

BE PREPARED: CYBER, CRAY AND VAX UPGRADES IMMINENT

We plan to make three system upgrades at UCC in March. We will go from NOS R4 to NOS R5 on all CYBER systems, from COS 1.10 to COS 1.11 on the CRAY, and from VMS 2.5 to 3.0 on the VAX. The articles that follow explain the differences that you will see because of these upgrades. Watch SYSNOTES on the CYBERs and log-in messages on the VAX for latest developments.

CYBER UPGRADE

Our upgrade from NOS R4 to NOS R5 is nearing completion. We plan to bring up NOS R5 (CDC's Network Operating System 1.4-552) on a production basis on Sunday, March 20, on all three CYBERs (CA, CB, and ME).

At the same time, we will install COS 1.11 (Cray Research Corporation Operating System Level 1.11) on our CRAY 1-A. It replaces COS 1.10 as our CRAY production system. For more information on the CRAY upgrade see the November 1982 *UCC Newsletter* and WRITEUP(CRAYINF).

Most of the differences between NOS R4 and NOS R5 are internal and hence transparent to our users. They deal with fixes to old bugs, system efficiency, and modernizations to enhance communications and system flexibility. In several important areas, however, there are user visible changes. A detailed machine-retrievable document that enumerates these differences is available with the control statement:

WRITEUP(UPGRADE=*PT=AS,L=LIST)

In addition, for several months we have run a special production time on Sundays from 1-3:30 p.m. All three CYBERs run NOS R5 at these times to make upgrading control statements and procedures more convenient for our users. These Sunday tests will continue until the upgrade is made.

If you have postponed learning the NOS control statement and CRAY job submittal changes, or are uncertain about some aspect of them, this article is a final notification and clarification of our imminent system upgrade. In summary, these are the visible changes:

ACQUIRE	Macro
CATLIST	Statement output format
CRAY	Job Submittal Structure
ECS	User ECS Availability
FAMILY	Family and Machine Name Changes
ROUTE	Statement
KCL	Conversion to CCL
QUEUE	Utility
MISC	Local UCC control statements deleted

ACQUIRE Macro

The macro parameters for ACQUIRE are now identical to those of the ATTACH macro. The MODE parameter is not functional.

CATLIST Statement

We are joining the rest of the CYBER world as we upgrade (or, some might argue, downgrade) to the CDC format for CATLIST output.

Specifically, NOS R5 prints separate lists on output for direct and indirect access files. In addition, files are listed alphabetically by columns rather than by rows within these separate types.

CRAY Job Submittal Structure

Perhaps the most visible R5 change involves the CRAY job submittal structure.

The format of CRAY jobs submitted from the CYBER to the CRAY will change. (The format of CRAY-to-CRAY job submittal has not changed.) Note: the changes to CRAY job submittal described here are slightly but significantly different from those described in an earlier *Newsletter*. The changes were made in response to user feedback on the original proposal.

Under NOS R4, jobs submitted interactively to the CRAY had a different structure from jobs submitted via batch. Under NOS R5, *all* jobs submitted from the CYBERs to the CRAY have the same format. It looks like this:

```
JNAME(STMCR)
BIN(ex,014)
USER(usnumber,passwd,family)
JOB,JN=jobname,T=1000,US=whatever.
ACCOUNT,AC=accnumber,PW=
  crypasswr.
ACQUIRE,DN=fname,UQ,ID=id,
  TEXT='ATTACH,fname.CTASK.'
DELETE,DN=fname,ID=id,NA.
CFT.
LDR.
-- EOR--
```

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Upgrades from 21

... program, data, etc. ...

In this job example, note the following changes:

- MCR is the logical ID of the CRAY. (STMCR means "Stage to Machine CRAY.")
- JNAME is a CYBER job name, since NOS is processing the first three statements of this CRAY-bound job.
- BIN is an optional statement, and if used, its position may be interchanged with the USER statement.
- The CYBER USER statement is required.
- The user number, password, and family parameters are remembered by the COS system and are used as the user, password, and family values on all COS ACQUIRE and DISPOSE statements in their TEXT parameter. You will no longer have to put them in your COS ACQUIRE or DISPOSE TEXT fields. This feature heightens security on our CRAY because it eliminates the appearance of CYBER passwords in the CRAY job logfile.
- There is no EOR before the CRAY job card.
- The JN parameter on the CRAY job card, which was forbidden under NOS R4, is now optional under NOS R5. There are two changes related to the JN parameter. First, if you put a JN=jobname parameter on your CRAY job in the past, it was ignored, but all other parameters on the job card were also ignored. This bug has been fixed. Second is the issue of job naming. If you omit the JN=jobname parameter, the CYBER jobname is used as the CRAY jobname as well. This is as it works now. If you include a JN=jobname field, it will be used as the CRAY jobname instead of the CYBER jobname.
- The US parameter can now be used on the CRAY job statement but the parameter is still meaningless in the UCC system and we advise against its use.

This job, then, may be submitted "as is" from a card reader or from an interactive terminal with either a SUBMIT or a ROUTE statement.

You can use any one of the following to submit this job to the CRAY:

SUBMIT,filename.
SUBMIT,filename,ST=MCR.
ROUTE,filename,ST=MCR,DC=IN.

