OREGON STATE UNIVERSITY COMPUTER CENTER NEWSLETTER

Corvallis, Oregon
(503) 754-2494

Volume XII, Number 1
January/February, 1977

Director: Thomas L. Yates

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GENERAL INFORMATION

INFORMATION AND POLICIES MANUAL AVAILABLE

A new manual entitled "Users Manual - Information and Policies" has been produced by the Computer Center. The manual is intended to provide users with the kinds of non-technical information they need to use the Center. Major sections of the manual deal with Computer Center Organization; Business Office Policies; Operations Policies; Service Policies; Acquisition of Equipment, Supplies and Services; and Safety and Security.

New (faculty) users will be given a copy of the manual. Departmental representatives can obtain a copy of the manual by contacting the Center Business Office, room 142.

SPECIAL CYBER OPERATING HOURS

Operating hours on the Cyber computer will be extended for the two weeks prior to finals week (February 28 - March 11). The computer will be up at 8:00 a.m. instead of at 10:00 a.m. for that two-week period on Mondays through Fridays.

UNSPONSORED RESEARCH FUNDS AVAILABLE

Each year a fund is established to support computing activities of research projects which are not otherwise funded from research grants. This Unsponsored Research Fund is administered by the Office of the Dean of Research and funds are allocated by a committee consisting of Dr. John Byrne, Acting Dean of Research, Dr. James Knudsen, Associate Dean of Engineering, and Tom Yates, Computer Center Director.

Unsponsored Research Funds can be applied to computing and programming activities carried out at the Computer Center. Funding is available to all OSU faculty members and graduate students. Approximately 200 projects are funded each year. Instructional and undergraduate research activities are not eligible for this support.

Applications for Unsponsored Research Funds are available from the Computer Center main office, Milne Computer Center 217.

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PROTECT YOURSELF, CHANGE YOUR USER CODES FREQUENTLY.

SOFTWARE

SOFTWARE SUPPORT LEVELS

The Computer Center's Software Evaluation Committee has completed definitions of the support levels to be used in categorizing software products for which the Center has accepted responsibility. The committee's recommendations for existing software packages have been approved and copies of the adopted support levels are available from the Computer Center office, room 217.

Under its operating guidelines the committee will review requests for the Center to acquire software packages or to change the support level of packages. Such requests are to be submitted via the Computer Center Management, the Academic Users Council or the Instructional Computer Committee (see the November/December 1976 Newsletter for information regarding the Council and the Committee).

ECS SIMULATOR

A Cyber ECS simulator is available on the file ECSSIM under the library user number in user library format. It provides the subroutines READEC, WRITEC and MOVLEV. These subroutines are compatible with the three routines of the same names in the Fortran extended manual.

Several precautions must be taken in the use of these routines. First, while READEC and WRITEC will accept an absolute ECS address MOVLEV will not. For MOVLEV an array or variable name that has been included in a level statement must be used. It is suggested that array or variable names be used for all the subroutines.

Second, a file named ECS is generated. This file must be rewound or returned before another program that uses the simulator is run.

Third, it is necessary to insure that these routines are loaded from ECSSIM before the Fortran library is searched. Otherwise, the standard routines that attempt to reference ECS will be loaded. Use of the loader directive LDSET(LIB=ECSSIM) is suggested.

Fourth, one program may not write data to simulated ECS for the use of a subsequent program. The data is buffered through CM and may not be completely written to disk during the execution of the first program.

Fifth, the ECS simulator uses about 20400 octal words of central memory.

Example:

```
GET(ECSSIM/UN=LIBRARY)
FTN(I=TSTSRC,B=TSTBIN)
LDSET(LIB=ECSSIM)
LGO.
RETURN(ECS)
```

NEW OS-3 RELEASES

Two releases of OS-3 are scheduled for the near future. They include several major changes as follows.

RJE Capabilities Expanded:

The next OS-3 release will involve expansion of our remote Job Entry (RJE-CDC 200 U.T.) facilities. We will have two dial-ups for RJE terminals, and we will be implementing an entire command language for RJE users to control their Input/Output. Information on the RJE commands is available using the HELP command, and requesting information on Systems Commands.

Users wishing to utilize these new improvements should contact Guy Lauterbach at x2494 to have site codes assigned for their RJE terminal.

New Control Statements:

Also incorporated into the new OS-3 release will be two new control mode statements, IF and GOTO. They will allow users to conditionally execute control statements and to skip forward within job decks or DO files. Detailed information about these statements is available through HELP by specifying IF or GOTO within the System Commands section.

Detached Terminal Message:

The next OS-3 release contains one additional feature. Users may occasionally notice the message "YOU ARE ALSO DETACHED ON TERMINAL NNN" at logon. This indicates that the same job/user number is logged on to OS-3 but is detached (not currently associated with a physical terminal). The user can attach to a detached job simply by typing ATTACH.

Change In Message Command:

Users will now be able to receive more than one message from another user without being required to send one first. That is, a logged-on user may received an unlimited number of messages from other users. If, at any time a user does not want to receive any messages, he may type MESSAGE,OFF to inhibit further message receiving.

Directory Change:

The second OS-3 release is scheduled for late winter quarter and at this time it is uncertain whether it will appear before or after the next Newsletter.

This release will incorporate major changes in system directory structure, thus allowing users an up-to-the-minute directory.

The directory printout routine will be drastically altered, involving several new features. Look for further information with the HELP command sometime in the next month. Due to the major changes, the directory command (DIRECTORY) will be changes to DIR to further call attention to the differences.

Because of the changes in system directory structure, users with large numbers of saved files (≥50), may experience slightly longer waits for file equips, unequips, etc. (.1 sec.). This may be noticeable on job numbers owning 150 or more files, Extra time is also needed for references to public files ($, *, ↑ files). It is hoped that this will be an incentive to keep saved files to a minimum and to eliminate public file names where not needed.

Any questions or comments should be directed to Guy Lauterbach, x2494.

CYBER COMPLOT NEWS

Users are reminded that it is now possible to generate plots using CYBER COMPLOT and transfer them to the Calcomp plotter for plotting via the CDC 3300. The procedure to accomplish this is described in the September/October 1976 Computer Center Newsletter and in the CYBER addendum to the COMPLOT Manual (available in MCC 142).

Users who may have experienced problems at one time or another with the CYBER COMPLOT plotting package are strongly encouraged to bring their problems to the attention of the consultants for resolution. If Computer Center software or hardware is found to be working improperly, prompt action will be taken to correct the problems.

Users who have new or unusual graphics terminals and wish to be able to use them with the CYBER COMPLOT system should make their desires know to Bill Hunteman (x2494) at the Computer Center. If the application has the potential for wide usage or appears to be of great value, the Computer Center may plan a revision to COMPLOT consistent with other demands on programming resources.

GPSS

The Computer Center has added GPSS-V to the Cyber's program library. With the addition of GPSS-V users have access to the latest version of the popular simulation package. The OS-3 version of GPSS-III will be discontinued on March 27, 1977.

USER OPERATIONS & SERVICES

MESSAGES FROM THE OPERATOR

Recently we have been asked about the messages that on-line users receive from the computer operator. Users have questioned the need and operator authority related to these transmissions that sometimes appear in the middle of an output run. The messages are of two types:

1. An emergency warning message, or
2. A standard warning message that the system is going off the air as scheduled.

First of all, neither of these messages are issued willy-nilly at the discretion of the operator. In each case transmitted messages have been authorized by Computer Center management. Specifically this means that the manager of systems software, the computer engineers, the operations manager, or the supervisor of operations has considered possible alternatives before requesting a message be sent.

An emergency or warning message is authorized when we have some prior information that the computer system will fail. This can be due to a number of reasons.

* A piece of computer hardware is about to break down.
* The operating system software is having a problem.
* We have been notified that a disruption in a vital service such as water or electrical is going to occur.

So what we are trying to do is to allow users a few moments to bring their work to a normal termination. Unfortunately, some users do get a message in the middle of their output and then get upset. In some situations you have the ability to turn off messages from the operator until your job is complete. However, if you use this option you are cutting yourself off from emergency notification. If you would like current information on the proper command syntax please call the Computer Center consultant at x3474.

CONSULTING AND TECHNICAL SUPPORT

The Computer Center has reorganized the consulting and technical areas serving the academic community in an effort to upgrade services. The consulting group is the first line of user services and will be able to answer or get answers to most questions the users have. The user can expect immediate response to these questions.

The technical support group is the second line of user services. This group will provide support and training to the consultant group. Within the next six months technical specialists will be identified in the areas of Graphics, Simulation, Linear Programming and Operations Research, Numerical Modeling and Time Series Analysis, Data Acquisition and Remote Sensing, Statistics, Compilers, Special Languages and Operating Systems. The User can expect turnaround of from one day to a week for problems that require a technical specialist. There may be a charge for this service.

The third level of support is the System Programming Group and the System Hardware group. Problems which require this level of support in general may require a longer period of time to solve.

Users should always contact the consultants with their problems. If referrals must be made to one of the other support groups the consultants will make the necessary contacts for the user.

FROM THE CONSULTANT'S DESK

You've probably noticed by now that some changes are being made in the consulting service. For one thing, the consultants' room number has changed to 150. To get there, go down the stairs directly across from the I/O desk. For another thing, the staff is small and (hopefully) better trained to answer your questions.

We've also expanded the hours that a consultant is on duty, so that we're now open from 9:00 a.m. to 4:00 p.m. Monday through Friday. And we've acquired the most complete set of OS-3 and Cyber manuals around, just in case we (or you) need to look something up. (Another set of these manuals is available for computer users in the student keypunch room upstairs.)

The free consulting service is available to help faculty and staff with minor computing problems that they can't solve themselves. We will also answer quick questions from students, but we can't help students debug their programs. If we can't solve a problem (student or faculty), we'll find the answer and get back to you. Any consulting that takes longer than about five minutes must be paid for. Free service can only be provided on a limited basis and must be spread over a large number of users. If you would like a copy of the Consultation Guidelines call x3474.

One last thing, we ask that you respect our hours and the sign in the window. Room 150 is open for consulting only 9:00 a.m. to 4:00 p.m. weekdays.

OPERATING STATISTICS

	Nov.	Dec.
Batch Logons OS-3	7024	7264
Batch Logons Cyber	18465	13981
Terminal Logons OS-3	27004	27322
Terminal Logons Cyber	9553	11427

OSU FACULTY - FREE CONVERSION TO CYBER

Last spring funds were made available to the Computer Center for the purpose of converting programs used by researchers from the 3300 to the Cyber. The Center has been directed by the Executive Department to complete all conversions by 1980.

An estimated 600,000 lines of programming code reside on the 3300 according to a survey of academic computing made eight months ago. Several requests have gone out from the Center for researchers to submit their programs for conversion. It is probable that programs submitted after March will not be completed.

The conversion project is designed to aid academic users in converting programs to the Cyber, and Computer Center staff members are available to do such conversion. Please call x2161 for more information. A form to request program conversion is on page 8 of this newsletter for your convenience.

GRIPES AND SUGGESTIONS

In its continuing search for 'TRUTH' the Center provides private communications pipelines for users to record gripes and suggestions. A manually operated Suggestion Box is located in the I/O room and the 3300 OS-3 system provides an on-line "Gripe File".

The Gripe File provides users with the ability to voice complaints and make suggestions on the improvement of Computer Center services. To gain access to the file a user simply types $GRIPE at any point during an interactive session on OS-3.

The contents of the Gripe File are reviewed daily by Computer Center personnel. Responses to problems of an immediate nature will be made directly to the user submitting the GRIPE provided a valid "return address" has been entered. Of course the consulting service is available to answer questions and will remain the best source of immediate information for most users.

Similar rules apply to the Suggestion Box items.

SPRING SERIES OF SHORTCOURSES

The Computer Center will offer a Spring series of shortcourses. The sessions will begin April 5 and will be ordered so that information required in the later sessions is presented in earlier sessions.

There is no fee, but advanced registration is required. Enrollment will be limited to the first twenty applicants. On page 9 of this issue is a registration blank. Additional registration forms are available in the Computer Center Main Office, rm 217.

All classes will be held from 3 - 4:30 p.m. on the dates listed. The Center will furnish computer job numbers for the applicants when required for the training session. User numbers will be distributed at the first meeting of the course and remain active for seven days following the last meeting. Users will need to purchase the necessary manuals for the course.

Shortcourses will be canceled if less than six participants enroll. If you have any questions, call Joanne Van Geest x2494 or JoAnn Baughman at x2161.

Schedule of Shortcourses

The Cyber shortcourses will all be held in room 223 of the Computer Center.

K-1 Introduction to KRONOS — April 5
(Beginning level)
Languages and Systems Available
Batch Processing - Control Card Formats

K-2 Cyber Editor (Intermediate) — April 7
Interactive Computing under KRONOS 2.1.2

K-3 Magnetic Tapes and Interchange — April 11
Considerations, Tape Formats, Reading and Writing Tapes, Tapes from 3300 to Cyber, Tapes from Cyber to 3300

K-4 Loaders, FTN Overlays and Associated Problems — April 13

K-5 Submit Jobs, Procedures Files — April 18

K-6 Introduction to SPSS — April 19
The Statistical Package — April 20
for the Social Sciences — April 21
is a self-contained problem oriented language for the analysis of statistical samples. The control card for using SPSS, local differences and various kinds of analysis available through SPSS will be discussed.

K-7 Cyber Graphics (3 hours) — April 25
The graphics software on — April 27
the Cyber will be demonstrated and discussed.

K-8 Cyber Application Software — April 26
(3 hours) — April 28
IMSL contains routines which perform the analysis of experimental design data, basic statistics, differential equations, Eigenvalue, Econometrics, Linear equations, Interpolation, approximation and smoothing.
GPSS
GASP — Simulation Languages
Simscript

K-9 SIPS (Beginning) — April 12
(3 hours) — April 14
This course includes two hours of instruction for computer novices or participants with limited statistical background.

TEST SCORING SERVICE

If you are a faculty member at OSU or some other institution, you may find the Computer Center's Test Scoring System useful.

Instructors who administer their tests with our special answer sheets for optical scanning may receive any or all of the following computer listings:

1) Alphabetic class listing of student scores including class score statistics;
2) Listing by social security number for public posting of scores;
3) Class listing in order by score (ranked from high to low);
4) Individual student printouts comparing student responses with correct answers;
5) Gradebook printout showing each student's score for each test given during the term, as well as a cumulative term score; and
6) Item analysis to give the instructor information on the quality of the test, item by item.

The listings are generally ready within 24 to 48 hours of the time the tests are delivered to the Center. (Special rush service is available if faster turnaround is necessary.)

The cost of scoring varies with the class size, test size, and type of output desired. (Most tests cost $5 to $15 to be scored.) Instructors who take advantage of this service generally agree that the speed, accuracy, and completeness of the test scoring and analysis procedure more than justify the cost - especially for larger classes.

The system is flexible and offers many options which haven't been mentioned here. If you want to know more, write or call Sue Mills or George Beekman, Computer Center, x2494.

1977 WINTER MEETING OF ADCIS

The 1977 Winter Meeting of the Association for the Development of Computer-Based Instructional Systems (ADCIS) will be held in Newark, Delaware, February 22-24, 1977. For further information, contact the conference host Fred Hofstetter, Department of Music, University of Delaware, Newark, DL 19711, (302) 738-2497.

The Association for Development of Computer-Based Instructional Systems (ADCIS) is an international, not for profit, organization with members throughout the U.S., Canada and Europe representing elementary and secondary school systems, colleges and universities, business and industry, as well as military and government agencies. (Formerly known as ADIS.)

The purposes of this organization are to:

1) Advance the investigation and utilization of computer-based instruction (CAI) and/or (CMI)
2) Promote and facilitate the interchange of information, programs and materials in the best professional and scientific tradition
3) Reduce redundant effort among developers
4) To specify requirements and priorities for hardware and software development, and encourage and facilitate their realization.

An informative newsletter is published six times a year so that members may keep up-to-date with the activities of other ADCIS members and with other CAI installations throughout the world. In addition, the newsletter provides a bibliography of current literature relating to computer-assisted instruction. Its columns are open to both members and nonmembers for communications of interest to other readers in the field of CAI/CMI.

