

Seafloor System Detects and Records Earthquake Data

Among the natural forces that offshore oil platforms must withstand are earthquakes. Though no oil platform has ever been damaged significantly by an earthquake, the consequences of damage could be severe to the environment and to human life.

To help oil companies be sure their platforms can resist earthquakes, seismic equipment

Seismic equipment designed at Sandia is under 210 feet of water, 10 miles off the California coast.

designed at Sandia is on the job under 210 feet of water, 10 miles off the southern California coast — and should keep on working for the next eight years.

The hardware is a product of the Seafloor Earthquake Measurement System (SEMS) program. The goal of SEMS is providing information to help ensure that designs for offshore platforms are based on correct assumptions about seafloor motion.

The latest equipment, SEMS III, continuously monitors seismic disturbances in the seafloor but records data only when movement is six times above the background motion. The system transmits data acoustically to a shipboard receiver when it receives the proper command (also acoustically). "Essentially," says project leader Gerry Sleepe (6258), "it's a way of sending data with sonar."

New Facts About Seabed

Previous versions of SEMS produced important new knowledge. "An earlier unit collected data showing that seabed soils behave differently from dry land during an earth-

quake," says Gerry. "Dry land shakes about equally in both the vertical and the horizontal direction, but so far it appears that the seafloor primarily shakes horizontally."

The information from SEMS III is combined with that from land- and platform-based seismic sensors to give researchers a more complete picture of how earthquakes affect offshore structures.

The system includes a microprocessor, a probe that contains accelerometers to sense seafloor motion, a battery pack, and a transducer to transmit recorded data. Besides Gerry, Sandia's SEMS team includes Bruce Engler, Pat Drozda, and Harry Morris (all 6258).

Fifty times more sensitive than its predecessor, SEMS III can detect earthquakes in its immediate area if their Richter magnitude is 3.0 or greater. That corresponds approximately to picking up quakes of magnitude 4.0 within a 50-kilometer range and 5.3 within a 250-kilometer range. SEMS III is expected to record an average of five quakes each year.

It has already recorded three this year. On Jan-

uary 17, it recorded a 3.5-magnitude quake centered near Gardena, Calif. On February 28, it recorded a 5.5 quake and a 4.6 aftershock centered in Upland. The Upland quake, which caused about \$20 million damage, was the strongest in southern California in the past two years.

Three-Axis Detection

The increased sensitivity of SEMS III comes partly from the improved multi-axis detection software used in its microprocessor

SEMS III has already recorded three earthquakes this year.

(lower-noise electronics also contribute). Unlike earlier versions of SEMS, which used a vertical-only detection algorithm, this one can process data on motion in all three directions simultaneously.

"The previous versions were designed and
(Continued on Page Four)

**Around-the-Globe
Backpacking —
See Page Seven**

No Longer 'Plain Vanilla'

Bond Drive Starts Next Week

Psst! Looking for an investment opportunity with a floor — but no ceiling — on yields? Want something that's risk-free? Rock-solid? Uncomplicated?

Sandians need look no further. The 1990 US Savings Bond Drive (April 9-20) opens the door to just such an investment for those who don't now buy bonds and allows current bond-buyers to increase their investment.

"Obviously, most Sandians are tuned in to the 'bond advantage,'" says Ray Reynolds (5120), chairman of the 1990 Savings Bond Committee. "Last year, we finished the campaign with a participation rate between 96 and 97 percent — and we topped the \$3 million mark in total investment allotments for the first time."

The April 15 Advantage

Advantages there are, not the least of which are safety and a guaranteed 6 percent annual rate of return. And as April 15 approaches (April 16 this year), another significant plus looms: Interest income on bonds is federal-tax-deferred until they're cashed in, and the interest escapes state

(Continued on Page Four)



FORMING A STRATEGY for their presentations at the all-employee meetings — three times on Thursday, April 19, at Livermore and once on Wednesday, April 25, at Albuquerque — are (from left) Jack Walker (6510), Joan Woodard (1820), Dan Arvizu (410), and Jay Gilson (8100-B). The quartet, invited by Al Narath to join him on the program for these first-ever meetings, will talk about key elements of the Labs' new strategic plan. "We plan to use a combination of historical perspective and personal experience to dramatize for all Sandians the importance of creating a new culture for meeting the Labs' new challenges," Jack says.

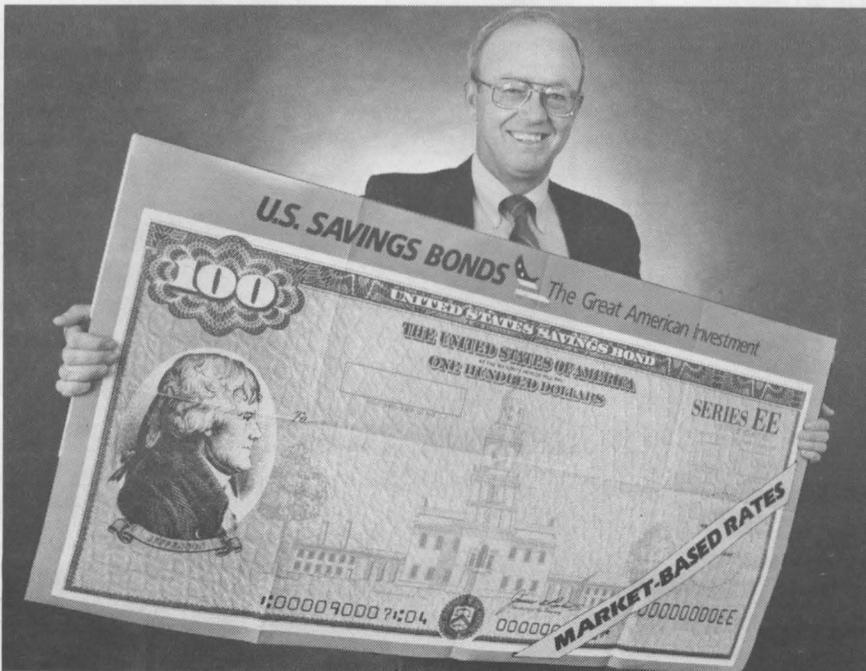


LAB NEWS

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SANDIA NATIONAL LABORATORIES

APRIL 6, 1990



GOING FOR BONDS in a big way is Bond Committee chairman Ray Reynolds (5120). US Savings Bonds aren't any longer considered a "plain-vanilla" investment choice, Ray notes.

This & That

Home by Midnight - That's Jim Leonard's (400) goal for next year's Northwest New Mexico Regional Science and Engineering Fair; this year's was March 15-17 at UNM. Jim (Sandia's representative on the steering committee) and members of the Fair's computer committee worked through the night on March 16 and until 3 a.m. the next morning sorting and recording the judges' results and producing award certificates and a presentation script for the March 17 morning ceremony. Jim notes that 118 of the 290 regional judges were Sandians, many of whom enlisted through the Labs' Volunteers in Action program.

* * *

About Average - I didn't get any response to my question in the last issue asking if any Sandians other than Wayne Potter (152) and his wife Petra have triplets or if any Sandians are themselves triplets. The odds that a pregnancy will result in triplets are about 10,000 to 1. With about 8,400 employees and several thousand retirees, I guess we're only about average in this area. We are, of course, much more prolific producers in our jobs.

* * *

Mail Call - Larry Greher of Legal Dept. 410 recently got a piece of mail addressed to Lawrence & Sandia Greher Corp. Two Sandians - Paul Yourick (3428) and Bob Eagan (1800) - received mail from separate places addressed to Sandia Nut Lab. And the last two lines of Paul's address were typed as "Oraant 3428, Albuquairy, NY 87185." Oraant? Typing with the feet is possible, but isn't too accurate.

* * *

All in a Title - I noticed a technical report title the other day that took up about half of the cover page. Reminded me of my days as a tech writer/editor when I'd occasionally tell an author that I was going to put an asterisk in the text, with the note: See title for details.

* * *

Earn Your Stripes - Why hasn't some creative Sandian coined a brilliant slogan to inspire us all for the DOE Tiger Team ES&H inspections this spring and summer? I've got a candidate: "Don't Let the Tigers Get You By the Tail!" You can do better, maybe? ●LP



GRAND PRIZE for Sandia's Earth Day 1990 Poster Contest at Longfellow Elementary School went to second grader Pilar Garcia, who receives an award ribbon from Rod Geer (3163). Pilar's poster and those of Longfellow's two first-prize winners are now in Washington for a national contest sponsored by DOE. Its theme is, "How would you use science to improve our planet?" Other Labs Earth Day activities: providing volunteer mentors for local high-school science workshops; offering a solar R&D display at UNM, April 20-21; and opening the Solar Thermal Test Facility to the public on Sunday, April 22, the official Earth Day, from 10 a.m. to 4 p.m.

Welcome

Albuquerque - Alison Cox (21-1), Dana Giles (2336), Don Shuster, Jr. (9115), Theresa Zender (1842); *Other New Mexico* - Martha Charles (3212).

Elsewhere: *Florida* - Manuel Clement (2114); *Georgia* - Timothy Gaylor (5172), Frank Mello (1522), Kevin Menges (5111); *Indiana* - John Burns (5176); *Kansas* - Tad Ashlock (9231); *New Jersey* - Duane Dimos (1842); *Texas* - Craig Novak (6344), John Waggoner (6253); *Utah* - Kevin Boyack (6517).