For submitted CRAY jobs, NOS R5 determines the CYBER jobname to assign to the job (and the filename under which the output appears) differently than under NOS R4. Under NOS R4, it is derived from the submitting user's hash, a four-character value unique to each user number. For SUBMIT or ROUTE files under NOS R5, it is derived from the hash of the user number given in the job's USER statement. Usually, the submitting user number and the number on the USER card are the same, but in the event that they are different, it is the user number on the USER card that is used. (Output still goes back to the submitting user.)

For batch submitted jobs under NOS R5, it is determined from the CYBER jobcard (as it was under NOS R4 for card deck submittals).

ECS

User ECS has changed under NOS R5. No user ECS is available on CA, and 230,000 (octal) words of user ECS are available on CB. If you specifically request USER ECS in

a job, consult "The Future of ECS" in this issue.

Family and Machine Names

As an article in the February Newsletter indicated, you *must* use the new machine IDs and family names on the FAMILY, USER, and SUBMIT statements, at log-in time, and on all other statements with an ST or MI parameter (see Exhibit 1).

ROUTE Statement

The most confusing upgrade change involves the ROUTE statement. We are now conforming to the rest of the CYBER world in our ROUTE statement parameters. Remember, ROUTE can be used to punch a card deck, print a listing, or submit a job to any of our four large-scale machines.

The parameters that have changed are listed in Exhibit 2. Under NOS R5, the TID parameter (used to specify where output should be printed) has been replaced by a UN parameter. As a convenience to our users, the TID parameter is still honored. Note, however, that this UN parameter is *not* the same as the NOS R5 UN parameter. Under NOS R4, the UN parameter specifies the user num-

Exhibit 1		
	NOS R4	NOS R5
MACHINE ID	64 72 74 CR (VAX-no ID)	ME CA CB CR VA
FAMILY NAME	C172 C74	CA CB

Exhibit 2		
NOS R4	NOS R5	R5 USE
MI=xx	ST=Mxx	MACHINE NAME
UN	RUN	REMOTE USER NUMBER
PW	RPW	REMOTE PASSWORD
CN	RCN	REMOTE CHARGE NUMBER
PN	RPN	REMOTE PROJECT NUMBER
(NONE)	RFM	REMOTE FAMILY NAME
TID	UN	OUTPUT SITE

Exhibit 3.

ROUTE,FILE,DC=PR,TID=EA.
 may be used in place of the more proper
ROUTE,FILE,DC=PR,UN=EA.

ROUTE,FILE,DC=PR,UN=CYBERUN,PW=CYBERPW,MI=74.
 must be changed under NOS R5 to
ROUTE,FILE,DC=PR,RUN=CYBERUN,RPW=CYBERPW,ST=MCB.

ROUTE,FILE,DC=IN,MI=72.
 must be changed under NOS R5 to
ROUTE,FILE,DC=IN,ST=MCA.

Exhibit 4.

OLD	NEW	
RWF.	REWIND,*.	(rewind all local files)
RTF.	RETURN,*.	(return all local files)
ULF.	UNLOAD,*.	(unloads all NODROP ed files)

ber on an alternate machine to which a file is being routed. Under NOS R5, that function is allotted to the RUN parameter, and the new UN parameter is simply a synonym for the old TID parameter. NOS R5 parameters associated with the new RUN parameter are shown in Exhibit 2.

Exhibit 3 provides examples of correct and incorrect route statements.

If you need further clarification, consult WRITEUP(UPGRADE=ROUTE). The parameters on the SEND command have not changed.

KCL

KCL (KRONOS Control Language) is obsolete. Control Data Corporation now supports CCL (CYBER Control Language), a victory for structured software supporters. In fact, CCL supports all but a few KCL statements.

As a convenience for our users, UCC will continue to support both KCL and CCL for the next few months. We urge you, however, to convert all KCL procedures (CALL procedures) to CCL procedures (BEGIN procedures) shortly after successful upgrade to NOS R5.

For more information on upgrading from KCL to CCL, consult WRITEUP(UPGRADE=KCL).

QUEUE Utility

As a convenience for our users, we will not, as previously planned and reported, annihilate the QUEUE utility. Hence, interactive intermachine job status throughout our multi-mainframe system will continue to be available to our users under NOS R5.

MISC

The UCC-written control statements shown in Exhibit 4 are being renamed because they now have CDC-standard NOS equivalents.

We encourage you to use our remaining Sunday NOS R5 test time to upgrade your jobs and procedures to our new operating system level. We realize that upgrades are not a particularly enjoyable computer task but upgrading to NOS Release 5 after one year's effort maintains our commitment to make available and to support the best and most modern software on our machines. Call us if you have any problems, criticisms, or suggestions.

(T. E. Kovarik)

VMS UPGRADE TO 3.0

In early March, we plan to upgrade our VAX/VMS system from version 2.5 to version 3.0. Nearly everything that works under 2.5 also works under 3.0. You need not change most commands, programs, and procedure files. But many new commands have been created, existing ones have been extended, the behavior of some has changed, and some unsupported programs have been removed. Here is a summary of the most important changes.

