EXCHANGE

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INEL SUPERCOMPUTING CENTER

Computer Operations and Data Processing of EG&G Idaho
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Computer Services Call List

Note: All numbers listed below can be called within Idaho (area code 208).

ACF2 SPECIAL SERVICES/OfficeVision ID-CRCS	526-9161
AI PROJECTS	526-9683
COMPUTER MANUALS/OfficeVision ID-KRS	526-8482
COMPUTER REGISTRATION/OfficeVision ID-CRCS	526-9949
Consulting (User Services)	
<i>Business (IBM 3090, HP 3000)/OfficeVision ID-BUS</i>	526-9355
<i>Microfilm (COM) (Business)</i>	526-9355
<i>Microfilm (COM) (Scientific)</i>	526-9440
<i>Network (6-COMM)</i>	526-2666
<i>Scientific (CRAY X-MP, WORKSTATION)/Email-consult@gem.inel.gov/ OfficeVision ID-SSUS</i>	526-9440
ISC Input/Output Area/OfficeVision ID-POP	526-9734
Computer Training (PC Training)	526-9033
Scientific Computer User Training	526-9440
Data Entry And Keypunch Services/OfficeVision ID-TJE	526-1504
EG&G Idaho Information Center	526-4636
Field Support (Hardware Repair)	526-9311
Macintosh Support (6-6MAC)	526-6622
NRC Data Bank Support	526-9071
OfficeVision Hotline	526-0566
PC Applications Development/OfficeVision ID-ART	526-9466
PC Systems Support (6-INFO)	526-9466
Remote Job Entry Terminals	
WCB	526-1710
Software Support/OfficeVision ID-MHJ	526-9340
System Status Information	
CRAY X-MP (Recording)	526-9560
DICOMED (Recording)	526-9731
HP 3000 DICOMED	526-9734
IBM 3090 MVS/IBS/VM/NOMAD/OfficeVision (Recording)	526-9561
NCR-fiche (Recording)	526-9561
Network (6-COMM)	526-2666
Printers	526-9734
Tape Management Library/OfficeVision ID-TAPE	526-9880
Tape Withdrawals/OfficeVision ID-KRS	526-8482
Terminals (Moves Or Acquisitions)	526-2666

EXCHANGE

VOL. 9-92

EXCHANGE is published monthly by the Idaho National Engineering Laboratory (INEL), a multi-disciplinary facility operated for the U.S. Department of Energy (DOE). The purpose of **EXCHANGE** is to inform computer users about recent changes and innovations in both the mainframe and personal computer environments and how these changes can affect work being performed at DOE facilities.

Computer information in **EXCHANGE** is divided into the following categories:

- *Of General Interest* — Information describing various INEL computing activities.
- *Education News* — Communication device between educators and INEL professionals.
- *Business News* — Information pertaining to the various business hardware and applications (e.g., ADoCS, AWOS, CAPS, HRS, IMMS, PECOS, OfficeVision, NOMAD, and SPMS).
- *Scientific News* — Information pertaining to the CYBER and CRAY systems and scientific computing.
- *Workstation News* — Information that pertains to UNIX-based workstations.
- *Visualization and Imaging* — Covers visualization tools that can enable users, in scientific/technology and in data processing of every discipline, to enhance their analyses with "added value" techniques.
- *Network News* — Information pertaining to data communications, [e.g., Ethernet, IBM SNA 3270, Local Terminal Network (LTN), and Dial In/Out].
- *PC News* — Information that pertains to personal computers.
- *Last Minute Items* — Last minute change information that could pertain to any of the categories above. All readers should refer to this section for information that possibly affects them.

We encourage readers to contribute articles, photos, graphics, and comments to

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SIXTH ANNUAL
INEL
COMPUTING SYMPOSIUM
SEPTEMBER 21-24, 1992
SHILO INN
IDAHO FALLS, IDAHO

EVOLUTION

IN

TECHNOLOGY

The Idaho National Engineering Laboratory (INEL) continues the tradition of providing a comprehensive view on the advances in computer technology at the SIXTH ANNUAL INEL COMPUTING SYMPOSIUM. This four-day event will provide information on current and future tools, techniques, and methodologies for using computer and communications technologies in both business and scientific environments. The symposium will contain valuable information for managers, scientists, engineers, administrators, educators, and data processing professionals.

SIXTH ANNUAL INEL COMPUTING SYMPOSIUM

TECHNICAL SESSIONS

COMPUTATIONAL SCIENCE AND ENGINEERING

The Computational Science and Engineering session will highlight recent developments in techniques to support simulation and modeling of science and engineering problems. (Two days)

DATABASE SYSTEMS

Speakers in this session will discuss various approaches, techniques, and tools for designing and implementing increasingly complex databases that are networked and distributed.

DISTRIBUTED COMPUTING

The Distributed Computing session will highlight developments in achieving interpretability in a heterogeneous networked environment.

ENVIRONMENTAL APPLICATIONS

This session focuses on various computational solutions to some specific environmental issues and problems as applied to the INEL and elsewhere.

ES&H COMPLIANCE APPLICATIONS

This session presents significant computer applications that either prove or assist compliance with environmental, safety, and health orders and regulations.

INTELLIGENT SYSTEMS

The Intelligent Systems session will cover various applications of artificial intelligence systems and neural networks.

NETWORKS

Presentations in the Networks session will cover various distributed computing architectures, examples of specific networked systems, and techniques for managing and controlling network usage.

QUALITY

Presentations in the Quality session will include discussions on quality improvement techniques in software engineering, tools to assess and improve the quality of existing software, and methods for improving system reliability.

SECURITY

Speakers in the Security session will address various tools and strategies for maintaining computer and network security and protecting against viruses. This session will also cover some computational tools for security training and intrusion detection.

SOFTWARE TOOLS

Presentations in this session will focus on products, techniques, and methodologies for enhancing the performance and productivity of today's software. Topics include Risk Analysis, Scheduler Modeling, CASE, Motif and Root Cause Analysis.

