



COMPUTER SERVICE CHARGES

--by J.K. Foster & B. Fox

As many of you may have noticed, you have not been charged for some computer services since September 1. The costs which have not been billed are as follows:

- (1) Costs for permanent files stored on UCC-supplied disk packs. That is, direct and indirect access files created with SAVE, REPLACE, or DEFINE.
- (2) CP time and pages for BATCHER jobs (i.e., student batch-run classroom jobs).
- (3) Disk pack mounts for privately owned/leased packs.
- (4) Connect time for non-open-shop 1004's and 200UT's.

Those projects which have used these facilities since September 1 will receive a cumulative bill for 5 months of use (September 1 through January 31). These bills may seem large at first glance; keep in mind, however, that they cover a 5 month period. The accounting staff has checked the charges (especially the permanent file charges). Where there has been some question, every benefit has been given to the user. Permanent file charges and BATCHER charges have accumulated since September 1, while the pack mount charges began in November.

If there are any questions about your bills, please call or see Mr. James Foster, 235h Experimental Engineering (373-5757). It is unfortunate that we have been unable to bill you on a month-by-month basis recently. However, after February 1, charges will be billed on a monthly basis and this type of cumulative charge will not be made again.

FROM THE CONSULTANT'S DESK

--by L.A. Liddiard

Two major conversion problems that caught a number of users have appeared recently. The first was hinted at in the January 21 SYSNOTE:

"Because of the calling sequence generated by MNF which was changed on January 1, 1975, users should not attempt to use binaries of subprograms compiled prior to January 1 in conjunction with other FORTRAN programs compiled after January 1."

It should be noted that this is true only for the FORTRAN Extended calling sequence, which is now standard, and not for the C=RUN calling sequence. For example, the standard FTN calling sequence for CALL SAD(A,J,1.0) is:

```
SAL  APTAG.
RJ   SAD
```

where APTAG points to consecutive words containing

42 bits	18 bits	
	address of A	word 1
	address of J	word 2
	address of 1.0	word 3
0		word 4 + A zero word indicates end of the parameter list.

Previous to January 1, MNF expected the upper 42 bits to be binary zero and thus did not clear these bits before adding the parameter address into various words of instruction that needed that address in the subprogram. Since FTN (as a standard) and MNF (since January 1) are using various bits in the upper 42, old binaries of subprograms add in these bits to make new instructions causing mysterious results such as changing an add to a divide or loading a completely different variable than was given in the FORTRAN source: thus the requirement that old binaries compiled by MNF with the FTN calling sequence be re-compiled with the latest version. Our apologies to any user who was caught by this problem. Being only human, we did not foresee the bad results until late in the quarter.

The second problem that has hurt users has been in changing FORTRAN programs and files from MERITSS to MIRJE. MERITSS uses unblocked binary files while MIRJE follows the practice (started several years ago under the MOMS system) of always putting binary blocking as the default mode. Binary blocking, in several cases, has proven to have faster processing times (a factor of 20) when users unknowingly used programs that wrote and read a very short number of variables out/in on a binary file. When you transfer binary files from MERITSS, the MIRJE FORTRAN program must (as the first executable statement) have a CALL FTNBIN(0,0) to set the default binary file processing to unblocked.

NEWS FROM SYSTEM NOTES

January 1, 1975 -- UCC has updated the KRONOS 2.1 operating system to Level 6. Based on the experience of other sites running Level 6, the system should prove far more stable and have substantially fewer errors in the system utilities. Anyone with a job which does not run on the present operating system but ran prior to January 1 should contact a consultant immediately.

January 1, 1975 -- The commonly encountered mode error message ARITH. ERROR xx AT yyyyyy. has been changed with the implementation of the new operating system level. The new format of the mode error message is CPU ERROR EXIT xx AT yyyyyy.

January 1, 1975 -- Tape users should note that when requesting a tape with non-standard labels (LB=NS on the LABEL control card) the ID parameter must now be specified as with unlabeled tapes.

January 1, 1975 -- As promised in previous notices, the new version of Colorado SNOBOL has replaced the current version. The old version is accessible via OLD,SNOBOL.

## THE PROBLEM OF SECURITY

--by M.J. Frisch

There has been much talk about the security of computer systems in the past few years. Recently, a very interesting book was published about the subject (Security System Review Manual, AFIPS Press, Montvale, NJ, 1974). Since the topic is important to certain people, we thought our users should know what level of security UCC has. In a word -- minimal. Fortunately, no jobs are being run by our staff on the computer which involve such sensitive things as payroll, student records, or industrial or national secrets. These are the types of jobs that have caused the need for security at other computer installations.

The purpose of this article is to point out to a user who has data or programs which could be misused by others that it is his responsibility to protect his own data. Some of the things the user can do are:

- 1) Coding data so that it can't be easily used by others. For example, individual names could be removed from student or hospital records in the computer and the data could be keyed on only a serial number of some sort.
- 2) Personally running sensitive jobs at our remote job entry stations. The cards can be watched by the user and the output will come directly back to the terminal without being seen by anyone, even our staff.
- 3) Keeping important programs in binary on the machine as permanent files or magnetic tape files. These should rarely be compiled and the output listing should be written on microfilm.
- 4) Finding a more secure computer installation if these data or programs are very important.

