University Computer Center newsletter

Director: Peter C. Patton

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Editor: A. Koepke
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CONTENTS

6600 TO BE REPLACED

-- *As a reminder, we are reprinting the following article from our February newsletter:*

The CDC 6600 computer will be turned off permanently sometime in the break between Winter and Spring Quarters, 1974, according to present plans. If you are close to the end of a project which uses the 6600, you may want to consider giving that project a high priority at this time. Installation of the new computer, a CDC CYBER 74, will begin immediately after the 6600 is removed.

Our expected schedule is as follows:

1) We hope to test the SCOPE/MOMS operating system on the machine in the CDC plant in the metro area before it is disassembled for shipping.
2) The machine will be disassembled and moved to Lauderdale after the 6600 is removed.
3) As soon as possible, we will begin operations again, running under SCOPE/MOMS as we are now. We do not plan to change any software in the MOMS system for the next several months in order that any problems can be traced to the new hardware. Changing software and hardware is usually traumatic!

Nobody ever made a painless computer switch -- "if something can go wrong, it will." Meanwhile, plan ahead: finish projects now near completion before the end of Winter Quarter.

DATA SPEED 40

-- *by R. T. Franta*

In the January, 1974 newsletter and in this issue there are suggestions to place Data Speed 40 units at additional locations. As is evident from the January response we were going to honor that request. During the last few weeks, however, Northwestern Bell has decided to charge for the previously free units. Even though the DS40 is a nice unit we cannot justify the $270 per unit per month to retain it. Thus, no DS40 will "appear" at Lauderdale nor will one be placed on the West Bank. In addition, the units at ExpEng and Coffey Hall will be removed.

See "The Suggestion Box" for a corrected response to the original January suggestion.

SPRING SHORT COURSES

The schedule of short courses to be offered by the Computer Center during Spring Quarter is not yet complete. When all short courses are scheduled, a list will be posted in the User Rooms, at all terminal sites, and the schedule will be printed in the April issue of the UCC newsletter and in the first Minnesota Daily of the quarter (watch the Official Daily Bulletin).

The keypunch classes have been scheduled, however. They are

INTRODUCTION TO THE KEYPUNCH
Days : April 1,2,3,4,5
Hours : 8:30 - 9:00 AM; 10:30-11:00 AM; 1:30-2:00 PM; 3:30-4:00 PM
Room : 223 ExpEng
Instructor: P. Gerlach

Registration is required; use the sign-up sheets posted on the door of Room 223 ExpEng or call 373-2521. Only 1 half-hour session should be adequate for most needs.

SYSTEM 2000 AND YOU

-- by G. Simones

System 2000 is presently being applied to data management problems over a wide spectrum. MRI Systems Corporation of Austin, Texas, recently supplied UCC with 36 application descriptions that have been or are being developed by various organizations. These organizations have been divided into six broadly defined categories:

Utilities and Nuclear Power
Finance
Medical and Health Care
Civil Government and General Applications
Education
Manufacturing

A typical application description might include the type of user, the purpose underlying the development, the data the application manages, and the nature or purpose of the output the application produces.

Last week, the University Computer Center made version 2.30G of System 2000 available to UCC users. System 2000 is implemented on both the CDC 6600 and the CDC 6400 timesharing system. System 2000 is universally available, is control card callable, and operates in batch mode on the 6600. In contrast, users of System 2000 on the 6400 must first be validated, must attach the binary file prior to execution, and may operate in either interactive or batch mode.

For additional information contact Stephen Nachtsheim (373-7878) or Gregory Simones (373-2522).

NEW VERSION OF SPSS

-- by S.P. Yen

SPSS version 5.5 has been received from Northwestern University and will be available on the system in the near future. The actual implementation date will be announced in SYSNOTES (on the first page of each output listing).

The major features of this version are: CM and CP time improvements, a discriminant analysis routine (DISCRIM), and a completely rewritten version of REGRESSION.

The minimum CM has been reduced from 72000 octal to 56000 octal in this version of SPSS. Due partly to this improvement, SPSS100 support will be dropped.