Take Note

Mike Cieslak (1833) and Tom Headley (1822), along with Richard Frank (Carpenter Technology Corp.), have received the American Welding Society's 1989 Warren F. Savage Award for a paper they co-authored about work performed jointly by Sandia and Carpenter. The award will be presented at the AWS annual meeting April 22 in Anaheim, Calif.

* * *

Former Sandian R. Bruce Miller (Titan Corporation) was selected to join a DOE 19-member Fusion Policy Advisory Committee formed by DOE Secretary James Watkins to help determine ways to develop fusion as a viable technology. The

committee will review a draft policy statement that calls for competition between the two approaches to fusion - inertial confinement and magnetic confinement.

LAB NEWS

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"WOMEN ON THE MOVE" recently named by the Albuquerque YWCA at its annual awards dinner included three Sandians: (from left) Marjorie Whipple (7844), engineering and high-technology category; Mary Ann Sweeney (1265), science and research category; and Joann Romero (3732), business/nonmanagerial category. An etched-glass award like the one shown in foreground was presented to each honoree. The Women-on-the-Move program honors Albuquerque-area women who have made significant contributions to their companies and/or community.



CONFERENCE CO-CHAIR Sandra Lormand (8524, left) with Sandy Ferrario (8161) and Lori Jensen of LLNL, program co-chairs.



CONDUCTING A WORKSHOP on metallurgy was Kim Mahin (8312), shown in lab coat.

Twelfth Annual Livermore Conference

Young Women Expand Their Horizons in Math, Sciences

For the 12th year, women from Sandia and Lawrence Livermore national laboratories organized a successful "Expanding Your Horizons in Science and Mathematics" conference for young women. This year's March 10 conference attracted some 330 young women in grades 6 through 12.

Held at Pacific Bell's San Ramon Valley Corporate Conference Center, the event attracted students from 78 schools in 33 cities, about two-thirds of them from the Livermore-Amador Valley.

There were 23 workshops conducted by 41 scientific and technical professionals who donated their time for the day.

Keynote speaker was Dr. Laurie Gage, lead veterinarian at Marine World-Africa USA.

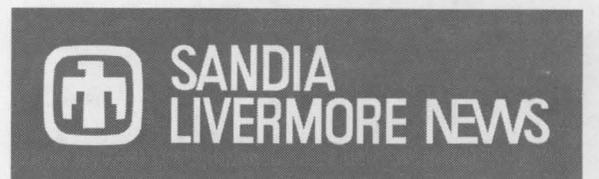
Attendees took part in hands-on workshops covering such diverse topics as space shuttle design, crystal growth, metallurgy, earthquakes and volcanoes, the mixing of chemicals, video documentaries, and stock-market portfolios — all of which could lead to careers in math and the sciences.

Conference co-chair Sandra Lormand (8524)

notes: "It was very gratifying to see so many women showing such care and concern for the futures of these girls, and to see these kids getting excited about science and the various career possibilities that they had not realized even existed before."

Sandra says 40 to 50 Sandians worked on the conference, either helping to plan the event or conducting workshops.

A similar conference earlier this year in Oakland for girls from the North Bay schools was chaired by Judy Tejada (8284).



Congratulations

To Pamela and Robert (8165) Monson, a son, John Matthew, March 6.

To Sharon (8162) and Travis White, a son, Channing Gilchrist, March 13.



GREETING PEOPLE at the registration desk were (from left) Sheila Akins (8441), Donna Opdahl (8284), and Lois Johnston (8316).



STAFFING THE ASME booth were Carolyn Pura (8156, left) and Pam Barr (8362).



SANDIA'S RECRUITING BOOTH was staffed by (from left) Jane Lamph (8442), Sally Raubfogel (8133), Mary Stoddard (8442), and (not pictured) Annie Webb (8237). (Photos by Val Pestanas, 8286)

(Continued from Page One)

Earthquake Measurement

built before it was realized that the seafloor movement would be mostly horizontal," says Gerry. "After all, an earlier SEMS provided that information. The vertical-detection algorithm was similar to what's used in land-based systems. It led to high false-trigger rates, as well as failure to detect some significant earthquakes."

Another change in SEMS III is the use of more-efficient electronics, which increased operational life from two and a half years to eight years.



US COAST GUARD employee supervises the transfer of SEMS III from a dock off the coast of San Pedro, Calif., to a 50-ft. workboat.

"Because the earlier versions' lives were short and their sensitivity was low, relative to SEMS III," Gerry says, "the unit might get only one or two earthquakes during its lifetime. That made for a costly system with a long-time turnaround in evaluating the response of offshore platforms to earthquakes."

Easier, Cheaper Installation

Besides improving the performance of the SEMS equipment, the SEMS team has revamped the process of placing the systems in their seafloor locations. The 12-ft.-high vibrocore drilling mechanism, developed by Bruce Engler, has been incorporated into the rest of the SEMS installation package. The result is easier and more accurate placement of the probe. That change, along with others, reduced the installation cost from \$40,000 to about \$10,000. For SEMS III, it took just four hours to lower the electronics package and attached drill to the ocean floor, drill an eight-foot-deep hole for the sensor probe, and release the drill (a job done with a one-man submersible) for recovery and reuse.

Another SEMS III is to be installed this summer near an oil rig offshore from Point Arguello, northwest of Santa Barbara. The two SEMS IIIs will form an offshore seismic array, which is ex-

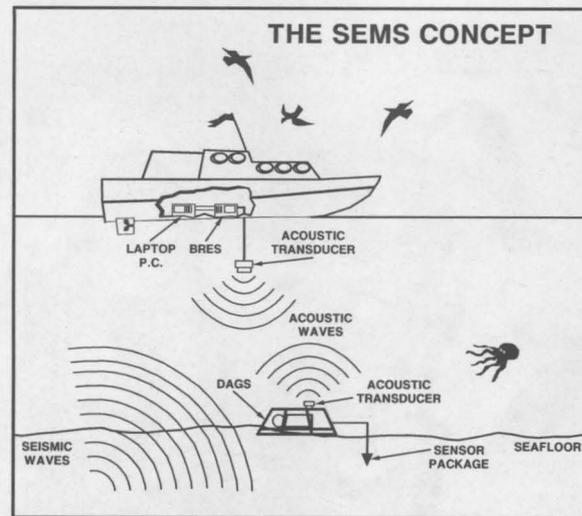


DIAGRAM SHOWS essential components of SEMS III. Abbreviations and their meaning: P.C. — personal computer; BRES — Buoy Repeater System; DAGS — Data Gathering System

pected to give researchers more complete data for analyzing sediment response during earthquakes.

The SEMS project, established in 1977, is primarily funded by the Minerals Management Service division of the US Department of Interior and by DOE. ●CS/JClausen(3163)

SEMS Fills Hole in Data

Designers of offshore oil platforms know a lot about designing structures that resist storm winds, waves, and ice floes. But because they have had little data on how seabed sediments respond to earthquakes, they know less about designing for earthquake resistance. The Seafloor Earthquake Measurement System (SEMS) project is helping supply the missing information.

Early SEMS hardware grew out of weapon-research technology developed for the terradynamics program. Terradynamics, the study of how soil, rock, sediment, and other geomaterials respond to high-speed intrusion, originated at Sandia in the '60s because of interest in mounting nuclear warheads on earth penetrators. That work extended naturally to seismic monitoring.

Three of the first four SEMS prototypes, each with a one-year lifetime, were buried in

the floor of the Santa Barbara Channel in 1980; the fourth was placed on land about a mile from shore. In 1986, the next-generation system recorded two earthquakes measuring 5.8 and 6.0 on the Richter scale. These quakes were the first to be monitored simultaneously by sensors on land, offshore platforms, and the ocean floor.

The combined information, plus that from a 1981 quake, gave researchers their first complete set of data for verifying models used in design of offshore platforms. The vertical component of acceleration on the seafloor was nearly an order of magnitude weaker than the corresponding on-shore measurements. The peak horizontal movement at all three sites was roughly equal.

Additional data from SEMS III will be compared with the earlier observations to confirm them and to further refine the design models for offshore platforms.

(Continued from Page One)

Bond Drive

taxation altogether.

"Bonds used to be considered sort of a 'plain-vanilla' kind of an investment," Ray notes. "But that all changed when the bond program was revamped to make it more competitive."

Since the Treasury spruced up the program in

1982, bonds pay a floating interest rate set every May and November at 85 percent of the average market rates on five-year Treasury securities. Currently, bonds are guaranteed to provide an annual return of 6 percent or 85 percent of the T-note rate, whichever is greater. The current semiannual market-based rate, in effect through April 30, is 6.98 percent.

Prospective Retirees, Take Note

Ray notes that stockpiling bonds for retirement is especially advantageous. "Since the interest isn't taxable until you cash bonds in," he says,

"people who buy bonds before they retire can cash them in afterwards at what will probably be a lower tax rate."

Another plus for retirees is the ability to convert Series E or EE bonds to Series HH bonds, for which holders receive semiannual interest checks. (Series HH bonds are larger, with a minimum in-

Currently, bonds are guaranteed to provide an annual return of 6 percent or 85 percent of the T-note rate, whichever is greater.