The minimal areas of security which UCC provides are:

- a) Password on the ACCOUNT control card.
- b) Access limitations on permanent files.
- c) Protection capabilities for magnetic tapes.
- d) Protected system files such as the one containing the passwords.
- e) Basic machine design of the CDC Cyber 74: memory protection and no direct way to do I/O. User central processor programs must request system peripheral processor programs for all I/O operations.

UCC staff members feel that whatever security is provided should mainly be protection from accidental destruction. Thus, we recommend the use of labeled tapes so that if an operator mistakenly mounts the wrong tape, no damage will be done. The user can control who writes on his permanent files (except in the case of system failure for which we recommend backup copies of important data on tape or cards).

There are two areas that security-conscious users may want to consider: (1) we do not make security checks on our operators or systems people (nor do we want to). We consider all our employees to be trustworthy and reliable. (2) While we try to keep the operating system somewhat secure, it may be possible for an exceedingly determined person to "crack" it.

Perhaps our biggest problem is that computer security is the antithesis of what a university is all about: a place to freely exchange ideas. True security costs a lot of money and degrades operating system efficiency. While we don't completely ignore security, we would rather spend money on things that will improve services.

## A WORD OF CAUTION ABOUT YOUR PASSWORDS

--by L.A. Liddiard

It sometimes happens that a user will obtain another user's account number and password. Because of this, all users are reminded that the PASSWOR control card can be used to change the password at frequent intervals. A recent check on the validation file shows that over 60% of the account numbers still have the password "DUMMYPW" which was given to the user at the initial access to the system. Remember that each new non-instructional user is expected to immediately change the password to one that he feels comfortable with and to keep that password fairly secure. (The passwords for instructional user numbers are handled differently.)

The use of another person's account number and password (without permission) to obtain services or to do malicious damage is considered theft and may be punishable under civil law. UCC has a broad policy of supplying computer time to any legitimate university user at a mutually acceptable final cost and of completely subsidizing computer time for instructional purposes. Because of this, there should be no need to steal time from others, and users should avoid those persons who offer account numbers and passwords that were not legitimately obtained.

## PROGRAM TROUBLE REPORTS

--by B. Stahl

PTR Reports are now posted in the Lauderdale and ExpEng Users' Rooms and at the 1004 sites. Items currently included in the list are for KRONOS, MISCELLANEOUS SOFTWARE, BATCHER, COBOL, COMMON ROUTINES, FTN3, FTN4, GPSS, MIMIC, MNF, PASCAL, SIMSCRIPT, SNOBOLC, and SORTMERGE. To get copies, use:

WRITEUP,PTR. (72 character width)

WRITEUP,PTRLIST, (135 character width)

An alphabetized listing (11 pages) of dayfile error messages (cross-referenced with the KRONOS manual) is now available and will be posted. Use:

WRITEUP,ERRMESS.

to get a copy. If you have questions or comments see Betty Stahl, 217 ExpEng, 376-7290.

## M N F N E W S

--by T. Hodge & B. Stahl

During the New Year weekend the experimental version of MNF (called by NEW,MNF) became the current version (called by MNF). Since then, a new experimental version of MNF has been put on the system. To access this experimental version in Batch, use:

```
FUTURE,MNF. (or NEW,MNF.)
MNF.
```

and in MIRJE use:

```
X,FUTURE,MNF
RUN
```

This FUTURE version is the one to which we make modifications; it is the one we put up to allow us to run our test decks; it is the one on which we experiment. Therefore, it is the one that may, from time-to-time, exhibit unpredictable behavior. Please call Betty Stahl at 376-7290, Thea Hodge at 373-4599, or Rich Franta at 376-3963 if you wish to report anomalies. We will not warn you everytime we make a change to FUTURE,MNF but we will always tell you in advance before we bump the current version to PAST,MNF (that is, OLD,MNF) and the FUTURE,MNF to "current." In general, this step-up process will take place over school breaks. For your own sakes, please do a test compile-and-run of important programs with FUTURE,MNF soon.

The following is the list of bugs which still exist in OLD,MNF, but which are corrected in the current version of MNF:

- (1) A multiple replacement statement containing variably dimensioned subscripted variables inside a DO loop will not be correctly evaluated.
- (2) A numeric file name in the program statement will give unpredictable results but no messages.
- (3) Values given for "CORE NEEDED = " on MAP are wrong.
- (4) The NOLIST statement does not suppress a COMPASS subroutine listing.
- (5) A library routine with the same name in FT3LIB and SYSLIB will be selected from FT3LIB even when the RUN calling sequence is used.
- (6) TRACE STATEMENT NUMBERS gives garbage name and count when there are no statement numbers in the routine.
- (7) An EQUIVALENCE of a subscripted variable containing more subscripts than the DIMENSION statement will time limit at compile time.
- (8) An I/O statement using the form 6LOUTPUT rather than a unit number gets a fatal error.
- (9) The index variable is not incremented when an ASSIGN statement occurs inside a DO loop.
- (10) The CMPLX function does not work when the real part is 0.0 and the complex part is variable.
- (11) A double=real replacement statement results in false underflow when TRACE ARITHMETIC is on.
- (12) An entry statement following a GO TO causes "STATEMENT CANNOT BE EXECUTED" message.
- (13) Extra characters after column 72 are not separated from the FORTRAN line on list.
- (14) The nonstandard unformatted WRITE statement of the form WRITE,(var) gives the error message "ILLEGAL FILE NAME" on the dayfile, and aborts.
- (15) Overlays are not working.
- (16) IF(UNIT( )) takes a parity error exit after a buffer in from an empty disk file.
- (17) An expression in a DATA statement will cause the compiler to abort; no error messages and no output.
- (18) Blank common does not get preset as documented. Use LDSET control card.