VISUALIZATION

Speakers in this session will highlight current tools, techniques, and methodologies for using computer graphics to visualize complex data.

There is no registration fee for the SIXTH ANNUAL INEL COMPUTING SYMPOSIUM. Admittance to all sessions with the exception of the Vendor Exhibits and the Graphics Gallery will be prohibited without prior registration. Please contact Pat Woolf at (208) 526-9408 or OV/ID PAW to register.

Monday, Sept 21

8:00 a.m.

SPOTLIGHT SPEAKER

Robert P. Freese is the president and co-founder of Alphatronix, Inc. Alphatronix introduced the world's first computer storage system based upon a new laser technology which makes optical disks erasable.

In 1989, Freese and his team were honored with the Distinguished Inventor of the Year Award and have recently received national awards from Inc. Magazine and the U.S. Chamber of Commerce.

Dr. Freese will share his unique views on quality and innovation along with his own personal story of how he went from being an optical scientist for 3M Co. to CEO of one of the fastest growing technology firms in the country.

Tuesday, Sept 22

10:00 a.m.

KEYNOTE SPEAKER

Clyde Prestowitz is the author of "Trading Places," the classic book on U.S. - Japan trade competition. Prestowitz's credentials include past U.S. Trade Negotiator and senior associate for the Carnegie Endowments for International Peace. He is currently the founder and president of the Economic Strategy Institute (ESI). ESI is a nonprofit "think tank" backed by many U.S. high-technology firms to promote improved profitability through reformed trade practices with foreign competitors. He has been called "one of the most influential people in private Washington." Prestowitz's dynamic keynote address will deal with key strategies for maintaining U.S. competitiveness through science and technology.

Wednesday, Sept 23

8:00 a.m.

HIGHLIGHT SPEAKER

Clifford Stoll is an astronomer by training and a computer security expert by accident. At Lawrence Berkely Laboratory, Stoll's discovery of a 75-cent accounting error led him on a trail of computer espionage. Stoll's search ended a year later in a sting operation which uncovered a spy ring in West Germany who sold their secrets to the KGB for cocaine and tens of thousands of dollars. Stoll will give his account of this adventure and discuss other aspects of computer security in a highly entertaining and informative presentation.

SPEAKERS

SIXTH ANNUAL INEL COMPUTING SYMPOSIUM

DAILY ACTIVITIES 8:00 a.m. - 5:00 p.m.

Vendor Exhibits - Graphics Gallery - ADPE Aquisitions Help Desk

Monday 21st	Tuesday 22nd	Wednesday 23rd	Thursday 24th
8:00 a.m. Spotlight Speaker Robert Freese, CEO, Alphatronix	8:00 a.m. GENERAL SESSION Welcome: Augustine Pitrolo, Manager, US DOE - Idaho Field Office	8:00 a.m. Highlight Speaker Clifford Stoll, Author, "The Cuckoo's Egg"	8:00 a.m. - Noon CONCURRENT TECHNICAL SESSIONS - Computer Security - Distributed Computing - Networks - Visualization
9:30 a.m. Computer Applications for DOE Field Offices (All day)	8:45 a.m. - 9:45 a.m. Headquarters Report: Gerald F. Chapple, Director, DOE-Office of Information Technology Services and Operations	9:30 a.m. - Noon SPECIAL SESSION International Computing Standards	
9:30 a.m. Vendor Showcase (All day)	10:00 a.m. - Noon Keynote: Clyde Prestowitz, President and Founder, Economic Strategy Institute		
NOON — Lunch	NOON — Lunch	NOON — Lunch	NOON — Lunch
	1:00 p.m. - 5:00 p.m. CONCURRENT TECHNICAL SESSIONS - Computational Science & Engineering - ES&H Compliance Applications - Intelligent Systems - Software Tools	1:00 p.m. - 5:00 p.m. CONCURRENT TECHNICAL SESSIONS - Computational Science & Engineering - Database Systems - Environmental Applications - Quality in Computing	1:00 p.m. - 5:00 p.m. SPECIAL SESSION Research Directions & Opportunities
6:00 - 7:00 p.m. SPECIAL SESSION What Vendors Need to Know...	7:00 p.m. - 9:00 p.m. SPECIAL SESSION Technology in the Classroom	7:00 p.m. - 9:00 p.m. SPECIAL SESSION Technology in the Classroom	5:00 p.m. — Adjourn

OF GENERAL INTEREST

INEL Forms Available on Novell Server

Todd Packer, Records and Information Management Support

Records and Information Management Support (RIMS) and Data Applications have teamed up to make Idaho National Engineering Laboratory WordPerfect forms available to all Novell Network users. The forms are available on the TMNT server.

To access the server, you must complete the following steps:

1. Log out of OfficeVision and any DOS programs that you are currently running.
2. Go to your Novell login directory (generally I:\LOGIN>).
3. Type **login tmnt/guest** and press <Enter>. This will log you into the TMNT server as a guest on the K:\EG&G.DOC> directory.
4. Change to your WordPerfect directory (generally C:\WP51>).
5. Type **wp** and press <Enter>. This will take you into a blank WordPerfect screen.
6. Press <F5> to list a directory.
7. Type **K:\EG&G.DOC** and press <Enter>. This will bring up a list of all current INEL forms.
8. You can retrieve the form you need and complete it or copy the form(s) that you need into another directory. You cannot save anything to the K:\EG&G.DOC directory. You will need to save the form(s) to a different directory (i.e., C:\WP51\FORMS).
9. After saving the form(s), exit out of WordPerfect, returning to the DOS prompt (generally C:\>).
10. Type **K:** and press <Enter>. This will return you to the K:\EG&G.DOC> directory.
11. Type **logout** and press <Enter>. This will log you out of the TMNT server and the process is complete.

