

# University Computer Center newsletter

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20739

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227 EXPERIMENTAL ENGINEERING

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## SCHEDULE FOR THE LABOR DAY WEEKEND

MOMS will run as usual through Saturday, August 31st. At 3:00 p.m. MOMS will go down for the last time and the final free KRONOS session will last from 3:00 p.m. to 7:00 p.m. Only KRONOS will be employed after 3:00 p.m. Saturday, August 31st.

SATURDAY, August 31 -- ExpEng closes at 4:00 p.m.; Lauderdale closes at 7:00 p.m.

SUNDAY, September 1 -- ExpEng closed; Lauderdale open from 4:00 p.m. to 2:00 a.m.

MONDAY, September 2 -- ExpEng closed; Lauderdale open from 6:00 p.m. to 4:00 a.m.

TUESDAY, September 3 -- ExpEng opens at 8:00 a.m. as usual; Lauderdale will open at usual times.

HAVE YOU TESTED ALL YOUR PROGRAMS UNDER THE KRONOS OPERATING SYSTEM? HAVE YOU TRIED READING A TAPE? HAVE YOU ASKED K.C. MATTHEWS OR T.T. LANZATELLA (373-4572) TO CONVERT YOUR PACK FILE TO A PERMANENT FILE AND THEN USED YOUR FILE? (see article on page of this issue).

YOU CAN LEAVE A JOB IN THE "KRONOS BIN" AT LAUDERDALE OR AT EXPERIMENTAL ENGINEERING DURING THE DAY ON TUESDAY; IT WILL BE RUN FOR YOU DURING KRONOS TIME THAT EVENING (see KRONOS "INSTANT" ON PAGE 3).

## NEW VERSION OF SNOBOL AVAILABLE

--by Andy Mickel

A new version of standard (macro-implementation) SNOBOL4 (version 3.10) is now available via the control cards:

```
NEW(SNOBOL)
SNOBOL(parameters)
```

This version will become "current" (and will replace the old SNOBOL Version 3 system) when KRONOS is available full time on September 1. SNOBOL4 Version 3.10 is from the University of Colorado and replaces the larger, slower macro-implementation of SNOBOL4 from Purdue University and I.D.A.

Changes and improvements in Version 3.10 include:

- (1) Minimum field length is now 50000 instead of 65000.
- (2) Fast I/O routines are used instead of FORTRAN I/O.
- (3) The SNOBOL control card now takes the following forms:

```
SNOBOL(I=Ifile,L=Ofile,P=Pfile,S=Sfile)
```

where Ifile is the Input file (Unit 1) (default INPUT), Ofile is the Output file (Unit 2) (default OUTPUT), Pfile is the Punch file (Unit 3) (default PUNCH), Sfile is the Scratch file (Unit 4) (default SCRATCH).

NOTE: After converting to KRONOS, a change planned for SNOBOL is to renumber the I/O Units 5, 6, 7, and 8 to conform more closely to the conventions outlined in the first reference listed below.

- (4) Version 3.10 is upward compatible in every way with Version 3. Purdue University is no longer supporting SNOBOL, whereas Version 3.10 is still under active development at Colorado.
- (5) Several additional primitive functions have been added:  
REVERSE(S) - returns a string whose value is the characters in strings reversed. Example:  
REVERSE(↑REKNIT↑) yields the value ↑TINKER↑.  
LIMIT(U,V) - sets the output line limit on unit U to V. Limits on output files are initially set to 5000. The OUTPUT routine decrements the limit by 1 each time a line is written on that unit. The job is terminated when any limit reaches zero. LIMIT returns V as its value, unless V is negative, in which case the existing limit is returned and the limit is unchanged. NOTE: LIMIT(U,V) replaces the LC=number parameter on the old SNOBOL control card.  
DAYFILE(S) - writes the string S into the user dayfile. DAYFILE fails if SIZE(S) is greater than 80.
- (6) Execution times for 17 test programs were on the average 20% faster.

(SNOBOL continued from page 1)

SNOBOL4 is a very powerful string processing and symbol manipulation language used primarily for non-numeric applications. Having its origins in the early Sixties, SNOBOL has evolved through four versions, becoming more generalized and possessing many other datatypes besides those related to handling strings of characters.