The new features, improvements, field length requirements, and other changes will be described in an update manual which will be available in H.D. Smith Bookstore (West Bank) in April.

LIBRARY CHANGES & ADDITIONS

-- by M. Frisch

February 12, 1974:

GENSORT	- RUN/FUN/MNF and FTN versions written in COMPASS; PROCER used for error checking.
GENSRT2	- RUN/FUN/MNF and FTN versions written in COMPASS; PROCER used for error checking.
SPACZRO	- RUN/FUN/MNF and FTN versions using PROCER for error checking.
ERFN,EXPD	- RUN/FUN/MNF and FTN versions. ERFNC (complement error function) added to ERFN. EXPD used by ERFN: $y=e^x$, x double precision, y single precision.
NONLIN	- New routine, RUN/FUN/MNF and FTN versions. It solves nonlinear systems of equations. NONLIN was written by Professor K. Brown of the Computer, Information, and Control Sciences Department and will eventually replace the older routine, NLSYSTM.

Correction to QRSYM writeup, page 2:

1. Calling sequence:

   CALL QRSYM (G, NN, KR, EVAL, EV, IDX, S)

   The EV parameter was inadvertantly left out of the calling sequence although it was described later in the writeup.

DOCUMENTATION PRODUCED AT UCC

Writeups

new:
- LISP at the University of Minnesota.
- Plotter Routines for the STATOS 31.
- C5 MINN NONLIN, nonlinear equation system

revised:
- C3 MINN CHSQ, CHSQI, FVR, FINV, TTEST, TINV, BETAI
- F1 MINN MXLNEQ, CMXLNEQ, DMXLNEQ
- F4 MINN SYMSOLV, SYMSOLU

Reference Manuals & Conversion Guides

Pocket Guide to UCC Facilities: reprinted, dated January, 1974, available in Reference Room, 235a 235a ExpEng.

UCC Users' Manual, Part I: revised, dated January, 1974, available in Reference Room, 235a ExpEng.

MOMS to KRONOS Control Card Conversion Guide,
MOMS to KRONOS Compiler Conversion Guide,
Permanent Files under KRONOS 2.1,
Tapes under KRONOS 2.1. These Guides are available at the short courses and from the Reference Room, 235a ExpEng.

NEWS FROM SYSTEM NOTES

-- *from SYSNOTE # 55*

FORTRAN users:

A new improved version of FTN is available for users who wish to test it before it is permanently placed on the system. Use the following control cards to access this new version:

```
LIBRARY,FT3LIB.
NEW,FTN.
FTN.
```

The new version of FTN is scheduled to go on the system on February 17, 1974.

All users:

Three new text records have been added to the INFO file:

1) AUDIT - A disk pack utility which derives pertinent information about disk pack files. A new parameter has been added to the AUDIT utility which allows the user to dump his sub-directories so that they can be reloaded under KRONOS as permanent files.
2) ROUTE - A new control card has been added to the MOMS operating system which allows users to send output files to sites other than that site where the job was read in.
3) INDEX - An extremely handy index of all MOMS control cards has been assembled and is now available to all users.

Any of these writeups can be obtained by using the following control card:

```
WRITEUP,record name
```

where 'record name' is the name of the requested record.

NEW ARRIVALS

-- *by L.A. Liddiard*

With the installation of the second 7054 mass storage controller the last 6603 disk drive was turned off. UCC now will have two 7054 controllers and eight 844 mass storage drives, completely replacing the original two 6603 disk drives and the 841 drives that were removed last summer.

The table below shows the equipment changes.