The forms on this server will be kept current by Forms Management. If you have any questions or problems with this service, please contact Todd Packer at (208) 526-5854

for Forms Management questions or Network Support at (208) 526-4636 (Option 5) for network related questions.

You Need PECOS for Property Control

Kirk Sheppard, PECOS System Manager

Have you had to turn in a "Theft, Misuse, or Loss of Government Property" form for unlocated property? Your group or unit could reduce its property accountability risk exposure by properly using the Plant and Equipment Control System (PECOS). Recognized by the U.S. Department of Energy for controlling property for the Idaho National Engineering Laboratory, PECOS successfully manages user and location changes for personal computers and office equipment.

For more information on the capabilities of PECOS, please call (208) 526-0344 or send an OfficeVision note to KSP.

Attention INEL Network Users

Janet Curtis, Computer Registration and Computer Security

Are you one of the lucky users that has an Internet only access? Internet registration is for workstations registered on the INEL Network (INET). Beginning September 1, 1992, Internet only users will be solely responsible for notifying Computer Registration and Computer Security (CRCS) of any Internet deletes. This process will totally eliminate both the Annual Renewal Notice and Failure To Renew Notices. The user, however, is responsible for notifying CRCS whenever they no longer need an Internet access; otherwise, they will continue to be billed for this access. If there are any question or concerns, please contact CRCS at (208) 526-9949.

Deadline For Submitting October Issue EXCHANGE Articles

The deadline for submitting articles for the October issue of **EXCHANGE** is September 11, 1992. Onsite contributors may submit their articles to MS 2602 or send an OfficeVision note to JUD. Offsite contributors may mail their contributions to EG&G Idaho, Inc., **EXCHANGE** Editor, P.O. Box 1625, Idaho Falls, ID, 83415-2602.

SCIENTIFIC NEWS

Scientific Computer User Training Schedules for Fall Classes

Bob Reed, Scientific User Services

Tape Management will be taught September 15, 1:00 to 3:00 p.m., September 30, 8:00 to 10:00 a.m., and October 15, 1:00 to 3:00 p.m. The current CYBER based tape management system, TRS/KRS, will be replaced on September 12 by REELlibrarian, a UNIX-based tape management system. All tape management functions on the CRAY X-MP will be processed by REELlibrarian. Students will learn the commands to request a tape, perform audits, modify charge numbers, retention periods, and tape access permissions.

Introduction to Scientific Computing Facilities will be taught September 1 and October 1 at 1:15 p.m. This noncommittal presentation is an overview of the scientific computing environment at the INEL Supercomputing Center and of the services provided by the Computer Operations and Data Processing Group of EG&G Idaho, Inc. It provides a beginning CRAY X-MP user or manager an understanding of the components of the system; how work is submitted, received, and billed; and what assistance is available.

Introduction to UNICOS will be taught October 6, 8:00 a.m. to 5:00 p.m. This course is designed for personnel who have no experience with UNIX. Students will receive the basic instruction necessary to become functional in the UNICOS environment residing on the INEL CRAY Supercomputer. The class will include information regarding file structures, file directory and manipulation commands, I/O, security, elementary shell programming, Email, tape commands, and an overview of many local commands and utilities. Hands-on use of the system is an important part of each class. These students should also enroll in **The vi Text Editor** class.

Advanced UNICOS will be taught October 20, 8:00 a.m. to 5:00 p.m. This class covers advanced topics in the UNICOS environment such as TCP/IP, filters and commands used in shell scripts, formatting data for printing, and disk file management. Also included are system and job accounting, UNICOS tape support, and some advanced

features of the sed editor. Prerequisites: **Introduction to UNICOS** or equivalent knowledge.

The vi Text Editor will be offered September 10, 1:15 to 4:00 p.m. and October 7, 1:00 to 4:00 p.m. The vi or visual screen-oriented editor is available on nearly every UNIX system. This class will satisfy the basic need to edit existing files, create and save new files, and insert, delete, or change text in full-screen mode. Prerequisites: **Introduction to UNICOS**.

Advanced vi will be taught September 17, 8:00 a.m. to 12:00 noon. This course addresses the advanced features of the vi editor including file manipulation, setting editing characteristics, interfacing with shell commands, and troubleshooting. Additional topics include text buffers, searching, and substitution. Prerequisites: **The vi Text Editor**.

Shell Programming will be taught November 17, 8:00 a.m. to 5:00 p.m. Writing shell scripts, from the basics to the advanced, understanding shell variables, and the shell user environment are the goals of this course. The class includes flow control, shell functions, errors, and signals. This class is based on the Bourne shell. Prerequisites: **Introduction to UNICOS** or equivalent knowledge, and **The vi Text Editor**.

Using Email will be taught September 10, 8:30 to 11:30 a.m. Using electronic mail (Email) is necessary for almost all UNIX users. You will learn the essentials of the mail and mailx utilities as well as the use of certain national networks that are available at the INEL for mail and file transmission. Prerequisites: **Introduction to UNICOS** and **The vi Text Editor**.

Introduction to X Window System will be taught September 15, 8:30 a.m. to 12:00 noon and October 8, 1:00 to 5:00 p.m. The X Window System allows the terminal screen to be divided into multiple screens, thereby taking advantage of the multitasking ability of UNIX that requires interactive response. Topics included are an introduction to the X Window System, using the window manager, and customizing the window manager and keyboard. The class is oriented towards users of the X Window System. Prerequisites: **Introduction to UNICOS** and **The vi Text Editor**.

Introduction to the Emacs Environment will be taught September 8, 8:30 a.m. to 4:30 p.m. Emacs is a real-time, self-documenting, advanced, customizable, display editor. Familiarization with the screen organization, entering and exiting Emacs, and basic editing commands will be taught. Prerequisites: **Introduction to UNICOS**.