Standard SNOBOL4 is defined in the excellent tutorial and reference text: The SNOBOL4 Programming Language by Griswold, Poage, and Polonsky (Prentice Hall, 2nd ed., 1971).

A very good book for beginning SNOBOLers is: A SNOBOL4 Primer by Griswold and Griswold (Prentice Hall, 1973). New documentation for both Colorado SNOBOL and Cal SNOBOL (SNOBOLC) is forthcoming in the UCC writeup: "SNOBOL4 at the University of Minnesota" to be available in November at the time of the next SNOBOL short course.

It is recommended that SNOBOL be used for debugging and teaching and SNOBOLC be used for SNOBOL4 production applications. (See June, 1974 newsletter for SNOBOLC information.)

## THE HYBRID COMPUTER LABORATORY

-- by Stephen Kahne

On July 1, 1974, the Hybrid Computer Laboratory again became part of the University Computer Center. Old time users will remember that in the mid-1960's, when the Hybrid Computer equipment was purchased and originally located at Lauderdale, it was part of UCC. Since then, it has been operated as an independent service and research facility located in the Space Science Center under the direction of Professor Stephen Kahne. Now it has again returned to UCC with Professor Kahne serving as its director and Associate Director for Hybrid Systems of the University Computer Center.

The Hybrid Computer Laboratory, for our readers who are not familiar with it, is a large-scale analog and digital computer facility with a large interactive computer graphics terminal and direct high-bandwidth communications with the Cyber 74. There is a complete description of the equipment and consulting services of the Laboratory available from Barbara Heyer (373-9751).

HCL provides contract programming for educational and research projects which require hybrid computer facilities. For details concerning services available, contact Mica Buric (373-7904), Rick Houska (373-7881), or Bill Zech (373-5768).

Among the more recent projects undertaken by the Laboratory are the following:

Car Pooling: The University of Minnesota car pooling service was developed at the Laboratory under contract with the Minnesota Highway Department and the Federal Highway Administration.

Critter Detector: This is the name of a computerized data acquisition and storage system for animal detection and tracking presently being designed and developed for the Cedar Creek Biological Research Station.

Mechanical Engineering Computer Aided Instruction Project and Mechanical Simulation: In a cooperative effort between the Mechanical Engineering Department and HCL, a mechanical system simulator using the hybrid-graphics capabilities of the 1700 system was programmed for use with ME student labs.

Control System Design Package: Working with students and faculty in Electrical Engineering and Control Sciences, the Laboratory staff is developing a comprehensive control system design package. This collection of programs will add measurability to the attractiveness and utility of the HCL system library, and will permit many researchers and practicing engineers to develop modern control systems using a variety of classical and multivariable design techniques.

Most HCL operation is open-shop and time may be reserved on the machine in Room 125 Space Science Center. Facilities of the Laboratory are available 24 hours/day to all University staff and students. Upon completion of a brief operating course, keys may be made available for off-hour usage. Computer grants are available for instructional computing; however, a nominal supply charge must be paid by the user's academic department. Applications for access to the machine are available from Barbara Heyer (373-9751).

## NEWS FROM SYSTEM NOTES

... from SYSNOTE #65 to all users:

Anyone who maintains pack files under the MOMS operating system may have UCC convert these files to permanent files accessible under KRONOS by calling either Thomas Lanzatella or Kevin Matthews at 373-4572. This conversion request must be made at least 4 days before the KRONOS session during which the user anticipates running. There will be no charge for this service.

An extra parameter has been added to the AUDIT control card which facilitates the conversion of MOMS pack files to KRONOS permanent files. Documentation for the AUDIT control card can be obtained by using the following control card in a job deck:

WRITEUP,AUDIT.

... from SYSNOTE #65 to all SIMULA users:

A bug in the SIMULA compiler has been corrected in the new version which is now available via the control card:

NEW,SIMULA.

The control card sequence to compile and execute a SIMULA program on INPUT with this corrected version is:

NEW,SIMULA.  
LIBRARY,SIMLIB.  
SIMULA,L,X.  
NOREDUCE.  
LGO.