New Maturity Schedule Makes Long-Range Planning Easier

A new schedule of maturities for savings bonds now gives all Series EE bonds an interest-bearing life of 30 years. The schedule not only gives bond owners a longer time period to accumulate interest; they also know the interest-bearing life of bonds in advance — a boon for long-range planning.

Previously, all that was known about a Series EE bond was that it would earn interest for

12 years and that the Treasury would decide on the possibility of an extension at a later date.

Under the new maturity schedule, bonds purchased currently will reach face value in a maximum of 12 years (sooner if their annual rate of return exceeds 6 percent), but will continue to earn interest until 30 years from their date of issue.

vestment of \$500; they're bought at face value, and there's no conversion fee. Though interest on rolled-over E or EE bonds continues to be deferred, the holder does pay tax on the semiannual HH interest.)

The 1990 Bond Drive, as in other years, will be conducted by VP representatives with the help of directorate coordinators and canvassers. Employees will receive payroll deduction cards enabling them to enroll in the bond program or to change basic allotments, beneficiaries, or denomination amounts. The cards should be returned to division canvassers, even if no changes are requested.

(Continued on Next Page)

'Little Did I Know ...'**On-Roll Management Consultant: A First**

As of this week, Danny Brown, former Manager of Education and Training Dept. 3520, has a new job. She's the first Sandian to become a "Management Consultant" — a newly created MLS position that enables administrative Department Managers (DMs) to leave the management ranks to provide expert advice to management about high-impact issues at the Labs.

Danny, with more than 15 years of managerial experience in library services, computerized information systems, and education and training, will be a consultant in the area of human resources and will continue to report to Ralph Bonner (3500). "When your career reaches a certain point," Danny says, "you sit back and take a look at where you are and where you want to go. I was in that situation a year or so ago."

"I'd enjoyed my years in management, but decided that perhaps it was time for me to look at different ways I might contribute to Sandia. So I proposed the concept of consultant positions in which administrative DMs could use their combined management experience and expertise in specialized areas to contribute in an equally significant way — but on an individual basis. Little did I know that a year later I'd be the first one with that opportunity!"

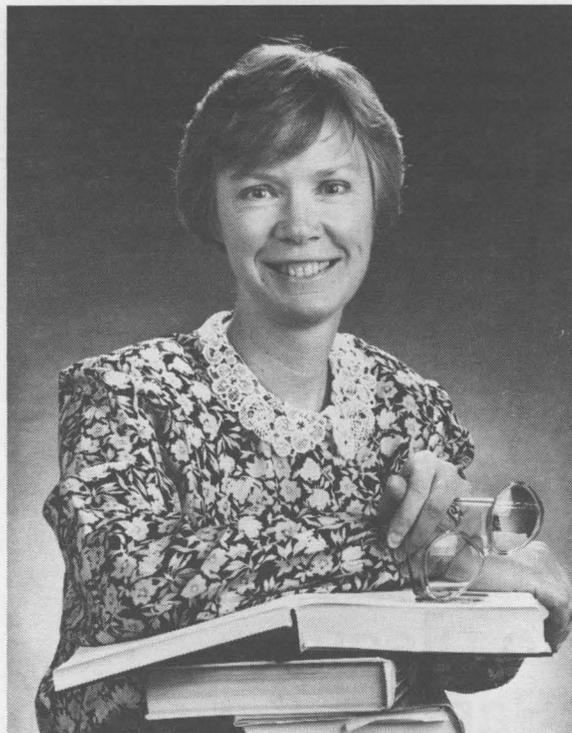
Meeting Labs Needs

"The consultant system should provide a real advantage to Sandia, in that it allows more flexibility in meeting Labs needs," Danny continues. "Managers, if they so choose, can take on new contributive roles in areas where they can be of most assistance — without being hampered by day-to-day managerial responsibilities."

As a consultant to the Human Resources Directorate, Danny will call on the expertise she's developed in several areas during her years of management experience. One focus, she says, will be organizational effectiveness — working on ways to overcome performance problems and to achieve continuously improving performance levels. Danny has a BA in physics and an MS in computing science, and received a certificate in personnel management from UNM last year.

A Management Consultant position is open to any administrative DM having at least 10 years' experience in supervision/management and an acknowledged expertise in an area having high-impact implications for the Labs, according to Dick Shepardson, Manager of Compensation

Dept. 3550. "Candidates also must have been top performers for a number of years and must have demonstrated exceptional management



ON-ROLL MANAGEMENT CONSULTANT Danny Brown (3590, formerly 3520) will serve as an advisor on human-resources topics such as organizational effectiveness, reward and recognition systems, and managing cultural change.

skills," he adds. If a consulting arrangement is worked out between a DM and a Director, the appointment must be approved by Executive VP Lee Bray (30). Appointments are for an unlimited time period.

Equivalent to DM Rank

"The on-roll-consultant position is equivalent in rank to a Department Manager, so it's a lateral move," says Dick. "Consultants continue to receive the perquisites of DM ranking, including an office, secretary, budget, participation in DM conferences and briefings, and so on."

Dick emphasizes that a move into the consultant role does not necessarily mean the end of the line in management ranks: "If, in the future, a Management Consultant wants to once again be considered for Department Manager, there's nothing to prevent that. And a consultant with appropriate qualifications could also be considered for openings further up the management ladder."

Danny's consultant work for Org. 3500 will include research on such topics as reward and recognition systems, motivation and performance management, quality improvement processes, and managing cultural changes at the Labs. "This is an exciting challenge for me," she says. "I'm really looking forward to having the time to do some creative thinking about these — and other — areas. When you're a manager, time is a luxury you often don't have." ●PW

Take Note

The 1990 AT&T Design for "X" Conference, "DFX for Quality and Profitability," will be held May 16-18 in Greensboro, N.C. The technical program includes more than 70 different DFX presentations by teams and individuals from 29 AT&T locations and guest speakers from Apple Computer, Sony America, and the US Navy. Factory tours at an AT&T Federal Systems plant are scheduled for May 18. Deadline for registration is April 20. For registration forms and information, contact Arlan Andrews (2364) on 4-7949.

* * *

On March 27, the Albuquerque Rescue Mission presented a plaque to Facilities Directorate 7800 in recognition of its contributions and support. Thanksgiving and Christmas holiday drives were conducted by employees of 7800 to collect

food and clothing for the mission, which provides meals, clothing, shelter, and other services to the homeless and needy. More than \$200 was also collected for the mission. The plaque is on display in the Bldg. 887 lobby.

* * *

Spring has sprung, and those who enjoy putting around their yards might be interested in gardening classes sponsored by the Council of Albuquerque Garden Clubs every Tuesday evening at the Albuquerque Garden Center (10120 Lomas NE) from 7 to 8:45 p.m. Each class is \$5, payable at the door. Tickets may also be purchased in advance — \$25 for six classes. More than 30 different classes taught by experts or professionals are offered. For information, contact the Center on 296-6020.

(Continued from Preceding Page)

"The Bond Committee encourages Sandians at all locations — Albuquerque, Livermore, Tonopah, NTS, and Pantex — to continue their high rate of

participation," says Ray. "And we hope everyone will take a close look at his or her level of support. Increasing the amount saved each paycheck makes good sense; you receive bonds sooner, and they start earning interest sooner." ●PW

**Earnings Factors
January 1990**

AT&T Savings Plan for Salaried Employees (SPSE)	Earnings Factors
AT&T Shares	.8623
Government Obligations	.9983
Equity Portfolio	.9368
Guaranteed Interest Fund	1.0073
South Africa Restricted Fund	.9538
AT&T Savings and Security Plan — Non-Salaried Employees (SSP)	
AT&T Shares	.8623
Guaranteed Interest Fund	1.0072
South Africa Restricted Fund	.9501

**Education Savings Bond Program
Helps With College Expenses**

There's a new tax advantage for some purchasers who redeem their savings bonds for qualified education expenses. Interest-tax on bonds purchased after the first of this year can be avoided under certain circumstances if the bond proceeds (principal and interest) are used to pay college tuition and required course fees and expenses of the taxpayer, the taxpayer's spouse, or the taxpayer's dependent.

To benefit from the Education Savings Bond tax exclusion, bonds must be purchased by persons at least 24 years old and registered

in the taxpayer's name alone or in the names of the taxpayer and taxpayer's spouse. (Bonds issued in the name of a dependent child will not be eligible.) Bonds bought as gifts (for example, by grandparents) are not eligible.

The tax exemption begins phasing out for couples with adjusted gross incomes that exceed \$60,000; for singles, the phase-out begins with a \$40,000 income. Some tax advantage remains, however, until those incomes reach \$90,000 and \$55,000, respectively.



Benefits Department Completes Pre-Retirement Survey

By Rebecca Spires (3544)

Two surveys on pre-retirement concerns of Sandians, completed last fall, have provided feedback that Benefits Department 3540 is using to build a better service organization.

Of all those surveyed, new hires — 30 to 45 years from retirement — expressed the highest interest in pension benefits. We've labeled this the "orientation effect:" new employees receive their initial benefits information and a briefing, and many have compared different companies. This group also expressed the greatest desire for financial planning assistance.

Mid-term employees, 15 to 29 years from retirement, placed little emphasis on retirement planning and showed little concern about benefits in general. Most are "thirty-something," getting their careers under way and enjoying personal activities.

Employees five to 14 years from retirement expressed increasing concern about retirement benefits. They had the highest interest of all groups in post-retirement medical benefits. Many are observing their parents' retirement and looking ahead to their own.