SCIENTIFIC NEWS (continued)

Intermediate Emacs will be taught October 13, 8:00 a.m. to 5:00 p.m. This class is oriented toward programmers, but nonprogrammers should still benefit. Topics covered in this session will include more text manipulation commands; introduction to regular expressions; more about files and buffers; introduction to regions; more about "C" language support and program development, including tags; and major and minor modes and their uses. Support for other programming languages, such as FORTRAN, can be covered if students are interested. Prerequisites: **Introduction to the Emacs Environment**.

Debugging with cdbx will be taught October 14, 8:00 a.m. to 5:00 p.m. Cdbx is a valuable tool for source-level debugging of executable programs produced with any of the language processors under UNICOS. Breakpoints and traces are featured to allow the user to display or change any desired portion of the code. The workshop format of this class will feature on-line examples for the student to gain debugging experience. Although cdbx is designed for use with CAL, CFT, CFT77, C, and Pascal, this course is oriented towards the CFT77 (FORTRAN77) programming language. Prerequisites: **Introduction to UNICOS** and working knowledge of CFT or CFT77 programming language.

NCAR Graphics Overview will be taught September 16, 8:30 a.m. to 4:30 p.m. The NCAR graphic system was designed to give users scientific visualization capabilities through a high-level FORTRAN library. This course will be a general overview of the NCAR graphics system and will cover the most often used NCAR utilities. Prerequisites: **Introduction to UNICOS** and familiarity with FORTRAN.

Graphics Software Overview will be taught October 27, 8:00 a.m. to 5:00 p.m. This course will provide an overview of the graphics packages available at the INEL through the INEL Supercomputing Center (ISC). A brief introduction to the software available on the CRAY X-MP and workstations will serve to acquaint users with the capabilities and limitations of each. The overview will include the various library interfaces available, as well as the interactive tools. The class will include information to assist the user in determining which package may be best suited to their needs. Also included will be a summary of the different output systems available and hands-on experience with some of the hardware available in the ISC Visualization lab. Prerequisites: None.

The awk Utility will be taught October 29, 8:00 a.m. to 5:00 p.m. The awk utility is a pattern scanning and processing language. The awk utility has a flexible format, conditional execution, looping statements, numeric and string variables, as well as those famous UNIX regular expressions. Prerequisites: None.

FrameMaker Text* is a day and a half class that will be taught October 21 8:00 a.m. to 5:00 p.m. and October 22, 8:00 a.m. to 12:00 noon. This course presumes no previous experience with FrameMaker, a desktop publishing package. This course will cover basic FrameMaker editing and word processing functions, creating and modifying templates, and creating footnotes. Prerequisites: **Introduction to the X Window System**.

FrameMaker Graphics* will be taught October 22, 1:00 to 5:00 p.m. This course will include the creation and editing of graphics using FrameMaker. It will also cover mixing graphics and text into one document. Prerequisites: **Introduction to the X Window System** and **FrameMaker Text**.

FrameMaker Page Layout* will be taught October 28, 8:00 a.m. to 5:00 p.m. This course will instruct students on how to create templates, create and modify headers and footers, use and modify master pages, create custom layout pages, manage text flow, and use reference pages to create master components for their documents. This class is appropriate for FrameMaker users who need to create, modify, and use templates. The class is also appropriate for users who need to create more complex page layouts. Prerequisites: **Introduction to the X Window System**, **FrameMaker Text**, and **FrameMaker Graphics**.

FrameMaker BookBuilding* will be taught November 4, 8:00 a.m. to 5:00 p.m. This course will instruct students on how to create and modify a table of contents, create and modify an index, build a multidocument book, and use cross-referencing. This class is appropriate for FrameMaker users who need to produce books, either single or multidocument. Prerequisites: **Introduction to the X Window System**, **FrameMaker Text**, **FrameMaker Graphics**, and **FrameMaker Page Layout**.

FrameMaker Additional Topics* will be taught November 18, 8:00 a.m. to 12:00 noon. This course will instruct students on how to build keyboard macros, use hypertext, use the Maker Markup Language (MML), more about variables, and setting equations with FrameMath. This class is appropriate for FrameMaker users who are interested in learning any of the

SCIENTIFIC NEWS (continued)

features listed above. Prerequisites: **Introduction to the X Window System, FrameMaker Text, FrameMaker Graphics, and FrameMaker Page Layout.**

*Note for all FrameMaker Students: Each student will be provided with a workbook. If you wish to keep the workbook there will be a \$30 charge. The workbook may be purchased before or after the class.

These classes are open to all INEL employees. There is no charge for the class other than your time. To register, please call Scientific User Services at (208) 526-9440, send an OfficeVision note to SSUS, or send Email to consult@gem.inel.gov.

CRAY/AID

Unused Codes Removed from CRAY X-MP

Keith Wickham, Computational Services

Two computer codes have been removed from the CRAY X-MP disk and placed on tape because they were not being used. The first code is NACHOS that is used for two-dimensional incompressible fluid dynamics problems. The second is FLUSH and its post processors FORCE and STRAIN that are used for soil structure interaction problems. If there is interest in these codes in the future, they can be reinstalled. For more information, please contact Keith Wickham at (208) 526-9332 or send Email to kwi@inel.gov.

Goodbye TRS

John Culley and Anita Litteer, Scientific User Services

It's almost here! REELlibrarian, the new tape management system for the CRAY X-MP/216, goes into production on September 14, 1992. On September 12 and 13, tapes in TRS/KRS will be loaded into REELlibrarian. There will be no tape service on these two days. The symbolic names from TRS/KRS will become the vname in REELlibrarian. Because symbolic names were in some cases duplicated in TRS and KRS, the TRS symbolic names will be converted to upper case and the KRS symbolic names will be left in lower case when the REELlibrarian vnames are loaded.

From September 14 through September 30, TRS commands can still be used only to read and write tapes. Tapes created on the CYBER 830 during this period will be entered into REELlibrarian nightly. TRS tape requests will be verified through REELlibrarian before access is granted. After September 14, all tape management functions, such as changes to charge numbers, expiration dates, and permissions, will have to be done from the CRAY using the new REELlibrarian commands. These new commands are

rlchacid	change charge number
rlchmod	change security permission mode
rlchgrp	change group ownership
rlchrp	change retention period (expiration date)
rlrsv	reserve a volume set without mounting it
rlls	audit report generator
rlscratch	release a volume set to scratch pool.