## TIMESHARING MNF

The K parameter of MNF (1) assumes that each statement contains timesharing line numbers in the first five columns and, therefore, causes the compiler to start reading in the sixth column, (2) sets up smaller buffer sizes, thus saving space, (3) sets C=FTN, D, L=0, R=0, and E=2 as default, (4) sets NOLIST, and (5) formats system messages in 72 columns or less. It also rewinds the LGO file before compilation.

An example is:

```
you type          BATCH,43000
the system responds $RFL,43000
you type          /GET,PROG1
                  /X,MNF,K,I=PROG1,B=LGO
                  /LGO
```

## THE MNF REFERENCE MANUAL

A new edition of the MNF Manual (with an orange cover) is now available in the Engineering Bookstore for \$6.60 per copy. It features five new appendices, revisions to three appendices, revisions to the index, and corrections to minor errors. It has been punched to avoid the page loss which occurred when the old manual self-destructed.

If there is enough interest among users who have a copy of the old manual (green cover), UCC will publish the new and revised appendices as a separate item for about \$4.00 per copy. Please send a note to the Editor, MNF Manual, University Computer Center, 227 Experimental Engineering, University of Minnesota, Minneapolis, Mn 55455, to express your opinion. We also welcome any comments you may have on the manual.

## NEWS FOR TAPE USERS

--by W. Elliott

There is some good news and much information to pass along this month. First, as you may have noticed, tape mounting time has dropped drastically during the past month, thanks to your efforts and those of the operations staff. The average wait in the queue is down to 10 minutes for express tapes and only slightly more for non-express labeled tapes. Most unlabeled tapes are now being mounted within half an hour (barring disasters such as deadstarts). After 6 PM almost all tapes are mounted within 10 minutes.

Two new features have been added to let you monitor our performance on a daily basis:

- 1) WRITEUP(TSTATS) This control card will return the previous day's tape mounting performance statistics. These statistics should be available by 10 AM each day and may be accessed from both MIRJE and Batch jobs.
- 2) PREVIEW. This control card will list tapes eligible for mount in the order of their priority. If your tape does not appear, it has (as a general rule) already been assigned to your job.

## THE EXPRESS LIBRARY

The express library has been expanded to nearly 1000 reels to place frequently-used tapes close to the operators. The content of this library is based on relative tape usage over a 3 month period and is automatically updated each week. If you are planning to use a specific stored tape frequently in the near future and would like to get it into the express library, call the tape librarian at 373-4995 and request express storage. We will fit your tape in if there is room. When you are through with an express tape, please let us know so we can free up space for others who may need it.

## MORE ON TAPE ERROR MESSAGES

A few months ago the tape error messages (those cryptic three-liners) were nearly eradicated from your dayfiles. Presently only the first message is written to indicate that an error recovery procedure was initiated. Unless a second message appears (for example, PARITY ERROR, or BLOCK TOO LARGE, TAPE3 AT 110, etc.) you should assume that recovery was successful and the job proceeded normally. If the "three-liners" begin to appear consistently, you should probably copy your data to another tape and have the old one certified to determine just how sick it is. Certification will destroy all information recorded on the tape including KRONOS labels.

## PROCESSING OPTIONS

- PO=U Specifying this option on the LABEL control card will prevent a labeled tape from being unloaded when your job ends. This feature is useful if you are submitting several separate jobs at the same time which use the same labeled tape. The system can then immediately re-assign your tape to one of your other jobs in the system without a wait in the tape mounting queue.
- PO=E Specifying this option will inhibit all error recovery on any tape error. The system will pass on to you whatever information is read even though it thinks something is wrong. Obviously, this is a last resort method of accessing data which may not be accessible in any other way. No diagnostic error messages are issued.

In closing then, we think it fair to say that service to the tape user has improved in the past month and will continue to improve in the future. Because of this, even the most avid disk user may benefit by checking out tape use and then choosing the most economical storage method to fit his needs.

(Please see page 6 for some comparative figures on tape operations.)

## A NEW CENTRAL SOURCE FOR ASSISTANCE

### PRELIMINARY ANNOUNCEMENT

--by R.L. Hotchkiss

We will soon be establishing a central contact point at the University Computer Center for both Batch and MIRJE users of the Cyber 74. This will be, essentially, a HELP or TROUBLE line to be manned from 0900 to 1700 hours (9 AM - 5 PM), Monday through Friday. This will be the person to call during periods of hardware, system, compiler, library, etc. instability. This person, who has been referred to as an Officer of the Day (we are searching for a better title), will have the most recent information known to Systems, Operations, Engineering, and Applications on changes, bugs, quirks, etc. in the whole system. He will also have the most recent information from users on changes, bugs, quirks, etc. that Systems, Operations, Engineering, and Applications don't know about yet. Many of the calls now made to Thea Hodge, Rich Franta, and other staff members will go to this person. We hope in this way to better serve all users, especially in time of crisis. Details will be forthcoming.

## CONTINUOUS SYSTEM SIMULATION

## DARE

--by D.R. Lienke

A software package, DARE IIIB, has been received from the University of Arizona. Although not as sophisticated as other continuous system simulation packages (for example, DYNAMO), DARE is easy to use. The system to be studied is described by the user in FORTRAN-like statements. The requirements for the deck structure are somewhat restrictive in that only one system may be studied per job. Documentation and sample runs may be found in the UCC Reference Room.

