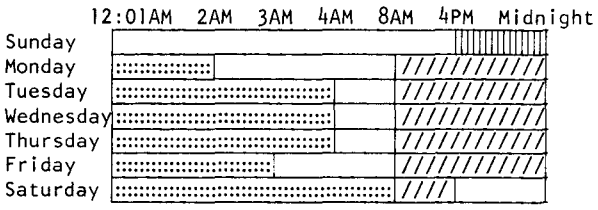
A new version of the statistical pattern recognition program, ARTHUR, has been received from the University of Washington. It has been enhanced at the University of Minnesota and will replace the present version on November 15, 1975. The new version features greatly reduced core size and paper consumption, increased speed, and the option to print misclassification matrices for a number of procedures.

This version continues to provide means for preprocessing the data, feature (variable) selection, feature reduction, category (group) separation with 2 and 3 dimensional line printer plots, and means for determining relationships between features. In addition, the following procedures have been added:

(1) NLM - Non-linear mapping from N space to 2 or 3 space.

(continued on page 12)

CYBER 74 OPERATING HOURS*



::::::: Lauderdale only

||||||| Lauderdale, ExpEng

///// Lauderdale, ExpEng, West Bank

*These are machine hours. UCC operators stop accepting jobs about 15 minutes before operations end to enable the queues to clear on time.

SUP10 (RJE medium speed terminals) comes up 1/2 hour after operation begins and closes down 1/2 hour before operation ends.

TELEX (MIRJE terminals): the Cyber 74 operator will issue a 10 minute warning before TELEX is dropped.

UofM-Twin Cities RJE sites

site	ID	supervisor(s)
East Bank		
ElectE 38	4V	J. Guentzel 373-5404 M. Cook 373-3985
EltH N640	4W	J. DeWitt 376-7377 N. DeWitt 376-7377
ExpEng 130	4B	Shift Supervisor 373-4596
KoltH S191	4Z	T. Faulkner 376-7024 J. Duff 373-2348
MasonH M39	4C	L. Croatt 373-0336
MinMet 321	4L	C. Swanson 373-5475 V. Bongiorno 373-2309
Physics 69	44	R. Scarlett 373-0243 D. Olson 376-7175 R. Hendrickson 373-3361
SpaSci 134	43	R. Weinberg 373-7881
TerrH W106	4I	R. Baker 373-3567
West Bank		
SocSci 167	4X	J. Shea 373-3608
St. Paul		
BioSci 257	47	R. Comstock 373-0979 R. Cardellino 376-3407
ClaOff 125G	48	C. Bingham 373-0988 S. Weisberg 373-1068 Consultant 373-0829 Consultant 376-3846
CofH 415	2L	D. Nelson 376-7003 T. Ehlen 376-7003
NorH 24	4O	J. Colten 373-0990
Lauderdale		
User's Room	49	Shift Coordinator 373-4940

CONSULTING SITES

General consulting:

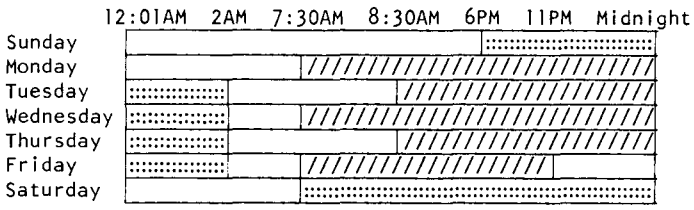
User's Room (Lauderdale)
ExpEng 140 (East Bank)
BlegH 25 (West Bank)

Statistical packages consulting:

ExpEng 140 (East Bank)
SocSci 167 (West Bank)
ClaOff 125 (St. Paul)

Hours are posted at each site.

CDC 6400 (MERITSS) OPERATING HOURS



///// up, attended

::::::: up, not attended

UofM-Twin Cities Instructional Timesharing Labs

site	supervisor
East Bank	
CentH Computer Room	R. Richgarn 373-2289
EltH 121 & 124	D. Anderson 373-5456
ExpEng 140	T. Hodge 373-4599
HealthSciA 1-752	L. Ellis 373-0331
LindH 136C	D. Boyd 373-7581
MechE 308	A. Erdman 373-2977
TerrH Computer Room	R. Baker 373-3567
VincentH 4	W. Stenberg 373-2586
WaLib 204	R. Estelle 373-5195
West Bank	
MiddlebrookH Computer Room	P. Johnston 376-6561
SocSci 167	J. Shea 373-3608
St. Paul	
ClaOff 125	S. Weisberg 373-1068

