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# acs academic computing services Newsletter

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## **SPSS 4 on the Mac: A Review**

*Bruce A. Center*

BAC@UMNACVX

**S** PSS Version 4 is now available on the Macintosh. Let me repeat that. SPSS Version 4 is now available on the Macintosh.

This is not a scaled down, rewritten version of SPSS as SPSS/PC+ is. There is no limit to the number of variables and cases; there are no inexplicable changes in spelling and syntax; all of the commands and procedures are there. SPSS 4 requires no unique Macintosh manual, only a small *SPSS for the Mac: Operations Guide*. For users even vaguely familiar with a Mac, this *Guide* is largely unnecessary.

The Macintosh interface is simple, sensible, consistent, and intuitive. There are no brilliant innovations and no unpleasant surprises. Commands can be entered in an input window; output goes to an output window; all or parts of both can be saved, printed, or edited in standard Mac ways. Cut, copy, paste, the clipboard, and the scrapbook all work as they do in all Mac applications. There is an *UNDO last run* (Command/Z, what else?) which is very handy for eliminating output from bad runs. (The Command key is marked by an apple or cloverleaf, depending on your keyboard.)

There is an interactive command generator that can help you build SPSS commands. There is an excellent, context-sensitive Help feature and an on-line glossary as well. None of these are intended to replace the 950-page reference manual, and they don't.

SPSS can read ASCII text files, SYLK files (i.e., Excel, Wingz, etc.), tab-delimited files, and, of course, SPSS Export files created on other machines. You can download SPSS Export files, created on VX or UX with the SPSS\* Export command, to the Macintosh and read them with the SPSS Import command on the Macintosh. Conversely, you can create SPSS Export files on the Macintosh, upload them to UX or VX, and read them there with the SPSS\* Import command.

SPSS 4 is not only new to the Mac; it is not yet available on VX or UX either. This version contains four new procedures worth noting.

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# Help Page

## ACS HELP-LINES

### Central Systems (UX,VX,VZ,CA):

626-5592 8 am to 5 pm, weekdays

### Artificial Intelligence:

625-8332 3 to 4 pm, Monday,  
Wednesday, Friday

### Database:

626-1887 10 to 11 am, weekdays

### Liberal Arts, Text Analysis:

625-8332 3 to 4 pm, Monday,  
Wednesday, Friday

### Statistics:

626-1887 1 to 3 pm, weekdays

## Other HELP-LINES

### LUMINA (communications questions):

626-2272 8 am to 5 pm, weekdays

### Microcomputer and Workstation Networks Center:

626-4276 9 am to 4 pm, weekdays

## Lauderdale Tape Library

626-1838 9 am to 3 pm, weekdays

## CONSULTING

### Walk-In

#### ACS, East Bank:

128C Lind Hall 10 am to 4 pm,  
Monday through Friday

#### Microcomputer and Workstation Networks Center:

125 Shepherd Lab 9 am to 4 pm,  
Monday through Friday

## Electronic Mail Consulting

Consulting is now available via the mail facility on all ACS systems (the UX, VX, VZ, and CA). 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 ACS systems (ENCORE/UNIX, VAX/VMS, CYBER/NOS), software, and for answers to any other inquiries on using computers for instructional computing.

## COMPUTING INFORMATION CENTER

128A Lind Hall, 625-7397, MAD@UMNACVX, MAD@VX.ACS.UMN.EDU  
8 am to noon and 1:00 to 4:30 pm, Monday through Friday

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

**Free ACS documentation.** General information and central system information available.

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

# acs

## Academic Computing Services

Director, ACS: Michael Skow  
 Editors: Steven Brehe, Paula Goblirsch

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For a free subscription call (612) 625-7397, or send your name and address to the Computing Information Center, 128A Lind Hall, University of Minnesota, 207 Church St. SE, Minneapolis, MN 55455. [MAD@UMNACVX](mailto:MAD@UMNACVX)/[MAD@VX.ACS.UMN.EDU](mailto:MAD@VX.ACS.UMN.EDU). On-campus address changes *must* include your department name and address.

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## New Procedures

**Examine:** Tukey's Exploratory Data Analysis. Complete with histograms, stem-and-leaf plots and boxplots.

**Flip:** A facility to transpose data files. Variables become cases, and vice versa.

**Logistic Regression:** Regresses a dichotomous dependent variable on a set of independent variables. Categorical independent variables can be automatically replaced by sets of contrast variables.

**Matrix:** a comprehensive matrix manipulation language, the functional equivalent of SAS/IML. Matrix includes all of the usual matrix operations and functions and a bunch more, including Ginv (generalized inverse), Solve (solve a system of linear equations), Magic (create a latin square), and procedures such as Eigen (eigen values and vectors). There are 60 such functions and procedures, including those for cumulative  $\chi^2$  and t distributions (chicdf and tcdf).