Individual Membership is available to anyone who supports the purposes of this organization. Dues for those persons affiliated with an Institutional or Associate Member will be $5 per year (U.S. and Canada), and $15 per year (foreign). Individual membership dues for those persons not affiliated with an Institutional or Associate Member shall be $10 per year (U.S. and Canada) and $20 per year (foreign). OSU is an Institutional Member.

For further information and membership, contact:

Joan Hayes
Computer Center-Bond Hall
Western Washington State College
Bellingham, WA 98225

DIAL-UP ACCESS TO OS-3 AND CYBER

Phone Number	OS-3	CYBER	Data Rate	Vicinity
754-3761	X	X	110	Corvallis
754-3781	X	X	300	Corvallis
229-3121	X	X	110	Portland
229-3116	X	X	300	Portland
754-4111	X		110	Corvallis
754-3651	X		300	Corvallis
229-3106	X		110	Portland
229-3101	X		300	Portland

Please fill out top part only and return entire form to Jo Ann Baughman.

FACULTY APPLICATION

3300 Conversion Project

NAME:_____ DATE:_____

DEPARTMENT:_____ Phone Number:_____

PROGRAM NAME:_____

Attached: ___ Program Listing ___ Program Source (required)

___ Program Abstract ___ Program Documentation ___ Sample Data

NOTE: We REQUIRE only the program source deck - this can be in the form of cards or a public file on the 3300. It would also be helpful to have sample data to test with for comparison of 3300 runs.

Computer Center Use Only

Project Code:_____ Language:_____

Programmer Assigned:_____ Lines of Code:_____

Date Assigned:_____ Difficulty Level:_____

Estimated Conversion Time:_____

Tasks to be Completed:

___ Convert Program to CYBER

___ Sample Run and User Instructions

___ Program to ANSI

___ Write Technical Documentation

___ _____

(To be completed at end of conversion)

The program runs to my satisfaction. The following documents have been turned over to me:

___ Program Listing

___ Source Code: ___ Cards ___ Mag Tape

___ Instructions for use on CYBER with CYBER sample run

Signature:_____

Date:_____

Computer Center

1977 Spring Term Shortcourses

Please check the courses that you wish to attend. These are limited to the first 20 applicants per session. There are no charges or registration fee for these shortcourses.

Name:_____ Phone:_____

OSU Department:_____
or
Home Address:_____

_____

All classes are from 3:00 p.m. to 4:30 p.m. in room 223 of the Computer Center.

KRONOS

☐	1. Introduction to KRONOS (Beginning level)	April 5
☐	2. Cyber Editor (Intermediate level)	April 7
☐	3. Magnetic Tape and Interchange	April 11
☐	4. Loaders, FTN Overlays and Associated Problems	April 13
☐	5. Submit Jobs, Procedure files	April 18
☐	6. Introduction to SPSS (4 hours) (3-session sequence)	April 19, 20, 21
☐	7. Cyber Graphics (3 hours)	April 25, 27
☐	8. Cyber Application Software (3 hours) (2-session sequence)	April 26, 28
☐	9. SIPS (Beginning level) (3 hours) (2-session sequence)	April 12, 14

Please return to:

Joanne Van Geest
Milne Computer Center
Oregon State University
Corvallis, OR 97331

*** If you do not hear from us, consider yourself registered for the classes you have checked.

To avoid the cost of returned or undeliverable mail, we are attempting to correct our Newsletter mailing list. You must return this form in order to continue to receive the Newsletter.

The name on the label attached is as it appears on our list. If there are any alterations, please indicate below and return this form to:

DO YOUR WANT TO CONTINUE TO RECEIVE THIS NEWSLETTER? IF SO --

RETURN FORM BELOW.

Place
Stamp
Here

Sue Mills
Milne Computer Center
Oregon State University
Corvallis, OR 97331

(Fold here first.)

_____ Retain the name and address as on the label

_____ Remove the entire entry

_____ Change the entry as indicated below:

_____
(Name)

_____
(Address)

_____
(City) (State) (ZIP)

***If no reply is received by March 25, 1977 the entry will be removed from the list.

Oregon State University
Computer Center
Corvallis, OR 97331

OREGON STATE UNIVERSITY
COMPUTER CENTER NEWSLETTER

Corvallis, Oregon
(503) 754-2494

Volume XII, Number 2
March/April, 1977

Director: Thomas L. Yates

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WARNING!

OUR JANUARY/FEBRUARY ISSUE INCLUDED A FORM (INSIDE BACK COVER) FOR USERS TO RE-CONFIRM THEIR DESIRE TO CONTINUE RECEIVING THE NEWSLETTER. BEGINNING WITH THE NEXT ISSUE WE WILL RESTRICT MAILING TO THOSE 'SUBSCRIBERS' WHO HAVE RECONFIRMED.

GENERAL INFORMATION

CYBER TO SWITCH TO NOS

A tentative decision has been made to convert Cyber operations to the Network Operating System (NOS) in September. Considerable study has been given the implications of this change, and it has been concluded that the long term gain of system stability outweighs the short term inconvenience.

In converting to NOS, users will not need to reconstruct files. All but a few programs will recompile under NOS with no change. The only program changes will be in some special carriage control characters for the line printer. There will be changes in the Job Control Language needed to set up a run.

Before finalizing this decision it will be reviewed with the Academic Users Council and the Computer Committee. At those meetings we will discuss the alternative of continuing to rely on KRONOS, which CDC is no longer supporting.

To learn the current status of NOS conversion planning select the NOS option under the HELP package.

NEW RATES COMING

A study has been underway for several weeks which is expected to result in a revised rate structure for Computer Center services. This is the first time that an in-depth, cost accounting analysis has been performed on the Center's rates, and some fairly significant changes can be expected beginning July first. Since we are a self-sustaining service unit the total income from user's jobs must cover costs.

The results of the study will be reviewed with the Academic Users Council early in Spring term. The revised rates will be published and submitted to the OSU Business Office which will schedule a public hearing in June.

HOLIDAY SCHEDULE

Memorial Day

The Computer Center will be closed Memorial Day, May 30, 1977.

July 4

The Computer Center will be closed July 3 and July 4 (Sunday and Monday) for the July 4th holiday.

SOFTWARE

CYBER COMPLOT NEWS

New CYBER Users' Manual: New documentation written specifically to describe the CYBER version of the COMPLOT library is under development and planned for release during the early part of summer term 1977. This manual will include detailed descriptions of all available subroutines and functions, as well as numerous examples, thereby serving as the definite reference for CYBER plotting.

New Subroutines: Two new subroutines have been added to the CYBER COMPLOT library recently. The first, called AXISL, will draw and label Cartesian, log-log, or semi-log axes and is similar but not identical to the subroutine of the same name available under OS-3. Special documentation describing the CYBER AXISL will be available in MCC 142 until the new CYBER COMPLOT User's Manual is published this summer.

A second new subroutine, TKTYPE, has been added to help deal with the rapid growth that has occurred recently in models and types of Tektronix interactive terminals available to the user community. The format of the call is as follows:

```
CALL TKTYPE(model)
```

where model is the Tektronix identification number (4002, 4006, 4010, 4012, or 4014). Users are encouraged to use this subroutine in preference to subroutine TK4010 or subroutine TK4014 because the latter two lack flexibility and will ultimately be deleted from the library. If the terminal model number is handled as a variable which is read in at execution time and then used as the parameter in a call to TKTYPE, no change or recompilation of programs will be necessary as new models come on the market or become available to the user. CYBER COMPLOT will be modified to handle these new terminal models as demand occurs. In addition, it is presently intended that the default Tekterminal type will change from 4002 to 4010 with the introduction of NOS. Thus, all users of Model 4002 Tekterminals should plan on incorporating a call to TKTYPE in their programs before that time. Additional details will be available in the new CYBER COMPLOT Users' Manual discussed above, and, as always, the consultants are available to respond to questions and problems.

SELECTIVE NEWSLETTER INDEX: 1/72-1/77

An index has been compiled by the Consulting staff to make important information in past newsletters more readily available to Computer Center users.

Most of the articles listed in the index contain useful information not found in the Computer Center User's Manual, the Cyber How-To, or other OS-3 and Cyber Manuals.

The index will be updated regularly by the consulting staff. Additions, corrections, and the suggestions for the index should be referred to the consulting office, room 150 ext. 3474.

The current version of the newsletter index is available on OS-3 by typing HELP, NEWSLETTER,INDEX.

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$UBACKUP (OS3)	11	4	3
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*CHELP (OS3)	8	6	6
*HI (OS3)	8	5	8
*INDEX (OS3)	7	3	12
*LINEUP (OS3)	7	3	13
*SCOOP (OS3)	8	5	8
*SIMCMP (OS3)	7	4	6
*SUMMARY--FILE EXAMINATION ROUTINE (OS3)	9	1	4
*SYSFLOW--SYSTEM FLOWCHART ROUTINE (OS3)	9	3	8
*TIMER (OS3)	10	6	3
*TYPO (FORMERLY *DOCUMENT) (OS3)	11	4	4

LINK CARD OBSOLETE

With the release of the NOS operating system (currently scheduled for Fall 1977), the LINK control card will no longer be available.

Unfortunately, some Computer Center documentation shows the use of LINK at a terminal for loading programs with libraries. These procedures should be modified to use the standard loader (Cyber Loader) as follows:

To compile, load and execute a program that uses COMPLOT plotting routines using LINK:

```
FTN.
ATTACH,COMPLOT/UN=LIBRARY.
LINK,P=COMPLOT,X.
```

For batch jobs this should be replaced by:

```
FTN.
ATTACH,COMPLOT/UN=LIBRARY.
LIBRARY(COMPLOT)
LGO.
```

At a terminal the procedure would be:

```
FTN,I=PROG,L=OUT
ATTACH,COMPLOT/UN=LIBRARY.
X,LIBRARY(COMPLOT)
LGO.
```

(*NOTE: The* "X," *in front of the* LIBRARY *card is necessary at a terminal to avoid confusion with the* TELEX LIBRARY *command which gets a primary file from the* LIBRARY *user number.*)

Up to three local files can be designated as a "Global Library Set" by the LIBRARY card. The specified libraries will be used for all future loads until the user issues a new LIBRARY card or logs off. Note that a LIBRARY card clears the previous "Global Library Set" so that if more than one library is needed, they must all appear on one card.

The LINK control card provides for production of a load map on a specified file name through the use of the L and LO parameters. To obtain a loader map using the Cyber Loader, the LDSET card must be used. Unfortunately, a load sequence of more than one card cannot be entered at a terminal. The sequence of Load cards must be put on a file with "." or ")" ending each line as in Batch, and then executed by typing a "-" followed by the name of the file.

For example, to get a full map we could use:

Contents of file L:

```
LDSET(MAP=SBEX/OUT)
LGO.
```

Then to load and execute the program, type:

```
-L
```

The map will be written on local file OUT.

For additional information on the Cyber Loader see the CDC Cyber Loader Reference Manual (60344200) or contact the Consultant in MCC 150 (ext. 3474).

IMSL LIBRARY

The International Mathematical and Statistical Library (IMSL) is now available on the Cyber 73 system. This article explains what IMSL is and how it is used. Complete documentation is available in the Computer Center.

What is IMSL?

IMSL is a collection of over 400 FORTRAN subprograms offering many capabilities in applied mathematics and statistics. These routines are highly accurate and generally embody the latest technology in numerical analysis.

What are the advantages over other systems?

Numerical analysis is fraught with pitfalls. Even a familiar problem like fitting a curve to a set of data points can be tricky. Elementary methods of solution can lead to great inaccuracies in the results. The advantage of IMSL is that all routines were designed and coded by experts and all are thoroughly tested and completely documented. They are regularly maintained, so they are always up-to-date, and they are fully supported by the Computer Center and by the IMSL Corporation of Houston. In short -- they are reliable.

Where is the documentation?

In the Computer Center Main Office there are two volumes of documentation. Photocopies of documentation for individual routines can be obtained for the cost of reproduction.

How is it used?

The easiest way to use IMSL is to attach a system permanent file containing the object code for all the routines. This section explains how to do this; the following section explains how to get your own copy of the FORTRAN code for an IMSL routines.

First, of course, you must determine which routine you need. Each subroutine has a name which is six or fewer characters in length. The first letter of the name denotes the general type of routine it is: for example, B for Basic Statistics; or F for forecasting, econometrics and time series. The table of contents and the quick index in the documentation can be used to locate the particular routine needed.

Second, you must write a FORTRAN program to call the IMSL routine according to the directions given in the documentation. With a few exceptions, IMSL routines do not do any input or output. It is up to the user to incorporate them into his own program. Thus, the routines may be

thought of as "building blocks", which do the difficult parts of the computation.

Finally, you compile and execute your program. There are two special control cards to include in the job:

```
ATTACH(IMSL)
LIBRARY(IMSL)
```

These can be placed anywhere in the job before the LGO control card. For example,

```
JOB,BN1234567X.
ATTACH(IMSL)
LIBRARY(IMSL)
FTN.
LGO.
7/8/9
  PROGRAM XXX(INPUT,OUTPUT)
    .
    .
    .
  CALL MDGAM (X,P,PROB,IER)
    .
    .
    .
  END
7/8/9
  [data]
6/7/8/9
```

In this example, MDGAM is an IMSL routine (that computes the gamma probability distribution). The user simply calls it in his main program. The function is then automatically loaded from the IMSL library.

That's all there is to it.

```
JOB,BN1234567X,MT1.
GETDECK(PUNCH=MDBETA,MDGAMMA,UERTST)
6/7/8/9
```

As another example, the following job shows how to get the source code for the IMSL routines BEMMI and UERTST, write it to the file COMPILE and then execute it along with a user-supplied FORTRAN program.

```
JOB,BN1234567X,MT1.FTN,A.
GETDECK(COMPILE/R/NOEOR=BEMMI,UERTST)
FTN(I=COMPILE,OPT,A)
LGO.
7/8/0
  PROGRAM XXX(INPUT,OUTPUT)
  ...
  END
6/7/8/9
```

In this example, the /R causes the COMPILE file to be rewound after GETDECK finishes. The /NOEOR causes the two IMSL routines to be written to the COMPILE file with no intervening end-of-record marks.

RJE UNIT TO BE INSTALLED

The Computer Center has ordered a Remote Job Entry terminal to be installed in the next few weeks. The DATA 100 model 78 will have a 300 line/minute printer and 300 card/minute reader plus a nine track tape drive. It will be used for accessing OSU computers, the Data Services Division Honeywell computer, and non-state systems such as the National Center for Atmospheric Research at Boulder.

The Data 100 will transmit at speeds up to 4800 baud. It will include emulators for CDC 200 UT, IBM 2780 and 3780, and Honeywell protocol.

SIPS CONVERSION

In the continuing effort to convert software from the 3300 the Center has embarked on a cooperative effort with the Statistics Department to develop a transportable version of SIPS. The project's goal is to implement SIPS on the Cyber in a form which will be readily transportable to other computers. At the same time it is expected that improvements will result in the command structure and in the system's ability to handle large data sets.

The Cyber implementation is targeted for completion by Fall term 1978.

OS-3 V6.Ø

As advertised in our January/February Newsletter, a new release of OS-3, version 6.Ø, was made on April 3, 1977. This new release has one major change involving system file directories. Users may now receive up-to-the-minute information about their file directories, instead of the one-day delay of previous OS-3 systems.

Along with this change, a new directory printout program has been developed. Because it is so different from the previous directory program the name has been changed from DIRECTORY to DIR to remind users of the change. DIR allows several new parameters and options. Users may obtain a detailed explanation of parameters by typing HELP,DIR from any logged-on OS-3 terminal.

NEW FEP SOFTWARE

In the near future, a new version of the Front End software system will be released. A major bug being fixed is one which allowed KRONOS to *grab* a user who was already logged onto OS-3. This will no longer happen, however, you may still get the logon header from KRONOS if one was waiting to come out when the system is brought up. Do not be alarmed if this happens, as it will not upset the program running on OS-3. You will still be connected to OS-3.

TEKTRONIX DEMONSTRATION

The Tektronix Corporation display cruiser will be at the Computer Center on Monday, May 9. It will be parked on the east side of the building and be open for demonstrations from 1:00 p.m. to 4:00 p.m. Terminals to be displayed will be the entire 4000 series graphics terminals, the 4051 and 4081 intelligent terminals, the 4662 x,y plotter, the 4631 graphics hardcopy unit and the video hardcopy unit.