TELEPHONE NUMBERS

373-4548	Account Clerk
373-4360	Administrative Offices
376-3963	Educational Services (R. Franta)
373-4596	ExpEng I/O Station
376-7067	Field Engineering
373-2521	Keypunch Supervisor
373-4940	Lauderdale Shift Coordinator
373-4995	Microfilm Operator
373-5907	Program Librarian
373-4994	Recorded message: ExpEng I/O jobs
373-1798	Recorded message: MERITSS status
373-7744	Reference Library
376-3963	RJE Services (R. Franta)
373-9751	Secretary - Hybrid Lab
373-4912	Secretary - Lauderdale
373-4995	Tape Librarian
376-5592	Telephone consulting: Cyber 74
373-5753	Telephone consulting: MERITSS
373-4599	User Services (T. Hodge)
373-4921	User's Room (Lauderdale)
373-3608	West Bank Computer Center

KEYPUNCH SITES

East Bank	*West Bank*	*St. Paul*	*Lauderdale*
ElectE 38 (1)	BlegH 86 (11)	ClaOff 125 (1)	User's Room (5)*†
EltH N640 (2)	BlegH 90 (1)	CofH 415 (1)	
ExpEng 130 (2)	SocSci 167 (2)*	NorH 24 (2)	
ExpEng 131 (1)			
ExpEng 208 (14)*†			
KoltH S191 (1)			
MinMet 321 (2)			
Physics 69 (1)			
TerrH W106 (1)			

*includes interpreting card punch.
†includes 029 keypunch.

(continued from page 10)

(2) PIECE - Piece-wise least-squares multiple regression.
(3) PNN - "Nearest-neighbor" continuous property predictor.
(4) REGRESS - Multidimensional multivariate regression method which computes linear discriminant functions.
(5) TUNE - Produces all linear, quadratic, and ratio feature terms.

ARTHUR is presently available at 60 installations in the United States and Europe and is becoming the standard statistical package for pattern recognition. Further information and documentation on ARTHUR can be obtained from Claus E. Liedtke (373-0327) or Dan Eggers (373-5613), Division of Health Computer Sciences, Box 511 Mayo Memorial Building, University of Minnesota, Minneapolis, Mn 55455.

brief notes

PL/I IS HERE -- A limited implementation of the PL/I language is now available on the Cyber 74. This compiler is under development at the ERDA Computer Center, Courant Institute of Mathematical Sciences. Eventually, the compiler will represent a complete implementation of the PL/I language. Users can obtain an excellent document describing the compiler and its use at this installation with a WRITEUP,CIMSPLI control card (see page 9 of this newsletter). *(T. Lanzatella)*

SPSS VERSION 6.0 NOW CURRENT -- On October 27, 1975 (as announced in an earlier SYSNOTE), SPSS Version 6.0 was made the current version and Version 5.8 was made PAST. The primary reference source for the SPSS system is a book, Statistical Package for the Social Sciences, Edition 2 (McGraw-Hill, 1975), which is now available at the University bookstores. Also available at the Engineering and H.D. Smith bookstores is an update manual describing the differences between the IBM version and the CDC 6000 version of SPSS. This update manual also documents the improvements and additions made to the 6000 version of SPSS. *(S.P. Yen)*

IRONFISH ENTERS CHESS TOURNEY -- *The chess program, IRONFISH, by Gary Boos and James Mundstock played on our Cyber 74 during the ACM '75 Conference in Minneapolis in October; ending with a score of 1 - 3. IRONFISH drew against the program SORTIE and against Monty Newborn's program, OSTRICH. Not a bad tournament score for a new program in a field of 12!*

FUTURE TO CURRENT TO PAST -- During winter quarter break, the FUTURE version of FORTRAN Extended (FTN) will become the current version, and the current version will become the PAST version.

RETURN TO:
UNIVERSITY COMPUTER CENTER
227 EXPERIMENTAL ENGINEERING
UNIVERSITY OF MINNESOTA
MINNEAPOLIS, MN 55455

IF YOU WISH TO HAVE YOUR NAME
REMOVED FROM THIS MAILING LIST,
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UCC NEWSLETTER
AT THE ABOVE ADDRESS, OR CALL
373-7744.