The LIBRARY control card is necessary. This correction has gone into the version of SIMULA available under KRONOS 2.1.

## KRONOS 2.1 "INSTANT" CONVERSION GUIDE (EDITION 2) -- AUGUST 1, 1974 \*

-- by Andy Mickel

WHAT IS KRONOS?

On September 1, 1974, UCC will activate the KRONOS 2.1 operating system full time on the CDC Cyber 74-16 machine. KRONOS 2.1 is the program scheduling your jobs through the machine, calling up the various language processors (compilers, etc.) and other packages that you request, and recording usage statistics and accounting information. KRONOS is CDC's modern operating system for its 6000 series and Cyber 70 series machines. It provides many advantages over other CDC operating systems (e.g. SCOPE). KRONOS makes better use of the hardware, provides time sharing capabilities, and possesses user-oriented features such as better security (especially tapes), easy-to-use permanent file scheme, and a control language (KCL).

REASONS FOR CHANGE?

UCC acquired the 6600 in the year 66-67. The first operating systems run on the machine were Chippewa (COS) and SCOPE 2. After the advent of SCOPE 3, a hybrid system was developed at the U of M which combined aspects of SCOPE 3.1.6, MACE (a CDC precursor to KRONOS), and some locally customized features. This MOMS 1.0 system has been in use for more than 4 years, but has become unwieldy and undocumented. Because of the acquisition of the Cyber 74 (an improved version of the 6600) whose expected lifetime is several more years, the change to a new operating system is warranted especially because CDC is abandoning SCOPE. KRONOS 2.1 allows us to "catch up" to more recent versions of CDC compilers which conform to accepted standards. Notably KRONOS runs jobs more efficiently, other installations (particularly in universities) with CDC 6000/Cyber 70 series machines are making the change, and the next CDC systems will be based on KRONOS concepts.

REFERENCES?

The standard reference for KRONOS 2.1 from CDC is the KRONOS 2.1 REFERENCE MANUAL #60407000 B.

References in the UCC Newsletter explaining the KRONOS changeover are:

October 1973 p. 1: "KRONOS 2.1 Scheduled for September 1974"

February 1974 p. 1: "CDC 6600 to be Replaced"

June 1974 p. 2: "KRONOS Conversion Periods for June"

July 1974 p. 2: "KRONOS 2.1 Test Dates for July and August"

In addition the Systems Staff has prepared 7 Conversion guides plus this "INSTANT" Guide:

#1 MOMS TO KRONOS Control Card Conversion Guide, February, 1974

#2 ABRIDGED KRONOS Control Cards Description, March, 1974

#3 MOMS TO KRONOS Compiler Conversion Guide, February, 1974

#4 MOMS TO KRONOS Tape Users Conversion Guide, February, 1974

#5 PERMANENT FILES UNDER KRONOS 2.1, February, 1974

#6 KRONOS 2.1 COBOL Conversion Guide, February, 1974

#7 KRONOS 2.1 FTN Conversion Guide, November, 1974

Note: Information in this "INSTANT" may correct certain portions of the first 6 Conversion Guides, as they were produced at an earlier date.

CONVERSION PROCEDURE AND INFORMATION?

1. Since June, trial periods have been available for you to test your programs and to cushion the conversion trauma, as well as to give the systems staff a chance to evaluate the operating system and to correct problems. Remember: we know our test decks work; do yours? Users may put KRONOS jobs in specially marked bins at Exp. Engr. 131 and at Lauderdale on Tuesdays during the day (taking a BIN card as usual) and pick them up the next morning. The remaining test dates before September 1 are:

<u>Tuesdays</u> (all stations)	<u>Thursday</u> (all stations)	<u>Saturdays</u> (Laud. & RJE only)
July 30, 6 PM - 4 AM		August 3, 3 PM - 7 PM
August 6, 6 PM - 4 AM		August 10, 3 PM - 7 PM
August 13, 6 PM - 4 AM		August 17, 3 PM - 7 PM
August 20, 6 PM - 4 AM		August 24, 3 PM - 7 PM
August 27, 8 AM - 4 AM	August 29, 8 AM - 4 AM	August 31, 3 PM - 7 PM

Notes: Tuesday use thru August 20 will cost you CP time, cards and paper. Saturdays will be completely free!!!