TAPE OPERATIONS

DECEMBER 18, 1974

JANUARY 24, 1975

<u>type mounted</u>	<u>number</u>
labeled	59
unlabeled	119
total mounted = 178 tapes	
(express	= 84 tapes)

<u>type mounted</u>	<u>number</u>
labeled	166
unlabeled	279
total mounted = 445 tapes	
(express	= 196 tapes)

<u>tape mounting time in minutes</u>		
type:	average:	maximum:
express	19	75
labeled	32	164
unlabeled	85	309

<u>tape mounting time in minutes</u>				
type:	average:	std. dev.		
labeled	3	3	] D	
express labeled	3	5		A
unlabeled	5	4		Y
express unlabeled	4	3	] N	
labeled	3	2		I
express labeled	4	4		G
unlabeled	5	6		H
express unlabeled	5	6	T	

TAPE MOUNT REQUESTS PENDING

Tapes waiting:	Time hr. min.
( 6)	0 30 I
( 5)	1 00 I
( 5)	1 30 I
( 4)	2 00 I
( 4)	2 30 I
( 4)	3 00 I
( 3)	3 30 I
( 2)	4 00 I
( 2)	4 30 I
( 2)	5 00 I
( 2)	5 30 I
( 2)	6 00 I
( 2)	6 30 I
( 2)	7 00 I
( 2)	7 30 I
( 2)	8 00 I
( 2)	8 30 I
( 10)	9 00 I
( 10)	9 30 I
( 24)	10 00 I
( 19)	10 30 I
( 20)	11 00 I
( 18)	11 30 I
( 17)	12 00 I
( 14)	12 30 I
( 24)	13 00 I
( 21)	13 30 I
( 24)	14 00 I
( 19)	14 30 I
( 16)	15 00 I
( 13)	15 30 I
( 20)	16 00 I
( 17)	16 30 I
( 20)	17 00 I
( 20)	17 30 I
( 9)	18 00 I
( 6)	18 30 I
( 1)	19 00 I
( 3)	19 30 I
( 6)	20 00 I
( 4)	20 30 I
( 5)	21 00 I
( 9)	21 30 I
( 6)	22 00 I
( 3)	22 30 I
( 1)	23 00 I
( 1)	23 30 I
( 2)	24 00 I

TAPE MOUNT REQUESTS PENDING

Tapes waiting:	Time hr. min.
( 1)	0 30 I
( 2)	1 00 I
( 1)	1 30 I
( 1)	2 00 I
( 0)	2 30 I
( 1)	3 00 I
( 1)	3 30 I
( 0)	4 00 I
( 1)	4 30 I
( 0)	5 00 I
( 1)	5 30 I
( 0)	6 00 I
( 0)	6 30 I
( 1)	7 00 I
( 0)	7 30 I
( 1)	8 00 I
( 1)	8 30 I
( 4)	9 00 I
( 1)	9 30 I
( 3)	10 00 I
( 2)	10 30 I
( 1)	11 00 I
( 2)	11 30 I
( 2)	12 00 I
( 2)	12 30 I
( 1)	13 00 I
( 1)	13 30 I
( 2)	14 00 I
( 2)	14 30 I
( 2)	15 00 I
( 3)	15 30 I
( 2)	16 00 I
( 4)	16 30 I
( 4)	17 00 I
( 2)	17 30 I
( 3)	18 00 I
( 2)	18 30 I
( 2)	19 00 I
( 1)	19 30 I
( 2)	20 00 I
( 2)	20 30 I
( 3)	21 00 I
( 4)	21 30 I
( 3)	22 00 I
( 1)	22 30 I
( 1)	23 00 I
( 0)	23 30 I
( 2)	24 00 I

## FUTURE EQUIPMENT ADDITIONS

--by L.A. Liddiard

In order to give advance information to users of planned equipment changes and additions that may affect their computing decisions and budget requests, the UCC wishes to announce that the following equipment has been ordered, scheduled for arrival in 1975. These have previously been reviewed by the University Computer Services Advisory Committee as part of Cyber 74 enhancement. Contracts have been signed with the vendor.

*9-track magnetic tape controller and units (addition)*

Scheduled for delivery in September: CDC 7021 controller and CDC 669 tape units with 800 and 1600 bpi for phase encoded (PE) tapes. This will give us the ability to read and write the industry standard 9-track tapes, a capability that numerous users have requested. At 1600 bpi, a 2400 foot magnetic tape will hold 50 million 6-bit characters compared to 20 million on the current drives and will transfer information at 3 times the current maximum tape transfer rate. In addition, UCC dumping and loading of permanent files will be done on these units, thus speeding procedures and giving better service.

*double density disk drives (replacement)*

Scheduled for delivery in October: three of the current disk drives with 117 million 6-bit character capacity will be exchanged for units having 230 million 6-bit character capacity. This will increase the UCC total mass storage by one-third. UCC made sure that the current controllers could be upgraded to handle intermixed single and double density drives at a nominal cost. Future disk additions will be double density also which may allow UCC to lower costs since the cost of the double density unit is only 25% more than the single density.

Note that until these drives are installed, UCC will not have any additional mass storage capacity, other than the 9 currently installed drives. Users are reminded that only necessary permanent files should be saved on mass storage, else congestion will cause severe problems for all users.