- EDT is the default editor instead of SOS. If you typed EDIT to access the SOS editor in the past, you must now type EDIT/SOS. Those who formerly typed EDIT/EDT need only type EDIT to access the EDT editor.
- Executable images (programs) and libraries are generally upward but not downward compatible. That is, nearly all 2.5 programs work under 3.0, but if you link a program during a 3.0 test period, you must relink it to run it under 2.5. The same is true for libraries: 2.5 libraries work on 3.0, but you must rebuild a 3.0 library from its component modules to use it under 2.5.
- All dial-up lines have autobaud: they automatically determine your terminal speed up to 1200 baud. After you dial in, press the carriage return (not any other character) several times. As of this writing, the autobaud feature's reliability is uncertain. If it detects your baud rate (terminal speed) incorrectly, you will see garbage. Hang up and try again. If this happens often, please call the HELP-line, 376-5592.
- Dial-up lines will probably hang up when you log off. As before, you are logged off if you hang up. We do not contemplate any timeout feature for idle terminals, however.
- HELP now lets you move interactively through the "tree" of documentation. Try it.

- New commands SEARCH, PHONE, SHOW USERS and SET PROCESS/NAME replace the SEARCH, MCR TALK, MCR USERS, and SETNAME programs respectively. See their corresponding HELP entries.
- The SEARCH program is now a more powerful SEARCH command.
- The appearance of SHOW TERMINAL, DIRECTORY, DIFFERENCES, and DUMP output has changed.
- MOUNT has a /COMMENT="message" qualifier that you can use instead of the separate REQUEST/REPLY "message" presently required with MOUNT when you ask for a tape. Details are not yet worked out and the old method still works.
- SUBMIT now has /NODELETE and

/NOPRINT qualifiers that tell it what to do with the batch job's log file. See HELP SUBMIT.

- A very useful SPAWN command lets you:
 - run a command while you do something else (SPAWN/NOWAIT command);
 - interrupt a running program without interfering with it. For example:
(a program is running . . .)
You type control/Y
(VMS prints its \$ prompt. The program is suspended but unharmed.)
You type SPAWN anycommand
(The new command does its thing, and VMS prints another \$.)
You type CONTINUE

(The old command resumes where it left off.)

See the 3.0 DCL Command Language User's Guide or HELP SPAWN for more information.

- New versions of FORTRAN, COBOL, and Pascal are available on version 3.0. The new compilers have some bugs fixed and offer additional features.

The Computer Store, 211 Experimental Engineering, now has 3.0 manuals in stock. For more information about any of these changes, or about the upgrade in general, watch VMS sysnotes or call Stuart Levy, 376-5606. (Stuart Levy)

Inside UCC—the View from the Users' Meeting

About 75 people trudged across the University's snowy campus to attend UCC's first users' meeting of 1983. They were greeted with coffee, hot cider, cookies, and a look at the present and near future at the Computer Center.

Dr. Peter Patton, UCC's Director, discussed the financial picture at the Center. He noted that public service computing (that done by outside users, including the state, the federal government, and industrial research and development corporations) now represents 50% of UCC's income and continues to grow. Internal research, which now represents about 30% of our income, has slowed somewhat as a result of grant cutbacks at every level. The remainder of our income, about 20%, comes from instructional computing. This last is the only income that is state-allocated.

Our expenditures are now labor intensive, rather than equipment intensive, as is the case in computing centers everywhere. Half of UCC's costs are for salaries and benefits, while another 35% covers hardware and software pur-

chases; 10% is marked for maintenance, and 5% for supplies and communications.

The immediate future does not look much more promising than the present, according to Dr. Patton, but he hopes that with the development of research partnerships between the University and industry and the establishment of research consortia that draw on the resources of universities, government, and industry, the situation will improve soon. At UCC, for example, the increased income from outside users (mostly on the CRAY and who pay a higher rate than internal users) is a source of funds for unsponsored faculty research.

Following Dr. Patton's presentation, Richard Hotchkiss, UCC's Deputy Director for Computing Services, offered a "big picture" that delineated how UCC and its services fit within the University hierarchy. Hotchkiss also announced some changes and improvements in our services, including MERITSS access to the St. Paul Computer Center's IBM 4341 (scheduled for this month); a new

research terminal cluster currently being installed in Physics; encouraging the development of a Micro Users Group on campus; and improved consulting services.

Lawrence Liddiard, Deputy Director for Computing Systems, then discussed our *proposed* system configuration for August 1983. The changes would include the phasing out of the CYBER 74 and the CYBER 730 (to be replaced, respectively, by a CYBER 174 and a CYBER 835), the elimination of extended core storage (ECS) (see the related article elsewhere in this issue), and the replacement of the faithful but somewhat klunky Univac 1004s with HASP protocol RJE's (remote job entry stations). The installation of the new CYBERS should result in lower costs to users. The VAX 11/780 will become a front-end to the CRAY, and would be upgraded to a VAX 11/782 with increased memory, disk storage, and processing power. The DICOMED D48C graphics facility will be phased in for use with the VAX and CRAY over the next several months (see the related article in this issue).

Following a short break, the

meeting was opened to questions and comments. These ranged from the technical to the philosophical. One man who expressed concern about track limits on the CYBERS was assured that by the end of February, with the addition of more disk storage memory, his problem would be resolved.

A user concerned about the stability of the systems in the midst of what seems to be a barrage of upgrades and changes, had a specific query about graphics standards, especially the rationale for our switch from PLOTPAC to MNCORE. His question was answered by graphics manager Kevin McMahan, who explained our process as a continuing attempt to bring our graphics and image processing facilities into line with world graphics standards. Since computer graphics is an especially fast-changing field, we feel we must do our best to keep up,

even if it results in some temporary inconvenience to our users.

Someone worried about the disappearance of the Univac 1004s (for which he harbored a long-standing affection) was told that card processing in some form would be part of our services for the foreseeable future.