JOB SET UP FOR BMD, GASPIV, AND IMSL

BMD - Biomedical computer programs

```
<JOBID>,CM70000,T100. <user's name>
USER,<user number>,<password>.
GET,BMDXXX/UN=LIBRARY,PN=SYSTEM2.
BMDXXX.
7/8/9
  PROBLEM
    .
    .
    .
    [PROBLEM DECK]
    .
    .
    .
  FINISH
7/8/9
6/7/8/9
```

To obtain a particular BMD program, be sure to include the PN parameter in the GET card above. The old form

```
GET,BMDXXX/UN=LIBRARY.
```

will not be available in two weeks.

GASPIV - A FORTRAN based simulation language

BATCH JOB, FORTRAN SOURCE AND DATA ON CARDS

```
(JOBID),CM70000,T100.  (USER'S NAME)
USER,(USER NUMBER),(USER PASSWORD).
FTN.
GET,G4LIB/UN=LIBRARY.
LDSET(LIB=G4LIB)
LGO.
7/8/9
  PROGRAM (PROGRAM)(INPUT,OUTPUT,TAPE5=
       INPUT,TAPE6=OUTPUT)
       .
       .
       .
    [FORTRAN SOURCE DECK FOR USER WRITTEN
            SUBROUTINES]
       .
       .
       .
  END
7/8/9
       .
       .
       .
    [GASPIV DATA DECK]
       .
       .
       .
6/7/8/9
```

BATCH JOB, FORTRAN SOURCE AND DATA ON FILES.

```
(JOBID),CM70000,T100.  (USER'S NAME)
USER,(USER NUMBER),(USER PASSWORD).
GET,(USERSUB).
FTN,I=(USERSUB).
GET,(DATA).
GET,G4LIB/UN=LIBRARY.
LDSET(LIB=G4LIB)
LGO,(DATA).
6/7/8/9
```

USING GASPIV FROM A TELETYPE, FORTRAN SOURCE AND DATA ON FILES.

```
BATCH,70000
$RFL,70000.
/EDIT,GASP
 BEGIN TEXT EDITING.
? A
 ENTER TEXT.
? #GASP.
? GET,F.
? FTN,I=F,L=LP.
? GET,D.
? GET,G4LIB/UN=LIBRARY.
? LDSET(LIB=G4LIB)
? LGO,D,LP.
? BANNER(LP)(USER'S NAME).
? DISPOSE,LP=PR.#
 READY.
? END
 END TEXT EDITING.
$EDIT,GASP.
/CALL,GASP(F=USERSUB,D=DATA)
 YOUR OUTPUT ID IS  T300053X
```

NOTE: All underlined words and characters in the above are typed by the computer. USERSUB and DATA are the user written GASPIV subroutines and GASPIV data, respectively.

OBTAIN COPY OF GASPIV COMMON SOURCE STATEMENTS.

```
       .
       .
       .
GET,G4COM/UN=LIBRARY.
       .
       .
       .
```

IMSL - International Mathematical and Statistical Library.

To compile and execute a FORTRAN program which accesses subroutines in IMSL library:

```
<JOBID>,CM70000,T100. <user's name>
USER,<user number>,<password>.
ATTACH,IMSL/UN=LIBRARY.
FTN.
LDSET(LIB=IMSL)
LGO.
7/8/9
     .
     .
  [FORTRAN SOURCE deck which accesses
     IMSL library]
     .
     .
7/8/9
6/7/8/9
```

The source code of an IMSL library routine is available to the user on OSU campus for research and instructional purposes. The user should be aware of the fact that obtaining the source requires an expensive computer job. Make sure that it is really necessary to obtain the source. Note that IMSL software may not be transferred to other computers without IMSL's specific permission.

USER OPERATIONS & SERVICES

STAFF TERMINAL ROOM

The Computer Center and the Statistics department have jointly acquired Home Economics Room 5 for a staff terminal room and for instruction. The room has been partioned to separate the staff terminals from the instructional facility. Access to the staff terminal room is from the Northeast side of the Home Economics building. There is an outside door leading into Room 5 and provides access to the staff terminal area without disturbing classes in the instructional area. Initially the staff terminal room will be equipped with at least two teletype terminals, a Tektronix graphics terminal and a keypunch.

The room is scheduled to be open on the same schedule as the Home Economics Building. At present that schedule is:

Monday-Thursday	7:30 a.m. - 10:00 p.m.
Friday	7:30 a.m. - 6:00 p.m.
Saturday	7:30 a.m. - noon

The Computer Center will have keys to be checked out to the staff terminal room during times when the building is locked. To check out a key the staff member or graduate student will have to leave his or her faculty or student ID card with the clerk at the I/O desk and the card will be returned when the key is checked back in.

COMPUTER CENTER VIDEOTAPE SERIES

New users are encouraged to take advantage of the videotape showings on the OSU Computer system. Spring Term 1977 schedule is as follows:

"Introduction to OS-3"

April 11-15	10:30 a.m.
April 11-18	10:00 p.m.

"Introduction to FORTRAN"

April 18-29	10:30 a.m.
April 19 - May 4	10:00 p.m.

All showings are over Cable Channel 5 and may be watched in Kidder 108J. Morning sessions are Monday through Friday; evening sessions are Monday through Thursday.

GRIPES AND SUGGESTIONS

In its continuing search for 'TRUTH' the Center provides private communications pipelines for users to record gripes and suggestions. A manually operated Suggestion Box is located in the I/O room and the 3300 OS-3 system provides an on-line "Gripe File".

The Gripe File provides users with the ability to voice complaints and make suggestions on the improvement of Computer Center services. To gain access to the file a user simply types $GRIPE at any point during an interactive session on OS-3.

The contents of the Gripe File are reviewed daily by Computer Center personnel. Responses to problems of an immediate nature will be made directly to the user submitting the GRIPE provided a valid campus "return address" has been entered. Of course the consulting service is available to answer questions and will remain the best source of immediate information for most users.

Similar rules apply to the Suggestion Box items.

OPERATING STATISTICS

		Jan.	Feb.
Batch Logons	OS-3	9892	11361
Batch Logons	Cyber	10149	17883
Terminal Logons	OS-3	22126	31889
Terminal Logons	Cyber	9345	12537

SPSS UPDATE AVAILABLE

The Version 6.5 update on SPSS is available at MCC 142 for 50¢.

EDUCATIONAL ACTIVITIES

TEST-SCORING INSTRUCTOR'S HANDBOOK

The instructor's handbook for the OSU Computer Center Test-Scoring Service is at the print shop and should be available for distribution soon. Instructors who are currently using the service will receive copies of the handbook via campus mail by about April 15.

Additional copies of the handbook are available for examination by instructors interested in learning about the Test-Scoring Service. If you would like to receive a copy contact Sue Mills, x2494.

SEMINAR ON TEST-SCORING SERVICE

The Computer Center is once again offering a free seminar to introduce faculty members to its Test-Scoring Service. This service makes it possible for instructors to have objective classroom tests machine scored quickly, accurately, and inexpensively. Results are available in many forms to suit individual instructors' needs:

1) Alphabetic class listing of student scores including class score statistics;
2) Listing by social security number for public posting of scores;
3) Class listing in order by score (ranked from high to low);
4) Individual student printout comparing student responses with correct answers;
5) Gradebook printout showing each student's score for each test given during the term, as well as a cumulative term score;
6) Item analysis to give the instructor information on the quality of the test, item by item.

Instructors who attend the seminar will have a chance to tour the test-scoring facilities, examine sample printouts, discuss the procedures involved in using the service, and learn how to use the item analysis to improve the effectiveness and fairness of their tests.

This one-hour seminar will take place at 2:30 p.m. on Friday, April 22, 1977 at the Computer Center Conference Room (MCC 223). Instructors planning to attend are asked to call Sue Mills or George Beekman at x2494 by April 21, 1977 to reserve a seat.

FACULTY WORKSHOP TO BE HELD SEPTEMBER 12-16, 1977

Oregon State University Computer Center will again sponsor a Faculty Workshop September 12-16, 1977. The workshop is intended for all who are engaged in undergraduate education, including universities, four-year colleges, and two-year colleges. The workshop will provide an opportunity for college and teaching faculty to increase their skills related to the use of the computer. It will provide a regional forum for the presentation, discussion, and dissemination of ideas, programs, and other curricular matters dealing with the instructional use of computers. Those attending this workshop need not have a background in computers. An attempt has been made to meet the needs of those with no background as well as those who have used the computer in some way. The purpose of this workshop is threefold:

1) To provide basic training in the development of computer skills in FORTRAN, BASIC, etc., on the OS-3 time-sharing system and CYBER 73 operating system.
2) To provide training in the development of user skills which will facilitate use of the computer within an academic area. These include the use of the plotter, files, *CATALOG programs, OSCAR, SPSS, ARAND, SIPS and Library programs for both the CYBER 73 and the 3300.
3) To provide instruction and examples of the in-class use of computer curriculum modules in specific disciplines.

If you are interested in receiving more information or in attending this workshop, please return the form on page 9.

STATEMENT OF INTEREST FOR THE FALL COMPUTER WORKSHOP

(NOT A REGISTRATION FORM)

Oregon State University

September 12-16, 1977

NAME: _____ DATE: _____

INSTITUTION: _____

DEPARTMENT: _____

SUMMER MAILING ADDRESS: _____

(If different) _____

For scheduling purposes, please indicate the sessions you would be interested in attending:

OPERATING SYSTEMS: ☐ CYBER 73 ☐ OS-3 (CDC 3300)

EDITING AND INTERACTIVE COMPUTING: ☐ CYBER 73 ☐ CDC 3300

FORTRAN: ☐ CYBER 73 ☐ CDC 3300

☐ Beginner ☐ Intermediate ☐ Advanced

STATISTICAL SYSTEMS: ☐ SPSS (Cyber 73) ☐ SIPS (CDC 3300)

SIMULATION LANGUAGES: ☐ EXPERSIM ☐ GPSS

GRAPHICS: ☐ CYBER 73 ☐ OS-3 (CDC 3300)

INTERACTIVE LANGUAGES: ☐ BASIC ☐ OSCAR ☐ APL

MISCELLANEOUS:

☐ Computer Assisted Instruction ☐ IMSL

☐ ARAND (Time Series Analysis and Numerical Modeling)

☐ Other: _____

There will be a nominal charge for this workshop.

Please return to the address below by JUNE 1, 1977.

Joanne Van Geest
Milne Computer Center
Oregon State University
Corvallis, OR 97330

Oregon State University
Computer Center
Corvallis, OR 97331

OREGON STATE UNIVERSITY
COMPUTER CENTER NEWSLETTER

Corvallis, Oregon
(503) 754-2494

Vclume XII, Number 3
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Director: Thomas L. Yates

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GENERAL INFORMATION

ASSISTANT DIRECTOR APPOINTED

Dr. Chris Calligan will be the new Assistant Director for Research and Instructional Computing starting July 1, 1977. Chris is currently Director of the Willamette Simulation Unit. He describes himself as an "inter-disciplinary engineer," having a B.S. in Mechanical Engineering from the University of Washington, an M.S. in Ocean Engineering and a Ph.D. is Electronic and Computer Engineering from OSU. He also spent seven years in the nuclear submarine service.

Partial support for the Assistant Director position will be provided by the Office of Research and the Office of Undergraduate Instruction. Under Chris' leadership the Center expects to improve its awareness of and responsiveness to the needs of the academic community in computing services.

CYBER USAGE INCREASING

A significant shift has occurred in computing workload from the 3300 to the Cyber this year. In comparing the six-month period, October, 1976-March, 1977, with the preceding year, the Cyber usage increased 66% and 3300 usage decreased 21%. This is strong evidence that the conversion project is working. The Center has converted 419 programs for faculty and staff users (that's over 150,000 lines of code). We have also converted over 200,000 lines of Center-supported applications software from the 3300 to the Cyber.

Another reason for the increase in Cyber usage is the improved responsiveness of the system to interactive users. Hardware upgrades during the past year have nearly doubled the effective capacity to serve on-line users. Systems converted from the 3300 to the Cyber by Center staff have realized operating cost savings of 10% - 70%. With a 25% reduction in Cyber mass-storage charges planned in July, the Cyber should become even more cost effective.

HOLIDAY SCHEDULE

The Computer Center will be closed July 3 and July 4 (Sunday and Monday) for the July 4th holiday.

SUMMER OPERATING HOURS

Due to reduced activity during the summer months and energy concerns, from 13 June to 12 September the Computer operating hours will be as follows:

Mondays through Fridays - 0700-0200

Saturdays - 0730-1700

Sundays - 1200-1800

Third shift rates, therefore, will apply only from 2300 to 0200 on week nights.

If a user has long jobs which will exceed this schedule, he may contact Dan Berg, Operations Supervisor (ext. 3584), who will make the necessary arrangements to accomodate his needs.

SOFTWARE

IMSL-SOLVING DIFFERENTIAL EQUATIONS

This is to show how to use IMSL to solve a set of differential equations of the form

$$dy_1/dt = f_1(t,y_1,y_2,\ldots,y_n)$$

$$dy_2/dt = f_2(t,y_1,y_2,\ldots,y_n)$$

$$\vdots$$

$$dy_n/dt = f_n(t,y_1,y_2,\ldots,y_n)$$

with given initial conditions. This is a system of differential equations of the first order. However, any set of differential equations can be put into such a form by simply introducing new variables, as the following sample demonstrates.

A particle is dropped from rest at time zero, subject to the force of gravity and air friction, the latter being proportional to the square of the particle's velocity. What is its velocity and total distance traveled at times 1.1,0.2,...,1.0 ?

This amounts to solving the differential equation:

$$d^2y/dt^2 = g - r(dy/dt)^2, y(0) =$$

$$(dy/dt(0)) = 0.$$

This differential equation of the second order can be rewritten as a system of two differential equations equations of the first order by defining new variables:

$$y_1 = y \quad , \quad y_2 = dy/dt.$$

Then,

$$dy_1/dt = y_2 \quad , \; y_1(0) = 0$$

$$dy_2/dt = g - ry_2^2 \; , \; y_2(0) = 0$$

Here is how to use the IMSL subroutine DREBS to solve these equations.

```
      EXTERNAL DFN
      REAL Y(2), R(2), S(2), WK(58)
      DATA T,Y,S,H,HMIN,EPS/5*0.0,0.1,1.OE-
          3,1.OE-6/
      DATA N,JM,IND,JSTART/2,6,2,0/
C
      PRINT 30
      PRINT 40 , t,y
C
      DO 20 I = 1, 10
        B = 0.1 *FLOAT(I)
   10   IF (H.GT.B-T) H = B - T
        CALL DREBS (DFN,Y,T,N,JM,IND,
     1              JSTART,H,HMIN,EPS,R,S,
                    WK,IER)
        IF (IER.NE.0)STOP
        IF (T.LT.B-HMIN)GO TO 10
          PRINT 40 , T ,Y
   20 CONTINUE
C
   30 FORMAT (10X,26H TIME  DISTANCE VELO-
              ITY,/)
   40 FORMAT (5X,F10.2,2F10.5)
C
      END
      SUBROUTINE DFN(Y,Y,N,DY)
      REAL Y(2),DY(2)
      DATA G,R/10.0,1.0/
C
      DY(1) = y(2)
      DY(2) = G - R*Y(2)**2
C
      RETURN
      END
```

The resulting output is as follows:

TIME	DISTANCE	VELOCITY
0	0	0
.10	.04919	.96795
.20	.18794	1.77006
.30	.39527	2.33751
.40	.64842	2.69556
.50	.92945	2.90544
.60	1.22646	3.02317
.70	1.53232	3.08760
.80	1.84300	3.12238
.90	2.15627	3.14102
1.00	2.47092	3.15097

In the main program, Y is a two-component vector: Y(1) is distance and Y(2) is velocity; R and S are vectors as long as Y; and WK is a vector which is 29 times as long as Y. T is the independent variable; H is a step size to be used by DREBS; HMIN is the smallest step size we are willing to allow; and EOS is an error tolerance. N is the number of equations in the system; JM is a parameter specifying the maximum order of the rational approximation; IND specifies the error criterion to be used by DREBS (2 indicates relative error); and JSTART=0 means that DREBS is to take a normal step.