I M S L  
EDITION 4

--by D.R. Lienke

A new edition of the IMSL mathematical library is available. Changes to abilities include 83 additions, 8 deletions, and 46 improvements. To use this edition of IMSL:

For use with FTN Version 3 or MNF

```

: (binary on LGO)
:
FUTURE,IMSL. (or NEW,IMSL.)
LOAD,LGO,IMSL.
EXECUTE.
```

For use with FTN Version 4

```

: (binary on LGO)
:
FETCH,IMSL44.
LOAD,LGO,IMSL44.
EXECUTE.
```

Detailed information is available in the IMSL Reference Manual in the UCC Reference Room.

The shuffle of Edition 4 to FETCH and of Edition 3 to PAST (or OLD) will be accomplished on or about March 15, 1975 unless difficulties appear. The exact date will be announced in SYNOTES.

NEW AND OLD CONTROL CARDS TO BE RENAMED

--by A.B. Michel

The NEW and OLD control cards, used to obtain "new" and "old" versions of language processors, applications packages, and special purpose programs, are University of Minnesota extensions made to KRONOS 2.1. These must now be replaced since CDC will be using the NEW and OLD commands for other purposes in a projected version of KRONOS 2.1. Therefore, UCC will replace the present NEW and OLD with FUTURE and PAST respectively. At present, all four commands are available. An announcement will be made in SYNOTES when NEW and OLD are finally disabled.

At present the following are accessed under NEW and now may also be accessed with FUTURE: DUMPPF, LOADPF, PASCAL, MNF, FTN, IMSL, and MF501. The following are accessed under OLD and may also be accessed with PAST: SNOBOL, MNF, MF501, MIXAL, and many BMD programs.

For example, those who now run on the NEW,PASCAL system should use this model:

```

:
:
FUTURE(PASCAL)
PASCAL(parameters)
RFL(20000)
LGO.
:
:
```

Those who now acquire the OLD,SNOBOL interpreter should now use this:

```

:
:
PAST(SNOBOL)
SNOBOL(parameters)
:
:
```

## SHORT COURSES

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Feb 3:	Feb 4: Introduction to SYSTEM 2000 309 Aero 3 - 5 PM	Feb. 5:	Feb. 6: Introduction to SYSTEM 2000 309 Aero 3 - 5 PM	Feb. 7:
Feb. 10: Introduction to COBOL 309 Aero 3 - 5 PM	Feb. 11: Introduction to SYSTEM 2000 309 Aero 3 - 5 PM	Feb. 12: Introduction to COBOL 309 Aero 3 - 5 PM	Feb. 13: Introduction to SYSTEM 2000 309 Aero 3 - 5 PM	Feb. 14: Introduction to COBOL 309 Aero 3 - 5 PM
Feb. 17: !HOLIDAY!	Feb. 18: Introduction to SYSTEM 2000 309 Aero 3 - 5 PM	Feb. 19: Introduction to COBOL 303 MainE 3 - 5 PM  PASCAL: Novices 309 Aero 2 - 3:30 PM  PASCAL: Advanced 309 Aero 3:30 - 5 PM	Feb. 20: Introduction to SYSTEM 2000 309 Aero 3 - 5 PM	Feb. 21: Introduction to COBOL 303 MainE 3 - 5 PM  PASCAL: Novices 309 Aero 2 - 3:30 PM  PASCAL: Advanced 309 Aero 3:30 - 5 PM
Feb. 24: Introduction to COBOL 303 MainE 3 - 5 PM  PASCAL: Novices 309 Aero 2 - 3:30 PM  PASCAL: Advanced 309 Aero 2 - 3:30 PM	Feb. 25: Record Manager 309 Aero 3 - 5 PM	Feb. 26: PASCAL: Novices 309 Aero 2 - 3:30 PM  PASCAL: Advanced 309 Aero 3:30 - 5 PM	Feb. 27: Record Manager 309 Aero 3 - 5 PM	Feb. 28: PASCAL: Novices 309 Aero 2 - 3:30 PM  PASCAL: Advanced 309 Aero 3:30 - 5 PM
Mar. 3: PASCAL: Novices 309 Aero 2 - 3:30 PM  PASCAL: Advanced 309 Aero 3:30 - 5 PM  Introduction to COMPASS 313 Aero 3 - 5 PM	Mar. 4: Record Manager 309 Aero 3 - 5 PM	Mar. 5: PASCAL: Novices 309 Aero 2 - 3:30 PM  PASCAL: Advanced 309 Aero 3:30 - 5 PM  Introduction to COMPASS 313 Aero 3 - 5 PM	Mar. 6: Record Manager 309 Aero 3 - 5 PM	Mar. 7: PASCAL: Novices 309 Aero 2 - 3:30 PM  PASCAL: Advanced 309 Aero 3:30 - 5 PM  Introduction to COMPASS 313 Aero 3 - 5 PM
Mar. 10: Introduction to COMPASS 3 - 5 PM 313 Aero	Mar. 11: Record Manager 3 - 5 PM 309 Aero	Mar. 12: Introduction to COMPASS 3 - 5 PM 313 Aero	Mar. 13: Record Manager 3 - 5 PM 309 Aero	Mar. 14: Introduction to COMPASS 3 - 5 PM 313 Aero

The above is a schedule of short courses previously scheduled. One addition has been made:

## INTRODUCTION TO COMPASS

Operating registers, instruction set, machine language coding, COMPASS coding format, Branch, Arithmetic, Shift, Logical instructions. Assembly output, floating point arithmetic, macros, micros.