Matrix contains its own language with which you can create your own statistical procedures. Examples are provided of a nearest-neighbor discriminant analysis, and a repeated measures analysis of categorical data using weighted least squares.

## Differences

- *SPSS/Graphics*, including the *Graph* command, has not been implemented yet. This is disappointing considering the graphics capabilities of the Macintosh. If you have Cricket Graph installed, SPSS can generate files in Cricket Graph format.
- The *Statistics* and *Options* commands have disappeared entirely. All procedures now use keywords.
- SPSS<sup>x</sup> Version 2 procedure names such as *Condescriptive*, *Breakdown*, and *Pearson Corr* have been replaced by the SPSS<sup>x</sup> ver-

sion 3 names *Descriptives*, *Means*, and *Correlations*.

- For SPSS/PC+ users, there are no traces of *Review* or the incomprehensible menuing system that made SPSS/PC+ so cumbersome even for experienced SPSS<sup>x</sup> users.

## Documentation

*SPSS Reference Guide*, SPSS Inc. (Chicago, 1990), \$34.95, documents and gives examples of all of the commands in alphabetical order. This is the complete reference manual for SPSS Version 4 on any system.

*SPSS Base System User's Guide*, SPSS Inc. (Chicago, 1990), \$24.95, shows how to use SPSS commands to manage and analyze data. It explains many of the statistical concepts involved and includes brief operational instructions for each command.

*SPSS Advanced Statistics User's Guide*, SPSS Inc. (Chicago, 1990), \$19.95, contains discussions of discriminant analysis, nonlinear and logistic regression, and MANOVA, including repeated measures analysis of variance, log-linear models, Probit analysis, survival analysis, and the new Matrix language.

*SPSS for the Macintosh: Operations Guide*, SPSS Inc. (Chicago, 1990), \$8.95, explains the features unique to the Macintosh.

All of these manuals will be available at the Minnesota Book Center in Williamson Hall. They can also be found at the Computing Information Center in 128A Lind Hall.

## Installation and Resources

Installation is fairly easy: Move the setup disk to your hard drive, double-click on **Set-up**, and follow the instructions.

Storage requirements are not trivial. SPSS requires:

- Ten megabytes of disk space just to store the program.

- Two megabytes of memory. SPSS strongly recommends four megabytes; four megabytes are required if you want to use MultiFinder.
- A numeric co-processor (they are on *all* Mac IIs) is also strongly recommended.

SPSS is a large package; it does not work well on smaller Macs. I have been testing SPSS on a Mac II with five megabytes of memory and a 140 megabyte hard drive. It fairly flies.

### License Fees and Consulting

SPSS for the Macintosh is available by site license from the Microcomputer Center in Shepherd Labs (626-4276). It costs \$75 the first year, with a \$50 renewal fee. The

Advanced Statistics (including *Discriminant*, *Manova* and the new *Matrix* procedure) are \$35 the first year with a \$20 renewal fee.

Our Statistics HELP-Line, available from 1 to 3 p.m. daily at 626-1887, will answer questions on SPSS Version 4 on the Macintosh.

Without fanfare, by the way, SPSS has dropped the \* from its name. (It is no longer SPSS\*.) I am waiting until, once again, SPSS stands for *Statistical Package for the Social Sciences* (or stands again for anything at all). I suspect I may have to wait a long time.

# SPSS 4

# MATLAB on UX and VX

Michael J. Frisch

MJFRISCH@VX.ACS.UMN.EDU

**W**e have recently completed the installation of MATLAB on the ENCORE UX and VAX VX computers. MATLAB (MATrix LABoratory) is an interactive computer program that serves as a convenient "laboratory" for computations involving matrices. It provides easy access to matrix software developed by the LINPACK and EISPACK projects. The capabilities range from standard tasks such as solving simultaneous linear equations and inverting matrices, through symmetric and nonsymmetric eigenvalue problems, to fairly sophisticated matrix tools such as the singular value decomposition.

MATLAB's primary use is in the classroom for introductory courses in applied linear algebra as well as more advanced courses in numerical analysis, matrix theory, statistics, and applications of matrices to other disciplines.

MATLAB was written by Cleve Moler, who was then a professor at the University of New Mexico.

The maximum workspace for MATLAB is 5000 complex elements, each having a real and an imaginary part. The imaginary part can be zero.

A **HELP** command is available within MATLAB that summarizes the other commands. The **EXIT** command terminates the MATLAB interactive session.