At five years or less from retirement, employees expressed decreased concern. Apparently they've made their decisions and are waiting. However, they expressed the greatest concern about survivor benefits and the highest desire for trust information.

Among the retirees, those retired five years or less had more concerns. They seem to be in an adjustment period. Positive comments included contentment at having time for activities, and a sense of "Wish I'd done it sooner, I had no idea it was going to be so much fun." Many expressed interest in continuing to work at Sandia part-time. The group retired for more than five years had low retirement concerns. They're now "pros" at this lifestyle. Their greatest concerns centered on assistance in will preparation.

We conducted the surveys by first sending open-ended questions to 1000 employees and retirees. The 211 responses helped define important issues for a second survey, which went to a different set of 1000 and was answered by 394. A consistent message for present employees came from the group retired five or fewer years: "Get into that 401K . . . I wish I had contributed to the savings plan earlier . . . the savings plan assured us of a secure retirement . . . we have the money to do what we want . . . tell those youngsters to make the sacrifice and put money away."

As ways of receiving information, most employees preferred interactive computer software, LAB NEWS articles, and videotapes. They generally didn't want retirement-planning seminars — being seen as "on their way out," they feared, could adversely affect their career.

Future LAB NEWS articles will respond to frequently asked questions, and other methods of communication are being studied. The Benefits Department thanks those who participated in the surveys. We have heard you.



REBECCA SPIRES

T-VI President to Discuss Links With Sandia



Sandia's continuing and future interactions with the Albuquerque Technical-Vocational Institute (T-VI) will be discussed by T-VI President

Ted Martinez in a Community Focus lecture on Friday, April 20, at 12 noon in the Technology Transfer Center Auditorium.

"Sandia and T-VI: What We're Doing," is the title of the talk, which is open to all Sandians on a first-come basis.



TED MARTINEZ

Yearly, more than 200 Sandia employees take job-related evening T-VI courses such as electronics, data processing, welding, and electro-mechanical and design drafting. Many Sandians also received degrees and training there before joining the

Labs. T-VI is one of the three largest post-secondary schools in New Mexico, with an enrollment of more than 18,000 students.

Discussions are under way between Sandia and T-VI for various kinds of on-site training programs. The Labs currently supports T-VI with about \$140,000 in loaned equipment.

Martinez, a long-time figure in New Mexico education, became president of T-VI on July 1, 1989. He has been with T-VI since October 1987, when he returned to Albuquerque after a two-year stint as an adult education coordinator with the Peace Corps in Belize, Central America. He became a Peace Corps volunteer after 22 years with the state's educational system.

During those years, Martinez served as execu-

tive director of the Board of Educational Finance, now known as the Commission on Higher Education; as an administrator at the University of New Mexico; and as a high-school history teacher and activities director.

A native of Albuquerque, Martinez graduated from high school in El Rito and received his bachelor's and master's degrees from the University of New Mexico. Long active in community affairs, he has been a member of T-VI's Governing Board, the Albuquerque Board of Education, the Governor's Commission on Public Schools, the Judiciary Selection Committee of the State Bar Association, and the Governor's Organized Crime Prevention Commission.

He has also served on a number of national committees dealing with education. In 1975, he received the New Mexico Distinguished Public Service Award from the governor.

Martinez serves on the boards of United Way, the UNM Alumni Association, and Alta Mira Specialized Family Services, Inc.

Fun & Games

Archery — An archery shoot will be hosted by the Manzano Archery Club on Saturday, April 14. Registration is 8 to 8:30 a.m., with first arrow at 8:30. Registration fee is \$5/adults and \$2.50/youth under 14 years old. The public is invited, and membership applications will be available for those interested in joining the club. More information is available from Dewey Reed on 4-4558 or 265-2687.

Soccer — The Sandia Soccer Association will hold a summer league organizational meeting April 9 at 5 p.m. at the Coronado Club, Eldorado Rm. This is a coed league; everyone is invited to attend. Contact Ken Osburn (2821) on 298-0354.

Golf — Sandia Women's Golf Association is sponsoring a golf rules clinic Thursday, April 12, to be presented by Jim Sweeney of Sun Country Golf Association at 5:30 p.m. at the Coronado Club, Conquistador Rm. You don't have to be a member of either the men's or women's golf associations to attend. For more information, contact Teri Carpenter on 256-0614.



SPRING BRINGS NOT ONLY FLOWERS. Athletes John Kelly (6454) and Roger Assink (1812) are practicing for competition in track and field events in next month's Southwest Regional Corporate Challenge May 13, 18, 19, and 20. The Southwest Challenge includes road race, race walking, and track and field events. Challengers include KAFB, LANL, and Honeywell. Sandia's Corporate Cup Track Team is looking for more participants. Runners in all age groups are sought for relay teams and other competitions. Interested athletes should contact Dave Womble (1422) on 299-9695. In July 1989, 10 Sandians qualified to compete in Iowa as members of the winning AT&T National Team. (Photo by Randy Montoya, 3162)

Congratulations

To Barbara and Bill (9143) Tedeschi, a daughter, Christina Lynn, Feb. 26.

To Laurie and Bob (1141) Caldwell, a daughter, Stacy Jean, March 22.

A Different Kind of Dynamic Duo

For This Couple, Happiness Is a Backpacking Trek

For many people, the ideal vacation means taking it easy and doing as little as possible, perhaps relaxing on the sundeck of a luxury ocean liner or sunbathing on a Hawaiian beach.

But for Dave Sanderlin (2346) and his wife Sheryl, the ideal vacation is a backpacking trek through the mountains of Hawaii, Bolivia, or Nepal.

Though it may sound arduous to some, the Sanderlins have saved a lot of money and avoided crowds of tourists by traveling the unbeaten path, where vacationers are uncommon and lodging is often cheap, says Dave.

"Two people can stay overnight in a Third World country for about \$3," he says.

Third World cultures are also radically different from Western cultures, making them fascinating places to visit, he says.

"Two people can stay overnight in a Third World country for about \$3."

The Sanderlins are accustomed to adventurous physical activity. When they are not abroad, they often spend long weekends exploring little-used trails and abandoned mines in the San Juan Mountains of southwestern Colorado. They're planning a whitewater rafting trip this summer (not the kind led by a tour guide) through the Grand Canyon.

They have collected some unusual souvenirs during their travels, such as a *charango* (a Bolivian stringed instrument) and a Nepali saddle blanket.

They love mountains (Dave is a member of the local Mountain Rescue Association), and their goal is to make at least one trek to all of the world's major mountain ranges.

From a Tibetan Monastery . . .

Dave and Sheryl first visited the Third World in 1984 when they went to Nepal. They paid a special outfitting company, which they had read about in a magazine advertisement, to make their accommodations. The company hired 19 sherpas — native mountain dwellers who act as guides and porters — to assist the Sanderlins.

One of the things the Sanderlins learned dur-



DAVE SANDERLIN displays some of the souvenirs he's picked up during his travels, such as a Bolivian *zamponia* (a reed instrument), *charango* (a guitar-like instrument), tapestry (on his shoulder), and a Nepali horse blanket.



SHERYL AND DAVE Sanderlin in front of Mt. Illampu in the Andes at 15,000 feet.

ing that trip was that they could save money by hiring their own guides and finding their own lodging after they arrived, if they allowed extra travel time to make the arrangements.

While in Nepal, they peered inside an ancient temple filled with statues and other relics that had not been used for 600 to 800 years. It was in a monastery near a sacred pool that was surrounded by a constantly burning fire fueled by natural gas escaping through fissures in the earth.

Another highlight of the trip came when they asked a Tibetan monk, who spoke no English, to explain the meaning of life. The monk was so excited about the question that he gestured repeatedly toward windows and murals as he spoke. However, in the end, it turned out the sherpa spoke little Tibetan and the monk spoke little Nepali, so the Sanderlins were unable to determine exactly what he said.

. . . to an Ancient Inca Trail

A trek in 1989 took the Sanderlins to Bolivia.

They spent the first few days in La Paz, mapping their itinerary, where they decided to search for an ancient Inca trail, which they had read about in a backpacking book. They located the trail in images taken by a NASA LANDSAT satellite.

In a village called Ingenio, during the journey, the sight of "white" people — who included the Sanderlins and their travel companions, two backpackers they met in La Paz — was so unusual that townspeople let children out of school for the occasion.

The backpackers nearly ran out of food and water during the 17-day trek through the Andes. They had anticipated the trip would take 10 days, based on map information. Along the way, they passed ancient Inca flagstones and staircases carved in the rock. At 13,000 feet, they entered the permanent cloud zone on the Eastern slope of the Andes. At 9000 feet, they entered the jungle, crawling at times on their hands and knees through tunnels that were formed when trees fell across the 400-year-old trail.

As usual, they selected the trail because it was off the beaten path. They had decided to avoid

neighboring Peru and well-known tourist attractions like Machu Picchu because of guerrilla activity in that country.

Roughing It in Hawaii

On a 1988 trip to the Big Island of Hawaii, the Sanderlins bushwhacked their way through a tropical rain forest and came upon the ruins of an ancient Hawaiian farming village. A native showed them how to knock papayas from trees with a long bamboo shoot, and taught Dave how to spear prawn.