These new commands are being taught in a Tape Management class (see the Scientific Training article in this issue). If you have questions or would like to enroll in the class, please call Scientific User Services at (208) 526-9440, send an OfficeVision note to SSUS, or send Email to consult@inel.gov.

It's Fiscal Year-End Time Again

Anita Litteer, Scientific User Services

The end of FY-92 is fast approaching. EG&G Idaho, Inc. plans to replace the current unit billing method with

SCIENTIFIC NEWS (continued)

block funding for INEL CRAY X-MP/216 customers. Non-INEL customers will continue to be unit billed for CRAY CPU and disk usage at the published rates. Charge numbers will still be necessary for all CRAY customers. They will be used to track and report usage of the CRAY CPU and disk as well as to bill non-INEL customers. Unless an FY-92 charge number carries over, all access to the CRAY system via FY-92 charge numbers will be automatically terminated. As soon as your FY-93 charge numbers are available, you will need to update your charge numbers for system access and for file storage. Charge numbers must be validated in the EG&G CAPS system before they can be used on the CRAY.

Since the CYBER will be removed on October 1, 1992, no charge number changes will be required on the CYBER.

CRAY SYSTEM ACCESS

Use `creact` on the CRAY to declare access to FY-93 charge numbers. To register a new charge number, type the following:

```
Creact -a chargenumber
```

where "chargenumber" is the nine-digit charge number provided by your line management. If the number is controlled by a master user, you must contact the master user to arrange for access to the charge number. To discontinue access to an old charge number type the following:

```
creact -d chargenumber
```

To display the charge numbers you are currently registered to use type the following:

```
creact -l
```

If you want to check whether a given CAPS number is valid for computer usage, type the following:

```
valact -v chargenumber
```

CRAY FILE STORAGE

Charge numbers for disk file storage may need to be updated. Use the `chacid` command to change the charge number on permanent files:

```
chacid chargenumber filename
```

`Chacid` will accept wildcard characters to allow updating charge numbers on multiple files. To change all files in your directory structure from one number to another, type the following:

```
find . -depth -acid oldnum -exec chacid newnum {} \;
```

where `oldnum` and `newnum` are replaced by the old and new charge numbers respectively.

TAPE STORAGE

A new tape management utility will be implemented on September 12, 1992. To update charge numbers on magnetic tapes, use the new command, `rlchacid`:

```
rlchacid chargenumber Volset
```

`RLchacid` will accept wildcard characters in the `Volset` to allow updating multiple tapes. Special classes are being held to introduce `rlchacid` and the other new tape management commands (see the article on Scientific Computer User Training in this issue).

If you need assistance with any of the above processes, please contact Scientific User Services at (208) 526-9440, send an OfficeVision note to SSUS, or send Email to consult@inel.gov.

VISUALIZATION AND IMAGING

Correction

In an article that appeared in the July 1992 issue of **EXCHANGE** (page 7), same title as listed below, we inadvertently misprinted the name of the tarfile. We are including the paragraph in which the error appeared with the corrected tarfile name.

xmgr, A Workstation Plotting Package

Fred McClurg, Visualization and Imaging

The compressed tarfile of the `xmgr` source is available through anonymous ftp on jade (134.20.8.49) in directory "pub/src/graphics" and is named "xmgr-2.07.tar.Z". Please contact your workstation system administrator for installation details. For additional information, contact Fred McClurg at (208) 526-9720, or send Email to frm@inel.gov.

NETWORK NEWS

PC Local Area Network Support

Jeff Summers, Data Networks

The Data Networks Unit has recently expanded its knowledge base in personal computer (PC) Local Area Network (LAN) support with the addition of four people: Jeff Summers, Rob Hoffman, Scott Landon, and Mark Hoffman. In conjunction with other personnel already within the unit, a LAN support team has been developed to provide varying levels of services to Idaho National Engineering Laboratory network customers. The primary focus of this team is the development, administration, and service of Novell PC LAN systems.

The team has been initially organized to provide support at four basic levels:

- Level 1 The Data Networks Unit (DNU) has responsibility for all day-to-day operational details associated with Netware installation, maintenance, and troubleshooting plus all administrative duties for groups, users, and rights (including software runners) on user-owned file servers and workstations. Response would be on a priority 1 basis. This level is designed to free customers from network operational concerns and still provide a means for developing LAN applications specific to an organization.
- Level 2 The DNU has responsibility for Netware operating system installation, maintenance, and troubleshooting on user-owned file servers. The customer would have primary responsibility for

administrative duties relating to users, groups, and access privileges. The DNU would provide priority 1 response for operating system issues. This level is designed for those customers with System Administrators who feel comfortable with routine operations but need more in-depth technical support.

- Level 3 The DNU provides help on an as-needed basis for customer owned file-servers and workstations. This level is designed for those LANs with System Managers/Administrators that need occasional technical help on a first-come, first-served basis.
- Level 4 The DNU provides basic Netware services to single or multiple users on DNU maintained and owned systems. This level is intended for customers that do not elect or do not have funds to purchase entire systems but wish to take advantage of LAN capabilities for file and print sharing, etc.

Rates for Level 1 and 2 are negotiated with a Service Level Agreement (SLA). Contributing factors will be location, number of users, type of application, and availability required. SLAs will be negotiated on a case-by-case basis. Level 3 is charged by time and materials. Level 4 would be a combination of negotiated and standard rates, depending on the resources required.

Other services such as LAN design and development and OS2 support are also available, and future services such as system backups are being planned. Please watch for additional articles in future issues of **EXCHANGE**.

For further information, please contact John Tanner at (208) 526-8710 or send an OfficeVision note to TAN.