The most critical question was raised by a person from CLA, who expressed the belief that many of his colleagues in the humanities perceived UCC as a capable but hostile environment. A good portion of the hostility was related to the fact that computing at UCC is not free. Dr. Patton explained that, while we had in the past provided funds for such things as unsponsored faculty research and graduate students thesis computing, the cut-backs throughout the University had eliminated this source of funds for faculty research computing. We are still making such funds avail-

able, but since they are unlikely to be given to us by the state or the University administration, our best hope lies in the development of research partnerships with industry and with the increased income from external users that can be channeled into internal research. (See the related article below.)

As the meeting neared its end, Richard Franta, Assistant Director for User Services and the meeting's moderator, told the audience of a recent conversation he'd had with a user. She, too, complained about the fact that computing at the University was not free, unlike the situation at the university from which she had come. When Rich inquired why she had chosen to come to Minnesota in that case, she explained that, well, the computing center at her former school had closed down.

(Christine Mack Gordon)

What Would You Do?

At the February users' meeting, a faculty member once again raised the question of University support for faculty research computing. The answer we gave was that with the state's final cancellation of the 0100 equipment fund last July (from which such support was drawn), there is currently no University support for faculty research computing. (This was previously detailed in the January *Newsletter*.) We at UCC, however, do offer (as do other University Computer Services computer centers) a sliding scale of support for any faculty member's research. At the \$250/year expenditure level, we provide \$205 if the faculty member covers the remaining \$45 (at the \$100 level, we cover the entire expenditure).

At this land grant University, faculty do not get all the perks supplied by private institutions, but we are pleased to be able to offer this amount of support for your research computing. At present, this faculty research funding comes from the differential income between internal and external UCC charges. The CRAY and other lower-cost services have allowed users to get even more for their money. Over 800 faculty members took advantage of our research grant program last year, but the differential income would not be enough for all 3800 faculty members (assistant professor and above) on the Twin Cities campuses to receive a \$200 grant.

But I have to admit that if the University could come up with

\$200 per faculty member each year, and every individual could take it in the form of:

1. A \$200 research computing grant;
2. A free parking lot contract;
3. \$200 worth of professional journals;
4. Free tuition for one or two children (or 80% of the corresponding University of Minnesota tuition to a college of your choice). This choice would have to be made for life, without an annual September change period; or
5. \$200 in cash;

my choice might not be a computing grant, since I will have two children in college next year.

(L. A. Liddiard)