TIME PERIOD	MASS STORAGE UNITS	TOTAL CAPACITY	AVERAGE HEAD MOVEMENT TIME	LATENCY	TRANSFER RATE
1967 - 1974	two 6603-II	150M characters	156 milliseconds	33 milliseconds	610K characters/second
1970 - 1973	841-7	235M characters	75 milliseconds	12.5 milliseconds	170K characters/second
1973 →	two 7054 with 844-8	936M characters	30 milliseconds	8.3 milliseconds	450 characters/second

PROGRAM TROUBLE REPORTS

-- *from E. Stahl*

```
*******
*COBOL*
*******

   1 ERROR MESSAGES MAY PRINT A FEW LINES OFF


***********
*SORTMERGE*
***********

   1 LARGE BLOCKS OF SORTMRG OUTPUT MAY BE OMITTED
     WHEN USING NEW I/O

   2 TAGSORT HAS BUGS USE NORMAL SORT INSTEAD
     THE NEXT VERSION OF SORTMRG WILL NOT SUPPORT
     TAGSORT


*********
*SNOBOLC*
*********

   1 STRING LONGER THAN 135 CHARACTERS WILL GIVE
     INCORRECT RESULTS IF OUTPUT IS UNBLOCKED
```

****
MNF AND MNF BATCH
****

1 THE FIRST ADDRESS IN BLANK COMMON IS NOT PRESET TO AN INDEFINITE WITH MNF. OR ZERO FOR MNF(Z)

2 MNF WILL MODE EXIT WHEN GENERATING AN OVERLAY OF MORE THAN 35000 CELLS IN BUFFER SPACE EG. MORE THAN 16 DIFFERENT FILES ON A PROGRAM CARD

3 SEQUENCE NUMBERS ARE REPEATED FOLLOWING A CONTINUE STATEMENT, BUT ARE CORRECT IN THE CROSS REFERENCE LISTINGS

```
1*     DO 66 I=1,2
2* 66 CONTINUE
2*     A=B
```

4 EXTRA CLOSING PARENS IN FORMAT STATEMENTS ARE NOT DIAGNOSED

```
    1 FORMAT(1X,5(3X,A3)))
```

5 FOLLOWING GIVES FATAL ERROR 68 - *ILLEGAL FUNCTIONAL LETTER* RATHER THAN *UNDEFINED VARIABLE* MESSAGE FOR THE I5

```
      PRINT I5,X,Y
```

6 ON MNF(C) COMPILATION BUFFER LENGTH MUST BE DEFAULT LENGTH

7 FOLLOWING PROCESSED CORRECTLY BUT CAUSES ≠DATA LIST TOO LONG≠ MESSAGE

```
      DIMENSION AA(5)
      DATA AA(1) /1/
```

8 CAUSES ERROR - *ILLEGAL EQUIVALENCE OF COMMON VARIABLE B TO OTHER COMMON VARIABLE*

```
      COMMON /AA/ A,B
      DIMENSION C(2)
      EQUIVALENCE(A,C(1)),(B,C(2))
```

9 AN ENTRY STATEMENT IN A MAIN PROGRAM CAUSES MNF COMPILER TO DIE OUT

```
      PROGRAM TT(INPUT,OUTPUT)
      ENTRY START
```

10 REAL MASKING EXPRESSION TO REAL POWER GENERATES JP TO CELL 1

```
      A = (B.AND.C)**D
```

11 NAMELIST INPUT DOES NOT WORK AS DOCUMENTED

****
MNF BATCH ONLY
****

1 A TRAILING COMMA IN AN UNFORMATTED OUTPUT STATEMENT MAY CAUSE BLOCKS OF OUTPUT TO BE LOST

```
      PRINT,*TEST*,
```

2 DATA FROM INPUT FILE READ INCORRECTLY IF MORE THAN 50 INPUT CARDS

*****
FTN
*****

1 FOR B, A VARIABLE DIMENSIONED ARRAY AND IX,IY NEGATIVE THESE SUBSCRIPTS WILL NOT BE COMPUTED PROPERLY

```
      B(IX+M,IY+N) = A
      B(IX+M,IY+N,IZ+K) = C
```

2 ON MODIFY COMPILE FILE FTN ALTERS CARD 513,2053,ETC.

3 THE FOLLOWING STATEMENTS WILL CAUSE FTN COMPILER TO MODE EXIT

```
      IF(1H ) 2,10,11
      IF(1RA-1B) 10,3,11
```

4 FOR CC A COMPLEX ARRAY, DC A DOUBLE ARRAY, RC A REAL ARRAY THE FOLLOWING WILL CAUSE FTN COMPILER TO MODE EXIT

```
      CC(IA-1)=BC(IA-1)=IA
     1  =IB=DC(1)=CC(2-1)=2
```