### Using MATLAB

On the VAX computer, you call MATLAB with this statement:

```
$ MATLAB
```

### Sample MATLAB Input

The following shows MATLAB input for a simple problem to solve  $AX=B$ . The output is shown on the following page.

```
//          SET UP "A" MATRIX
A = < 9 -1 1 ; 8 2 -2 ; -7 3 3 >
//          SET UP "B" VECTOR (NOTE ` AT END INDICATING TRANSPOSE)
B = < -1.3 .8 3.1416 >'
//          SOLVE AX=B
X = A \ B
//          MULTIPLY SOLUTION TO CHECK IT
BB = A * X
//          THE ERROR SHOULD BE SMALL
E = BB - B
EXIT
```

NOTE: All input to MATLAB must be in uppercase (except comments). This includes commands and matrix names. If you make the mistake of using lowercase, MATLAB responds:

```
'n' = m HEX IS NOT A MATLAB CHARACTER
```

and waits for you to retype the command correctly.

Any files to be created or read by MATLAB on the VAX have the file type .DAT unless you explicitly specify the file type. For example, using the DIARY facility, MATLAB can "log" the contents of a session for perusal and printing. Thus the command DIARY('SAM') is the same as DIARY('SAM.DAT').

The VAX version of MATLAB has been compiled in 64-bit double precision using the FORTRAN compiler's /G\_FLOATING option.

On the ENCORE computer, you call MATLAB with this statement:

```
matlab
```

or

```
matlab <infile >outfile
```

where *infile* is the name of file containing MATLAB commands and *outfile* is the name of a file where MATLAB output will be written. If *<infile* is not used, input commands will be expected from your terminal. If *>outfile* is not used, output will go to your terminal.

NOTE: Once again, all input to MATLAB must be in uppercase (except comments). This includes commands and matrix names. If you make the mistake of using lowercase, matlab responds:

```
n IS NOT A MATLAB CHARACTER
```

and waits for you to retype the command correctly. However, note that the program name matlab must be in standard UNIX lowercase.

### Sample MATLAB Session (The comments, //, are deleted to save space.)

```
matlab
  < M A T L A B >
  VERSION OF 03/19/82

  HELP IS AVAILABLE

  >
  A = < 9 -1 1 ; 8 2 -2 ; -7 3 3 >

  A =

      9.   -1.    1.
      8.    2.   -2.
     -7.    3.    3.

  >
  B = < -1.3 .8 3.1416 >'

  B =

 -1.3000
  0.8000
  3.1416

  >
  X = A \ B

  X =

 -0.0692
  0.7813
  0.1044

  >
  BB = A * X

  BB =

 -1.3000
  0.8000
  3.1416

  >
  E = BB - B

  E =

  1.0D-15 *

  0.0000
  0.0000
  0.4441

  >
  EXIT

  TOTAL FLOPS      101

  ADIOS
```

continued on page 96

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The ENCORE version has been compiled in 64-bit double precision.

## Documentation

There is abbreviated on-line documentation on VX (**MOREHELP APPLICATIONS MATLAB**) and on UX (**man matlab**). An on-line 68-page *MATLAB Users' Guide* is also available. To obtain a printed copy of the *Guide* on VX, enter:

```
$ LISTDOC /PRINT /CHAR=PSTD /NAME=xx.nnn MATLAB
```

where *xx* is the site code and *nnn* is the bin number where the output should be delivered. For example, EA.425 is a bin number in 128 Lind Hall. On the ENCORE, the *Guide* is stored as file **matlab** in the directory **/usr/doc**. To obtain a copy, use the command

```
xerox -C site.bin /usr/doc/matlab
```

to print the *Guide*. Both the **ListDoc** utility on VX and the **xerox** command on UX yield double-sided three-hole punched output on the high-speed Xerox printer at Lauderdale and have it sent to the given site and bin (for example, EA.425 is bin 425 in 128 Lind Hall).

M

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B



## ACS Central Systems Spring 1990

Central Systems courses are *free*. To register call 625-7397.  
Some classes have size limitations: Register early.

### Elective Courses

Math and Engineering Software	May 14-16	MW	2:30-4:30 pm
Electronic Mail and Networks	May 15-17	TTh	2:30-4:30 pm
vi: UNIX Editor           Section 2	May 18	F	2:30-5:00 pm
C Programming	May 21-25	MWF	2:30-4:30 pm

### Registration Information

**Prerequisites:** Please check the course description list to see if there are any prerequisites for the class you are interested in. Instructors will not be able to review any prerequisite information. For more information on prerequisites, call the Computing Information Center at 625-7397.

**Limits:** Some central systems classes have limits to class size. Please try to register early to be sure of getting a place. If you decide to cancel from a class, please do so as soon as possible, so that we can make the space available to others.

