

1116  
20724

UNIVERSITY COMPUTER CENTER, UNIVERSITY OF MINNESOTA-TWIN CITIES, MINNEAPOLIS, MINNESOTA

## CONTENTS

CHARACTER SET CONVERSION <i>General introduction, reasons, tables, hardware changes coming up</i>	P. 32
CYBER 172 NEWS <i>Conversion grants, other assistance</i>	P. 36
NOS NEWS <i>NOS on the Cyber 74, WRITEUP, UPGRADE.</i>	P. 37
SYSTEM 2000 <i>Major changes coming up; special short courses to be offered in June</i>	P. 37
EDUNET <i>The EDUNET data base catalogs software, documentation, people</i>	P. 38
HELP WANTED, FOR SALE <i>Teletypes for lease or sale VIDAR autodata 5600 for sale Programmer wanted</i>	P. 38
ERRATA <i>A correction to the UCC Newsletter EXTRA (March, 1978)</i>	P. 38
USAGE STATISTICS	P. 39
SHORT COURSES	P. 40
OPERATING HOURS/SITES	P. 41

DEADLINE FOR ITEMS FOR THE JUNE NEWSLETTER  
IS MAY 24.

## BULLETINS

++++  
On Thursday, May 18, there will be a seminar on  
micro-computer activities within UCC. The meeting  
will focus on Terak development.

131 Physics  
1:00-4:00 PM

++++

!!  
HOLIDAY HOURS

Memorial day weekend	down	up
Lauderdale	4PM Sat May 27	6PM Mon May 29
ExpEng	4PM Sat May 27	8AM Tue May 30

!!

SPRING QUARTER USER'S MEETING

MAY 17  
115 SOIL SCIENCE {ST. PAUL}  
1:15 - 4:00 PM  
COFFEE AND COOKIES WILL BE SERVED  
PLEASE COME

## UCC newsletter

VOLUME 12 NUMBER 5 MAY, 1978

Director: Peter C. Patton  
Editor : A. Koepke

Comments about the content of this newsletter, or  
suggestions for changes may be directed to the  
editor, 235a Experimental Engineering, 373-7744.

The University of Minnesota adheres to the prin-  
ciple that all persons shall have equal oppor-  
tunity and access to facilities in any phase of  
University activity without regard to race, creed,  
color, sex, age, or national origin.

# CHARACTER SET CONVERSION

## Introduction

With the change to the NOS operating system on the Cyber 74 and the acquisition of new equipment such as the Cyber 172 and its new high speed upper and lower case printer, we now have the (long-awaited) opportunity to change our character sets to ASCII. ASCII, the American Standard Code for Information Interchange, is the only standard and officially approved character set in the United States.

Many CDC computer system users over the years have complained about the particular set of special characters (such as ) in the 63-character "scientific" character set which has existed in CDC operating systems from Chippewa to SCOPE, MACE, KRONOS, and NOS. The printing and output peripherals on a computer system have a large role in determining the character set we see and use for results. So, for example, the absence of a quote character (') on the 501 high speed line printers, which now have been around for 12 years, was only partially alleviated when interactive terminals and later 1004 remote batch terminals arrived. These terminals are (by and large) ASCII (or a subset of ASCII) terminals.

Unfortunately, we are not able to change all hardware and programs to use the full 128-character ASCII character set. But, in late August or early September, we will make keypunch and line printer changes to enable a conversion to a standard 63-character subset of ASCII throughout the computer system, as well as facilitating full ASCII in more places than is available now.

As with other aspects of UCC staff work on the NOS conversion, the character set change was researched and studied thoroughly. Actually, several other universities (Indiana, Iowa, Michigan State) with CDC equipment now facing similar problems and have just made similar studies.

## Reasons for the Change

There are several reasons why we should change character sets:

1. Earlier, we said that we use the CDC 63-character scientific character set. In reality, this set is used, with KRONOS, only on the high-speed line printers and modified-H 029 keypunches. On the 1004 terminals we use another set in which 8 characters are different. Interactively, we use a default 61-character set which differs in 9 characters. Internal 029 card conversion, ASCII 9-track tapes, and the mini-computer RJE protocol use another character set which differs in 10 characters. Finally, the on-line plotting routines and off-line microfilm printing routines each use character sets different from these others. The first reason we need to change is obvious; we need a single, common character set in all of these areas.