******
MOMS
******

1 OUTPUT FILES MAY NOT BE FLUSHED WHEN MODE OR TIME LIMIT ERRORS OCCUR IF ONLY A FEW LINES HAVE BEEN PUT INTO THE OUTPUT BUFFER

2 PFM MAY FAIL TO ATTACH SYSLIB WHEN LOADER REQUESTS IT

3 LOADER MAY HAVE TROUBLE ESTIMATING MAXIMUM FIELD LENGTH TO LOAD

4 COPYSBF DROPS LAST CHARACTER OF 150 CHARACTER RECORD

5 CBR MAY TIME LIMIT EVEN THOUGH THE TIME NEEDED IS < LIMIT

```
CBR(INPUT,SIMX)
```

6 SIO$ GETS MODE 1 ERROR WHEN TRYING TO READ AN S-TAPE(A NEGATIVE VALUE FOR OUT IN THE FET IS GENERATED

7 ACQUIRE DOESNOT BLANK OUT PASSWORDS IN DAYFILE LISTING

```
A,STEOPL,PW=SYS,SYSX.
```

8 FOR LOGICAL RECORD LESS THAN HALF TRACK LONG BUT ENDING EXACTLY ON HALF TRACK BOUNDARY BSP WILL NOT BACKSPACE OVER THE RECORD

9 WILL TIME LIMIT IF EOF ON INPUT FILE IS MISSING(I.E. THE FILE HAS ONLY EOI)

```
CBF(IN,OUT,1,NREC)
```

10 WHEN COPYING ZERO LENGTH FILES ROUTINES CCF,CBF,ETC. WILL COPY TO THE EOI

11 ROUTINE TO READ NEXT CONTROL CARD(ACE) DOES NOT STORE ZERO WORD AFTER CARD IMAGE WHEN IMAGE IS MULTIPLE OF 10 CHARACTERS.COULD CAUSE PROBLEMS IN MMLOADER WHICH READS CONTROL CARDS OR IN UPDATE2 WHICH HAS CONTINUATION CONTROL CARDS

****
RUN/FUN
****

1 PERMANENT FILE ROUTINES DO NOT CLEAR OF EXTRA CHARACTERS IN FILE NAMES ERROR R1 *ILLEGAL FILE NAME* APPEARS ON LISTING

2 A DOUBLE PRECISION NUMBER RAISED TO NEGATIVE INTEGER ZERO GIVES WRONG ANSWER RESULT WILL BE DA =4.000,NOT 1.000)

```
DOUBLE DA
DA = 4.000
DA = DA**(-0)
```

3 DMAX1 AND DMIN1 WILL GIVE WRONG RESULT WHEN DIFFERENCE IN NUMBERS IS VERY LARGE

4 R AND H DATA CONSTANTS CONSISTING OF 1 ONLY ARENT CONVERTED PROPERLY

```
I = 3R111
I = 3H111
```

5 CONSTANTS GREATER THAN 1.E+300 ARE NOT HANDLED PROPERLY

6 A DOUBLE PRECISION NUMBER NEAR 9E-280 DIVIDED BY A NUMBER > 1 DOES NOT PRODUCE EXPECTED UNDERFLOW. RESULT IS SMALLEST NONZERO DOUBLE PRECISION NUMBER

7 FOR C1 COMPLEX,THE EXPRESSION 0-C1 IS M ISCOMPILED IF IT IS AN ACTUAL PARAMETER TO A SUBROUTINE

```
CALL CPS(0-C1)
```

****
RUN/FUN/FTN
****

1 A NUMBER WHICH IS EXACTLY 2**N IS NOT COMPARED CORRECTLY WITH A NUMBER OF EXACTLY 1 BIT LESS

```
A=1717777777777777777B
B=1720400000000000000B
IF(B.GT.A) GO TO 5
```