Tuesday the 27th and Thursday the 29th will be fully accounted: (Long production jobs will be

CP time @ \$9.00/min., paper @ 3¢/pg., and cards @ .3¢/card; dropped)

tape mounts, permanent file storage, and KPR's transferred (at a rate to be determined). KPR's (Kilo Physical Record units) are a measure of I/O activity (replaces PP time).

Consulting: At all times staff on call at Lauderdale: 373-4921.

On Tuesdays at Experimental Engineering Room 140. (6 PM - 10 PM)

For medium-speed remote terminals: call 373-4921.

PLAN AHEAD AND CONVERT BEFORE SEPTEMBER AND SAVE \$\$\$!!! (Avoid the rush to Confusion.)

(see over)

\* A REVISED VERSION WILL BE ISSUED WHENEVER NEW INFORMATION IS AVAILABLE.

2. The basic job deck setup is different. Under KRONOS:

Job card:	name <sup>7</sup> ,Tnn,CM <sup>mmmmmm</sup> . comments	0 < nn ≤ 4095 in decimal; mmmmm < 150000 <sup>8</sup>
Bin card:	BIN,ss,bbbb.	ss=site code; bbbb=bin number
Account card:	ACCOUNT,usernum,DUMMYPW.	usernum=7 character KRONOS user number - DUMMYPW=password that all users begin with.
Other commands	:	(a RESOURC card specifies # of magnetic tapes if > 1 and/or user-owned packs.)
Record Separator	<sup>7</sup> 8 <sub>9</sub>	(User ECS will be provided with a control card of the form ECS,mmm. about August 1.)
End of Information	<sup>6</sup> 7 <sub>8</sub> 9	

Loading binary decks from file INPUT requires changing the 2 trailing <sup>7</sup>8<sub>9</sub> record separators to one <sup>6</sup>7<sub>9</sub> KRONOS file separator. Binary decks and <sup>6</sup>7<sub>9</sub> cards of course cannot be used on medium-speed remote terminals. (see #13)

The usernum on the ACCOUNT card can be obtained from your class instructor or your project director. If that fails, see the consultant at Lauderdale or Exp. Engr. or call 373-4548 during regular working hours. Be sure to have your OLD account number with you.

The password parameter on the ACCOUNT card specifies a password that some users can immediately change if someone else is suspected of running jobs under your user number.

CONVERSION TIPS, OTHER CHANGES AND DIFFERENCES BETWEEN MOMS AND KRONOS?

- Most Language Processors (compilers, etc.) have been converted to KRONOS. Note that the major exception is that RUN23 replaces both FUN and RUN. (see conversion guide #3).
- The Subroutine Library developed at the U of M uses the FTN Fortran Compiler calling sequence. MNF uses the FTN subroutine library. A copy of MOMS SYSLIB will be brought over for RUN23 but will be unsupported. (see conversion guide #3). The MNF C=RUN parameter gets the RUN/FUN calling sequence.
- Permanent Files using the PACK control cards on MOMS are not available. Pack files will be transferred to KRONOS permanent files on 4 day notice. Call K. Matthews (373-4572). (see conversion guide #5).
- The structures used on MOMS and KRONOS tapes are considerably different. Even though MOMS tapes can be read under KRONOS, it is suggested that you use KRONOS format when writing tapes. (see conversion guide #4).
- Many control cards are different under KRONOS. For example: CBR, CBF, CCR, and CCF do not have the options that were available under MOMS. (see conversion guides #1 and #2).
- Permanent files and tapes generated under KRONOS trial periods will be available from one trial period to the next and into the fall (after September 1).
- Version 3 of FTN, COBOL, and SORTMRG were brought over to KRONOS instead of using the untested and possibly unstable version 4 equivalents. Version 4 of each will be made available later if they prove reliable. Conversion guide #6 is therefore premature and #7 will be made available when the change is made for FTN.
- Although there is currently no conversion guide for applications packages, UMST, SPSS, OMNITAB, SSP, EISPACK, GPM, BMD, BMDX, IMSL, APEX, S2000, PLIFOR, PLICOB, SIMPLX, ALMAP, FORPREP, TIDY, KWIC, SIS, TRIAL, PISCES, etc., will be brought over. However not all of them are available at the present, so try to access them and see. Definite information will be provided as soon as possible.
- Most packages available via the MOMS ACQUIRE card are accessed with the FETCH command under KRONOS.
- Permanent files may be automatically backed up on tape at the user's option and at a cost to you. Changes that are made to permanent files shortly before a system "crash" may not have been backed up.
- When deciding whether to create a KRONOS indirect or direct access permanent file for transferring a MOMS Pack file, remember that 5 record blocks < 300 sectors < 6 record blocks. (see conversion guide #5)
- MODIFY OPLs will work as they presently exist.
- A <sup>7</sup>8<sub>9</sub>17 card (<sup>7</sup>8<sub>9</sub> in col 1; 17 in cols 2 and 3) may be used as a substitute for a KRONOS <sup>6</sup>7<sub>9</sub> card at medium speed remote stations and in the future at high speed stations as well.
- Jobs printed at Lauderdale may suffer auto page eject gaps in the output. Printing a Q carriage control in column one disables this for your job.
- If you suspect a system bug in any package, fill out an orange PROGRAM TROUBLE REPORT (PTR) card so that a systems person will be notified to fix the problem for yourself and the next user. Thanks!
- MNF Batch is not yet fully available; use regular MNF.
- This "INSTANT" guide will be updated to reflect other significant developments in the conversion to KRONOS!

