



The ACSS

# Newsletter

University of Minnesota  
Twin Cities  
August 1987

## Computing Reflections

### Controlled Change: University Computing vs Technology

Lawrence Liddiard  
BITNET: LIDDIARD@UMNACVX  
UX: lal

As all our readers know, the University is now in the process of making itself a smaller, more "focused" institution, and every department, including ACSS, is submitting plans to that end. But computer centers all over the country are also refocusing their missions, some of them in drastic ways, in response to financial crises brought about by technological change.

The Academic Computing Center (MACC) at the University of Wisconsin, Madison, is one nearby example of a computer center confronted by such change. These changes, and MACC's response, are ably described in the following abridged article by Larry Travis, director of MACC, originally published in the March 18 issue of the *MACC News*, and published here with permission. (The entire article is available in the Computing Information Center, 128A Lind.)

#### "A New MACC: Downsized and Refocused"

MACC is hemorrhaging financially, and drastic action is being taken. . . .

What happened? Until last year (the fiscal year that ended June 1986), MACC had enjoyed reasonably good financial health for a period of 15 years. For at least a decade prophets of doom had been predicting the imminent demise of mainframes and organizations (like MACC) founded around the need to provide services from mainframes, but demand for MACC mainframe services remained strong nevertheless.

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## In This Issue . . .

We provide details about the testing times for the **VMS 4.5 upgrade**, including information on password changes, electronic mail, and documentation on the changes coming under 4.5.

Changes have been made in the **Computing Information Center**—our services there are the same as before, but some of them have moved.

In the Consulting Corner, you can learn **how to print UNIX files**. If you prefer to do your writing on the Macintosh using Microsoft Word, our Special Projects group has a **Macintosh text processing utility** for you.

Also in this issue is information on a new on-line CYBER document, **WRITEUP,COMMAND**, which replaces **WRITEUP,CONTROL**.

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**VAX VX to be  
upgraded to  
VMS 4.5 on  
August 30**

# The Help Page

## General Consulting

**Walk-in:** 128C Lind Hall, East Bank; 10 am to 4 pm weekdays except 10 am to 11 am Wednesday  
140 Blegen Hall, West Bank; 2:15 to 4:45 Monday, 12:15 to 2:45 Tuesday, 11:15 to 2:45 Wednesday, 1:15 to 4:15 Thursday, 2:30 to 4:30 Friday

**HELP-Line:** 626-5592, 8 am to 5 pm weekdays

## Specialized HELP-Lines



HELP-Line	Phone Number	Hours
Artificial Intelligence	625-8332	3 to 4 pm weekdays
Data Bases	626-1887	10 to 11 am weekdays
Microcomputers	626-4276	9 am to noon & 1:30 to 4 pm, Monday, Tuesday, Friday; 9 am to 4 pm, Wednesday and Thursday
Statistics	626-1893	1 to 3 pm weekdays
Text Analysis	625-8332	3 to 4 pm weekdays
Text Processing	625-1391	10:00 am to noon, Tuesday, Wednesday, Thursday

## Consulting by Mail



Consulting is now available via the mail facility on all ACSS systems (the CA, MD, VX, and UX). Send mail to user name CONSULT for questions after hours and for low-priority questions that are not critical to your immediate computing work. Replies will be sent to your account through the mail facility on your system.

## Instructional Computing Consultant

Department instructors may call 626-0200 for assistance in choosing ACSS systems (CYBER/NOS, VAX/VMS, ENCORE/UNIX), software, and for answers to any other inquiries on using computers for instructional computing.

## **Computing Information Center**

128A Lind Hall, 625-7397, YZE6075@UMNACCA or MAD@UMNACVX

**Computing account and grant applications** available for CYBER, ENCORE, and VAX computers.

**Short course enrollment.** Short course schedules and class descriptions available.

**Assistance in ordering vendor documentation.** Vendor documentation is not always available in the University bookstores and may be ordered directly from the company.