When DREBS is called, it takes on step of size H or less, incrementing T by the actual step taken and replacing Y with an approximation to the solution at the new value of T. It also returns a suggested value of H for the next step. Statement number 10 and the statement before statement number 20 take care of the "or less" mentioned above.

In subroutine DFN, which is called internally by DREBS, Y is the same vector as in the main program; DY is a vector of derivatives: DY(1) is the derivative of Y(1), and DY(2) is the derivative of Y(2); N is the number of equations (unused in this problem); and T is the time (unused in this problem). Any additional parameters to the problem would have to be set in DFN or passed via COMMON (we declared G=10 and R=1 in DFN).

CYBER COMPLOT NEWS

New CYBER COMPLOT User's Manual

A new manual describing the CYBER version of the COMPLOT library is in the final stages of development and is planned for release during June 1977. This manual will include detailed descriptions of all subroutines and functions which are available in the library, as well as numerous examples of correct usage. It should be invaluable to all users who generate plots on the CYBER using the COMPLOT library.

CYBER COMPLOT Moves to NOS

As announced in the March-April Newsletter, the Computer Center will be transferring operations on the CYBER from the KRONOS to the NOS operating system this summer. Although the changes in the job control language are minimal, users must recompile their programs. Thus, this seems to be an opportune time to make two long-overdue changes to default conditions associated with CYBER COMPLOT.

First, the default Tekterminal type will change from the Model 4002 (which no longer is manufactured by Tektronix) to the Model 4010. Thus, all users of Model 4002 Tekterminals should incorporate calls to subroutine TKTYPE (as described in the last newsletter) prior to recompiling under NOS. No change is necessary for users of other Tekterminal models.

The second change that will occur affects the rate of data transmission (generally referred to as the "baud rate"). The default value of this parameter will change from 300 to 2400 baud in recognition of the fact that most graphics terminals currently installed on campus use data rates of 1200 baud and higher.

Users who wish to plot at lower data rates should include a call to subroutine BAUD in their programs prior to recompiling under NOS to make the appropriate change to the default value.

Additional details will be available in the new CYBER COMPLOT User's Manual, and the consultants are available in MCC 150 (ext. 3474) to respond to questions and problems.

New Gerber Plotter Operational

The Computer Center has completed installation and testing of the GERBER 2032 flatbed plotter, and is now available for general use by the public. This plotter, dubbed the "big" GERBER, has a plotting surface that is 96 inches wide and 60 inches high, compared with the previously-operational "small" GERBER 1022 which has a plotting surface 58 inches wide and 42 inches high. The big GERBER also is outfitted with a multi-pen turret which allows pen selection under program control. CYBER COMPLOT has been modified to support these features. However, because of these differences (the actual plotting records are compatible between the two plotters), it is necessary to specify the destination GERBER plotter for which a plotting tape has been generated. The description of this procedure, and the big GERBER in general, will be available in MCC 142 until the new CYBER COMPLOT User's Manual is published this summer.

MULTITUTOR AVAILABLE ON CYBER

The Computer Center has recently received and installed on the CYBER the MULTITUTOR system for computer-based education. MULTITUTOR was originally developed at Northwestern University in Evanston, Illinois, by Dr. James Schuyler, and was modified for the KRONOS 2.1.2 and NOS 1.1 Operating Systems by the University System of Georgia Computer Network. MULTITUTOR utilizes many features of the PLATO IV language, TUTOR, while requiring only conventional terminals to author and execute computer-assisted instructional (CAI) lessons. MULTITUTOR appears to be a logical first stage in making the capabilities of the PLATO system available to local users at a reasonable cost, since lessons written in MULTITUTOR are compatible with the PLATO system.

Because only a very limited variety of courseware was received with the MULTITUTOR system, it can not at this time serve as an effective substitute for the PLATO system. However, efforts are underway to interface the Oregon State University PLATO terminal with the MULTITUTOR system on an experimental basis to facilitate the development and testing of instructional courseware at reduced cost. Even though this project has not been completed yet, MULTITUTOR is available to teletypes and Hazeltine terminals, and faculty members who are interested in learning the MULTITUTOR language or who desire to author lessons for the MULTITUTOR system (with the potential for transfer to PLATO) should contact Ted Hopkins at ext. 2953 for assistance.

JOB SET UP FOR BMD:

BMD - Biomedical computer programs

```
<JOBID>,CM100000,T100.  <user's name>
USER, <user number>,<password>.
GET,BMDXXX/UN=LIBRARY,PN=SYSTEM2.
BMDXXX.
7/8/9
  PROBLEM
    .
    .
    .
    [PROBLEM DECK]
    .
    .
    .
  FINISH
6/7/8/9
```

To obtain a particular BMD program, be sure to include the PN parameter in the GET card above.

JOB SET UP FOR A BMD-P PROGRAM

```
JOBID,CM100000,T100.<user's name>
USER,(USER NUMBER),(USER PASSWORD).
GET,BMDP/UN=LIBRARY.
CALL,BMDP(P=BMDP7M)
7/8/9
PROBLEM
   .
   .
   .
END/
   .
   .                          BMDP deck set-up
 [data deck]
   .
   .
   .
FINISH/
6/7/8/9
```

NOTE: Programs BMD04M and BMDP7M are chosen for example. User may replace them with any other names listed in the BMD or BMDP user's manual.

BMD Documentation

The following two manuals illustrating the use of BMD and BMDP programs are available for reference use in the Computer Center room 217 and can be purchased at room 142 in the Computer Center.

1. Dixon, W.J. (Ed). BMD Biomedical Computer Programs. U. or California Press, Berkeley, 1976.

2. Dixon, W.J. (Ed). BMDP Biomedical Computer Programs, U. of California Press, Berkeley, 1975.

The BMD and BMDP manuals are supplemented by a newsletter, BMD Communications, which is issued several times per year. BMD Communications contains notices of new programs, update announcements, and discussion of the effective use of BMD and BMDP programs. Copies of the BMD Communications are on file at the Computer Center consultant.

JOB SET UP FOR GASPIV:

GASPIV - A FORTRAN-based simulation language.

BATCH JOB, FORTRAN SOURCE AND DATA ON CARDS

```
(JOBID),CM70000,T100.  (USER'S NAME)
USER,(USER NUMBER),(USER PASSWORD).
FTN.
GET,G4LIB/UN=LIBRARY.
LDSET(LIB=G4LIB)
LGO.
7/8/9
  PROGRAM (PROGRAM)INPUT,OUTPUT,TAPE5=
       INPUT,TAPE6=OUTPUT)
       .
       .
       .
    [FORTRAN SOURCE DECK FOR USER WRITTEN
            SUBROUTINES]
       .
       .
       .
  END
7/8/9
       .
       .
       .
    [GASPIV DATA DECK]
       .
       .
       .
6/7/8/9
```

BATCH JOB, FORTRAN SOURCE AND DATA ON FILES.

```
(JOBID),CM70000,T100.  (USER'S NAME)
USER, (USER NUMBER),(USER PASSWORD).
GET,(USERSUB).
FTN,I=(USERSUB).
GET,(DATA).
GET,G4LIB/UN=LIBRARY.
LDSET(LIB=G4LIB)
LGO,(DATA).
6/7/8/9
```

USING GASPIV FROM A TELETYPE, FORTRAN SOURCE AND DATA ON FILES.

```
BATCH,70000
$RFL,70000.
/EDIT,GASP
 BEGIN TEXT EDITING.
?A
ENTER TEXT.
? #GASP.
? GET,F.
? FTN,I=F,L=LP.
? GET,D.
? GET,G4LIB/UN=LIBRARY.
? LDSET(LIB=G4LIB)
? LGO,D,LP.
? BANNER(LP) (USER'S NAME).
? DISPOSE,LP=PR.#
 READY.
? END
 END TEXT EDITING.
$EDIT,GASP.
/CALL,GASP(F=USERSUB,D=DATA)
 YOUR OUTPUT ID IS T300053X
```

NOTE: All underlined words and characters in the above are typed by the computer. USERSUB and DATA are the user written GASPIV subroutines and GASPIV data, respectively.

OBTAIN COPY OF GASPIV COMMON SOURCE STATEMENTS.

```
       .
       .
       .
GET,G4COM/UN=LIBRARY.
       .
       .
       .
```

JOB SET UP FOR IMSL:

IMSL - International Mathematical and Statistical Library.

To compile and execute a FORTRAN program which has access to subroutines in IMSL library:

```
<JOBID>,CM70000,T100. <user's name>
USER,<user number>,<password>.
ATTACH,IMSL/UN=LIBRARY.
FTN.
LDSET(LIB=IMSL)
LGO.
7/8/9
     .
     .
  [FORTRAN SOURCE deck which accesses
     IMSL library]
     .
     .
7/8/9
6/7/8/9
```

The source code of an IMSL library routine is available to the user on OSU campus for research and instructional purposes. The user should be aware of the fact that obtaining the source requires an expensive computer job. Make sure that it is really necessary to obtain the source. Note that IMSL software may not be transferred to other computers without IMSL's specific permission.

PRODUCTION LOGGING MOVES

As of May 9, 1977, all production logging and test-scoring problems should be taken to room 227 of the Computer Center. Sue Mills has moved to this office to assist Terry Kelley in Production Control. Sue will still be available for any questions or problems that come up with the test-scoring system.

Test scoring forms can now be purchased in the I/O room anytime the Computer Center is open.

USER OPERATIONS & SERVICES

NEW RATES SCHEDULE

The Computer Center has recently completed an exhaustive analysis of its rate schedule. As a result of this study new rates have been proposed to go into effect on July 1, 1977. The new rates have been established in order to place the various Center services on a cost recovery basis. Exceptions are certain services which do not have sufficient usage to recover costs at a reasonable rate or services for which the demand may be excessive.

The rate changes will generally benefit interactive users and jobs which use a large amount of CPU time. Users of personnel services (keypunching, programming, etc.) and users with jobs which read or punch large volumes of cards will encounter increased costs.

The table on page 9 shows the rate changes.

OPERATING STATISTICS

	March	April
Batch Logons OS-3	10279	8255
Batch Logons Cyber	16668	11657
Terminal Logons OS-3	29784	26422
Terminal Logons Cyber	14746	11920

MAGNETIC TAPE TRANSFER BETWEEN MINI COMPUTERS AND THE CYBER

We have been receiving inquiries concerning ways in which magnetic tape can be transferred from mini computers to the CYBER for further processing and analysis. The mini computers generally have 16-bit words (8-bit characters) while the tape drives accommodate either 6 or 8 bits, plus a parity bit, per frame. Therefore, each word occupies more than one frame on the tape. In the case of 9-track tapes the words occupy two frames, while for 7-track tape the problem is more complex, requiring three frames per word. Consequently, the bit pattern must be unscrambled and packed into the Cyber's 60-bit words and then further interpreted either as binary or BCD information. The Center has acquired some experience with these problems involving certain NOVA and VARIAN computers on campus. Users with similar problems who would like to encourage formation of a central clearing house for information relating to this general area are asked to contact Ted Hopkins of the Educational and Research Computing Services group at x2953.

DISCOUNTS ON TERMINALS

If you are thinking of ordering terminals and related equipment under your grant or for your department, be sure to check first with Ron Davis (ext. 2494) at the Computer Center. Being part of the State School System, we are entitled to EDUCOM discounts on the purchase of the following terminals:

DEC writer II
Texas Instruments data terminals
Diablo Model 1610 RO Printer
ADDS 920 CRT
Omnitec 503C acoustic coupler

MORE GOOD BUYS

The Computer Center is considering upgrading its keypunch equipment from 026 models to 029 models. If you are interested in purchasing a keypunch model 026, you may take advantage of the lease credits that have been accrued by the Computer Center on these machines.

The current IBM purchase price of a model 026 is $2800. You may buy one of the Center machines for between $1000 and $1300, or only about 40% of the current price. For further information contact Ron Davis at the Computer Center, ext. 2494.

EDUCATIONAL ACTIVITIES

POLICY ON OFF-CAMPUS INSTRUCTIONAL COMPUTING

The OSU faculty Computer Committee has responsibility for allocating instructional computing funds to the departments. At a recent meeting the committee adopted the following policy regarding support of off-campus instructional computing.

> The Computer Committee recognizes the occasional need to use a computer other than those at Oregon State University for instructional computing, usually to take advantage of specialized software packages that are not available at OSU. Ideally, this can be accomplished by exchanging computer time between

the two computer centers involved. In those situations where this cannot be done, the following procedure will apply:

1. Requests will be submitted along with requests for OSU instructional computing time, except that they will be considered separately. These requests (and their approval) will be made prior to the use of the non-OSU computer.

2. The Computer Committee will consider each non-OSU instructional computing time request separately.

3. The academic department submitting the request will fund 20% of the total cost of the non-OSU instructional computing, either from departmental funds or other sources.

4. Non-OSU instructional computing will not exceed 5% of the OSU instructional computing budget during any one fiscal year.

5. The Computer Committee will not consider requests for non-OSU instructional computing if the request is made after the computing has been started.

FACULTY WORKSHOP TO BE HELD SEPTEMBER 12-16, 1977

Oregon State University Computer Center will again sponsor a Faculty Workshop September 12-16, 1977. The workshop is intended for all who are engaged in undergraduate education, including universities, four-year colleges, and two-year colleges. The workshop will provide an opportunity for research and teaching faculty to increase their skills related to the use of the computer. It will provide a regional forum for the presentation, discussion, and dissemination of ideas, programs, and other curricular matters dealing with the instructional use of computers. Those attending this workshop need not have a background in computers. An attempt has been made to meet the needs of those with no background as well as those who have used the computer in some way. The purpose of this workshop is threefold:

1) To provide basic training in the development of computer skills in FORTRAN, BASIC, etc., on the OS-3 time-sharing system and CYBER 73 operating system.

2) To provide training in the development of user skills which will facilitate use of the computer within an academic area. These include the use of the plotter, files, *CATALOG programs, OSCAR, SPSS, ARAND, SIPS and Library programs for both the CYBER 73 and the 3300.

3. To provide instruction and examples of the in-class use of computer curriculum modules in specific disciplines.

If you are interested in receiving more information or in attending this workshop, please call Joanne Van Geest at ext. 2494.

COMPUTER CENTER RATE REVISION PROPOSAL

Effective July 1, 1977

Item	Present	Proposed
CPU		
3300	$300.00/hr	$ 260.00
CYBER	306.00/hr	275.00
Terminal Connect	2.00/hr	2.05[1]
Line Printer	1.25/1000	1.15[2]
Card Reader	1.50/1000	2.50
Card Punch	3.00/1000	6.00
Mag Tape (3300)	54.00/hr[3]	65.00[3]
Plotting--Calcomp	1.20/1000[4]	2.15
--Gerber	10.00/hr	10.00[5]
Remote RJE	.625/1000	.75
File Storage--3300	.15/block	.15
--CYBER	.064/PRU	.047
Paper Tape R/P	5.00/1000[6]	10.00
Keypunch/Verifying	7.75/hr	10.75/hr
Programmer	8.00/hr	9.00/hr
Sr. Progr/ Progr. Analyst	12.00/hr	13.50/hr
Analyst	16.00/hr	19.00/hr
Sorting, Interpreting, Bursting, Deleaving	7.50/hr	10.00/hr
OPSCAN		
Instructional	.015/sheet	.02/sheet
Other	.03/sheet	.04/sheet
Digitizing	15.00/hr	15.00/hr

(Commercial rates to be 150% of University rates.)

Shift discounts for computer services: Second shift -25%
Third shift -50% on CPU
25% on all other

---

[1] 2400 baud remains at $4.50/hr

[2] CYBER line printer charges change delayed to 9/1/77

[3] Plus $.50 tape mount charge

[4] Plus $.15/foot of paper used

[5] Plus $2.00 for wet ink pen usage

[6] Plus $1.00 setup

CONSULTING QUESTIONNAIRE

The Computer Center Consulting Service is attempting to compile a list of other computer consulting services available on campus and around the state.

If your department or group offers any type of computer-related consulting for students, staff, or faculty, please take a few minutes to complete this questionnaire and return it to the Consulting Service, Milne Computer Center.

1. Department offering consulting service_____

2. Is the service available to

__undergrads __faculty __user from your dept.only

__grad student __staff __user from any department

__other(_____)

3. Is there a charge for the service? ___ Yes ___No

4. If so, please outline charges:

5. What types of consultation are available? (e.g. debugging, statistical help, departmental problem solving, beginning programming help, etc.)