2. The NOS standard (63-character, subset ASCII) character set is based on ASCII which has been an industry standard for 15 years. The second reason, then, is that we should move in the direction of accepted standards which enhance the sharing of software.
3. There is no clean way of fitting more and more character sets into the current scheme when new equipment (most of it in ASCII) arrives, such as the new 580 printer on the Cyber 172.
4. The NOS character set has special characters which are more useful to text processing (such as ?, !, @, #, ', ", and &). Text processing is an increasingly significant part of our computing requirements. Documentation production, data base management, linguistic analysis, and symbol processing are just some examples; compiling has always been non-numeric!

## Advantages and Disadvantages

The advantages of changing to the NOS character set (63-character, subset ASCII) include the following:

1. Users with full ASCII text files (usually created interactively) will be able to DISPOSE (ROUTE) these files to high-speed printers for full ASCII printing whereas now we are limited usually to 30 cps hard copy interactive terminals (with a very few of us having access to 120 cps terminals).
2. More and more CDC sites are using this set which allows us to continue sharing software with them.
3. Under interactive ASCII mode (from now on called EXTENDED mode because NORMAL mode will also be ASCII) 41 more characters will be in true ASCII order than they are now.
4. Interactive users will have four more printable characters in NORMAL mode.
5. Many language processors (BASIC, MNF, LISP, SNOBOL, Pascal, COBOL, etc.) and applications programs will be able to use the correct characters which are specified in their corresponding standard definitions.

The disadvantages include:

1. We must convert files and software to change to the new character set; this is a large task.
2. The NORMAL mode for interactive users will not work quite the same way for listing full ASCII (extended mode) files and two characters (^ and @) will have different translations depending on the mode.
3. The modified-H 029 keypunch machines must be converted.

Procedures for changing

Below is a brief but relatively complete list of procedures. For a full explanation, see WRITEUP(UPGRADE=CHAR):

1. If you are a user of programming languages, special characters in the text of the program source can be changed by using the CONVERT control statement which, incidentally, exists right now under KRONOS. Future versions of languages which will handle the new character set will be available before the actual change date.
2. If you use applications software such as plotting routines, or text formatters (such as TYPESET or FMT), or GENCORD, or GENSORT, you should be aware of the new character set and its collating sequence, and you may find it necessary to use the CONVERT control statement.
3. Every interactive user must be aware that the character set now being used is the default one: TTYD. This will change to TTY (the new character set). The CONVERT control statement was created specifically for interactive users for any files using the special characters. Teletype users will have to use control-H for backspace instead of back arrow. Or, alternatively, they will have to switch to terminal type BARROW after logging in.

4. This summer, before the change goes into effect, everyone using batch processing with cards will be advised to punch "26" in columns 79 and 80 of the job card to assure proper card reader conversion modes at high-speed stations and 1004 sites, unless you have a deck punched using EBCDIC 029 codes from a standard 029 keypunch. In this case you should punch "29."

\*\*\*\*\*  
 THE MODIFIED-H 029 KEYPUNCHES PROVIDED BY UCC ON CAMPUS ARE NOT STANDARD; THEY HAVE BEEN MODIFIED TO PUNCH 026 CODES EVEN THOUGH THEY ARE 029 MACHINES!  
 \*\*\*\*\*

As the new ASCII 029 keypunches become available, any jobs you punch using the new machines should have "29" on the job card to assure proper conversion. Please see the article on keypunch conversion elsewhere in this newsletter.

Character set tables

Page 34 contains a table which summarizes current and future character sets. Please note the following points:

1. Column 1 gives the internal CDC 6-bit "display code" in octal for all the characters listed.
2. Column 9 gives the 7-bit standard ASCII code for reference only. These codes will not apply to most character processing on CDC machines.

3. Column 2 gives the modified-H 029 keypunch characters available on many UCC keypunches. These punches will be converted to ASCII 029 (column 6).
4. Note the column 5, entitled "029 cards, ASCII tapes, and mini-protocol." This character set, in use now under KRONOS, is identical to the "new" NOS character set.
5. Finally, note that in columns 6, 7, and 8, labeled "NEW" that, with the exception of two characters on the 1004 printers, we will have fully normalized character sets for all processing.