**Complete documentation collection.** Reference copies of vendor and all other documentation for ACSS software.

**Free ACSS documentation available.**

**Computing Newsletters.** Subscribe to the *ACSS Newsletter* or the *ACSS Microcomputer Newsletter*. Newsletters from other computing centers are also available for reference.

We perhaps should have paid those prophets somewhat more heed than we did. When it came time to consider replacing the Sperry 1100/82 with newer technology, we proposed doing it with an upgraded Vax VMS cluster and a new medium-sized machine, an IBM 4381 running VM/CMS. . . .

What appears to be happening is that as users face the hard decision of converting 1100 programs and files to run on some other machine, they prefer that it be a personal computer or a departmental machine. Almost none have opted for the 4381 — and not many more have opted for the Vax cluster. . . .

What we are faced with is a situation in which MACC's original reason for being — to enable UW-Madison academic computing users to benefit from the economy of scale afforded by sharing large mainframes — no longer exists. . . . The per-cycle cost of raw computing is now greater on mainframes than it is on micros or minis. . . .

Over the 25 years of its existence, MACC has taken on many functions besides the original function of providing services from a shared mainframe. . . . Our goal [now] is to create a new organization that will focus on high-quality services in those areas where there continues to be a need for a campus-wide computing services organization. . . .

Our current problem is exacerbated by the fact that over the years we funded many of these additional functions by marking up the price we charged for mainframe services. This was justified when those functions were integral to effective use of MACC's mainframes. However, as academic computing moved to non-MACC departmental and school machines and to personal computers, we failed to develop new mechanisms for adequately funding the functions, though these functions are no less needed for effective use of decentralized systems than they were for effective use of centralized mainframes. In fact, some of the functions, for example, good networking service, are needed all the more. . . .

The crisis we are confronting at this university is being repeated many times over at other universities. It is worse here, however, because such a small fraction of our academic computing center budget is centrally funded. MACC receives 24% of its budget in central funding, compared to a median of 68% for academic computing centers at peer institutions.

We are proceeding as rapidly as we can to make the necessary adjustments. However, we put very high priority on minimizing impact on MACC users who are dependent on a service that is being changed, reduced, or eliminated. And we put a similarly high priority on making equitable staff-reduction decisions and assuring that staff who must be terminated are provided all possible support in relocating, within the University or elsewhere. . . .

### **Some Responses To Technological Changes at the U of M**

ACSS has experienced some of the same declines in revenue that MACC has suffered, and for similar reasons: the increased use of micros, departmental mainframes, and supercomputers. Thus, in the balanced budget ACSS presented to Central Administration for fiscal 1988, the expected revenue from central mainframe services

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(revenue that is not centrally funded, but earned by selling mainframe services to University and non-University users) has been reduced by \$1,050,000 from the budget in fiscal 1987. This represents a 30% reduction. We anticipate an additional 10% reduction for fiscal 1989. We have compensated for part of this reduction in revenue by eliminating (by attrition or termination) 12 full-time equivalent (FTE) employees (a 10% reduction) who worked in our administration or with central mainframes. We achieved the remaining reduction by eliminating all central mainframe capital expenditures, except for upgrading the ENCORE UNIX service and putting a TCP/IP networking connection on the Control Data CYBERs.

When we compare ACSS with the University Computer Center (UCC) of three years ago, we are 30 FTE's smaller. Twenty FTE's went to the Minnesota Supercomputer Center. Three FTE's in our UCC Computer Store were eliminated when the University bookstores assumed micro and computer supplies sales; and finally we eliminated 12 in this fiscal year.

We offset these reductions somewhat by adding 5 additional FTE's in micros and public lab monitoring, where use is growing. Also in those three years we began the successful VMS service on a VAX 8600 and UNIX service on the multi-processor ENCORE, both of which have attracted new central mainframe users. With these reductions to our external revenue and increased internal funds for microcomputer services and the Keller and Graduate Grants, ACSS's percentage of central funding has increased from 20% to 48% of our fiscal '88 budget, giving us more financial stability in times of technological (and financial) change for university computer centers. This summer we will also complete the final upgrading of the IT Engineering Center CYBER 830 to a NOS/VE system for computer-assisted design and manufacture, a service that may also attract users.