6. Where is the consulting service?_____

7. What hours is the service available?_____

8. Is it available ___between terms? ____summer term?

9. Do you want this information made public? ____Yes ____No

10. Additional comments

11. Signed:_____

Oregon State University
Computer Center
Corvallis, OR 97331

OREGON STATE UNIVERSITY COMPUTER CENTER NEWSLETTER

Corvallis, Oregon
(503) 754-2494

Volume XII, Number 4
July/August, 1977

Director: Thomas L. Yates

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Directory

COMPUTER CENTER
Oregon State University

Telephone:
503-754-2494

MANAGEMENT:

Director--Thomas L. Yates
Assistant Director--Christopher C. Calligan
Manager Data Processing Systems--Anthony J. White
Manager Operations and Programming Services--Ronald A. Davis
Manager Communications and Hardware--James W. Fryklund
Manager Educational Computing Services--JoAnn Baughman
Manager Systems Software--William Hunteman
Business Manager--Michael McQueen

OFFICE SERVICES

General Information 754-2494
Job Numbers--Gayle Zandofsky. 754-3483
Billing (Accounts Receivable)--Hilary Detering. . . 754-4183
Purchasing (Accounts Payable)--Dolores Gugel. . . . 754-2638
Manuals for sale--Hilary Detering 754-4183
Newsletter--Jody Bowles 754-2494
Instructional Computing Requests--Dorrie Lemon. . . 754-2494
Unsponsored Research Grants--Dorrie Lemon 754-2494

PRODUCTION SERVICES

Card Sorting, Interpreting, etc. 754-3584
Digitizing--RJay Murray 754-4156
Input/Output Area 754-3584
   Computer Supervisor--Dan Berg
   Day Supervisor--Dale Hannon
   Night Supervisor--Clyde Webb
Keypunching and Verifying--Verna Wohlers. 754-2494
Magnetic Tape Librarian 754-3584
Optical Scanning--George Beekman 754-2494
Purged Files--I/O room 754-3584
Terminal Connection 754-2033
Testing Services--George Beekman. 754-2494
Time-Sharing Services
   CYBER 73 300 Baud 754-3781
   CYBER 73 110 Baud 754-3761

   3300 300 Baud 754-3651, 754-3536
   3300 110 Baud 754-4111

HARDWARE SERVICES

Teletype--Doug West, Gary Jarman . . .754-2455, 754-2494
Electronic Terminals--Fred Beebee, Randy Grainger . 754-2494

PROGRAMMING

All programming questions should be referred to:
Consultant 754-3474

GENERAL INFORMATION

HOLIDAY AND NIGHTTIME SCHEDULE

The Computer Center will be closed September 4th and 5th for the Labor Day holiday.

On September 12 the Center will switch from our summer operating schedule back to the regular schedule of being open all-night Monday - Thursday night.

NEW CYBER SCHEDULE AND OPERATING SYSTEM

As previously announced, Cyber operations are converting to the Network Operating System (NOS) effective September first. During July and August KRONOS users are being provided free test time on NOS prior to 10:00 a.m. Monday through Friday. A document entitled NOS Conversion Notes is available to assist users in making the transition. Questions concerning NOS should be directed to the Consulting Service in MCC 150 (ext. 3474).

Also beginning September 1, Cyber will be up for production work at 7:30 a.m. Monday-Friday. This is a change from the 10:00 a.m. starting schedule.

SUGGESTIONS

Several users have made helpful suggestions recently concerning improved operating procedures or changes to the user areas for the convience of all the users. The Center appreciates helpful suggestions and encourages others to point out areas of improvement. A suggestion box is located in the I/O room.

CREDIT REQUESTS

All credit requests must be legibly written and filled out properly. Your account may not be credited if the person that processes your requests cannot read it.

SOFTWARE

OS-3 V6.1

As advertised in our May/June Newsletter, new rates went into effect July 1, 1977. For a comprehensive list of the new rates type HELP,INFO,RATES from any logged-on OS-3 terminal. Since the change in rates affects the value of a CPU-second, and billing on OS-3 is based on the CPU second, programs (*SCOOP,*MONEY,$,etc.) which produce a dollar estimate of an account may no longer reflect the current billing rate for a CPU second. To overcome this, the control statement HI was implemented, which is similar to *HI but in a different format. After September 1, 1977 the Computer Center will only support the HI command and the others mentioned may no longer be available.

Along with this change, LABEL now allows users to equip a LUN to a hardware type using the "=" option or label a FILE with a LP,CP,PLOT, or PTP label using the ":" option. For further information type HELP,LABEL on any logged-on OS-3 terminal.

FLECS NEWS

FLECS, which stands for Fortran Language with Extended Control Structures, is both an extension to the Fortran language and a transportable preprocessor for implementing that extension. As a language, FLECS contains nine control structures not found in standard Fortran. These control structures allow the programmer to program more easily and naturally as well as allowing the use of structured programming techniques. In all other ways, FLECS is identical to Fortran. The preprocessor translates FLECS control structures into equivalent Fortran and produces a nicely formatted and indented listing which displays the logical structure of the program.

Designed by Terry Beyer of the U of O Computer Center, FLECS is easy to learn and easy to use. Since FLECS is a true extension of Fortran, the Fortran programmer who moves to FLECS need not give up features of which he is fond nor subject himself to a relearning process. FLECS is being used successfully by both beginning and advanced programming students and by professional programmers at installations throughout the country.

The OSU version of FLECS, available on Cyber for about a year, has until now been fairly slow and expensive to use. But the recent rewriting of several character-manipulation routines has streamlined the preprocessor considerably making the average FLECS program compile about three times faster than it did with the old preprocessor.

The calling sequence for the new, more efficient version of FLECS remains the same as before:

```
GET,FLECS/UN=LIBRARY
FLECS, <input>,<output>,<fout>
```

where <input> = file containing program written in FLECS (default name=INPUT)

<output> = file containing structured FLECS output from FLECS (default name = FOUT), ready to compile with the FTN command: FTN, I=FOUT,L=0,...

The current Cyber version of FLECS requires RFL 40,100 to load and 27,500 to run.

The FLECS user's manual is available for $.60 from Hilary Detering in MCC 142.

Questions or comments on FLECS should be referred to George Beekman, MCC 150, x2494.

METRO-APEX AVAILABLE ON THE CYBER

METRO-APEX, one of, if not the most complex gaming-simulation of an urban area in use today, has been converted for use on the Cyber and is in the final stages of verification and testing. The program was designed to supplement standard teaching methods, but it has become far more than an educational tool. It is a communication channel of a new level--capable of providing both the language and the forum for information transfer between persons and groups with different educational and cultural backgrounds as well as different perspectives of the urban situation.

METRO-APEX is composed of two essential components: (1) a computerized system made up of a series of integrated simulation models linked to a (2) "gamed" environment encompassing a series of interactive roles. The computerized system predicts the changes that occur in several sectors of the urban system in response to the decisions made by participants in the "gamed" environment, decisions made by persons outside the "gamed" environment (other actors whose behavior is simulated in the computer), and external pressures on the metropolitan area (also simulated in the computer).

The County of APEX is run year by year by principal decision makers performing both the mundane and extraordinary functions of their office in the "gamed" environment. Each cycle or year is condensed in time to a three-to eight-hour session during which the decision makers formulate their yearly policy. The decisions that emerge out of the "competitive--cooperative" environment of the gaming-simulation are used as priming inputs to the computer simulation. The change in the status of the urban area is calculated by the computer and returned to the decision makers as the primary input to the next cycle of action. Included in the change picture generated by the computer are selected social, economic, and physical indicators which show the magnitudes of change in key areas and a newspaper which serves as the focal point of local public opinion.

The key decision makers acting in the gamed environment include an Environmental Quality Agency with departments of air pollution, water pollution, and solid waste; politicians, planners, and administrative officers from a Central City and a County; land developers and industrialists from the private sector; and representatives from the news media and pressure groups. The politicians are responsible for the administration of their respective jurisdictions and for the formulation and implementation of various programs to upgrade the social status of their constituents. The planners serve as aides to the politicians and represent the major long-range coordinating force in the community. The environmental control officers are charged with the task of monitoring and alleviating the pollution problems. The private business sectors operate to foster their own interests and frequently those of the community. Pressure groups and news media advocate various positions on community issues. Generally, each decision maker finds it to his advantage to coordinate and/or compete with other players in his efforts to promote his strategies.

In general, people have great difficulty understanding the dynamics of a complex system through traditional means. Gaming-simulation offers participants the opportunity to study, work with, and discuss the structure of such a system and to experiment with intervention strategies designed to change that structure. When used as a teaching device, the strength of a gaming-simulation such as METRO-APEX lies in the opportunity afforded participants for involvement in the system. When compared with the passive observation of the system offered by traditional methods, this approach has had great success.

It is hoped that in the not-too-distant future it will be possible, with the cooperation of various departments on campus, to conduct a full-scale METRO-APEX workshop at Oregon State to afford local faculty and staff the opportunity to gain the educational experience and benefits which this gaming-simulation can provide.

MINITAB II AVAILABLE ON THE CYBER

MINITAB II, a general-purpose statistical computing system somewhat similar to SIPS, is now available for use on the Cyber. This system, which was developed at Pennsylvania State University, was designed especially for students and researchers who have had no previous experience with computers. It is easy to use, very flexible, and fairly powerful. Like SIPS, it is designed for small to moderate sized data sets which can be stored in central momory. MINITAB II can be accessed and executed as follows:

```
ATTACH(MINITAB/UN=LIBRARY)
MINITAB.
```

In order to use MINITAB II, a user number must be validated for a field length of at least 105000 octal words. This requirement will be greatly reduced when the system is installed on NOS.

Manuals describing MINITAB II are available from the Computer Center Business Office in MCC 142.

ECS SIMULATOR

An Extended Core Storage (ECS) simulator is available on the Cyber which allows programs which read and write data in ECS to execute properly as written. The simulator satisfies calls to the subroutines READEC, WRITEC, READECS, WRITECS, and MOVLEV by transferring the data to/from disk storage through a relatively large central memory buffer. This scheme greatly reduces the number of disk accesses, speeding up program execution and improving turnaround time. The simulator has been used with several very large programs that were designed to use ECS, and comparative runs between our Cyber and an equivalent machine with ECS have shown that the central processing time required to execute the programs is very nearly the same. Users may find the ECS simulator a cost-effective approach for handling large arrays that will not fit into central memory and therefore must be processed one row or column at a time.

For additional details, consult the ECSSIM entry under the KRONOS HELP command.

USER OPERATIONS & SERVICES

OPERATING STATISTICS

	May	June
Batch Logons OS-3	7753	6820
Batch Logons CYBER	17803	8883
Terminal Logons OS-3	30324	19103
Terminals Logons CYBER	17468	10292

STATISTICAL CONSULTING SERVICE

The Computer Center has organized a Statistical Consulting Service as of July 1, 1977. Its purpose is to provide users with technically qualified consultants in all areas of statistical (including operations research) computation. The service will normally include only very limited statistical advice outside the realm of computation. Such other advice will be at the discretion of the particular consultant as they have time and feel qualified.

Specifically the service will:

1) Make available and coordinate a library of statistical programs and evaluate needs and available enhancements.

2) Maintain an expertise in the use of statistical programs supported by the Computer Center and respond to user problems in using the programs.

3) Maintain staffing to provide effective programming of special statistical and operations research problems.

The staff and their specialities are:

Kenneth E. Rowe, Associate Prof. of Statistics (Coordinator) SIPS, Statistics Library Catalog. ext. 3366

David G. Niess, Systems Specialist, M.S. in Statistics BMDP, SPSS, IMSL, Statistics Library Catalog. ext. 2494

Josh Burke, Research Asst. Uncl., M.S. in Statistics SPSS, SIPS. ext. 3366

Richard Carone, Graduate Res. Assistant, M.S. in Operations Research. REX, OPTIMAL, GASP, EISPACK, etc. ext. 3366

Susan Maresh, Graduate Research Asst., M.S. Student in Statistics.

Office hours will be offered for drop-in assistance and other assistance is available by appointment. The actual location for open office hours is still unclear, but the location will be identified near Room 149 in the Computer Center. For the summer, hours are 10-12, M,T,W,H. The person on duty will respond if possible or refer the question to the person most able to do so. The service is free for short (less than 10 minutes) consultations.

Please feel free to make suggestions about the service or ask questions about it.

EDUCATIONAL ACTIVITIES

CONDUIT PIPELINE AVAILABLE

The Winter/1977 issue of CONDUIT's Pipeline is now available.

Pipeline is a publication produced three times each year by CONDUIT containing articles and papers dealing with education, computers in education, transportability of educational computer packages, and other articles relevant to the purpose of CONDUIT.

This issue includes profiles on four

educators deeply involved in instructional computing:

Alfred Bork, Professor of Physics and Professor of Information and Computer Science, University of California at Irvine.

Grace Hertlein, professional artist and Associate Professor of Computer Science, California State University at Chico.

N. John Castellan, Jr., Professor of Psychology, Indiana University.

Patrick Suppes, Director of the Institute for Mathematical Studies in the Social Sciences, Professor of Philosophy, Stanford University.

Also included are highlights of the new reviewed and tested curriculum materials available through CONDUIT in biology, physics, political science, chemistry, and sociology.

Copies of the Pipeline have been sent to the OSU Instructional coordinators, as well as to each Regional Computer Center coordinator. Extra copies are also available at no charge from Educational Computer Services, BA 300. If you would like to receive the CONDUIT Pipeline on a regular basis, return the appropriate form in the back of this issue of the newsletter.

FACULTY WORKSHOP TO BE HELD SEPTEMBER 12-16, 1977

Oregon State University Computer Center will again sponsor a Faculty Workshop September 12-16, 1977. The workshop is intended for all who are engaged in undergraduate education, including universities, four-year colleges, and two-year colleges. The workshop will provide an opportunity for research and teaching faculty to increase their skills related to the use of the computer. It will provide a forum for the presentation, discussion, and dissemination of ideas, programs, and other curricular matters dealing with the instructional use of computers. Those attending this workshop need not have a background in computers. An attempt has been made to meet the needs of those with no background as well as those who have used the computer in some way. The purpose of this workshop is threefold:

1) To provide basic training in the development of computer skills in FORTRAN, BASIC, etc., on the OS-3 time-sharing system and CYBER 73 NOS operating system.

2) To provide training in the development of user skills which will facilitate use of the computer within an academic area. These include the use of the plotter, files, *CATALOG programs, OSCAR, SPSS, ARAND, SIPS and Library programs for both the CYBER 73 and the 3300.

3) To provide instruction and examples of the in-class use of computer curriculum modules in specific disciplines.

If you are interested in receiving more information or in attending this work shop, please fill out the registration form at the back of this newsletter, or call Joanne Van Geest at ext. 2494.

TENTATIVE SCHEDULE

OSU COMPUTER CENTER FACULTY WORKSHOP

September 12-16, 1977

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8 A.M.	Pre-Registration for late registrants	PLATO 1 NOS Basic 1 Beg. SIPS 1	PLATO 1 NOS Basic 2	PLATO 1 NOS Basic 3	PLATO 1 NOS COBOL
9 A.M.	Introduction to Computer Center services (general session & tour)	PLATO 1 Beg. FORTRAN 1 Beg. SIPS 2	PLATO 1 Int. FORTRAN 1 GPSS 1	PLATO 1 Adv. FORTRAN 1 GPSS 2	PLATO 1 FORTRAN Differences Simscript
10 A.M.	Introduction to Computer Center services (Repeat)	NOS Edit 2 SIPS 1	NOS Submit Procedures SIPS 2	NOS Mag Tapes SIPS 3	NOS Loader SIPS 4
11 A.M.	Introduction to NOS 1 Introduction to OS-3	ARAND 1 Beginning FORTRAN 2	ARAND 2 Int. FORTRAN 2	ARAND 3 Adv. FORTRAN 2	
12 NOON	NOS Lab OS-3 Lab	NOS Lab OS-3 Lab	NOS Lab OS-3 Lab	NOS Lab OS-3 Lab	NOS Lab OS-3 Lab
1 P.M.	Intro. to NOS 2 Intro. to OS-3 2	EXPERSIM 1 Beg. FORTRAN 3	EXPERSIM 2 Int. FORTRAN 3	EXPERSIM 3 Adv. FORTRAN 3	NOS Review OS-3 Review
2 P.M.	Access NOS OS-3 Editor	SPSS 1	SPSS 2 IMSL 1	SPSS 3 IMSL 2	SPSS 4
3 P.M.	NOS Graphics	GRAFIT	CYBER Complot	Graphics Review	
4 P.M.	NOS Edit 1 Running on OS-3	NOS FORTRAN	NOS Libraries	NOS Modify	

NOTE: If five or more users request a subject not already included in this tentative schedule, we will attempt to include it with our course offerings.