The native, named Patrick, was the unofficial mayor of a community of hobos who lived on papayas and bananas in the lush, tropical rain forests of a remote Hawaiian valley, where, in Dave's words, "plants that look like house plants grow bigger than most trees."

They were warned to beware of wild boars, which they only saw once, on the other side of a river. On another excursion, Dave barely made it back to their campsite along a rim of coastal land before it was engulfed by the approaching high tide.

Future trips will take the Sanderlins on other adventures, says Dave — for example, to the island of Bali in the South Pacific.

At least one of their journeys likely will take them to a place frequented by scores of other tourists as well — the great pyramids of Egypt. Daves says he hopes to see the pyramids and the Sphinx before they are destroyed by acid rain.

Yet ever the adventurers, they also plan to take a trip on a log raft along the headwaters of the Nile. ●LD/JW

Card of Thanks

My family and I would like to express our appreciation for a memorial gift from Sandia Laboratories to the American Cancer Society in remembrance of William P. "Bill" Thomas (ret., Div. 7251). Our thanks to those Sandians who contributed to this gift.

Betty Thomas

Supervisory Appointments

RICHARD BEASLEY (DMTS) to Supervisor of Advanced Projects Div. V 9128.

Rick joined the Labs in June 1959 as a design engineer on B57 development. His weapon-project leadership roles have included Phase 1 and 2 feasibility studies, and various stages of development on the W69, fuel-air weapon, TIGER, B53, B90, and advanced-bomb family. He has had other leadership roles in thin-film technology development, oil shale developments, and the Strategic Petroleum Reserve.

He has a BS in mechanical engineering from the University of Missouri.

Rick enjoys bow hunting and cross-country skiing. He and his wife Leon live in NE Albuquerque. They have two grown children.

LAURA GILLIOM to supervisor of Chemical Instrumentation Research Div. 1821.

Laura joined the Labs in October 1985 as a member of the Chemistry of Organic Materials Division, where her work included developing a polymeric hydrogen getter, polymer synthesis, and bulk catalytic modification of organic materials.

She has an AB in chemistry from Princeton University and a PhD in chemistry from Caltech. She's a member of the American Chemical Society and the Materials Research Society.

Laura enjoys skiing, hiking, and collecting art.

She and her husband Alan Sylwester (6211) live in NE Albuquerque.

DONALD GLUVNA to Supervisor of Test Assembly Sec. 5122-1.

Don joined the Labs in July 1962 as a draftsman in the Design Definition Drafting Division. In 1974, he transferred to the Aircraft Compatibility Division, where he was responsible for various mechanical compatibility tests on the F-4, F-111, FB-111, and B-1B aircraft.



DON GLUVNA (5122-1)

He has an AS in drafting and design technology from Pennsylvania State University.

Don enjoys gardening, automobiles, photography, biking, and church activities. He and his wife Theresa have two children and live in NE Albuquerque.

PATRICK SENA to Supervisor of Weapon Program Integration Div. 5122.

Pat joined Sandia in January 1980 as a member of the Access Denial Technology Division, where he developed, evaluated, implemented, and transferred security/survivability technology. He was project leader for the concertina blanket portion of the Army's Weapon Access Delay System; weapon tie-downs; barriers to stop terrorist truck bombs; and a security system command center for Marines who protect Department of State foreign posts. He organized and conducted several conferences on secu-



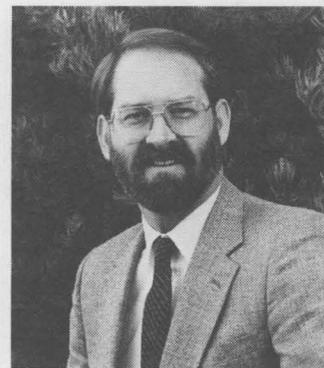
PAT SENA (5122)

rity/survivability technology; the most recent was Junefest for the Senior Level Weapons Protection Group. His most recent assignment was developing concepts to enhance the survivability of non-strategic nuclear forces. He taught dynamics in Sandia's TIE program and physics in the Summer Science Program.

He has a BS in mechanical engineering from New Mexico State University and an MS in the same field from Purdue University.

Pat enjoys woodworking, gardening, and sports. He leads a church guitar group and is a Cub Scout den leader. He and his wife Kerrie have four children and live in the SE Heights.

ALAN SYLWESTER to supervisor of Fuel Science Div. 6211.



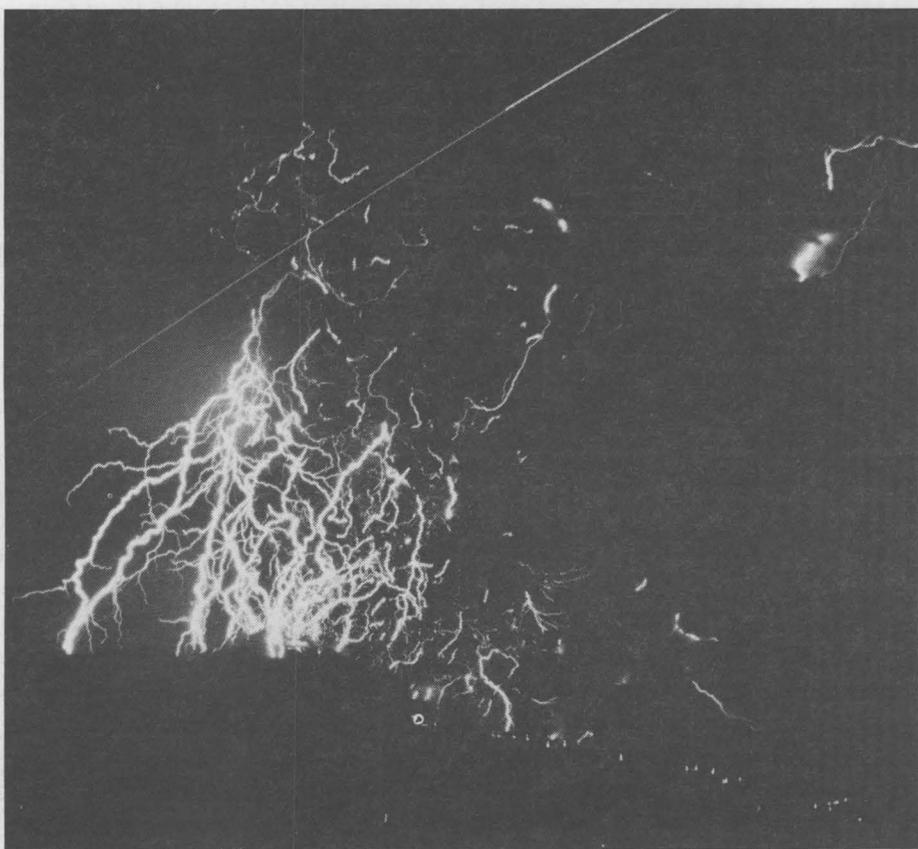
AL SYLWESTER (6211)

Al joined Sandia's Chemistry of Organic Materials Division in July 1985, developing unique low-density microcellular polymer and carbon foams, with properties tailored for numerous applications. He helped develop thin carbon films for microelectronic and electrochemical applications, and did research utilizing immunochemical recognition of polymer surfaces for verification applications.

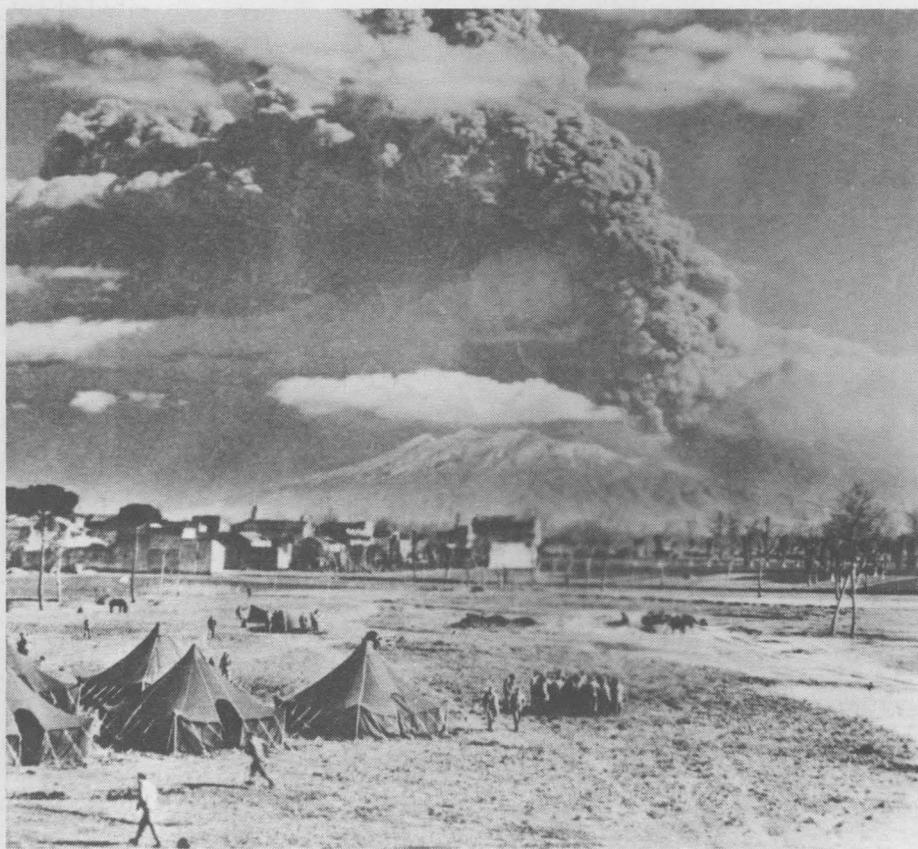
He has a BS in chemistry from the University of California, Riverside, and a PhD in physical organic chemistry from Caltech. He's a member of the American Chemical Society, the Materials Research Society, and the American Association for the Advancement of Science.