DAYS : March 3,5,7,10,12,14 (MWF)

HOURS : 3:00 - 5:00 PM

ROOM : 313 Aero

INSTRUCTOR: J. Cosgrove

REFERENCES: CDC COMPASS Reference Manual (pub. # 60360900)

The time for the weekly KEYPUNCH WORKSHOP has been changed to 9:15 - 10:00 AM.



## THE SUGGESTION BOX

[Unsigned cards are ignored. Questions may be re-worded for clarity. At the request of a reader, the date that the card was received will be printed with the question.]

Q/S How about providing a FORTRAN-callable routine which will read or write a magnetic tape, similar to the old BUFF, LTR combinations, and not impose any artificial conventions on the user? There should be no "noise blocks", "record levels", parity error recovery, code conversions, or "block terminators." Just copy data to/from CM, one physical record at a time. Operations available should include read, write (both with optional code conversions to/from display and external BCD), rewind, backspace, and write endfile. The CM routine should return status and number of words/characters transferred. A typical calling sequence could be

CALL GOODIO({fwa,lwa,op,status,nchar}).

Since the switch to KRONOS we have tried three times to write tapes for use at non-KRONOS sites and have been unable to determine what actually went on the tapes. (January 14, 1975)

A You are really asking us to re-write the magnetic tape drivers; an opportunity we graciously decline at this time. The constraints imposed by KRONOS are not so severe that we cannot work within them. Most of the problem areas you have cited can be circumvented or do not exist. The main restriction in writing a tape is the maximum record size of 512 words. In most cases this is sufficient. For tapes being sent to non-KRONOS sites, use an "S" format tape for binary data. This format contains no extra system information words (which are used to facilitate parity error recovery). For coded tapes, the "B" format is recommended. The COPY utility routines should be employed when possible to transfer the information from disk to tape or tape to tape. When this is impractical, an appropriate call to FTNBIN from a FORTRAN program will disable binary blocking as required. If you are still in doubt as to tape content, use TDUMP to dump a portion of the file for visual examination. (W. Elliott)

Q/S As a user of MIRJE I would like to express my opinion and suggest that computerized games be eliminated from the Cyber 74 system. By "game" I mean programs, not written by the user, which have no redeeming aspects in the form of research or utility use, for example, STARTREK, SIMTALK, BANDIT, CHESS, etc. On the MERITSS system I have noticed that massive amounts of connect time and (in some cases) an equally massive amount of CP time are wasted in the running of games. Turnaround time is poor enough on the MIRJE system so that any efforts to ease congestion would be appreciated. (January 14, 1975)

A There are at least two reasons for not complying with your suggestion:

- (1) Philosophical -- Anybody's game is someone else's utility program. Games can be used for timesharing orientation and demonstration, for teaching of and study of problem solving, for therapy (the non-vindictive impersonal opponent), etc. However, you're probably right that such game use is minimal.
- (2) Practical -- Prohibition of alcoholic beverages not only didn't work but it fostered a tremendous growth of crime. Games are available on paper tape and propagate like rabbits. Do we want dozens of versions of Star Trek, Chess, etc. cluttering up disk space? We would rather have only one library copy and save that precious space. If you see someone playing computer games on a public or shared terminal and suspect that it's for pleasure only, you're certainly within your rights in asking them to release the terminal to you. We have urged all users to limit their game-playing for fun to evening hours. (R. Hotchkiss, T. Hodge)

Q/S What is this nonsense with writing junk (ENDOFSAM) on my output? I set up my output to look nice and I don't want the system screwing it up. Write your messages on the dayfile, not at the end of my output file. That is my file, not yours. (January 20, 1975)

A We try not to put in arbitrary changes. However, END and STOP are now appearing on the output files since MIRJE users requested this. Under TELEX origin jobs, the dayfile is not automatically printed and END and STOP are seen only if they are put on the output file. (That's the way the MERITSS system does it.) UCC will investigate and implement code, if possible, to satisfy both your request and that of MIRJE users (unless the suggestion box is stuffed with replies of lovers of the STOP and END on the output file). (L. Liddiard)

Q/S Would it be possible to have FTN (3.0 or 4.2) give the absolute addresses of statements in the source listing as MNF does? This would be in addition to the current noting of the card number. (January 14, 1975)

A I think that this request has been submitted to CDC by other installations but, as yet, CDC has not seen fit to implement it. Since UCC is diligently trying to be somewhat compatible with CDC, we will not make our own modifications. (L. Liddiard)

Q/S (1) At the start of a job, preferably on the banner page, some indication should be given as to the number of lines or number of pages that will be printed for that job. This has the advantages of (a) if the job goes into an infinite loop, the operator or programmer can abort, and (b) if the operator knows how long the job is the search for the next banner page for job separation can be shortened, saving both paper and time.  
 (2) Loader maps and cross reference listings should be saved and not normally printed unless the program aborts during execution. At that time, since you know the information is needed, print the map, cross reference list, and the core dump. This would really save paper. (January 8, 1975)

A The major difficulty with your first suggestion is that, when the banner page is printed by an output queue processor, the only reliable file length information available is the total number of PRU's (PRU=640 characters). Since, within these characters, there are large variations in average printer line lengths and number of format control codes between individual user jobs, it is difficult to give the number of lines or pages until they have actually been printed without using processor and disk I/O time to go through the entire file. After printing the lines or pages, the particular output queue

processor reports (to the accounting and dayfiles) the actual pages printed and thus, to answer your point (b) the search for the next banner page in a stack of output can be done by going backwards from the dayfile. One of the reasons for changing to KRONOS is the system sector allocated to each file which, at some future time, will be used to hold the user page limit and stop any output queue processor and take care of your first suggestion.