The Terminal Room, CC 228, will be open throughout the workshop for participants use.

A final Schedule of Classes will be included in packets given each participant prior to the beginning of the workshop sessions.

CONDUIT Order Form and Mailing List

This form may be used to order reports, guides, and other publications from CONDUIT. It may also be used to have your name added to the CONDUIT mailing list. The form should be returned to: CONDUIT, P.O. Box 388, Iowa City, Iowa 52240.

MAILING ADDRESS:

NAME ..... DEPARTMENT .....
(last) (first) (initial)

INSTITUTION .....

ADDRESS .....
(City) (State) (ZIP)

AREA OF INTEREST (check one):

- ☐ Physical Sciences
- ☐ Biological Sciences (including Health Sciences)
- ☐ Social Sciences
- ☐ Mathematical Sciences
- ☐ Humanities
- ☐ Engineering
- ☐ Other .....
- ☐ Business

DISCIPLINE
(number in order of preference; select no more than two):

- ☐ Biology
- ☐ Management Science
- ☐ Chemistry
- ☐ Education
- ☐ Economics
- ☐ Mathematics and Statistics
- ☐ Physics
- ☐ Political Science
- ☐ Psychology
- ☐ Sociology
- ☐ Geography
- ☐ All
- ☐ Other.....
- ☐ Computer Science

Please check any of the following documents you wish to receive.

- ☐ PIPELINE (no charge for single copy of each issue)
- ☐ Author Guide ($3.00)
- ☐ BASIC Revisited: An Update to Interdialect Translatability of the BASIC Programming Language ($2.50)
- ☐ Catalog (no charge for single copy)
- ☐ Abstracts & Reviews ($5.00)
- ☐ Documentation Guidelines ($2.00)
- ☐ Technical Transfer Guide ($3.00)

..... Total Payment ☐ Enclosed ☐ Bill Me

OSU COMPUTER CENTER

Schedule of Rates
Effective July 1, 1977

PRIME SHIFT RATES

Operations device charges

CYBER	
System resource units (system seconds, data transfer and central memory use)	$ .0764*
Disk file storage, per PRU-month	.047
3300	
Central processor seconds	.072 ($260/hr)
Magnetic tape data transfer, per channel second	.018 ($65/hr)
Disk file storage, per block-month	.15
Plotter, Calcomp, per thousand records	2.15
Paper charge, per foot	.15
BOTH COMPUTERS	
Terminal connect time, low speed, per hour	2.05
2400 Baud service, per hour	4.50
Card reader, per thousand cards	2.50
Line printer, per thousand lines	1.15**
Card punch, per thousand cards	6.00
Paper tape reader or punch, per thousand records	10.00
Set-up charge	1.00
Remote job entry terminal data transmission, per thousand records	.75
Plotter, Gerber, per hour	10.00
Wet pen charge, each	2.00

MONTHLY MINIMUM CHARGE $1.00

*approximately $275/hr.
**Cyber printer rates to remain at $.0075/PRU until 9/1/77.

(over)

Tab shop charges

Bursting, decollating, deleaving and sorting	$10.00/hour
Optical scanning, instructional	.02/sheet
non-instructional	.04/sheet

Data entry

Keypunching or verifying	10.75/hour

Programming Services Pool

Junior programmer services	$9.00/hour
Programmer, senior programmer services	13.50/hour

Data Processing Systems

Specialist and analyst services	19.00/hour

Digitizing

Digitizing services	15.00/hour

Hardware group services

Terminal maintenance, senior staff	17.00/hour
junior staff	11.00/hour
(All terminal maintenance plus parts and supplies)	

Communication line installation and related charges

110-150 baud direct line (campus only)	$60.00 plus 3.00/mo.
dial-up acoustic coupler	270 or 15.00/mo.
300-2400 baud direct line (campus only)	
full duplex	$220.00 plus 12.00/mo.
half duplex	200.00 plus 6.00/mo.
high-speed line driver modem, computer center lines	$350.00 purchase or 30.00/mo/pair 1-year minimum lease

* * * NOTE * * *

Commercial services are provided at 150% of regular rates.

Second and third shift computer rates are 75% of prime shift rate, except third shift CPU usage is charged at 50% of prime rate.

REGISTRATION
FOR THE FALL COMPUTER INSTITUTE

Oregon State University
September 12-16, 1977

NAME _____ DATE _____

INSTITUTION _____

DEPARTMENT _____

SUMMER MAILING ADDRESS _____
(if different) _____

For scheduling purposes please indicate the sessions you plan to attend:

Basic level

__ Introduction to OS-3
__ Assessing NOS from a Terminal
__ Using Basic on Cyber
__ Using Graphics on Cyber
__ Running Programs on OS-3
__ Beginning FORTRAN
__ Plato (CAI)
__ Introduction to NOS

Intermediate Level

__ NOS Text Editor
__ NOS Fortran
__ NOS Libraries
__ NOS Submit and Procedure
__ Mag Tapes under NOS
__ Cyber Graphics (Complot)
__ Using COBOL on NOS
__ Fortran Differences between OS-3 and Cyber
__ SIPS
__ SPSS
__ EXPERSIM
__ Simscript
__ ARAND
__ GPSS
__ OS-3 Graphics (Grafit)
__ Intermediate Fortran
__ IMSL

Advanced Level

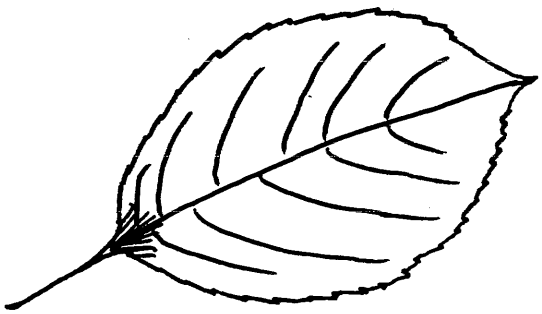
__ Modify on NOS
__ NOS Loader
__ Advanced Fortran
__ Other

The charge for this workshop will be $12.00.

Please return this form by September 2, 1977, to:

Joanne Van Geest
Computer Center
Oregon State University
Corvallis, Oregon 97331

Oregon State University
Computer Center
Corvallis, Oregon 97331



ACCESS

NEWSLETTER OF THE OREGON STATE UNIVERSITY MILNE COMPUTER CENTER

MILNE COMPUTER CENTER

OREGON STATE UNIVERSITY

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Assistant Director--Christopher C. Calligan
Manager Data Processing Systems--Anthony J. White
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Terminal Connection	754-2033
Testing Services--George Beekman.	754-2494
Time-Sharing Services	
CYBER 73 300 Baud	754-3781
CYBER 73 110 Baud	754-3761
3300 300 Baud	754-3651, 754-3536
3300 110 Baud	754-4111

PROGRAMMING QUESTIONS--refer to CONSULTANT, Room 150. 754-3474

HARDWARE SERVICES

Teletype--Doug West, Gary Jarman.	754-2455, 754-2494
Electronic Terminals--Fred Beebee, Randy Grainger	754-2494

Access

NEWSLETTER OF THE OREGON STATE UNIVERSITY MILNE COMPUTER CENTER

Ellen T. Drake, editor

Volume XII, Number 5 September/October, 1977

In this issue:

Information in this newsletter is current as of September 1, 1977.

EDITOR'S CORNER

For a long time I have been noting comments on the looks, function, and readability of the Computer Center Newsletter. My task, I feel, is to disseminate the news of the Computer Center in as attractive a manner as possible while preserving the dignity and quality that characterize all our publications. I hope you like our new look and name. The name ACCESS, I think, is singularly appropriate to the Computer Center Newsletter. Each issue will have a different cover design and I would like to invite all staff members of the Center and users to contribute ideas or submit copy for future covers.

IS SECURITY SENSE OR NONSENSE?

If you've ever experienced the rush of enthusiasm that many people have when they discover the potential for fun and power in computing, the apparent high price of computer services has undoubtedly frustrated you. Temptation then presents itself when the opportunity to use another job number arises.

This opportunity typically arises from one of the following situations, although we are certain that many other possibilities exist.

1. One overhears a discussion during a log-on session at a terminal which just happens to include a password or validity code.
2. One observes the entry of a password or validity code while working or passing near a terminal.
3. One discovers job or account cards in the trash or on the floor.
4. Funds remaining in an instructional or unsponsored research account after the work for which the account was established is complete.
5. A job card is returned with one's deck (usually at the end of it) which belongs to the job following that deck into the card reader.

The computer enthusiast is often tempted beyond his or her ability to resist by opportunities such as these and proceeds to "borrow" a little time. For the potential borrowers, we have a single word of advice: DON'T!

All the services the Computer Center provides must be billed and paid for in real dollars. The person or department to whom the job number belongs receives a bill for services, and money must be transferred to the Computer Center. If a user can substantiate unauthorized use of a job number, an operating system alarm can be set to notify the operations staff of such use at anytime. The operating system can also supply the number of the terminal being used, and an operator can make a quick cross-check and pinpoint the location.

The policy of the Center is to identify persons making unauthorized use of computing resources and give them the opportunity to make monetary restitution. The alternatives to paying up are not pleasant and range up to criminal charges for theft. While we have no desire to engage in formal civil or criminal proceedings, we must make every effort to secure the use of our resources and our customers' accounts. To this end we will not rule out any options open to us.

We presently have one person paying off a bill of $800 and two other persons have paid bills in the $100 range within the last six months.

A big share of security responsibility is yours if you are responsible for a Computer Center account. We suggest the following common-sense ideas to protect your job or account number:

1. At a terminal, be aware of who's watching as you log on.
2. Don't leave your job decks unattended for persons to inspect. Better yet, keep your job or account cards off the deck unless it's on its way into the computer room.
3. Turn "PRINT OFF" when punching a job or account card.
4. Change your password or validity code frequently and use hard-to-guess letter/number combinations. Random characters are best.

Anytime you suspect unauthorized use of facilities, the operations supervisors or Center managers will be pleased to receive your information or assistance. Unauthorized use ultimately means higher rates for everybody.

ERROR RECOVERY PARAMETER FOR FTN

One of the banes of all CYBER programmers has been the "EXCHANGE PACKAGE" dump. Whenever a system error such as an arithmetic mode error (CPU ERROR EXIT nn) occurs, the job is aborted and the contents of the CPU registers (EXCHANGE PACKAGE) and a portion of memory is printed. The majority of problems brought to the Computer Center Consulting Service involve these errors.

But now, with the advent of our new operating system (NOS) the FORTRAN programmer has been rescued by the ER (error recovery) parameter. Including this parameter on your FTN card causes mode errors to be intercepted and a message printed giving the type of error as well as the subprogram name and approximate line number where the error occurred. After this message, the exchange package is printed and the job is aborted as before. Other errors which will be intercepted by the ER processor are:

CPU time limit exceeded
Mass Storage (Scratch) limit exceeded
Operator drop
Bad System request (RA + 1 call)

This option is also enabled by the OPT=Ø and TS parameters. Since these compiler options provide much faster compilation as well as additional error checking, we recommend that they be used for all student programs and for the debugging stages of larger programs. The TS option is particularly recommended for programs which are recompiled before each execution unless the run time is more than twice the compilation time. The compilation time for TS mode is 30% to 75% less than for OPT=Ø. Other advantages of TS mode are: some keyword misspellings and punctuation errors will be accepted (although a warning message is given); error messages appear immediately after the line which caused the error.

The recommended deck setup for student programs is:

```
USER(usernumber,password)
CHARGE(chargenumber,projectname)
SETTL,1Ø.  (Time limit in octal)
TITLE.  Your name
FTN,TS,T,GO.
7/8/9
  -Program deck-
7/8/9
  -Data deck-
6/7/8/9
```

NOTE: The SETTL card may be omitted if the default of 8 (decimal) seconds is sufficient.

For the debugging stages of larger programs we recommend the following:

```
USER(usernumber,password)
CHARGE(chargenumber,projectname)
SETTL,1Ø.  (Time limit in octal)
TITLE.  Your name
FTN,ER,T,R.
LGO. (or other loadcards)
7/8/9
```

[The T parameter enables the error traceback feature as well as providing additional error checking.]

The D (debug) parameter also activates the ER option as well as setting OPT=Ø and T. Note that the debug utility (D option) may not be used in TS mode.

When a program has been debugged, it should be recompiled without the ER and T parameters as these cause the program to be somewhat larger and to execute more slowly.

A program which has no known bugs can be recompiled using the OPT=2 and UO parameters; however, this should be done only if it can definitely be determined that the program still operates correctly. These options can cause a working program to malfunction. Extensive testing should be done on any program compiled with these options.

COMPUTER CENTER NEWS

AIR CONDITIONING WOES

We regret any inconvenience to our users that may have been caused by the problems we have been having with our air-conditioning system. The Center has had to shut down three times this summer due to critical malfunctioning of the system; the last time, over the weekend of 19 August, when there was a general stoppage of the steam distribution system by the Physical Plant, their engineers did find a leak in our air conditioning system and repaired it. We hope there will be no more problems with the system and would like to thank all our users for their patience and forbearance.

PUBLICATIONS COMMITTEE SPELLS OUT GOALS

A new committee charged with recommending policies regarding Computer Center publications has been established. Assistant Director Chris Calligan is chairman of the Publications Committee. Other members are as follows:

Ellen Drake, ex officio
JoAnn Baughman
George Beekman
Joe Clinton
Ted Hopkins
Dorrie Lemon

The committee has met twice and has formulated some long-range goals for the Center, one of which is to identify areas where manuals and documentation are needed and to generate publications to fill this need.

Another long-range goal is to develop a catalog scheme to keep track of all programs and documentation which could be easily searched and which would fit into an eventual state system network.

The committee welcomes input from users or staff members concerning our publications.

COMPUTER TIME FOR UNSPONSORED RESEARCH

Funds administered by the OSU Research Office are available to support computing services for unsponsored research projects. Approximately 200 such projects received funding in each of the last five fiscal years at a total annual level of approximately $80,000.

The objectives of the grants are:

(1) to support computing requirements of worthwhile faculty research projects for which there is no outside source of funding;

(2) to provide faculty members with "seed money" for computer time to develop new sponsored research programs;

(3) to enable graduate students in good standing to conduct thesis/project research which is not supported by other funding sources.

For further information and application forms, please contact the Computer Center office, MCC 217, extension 2494.

OPERATING STATISTICS SHOW INCREASE

	July 76	July 77
Batch Logons OS-3	6183	6230
Batch Logons CYBER	5581	7649
Terminal Logons OS-3	17580	15484
Terminal Logons CYBER	6435	8524
	Aug 76	**Aug 77**
Batch Logons OS-3	5690	6381
Batch Logons CYBER	5914	5761
Terminal Logons OS-3	16660	15042
Terminal Logons CYBER	6200	8415

Batch logons for both OS-3 and CYBER show an increase over last July while the change in terminal logons reflects a switch from OS-3 to CYBER.

REVISED MANUALS AVAILABLE

IMSL Library New Edition

A new edition (No. 6) of the IMSL library is available on the NOS operating system as of September 1st. Edition 6 includes approximately 40 new subroutines. Approximately 30 routines from Edition 5 have been upgraded. The new routines should not require changes in your programs. Users with Edition 5 manuals may purchase the Edition 6 maintenance service which includes modification pages. Use IMSL order form U-0005, Page INTRO-21, in the 5th edition manual.