Page 35 contains a table which gives the new NOS 63-character interactive character set in both NORMAL and EXTENDED modes (terminal type TTY). This table can also be used for generation of upper and lower case print files on the 580 high-speed printer using terminal id code "A9".

A.B. Mickel, 376-7290

CARDS, KEYPUNCHES, BATCH TERMINALS

On August 21, 1978, we will change the NOS operating system on the Cyber 74 and Cyber 172 so that the 63 character subset ASCII character set will be default. The MERITSS (6400) system will also be changed at this time so their KRONOS system will use the 63-character subset. We are now making plans to upgrade our printers and software to make use of this character set. No changes to 1004 hardware are required but software modifications to SUP10 are needed. This change implies that all batch terminals will read 029 type cards by default. At present, 026 type cards are default. After the August change, users of 026 type cards will have to punch 26 in columns 79 and 80 of the job card in order to have those cards read in correctly. This will be true at all batch terminal sites (Lauderdale, West Bank, Experimental Engineering, and all 1004 sites). Each user will therefore have a choice of using 026 or 029 cards.

We will change all of our card equipment to support the 029 subset ASCII character set. This change will involve all of the following equipments:

<u>type</u>	<u>conversion cost</u>
026 punch	\$ 600
026-21 punch-interpretor	\$4000
029 punch	\$ 200
056 verifier	\$1400
080 interpretor	\$1200

These costs represent our best estimates at this time and should be considered fixed. We may be able to convert (rather than replace) the 026-21 at a cost of about \$800.

continued page 36

TABLE 1  
UCC CHARACTER SET CONVERSIONS

internal octal display code	O L D				N E W			7-bit ASCII code
	501/505 printer	1004 printer	interactive TTYD	029 cards ASCII tapes mini-protocol	512/850 printer	1004 printer	interactive TTY	
01-32	A-Z	A-Z	A-Z	A-Z	A-Z	A-Z	A-Z	101-132
33-44	0-9	0-9	0-9	0-9	0-9	0-9	0-9	60- 71
45	+	+	+	+	+	+	+	53
46	-	-	-	-	-	-	-	55
47	*	*	*	*	*	*	*	52
50	/	/	/	/	/	/	/	57
51	(	(	(	(	(	(	(	50
52	)	)	)	)	)	)	)	51
53	\$	\$	\$	\$	\$	\$	\$	44
54	=	=	=	=	=	=	=	75
55	blank	blank	blank	blank	blank	blank	blank	40
56	,	,	,	,	,	,	,	54
57	.	.	.	.	.	.	.	56
60	≡	'	"	#	#	#	#	43
61	[	[	[	[	[	[	[	133
62	]	]	]	]	]	]	]	135
63	:	:	:	:	:	:	:	72
64	≠	≠	'	"	"	≠	"	42
65	→	@	&	—	—	□ <sup>1</sup>	—	137
66	√	!	carriage return	!	!	!	!	41
67	^	&	line feed	&	&	&	&	46
70	↑	Δ	^	'	'	'	'	47
71	↓	#	#	?	?	?	?	77
72	<	<	<	<	<	<	<	74
73	>	>	>	>	>	>	>	76
74	≤	#	ascii escape	@	@	@	@	100
75	≥	?	?	\	\	/ <sup>1</sup>	\	134
76	┘	%	ascii escape	^	^	Δ	^	136
77	;	;	;	;	;	;	;	73

<sup>1</sup>The characters □ and \ will print as % until SUP10 and the 1004 plugboards are modified.

TABLE 2: SUBSET ASCII AND ASCII CHARACTER SETS

Internal display 6/12-bit octal	Normal ASCII	
	char	7-bit octal
00		
01	A	101
02	B	102
03	C	103
04	D	104
05	E	105
06	F	106
07	G	107
10	H	110
11	I	111
12	J	112
13	K	113
14	L	114
15	M	115
16	N	116
17	O	117
20	P	120
21	Q	121
22	R	122
23	S	123
24	T	124
25	U	125
26	V	126
27	W	127
30	X	130
31	Y	131
32	Z	132
33	0	060
34	1	061
35	2	062
36	3	063
37	4	064
40	5	065
41	6	066
42	7	067
43	8	070
44	9	071
45	+	053
46	-	055
47	*	052
50	/	057
51	(	050
52	)	051
53	\$	044
54	=	075
55	SPACE	040
56	,	054
57	.	056
60	#	043
61	[	133
62	]	135
63	:	072
64	"	042
65	'	137
66	!	041
67	&	046
70	'	047
71	?	077
72	<	074
73	>	076
74	@	100
75	\	134
76	^	136
77	;	073