Al enjoys gardening, hiking, skiing, and fishing. He and his wife Laura Gilliom (1821) also enjoy church activities and are active in their neighborhood association.

Favorite Old Photos



IN 1944-45, AS A WARRANT OFFICER in the Army Signal Corps, I was stationed in a camp just outside Naples, Italy. In March of '44, Mt. Vesuvius chose to put on a show — its greatest volcanic activity since A.D. 79, when a Vesuvius eruption buried the old resort city of Pompeii under 50 feet of lava and ash. Photo at left is a four-hour time exposure I took the night before the 1944 eruption. Vesuvius is silhouetted by intermittent lightning flashes created by intense heat



within the mountain; the city of Naples appears in the right foreground. A virtually clear sky is evidenced by the straight white streaks (star trails) above Vesuvius. (Wartime blackout regulations probably contributed to the photo's clarity.) Photo at right shows Mt. Vesuvius during the second day of its eruption. A small part of my Army camp — some 11 miles from Vesuvius — is visible in lower left foreground.

— R.C. (Bob) Spence (ret.)

fixed Riback

Q. Many Sandians make short, frequent trips on Labs business. Currently, SNL travel-accounting practices require that the account for each trip be entirely closed out, i.e., any excess funds for the traveler must be paid back to Sandia by check, or any shortage of travel funds must be paid to the traveler by check from Sandia.

Considerable administrative expense could be saved by establishing employee travel accounts that would provide for carryover of small excesses or shortages — perhaps limiting plus-or-minus amounts to \$25 or \$30. At the same time, the provision for zeroing out the account could be retained for use when an employee did not expect to travel again soon.

A. Travel funds advanced to employees are government property. The government's cash-management procedures require that cash advances be monitored to ensure that federal funds are not disbursed in excess of immediate needs, and that unused funds are released for use on other projects in a timely manner. Travel advances (TAs) and expenses are audited on an individual-trip basis to establish that federal funds are used judiciously.

If Sandia's TAs were not cleared by individual trip, considerable administrative expense would be required to reconcile outstanding advances to applicable expense vouchers. It is much more efficient — for the employee as well as the company — to locate and correct discrepancies and settle disputed claims on a trip-by-trip basis. By controlling and monitoring TAs and expense vouchers by individual trip, Sandia meets requirements of the government's cash-management policies and keeps the administrative burden of reconciling employee accounts to a minimum.

Paul Stanford — 100

Q. Some companies that subcontract to Sandia, as well as other businesses in our community, have adopted stringent drug-testing policies as part of their employment process, both for on-roll employees and new-hire applicants. Sandia's policy of conducting drug tests only on Security employees should be expanded Labs-wide to assure and reinforce the fact that drug use is strictly prohibited and will not be tolerated in any form in a company whose primary mission is highly classified.

Why don't we implement a program whereby all new hires are tested during their medical exams, and on-roll employees are tested randomly in a controlled environment — with immediate action taken

when testing shows a positive result? Sandians should welcome the idea that we are making a concerted effort to eliminate any problems or adverse publicity on this issue, and to preserve our high-quality employment standards.

A. Studies and projects are currently under way to expand drug testing beyond that which applies to Security employees. One such effort is the Personnel Security Assurance Program, a DOE program covering those individuals (about 200 Sandians) in "critical positions" — typically those with hands-on access to nuclear materials. We have submitted an implementation plan to DOE for this program and expect approval in a short time.

Also, as you are undoubtedly aware, we can test any employee for "reasonable cause," with such determination being made by the Medical Director or his representative.

Jim Martin — 3400

Q. Graphic Arts Work Requests currently require a division supervisor's approval, even for small requests. Since MTSs can sign for purchase orders up to \$1000 and can also order from JIT without supervisory approval, could the division-approval requirement for small-value Graphic Arts Work Requests be eliminated?

A. We are considering eliminating supervisory approval for Graphic Arts Work Requests with a cost estimate of less than \$1000. Unlike a Just-in-Time procurement (generally involving a fixed cost), we must estimate the cost of our services. While we are getting better at estimating, there are many variables involved that can impact our estimates. We are working out the details of how we process requests where the estimated cost is less than \$1000 (staff approval), but the actual cost exceeds \$1000 (supervisor approval). Look for changes in required approvals in the near future.

Herb Pitts — 3100

Q. Some fees are not clearly assignable to only one of the three insurance programs (medical, dental, and eye care). All carriers want originals of the statements. If a carrier decides it is not responsible for covering the claim, the original is not returned, making submission to the correct insurer difficult. Can this be changed?

A. Originals of claim forms and itemized statements are not sent back to the claimant because the

carriers require that all claims, along with the original itemized statements, be kept on file — whether the charge submitted is a covered expense or not. Although the carriers prefer to have the original itemized statement to process a claim, Provident, Metropolitan, and Mutual of Omaha will all accept copies when the original statement has been sent to another carrier. To alleviate problems in processing a claim that has been submitted with a copy of the bill, attach the Explanation of Benefits statement from the other carrier to the claim.

Ralph Bonner — 3500

Q. I have obtained several items from Property Reapplication Div. 3414; it's a very helpful service. However, the system would be much more useful if I could hand-carry the items I need back to my lab, rather than waiting several days (or more) for delivery. Any reason why Transportation has to deliver an item that I could easily carry myself?

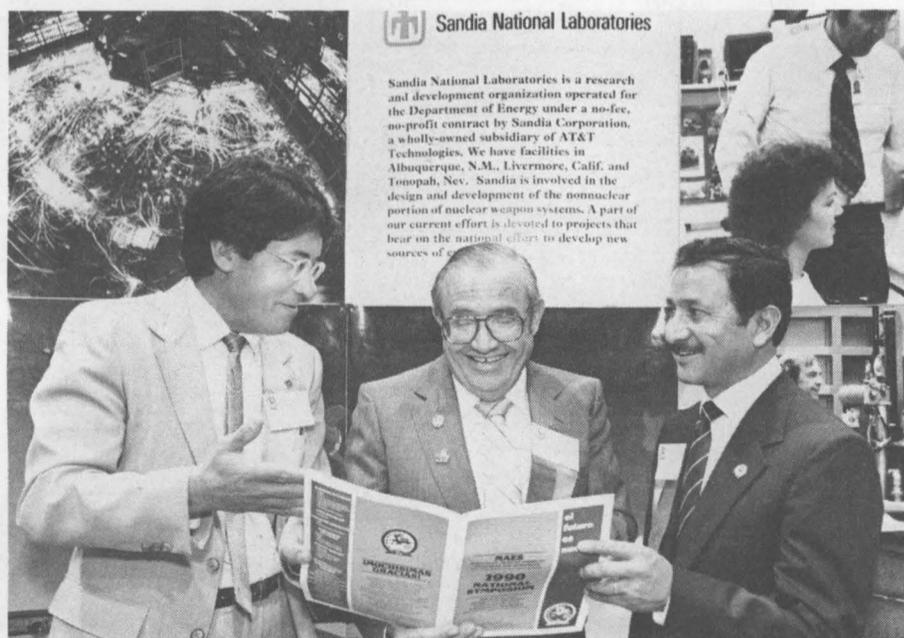
A. We normally do not permit property/material movement from Property Reapplication by anyone other than Transportation Division employees because of the negotiated contract we have with the Atomic Projects and Production Workers Metal Trades Council. In essence, the agreement states that Labs supervisors and other employees not represented by the Council will not perform work that is normally assigned to represented employees. If a delivery delay of "several days (or more)" would critically affect an urgent project, please speak with the division supervisor about what arrangements are needed.

Jim Martin — 3400

Q. There is no lighting in the parking lots south of Bldg. 823 — a significant safety hazard for those of us who work late and attempt to locate our cars in almost total darkness. It's particularly a problem during the winter months, when the sun sets very early. The newer parking lots all seem to have had lights installed. Will something be done about this as part of the ES&H initiative?

A. A project to correct parking-lot lighting deficiencies in various lots around Tech Areas I and IV (including the parking lots south of Bldg. 823) has been initiated and is currently in the design stage. We estimate that, by August 1990, installation of the new lighting systems will have been completed.

Ward Hunnicutt — 7800



PAUSING FOR A BREAK in front of the Sandia exhibit at the recent 1990 National Symposium of the Society of Mexican-American Engineers and Scientists (MAES) at UNM are (from left) Jesus Martinez (2553), symposium program chairman; Francisco Guevara, MAES national President; and Fred Norwood (1533), symposium chairman and member of the MAES national Board of Directors. Goal of MAES is to foster cooperation among industry, government, and the academic and professional communities to improve educational and employment opportunities for Mexican-American engineers and scientists. Sandia co-sponsored the symposium with AT&T, TRW, Kirtland AFB, UNM, LANL, and KLUZ-TV.