SYSTEM NEWS/NOTES

Graphics

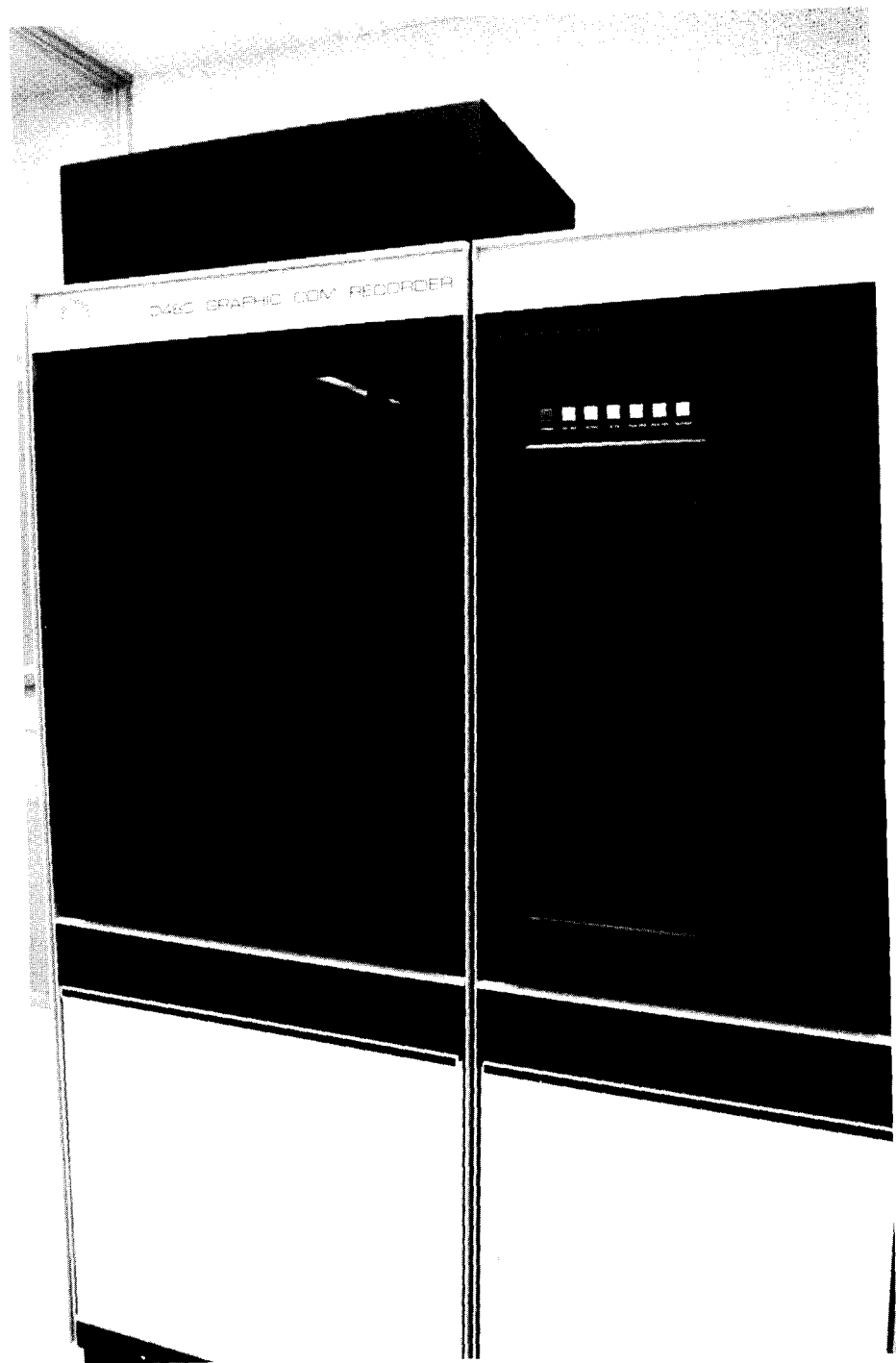
NEW DICOMED FILM RECORDER

A new DICOMED D48C color film recorder, now being installed at our Lauderdale site, will significantly improve our graphics and image-processing facilities. It will replace the limited D48 service we now provide on the VAX through a service bureau.

With the move of the VAX/VMS system to Lauderdale in late January, all our graphics equipment has been centralized. The configuration at Lauderdale that will be phased in over the next few months will connect the DICOMED equipment (a D47 and D57 in addition to the new arrival) and other graphics hardware connected to the VAX. The VAX, in turn, will be connected to the CRAY-1 mainframe, becoming another "station" from which you can submit CRAY jobs and receive CRAY output. Both MNCORE and DISSPLA run on the CRAY.

The D48C can produce graphic or animated output of complex material, such as the simulation of physical phenomena that the CRAY-1 generates. The DICOMED and the CRAY together offer the highest level of computer analysis and image processing available today.

For researchers in many fields, graphic output is the only practical way to portray large quantities of data. When a computer runs a stress test simulation to determine how a part performs in operation, for example, it goes through thousands of mathematical calculations. The results cover pages of computer printout—or they can be represented as a single picture that shows how the part looks after undergoing the test. The latter option is certainly the more efficient and interesting one.



We are currently hard at work incorporating the new DICOMED recorder into our routine operation. One of our main goals is to make the D48C and its extensive capabil-

ities easily accessible to our diverse research community. More information about the DICOMED will be available in future issues of this *Newsletter*.

CYBER Notes

THE FUTURE OF ECS

Some of you may be familiar with the ECS control statement on the Network Operating Systems (NOS) of our CYBERS. Extended Core Storage (ECS) obtains a block of space for use by a CYBER program. But the nature of ECS is changing, and it will eventually disappear. If you don't know what ECS is and have never used the control statement, feel free to skip this article.

When we begin to run NOS release 5 on March 20, blocks of user ECS will be available *only* on the CB computer. Since we will use the standard Control Data method for ECS allocation at that time, we must dedicate one machine to ECS to allow ECS blocks as large as those we've allowed previously. The RFL control statement, documented in the *NOS Reference Manual*, volume 1, will work for ECS. We will also retain the ECS control statement for upward compatibility, but you must remember that ECS is available only on machine CB (the CYBER 74).

In summer 1983, we will eliminate extended core storage altogether from our CYBER systems. It is too expensive to maintain on our older CYBERS, and it will not work with new CDC hardware. The new CYBER 170-800 series machines can simulate ECS and will allow us to gradually phase out its use. The amount of central memory available to user programs will exceed the amount of user ECS available, so programs that use ECS can be changed to use more central memory. If you use ECS, plan now for its eventual disappearance. If you are unsure about how to eliminate your need for ECS, contact K. C. Matthews, 376-9720.

(K. C. Matthews)

CAI: NO NEW PROJECTS FOR MIL AND CALLS

The CAI (Computer-Aided Instruction) packages MIL and CALLS, currently available on our CYBER systems, are no longer available for new projects.

We will give anyone with existing programs in MIL or CALLS continued support for these programs through special arrangements. If you required continued service for existing programs, contact Earl Schleske, (612) 376-2975, immediately.

COBOL 4 TO BE REMOVED IN FALL

We will remove the COBOL 4 compiler from the system at the beginning of fall quarter 1983. You must convert your COBOL 4 programs to COBOL 5 by then. If you have questions about this change or need assistance, call our Information Management Systems Group at 376-1761. COBOL 5 documentation is available at the Computer Store. We will also remove CYBER Record Manager Advanced Access Methods Version 1 in the fall.

(Steve Reisman)

CDC SUPPORT FOR FTN ENDS SOON

Control Data Corporation (CDC) is removing support for FTN, FORTRAN Extended Version 4, on June 30, 1983. This means that no corrections will be made to the FTN compiler after that date. While FTN will still be available at UCC for many years, we cannot guarantee that FTN programs will work on future releases of NOS (the Control Data CYBER Network Operating System).

We strongly recommend that you develop new programs in FTN5 or M77 and convert MNF and FTN programs as time permits. Conversion may be as simple as compiling your program using one of the compilers that conforms to the new standard and checking for correct results. If, however, you must make some changes to the program, F45, a conversion aid, may prove helpful (especially with long programs). The *F45 Reference Manual* is available for use in our Reference Room, 140 Experimental Engineering (it cannot be checked

out, however). Differences between MNF and M77 are documented in WRITEUP(M77).