CYBER Record Manager

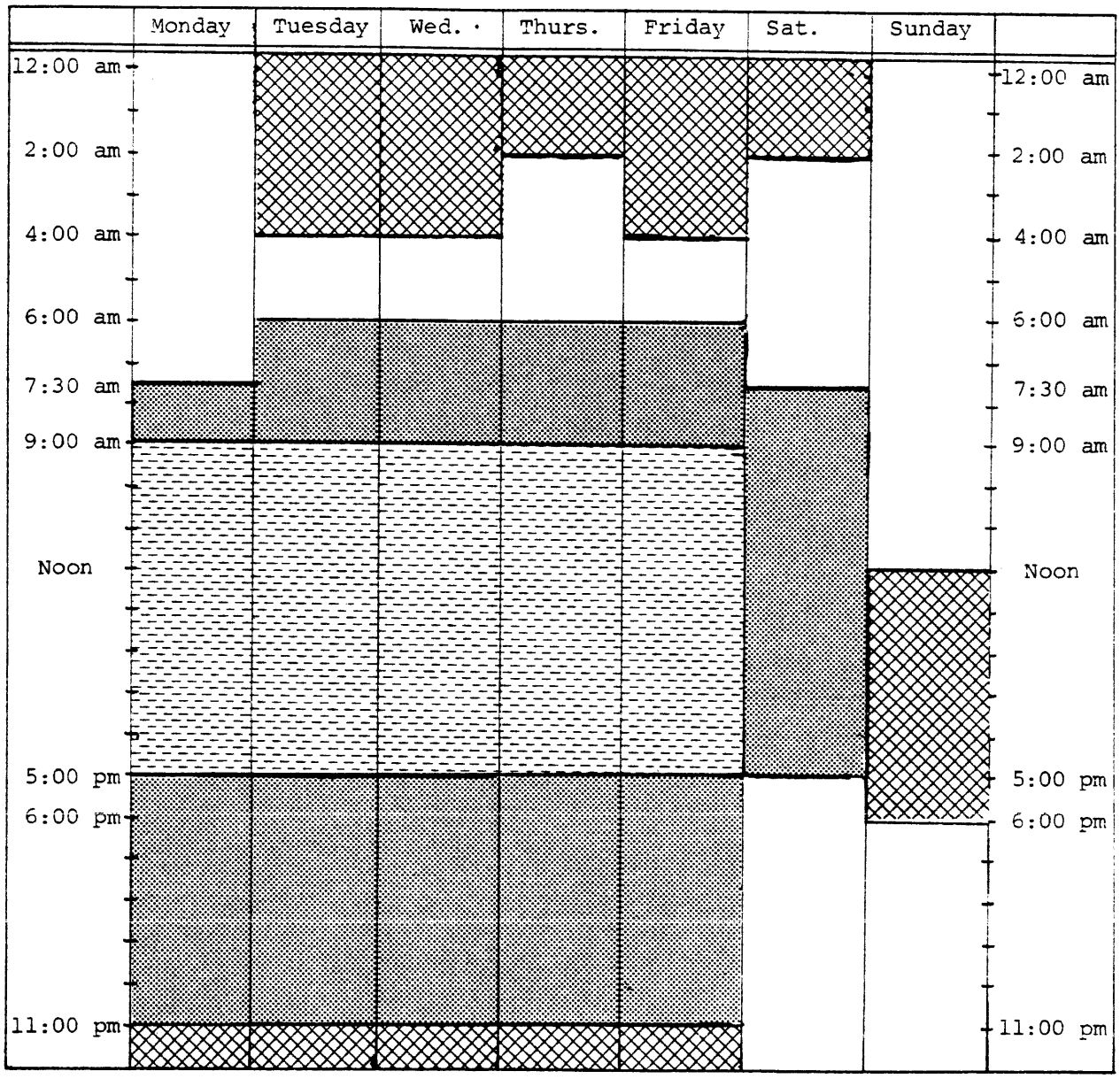
A revision which replaces the NOS edition of the CYBER Record Manager Version 1 Reference Manual (No. 60495700, Revision B) is available in Room 142. Bring in your old manual to exchange for the free revision.

SCRATCH TAPE POLICY CHANGES

The policy regarding the use of magnetic SCRATCH tapes has changed effective September 1st. SCRATCH tapes can no longer be held indefinitely. These tapes should be used only for the time period that they are mounted on the drive. Once dismounted, tapes will be made available to other users immediately. For additional information call Dan Berg at ext. 2494.

NEED CONSULTING HELP? CALL X3474

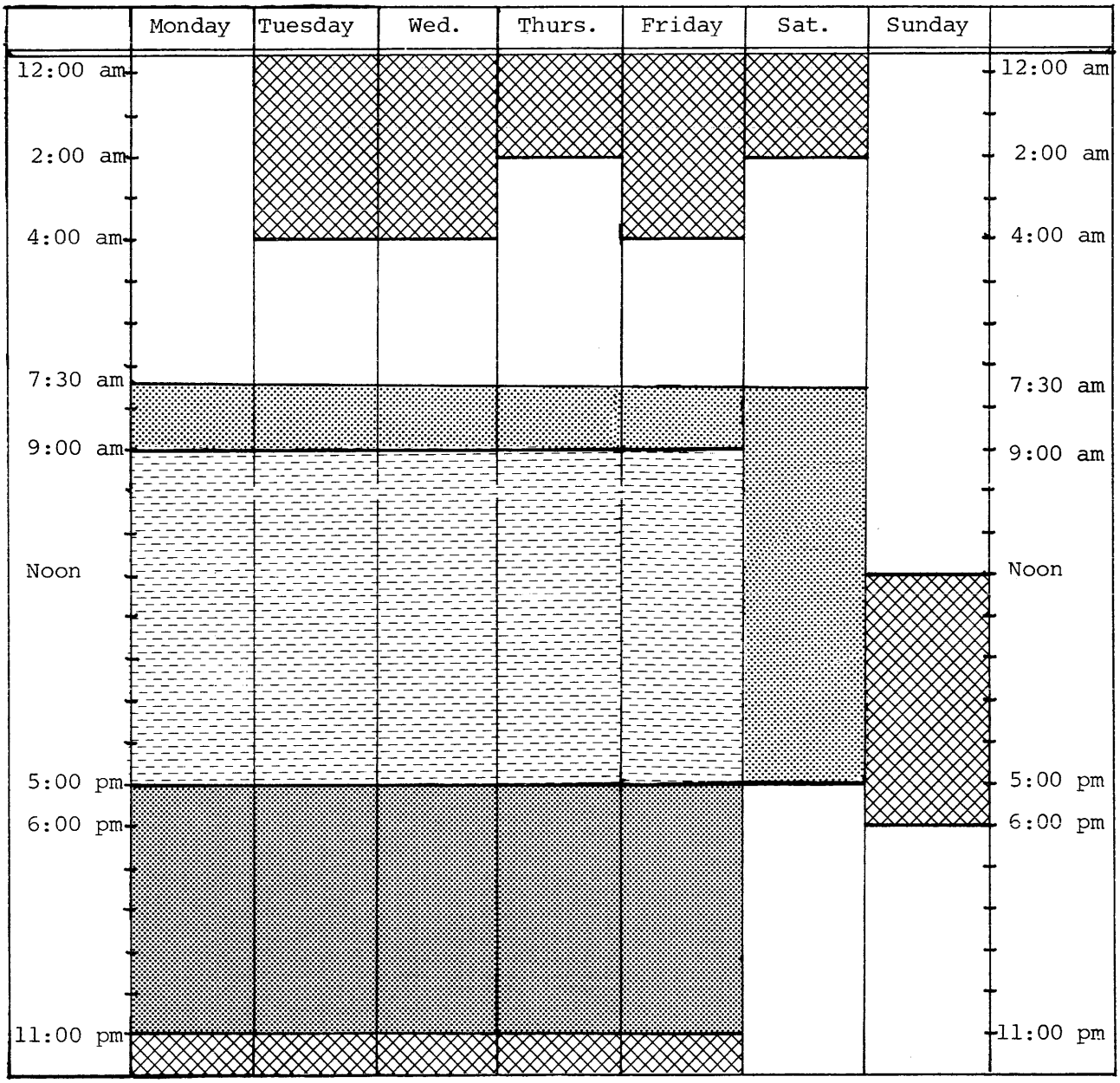
OS-3 OPERATING HOURS AND SHIFT SCHEDULE



LEGEND:

- Systems Maintenance and Development
- Prime Shift - No discount
- 2nd Shift - 25% discount
- 3rd Shift - 50% discount for CPU.
  - 25% discount for all other computer charges.

CYBER OPERATING HOURS AND SHIFT SCHEDULE



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9/1/77

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Effective July 1, 1977

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Mount charges per tape	.50

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Bursting, decollating, interpreting and sorting (with operator)	10.00/hr
Sorting without operator	3.00/hr
Optical scanning, instructional	.02/sheet
non-instructional	.04/sheet

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Keypunching or verifying	10.75/hr

Programming Services Pool

Junior programmer services	9.00/hr
Programmer, senior programmer services	13.50/hr

Data Processing Systems

Specialist and analyst services	19.00/hr

Digitizing	
Digitizing services	$ 15.00/hr
without operator	12.00/hr
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(All terminal maintenance plus parts and supplies)	
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Oregon State University
Computer Center
Corvallis, Oregon 97331

ACCESS

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Vol. XII, No. 6, Nov./Dec., 1977

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OREGON STATE UNIVERSITY

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Ellen T. Drake, editor

Volume XII, Number 6 November/December, 1977

In this issue:

Information in this newsletter is current as of November 1, 1977

EDITOR'S CORNER

A number of readers of ACCESS responded with constructive suggestions since the publication of the last issue. We are also delighted with the compliments we have received regarding the appearance and content of ACCESS. As a result of discussion with Donna Worden, a user at the Marine Science Center, we have decided to have a Users' Forum column. The function of the column is to give users the opportunity to contribute ideas which may help other users—a sort of "Heloise" column for the computing world. Donna is our first contributor and we believe that her information on keeping source programs on magnetic tapes will be helpful to our readers. We hope that other users who have discovered helpful techniques or have constructive suggestions will also share their information by contributing articles to ACCESS.

USERS' FORUM

HOW TO ORGANIZE A SOURCE PROGRAM MAGNETIC TAPE BACKUP SYSTEM ON CYBER

Every computer user who begins or has a tape backup system for his/her programs must cope with the problem of keeping meaningful, clear records of the contents of that system. The intent of this article is to demonstrate how the CYBER CATALOG listing from a tape can be used as an index or table of contents for that tape.

What to do with the tapes

1) Reference a tape with the same local file name each time it is accessed to minimize mistakes.

2) CATALOG a tape each time the tape is updated.

3) Copy the CATALOG listing with COPYSBF for readability. (The listing for several files will be printed on the same rather than separate pages of output.)

What to do with the contents

1) On NOS, the CATALOG command lists the first seven characters of the contents of each record in each file. Consequently, a very useful index of the contents of the tape can be produced by a judicious selection of the first seven characters of each record.

   a) Let the first line of a procedure file be its name or a control statement having "version number—procedure file name" as its statement label.

   b) Let the first line of FORTRAN source be a comment statement of the form "C-program name" or "C-unique name."

   c) Let the first line of assembler or COMPASS source be a comment statement of the form "*-program name" or "*-unique name."

2) Group related material into files, adding as a first record of each file the identifier of that group. For example, store program systems in the same file, with each program, procedure file and sample deferred batch job (SUBMIT) being contained in separate records. If there is a version

number associated with the system, combine it with the system name in the first record.

3) Let library sources be stored as files in MODIFY program libraries and let the first record be the MODIFY program library name.

In order to maintain such a system, a minimum of two tapes is desirable, the first to update the second then the second to update the first. (Note: data processing systems usually employ the three-tape grandfather, father, son set-up).

The user should be acquainted with commands managing records (as opposed to files) such as COPYBR and SKIPR.

Below is an example of the catalog which would result from the use of this procedure.

[Editor's Note: Donna Worden has kindly agreed to answer any questions from users who may be interested in using her procedure. Contact her at the Marine Science Center at Newport, telephone: 1-867-3011.]

1 CATALOG OF TAPE3 FILE 1

REC	NAME	TYPE	LENGTH	CKSUM	DATE	COMMENTS
1	MSUBLIB	TEXT	2	3370		
2	PSORT	OPL (64)	125	2077	76/09/24.	
3	SHELL	OPL (64)	67	2277	76/09/24.	
4	KEY1	OPL (64)	151	2605	76/09/24.	
5	XT2X2	OPL (64)	315	7460	76/09/24.	
6	INBIT	OPL (64)	72	0301	76/09/24.	
7	SET1	OPL (64)	70	2246	76/09/24.	
8	XLUCY	OPL (64)	264	3220	77/08/17.	
9	RNAMS	OPL (64)	44	0605	77/08/17.	
10	NAMS	OPL (64)	105	0171	77/08/17.	
11	OPL	OPLD	23	3216	77/08/17.	
12	* EOF *	SUM =	1546			

1 CATALOG OF TAPE3 FILE 2

REC	NAME	TYPE	LENGTH	CKSUM	DATE	COMMENTS
1	V2 SPA	TEXT	1	6220		
2	C2 SPA1	TEXT	1700	1337		
3	2PROC1,	COS	45	3510		
4	C2 SPA2	TEXT	1721	2302		
5	2PROC2,	COS	55	6066		
6	C2 SPA3	TEXT	1144	2002		
7	2PROC3,	COS	53	4075		
8	C2 SPA4	TEXT	4274	1365		
9	2PROC4,	COS	53	4453		
10	C2 SPA6	TEXT	2510	4000		
11	2PROC6,	COS	55	7776		
12	* EOF *	SUM =	14317			

Videotapes on "Introduction to OS-3" and "Introduction to FORTRAN" will be shown again Winter Term, beginning the third week of the term. Watch for announcement of times and places in the Staff Newsletter.

LINE PRINTER CHARGES: Paper Saving Is Money Saving

The installation of the NOS operating system on CYBER has changed, among other things, the way that line printer charges are accrued. Instead of being computed from the number of lines printed, the printer charge is now partially based on the number of pages printed. In other words, the more paper you use, the more you pay. So an easy way for users to reduce computer charges is to eliminate wasted paper from printouts.

The simplest way to do this on most jobs is to print at eight lines per inch instead of six, allowing 25% more printing per page. The carriage control on the printer can be switched to eight lines per inch by printing a "T" in column 1 of your print file. Every line of the print file after this line will be printed at eight lines per inch, until an over-riding carriage control character is encountered. An "S" in column 1 of any line can be used to reset the printer carriage control to six lines per inch.

The following string of NOS commands shows one way to switch print file PRFILE from six lines per inch (l.p.i.) to eight:

```
   .
   .
   .
COPYBR,,PRFILE
   .
   .
   .
7/8/9
  T (data for COPYBR, switches to
     8 l.p.i.)
7/8/9
   .
   .
   .
```

One final note for users of SPSS - substantial paper (translate: money) savings can be made on SPSS runs by using the option

PAGESIZE NOEJECT.

This feature eliminates wasted paper by suppressing the page ejects built into SPSS and substituting a dashed line. The resulting output is not quite as pretty, but is substantially cheaper. See page 74 of the SPSS Manual for details.

PLOTTING SERVICES

The OSU Computer Center has three hard copy plotting devices available for public use (the CALCOMP, the LITTLE GERBER and the BIG GERBER). A description of each follows.

1. The CALCOMP is a drum plotter which moves in increments of .01 inch. The maximum plot size for most cases is 30 inches wide and 200 inches long. These limits are imposed by the software. The rolls of plotting paper are 120 feet long. Plots can be generated using either ball point or wet ink pens. The CALCOMP is on-line to the CDC 3300 allowing the user to access it much like the line printer or the card punch. CYBER users can generate a plot on magnetic tape and then use the CDC 3300 to copy the tape to the CALCOMP plotter.

2. The LITTLE GERBER, which is a flatbed plotter, has a higher resolution. It has a stepsize of .002 inch. Both GERBER plotters are off-line devices and are accessed by creating a plot tape (on either computer) which is then saved to be plotted at a later time. Plots 58 inches wide and 48 inches high can be created using either ball point or wet ink pen.

3. The BIG GERBER, also a flatbed plotter, has a stepsize of .0004 inch. The plotting surface is 96 inches wide and 60 inches high. The BIG GERBER is outfitted with a six-pen turret which allows pen selection under program control. Aside from the size difference and the multi-pen capability, the plot codes for the two GERBERs are the same.