Faced with problems similar to Wisconsin's (though not as extreme), ACSS introduced controlled technological change: new central mainframe services and telecommunications, increased micro workstation support, and other new services (such as the Xerox laser printer, the Kurzweil optical scanner, electronic mail, and, this summer, a new color plotter). With central administration supporting those important services in distributed computing (e.g., microcomputing) that do not generate revenue, we have thus far been able to avoid a financial hemorrhage like Wisconsin's.

Further, in its May 1987 "Focus on Computing" document, Information Systems proposed new models for allocating workstations and for funding computing that sets the specific goal of providing faculty and students with integrated, campuswide networked workstations by 1990. This goal may be ambitious, but its first steps, the required network backbone and several departmental local area networks, should be in place by next summer.

*Finis coronat opus* — the ends crown the work. In 1990, with classic 20/20 hindsight, we will be able to judge these computing changes and their cost effectiveness.

# The VMS Upgrade: Testing and Documentation

*Marisa Riviere, Bryan M. Senn*

BITNET: MARISA@UMNACVX  
BMSENN@UMNACVX

As announced in our July issue, we will upgrade the VX to VMS Version 4.5 on August 30. As indicated in our recent system notes on the VX, we are providing test sessions for users on Sunday afternoons, from 1 to 5 p.m., on August 9, 16, and 23. The HELP-Line (626-5592) is staffed during those hours.

During the test sessions, your password on 4.5 will be the last one you had on Version 4.2, the version we are currently running. If you change your password during a 4.5 test session, that change will not affect your password during normal 4.2 sessions.

You may send and read VMS mail during test sessions, but new mail sent under one version and read under the other causes erroneous messages about the presence of new mail. To correct this, type **READ/NEW** from within VMS MAIL during a test session or during a normal 4.2 session.

All your 4.2 files will be available to you during test times. Changes made to these files during 4.5 test times will carry over to 4.2. We suggest that you copy your working files to special test subdirectories for test sessions.

Please use these test sessions for executing and evaluating your current programs under VMS 4.5. You will not be billed for computer time during these sessions, but we reserve the right to request you to stop a job or to abort the job ourselves, if we notice jobs that use too many resource units or block other users' testing.

## Differences between the Versions

In general, the differences between Version 4.2 and Version 4.5 should not affect the average user.

A new VX writeup contains an outline of the differences. To view the writeup at your terminal type

```
$ TYPE ACSS$WRITEUP:VMS45.LIS
```

The writeup covers such topics as

- significantly changed DCL commands
- new DCL commands
- general changes to VMS
- changes to system libraries

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- changed run time library routines
- obsolete run time library routines
- upgrades to additional DEC software

## Inspect: Utility Inspects VX Tape Formats

Bryan M. Senn  
BITNET: BMSENN@UMNACVX

INSPECT is a magnetic tape utility written by ACSS and now available on our VAX 8600 (VX) computer system.

INSPECT provides general information about a tape's structure and contents to assist you in selecting the correct VMS utility for reading the tape. It will tell you the tape's block structure, the tape label, if any, and the tape's density. It will also give you information to help you to make an educated guess about which VMS utility was used in writing the tape, and whether the tape is written in ASCII, EBCDIC, or a binary character set.

There is an entry in the VMS HELP utility about the INSPECT command's use, parameters, and qualifiers. Type:

```
$ HELP INSPECT
```

For information on interpreting the output from INSPECT, there is a WRITEUP which may be viewed at your terminal by typing:

```
$ TYPE ACSS$WRITEUP:INSPECT
```

or

```
$ EDIT/READ_ONLY ACSS$WRITEUP:INSPECT.LIS
```

To obtain a printed copy of the WRITEUP, enter:

```
$ PRINT/CHARACTERISTIC=P80/NAME=xx.nnn ACSS$WRITEUP:INSPECT
```

where **xx** is the site code and **nnn** is the bin number where output should be delivered. For example, EA.425 is a bin number at Lind Hall.