CYBER 74 USAGE

CYBER 74 USAGE FOR MAY

Jobs run:	79,907
from ExpEng	26.8%
from Lauderdale	7.6%
from West Bank	17.6%
from other remotes	46.2%
for maintenance	1.8%
Average times:	
on input queue	9.7 min.
at control point	4.4 min.
on output queue	6.6 min.
printing	1.5 min.

CYBER 74 USAGE FOR JUNE

Jobs run:	60,230
from ExpEng	25.3%
from Lauderdale	9.7%
from West Bank	17.0%
from other remotes	46.0%
for maintenance	2.0%
Average times:	
for input queue	8.4 min.
at control point	4.7 min.
at output queue	7.1 min.
printing	1.6 min.

CDC 6600 & CYBER 74 USAGE FOR

FISCAL YEAR JULY 1, 1973-JUNE 30, 1974

Jobs run:	668,967
from ExpEng	27.7%
from Lauderdale	11.8%
from West Bank	17.0%
from other remotes	39.2%
for maintenance	4.3%
Average times:	
for input queue	16.9 min.
at control point	5.8 min.
at output queue	5.8 min.
printing	1.7 min.

## LANGUAGE PROCESSOR USAGE

--by Andy Mickel

Below is a table of year-end totals of the usage of various language processors (compilers, interpreters, assemblers, etc.) available on the MOMS 1.0 system. The period covers the fiscal year from July 1 through June 30.

<u>PROCESSOR</u>	<u>USAGE (1973-74)</u>	<u>Usage (1972-73)</u>
ALGOL	1976	1351
BASIC	492	15
BATCH (MNF)	46998	31144
COBOL	29450	18644
COMPASS	14737	19607
EMULATE (3200)	2606	4687
FTN	22035	21323
FUN	89911	87691
LISP	291	n/a
MIMIC	403	n/a
MIXAL	14642	8148
MNF	86094	68861
PASCAL	1306	n/a
PLONE	9	n/a
RUN	28595	43924
SIMS	615	104
SIMULA	1031	355
SNOBOL	3292	4754
SNOBOLC	1468	n/a
UMRPG	2392	n/a
UTALGOL	62	n/a
6600/CYBER 74 TOTAL JOBS	668967	577180

\* n/a - statistics not available.

## THE SUGGESTION BOX

(Unsigned suggestion cards are ignored. Questions may be reworded for clarity.)

Q/S Anyone who has seriously used the 1004's with programming languages such as PASCAL and SNOBOL must be aware of "the character set problem." It seems only reasonable to expect that all 63 characters (whatever the graphic) should be readable and printable as unique 1004 characters. I'll bet that this problem can be solved, but I wonder how long it will take UCC to do it. Any guesses at your end?