ROBOTICS APPLICATIONS in manufacturing was the subject when Sandia hosted a recent workshop for visitors from the National Center for Manufacturing Sciences (NCMS) and other organizations, including national labs. Inspecting Sandia-designed parts just processed on advanced robotic equipment are (from left) Vernon Lott (Texas Instruments), Marek Winiarz (BDM), Al Thiele (Rockwell International), Joe Mullins (UNM), Jamie Wiczer (1411), and David DelVecchio (General Motors). NCMS is located in Ann Arbor, Mich.

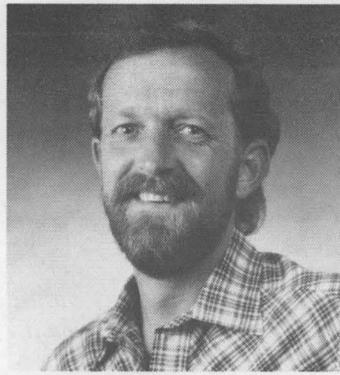
MILEPOSTS

LAB NEWS

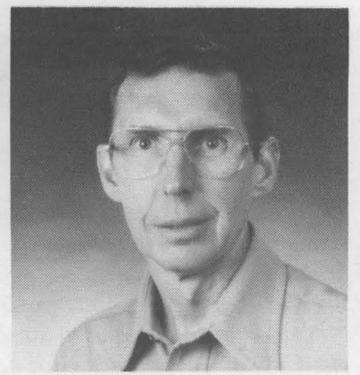
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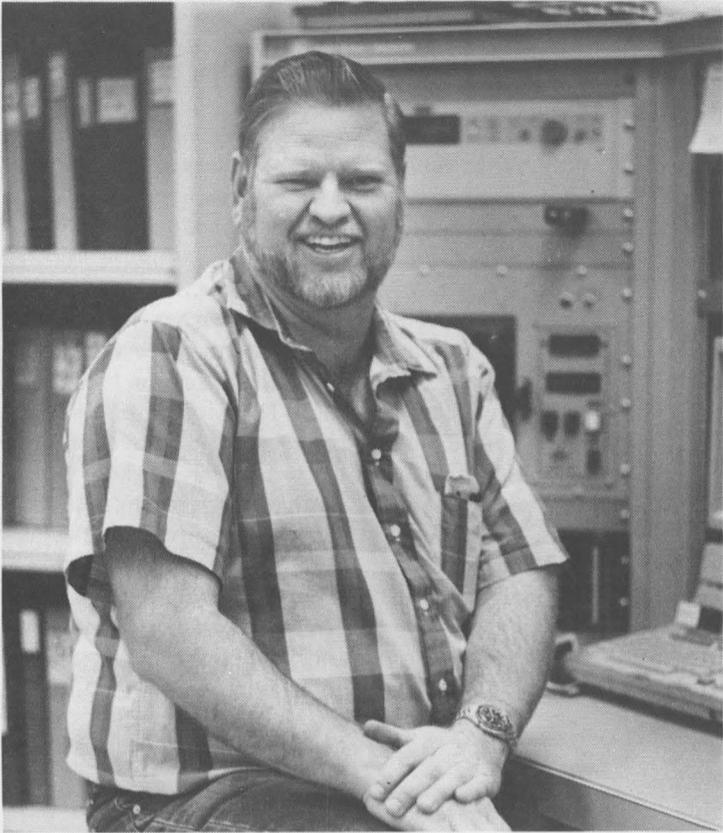
Margaret Crawford
(7476) 30