**Registration:** Registration is located at ACS's Computing Information Center, 128A Lind Hall. (Hours: 8:00 am to noon and 1:00 to 4:30 pm, Monday through Friday.) To register, call 625-7397. Mail registrations will be accepted. You can also register by electronic mail—write to MAD@UMNACVX or MAD@VX.ACS.UMN.EDU. Include a daytime phone number. Please call to cancel if you later decide not to attend, so we know how many to expect. Deadline for registering is 4:00 pm on the last working day before the class begins. For registration information, call 625-7397.

### Course Descriptions

**VI: UNIX EDITOR.** Editing files on UNIX systems with ex (line editing) and vi (full screen editing). All the commands will be covered. Additional topics include terminal definitions, '.exrc', view, and examples of where an ex command is superior to a vi command in ease of use. One meeting.

**MATH AND ENGINEERING SOFTWARE.** How to use mathematical software packages and the Fortran or Pascal-callable libraries on the ACS ENCORE UX, VAX VX, and CYBER NV and CA, machines, and on the Minnesota Supercomputer Center's CRAY-2. How to access the packages and libraries, what their capabilities are, and examples of how to use some of the most common routines. Prerequisites: Knowledge of one or more of the operating systems (UNIX, VMS, NOS/VE, or NOS 2), and Fortran, Pascal, or C programming language. Two meetings.

**ELECTRONIC MAIL AND NETWORKS.** Introduction to electronic mail and networks. Mail on the VAX 8650; sending, receiving, and managing mail, commands. BITNET addressing and uses. Other networks. Prerequisites: *Introduction to VMS Operating System* or experience using VMS. Two meetings.

**C PROGRAMMING.** This course will introduce the C programming language (new ANSI Standard). Topics include: programming style, flow control, statements and operators, program structure, data types, pointers, functions, arrays, standard I/O, and the system interface. Some programming background is necessary. No operating system will be taught, but a class account will be available on ACS's UX (UNIX) and VX (VMS) systems. Three meetings.

## Using ListDoc

Steven Brehe  
SKB@UMNACVX

**A**CS has created a number of longer text files that document many of our services, software, and certain features of the VMS operating system. These documents have been available as WRITEUPs on our VMS cluster, but many of them are now more easily available within ACS's ListDoc utility. ListDoc documents will eventually replace WRITEUPs, so every user of the ACS VMS cluster should learn how to use this utility.

To start up ListDoc, simply type

```
$ LISTDOC
```

from a VT100-compatible terminal. After a moment, the system will redraw your screen to resemble **Figure 1**. Initially the first topic, **General\_information**, will be highlighted. To open that topic (that is, to display a list of the documents that are available for that topic), simply press RETURN.

To select another topic in the list shown in **Figure 1**, just use the up or down arrow keys on your terminal to highlight another topic. In **Figure 1** the second topic, **VMS\_System**, has been selected in this way. After selecting a topic, press RETURN to display a list of the documents that are available for that topic.

After you have displayed the list of documents, you can again use the up and down arrow keys to highlight a specific document. Then press RETURN to open the document. It will be displayed on your screen, several lines at a time.

As shown in the figure, the bottom of the ListDoc screen displays other currently available commands for printing a file, copying a file to your directory, entering a file with a text editor, moving from subtopic to topic, exiting ListDoc, and other functions, as described in the text below **Figure 1**. The CTRL key commands in the menus involve keeping the CTRL key on your terminal pressed down while you type a letter key. The CTRL key may

have different labels on some terminals and microcomputers.

With other types of terminals you can also use ListDoc in command mode. See **HELP LISTDOC** for more information.

### Copying ListDoc Files

After you have selected a ListDoc file, you can copy it to your own directory and then manipulate the file as you would any other text file.

First open the particular document that you want to copy. Then press the C key on your keyboard. ListDoc will prompt you for a file name and ask if you really want to copy the current ListDoc document to that file. Simply type Y or Yes and ListDoc will create a file with that name and copy the document to that file.

### For More Information

Press the H key to enter the ListDoc HELP utility, which provides more information about the functions of ListDoc.

### Figure 1: Using ListDoc

The figure on the facing page shows the main ListDoc screen. The commands you can use at a specific level within ListDoc are always displayed at the bottom of the screen.

When you begin ListDoc, the first category, **General\_information**, is always selected, as indicated by the "reverse video" highlighting (white letters on black).