A More than several questions have been asked of this nature. The current character set equivalences were done at a time when languages other than FORTRAN were deemed insignificant at UCC. That has changed in the last few years, and it is true that characters used in the ALGOL, COBOL, SIMULA, PASCAL, SNOBOL, COMPASS processors as well as time-sharing system generated files are affected. A proposed change for the not so near future will involve software, plugboard (firmware), and hardware changes for the 1004. There are 54 characters common to the CDC standard and 1004 printer, 5 of which have problems now: #, ], [, >, <. For the remaining 9 characters the proposed compromise 6000/Cyber 70 series-1004 conversions:

<u>CDC/CYBER 70</u>	<u>1004</u>
≡	'
↑	@
√	!
^	&
†	Δ
‡	#
<	\
>	?
∩	%

(A. Mickel)

Q/S To aid in the conversion to KRONOS, why doesn't the UCC do the conversion from MOMS disk pack sub-directories to KRONOS files. As far as I'm concerned, it's not worth the trouble to find an unused scratch tape and run two jobs just to try KRONOS. However, it would be a simple matter for the UCC to "automatically" convert files and set up collection boxes in which interested users could place cards containing the subdirectory name, account number, pack, etc. for files that they want converted. This would be a good deal more efficient than the present system and might encourage people with subdirectories to try KRONOS.

A. We put your suggestion into practice immediately in July and announced it in the SYSNOTES. This answer is to remind users that by giving a 3 day notice of a particular file to be loaded to the KRONOS system, that UCC will transfer the file. The person to leave a message with is at 373-4572. (Note other KRONOS article in this newsletter.)

(L. Liddiard)

Q/S Does the lower quality paper used at the remote terminals cost the same as the paper used at ExpEng and Lauderdale? If so, why?

A The green lower quality paper used at the remote terminals costs just a little more than UCC paper previously cost, while the UCC paper has approximately doubled in cost. UCC is working under the following constraints:

- 1) There is a paper shortage and Moore Business Forms who supplied paper to us in the previous years has allocated only 80% of our previous years total for the coming fiscal year 1974-75. The remaining 20% and any increase must be purchased where ever UCC can locate a supply.
- 2) There is a supply of low quality green paper available, but it allows only 132 column printing and the "lint" and "chad" given off when it travels through the printer are not good for the high speed disks and magnetic tape units. For these reasons we are not using it on the 136 column 501 printers at Lauderdale and Experimental Engineering.
- 3) System programmers during system time are printing on the back side of long listings (more than 100 pages) in order to save the good quality paper for users.

Thus, as several recent articles have stated, users must try to conserve paper or there may be no paper to print on. UCC will try to obtain enough paper to satisfy the user's real needs. If you desire output on the better quality paper, then for those special jobs use the ROUTE card to have it printed at Lauderdale rather than your 1004 site.

(L. Liddiard)

Q/S Your decision to install a "campus only" phone at the Lauderdale user room is very inconvenient. Admittedly, I don't know what prompted this decision but on the outside it looks very arbitrary. I'm aware there is now a public phone in the hall but more often than not, I have no change and if I do I'd rather use it for coffee. I sincerely hope you will reconsider this decision or at least give some rationale for it. Was the alternative of putting the single phone within the room on the wall with a short cord (as the pay phone in the hallway) ever considered? The change would result in shorter and/or fewer calls. By having the table and chairs there, you were encouraging the misuse of the facility.

A The decision to put in a pay phone and make the current phone a "University only" was prompted by the following considerations:

- 1) A number of users desired a second phone at Lauderdale.
- 2) The current phone was often tied up for long periods by certain individuals, and in one recent case a user was delayed over an hour and a half from receiving an emergency message when the single user phone was busy.
- 3) Every couple of months UCC was charged for long distance phone calls made from that phone although it was for local calls only.

The suggestion that the "University only" phone be also put on the wall is a good one and will be acted on when UCC redoes the user area at Lauderdale this summer.

(L. Liddiard)

Q/S Make the CDC compatibility features of I/O default on MNF since they are more useful and I think, more what users at the University expect.