Internal display 6/12-bit octal	Extended ASCII	
	char	7-bit octal
7600		
7601	a	141
7602	b	142
7603	c	143
7604	d	144
7605	e	145
7606	f	146
7607	g	147
7610	h	150
7611	i	151
7612	j	152
7613	k	153
7614	l	154
7615	m	155
7616	n	156
7617	o	157
7620	p	160
7621	q	161
7622	r	162
7623	s	163
7624	t	164
7625	u	165
7626	v	166
7627	w	167
7630	x	170
7631	y	171
7632	z	172
7633	{	173
7634		174
7635	}	175
7636	~	176
7637	DEL	177
7640	NUL	000
7641	SOH	001
7642	STX	002
7643	ETX	003
7644	EOT	004
7645	ENQ	005
7646	ACK	006
7647	BELL	007
7650	BS	010
7651	HT	011
7652	LF	012
7653	VT	013
7654	FF	014
7655	CR	015
7656	SO	016
7657	SI	017
7660	DLE	020
7661	DC1	021
7662	DC2	022
7663	DC3	023
7664	DC4	024
7665	NAK	025
7666	SYN	026
7667	ETB	027
7670	CAN	030
7671	EM	031
7672	SUB	032
7673	ESC	033
7674	FS	034
7675	GS	035
7676	RS	036
7677	US	037
7400		
7401	@	100
7402	^	136
7403		
7404	%	045
7405		
7406		
7407	`	140

During the first few weeks of August, we will redistribute our keypunches so that each site will have at least two punches (this includes all 1004 sites). On the conversion date (or at least as close to that date as possible), we will:

1. Replace our two 056 verifiers with new subset ASCII 059 verifiers.
2. Convert the 028 interpreter to subset ASCII.
3. Replace two 026-21 interpreters with a new 080 interpreter with subset ASCII.
4. Convert ten 029 keypunches to subset ASCII.
5. Convert thirteen 026 keypunches to subset ASCII.

At this point, half of our punches and all other card equipment will be ASCII compatible. Each site will then have an 026 and an ASCII compatible punch. This condition will exist until February 1979 in order to give our users plenty of time to convert to subset ASCII cards.

The Operations group is now working on a policy to permit users to convert card decks from 026 cards to 029 subset ASCII. This conversion will be provided free of charge (cards, conversion, and interpreting of new deck). Watch for later articles on this conversion process. All users are advised to convert their decks during the period from August, 1978 to February 1979.

In February, 1979, we will stop providing free conversion of cards and users then will have to do normal conversion through the system.

After we reach February, 1979, we will:

1. Convert eleven 029 keypunches to subset ASCII.
2. Convert thirteen 026 keypunches to subset ASCII.

At this point, we will be fully ASCII compatible. (We will maintain one 026 punch at Lauderdale and one at Experimental Engineering.)

We will not fund the conversion of any user-owned equipment. University departments wishing to upgrade their equipment may utilize departmental supply and expense funds or other resources available to them or their college; or they may apply for funds from the Equipment Depreciation Appropriation through their college deans or provost.

Please contact Ron Fleagle at 376-5263 to discuss upgrade cost, vendors, and part numbers needed for conversion. We now have an 029 ASCII keypunch at the Lauderdale site anyone wishes to see/try it.

If you have any questions on this policy or on the conversion, please call me.

R. T. Franta, 376-3963

The expansion system for UCC, a Control Data 172, was installed on April 13, 1978. The system, both hardware and software, was checked out by CDC and UCC personnel during the last two weeks of April and became available to a small number of general users in early May.