The stepsizes mentioned above are according to factory specifications. The accuracy of the plot will depend upon the size of the plot involved, the size of the pen used, the type of plot being drawn, and the speed of the plotter being used. The CALCOMP has the lowest resolution and the BIG GERBER has the highest resolution. Certainly any "scale-critical" plots should be done on either the LITTLE GERBER or the BIG GERBER.

The Computer Center provides four standard colors: black, red, blue, and green. The wet ink pens are provided in three sizes: 0.4 mm, 0.6 mm, and 1.0 mm. There is a setup charge for wet ink pen and for color pens. The default is black ball point (no setup charge). Users can also supply their own special paper, pens, or ink.

A set of plot drivers (FORTRAN callable subroutines) have been written to allow plotting on any of the above devices as well as various TEKTRONIX graphics terminals or Hewlett-Packard plotters. These subroutines expand relatively simple instructions specified by the programmer to include all of the necessary details for the plotting device being used. A version of COMPLOT is available on both computers.

A preliminary draft (blue) of the CYBER COMPLOT User's Manual was available this past summer. The CYBER COMPLOT User's Manual (pink) now reflects the new NOS operating system. These manuals are available in MCC 142. The blue manuals can be exchanged for the new pink ones at no charge. The consultants are available in MCC 150 (ext. 3474) to respond to questions and problems.

STATISTICAL CONSULTING SERVICE

The Computer Center has a Statistical Consulting Service staffed by technically qualified consultants who will help users in all areas of statistical (including operations research) computation. Statistical advice other than for computation will be given at the discretion of the particular consultant. Specifically the service will:

1) Make available and coordinate a library of statistical programs and evaluate needs and enhancements.

2) Maintain an expertise in the use of statistical programs supported by the Computer Center and respond to users who may have problems in using the programs.

3) Maintain staffing to provide effective programming of special statistical and operations research problems.

The staff and their specialities are:

Kenneth E. Rowe, Assoc. Professor of Statistics (Coordinator) SIPS, Statistics Library Catalog. ext. 3366

David G. Niess, Systems Specialist, M.S. in Statistics BMD, SPSS, IMSL, Statistics Library Catalog. ext. 2494

Susan Maresh, Research Asst. Uncl., M.S. candidate in Statistics, BMD, SPSS, SIPS. ext. 3366

Richard Carone, Graduate Res. Assistant, M.S. REX, OPTIMAL, GASP, EISPACK, etc. ext. 3366

Dana Thomas, Graduate Research Asst., M.S. Student in Statistics. ext. 3366

Users may drop in for assistance between 1 and 3 p.m. Mondays through Fridays in Room 149, Computer Center. Help is available during other hours by appointment.

This service is free for short (less than ten minutes) consultations. Please feel free to make suggestions about the service or ask questions about it.

USER COMMITTEES

Users should be aware of the existence of two faculty committees which provide input to the Center on planning and service matters. The Computer Committee and the Academic Users Council each meet once or twice per term to advise the Center administration on policy matters and to report concerns of the user community.

The Computer Committee is principally concerned with the use of computers in instruction. It is the committee which allocates the instructional computing budget to departments. Committee members are appointed by Vice President Popovich.

The Academic Users Council concerns itself with services and policies that affect the entire academic community, with special emphasis on computing for research applications. Council members serve at the invitation of the Computer Center Director.

Computer Committee members (1977-78)

Lewis G. Hogan, Oceanography, (Chairman)
Donald L. Amort, Electrical and Computer Engineering
David Butler, Statistics
Joel Davis, Mathematics
Russell G. Dix, Registrar's Office
Rebecca M. Herrold, Music
Martin Hellickson, Agricultural Eng.
Roger G. Kraynick, Agricultural Ec.
Walter D. Loveland, Chemistry
Robert L. Newton, Business Office
Paul E. Paschke, School of Business

Academic Users Council members (1977-78)

John S. Allen, Oceanography
Edwin L. Anderson, Education
William S. Bregar, Computer Science
Frank S. Conklin, Ag & Resource Econ.
Robert Hudspeth, Civil Engineering
Paul Paschke, School of Business
Roger G. Peterson, Statistics
Solon Stone, Sch. of Engineering
Albert Tyler, Marine Science Center
Andy VanderPlatt, Ag. Fiscal Office

PLOTLIB ON NOS

The PLOTLIB library of subroutines is now available under NOS by ATTACHing PLOTLIB/UN=LIBRARY. The routines currently available are:

PLOTP - line printer plot of 1 to 8 dependent variables vs 1 independent variable with scaling calculated for each dependent variable.

PLOTF - line printer plot of 1 to 8 dependent variables vs 1 independent variable

with scaling provided by the user.

Plotl - a linear or log-scale teletype time-series plot.

XYPLOT - teletype or line printer plot of one or more sets of paired (X,Y) data.

PROFIL - teletype or line printer time-series plot of N variables.

HISTO - graphical display terminal or plotter histogram from raw data.

HISTPLT - graphical display terminal or plotter histogram using frequency data.

CONTUR - graphical display terminal or plotter contour graph of one or more contour levels.

CHEBFIT - computes a least-squares fit to a data set using Chebychev polynomials.

EXPFIT - computes a least-squares fit to a data set using at most three exponentials.

See the consultants (MCC 150) for more details. Documentation can be purchased from the Computer Center (MCC 142).

TERMINALS AND KEYPUNCHES AVAILABLE TO OSU COMMUNITY

There are approximately 92 terminals on the OSU campus that can be used by members of the OSU community, students, staff and faculty members. These are listed below. In addition, we have eight teletypes in Room 5, Home Economics (Milam). These terminals can be used whenever classes are not in session in that room. Adjacent to Room 5 is a small staff terminal room with two teletypes, one Tektronix Graphics terminal, and one keypunch. These facilities in Room 5 are specifically reserved for OSU faculty and staff only.

Available to campus community:

Keypunches:
16 at the Computer Center Rm. 211
4 at Dearborn Hall Room 119

Terminals:

No.	Hall	Room #
1	Agriculture Hall	201A
1	Agriculture Hall	325
7	Apperson Hall	309
4	Chemical Engineering	204
19	Computer Center	228
1	Cordley Hall	4050
1	Covell Hall	106
2	Covell Hall	214
8	Dearborn Hall	119
2	Extension Hall	206
2	Gilbert Hall	206
1	Graf Hall	203
6	Kidder Hall	72
1	Kidder Hall	142
1	Kidder Hall	108C
11	Milam Hall	5
1	Moreland Hall	140
2	Nash Hall	50
2	Oceanography	172
2	Oceanography	444
4	Peavy Hall	282
1	Poling Hall	TTY Room
2	Rogers Hall	224
1	Rogers Hall	438
1	Sackett C	Beau Room
2	Social Science	208
1	Weniger Hall	112
1	Weniger Hall	118
1	Weniger Hall	127
2	Weniger Hall	503
1	Wilson Hall	100

BMD-P PROGRAMS

All of the BMD-P programs (1975 catalog) are currently available for use on the CYBER. If you experience any difficulty in using them, call Rich Carone ext. 3366

REMOTE JOB ENTRY (RJE) TERMINAL

The Computer Center now has a DATA 100 model 78 remote job entry terminal. It has a 300-line-per-minute printer and 300-card/minute reader plus a nine-track tape drive. It transmits at speeds up to 4800 baud. The DATA 100 can communicate with other computers emulating (imitating) CDC 200 UT, IBM 2780 and 3780, and Honeywell terminals. This terminal can be used for accessing OSU computers, the Data Services Division Honeywell computer, and non-state systems such as the National Center for Atmospheric Research at Boulder (NCAR). The charge for using the DATA 100 is $30.00 per hour. For further information, contact Ron Davis, ext. 2494.

CONVERSION JOY

We have heard some grumbling over the conversion from KRONOS to NOS, but sometimes conversion brings joy instead of pain to users. Due to accounting problems, CYBER users were not charged for disk storage for the first 28 days of September. Merry Christmas!

OPERATING STATISTICS

	Sept 76	Sept 77
Batch Logons 3300	5679	5675
Batch Logons CYBER	3637	4059
Terminal Logons 3300	13846	11813
Terminal Logons CYBER	5337	7679

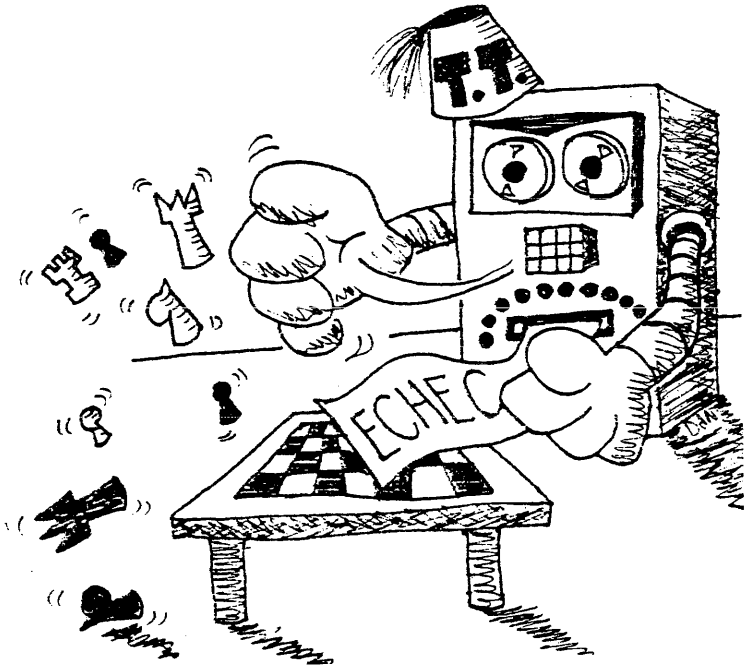
XREF:

COMPUTER INCOGNITO?

It doesn't matter that today's computers are mental marvels, able to perform prodigious tasks in seconds; the fact remains that they can't play a decent game of chess, make a few concessions to fashion other than a few strips of chrome, and generally are a pretty taciturn lot. Thus, they would impress few of the thousands who in the 18th century flocked to see a mysterious clanking machine. The Terrible Turk, as the machine was called, played an almost unbeatable game of chess, crying "Echec" in French after each victory. The Turk reigned, resplendent in flowing robes and fez from a backless chair. Attached to the front of his huge wooden form was a maple box, 3 feet wide, 2 feet 4 inches deep and 2 1/2 feet high. A chessboard was built into the top of this box.

The Terrible Turk was built in 1769 by an Austrian hydraulic engineer, Baron Wolfgang von Kempelen. The Baron toured Europe with his machine. Before each performance the Baron would open 2 doors built into the Turk's body and 3 doors built into the box. This way the audience was free to inspect the device. They found the Turk was apparently jammed with gleaming wheels, cogs and springs. The Baron then locked the doors and chose a volunteer from the audience. The volunteer would sit with his own chessboard a dozen feet in front of the Turk. The Baron would wind up the Turk with a key. Slowly the Turk would raise his arm and jerkily make the first move. The Baron duplicated the Turk's move on the opponent's board and would thereafter continue as messenger between the two chessboards.

The Turk played in a very singular manner. he reached for his pieces wheezing and clicking, only after he had pondered his opponent's move. The Turk signaled that his opponent had made a wrong move by rapping sharply on the chessboard. The machine usually had his opponent in check within half an hour. At this point he would roll his glassy gray eyes and, after much metallic clicking, cry, "Echec!"



It was in Berlin that the Turk was challenged by Napoleon Bonaparte, then at the height of his career. Napoleon set out deliberately to cheat the machine, but after his third incorrect move, the Turk angrily swept the pieces from the board and ended the game.

After the Baron died, a portly man named Johann Nepomuk Maelzel brought the Turk to the United States. Here the Turk generated even more interest. Of course, there were the scoffers. One of these was author and poet, Edgar Allen Poe, who would later write the world's first dectective stories. Poe attended the Turk's performances a number of times, taking numerous notes and asking pointed questions. Poe observed that the Turk's game improved when Maelzel acquired as an assistant a stoop-shouldered man named William Schlumberger. Poe's investigation revealed that Maelzel and Schlumberger were old cronies since the days in Paris when Schlumberger made a living as a chess hustler. Poe noted that neither Schlumberger nor any other of Maelzel's former assistants were ever in attendance while the Turk was performing.

The charges of fraud grew stronger and Maelzel, Schlumberger and the Turk headed for Cuba. Here Schlumberger died of yellow fever. Maelzel suspended the Turk's performances indefinitely. Not long afterward Maelzel himself died and the Turk was sold to Dr. John Mitchell, a professor at Jefferson College of Medicine in Philadelphia. An "autopsy" performed on the Turk revealed the worst. The machine was an ingenious fraud, controlled by a human operator who sat in the Turk concealed by hidden panels and mirrors. Dr. Mitchell gave the Terrible Turk to the Chinese Museum where it was exhibited until destroyed by a fire in 1854.

The world had to wait until 1945 for the first true electronic brain. Though a marvel for its time, this 30-ton, vacuum-tube calculator never became a celebrity, terrible or otherwise.

[Reprinted with permission from The Full Word, Newsletter of the Loyola University Computer Center, Chicago, August, 1977.]

THE MILNE COLLECTION

On display in the Conference Room (Room 223) of the Computer Center is the William Edmund Milne collection of journals and reprints donated by Milne's family. Professor Milne, a pioneer in numerical analysis and computer mathematics, was chairman of the OSU Mathematics Department from 1932 to his retirement in 1955. He gained an international reputation from his writings and from the "Milne method" of solving differential equations. In 1972, the Computer Center was named in honor of the memory of Milne who died in 1971 at age 81. Users and staff members are encouraged to stop in the Conference Room to examine this interesting collection which gives evidence of a long and productive life.

THE DIAL-UP LINES

The asynchronous dial-up ports for use by low-speed interactive terminals into the computer system fall into two basic categories:

1) Front End Processor (F.E.P.) "A" which will allow users to access both CYBER and the 3300.

2) Front End Processor "B" which will allow users to access the 3300 only.

The dial-up numbers and speeds are as follows:

754-3761	110 BAUD	F.E.P. "A"	103 Type data set
754-3781	300 BAUD	F.E.P. "A"	103 Type data set
754-4111	110 BAUD	F.E.P. "B"	103 Type data set
754-3651	300 BAUD	F.E.P. "B"	103 Type data set
754-2521	1200 BAUD	F.E.P. "A"	202 Type data set
754-3122	1200 BAUD	F.E.P. "A"	212A Type data set

Each of the above listed numbers is the pilot number for a "trunk-hunting group" of numbers in the categories indicated. You should get a busy signal only if all of the lines in the group are busy, and the only time that the phone should ring, but not answer, is when the system is down.

Please report any problems that you may experience to the I/O desk, 754-2033, and indicate the phone number dialed and port number if available.

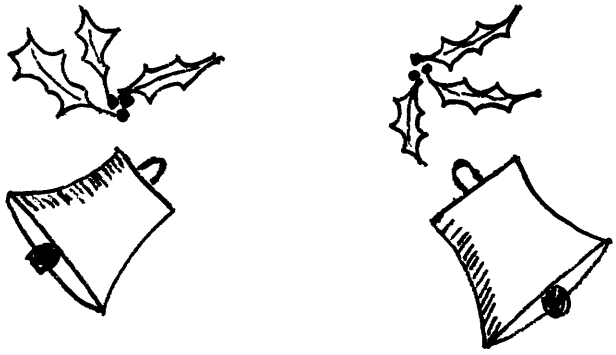
The synchronous dial-up ports for remote job entry terminals are:

754-2554	2000 BAUD	CYBER	201A Type data set
754-2531	2000 BAUD	F.E.P. "B"	201A Type data set

HOLIDAY SCHEDULE

Veterans Day	-	open
Thanksgiving	-	closed - Wednesday 23rd - 12:00 midnight
		" - Thursday 24th
		open - Friday 24th - 7:30 a.m.
Christmas	-	closed - Friday 23rd - 6:00 p.m.*
		" - Saturday 24th
		" - Sunday 25th
		" - Monday 26th
		open - Tuesday 27th - 7:30 a.m.
New Year's	-	closed - Friday 30th - 12:00 midnight
		" - Saturday 31st
		" - Sunday 1st
		" - Monday 2nd
		open - Tuesday 3rd - 7:30 a.m.

*No 3rd shift runs made on Friday December 23rd.



HAPPY HOLIDAYS

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1/73 THROUGH 10/77

Oregon State University
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