To select another category, use the up- and down-arrow keys on your terminal keyboard. The highlighting will

## LISTDOC - MAIN

```
General_information -- ACS information for all systems
UMS_System -- The UMS system and the ACS UMS cluster in particular
Changes -- News about system and documentation changes
All-in-1 -- DEC/UMS office automation software
Artificial_Intelligence -- Documentation for AI software on UX
DEC_Systems -- Available contracts, software distribution and discounts
Graphics -- Information about graphics software and output devices
Instructional_administration -- Management and validation
Languages -- Information about programming languages on UX
MathEng_Software -- Math and engineering libraries, applications packages
Networking -- About FTP, Internet, Telnet, and BITNET
Statistics -- Information about statistics packages on UX
Text_analysis -- Information about text analysis on UX
Text_processing -- Information about text processors on UX
```

```
- arrow keys to select - return to open - e to view with editor - h for help -
- ctrl_z to exit - p to print - s to search - d for directory - c for copy -
- ctrl_w to repaint screen - l to locate -
```

move up or down as you strike these keys. When you have positioned the highlighting on the category you want, press RETURN to open that category.

After you have displayed a list of sub-categories or a list of documents, use the arrow keys again to select one item from the list. Then press RETURN to open the selected item.

After you have opened a document, use the arrow keys to scroll up and down through the text.

You can use a ListDoc document like any other text file, by pressing these letter keys:

Press **C** to copy the current document to a specified file in your directory.

Press **D** to display a directory of ListDoc documents.

Press **E** to enter the file with the EVE editor. (You can't actually edit a ListDoc file, but you

can use EVE commands to move through it quickly.)

Press **F** to copy the current screen to your directory.

Press **L** to search for (locate) a key word in the title of a document.

Press **P** to print the file.

Press **S** to search a document for a word or phrase.

At any point in ListDoc, press **H** for help.

Press **<CTRL>-Z** to leave a document.

Press **<CTRL>-B** to move from a sub-category list to the main category list.

After returning to the main screen, press **<CTRL>-Z** to leave ListDoc.

## The SEND Command on VX

*Jerry Stearns*

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**O**ne of the useful, but little known features of BITNET is the ability to send interactive messages via the network. The **SEND** command on VX makes it possible to send an informational message, an

interactive computer command, or files without using the MAIL utility. It even allows you to "talk" to users on the ACS VAX VX, or another VAX on BITNET, in *real time*.

### Example

Let's say, for example, that you walked by Bob's office and saw him sitting with another person, and that his terminal or personal computer was logged on to VX. You want to see him when he is free, but don't want to disturb him when he's with someone else. So you go back to your own terminal, log on to VX, and type

```
$ SEND BOB "Can I see you when you are free? -Jack"
```

where **BOB** is his VX user name, or an alias you have defined to mean his user name. The message must be enclosed in quotation marks.

What shows up on Bob's screen is:

```
JBENTON (NTY1743) - Can I see you when you are free? -Jack
```

where **JBENTON** is your user name, and **NTY1743** is the terminal port address. The receiver always knows who sent the message, because the user name is clearly listed on the screen. If more than one terminal is logged onto the receiving user name, each of them receives the message on the screen.

We should not use this command frivolously. The message received is not received as text in an editing session or a mail message at the other end, but it can, nonetheless, be annoying to others to receive a message in the middle of an important terminal session. Please be thoughtful and use this function sparingly.

Let's say you have a message longer than one line to convey to a colleague. You know from the **SHOW USERS** command that she is currently logged onto VX. You use the **SEND** command to get into "interactive mode."

```
$ SEND SAMANTHA
SAMANTHA: I am having trouble downloading those
SAMANTHA: files I received yesterday. Would you
SAMANTHA: come and help when you are free? -Jack
SAMANTHA: <CR> {An empty carriage return, or CTRL/Z will end the connection.}
```

In this mode the message should *not* be enclosed in quotation marks. On her screen Samantha will see lines similar to what we saw above with the single line message:

```
JBENTON (NTY1743) - I am having trouble downloading those
JBENTON (NTY1743) - files I received yesterday. Would you
JBENTON (NTY1743) - come and help when you are free? -Jack
$
```

You may use a BITNET address in place of the local user name. For example, I can send an interactive message to Bob, even though he might have his account on the VAX on the Duluth campus:

```
$ SEND BOB@UMNDUL "When are you going to the conference?"
```

This assumes that Bob is currently logged in to the destination node, UMNDUL. If he is not, you will get an error message stating that the "User is not logged in."

So you may want to find out beforehand if Bob is logged in to the node in Duluth. Another function of **SEND** is to send a **REMOTE COMMAND** to another computer on BITNET. To see if BOB is logged on in Duluth, use:

```
$ SEND @UMNDUL SHOW USERS
```

**SHOW USERS** tells you who is logged on to a VAX running the VMS operating system. If you are sending to a computer running the UNIX operating system, you can use **FINGER** as the command. If it is an IBM mainframe on the other end, use **CPQ NAMES**. If you don't send the correct command for the computer at the other end, you will get an error message of some kind. Try a different command.