Certain parts of the new system (specifically, disks, controllers, and a timesharing front end) have not yet been delivered. These are expected during May and June. Because of this, the 172 will not be able to accommodate its full load of users until sometime during June. Therefore the phaseover of all intensive interactive users from the Cyber 74 to the Cyber 172 is being delayed until the necessary hardware and software configuration is completely in place, and users can move to the 172 without experiencing abnormal delays or inconvenience. Certain users (and the majority of UCC staff) have already been moved to the Cyber 172 in order to reduce the ever growing load on the Cyber 74; other users will be moved as equipment delivery makes movement feasible. Users who have responded with a "Request for Access" form will be contacted personally by UCC personnel and assisted in transferring files, etc. to the 172.

### Financial Aspects

Interactive users of the Cyber 74 are encouraged to move to the Cyber 172 at their earliest convenience. To relieve the financial burden of transferring, we offer the following:

1. Grants for SRU charges on the 172 are available from UCC. (See the article in the March edition of this Newsletter and the "Request for Access" form).
2. In order to assure uninterrupted processing capability, user numbers will remain valid on the Cyber 74 during the introduction of the Cyber 172. Users who are in the transition process will not be charged for permanent file storage on the 172 since most will want to keep backup files on the 74 during the transition.

### Conversion Assistance

We have set up a Conversion Coordination team to assist users in moving from the Cyber 74 to the Cyber 172 (and, in Health Sciences, from the CDC 3300 to the Cybers). This team, consisting of Rich Franta, Steve Nachtsheim, and Larry Ozga, has begun work and will continue in existence until December 15, 1978. In connection with this, the aforementioned grants will also be available through December 15, 1978. The special projects set up to assist CDC 3300 users will also terminate on December 15, 1978. Therefore users are encouraged to transfer their computing in advance of December 15, 1978.

As mentioned in previous newsletters, timesharing validations on the Cyber 74 will be restricted as of July 2, 1978. Specifically, no users will be allowed more than 55,000 (octal) words of central memory for timesharing jobs. Users of the Cyber 74 who currently use more than 55K in timesharing will have to transfer to the Cyber 172 before July

2, 1978. Other Cyber 74 timesharing users are encouraged to move to the Cyber 172 at their convenience. Movement of timesharing users to the Cyber 172 will benefit both the timesharing users and the Cyber 74 batch users by reducing the load on the batch machine.

S.P. Nachtsheim, 373-7878

## NOS NEWS

As previously announced, we will be moving to NOS for the Cyber 74 on June 11, 1978. (NOS is the operating system currently running on the Cyber 172.) NOS is relatively compatible with KRONOS and nearly all users will experience no inconvenience in this upgrade.

In order to make users aware of the changes between KRONOS and NOS, we are sponsoring special seminars on NOS. See the course schedule elsewhere in this newsletter. In addition, a machine retrievable WRITEUP, called UPGRADE, has been placed on the system. This indexed document contains sections on changes, accounting, data management and other topics of interest. The sections of WRITEUP, UPGRADE are given below. The capitalized portion of the section is used to obtain that section as a WRITEUP; for example, WRITEUP, UPGRADE=RATES.

CHAR	Character sets and printers
CONTROL	Statement differences
DBMS	Data base management systems
DOC	Documentation
ERRORS	Error lists
FILEX	File transferring
INDEX	This list
INTRO	Introduction to UPGRADE
LANG	Language differences
MEMORY	Memory management
MISC	Anything else
MMF	Multi-mainframe information
NOSCLAS	special class schedule
POLICY	Policies and procedures
RATES	Rates and accounting information
SCHED	Schedule of operations and testing

For Health Science 3300 users, we have also scheduled a special set of seminars oriented towards the MASTER to NOS conversion. A conversion newsletter entitled "CONVERT" is also being published. Specialized conversion assistance for HCS 3300 users will be available from UCC through December 15, 1978. Contact Larry Ozga at 376-5605 or 373-5613 for details.

S.P. Nachtsheim, 373-7878

## SYSTEM 2000

### MAJOR CHANGES COMING UP

On June 11, some major changes will take place in System 2000 on all UCC computer systems. The current version, 2.40, will become PAST, while the FUTURE version, 2.60, will become current. A new version for Programming Language Interface (PLI) only, will be installed as a FUTURE version.

These changes are the first steps in a movement toward maintaining three versions of System 2000: a "normal" version, a large core version, and a small core version. When these changes are made, version 2.60 will be considered the "normal" version; version 2.70 will be the large core version; the small core version will be added at a later date.