A The UCC has two requirements for its users in this regard: to make programs currently running upward compatible and not to let users or UCC become outmoded and/or considered backward. This means insuring that current programming standards are the normal operation. In FORTRAN, the ANSI standard of 1966 and the forthcoming revision will be the defacto programming standards; thus, MNF defaults the I/O formatting to ANSI rather than CDC practice. To insure that programs are upward compatible the MNF-A control card option gives CDC compatibility. See section 9.8, "ANSI Compatibility" in the FORTRAN 2.3 Reference Manual.

(L. Liddiard)

A/S Recently, while running from a 1004 terminal, I ran a job with a subroutine name misspelled, thus causing a load error, yet the job ran up until the missing subroutine was required, and then bombed. Isn't this rather peculiar behavior for an operating system? Shouldn't it abort the job upon discovery of the load error, rather than waste time executing only to abort?

A In this case you are the victim of conflicting goals. The maxim (give the maximum amount of information per batch run) means that when debugging a new program it is desirable to get as much information as possible (assuming that the user has put on a short job time limit). In most operating systems this feature also allows check out of a large program even though certain routines have not yet been coded. Of course this behavior of a loader may be a reaction of systems programmers who remember previous days in which each pass on some FORTRAN compilers had to be error free before you could advance to the next pass and where FORMAT and LOAD errors were found one at a time thus requiring many batch runs before the program actually began executing. Thus, the current action of the loader will be kept. It is suggested that if you are still debugging or changing a program deck that rather than using an LGO card, you use LOAD(LGO) to find if all the externals are satisfied and if the program is ready for production. KRONOS LOSET cards (page 5-80, KRONOS Reference Manual) will give the user more control over his loader options. Under KRONOS the card LOSET,ERR=ALL will cause your program to abort.

Q/S SPSS Suggestions -- several were received.

(L. Liddiard)

A We are sporadically receiving suggestions for changes to SPSS. Since we will be working with the Vogel-back Computing Center staff at Northwestern University on further development of SPSS, we very much appreciate receiving these ideas. Rather than acknowledging them individually in this section each month, we would like to thank you collectively and encourage you to keep 'em coming.

(L. Liddiard)

CYBER 74 OPERATING HOURS

CONSULTING SCHEDULE

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

.... (Lauderdale only)  
 ||||| (Lauderdale, ExpEng)  
 //// (Lauderdale, ExpEng, West Bank)\*\*

West Bank will close at 10:00 PM during the summer and return to these hours at the beginning of Fall Quarter]

MEDIUM SPEED REMOTE TERMINALS

Hours will vary from site to site.)

Site	Supervisor
8 ElectE (East)	J. Guentzel/373-5404 M. Cook/373-3895
640 EltH (East)	J. DeWitt/376-7377 N. DeWitt/376-7377
191 KoltH (East)	T. Faulkner/376-7024 J. Abdallah/373-2348
21 MinMet (East)	C. Swanson/373-5475 R. Oelfke/373-5680
9 Physics (East)	Bob Scarlett/373-0243 Dave Olson/376-7175
67 SocSci (West)	G. Lutgen/373-3608
57 BioSci (StP)	R. Comstock/373-0979 R. Cardellino/376-3407
25G ClaOff (StP)	C. Bingham/373-0988
15 CofH (StP)	D. Nelson/376-7003 T. Ehlen/376-7003
4 NorH (StP)	J. Colten/373-0990 D. Rignell/373-0990
Users Room (Laud)	Shift Supervisor/373-4940

TELEPHONE NUMBERS

73-4548	Account Clerk, CYBER 74
73-7753	Account Clerk, 6400 (MERITSS)
73-4596	ExpEng I/O
6-7067	Field Engineering
73-2521	Keypunch Supervisor
73-4940	Lauderdale Shift Supervisor
73-4995	Microfilm Operator (leave a message)
73-4876	Operations (R. Folden)
73-4994	Recorded Message
73-7744	Reference Librarian
6-3963	Remote Job Entry Coordinator
73-4995	Tape Librarian (leave a message)
73-4360	UCC Office
73-4599	User Services (T. Hodge)
73-4921	Users' Room (Lauderdale)
73-3608	West Bank I/O

KEYPUNCH LOCATIONS

Number of keypunches is in parentheses)

West Bank	St. Paul	West Bank
8 ElectE (1)	321 MinMet (1)	257 BioSci (1)
640 EltH (1)	69 Physics (1)	125G ClaOff (1)
10 ExpEng (2)		415 CofH (1)
31 ExpEng (1)		24 NorH (1)
08 ExpEng (8)*		
23 ExpEng (6)		
191 KoltH (1)		

Lauderdale  
Users' Room (5)\*

\*includes 1 interpreting card punch.