Another use for this Remote Command function is to determine if the network is up and running between the ACS VAX and the destination node of the message or file you want to send. To find out, use the following:

```
$ SEND @nodename CPQ IND
```

CPQIND stands for Central Processor Query INDicate. It will return either a message from the computer at the other end (telling you, indirectly, that the network is open all the way), or a message stating which node is down at the moment. Usually you don't really need to know the status of the processor at the destination, but the fact that you get a return message tells you what you wanted to know—the status of the network.

The BITNET Information Center (BITNIC) computer runs a program called **LISTSERV**, which responds to

interactive commands, as well as Mail messages. You can find out much information about using the BITNET network by asking the BITNIC for it. Try sending these commands:

```
$ SEND LISTSERV@BITNIC HELP
```

This command will return to you a page of information about the commands you can send to the **LISTSERV** program.

```
$ SEND LISTSERV@BITNIC GET BITNET USERHELP
```

This command will return a 15-page beginner's guide to using the BITNET network. (It is the same one that is available on the ACS VAX in **LISTDOC**, under the

*continued on page 102*

*continued from page 101*

NETWORKS heading, as BITNET\_INFO.) It may take a few hours for it to arrive via the network, but it will be waiting for you when you next log in to your account. Just type \$ **RECEIVE \***, and it will be written as a file on your directory.

The CYBER CA and ENCORE UX do not have an equivalent for the interactive **SEND** command for sending remote commands. However, many of the same functions can be performed by sending a mail message and putting the command in the SUBJECT field, or as the first and only line of the message.

See **HELP SEND** for more information about the VMS **SEND** command. In future articles we will describe the **SEND/FILE** command to send files and provide more information about using **RECEIVE** when you get files via BITNET.

## Read-Only Compact Disk Services on the VMS Cluster

*Marisa Riviere*  
MARISA@UMNACVX

**E**arlier this year ACS added to the VMS cluster two optical disk readers for read-only compact disks (CD-ROM). The readers accept optical disks, the size of those used in CD audio players, with a capacity of 600 megabytes. The readers can transfer information from the

disks at a speed of approximately 150,000 bytes per second. Thus many vendors are now using read-only CDs as an ideal media for distributing large databases.

The first two ACS databases on read-only CDs on our VMS cluster are "VMS Consolidated Software Distribution" to support the University-wide distribution of software in the Educational Software Library (ESL), and "VMS On-line Documentation" for users who have terminals with windowing capabilities.

System managers for sites that utilize VMS software through the ESL contract can now easily access software that they would like to install in their systems. Because of the easy-to-handle read-only CDs, the software is available over the networks as if it were permanently on-line. A VMS layered product—or upgrade—is only a few minutes away from any University-owned Digital system on the network. ACS plans to extend read-only CDs distribution to Ultrix/RISC systems in the near future.

The second application, on-line documentation services, makes VMS manuals accessible to users with windowing terminals connected to other VMS or Ultrix systems or directly connected to ACS VMS systems. We are searching for DEC or third-party software compatible with our systems that will make the documentation accessible through any vendor's TCP/IP network protocols as well.

There are a variety of applications and media formats for read-only CDs in the market. Media formats can range from standard text format to encoded application-dependent, vendor-defined types. We welcome requests from users for additional applications that can make use of the CD readers, but before ordering database distribution or other types of documents on CDs for which you plan to use our services, please give us a call. Standard VMS supports only some of the available formats.

## VMS Updates

Marisa Riviere  
MARISA@UMNACVX

**W**e plan these software and hardware updates for the ACS VMS cluster during 1990:

- On June 10, we will update VMS to Version 5.3 or to a later version, if one happens to be released soon. At that time all the layered products will be upgraded to the latest available version. An upgrade of the TCP/IP communications software is also in the plans.

We will offer test times on the new version of VMS on Sundays, May 27 and June 3. See the News notes when you log in for more information on schedules and for references to on-line documentation about the changes.

- Some time this quarter we will add more disk drives to VX. The new drives (DEC's RA90s) will provide more space for system and users files, thus making general access to the system more efficient.
- This month we will expand VX hardware. As many of our users have noticed, in spite of the addition of the VAX 6400 and the VZ system, to which we transferred a large number of VX users, the VX system continues to be saturated by new users and projects. So we will add a VAX 3100 to the cluster that will be dedicated to staff development projects and mail services.
- To respond to the increasing demand for VMS services, ACS will also upgrade the VX hardware to a multiprocessor system next year, including additional VAX stations in the cluster. In the meantime, we will search for new ways to alleviate the CPU saturation and provide the best possible turn-around time.

Further information about all these changes will appear in future issues of this *Newsletter*.