Your second suggestion for loader maps is an addition to the loader which had been planned by UCC for several months and was to be installed on January 1. However, we found CDC loader errors introduced into Level 6. In order to investigate and correct these problems, this addition has been delayed for several weeks. (L. Liddiard)

- Q/S Shouldn't users be warned when major changes are planned in compilers? The recent change in the MNF calling sequence had the net effect of making useless all of my previously compiled binary decks and libraries. It's particularly tough when UCC personnel, at the manager level, are unaware of the changes and thus provide absolutely no help in debugging what used to be working subroutines. If the computer changes were only made to the called routines for this quarter and if the actual calling sequences were not changed until next quarter, most people could recompile at their convenience, not yours. (January 27, 1975)
- A Please see the article "From the Consultant's Desk" on page 2 of this newsletter. (L. Liddiard)
- Q/S In the December, '74 UCC Pocket Guide the descriptions of the A and B parameters of MNF are very confusing. Is A mnemonic for "not ANSI" and weren't S and X parameters at one time? (January 27, 1975)
- A The descriptions are confusing and will be changed. The A originally called for ANSI I/O interaction with the CDC I/O interaction being the default. This has since been changed and ANSI I/O is now default. S and X parameters for MNF have never been documented.
- Q/S We attended the tape users meeting in December and loudly voiced our complaints about tapes. Within a few weeks all our problems with tapes disappeared. We have no further complaints. In fact, we're very happy with how KRONOS handles tapes now and would like to compliment you on the fine job and hard work your people put in to clear up the problems! (January 27, 1975)
- A To say we are pleased wouldn't be strong enough: Whoopee!
- Q/S Could you provide a list of the current default blocking modes that MNF uses for the different modes of tapes, i.e., is an F=S tape automatically blocked or not? (January 27, 1975)
- A Binary blocked on I, SI, E, and B tapes; the rest are unblocked. (T. Hodge)
- Q/S Why not change the PASCAL predefined procedure NEW to return a NIL pointer when storage is not available? (January 20, 1975)
- A I assume that you want to be able to avoid the post-mortem dump and take alternative action such as performing manual garbage collection (via the standard procedure DISPOSE). We are now in the process of designing and testing a new version of DISPOSE. The change to the dynamic allocation procedure NEW could be reasonably implemented at the same time as this version of DISPOSE. (A. Mickel)
- Q/S I would like to take some of the short courses offered by UCC but my schedule always conflicts. Why not change to evening and/or weekend hours? In addition, why not add a course on "1004 Use?" (January 27, 1975)
- A We will consider both suggestions. (R. Franta)

## LIBRARY CHANGES & ADDITIONS

--by M.J. Frisch

December 19, 1974:

Addition of FORTRAN Extended callable permanent file routines for MIRJE users:  
GET, APPEND, SAVE, REPLACE, RETURN, PURGE, ATTACH, and DEFINE.

December 23, 1974:

Corrections were made to:

SPSS - free-format input disabled (because of serious error), bug corrected in T-test.  
BMD02V - scratch file changed from coded to binary.  
UMST630 - bug in separate data file (TAPE2) corrected.

January 2, 1975:

Replacement of TEKLIB (Textronix terminal library) for MIRJE users:  
changes were to get correct versions of routines REVCOT, VWINDO, SWINDO, V2ST,  
WINCOT, SVSTAT, RESTAT, and INITT.

## A NEW VERSION OF UMTIMER

--by R. Myster

A new version of UMTIMER is now available for timing assembly language programs for the Cyber 74. Changes from the previous version include correction of some bugs and revisions because of minor differences between the Cyber 74 and 6600 computers. Noteworthy additions to this version are the timings for RE (read ECS), WE (write ECS), and XJ (exchange jump). A writeup for the new version of UMTIMER is available in 140 Experimental Engineering. The old version of UMTIMER is still available via "OLD,UMTIMER" for those persons who wish to use it (for comparisons, for example).

CYBER 74 OPERATING HOURS

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

..... Lauderdale only  
 ||||| Lauderdale, ExpEng  
 ||||| Lauderdale, ExpEng, West Bank

MEDIUM SPEED REMOTE TERMINAL SITES (RJE)

site	supervisor
38 ElectE (East Bank)	J. Guentzel/373-5404 M. Cook/373-3895
N640 EltH (East Bank)	J. DeWitt/376-7377 N. DeWitt/376-7377
S191 KoltH (East Bank)	T. Faulkner/376-7024 J. Duff/373-2348
321 MinMet (East Bank)	C. Swanson/373-5475 R. Oelfke/373-5680
69 Physics (East Bank)	R. Scarlett/373-0243 D. Olson/376-7175
167 SocSci (West Bank)	J. Shea/373-3608
257 BioSci (St. Paul)	R. Comstock/373-0979 R. Cardellino/376-3407
125G ClaOff (St. Paul)	C. Bingham/373-0988
415 CofH (St. Paul)	D. Nelson/376-7003 T. Ehlen/376-7003
24 NorH (St. Paul)	J. Colten/373-0990 D. Rignell/373-0990
Users' Room (Lauderdale)	Shift Supervisor/373-4940