Version 2.70 requires approximately 75K for Natural language and approximately 77K plus the program for PLI. This large core version improves efficiency by virtually eliminating any overlay swapping during S2K operations and by decreasing the amount of disk I/O needed for sorting. Note that this version contains no Report Writer; the normal (2.60) Report Writer may be used.

In order to accommodate three differently sized versions of System 2000, the following naming conventions have been established:

	small core	normal	large core
Natural language	S2000*	S2000	S2000L
FORTRAN precompiler	PLIFORS*	PLIFOR	PLIFORL
COBOL precompiler	PLICOB*	PLICOB	PLICOBL
PLI relocatable	PLILGOS*	PLILGO	PLILGOL
Report Writer Owncode	RWEXITS*	RWEXIT	RWEXITL*

\*indicates availability at a future date.

To recap, on June 11, the current (2.40) version of S2K will become the PAST version and may be accessed via:

PAST(S2000)  
S2000.  
or  
PAST(PLICOB)  
PLICOB.  
etc.

The FUTURE version (2.60) will become current.

A new version (2.70) will be added as a FUTURE version and may be accessed via:

FUTURE(S2000L)  
S2000L.  
or  
FUTURE(PLIFORL)  
PLIFORL.  
etc.

Questions may be addressed to:

J. Cosgrove, 373-1761

### SYSTEM 2000 SHORT COURSES

Due to demand from the user community, we have scheduled two special courses on System 2000. These courses, "Application Analysis Methods" and

"Data Base Design and Administration," will be taught by personnel from MRI Systems Corporation. (MRI is the firm that developed and supports System 2000.)

The courses will be conducted during the week of June 19. The first course will be June 19, 20, 21; the second June 22 and 23. The courses will run from approximately 8:30 AM to 4:30 PM. The cost for each course will be approximately \$160.00 per student; the exact amount will depend on expenses and the total number of students registered. Each course normally costs \$400.00 if taken at MRI in Austin, Texas,

We are limiting registration to the first 15 people who apply; to register, or to get further information, call:

S. Nachtsheim, 373-7878

## EDUNET DATABASE

The EDUNET data base

As a library needs a card catalog to facilitate finding a book, so a computing network needs a resource catalog to aid users in finding the proper program or package for their application. To provide such a function for EDUNET, the prototype university network, staff members at Stanford University have developed and are maintaining an on-line catalog of available EDUNET resources and procedures for accessing them. Software programs which EDUNET suppliers are promoting for network use are included in the data base. In addition, other software which is available, though not necessarily via EDUNET or even interactively, is also included. The purpose of the first class of programs is obvious: if users cannot find the appropriate application on their school's computing system, their EDUNET liaison may be able to locate it at an EDUNET host site. The usefulness of the second class of programs may vary: in some cases a resource may be available at a school which is not a network host, but would be accessible if the user were willing to incur the cost of long distance telephone calls; in other cases the application may run in a batch mode only, and require implementation at the user's site; in still other instances, the resource might not be fully supported by the host site's computing center, but could be used at the user's risk if he or she so chose. There are currently over 400 resource entries in the EDUNET data base, and more are being added.

The EDUNET data base is implemented within the Stanford Public Information Retrieval System (SPIRES) and actually consists of four subfiles: EDUNET Resources, EDUNET Suppliers, EDUNET Documents, and EDUNET People. For most users, the Resources subfile is the primary source of information; they can search for a specific program name, or for keywords characterizing the program they hope to find. The user can then query the Supplier subfile to determine whether the school providing the program is an EDUNET host site and, if it is, what administrative procedures must be followed to obtain an account there. The Documents file can be searched to locate available program documentation and the People file provides

the names of the EDUNET liaisons and professional consultants for the program.

The EDUNET data base is a first step in locating particular programs and software not available at the user's site. It will become even more useful as it continues to grow.  
(Reprinted from "The Bulletin," MIT IPS newsletter.)

UCC users are encouraged to take advantage of the data base when searching for a program or program function not available here. Also, users with reliable software they would like to make available to their colleagues at other universities are invited to create appropriate data base entries. Guest accounts on the Stanford system for accomplishing either task are available; call Thea Hodge, 373-4599.