For more information contact the ACSS HELP-Line at 626-5592.

# Scholar's Aid for the Macintosh

Ron Zacharski  
BITNET: RAZ@UMNACVX  
UX or VX: raz

Scholar's Aid is a utility for users of Microsoft Word for the Macintosh; it manages figures, tables, equations, and bibliographic citations. It requires either version 1.05 or 3.0 of Microsoft Word.

## Numbering Figures, Tables, and Equations

If you write a long paper using Word without Scholar's Aid and then discover that you should have included one more equation or example in the first paragraph, you have to manually renumber all your examples. But Scholar's Aid will do this automatically. It searches your text for figures, tables, and equations, and also for references to them, and numbers both.

## Bibliographic Entries

The bibliographic facility searches a database for references cited in a given text, extracts the appropriate entries, and creates a reference list in the text in any one of approximately twenty bibliographic formats. This facility is also useful when you need to resubmit a document to a journal with a different format. To take advantage of the bibliographic citation facility, you will also need Microsoft File. (A version of Scholar's Aid in preparation will work with Personal Bibliographic System [see the *ACSS Newsletter*, June 1986, p. 101], Excel, FileMaker Plus, and Record Holder.)

Unfortunately, because of a limitation in Microsoft Word, you cannot use Scholar's Aid on a document that contains a total of more than 127 references, tables, figures, and equations. The limitation can be ameliorated by dividing a long document into chapters, but this is not a perfect solution.

## It's Shareware

Scholar's Aid is a shareware program. You can obtain a copy from us at no cost other than providing a blank formatted disk. The copy includes version 9.71 of Scholar's Aid, documentation, and sample files. You are free to use the program and to distribute it to your colleagues. If, however, you find the program useful, you should pay the program's author \$35.00.

Special Projects  
M141 Fraser (office)  
128A Lind Hall (Campus Mail)  
207 Church Street SE  
(612) 625-8332

## Writeup,Command Replaces Writeup,Control

Steven Brehe

BITNET: SKB@UMNACVX

A new indexed WRITEUP called WRITEUP,COMMAND is now up on the CYBER CA (and also on the MD, until that machine is converted to NOS/VE). WRITEUP,COMMAND updates and replaces WRITEUP,CONTROL.

The current version of WRITEUP,COMMAND contains brief entries on all NOS 2 commands, utilities, and language processors, including those ACSS has added. There is an entry for each command and call statement, describing the purpose, format, and parameters of each. A version that will go up before the beginning of Fall Quarter will also contain entries on the application packages on the CA.

The first section in WRITEUP,COMMAND describes the WRITEUP and explains how to use it. The second section, WRITEUP,COMMAND=COMLIST, is an alphabetized list of the other sections of the WRITEUP, including brief descriptions of each NOS 2 command. The rest of the sections, from A to XEDIT, are in alphabetical order. The entire WRITEUP is about 500 pages long with well over 300 sections.

You may find it convenient to print all of WRITEUP,COMMAND, using these two commands:

```
WRITEUP,COMMAND=*/L=LIST  
PRINT,LIST,EC=A9,UN=BC,UJN=site*bin,P,D,3P,SH
```

This **PRINT** command will print the file on a laser printer on three-hole punched paper in "duplex" mode (i.e., text on both sides of a page, reducing by half the number of pages necessary). The output will also be in "portrait" mode, with the pages printed vertically, and ready to insert into a three-ring binder. (Replace *site* with the code of the site to which your output should be delivered; code EA is Lind Hall and code EB is Anderson. Replace *bin* with a bin number at the site: UJN=EA\*436 will get your output delivered to Lind Hall bin 436.)

### Holiday Hours

## Labor Day Hours

In observance of Labor Day, ACSS systems—the CYBER 855 (CA), VAX 8600 (VX), ENCORE (UX), and CYBER 830 (MD)—will run in unattended mode from 6 a.m to 6 p.m. Monday, September 7. It is unlikely that any tape requests or printing will be processed during these hours. Normal operations on all systems will resume at 6 p.m. Monday, September 7.