EAST BANK	GENERAL COMPUTING	STATISTICAL COMPUTING
140 ExpEng	Mon-Fri: 10AM-Noon 1PM-3PM	Mon : 1:00PM-4:30PM Tues :10:30AM-4:30PM Wed :10:30AM-4:30PM Thurs: 1:00PM-4:30PM
WEST BANK	GENERAL COMPUTING	STATISTICAL COMPUTING
167 SocSci		Mon : 9:00AM-1:00PM Wed :12:00 -3:00PM Thurs: 9:00AM-12:00N
25 BlegH*	Mon-Fri: 10AM-Noon 1PM-3PM	Mon-Fri: 10AM-Noon 1PM-3PM
ST. PAUL	GENERAL COMPUTING	STATISTICAL COMPUTING
125 ClaOff	<i>Consultant will be available. Hours to be determined (about 20 hours/week).</i>	
LAUDERDALE	GENERAL COMPUTING	STATISTICAL COMPUTING
	Mon- Thurs:1:30PM-3:30PM 7:30PM-9:30PM Fri :1:30PM-3:30PM	

\*SSRFC. Social science computing only.

REFERENCE MANUALS

[Copies are available for reference in 140 ExpEng, Lauderdale Users' Room, West Bank Computer Center, and at the medium speed terminal sites.]

APEX I	86615300C
ALGOL version 2	60306100D
COBOL version 3	60253000E
COMPASS version 2	60279900D
CYBER 74, volume 1	60347400
CYBER 74, volume 2	60347300
CYBER 74, volume 3	60347100
FORTRAN EXTENDED version 3	60329100D
FTN DEBUG users' guide	60329400C
FORTRAN (RUN/FUN) version 2.3	60174900F
MIMIC simulation language	44610400E
MODIFY	60281700D
PERT/TIME	60133600C
SCOPE version 3.2	60189400L
SIMSCRIPT version 2	60178300C
SIMULA	60234800E
SORT/MERGE version 3	60252600E
6000/7000 computer systems	60100000W

BMD & BMDX: Biomedical Computer Programs  
 IMSL library catalog (library 3, edition 3)  
 MNF reference manual  
 OMNITAB II programmers reference manual  
 OMNITAB II, an introduction to  
 SPSS: Statistical Package for the Social Sciences  
 SPSS version 5.5 (CYBER 74 implementation)  
 System 2000 reference manual  
 System 2000 users' guide  
 UMST: University of Minnesota statistical programs  
 UCC Users' reference manual

## LIBRARY CHANGES &amp; ADDITIONS

--by Mike Frisch

The following were changed on SYSLIB and FT3LIB:

NONLIN - Error message corrected; method improved for choosing step-size.  
CMXLNEQ - Error message changed; error in error-detection corrected; allows non-fatal zero determinant  
CMXLNEF, for mode = -0 (i.e., only determinant desired).  
DMXLNEQ,  
DMXLNEF,  
MXLNEQ,  
MXLNEF

FREQDSN - Improved error checking and error messages.

PROCER,

PROCERC - Modified to work using new I/O routines.

PRNPLOT - Improved error processing; much shorter code.

RETURN TO:

UNIVERSITY COMPUTER CENTER  
227 EXPERIMENTAL ENGINEERING  
UNIVERSITY OF MINNESOTA  
MINNEAPOLIS, MINN. 55455

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IF YOU WISH TO HAVE YOUR NAME  
REMOVED FROM THIS MAILING LIST,

WRITE TO:  
EDITOR

UCC NEWSLETTER

AT THE ABOVE ADDRESS, OR CALL  
373-7744.

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