## CLASSIFIED ADS

### TELETYPES FOR LEASE OR SALE:

The UCC has a limited number of teletypes available for sale or for short term rental.

A refurbished KSR sells for \$500; an ASR for \$600. The KSR will rent for \$40 per month with an acoustic coupler; the ASR rents for \$50 per month with an acoustic coupler.

If you are interested in obtaining one of these terminals or would like more information, please call Dan Whealdon at 373-4877.

### FOR SALE:

VIDAR Auto Data 5600 Data Acquisition System with a DEC PDP-8E mini-computer, 12K core memory, dual cassette, programmable real-time clock, teletype, integrating digital voltmeter, Autodata 616 scanner, Autodata 580 remote scanner coupler, all-weather container for remote operation, and cabinet. Contact Dr. Dave French at 373-0852.

### PROGRAMMER WANTED:

For several short term projects; must be familiar with DEC PDP-11 hardware and RSX-11M software. Call Sid Nystrom at 373-2183.

## ERRATA TO UCC NEWSLETTER EXTRA {MARCH, 1978}

{SEE PAGES 3 & 4}

THE MACHINE IDS WERE STATED TO BE MI=MA {CYBER 74} AND MI=MC {CYBER 172}.

THESE MNEMONICS NOW SHOULD BE:

MI=74 {FOR THE CYBER 74}  
MI=72 {FOR THE CYBER 172}  
MI=64 {FOR THE 6400}



PRODUCTION USAGE SUMMARIES

	<u>March, 1978</u>	<u>March, 1977</u>
<b>CDC Cyber 74</b>		
Number of Batch jobs and MIRJE sessions	102,218 ( 114,767)	83,096 ( 97,767)
Total Central processor hours inc. DELAY	214 ( 273)	162 ( 226)
DELAY queue processor hours	65 ( 72)	-
MIRJE terminal hours	9,326 ( 11,727)	-
Mass storage transfers (KPR)	267,373 ( 343,977)	208,973 ( 281,431)
Magnetic tape transfers (KPR)	6,607 ( 9,188)	5,259 ( 7,856)
Pages printed, charged from UCC	1,029,576 (1,139,764)	853,824 ( 985,025)
Cards punched	421,990 ( 495,294)	405,426 ( 451,095)
Microfilm frames produced	18,812 ( 316,504)	95,747 ( 349,673)
Status plotting production (feet)	7,705	5,458
Tapes mounted	10,454	8,786
Average file storage (2347M available)	1,456.4 million char	966.9 million char
Mean time between failures	23.3 hours	23.2 hours
Available during scheduled hours	97.2 percent	97.9 percent
SUPIO uptime during available hours	97.9 percent	93.8
(totals in parentheses include staff development, accounting, and maintenance runs)		
<b>CDC 6400</b>		
Number of jobs run	146,385	147,973
Central processor hours	153	112
MERITSS terminal hours	20,780	21,278
Number of terminal sessions	41,063	41,222
Maximum number of simultaneous users	120	110
Average file storage	266.0 million char	232.3 million char
Mean time between failures	40.3 hours	44.3 hours
Available during scheduled hours	97.1 percent	93.8 percent

CYBER 74 DOWNTIME SUMMARY : April, 1978

	<u>Monday-Friday</u> <u>0800-1800</u>	<u>other</u>	<u>total</u>
Total possible scheduled uptime hours	200.	304.	504.
Total downtime hours (see Schedule A)	9.5	7.9	17.4
Total uptime hours	190.5	296.1	486.6
Uptime percentage	95.3 percent	97.4 percent	96.5 percent
Average downtime per occurrence	57.2 minutes	119.0 minutes	74.9 minutes
Mean time between failures	28.6 hours	76.0 hours	45.8 hours
<b>Subsystem failures</b>			
SUPIO	11	1	12
TELEX*	3	0	3
EXPORT	4	4	8

Schedule A: downtime hours

	<u>Number</u>	<u>Total hours</u>	<u>Average minutes</u>
(1) Preventive maintenance over-runs	2	0.3	8.5
(2) Software related problems	3	0.4	9.0
(3) Hardware related problems	6	6.7	66.5
(4) Indeterminate software/hardware problems	0	0.0	0.0
(5) External Problems	3	10.1	201.7

\*5 additional front-end failures affecting 1200 baud users.