## Printing Files from the ENCORE UX

Jill McAllister

BITNET: JLM@UMNACVX

Mail on UX: jlm

### Question:

How do I print my files from the UNIX machine?

### Answer:

There are three printers available directly from ACSS's UNIX Encore (the UX). All of these printers are on the Minneapolis campus. Two are in 128 Lind Hall, and one is in the Learning Resource Center in Diehl Hall. The UNIX command to print your files on these three printers is `lpr`.

First, choose the printer you want. The code `lind128a` selects a Printronix line printer. The code `lind128b` selects an Apple LaserWriter. The Diehl Hall printer is also an Apple LaserWriter and is referred to as `LRC`. The `-P` option to the `lpr` command allows you to specify one of these printers, as shown in the example below..

Next, decide where you want your job sent. The `-C` option allows you to specify a site and bin number. For example, if you want to send the file `assignment.c` to the Apple LaserWriter in Lind 128, you would use the following command:

```
lpr -Plind128b -CEA.440 assignment.c
```

You can see in the `-C` option that your output would be sent to bin 440 in Lind Hall (which is designated as site `EA`). Bins open for your use at Lind Hall are `EA.401` through `EA.448`. Open bins at Lauderdale are `BC.97` through `BC.144`.

There are a number of other useful options. The `-#` option lets you get multiple copies. Simply follow the `-#` with the number of copies you would like, as follows:

```
lpr -Plind128b -CEA.440 -#3 assignment.c
```

You can see what other options are available by looking at the on-line document `man lpr`. (The UNIX `man` command stands for manual; it lets you see on-line documentation.)

There is also an on-line help. Type `help` to use it. The major topics are:

<code>awk</code>	<code>libraries</code>
<code>editors</code>	<code>mail</code>
<code>find_file</code>	<code>printers</code>
<code>general</code>	<code>statpacks</code>
<code>languages</code>	<code>system_use</code>

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The information contained in this on-line help is information that is specific to our site here at ACSS. Type **printers** after getting the initial **help** display. This information along with the information given by the standard UNIX **man lpr** command will enable you to print your files from the UX.

If you have any problems, please call the HELP-Line at 626-5592, Monday through Friday, between the hours of 8:00 a.m. and 5:00 p.m.

Computing Information Center

## Changes in the CIC

*Michael Dunham*  
BITNET: MAD@UMNACVX

If you haven't been to the Computing Information Center (CIC) recently, you will notice a few changes on your next visit.

The desk for short course registration, computing grant applications, and documentation questions was moved recently to the center room of ACSS's facility in Lind Hall. At the same time, Lind walk-in consulting moved into the space where the CIC counter was previously located. All of the computer hardware and software reference materials and newsletters remain in their old location.

The reason for this change is to provide a more visible contact point for our patrons and especially for those new to our campus and facilities. Those familiar with the Lind Hall facility are probably already aware of the unusual room numbering used there. All rooms on the first floor at the north end of the building, except for one, are labeled 128, a confusing situation. When users entered the 128 area, the first room they entered was sometimes empty. (Because the consultants' hours change from quarter to quarter and are generally less than a full day, the consultants' desk in the room between the I/O station and the CIC was sometimes unstaffed.) Since the CIC counter is always staffed from 8:00 am to 4:30 pm, it made sense to switch the two operations. Now anyone seeking help with documentation, needing grant applications, or wanting to register for a short course will, when entering the area, immediately see someone who can answer their questions.

This change also puts the consultants and their clients close to the reference manual collection. However, the CIC staff still maintains this collection and is responsible for it. Anyone with questions about the collection or anyone who needs help with ordering materials should still talk to the CIC staff. Tables remain for your convenience and you are welcome to use the materials. We hope that you find this change an improvement and will let us know what you think of it.