PC NEWS

The articles in this section contain suggestions for more productive use of personal computers (PCs). Since articles for this section are collected and edited by EG&G Idaho, Inc., New Customer Applications Unit, but distributed within other companies and the U.S. Department of Energy, specific questions regarding the use of hardware and software should be directed to the PC Representative for your Company who is available to answer questions and help resolve problems. For example, the EG&G Idaho PC Hotline (526-INFO) is available to answer questions and resolve problems for the EG&G Idaho PC users. The WINCO IC Hotline (526-3359) performs the same function for Westinghouse Idaho Nuclear Company, Inc.

SOFTWARE TIPS

Lotus Graphs With Error Bars

Mark W. Huntley, Scientist:WINCO

In many instances it becomes necessary to place error bars on individual data points to show the uncertainty inherent in those measurements. This is relatively easy in advanced plotting programs like Sigma Plot but is more cumbersome in spreadsheets like Lotus or Quatro Pro. A straightforward technique has been developed to plot the data with error bars, in Lotus, and is described below.

Figure 1

The input areas are shown in Table 1 and must be entered as shown. A linear regression fit of the data is shown also but is optional in most instances. The keystrokes needed to plot are shown at the bottom of the table in the usual Lotus abbreviations.

After plotting, the graph should look like Figure 1. Also, I have created a spreadsheet that can plot up to 10 data points automatically. This spreadsheet is available to anyone. Send a formatted disk, either 3.5 or 5.25 in., to MS 2202 or if you have any questions please contact Mark Huntley at (208) 526-1627.

Table 1

	A	B	C	D	E	
						1
						2
X Data Range	276	262	246	237	231	3
	276	262	246	237	231	4
	276	262	246	237	231	5
	276	262	246	237	231	6
	276	262	246	237	231	7
Y Data Range	3.40	3.70	3.85	3.97	4.11	8
						9
						10
						11
						12
						13
						14
Linear Reg.	3.40	3.62	3.86	4.00	4.10	15
(Optional)	3.40	3.62	3.86	4.00	4.10	16
	3.40	3.62	3.86	4.00	4.10	17
	3.40	3.62	3.86	4.00	4.10	18
	3.40	3.62	3.86	4.00	4.10	19
						20
Error Bars						21
Y + 1 Sigma	3.57	3.88	4.04	4.16	4.31	22
Y - 1 Sigma	3.24	3.52	3.66	3.78	3.91	23
Y Range	3.40	3.70	3.85	3.97	4.11	24
						25
						26
Keystrokes needed to graph data:						
/GTXXB3.F7~CB9.F13~DB15.F19~FB21.F25~						
OFCSDLFLQQ						
(F10) TO VIEW GRAPH						

WordPerfect Printing Tips

Nancy M. Cox, PC Support, End-User Computing

Have you ever finished typing a long document in WordPerfect, saved it and sent it to your printer, and nothing happens? Your first response is panic! Before you panic, check out these functions:

- Press Shift F7, C (control printer) to find out the error message. In most cases, the printer is not finding a font you used. Cancel all print jobs before you proceed any further. Press F7 (exit) to return back to your document.
- Press Shift F7, choose S (select printer), E (edit), check the *Select Printer: Edit* screen, the file name should contain the name of the .PRS file. It should not have **S.PRS**; this will cause problems. If it contains this filename, call PC Systems Support at (208) 526-4636, option 2, choice 1. The **Filename** should reflect your printer type; for instance, if you have an HP LaserJet III, it should read **HPLASIII.PRS**.

- Selection 1 - Name = **HP LaserJet III** (or your printer type)
- Selection 2 - Port = **LPT1:**, unless you know it needs to go to a different port such as LPT2, COM1, etc.,
- Selection 3 - Sheet Feeder = **None**
- Selection 4 - Cartridges/Fonts/Print Wheels, = (should be blank)
- Selection 5 - Initial Base Font = **Letter Gothic 12cpi (DA)**
- Selection 6 - Path for Downloadable Fonts and Printer Command Files = **C:\WP51\FONTS**
- Selection 7 - Print to Hardware Port = **No**

Selection 4 is to verify Cartridges/Fonts/Print Wheels. Select C under *Select Printer*: highlight **Soft Fonts**, and press <ENTER>. Now on the *Fonts Groups*: screen, highlight **HP DA L.Gothic/Presentation** and press <ENTER>. This will bring up a screen listing the soft fonts. Each of these needs to be marked with a plus sign, with the exception of any **Math** or **PI** fonts. If you have either the **Math** or **PI** fonts, call PC Support for a new printer driver. After these have been marked, press F7 (exit) twice to update your fonts. You will see a countdown in the bottom left side of your screen. After it has finished counting, exit (F7) back to the *Select Printer Edit*: screen and verify that **Letter Gothic 12cpi (DA)** is selected; if it is not selected, choose F (Initial Base Font), and select the correct font.

Selection 6 depends on what directory you have stored your fonts in.

Now let's check some other selections to make sure everything is functional. From your document screen or a blank text screen, press Shift F1, *Setup*: choose selection 6, **Location of Files**, to ensure that these are filled in correctly. The printer files are key to printing. If you are not sure of their location, exit (F7), hit F5 to go to your directories, and locate your **.PRS** files. This is the location of the printer files. Return to *Setup*: **Location of Files** if necessary.

Now that your setup and printer selections are all correct, let's check the document initial base font. Press Shift F8, D (Document) and make sure that you have **Letter Gothic 12cpi (DA)** selected on line 3.

Now that everything is selected as it should be, let's print the document again. If it still will not print, note the name of the document, press F7, select **Yes** to save the document, replace if necessary, and reply **No** to **Exit WP?** This brings up a blank text screen. Press the space bar a couple of times, and do a Shift F10 (Retrieve) or use F5 to list and retrieve. Type in the whole path name, file name, and extension. Take out the spaces and print the document again. Now it should print just fine.