## Computing Information Center and Fraser Staff Moving to 1 Nicholson

Michael Dunham  
MAD@UMNACVX

**A**s we go to press, plans are under way to move our Computing Information Center (the CIC) from its current location in 128 Lind Hall to 1 Nicholson Hall. At this time we expect to move sometime in September.

All ACS functions now located in 128 Lind will be relocated to 1 Nicholson, including:

our reference room,  
short course registration,  
the input/output facility,  
consulting,  
shuttle pickup and delivery,  
distribution of free documents,  
application for accounts and grants,  
newsletter subscriptions,  
and others.

Hard-wired lab terminals will also be moved to 1 Nicholson.

ACS staff now located in Fraser Hall will move their offices to 1 Nicholson as well.

As we prepare for the move, make the move, and unpack at Nicholson, we will undoubtedly have to curtail some or all of our CIC and Fraser services at times. We ask your patience during this period. Any changes in these plans will be announced in future issues of this newsletter.

### 140 Blegen May Become Micro Lab

*Richard Hotchkiss*  
HOTCHKISS@UMNACVX

**R**oom 140 in Blegen Hall is currently an ACSnet terminal facility with CRTs, hardcopy terminals, and a fast printer. From these terminals you can access most of the mainframes on campus and LUMINA, the library system. A survey last winter quarter indicated that although the terminals were well used, West Bank users were a minority among users.

Because there is an overwhelming demand for more microcomputer access, this facility may be converted to a micro lab when the funds become available, possibly this summer. You could still access the central computing systems from this lab as well as from the other micro labs.

A benefit of this conversion is that the mainframe user could upload and download files and, in general, use each system, micro and mainframe, to its advantage. However, each user would have to have a micro access card and central system users would have to compete with micro users for the use of the micros. Those of you who already use micros as central system terminals know that you have to make some adjustments since micro keyboards do not match standard terminal keyboards, e.g., VTxx terminals.

Please convey your opinions for or against this change to:

Richard Hotchkiss  
ACS  
100 Laud CF

or E-mail to:

HOTCHKISS@UMNACVX

### Kurzweil Scanning Will Be Discontinued

*Richard Hotchkiss*  
HOTCHKISS@UMNACVX

**I**n the August 1989 issue of this *Newsletter*, Michael Skow, director of ACS, stated that our Kurzweil optical scanning service would soon have to be phased out or transferred to another University group that would be willing to operate this service. In the face of the University's general funding problem for computing activities, we find that we can no longer subsidize the scanning service.

When the current maintenance contract for the machine expires, sometime in June, we will discontinue the scanning service, completing only those jobs already in progress.

### Holiday Hours for May

**I**n observance of Memorial Day, our systems will run in unattended mode from 15 minutes after midnight the morning of Monday, May 28, until 6 am Tuesday, May 29. It is unlikely that any tape requests or printing will be processed during these hours. Normal operations on all systems will resume at 6 am on Tuesday, May 29.



## User Survey Results, Part 1

Peter Oberg

PJO@UMNACVX

PJO@VX.ACS.UMN.EDU

**I**n February, we sent a user survey to a majority of *Newsletter* subscribers to find out how well Academic Computing Services (ACS) is providing mainframe services and systems. We are going to use the responses in our planning for the coming year. This month I'll summarize the quantitative portions of the survey and next month I'll summarize the user comments on improving current services and requests for new services.

Surveys were sent to 658 subscribers of the *Newsletter* mailing list. We've tabulated 213 responses. The association to the University of those responding: 98 faculty, 43 graduate students, 2 undergraduate students, 50 University staff, 8 outside the University. Twelve respondents reported no association.

### Services Rated High

Value of ACS services compared to costs	49 Excellent and 70 Above Average
ACS computing grant system	72 Excellent and 39 Above Average

Subtracting the Not Applicable count from the total, we learned that 72% of respondents rated costs and the grant system above average to excellent.

The <i>ACS Newsletter</i>	59 Excellent and 91 Above Average
Reliability of ACS computer systems	66 Excellent and 64 Above Average

The reliability of ACS systems was rated above average to excellent by 80% of applicable users. The *ACS Newsletter* was also given high ratings by the highest number of respondents, 193.

Respondents were also asked to rate mainframe service as it helped them to achieve their research and instructional objectives. For research, 64% rated the mainframe service above average to excellent in achieving their objectives. For instruction, 56% rated mainframe service above average to excellent and 25% rated the service average for achieving their instructional objectives.