# Phones/Hours/Labs

## ACSS PHONE NUMBERS

Administrative Office: 626-1600

**HELP-Line 626-5592**

**Access:**

CYBER (CA)	626-1620
CYBER (MD)	626-1622
ENCORE (UX)	626-1681
VAX (VX)	626-1641
RJE (2400 baud)	626-1656
RJE (4800 baud)	626-1663

**Accounts:**

CYBER, ENCORE, VAX	625-1511
Computer Hours (recorded message)	626-1819
Computing Information Center	625-7397
Contract Services	625-2303
East Bank I/O, 128B Lind Hall	625-5082
Engineering Services	627-4357
Equipment Maintenance/Repair	627-4357
Graphics Software	626-5592
Information, Lauderdale	626-1600
Lauderdale Computer Room	626-0550
Lauderdale Services	626-1838
Magnetic Tape Librarian	626-1838
Math and Statistics Packages	626-5830
Micro Information	626-4276
Newsletter Subscription	625-7397
Permanent File Restoration	626-0595
Project Assist	626-1090
Public Labs (Managed by ACSS)	
14 Folwell Hall	625-4896
306B Lind Hall	625-9032
130 Physics	625-6820
9 Walter Library	626-1899
Lab Manager (14 Folwell Hall)	625-7850
Publications Information	626-1093
Short Course Registration	625-7397
Shuttle Bus Service	625-9525
System Status (recorded message)	626-1819

## PUBLIC LABS TWIN CITIES CAMPUS

Location	Batch	Interactive	Micro
<i>East Bank</i>			
ApH 204			X
Arch 148			X
CenH		X	
ComH		X	
DieH 207, 270		X	
EddyH Annex 54			X
EltH 121, 124	P	X	
FolH 14, 14a	P	X	X
FronH		X	
LindH 26		X	
LindH 128B	P	X	
LindH 306B			X
MechE 308		X	
MoosT 8-425			X
Nich 109			X
Phys 130		X	X
PioH		X	
SanH		X	
TerrH		X	
VinH 4		X	
VinH 203			X
WaLib 9		X	X
<i>West Bank</i>			
AndH 170	P		X
BlegH 90			X
BlegH 140	P	X	
MdbH		X	
OMWL 2	P	X	
<i>St. Paul</i>			
BaH		X	
CentLib B50			X
ClaOff 125E	P	X	
ClaOff B22			X
McNH 69			X

P means Printer only.  
For more information see WRITEUP, LABS.

## SYSTEM OPERATING HOURS

	CYBER (CA), ENCORE (UX), VAX (VX)	CA and VX Low Rate	CYBER (MD)
M-F	7 am - 4 am	8 pm - 4 am, 7 am - 8 am	7 am - 1 am
Sat	4 am - 9 pm	all operating hours	7 am - 10 pm
Sun	6 pm - 4 am	all operating hours	6 pm - 1 am

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**Acting Director:** *Michael M. Skow*  
**Editors:** *Steven Brehe, Paula Goblirsch*

The *ACSS Newsletter* is published monthly by Academic Computing Services and Systems of the University of Minnesota, Twin Cities. Deadline for articles is the 10th of the month preceding publication; deadline for short announcements is the 15th. The *Newsletter* is produced with an Apple Macintosh Plus running Microsoft Word, FullPaint, MacDraw, and Aldus Pagemaker software, with camera-ready copy produced on the Apple LaserWriter Plus.

Direct comments, suggestions, articles, and announcements to the editors at the address below, or call (612) 626-1828 or 626-1093. For a free subscription call (612) 625-7397, or send your name and address to the Computing Information Center, 128A Lind Hall. Electronic Mail: YZE6075@UMNACCA or MAD@UMNACVX. On-campus address changes *must* include your department's name and your *departmental* address.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, religion, color, sex, national origin, handicap, age, veteran status, or sexual orientation.

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**The ACSS  
Newsletter**

**Academic  
Computing  
Services and  
Systems**

Technical Publications  
100 Lauderdale CF  
University of Minnesota  
2520 Broadway Drive  
Lauderdale, Minnesota 55113

Nonprofit Org.  
U.S. Postage  
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Minneapolis, Mn.  
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**UNIVERSITY ARCHIVES**  
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**Deliver to current occupant.**

August 1987