If all else fails, call PC Systems Support at (208) 526-INFO (526-4636), option 2, choice 1.

Useful Excel 4 Tips

Bonnie Scott, Computer Training, INEL Support

Number Formatting with Excel

When entering numbers that are not going to be calculated, such as phone numbers, ZIP codes, and Social Security numbers, you can save time by creating custom number formats that include parentheses and hyphens (or other constant information). You can then enter just the numbers in the cells.

First, select the cells where the numbers will be entered. Choose **Format, Number**, then press <Tab> to highlight the **Code** box. Simply type in your format and click **OK**.

For phone numbers, type (000) 000-0000. When you type a phone number into these cells, just type the numbers. Excel will add the parentheses and hyphen. For Social Security numbers, type 000-00-0000. You won't need to type the hyphens when you enter the data.

Wrap Text in a Cell

If you write a long paragraph or entry and want it to fit in (wrap down) a cell, type in the text and highlight the cell(s). Then choose **Format, Alignment**, and check the **Wrap Text** box. Excel will now fit your text into the cell at whatever width you set. If you make the column wider after you've wrapped text, you'll notice that the column height doesn't shrink. Double-click on the bottom edge of the row heading and resize row height.

Contribute PC NEWS Articles
Contact Teresa Gruen at (208) 526-8026,
OfficeVision user-ID TEG, or MS 1602

The Mouse Pad

Macintosh Software Upgrades

Mike Klingler, Macintosh Support, End-User Computing

Keeping up in the software world seems to be a never ending battle. You just get all of your software up-to-date and someone else comes out with a new version. Most upgrades are interim releases meant to fix bugs or incompatibilities with other software packages or new systems. Others are major upgrades, enhancing old features and adding powerful new ones.

Here is a list of the current versions of the most commonly used packages at the INEL. Compare the version you have with these to see if you are up-to-date or not.

Most upgrades should be ordered on an outside requisition. However, upgrades to Word, Resolve, Canvas, Persuasion, and MacLink Plus are ordered through PC Store by submitting OfficeVision miniform, EGG-633 ("Macintosh Software Upgrade Request"). If you have any questions about upgrading your software packages, please call Mike Klingler or Ivan Jenkins of Macintosh Support at (208) 526-INFO.

Macintosh Software Latest Versions (8/5/92)

Access PC	2.0
AfterDark	2.0v
AppleShare	3.0
Canvas	3.04
Claris Cad	2.0v3

Disk Express	2.11
Disinfectant	2.0.8
DOS Mounter	3.01
Empower I	4.08
Empower II	4.08
Excel	4.0
FastBack II	2.6.1
Filemaker Pro	1.0v3
FrameMaker	3.0
GateKeeper	1.2.6
HyperCard	2.1
Illustrator	3.2
MacFlow	3.7
MacLink Plus	6.0
MacMainframe	5.0
MacProject II	2.5
MacroMind Director	3.1
MicroPlanner XPert	2.03
MiniCad +	3.1
Norton Utilities	2.0
OmniPage Pro.	2.1
OmniPage	3.0
Pagemaker	4.2a
Persuasion	2.12
PhotoShop	2.01
Plottergiest	2.1
Resolve	1.1
Soft AT	2.5
Soft PC	2.5
Stratavision 3D	2.5
StuffIt Deluxe	3.0
Swivel 3D Pro	2.0.4
System 7 Tune-up	1.1.1
Think C	5.0
Think Pascal	4.0
VersaTerm-PRO	3.62
Word	5.0a

Macintosh LC II Evaluation

Ivan Jenkins, Macintosh Support, End-User Computing

On July 16, 1992, The Macintosh Steering Committee finished their evaluation and added the Macintosh LC II Computer to the checklist. The Macintosh LC II is an enhanced version of the Macintosh LC. It uses a 68030 microprocessor running at 15.6672 MHz. The LC uses a 68020 microprocessor running at the same clock speed. The new processor gives the LC II a slight performance boost and allows the computer to use System 7 virtual memory.

The LC II comes with 4 MB RAM soldered on the main logic board, expandable to 10 MB total (there are only 2 SIMM sockets for expansion). It uses the standard 1.4 MB SuperDrive, which can read and write DOS formatted disks with the appropriate software.

The model on the checklist comes with an 80 MB hard drive, and built in video support (512 KB Video RAM) for the Apple 12- and 13-in. monitors. On the 12-in. monitor it will support 16-bit color, and on the 13-in. monitor, it will support 8-bit color. It comes with 1-Monaural sound output port and 1-Monaural sound input port. There are 2-mini-DIN 8 serial ports and 1-Apple desktop bus port. It ships with a mouse, microphone, System Software Version 7.01, and HyperCard software Version 2.1.

Current checklist price on this model is \$1,441.00 without keyboard or monitor. The low cost and low profile of this Macintosh make it ideal for terminal replacement, data entry, word processing, and other low to medium central processing unit (CPU) intensive applications. Mathematical performance can be enhanced with the addition of a Motorola 68882 floating point unit (Math Co-Processor) that may be purchased as part of a processor direct card. For applications such as rendering, heavy animation, large relational databases, and other CPU intensive applications, one of the other Macintosh models on the checklist may be a better choice.

For help with purchasing Macintosh equipment call the Macintosh Hotline at (208) 526-4636, option 3.

PC STORE INFORMATION

Approved Computer Items

Frank Girard and Randy Heaps, PC Product Evaluation Committee, End-User Computing

EG&G Idaho, Inc. maintains a list of approved computer hardware and software items. This list is developed through evaluation efforts of the PC Product Evaluation Committee based upon company-wide requirements, as gathered by department-level representatives to the committee. The purpose of standards is to minimize training and support costs, as well as user-to-user compatibility issues while at the same time, providing the best possible tools for the job. Adherence to the standards is strongly recommended, recognizing that some specialized functionality may be needed. Input into the standards process is through your designated department representative.