While you are converting your programs, you may want to make them conform to ANSI standards. This makes them more portable and makes any future conversions easier. Non-standard statements can be detected by using the EL=0 parameter on the M77 control statement or the ANSI parameter on the FTN5 control statement. For more information or assistance, call Janet Eberhart, 373-5907.

(Janet Eberhart)

CRAY News

VAST: A VECTORIZATION TOOL

VAST, the Vector and Array Syntax Translator, is now available on our CRAY-1 system. VAST is a pre-compiler that translates scalar FORTRAN DO loops into loops that can be vectorized by the CRAY FORTRAN Compiler (CFT) and calls to CRAY math library routines.

In addition to the SBU charges for a VAST run, external users will be charged a royalty fee equal to four times the SBU charge. (The charge for internal users will be lower.) For those of you who do not have the time to optimize your programs for the CRAY, the VAST program may offer speed improvements. We'll have more results from our testing next month. A reference copy of the *VAST User's Guide* is available in our Reference Room, 140 Experimental Engineering. For more information about VAST, call L. Liddiard, 373-5239.

Here is a list of some of the constructs that VAST can optimize that CFT by itself cannot:

- IF statements in DO loops (block ifs, forward transfers, and conditional assignments)
- Indirect addressing (by use of SCATTER and GATHER operations)
- Partial loop conversion (recursive parts are cut out of otherwise vectorizable loops)
- Split out subroutine and function calls from otherwise vectorizable loops (when the SPLIT directive is used)
- Explicit loop index use (for example, A(I)=I)
- Complicated indexing (handles multiplication in setting up an index and index expressions containing parentheses)
- Non-linear indexing (for example, A(I**2))
- Call-efficient SCILIB versions of SDOT and SSUM
- Recognition of MIN and MAX reduction functions (ISMIN, ISMAX)
- Ability to have FORTRAN versions of vector functions
- Better data dependency analysis

In addition, VAST provides good user diagnostics. The reason a loop is not vectorized is always indicated and messages occur un-

der the line or loop to which they apply.

(Lawrence A. Liddiard)

Grants for Research

The Department of Education will award approximately \$500,000 in fiscal 1983 to "New Developer Demonstrator" projects to encourage rigorously evaluated, exemplary educational programs nationwide. Projects that teach computer literacy or demonstrate the use of technology to improve instruction in math, science, reading, and writing will be considered as well as projects in more traditional areas. For further information, grant guidelines, and application materials, contact:

Robert M. Mulligan
National Diffusion Network
Division
Department of Education
Room 802, Riviere Building
1832 M Street NW
Washington, DC 20036
(202) 653-7000

The W. K. Kellogg Foundation supports projects in the broad areas of agriculture, education, and health. The Foundation encourages the expansion of adult continuing education beyond general and occupational skills. This expansion should explore new delivery systems, including interactive computer programs. For more information, request copies of the *1982 Annual Report* and the *Brochure on Foundation Grant-Making Interests* from:

Communications Office
W. K. Kellogg Foundation
400 North Avenue
Battle Creek, MI 49016
(616) 968-1611

Non-Traditional Computing

CONFERENCE ON SIMULATION AND GAMING

The Center for Ancient Studies at the University of Minnesota is sponsoring a Conference on Simulation and Gaming in Ancient Studies, May 6 and 7 at the Nolte Center. It will include sessions on

simulations in ancient history and archaeology. Contact Guy Gibbon, Center for Ancient Studies, 205-1/2 Folwell Hall for more information.

LECTURE ON HIEROGLYPHS

Mary Ellen Kelly, of the University's Department of Anthropology, will discuss "Decipherment of the Mayan Hieroglyphs," on Wednesday, March 9, at 3:15 p.m. in 203 Folwell Hall. This lecture is part of our series on the applications of computing in non-traditional fields. All those interested are welcome.

All Systems Bulletins

OPERATING HOURS TO BE EXTENDED

We will soon extend our operating hours at the Lauderdale site; such an extension could occur as early as March 1. This would probably affect only the CYBER 730 and CYBER 74 mainframes. Watch the SYSNOTES for further information. KSH disk storage charges that depend on the total hours the system is up will be adjusted to keep the cost per user file approximately the same per month.

ATTENTION DATA BASE SERVICE SUBSCRIBERS

University departments and state agencies that currently subscribe to data base services (such as Com-pustat) that include financial or security information for public utility companies should contact Bill Towery, 297-3819, of the Minnesota Department of Public Service, to discuss the data-sharing and financial arrangement possibilities.

FOR SALE

Data 100 model 76 batch terminal. 3-1/2 years old. CPU, CRT console, 150 cpm card reader, 225 lpm line printer (belt), RS232 interface, 2400 baud modem and 200UT emulator decks for access to UCC CYBER system. Will consider sale of components separately. Make offer. Call Mike Peterson, 373-0082.