****
FORTRAN OBJECT RTN
****

1 MATHEMATICAL ROUTINES WILL NODE EXIT IF AN UNNORMALIZED ARGUMENT IS SUPPLIED

2 ACOS(1.0) GIVES UNNORMALIZED ZERO WHICH I/O ROUTINES CONVERT TO 100.

3 BETAI GIVES INCORRECT RESULTS FOR NEGATIVE PROBABILITIES FOR X NEAR .5 AND LARGE A OR B

****
KRONOS
****

1 A MODE 7 OCCURS FOR THE FOLLOWING STATEMENT

```
X(N) = X(N) - Z(I,J)*X(M)
```

THE SUGGESTION BOX

Q/S *What percentage of the questions submitted do you bother to respond to?*

A Every signed question/suggestion/complaint is considered and answered, either in the newsletter or personally. Delays may occur sometimes since each is reviewed by an officer of UCC. If you are dissatisfied with this procedure, don't hesitate to discuss it with T.D. Hodge, 232 ExpEng.

Q/S *How about some hot water in the Lauderdale Users' Room for tea?*

A We've tried this in the past (without success) and hesitate to get into it again. The coffee operation is costly as is. Why not bring a thermos?

Q/S *Obtain and assign a Data Speed 40 to West Bank. This would complement the West Bank installation and equivalence it to ExpEng and Lauderdale.*

A

A See the article on the Data Speed 40 on page 1 of this newsletter, please.

Q/S *Why is it necessary to have to run around ExpEng Saturday afternoon to try and find which door was left unlocked today? (Like at 2:00 PM -- nowhere near closing time.)*

A We appreciate your problem. It has been agreed that we will assure that the front door of the building (west side) will be open whenever the high speed station is operative.

Q/S *After waiting (I'm still waiting) 1 1/2 days to get my 6 boxes of cards read in so that I can put them on tape and after several conversations with your operator who keeps informing me that he will read in my job as soon as he has the time I wonder if it wouldn't be wise to increase the operations staff slightly so that one operator isn't left to work the ExpEng terminal alone. This situation is really absurd.*

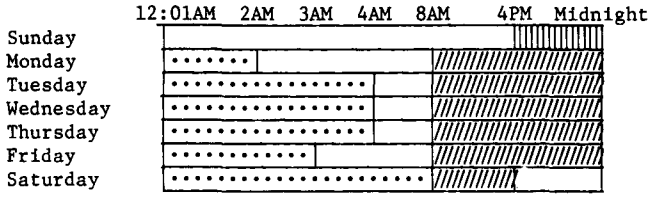
A This appears to have been our error. Some long jobs are held for the evening when job submission tapers off. However, your job should have been processed. We're sorry for the inconvenience.

The following is repeated (with a different answer) from the January, 1974 newsletter:

Q/S *How about putting a MERITSS terminal in the Users' Room at Lauderdale? With the transmit feature, through the ECS link, having a TTY or CRT handy would be a good service.*

A We have no present plans to place a 6400 terminal in the Users' Room at Lauderdale. The transmit feature is only available to specially validated users on certain terminals. We are not able presently to make this feature generally available. We hope you find the 1004 terminal in the Lauderdale Users' Room a convenience for accessing the 6600.

6600 OPERATING HOURS



//// (Lauderdale, ExpEng, West Bank)
|||| (Lauderdale, ExpEng)
••• (Lauderdale only)

MEDIUM SPEED REMOTE TERMINALS

(Hours will vary from site to site.)

Site	Supervisor
38 ElectE (East)	J. Guentzel/373-5404 M. Cook/373-3895
N640 ElthH (East)	J. DeWitt/376-7377 N. DeWitt/376-7377
S191 KoltH(East)	T. Faulkner/376-7024 J. Abdallah/373-2348
321 MinMet(East)	C. Swanson/373-5475 R. Olfke/373-5680
69 Physics(East)	Bob Scarlett/373-0243 Dave Olson/376-7175
167 SocSci(West)	G. Lutgen/373-3608
415 CofH (StP)	D. Nelson/376-7003 T. Ehlen/376-7003
24 NoH (StP)	J. Colton/373-0990 D. Rignell/373-0990
257 BioSci(StP)	R. Comstock/373-0928 H. Meyer/373-3067
125G ClaOff(StP)	C. Bingham/373-0988
User Room (Laud)	Shift Sup./373-4940