Purchase of special-purpose items must be justified. Justification of nonstandard item(s) includes a description of each item, the purpose for which they are to be used, and what they **do** that similar standard items cannot. Please be descriptive (as you may be the only one familiar with the given item), yet concise. Personal preference and cost are **not** appropriate justification. Automated Data Processing Equipment Planning may need to approve many of these items. Questions may be directed to Frank Girard at (208) 526-6966 or Randy Heaps at (208) 526-9984.

OPERATING SYSTEM TIPS

A Few Often-Overlooked DOS 5.0 Commands

Bonnie Scott, Computer Training, INEL Support

DIR Command to Sort

Usually when the DIR command is entered, the directory is displayed in the order in which the files occur on the disk. The command, **DIR /O** will display an alphabetic listing of directories, followed by an alphabetic listing of

filenames. However, there are several different ways to sort the directory. The command form is

DIR /O:order

What you insert for the "order" will determine how the directory will be sorted. In place of "order," you can use the following commands:

:D	date and time (earliest first)
:-D	date and time (latest first)
:E	extension
:-E	reverse order by extension
:N	name
:-N	reverse order by name
:S	size (smallest first)
:-S	size (largest first)
:G	displays directories grouped before file list
:-G	displays directories grouped after file list.

Note: DIR | SORT | MOKE sorts by filename.

DIR Command to Search

Did you ever waste a considerable amount of time by manually searching through each subdirectory looking for a certain file or specific file type? When using the DIR command, it only lists those files contained in the current subdirectory. Sometimes you know you have a file stored somewhere, but you are not sure where.

The **/S** option allows you to find (or Search) for file(s) and display that drive and/or subdirectory where it resides. For example,

DIR BUD*.* /S	Searches all directories and subdirectories and displays a list of all files found whose filenames begin with BUD, and tells you where these BUD files reside
DIR REPORT92.DOC /S	Searches until this exact file is found

PC NEWS (continued)

DIR *.DOC /S

Displays a list of all files and locations where any files ending with a DOC extension are residing.

to obtain the procedure/syntax on using a command, just use the DOS HELP command.

HELP [command] or [command] /?

Help Command

Most software packages offer online HELP. DOS is no different; it offers a wonderful online HELP feature. To obtain more information about a specific DOS command or

For example, to obtain more information about the FORMAT command, type

HELP FORMAT or FORMAT /?

Training Center Course Schedule for October 1992

			1 WP Tables 1-5 WP Graphics 8-12 dBASE IV Intro 8-5	2 Lotus Intro 8-5 *** WordPerfect Inter 8-5
5 PC Concepts 8-12 DOS Intro 1-5 Freelance I (Charting) 8-5 *** Windows 1-5	6 OfficeVision Intro 8-12 dBASE IV Inter 8-5 *** WordPerfect Inter 8-4 * WordPerfect Intro 8-5	7 Lotus Intro 8-5 *** WordPerfect Inter 8-5	8 Lotus Adv 8-5 *** WP Macros 8-12 WP Merge 1-5 OfficeVision Intro 12-4 * PC Concepts 8-11:30 *	9 WP/Windows Trans. 8-12 *** Freelance III (Pres.) 1-5 *** Windows 8-12 OfficeVision Intro 8-12
12 MS Word 5.0 Intro 8-5 Freelance II (Drawing) 8-5 *** WordPerfect Intro 8-5	13 WordPerfect Intro 8-4 * WP Tech Doc Prep 8-5 *** Windows 8-12 WordPerfect Inter 8-5	14 Excel Intro 8-5 *** dBASE IV Intro 8-5 DOS 5.0 Intro 8-11:30 * DOS 5.0 Batch Files 12-4 *	15 OfficeVision Intro 1-5 DOS 5.0 Inter 8-12 DOS 5.0 Batch Files 1-5 ORPS 8-12 Lotus Intro 8-5 ***	16 Windows 1-5 Mac Intro 8-5 Lotus WYSIWYG 8-5 *** WP Merge 8-12
19 Lotus Inter 8-5 *** dBASE IV Intro 8-5 Windows 1-5	20 DOS 5.0 Intro 8-12 DOS 5.0 Inter 1-5 WordPerfect Inter 8-5 Freelance I (Charting) 8-5 *** PC Concepts 12-4 *	21 OfficeVision Intro 12-4 * OfficeVision Intro 8-12 ORPS 1-5 Lotus WYSIWYG 8-5 *** WP Macros 8-12	22 WordPerfect Inter 8-4 * Freelance II (Drawing) 8-5 *** dBASE IV Inter 8-5	23 WordPerfect Intro 8-5 *** WP Tables 8-12 Resolve Intro 8-5 PC Concepts 1-5
26 OfficeVision Intro 1-5 dBASE IV Dot Prompt 8-5 *** ORPS 8-12	27 Freelance III (Pres.) 8-12 *** WP/Windows Trans. 1-5 *** Mac Intro 8-5 DOS 5.0 Intro 8-12 DOS 5.0 Inter 1-5	28 MS Word 5.0 Intro 8-5 Freelance II (Drawing) 8-5 *** WordPerfect Intro 8-4 * Freelance I (Charting) 8-5	29 Lotus to Excel Trans. 8-12 *** DOS 5.0 Batch Files 1-5 DOS 5.0 Inter 8-12 dBASE IV Intro 8-5	30 Instructor Meeting - No classes scheduled

For enrollment or additional information, contact Computer Training Center on 526-9033.

Note: Classes are scheduled on an "as needed" basis and are subject to change. Classes also scheduled for groups upon request. Training centers available for special needs. Call 526-9033 for information.

* Classes will be held at CFA-606 Room 112.

*** Classes will be held at Eastern Idaho Technical College Room 146.

All other classes will be held at WCB Computer Training Center (WCB W2 F-4).

EXCHANGE

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This document contains new concepts or the author(s) interpretation of new calculations and/or measurements; accordingly, EG&G Idaho, Inc. is required by the United States Government to include the following disclaimer:

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