SPRING QUARTER SHORT COURSES

INTRODUCTORY COURSES

Prices: U. student \$10, U. staff \$20, Non-University \$30

010	Introduction to Computer Terms (Jerry Larson)	
	April 4-8 (MWF)	3:15-5 p.m.
020	A Taste of Computing (Staff)	
	April 11-15 (M-F)	3:15-5 p.m.
050	NOS (CYBER operating system) (Rich Franta)	
	April 18-May 4 (MWF)	3:15-5 p.m.
080	Introduction to Microcomputers (Mark McCahill)	
	April 19-May 3 (TTh)	3:15-5 p.m.
040	Introduction to VAX/VMS (Linda Merims)	
	April 19-May 5 (TTh)	2:15-4 p.m.
055	Interactive System Commands (Rich Franta)	
	May 3-12 (TTh)	3:15-5 p.m.
100	Text Editing at UCC (Simin Hickman)	
	May 9-23 (M)	3:15-5 p.m.
150	Introduction to Programming (Rich Franta)	
	May 16-27 (MWF)	3:15-5 p.m.
110	Text Formatting at UCC (Elaine Collins)	
	May 17-26 (TTh)	3:15-5 p.m.
130	XEDIT (Mary Boyd)	
	May 17-26 (TTh)	2:15-4 p.m.

ADVANCED COURSES

Prices: U. student \$20-30, U. staff \$30-50, Non-University \$50-100

^620	LISP (Armand Prieditis)		
	April 4-6 (MTW)	3:15-5 p.m.	\$20-\$30-\$50
510	Introduction to System 2000 (Cheryl Vollhaber)		
	May 9-25 (MWF)	3:15-5 p.m.	\$30-\$40-\$50
530	SPSS (statistics package) (Pat Bland)		
	May 9-12 (MWTh)	2:15-3:30 p.m.	\$20-\$30-\$50
600	Beginning FORTRAN (Janet Eberhart)		
	May 9-20 (MWF)	3:15-5 p.m.	\$25-\$35-\$60
640	Introduction to Pascal (Michael Collins)		
	May 10-26 (TTh)	3:15-5 p.m.	\$20-\$30-\$50
520	SIR (data base management) (Brian Cook)		
	May 16-27 (MWF)	3:15-5 p.m.	\$30-\$40-\$60
580	Graphics (John Cornelison)		
	May 17-26 (TTh)	3:15-5 p.m.	\$20-\$30-\$60

NOTE: Caret (^) indicates a new course.

HOLIDAY: Monday, May 30 is a University holiday. No classes will be held.

REGISTRATION: Spring quarter registration begins March 7 at the UCC Computer Store, 211 Experimental Engineering; a self-service terminal for registration is located outside the Store. We accept mail registrations for an additional \$1 fee per class. You may pay course fees with cash, check, University journal voucher, or charge them to your non-instructional UCC user account.

REFUND POLICY: No refunds will be made after a class has begun. Refunds are made in the same form as the fee was paid, i.e., check, journal voucher, UCC account credit.

If you have questions about short courses or about registration, call Jerry Stearns, 376-8806, or see WRITEUP(CLASSES) on the MERITSS or CYBER systems.

PHONE NUMBERS

<p>Budgets 373-2521</p> <p>Computer-Aided Instruction 376-2975</p> <p>Computer Hours (recorded message) 373-4927</p> <p>Computer Store 373-4877</p> <p>Consulting</p> <p style="padding-left: 20px;">HELP-line 376-5592</p> <p style="padding-left: 40px;">9 a.m.-5 p.m., Monday-Friday</p> <p style="padding-left: 20px;">Business Data Products 376-1761</p> <p style="padding-left: 40px;">1-3 p.m., Monday-Friday</p> <p style="padding-left: 20px;">Statistics Packages 376-5062</p> <p style="padding-left: 40px;">1-2 p.m., Monday-Friday</p> <p style="padding-left: 20px;">Data Bases 376-1761</p> <p style="padding-left: 40px;">1-3 p.m., Monday-Friday</p> <p style="padding-left: 20px;">Microcomputers 376-4276</p> <p style="padding-left: 40px;">10-12 a.m. and 2-4 p.m., Monday-Friday</p> <p style="padding-left: 20px;">Non-Traditional Computing 373-5780</p> <p style="padding-left: 40px;">10:30-11:30 a.m., Monday, Wednesday, Friday</p> <p style="padding-left: 20px;">TELL-A-GRAF/DISSPLA 376-2663</p> <p style="padding-left: 40px;">1-3 p.m. Tuesday, Thursday</p> <p style="padding-left: 20px;">Text Processing 376-2943</p> <p style="padding-left: 40px;">9 a.m.-noon Tuesday-Thursday</p> <p style="padding-left: 20px;">Contract Programming 376-1764</p> <p style="padding-left: 20px;">Data Base Applications 376-1764</p> <p style="padding-left: 20px;">Educational Services 376-3963</p> <p style="padding-left: 20px;">EDUNET Liaison 373-7745</p> <p style="padding-left: 20px;">Engineering Services 376-1023, 376-8153</p> <p style="padding-left: 20px;">Equipment Purchase/Information 376-8153</p> <p style="padding-left: 20px;">Experimental Engineering I/O 373-4596</p> <p style="padding-left: 20px;">Field Engineering 376-7584</p> <p style="padding-left: 20px;">Graphics Software 376-5592</p>	<p>HELP-line 376-5592</p> <p style="padding-left: 20px;">9 a.m.-5 p.m., Monday-Friday</p> <p>HOURS-line (recorded message) 373-4927</p> <p>Image Processing 376-2895</p> <p>Information, Experimental Engineering 373-4360</p> <p>Information, Lauderdale 373-4912</p> <p>Information Systems 376-1764</p> <p>Instructional Labs 376-2703</p> <p>Job Status, ExpEng (recorded message) 373-4994</p> <p>Lauderdale Computer Room 373-4940</p> <p>Lauderdale Services 373-4995</p> <p>Lauderdale Services Manager 373-7538</p> <p>Lauderdale Users' Room 373-4921</p> <p>MECC Liaison 373-7745</p> <p>Newsletter Subscription 373-4912</p> <p>Permanent File Restoration 376-5605</p> <p>Professional Services Division (PSD) 376-1764</p> <p>Project Assistance 376-1764</p> <p>Program Librarian 376-1636</p> <p>Programming Languages 376-7290</p> <p>Reference Room 373-7744</p> <p>Remote Batch (RJE) Services 376-2703</p> <p>Short Courses 376-8806</p> <p>Shuttle Bus Service 376-3068</p> <p>System Status (recorded message) 373-4927</p> <p>Tape Librarian: see Lauderdale Services</p> <p>Text Processing Services 376-2943</p> <p>User Accounts 373-4548</p> <p>User Services 376-3963</p>
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OPERATING HOURS