CONSULTING SITES & HOURS

LAUDERDALE USERS' ROOM (general consulting)\*  
 Monday - Friday 1:30 - 3:30 PM  
 Monday - Thursday 7:30 - 9:30 PM

EXPERIMENTAL ENGINEERING 140 (general consulting)\*  
 Monday - Friday 9:00 AM - 5:00 PM  
 Monday - Thursday 7:00 PM - 9:00 PM  
 Saturday 10:00 AM - 2:00 PM  
 Sunday 7:00 PM - 9:00 PM

EXPERIMENTAL ENGINEERING 140 (statistics packages)  
 See the schedule posted in 140 ExpEng.

SOCIAL SCIENCES 167 (statistics packages)  
 See the schedule posted in 167 SocSci (West Bank)

CLASSROOM OFFICE BUILDING 125  
 See the schedule posted in 125 ClaOff (St. Paul)

\*These general consultants can also answer questions about the statistics packages: D. Eggers, B. Hinkley, and S.P. Yen.

REFERENCE MANUALS

[Copies are available for reference in 140 ExpEng, Lauderdale Users' Room, West Bank Computer Center, all the medium speed terminal sites, and in the Reference Room (235a ExpEng).]

- Revision D ALGOL Version 3 Reference Manual
- Revision C APL\*CYBER Reference Manual
- Revision A BASIC Reference Manual
- 1973 BMD Reference Manual
- Revision E COBOL Version 3 Reference Manual
- Revision D COBOL Version 4 Reference Manual
- Revision E COMPASS Version 3 Reference Manual
- Revision F FORTRAN 2.3 (RUN23) Reference Manual
- Revision D FTN Version 3 Reference Manual
- Revision F FTN Version 4 Reference Manual
- Revision B FTN DEBUG User's Guide
- 1973 IMSL Library 3, Edition 3 Reference
- Revision C KRONOS 2.1 Reference Manual
- 1974 MNF Reference Manual
- Revision E MODIFY Reference Manual
- 1974 OMNITAB II Programmer's Reference Manual
- Revision C OMNITAB II, An Introduction to
- Revision C SIMSCRIPT Version 2 Reference Manual
- Revision G SORT/MERGE Version 4 Reference Manual
- 1970 SPSS: Statistical Package for the Social Sciences
- 1974 SPSS Version 5.5
- SYSTEM 2000 Reference Manual
- 1973 SYSTEM 2000 Users' Guide
- Revision C T/S User's Reference Manual
- Revision A Text Editor (EDIT) Reference Manual
- Revision E UPDATE Reference Manual

TELEPHONE NUMBERS

- 373-4548 Account Clerk
- 376-3963 Educational Services (R. Franta)
- 373-4596 ExpEng I/O
- 376-7067 Field Engineering
- 373-2521 Keypunch Supervisor
- 373-4940 Lauderdale Shift Supervisor
- 373-4995 Microfilm Operator
- 373-4876 Operations (R. Folden)
- 373-7744 Reference Librarian
- 376-3963 RJE Services (R. Franta)
- 373-4995 Tape Librarian
- 373-4360 UCC Main Offices
- 373-4599 User Services (T. Hodge)
- 373-4921 Users' Room (Lauderdale)
- 373-3608 West Bank I/O

KEYPUNCH LOCATIONS

[The number of keypunches at each site is in parentheses.]

East Bank	St. Paul	West Bank
38 ElectE ( 1)	257 BioSci (1)	90 BlegH ( 1)
N640 EltH ( 1)	125G ClaOff (1)	86 BlegH (11)
130 ExpEng ( 2)	415 CofH ( 1)	167 SocSci ( 1)
131 ExpEng ( 1)	24 NorH ( 1)	
208 ExpEng (14)*		
S191 KoltH ( 1)		
321 MinMet ( 1)	Lauderdale	
69 Physics ( 1)	Users' Room (5)*	

\*includes 1 interpreting card punch.

## B R I E F N O T E S

WHEN using the ACCOUNT card -- If you enter the system using one user number and do some work; then ACCOUNT to another user number and do some more work, each number will be charged according to the CP time and resources used under that account number. For example, a tape mount after the second ACCOUNT card will be charged to the second user number.

BUGS in the WORDWORK -- Due to a bug we recently discovered, RESTART (checkpoint-restart) has been temporarily removed. When it is fixed and restored, we will inform you via SYSNOTES.

When DEFINEing a file -- A DEFINED or direct access file, by default, is stored in write mode. This means that a user may ATTACH the file in write mode and lock out other users of that file. To avoid this, you may use the M=R (i.e., mode=read) parameter on the DEFINE statement so that other users may only ATTACH in read mode.

To discover in which mode a direct access file is stored, use:  
CATLIST, FN=name, LO=F.

To change the mode of the stored file, use:  
CHANGE, name/M=R.

## RETURN TO:

UNIVERSITY COMPUTER CENTER  
227 EXPERIMENTAL ENGINEERING  
UNIVERSITY OF MINNESOTA  
MINNEAPOLIS, MN 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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UNIVERSITY ARCHIVES  
ROOM 11 WA LIB  
MINNEAPOLIS CAMPUS