Of the 17.4 hours of downtime this month, 5 failures accounted for 15.9 hours: component failure in display console (4 hr,56 min), ECS failure (55 min), water shutdown (2 hr), and 2 power outages (3 hr,5 min).

\*\*PLEASE POST\*\*

THESE SHORT COURSES ARE OFFERED BY THE UNIVERSITY COMPUTER CENTER. THEY ARE FREE AND REQUIRE NO REGISTRATION. FOR MORE INFORMATION CALL LINCOLN FETCHER (376-1637) OR RICH FRANTA (376-3963) OR SEE WRITEUP, CLASSES.

\*\*PLEASE POST\*\*

SUMMER QUARTER 1978		UNIVERSITY COMPUTER CENTER SHORT COURSES			SUMMER QUARTER 1978	
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY		
12 JUNE	13 JUNE	14 JUNE	15 JUNE	16 JUNE		
Beginning Summer Session I						
19	20	21	22	23		
Beginning FORTRAN	Intro to UCC Advanced FORTRAN PLOTAC	Beginning FORTRAN PLOTAC	NOS Cont Statements Advanced FORTRAN PLOTAC	Beginning FORTRAN		
26	27	28	29	30		
Intro System 2000 Beginning FORTRAN	NOS Cont Statements Advanced FORTRAN	Intro System 2000 Beginning FORTRAN	NOS Cont Statements Advanced FORTRAN	Intro System 2000 Beginning FORTRAN		
3 JULY	4 JULY	5 JULY	6 JULY	7 JULY		
		Intro System 2000 Beginning FORTRAN	NOS Cont Statements Advanced FORTRAN	Intro System 2000 Beginning FORTRAN		
10	11	12	13	14		
SPSS	NOS Cont Statements Advanced FORTRAN SPSS	SPSS	NOS Cont Language Advanced FORTRAN	End Summer Session I		
17	18	19	20	21		
Beginning Summer Session II						
24	25	26	27	28		
S2000/PLI		S2000/PLI		S2000/PLI		
31	1 AUG	2 AUG	3 AUG	4 AUG		
S2000/Report Writer		S2000/Report Writer		S2000/Report Writer		
7	8	9	10	11		
	Intro Time-Sharing		Intro Time-Sharing			
14	15	16	17	18		
End Summer Session II						

\*\*\*\* NOTE: No classes will be held on Monday, 3 and Tuesday, 4 July. \*\*\*\*

-----  
 Beginning FORTRAN.....: 2:15-4pm, 19 Jun - 7 Jul (mwf), Lind H 54, RTF  
 Introduction to UCC.....: 2:15-4pm, 20 Jun (t), Mech E 221, RTF  
 Advanced FORTRAN.....: 6:15-8pm, 20 Jun - 13 Jul (tth), Lind H 54, RTF  
 PLOTAC.....: 7:30-9:30pm, 20-22 Jun (twth), Laud Conf Rm, KM  
 Introduction to SYSTEM 2000.: 2:15-4pm, 26 Jun - 7 Jul (mwf), Lind H 315, JC  
 NOS Control Statements.....: 2:15-4pm, 27 Jun - 11 Jul (tth), Lind H 54, RTF  
 SPSS.....: 2:15-4pm, 10-12 Jul (mtw), Arch 45, SPY  
 NOS Control Language.....: 2:15-4pm, 13 Jul (th), Lind H 54, RTF  
 SYSTEM 2000/PLI.....: 2:15-4pm, 24-28 Jul (mwf), Lind H 54, JC  
 SYSTEM 2000/Report Writer...: 2:15-4pm, 31 Jul - 4 Aug (mwf), Lind H 54, SPN  
 Introduction to Timesharing.: 2:15-4pm, 8-10 Aug (tth), Lind H 54, RTF  
 -----



RETURN TO:  
UNIVERSITY COMPUTER CENTER  
227 EXPERIMENTAL ENGINEERING  
UNIVERSITY OF MINNESOTA  
208 UNION STREET SE  
MINNEAPOLIS, MINNESOTA 55455

UNIVERSITY ARCHIVES  
11 WALTER LIBRARY  
UNIV OF MINNESOTA  
EAST BANK CAMPUS