	Cyber 74/730	Low rate/No frills	Cray	MERITSS (Cyber 172)	VAX
M-F	8 a.m. - 4 a.m.	11 p.m. - 4 a.m.	8 a.m. - midnight	7:45 a.m. - 1:30 a.m.	8 a.m. - 6 a.m.
Sat	4 a.m. - 5:15 p.m.	4 a.m. - 5:15 p.m.	8 a.m. - 5 p.m.	7:45 a.m. - 1:30 a.m.	24 hours
Sun	4 p.m. - 1 a.m.	4 p.m. - 1 a.m.	4 p.m. - midnight	4 p.m. - midnight	24 hours

PUBLIC LABS—TWIN CITIES CAMPUS

Location	Batch	Interactive	Micro	Location	Batch	Interactive	Micro
<i>East Bank</i>				<i>West Bank</i>			
Arch 160		X	X	BlegH 90	X		
CentH		X		BlegH 91T			X
ComH		X		BlegH 140		X	
DiehH 270, 207		X		MdbH		X	
EltH 121, 125		X		OMWL 2		X	
EltH N640	X			SocSci 167		X*	
ExpE 130	?			<i>St. Paul</i>			
FolH 14, 14a	X	X*	X	BaH		X	
LindH 25, 26	?	X		ClaOff 125	X	X	
MasCan 39	X			NorH 24	X		
MechE 308		X					
Physics 69		*?					
SanfH		X					
TerrH		X					
VincH 4		X					
WaLib 204		X					

* Research cluster; access to Cyber 730 and VAX/VMS

X in interactive column indicates access to MERITSS

? Unknown at the present time

Contents

Be Prepared:

CYBER, CRAY, and VAX Upgrades Imminent ...21
Inside UCC—the View from the Users' Meeting ..25
What Would You Do?26
SYSTEM NEWS/NOTES
Graphics
NEW DICOMED FILM RECORDER27
CYBER Notes
THE FUTURE OF ECS28
CAI: NO NEW PROJECTS FOR MIL AND CALLS 28
COBOL 4 TO BE REMOVED IN FALL28
CDC SUPPORT FOR FTN ENDS SOON28

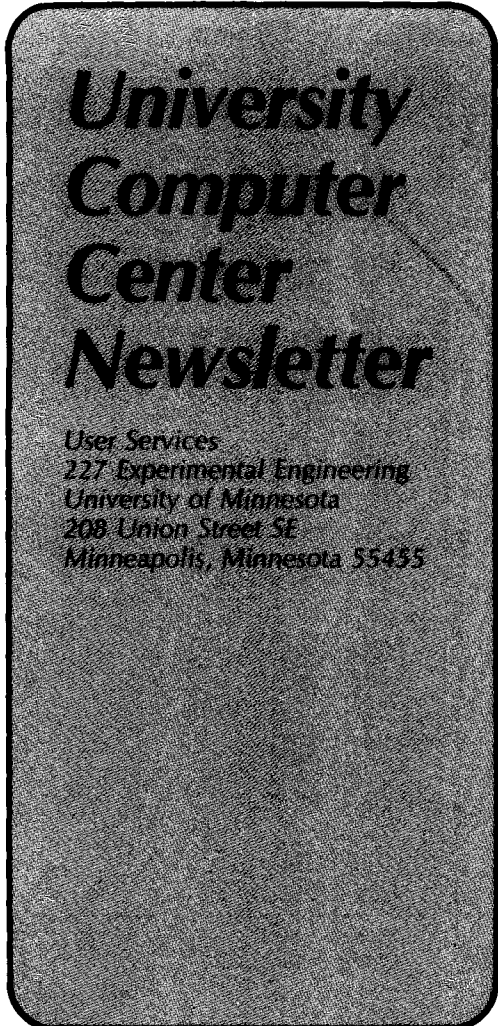
CRAY News
VAST: A VECTORIZATION TOOL29
Grants for Research.....29
Non-Traditional Computing
CONFERENCE ON SIMULATION & GAMING ..29
LECTURE ON HIEROGLYPHS29
All Systems Bulletins
OPERATING HOURS TO BE EXTENDED29
ATTENTION DATA BASE SERVICE
SUBSCRIBERS29
FOR SALE29
Spring Quarter Short Courses30

Director: Peter C. Patton
Editor: Christine Mack Gordon

Comments about the content of this newsletter, or suggestions for changes may be directed to the editor, 235a Experimental Engineering, or call 612/376-9832.

The University of Minnesota adheres to the principle that all persons shall have equal opportunity and access to facilities in any phase of University activity without regard to race, creed, color, sex, national origin or handicap.

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