### Services Rated Average

ACS general Help-Line	37 Excellent, 49 Above Average, 35 Average, 10 Below Average, 5 Poor 77 Not Applicable
ACS Statistics Help-Line	13 Excellent, 27 Above Average, 11 Average, 5 Below Average, 5 Poor 151 Not Applicable
ACS on-line documentation	22 Excellent, 49 Above Average, 42 Average, 21 Below Average, 5 Poor

*continued on page 106*

## Survey Results

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*continued from page 105*

The general Help-Line and Statistical Help-Line were rated average to above average by 66% of applicable responses. On-line documentation was rated near the fiftieth percentile. These are areas in which users require up-to-date information on topics from software to billing. On-line documents on all systems are being reviewed. We plan to improve the delivery of on-line documentation from both the outside vendors and the working groups at ACS. Further suggestions in documentation can be forwarded to the mail address at the end of the column.

### **Services Rated Below Average**

Relatively few respondents rated our services below average. From 5 to 21 respondents gave low ratings to text editors, magnetic tape service, our general Help-Line, and on-line documentation.

Next month, we'll publish many of the written comments from respondents and also summarize ACS plans for the coming year in response to the survey and user requests. If you have any questions or comments regarding the survey, please contact me at my office at 626-0200 or at my E-mail address [PJO@UMNACVX](mailto:PJO@UMNACVX) or [PJO@VX.ACS.UMN.EDU](mailto:PJO@VX.ACS.UMN.EDU).

# acs

# Phones/Hours/Labs

## ACS PHONE NUMBERS

Administrative Office: 626-1600  
HELP-Line 626-5592

Access:	
ACS systems (UX, VX, VZ, CA)	
3/12/2400 bps + 7/Even/1	626-1630
12/2400 bps + 8/None/1	626-1631
LUMINA	626-2206
Accounts:	
ENCORE, VAX, CYBER	625-1511
Computer Hours (recorded message)	626-1819
Computing Information Center, 128A Lind	625-7397
Contract Services	625-2303
East Bank I/O, 128C Lind Hall	625-5082
Engineering Services	625-1595
Equipment Maintenance/Repair	625-1595
FAX	626-7440
Graphics Software	626-5592
Information, Lauderdale	626-1600
Lauderdale Computer Room	626-0550
LUMINA	626-2206
LUMINA Consultant	626-2272
Math and Engineering Software	625-5830
Microlab (WBCS-170 Anderson)	624-6526
Newsletter Subscription	625-7397
Permanent File Restoration	626-0595
Public Labs (with ACSnet)	
140 Blegen Hall	624-5278
B40 Central Library	no phone
207/270 Diehl Hall	624-3128
4-204/4-250 EE/CSci	625-9081
121 Elliott Hall	624-0866
14 Folwell Hall	625-4896
1 Lind Hall	625-0801
128C Lind	625-5082
308 Mechanical Engineering	625-7352
130 Physics	625-6820
9 Walter Library	626-1899
MWNC 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
Tape Librarian/Operations Services	626-1838
West Bank Computing Services	624-0877
For the phone numbers of consulting services, see the Help Page.	

## PUBLIC LABS TWIN CITIES CAMPUS

	Central System Printing	Interactive	Micro
<i>East Bank</i>			
ApH 117			X
Arch 148			X
CenH		X	
ComH		X	
DiehlH 207/ 270	L	X	X
EddyH Annex 54			X
EE/CSci 4-204/250	I, L	X	X
EltH 121	I, L	X	X
FolH 14, 14a	L	X	X
FronH		X	
LindH 1	I	X	
LindH 26			X
LindH 128C	L	X	
LindH 306B			X
MasCanCtr M39		X	
MechE 308	I	X	
MoosT 8-425			X
Phys 130	L	X	X
PioH		X	
SanH		X	
TerrH		X	
VinH 203			X
WaLib 9	L	X	X
<i>West Bank</i>			
AndH 170	L		X
BlegH 140	I	X	
MdbH		X	
OMWL B2			X
<i>St. Paul</i>			
BaH		X	
CentLib B40	I	X	
CentLib B50			X
ClaOff 135	L		X
McNH 69			X
Vet 436			X
I - Impact line printers.			
L - Laser printers.			

## SYSTEM OPERATING HOURS

The ENCORE UX, VAX VX, VAX VZ, and CYBER CA systems run continuously from 6 pm Sunday until 6 am the following Sunday. The systems are in unattended production mode Saturday and Sunday from midnight until 6 am. It is unlikely that any tape requests or printing will be processed during these hours. Normal operations resume at 6 am each day except Sunday.

On the first and third Fridays of each month from 5 am to 7 am the CYBER CA system is unavailable. Low-rate hours are from 8 pm to 8 am Monday through Friday, and all operating hours on Saturday and Sunday.

## ACS Newsletter Subscription Request

Send to ACS Computing Information Center, 128A Lind Hall, 207 Church St. SE, Minneapolis, MN 55455

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