TELEPHONES

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

KEYPUNCH LOCATIONS

(number of keypunches is in parentheses)

East Bank						St. Paul				West Bank		Lauderdale	
38 ElectE	(1)	208 ExpEng	(8)*	69 Physics	(1)	257 BioSci	(1)	24 NoH	(1)	90 BlegH	(1)	Users' Room	(4)*
N640 ElthH	(1)	223 ExpEng	(4)			125G ClaOff	(1)			167 SocSci	(1)		
130 ExpEng	(2)	S191 KoltH	(1)			415 CofH	(1)						
131 ExpEng	(1)	321 MinMet	(1)										

*includes 1 interpreting card punch.

CONSULTING SCHEDULE

EAST BANK	GENERAL COMPUTING	STATISTICAL COMPUTING
140 ExpEng	Mon- Thurs: 9AM-5PM 7PM-9PM Fri : 9AM-5PM Sat :12 N-2PM Sun : 7PM-9PM	
205 ExpEng		Mon : 1:00PM- 3:00PM Tues : 8:30AM-12:30PM Thurs: 11:00AM- 3:00PM
N640 ElthH		Mon : 11:00AM- 2:00PM Wed : 9:00AM-12:00 N Fri : 11:00AM- 2:00PM
ST. PAUL	GENERAL COMPUTING	STATISTICAL COMPUTING
125C ClaOff	Mon : 8:00AM- 6:00PM Tues : 8:30AM-12:00 N 2:00PM- 6:00PM Wed : 8:00AM- 8:00PM Thurs: 8:30AM-11:00AM 2:00PM- 6:00PM Fri : 8:00AM- 6:00PM Sat : 9:00AM-12:00 N	Mon : 1:00PM- 5:00PM Tues : 8:30AM- 2:00PM Wed : 1:00PM- 3:00PM 3:30PM- 5:30PM Thurs: 8:30AM- 2:00PM
WEST BANK	GENERAL COMPUTING	STATISTICAL COMPUTING
25 BlegH*	Mon-Fri: 9AM-12 N 1PM- 4PM	Mon-Fri: 9AM-12N 1PM- 4PM
167 SocSci		Mon : 9:00AM-12:30PM Wed : 2:30PM- 5:30PM Thurs: 9:00AM-12:30PM
LAUDERDALE	GENERAL COMPUTING	STATISTICAL COMPUTING
	Mon- Thurs: 1:30PM-3:30PM 7:30PM-9:30PM Fri : 1:30PM-3:30PM	Thurs: 1:30PM-3:30PM

*Social science computing only.

REFERENCE MANUALS

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

	CDC publication #
APEX	86615300B
ALGOL Version 2	60306100D
COBOL version 3	60253000E
COMPASS Version 2	60279900D
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	60252600D
6000/7000 Computer Systems	60100000W

BMD & BMDX: Biomedical Computer Programs
IMSL Library Catalog
MNF Reference Manual
OMNITAB II Programmers Reference Manual
SPSS: Statistical Package for the Social Sciences
UMST: U of Minnesota Statistical Programs
UCC Users' Reference Manual

BRIEF NOTES

For those with 'lost' punched output.....If a job must be run a second time to obtain punch output which was lost on the first run and the user has his printed output, either the control card

```
D,OUTPUT.
```

or

```
DESTROY,OUTPUT.
```

will supress the printing of the output. Only the dayfile will print, but otherwise the job runs normally, and the punch output will be punched. This control card should be placed in the deck so that it is the last control card executed.

The manuals finally arrived.....All of the open shop remote terminals on campus now have reference materials available in the form of manuals and listings. Users no longer need to come to ExpEng to use manuals. We hope that this will make the terminals more effective for you to use.

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, WRITE TO

EDITOR
UCC NEWSLETTER

AT THE ABOVE ADDRESS, OR CALL 373-7744.