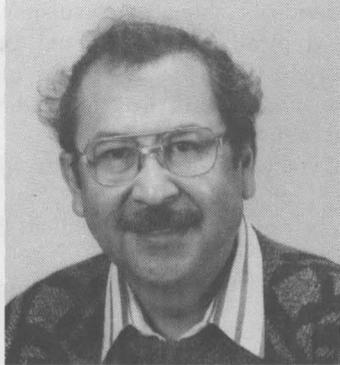
Tom Bauman
(9116) 20



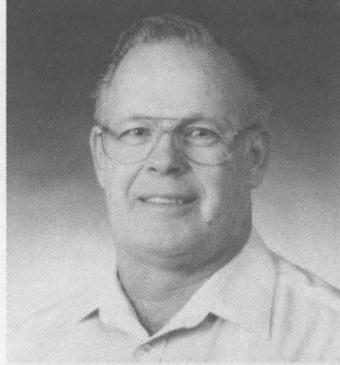
Leroy Thomas
(9215) 25



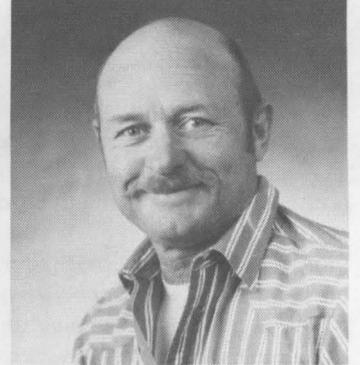
John Kirkland (5141) 20



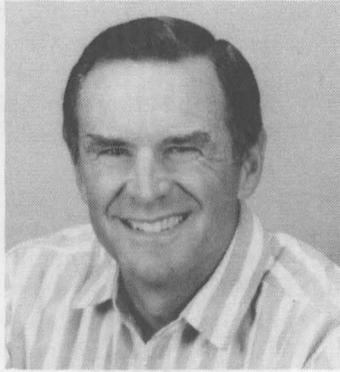
Gabe Gutierrez
(8273) 30



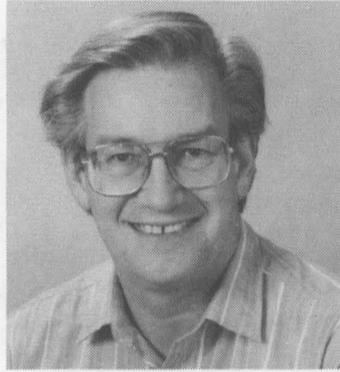
Rand Rozelle
(2857) 30



James Clark
(6215) 30



John Liebenberg
(8165) 25



Dick Isler
(8274) 20



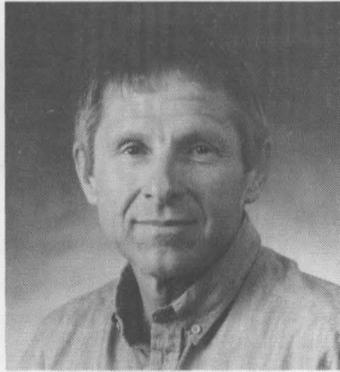
T. J. Williams
(2361) 35



Martha Campiotti
(8270) 15



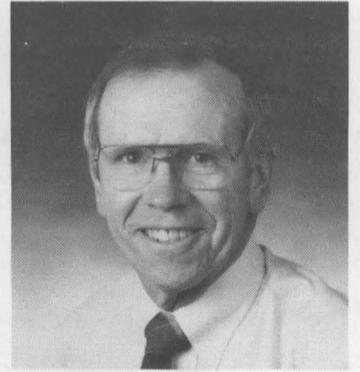
Roger Tate
(1554) 30



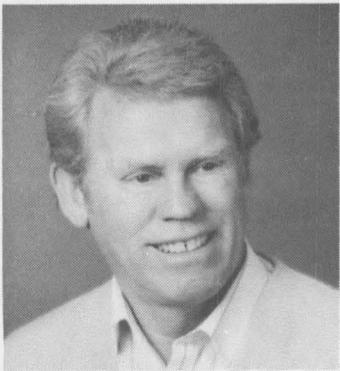
John Moyer
(5221) 30



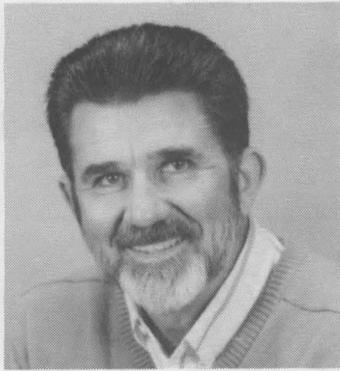
Gladys Kimberling
(8534) 30



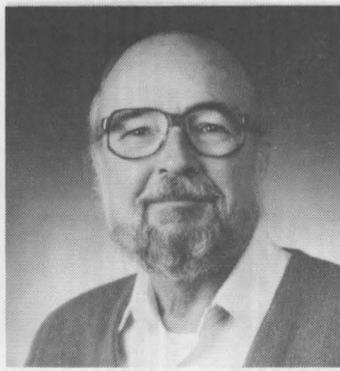
Glen Whiting
(5133) 30



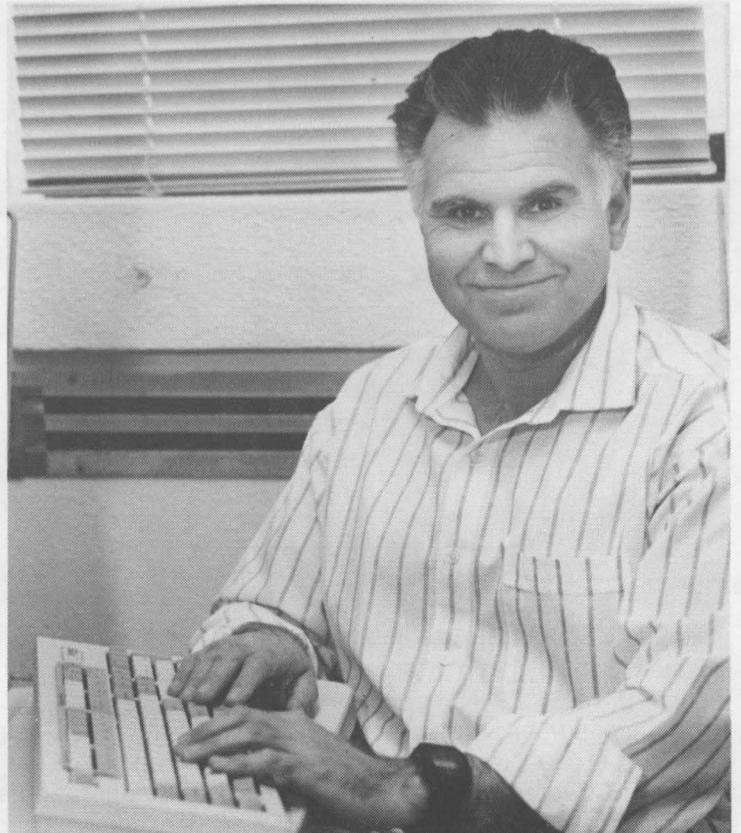
Doyle Baker
(8451) 30



Mike Ferrario
(8436) 30



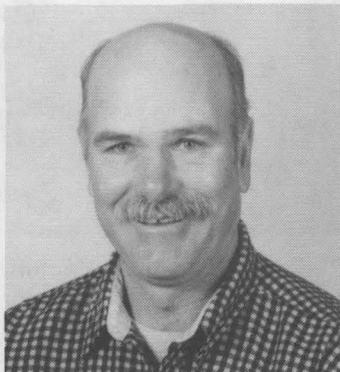
Al Asselmeier
(2171) 30



Robert Jaramillo (2565) 20



Pat Leary
(8235) 20



Ted Hebebrand
(8532) 25



Robert Alvis
(5154) 30



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Deadline: Friday noon before week of publication unless changed by holiday. Mail to Div. 3162.

Ad Rules

1. Limit 20 words, including last name and home phone.
2. Include organization and full name with each ad submission.
3. Submit each ad in writing. No phone-ins.
4. Use 8 1/2 by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per category per issue.
8. No more than two insertions of same "for sale" or "wanted" item.
9. No "For Rent" ads except for employees on temporary assignment.
10. No commercial ads.
11. For active and retired Sandians and DOE employees.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

KING-SIZE BED and headboard, \$175; matching 5' dresser w/mirror, \$150. McMillen, 881-6077.

QUEEN-SIZE MATTRESS and box spring, \$100; 3 rugs: blue 12' x 14', green 14' x 6', earth-tone 10' x 12', \$50/ea. Mak, 298-2479.

'81 **KOMFORT LITE TRAVEL TRAILER**, 18', self-contained, \$4500. Ehrman, 281-3976.

SOFA, love seat, sleeper sofa, bedroom dresser w/mirror, king-size headboard, best offer. Wiczor, 296-4496.

LINE-A-BED II BED LINER, for '87 full-size Ford F-150 pickup, \$100 OBO; Sears stovetop electric range, never used, 4-burner, almond, \$100 OBO. Claussen, 293-9704.

PRE 1200 SKIS, w/N77 Look bindings, size 190, \$125. Barr, 821-5870.

GUITAR AMP, Roland Jazz Chorus 120, 2-12, w/cover, \$395. Nichols, 281-0801.

"**RASCAL**" **ELECTRIC WHEELCHAIR**, never used, cost \$3763, sell for \$2800 or trade for pickup or car; conventional wheelchair, \$125. Anderson, 821-6693.

FREE TREES, 2 deciduous (ash?), 3 evergreen (piñon?), you remove. Vogel, 275-0774.

SWIVEL ROCKER, new, brown corduroy, \$80; Early American sofa, rust, \$80; 2 lamps, \$8/ea. or \$15/both. Hines, 821-8592.

FOUR CHROME/GOLD CENTER RIMS, 15", for GM products, w/locking lugs, two 70 Radial 15" tires included, \$100. Tichenor, 265-3843.

OXYGEN CONCENTRATOR, new, DeVilbiss, 29 lbs., \$1800. Morrison, 256-3752.

NOSE BRA for Subaru XT/GT coupe, new, cost \$120, sell for \$80; Kelty internal-frame backpack, \$115. Gonzales, 266-2302.

REFRIGERATOR, GE, 14 cu. ft., w/top freezer, \$100. Bukaty, 345-4691.

CAB-OVER CAMPER, fits long bed, \$400; Ford 460-CID engine, complete, \$200. Brandon, 836-5621.

TROLLING MOTOR BRACKET, w/hydraulic lift, used once, cost \$160, sell for \$60; Modine ceiling furnace, 50,000-Btu, \$100. Skogmo, 292-9773.

HEDGE TRIMMER, Black & Decker, 16", \$30. Kureczko, 281-8206.

BLUEPOINT SIAMESE/TIGER CAT, declawed, spayed, free to good home. Ottinger, 242-5944.

QUEEN-SIZE WATER BED, bookcase headboard, padded side rails, \$100. Chavez, 898-3756.

BIRD CAGE, used 1 week, w/food, approx. 3-1/2' tall, cost \$90, sell for \$75. McMullen, 822-0380.

DINETTE SET, round table, w/center leaf, 4 rust-color upholstered and chrome chairs, \$150. Haines, 293-8911.

CHILTON'S AND TUNE-UP GUIDE for Ford Fairmont Zephyr, '78-'83, \$6; rims for '75 Olds. Cutlass. Padilla, 877-2116.

MACINTOSH 512, internal and external drives, popular software included, \$595; w/ImageWriter II, \$950. Rondeau, 294-1741.

AKC-REGISTERED CHIHUAHUA PUPPIES, 1 fawn male, 1 blue-fawn male, have shots, health guaranteed, ready for Easter, \$225/ea. Sargent, 865-3227.

DRESSER, 9-drawer, w/mirror, \$150; secretary, w/glass doors, drop desk, 3 bottom drawers, \$250. Powell, 877-4939.

CHILD'S SKIS, RC Elan Pro Team, 125cm, w/Salomon bindings and Nordica boots, size 3, red & white. Wagner, 823-9323.

WHIRLPOOL DISHWASHER, Supreme 400, 3-spd., \$75 OBO. Haaker, 298-7415.

ALUMINUM SPOKE WHEELS, 14", for RX-7, \$28.50 per wheel. Bliss, 296-3752.

TIRES, w/double-basket chrome rims, P205/70R14, \$200; dash cover for '80 Mustang, \$25. Chavez, 842-6374.

INDUSTRIAL SEWING MACHINE, Tacsew, sews upholstery, leather, jeans, straight stitch only, \$450. Cibicki, 877-7098.

UTILITY TRAILER, 5' x 10' flat bed, w/spare, \$450 OBO; 12'-diam. solar cover for swimming pool, \$25. Bercaw, 275-1691.

PREAMPLIFIER, Hafler DH-101, inputs: 2 phono, 2 tape, 1 external patch, 1 aux. (CD or VCR/TV), \$100. Linebarger, 275-7931.

OSCILLOSCOPE, BK Precision, dual-trace, 30-MHz, delayed sweep, 2 probes, w/1x-10x settings, \$400. Brock, 293-2507.

TAOS-STYLE DINING ROOM SET: hexagonal table, 6 chairs, china cabinet w/glass doors, \$750; white Techline computer cabinet, \$125. Lloyd, 822-8567.

WET SUIT, SAS 3/16, size medium, cost \$260, sell for \$150. Babcock, 892-7199.

AUSTRALIAN SHEPHERD/COLLIE, medium-size female, spayed, has all shots, free to good home. Lauffer, 265-7218.

STROLLER, \$13; child's rocker, \$13; patio bench, \$20; coffee & end tables, \$45; king-size sheets. Levan, 293-0079.

MICROWAVE OVEN, Toshiba, medium-size, digital settings, \$50 OBO. Richards, 296-2272.

MALE DOG, neutered, medium size, 11 months old, free to good home; electric range, all elements work, \$100. Shaut, 299-8569.

DRIVER, Borun graphite, 9.5 degrees, used twice, cost \$70, sell for \$55. Underhill, 294-5774.

LAWN MOWER, 3.5-hp, gas-engine rotary, 20", w/catcher, \$195; cordless grass shears, w/charger, \$15. Stang, 256-7793.

TWO YELLOW LAB PUPPIES, AKC-registered, have first shots, \$150/ea. Garcia, 293-3937.

UPRIGHT PIANO, Kohler & Campbell, pecan wood, w/bench, children's notes, lamp, \$1950 OBO. Cianciabella, 268-7150.

UTILITY TRAILER, 16', tandem wheels, \$1000. Benton, 877-2473.

TWIN-SIZE BED, w/mattress, box spring, frame w/casters, \$40. Jones, 296-3998.

CAMERA, Yashica T2D, 35mm, auto focus, Velbon mini-F tripod, new, \$175. Burton, 275-9483.

TRIPLE DRESSER, solid maple, cedar-lined bottom drawers, \$230; 9' x 11' brown/gold carpet, \$20; aluminum screen door, 32" x 80", \$20. Trump, 299-5162.

LANDSCAPE ROCKS, slightly larger than golf-ball size; lava rocks; border bricks, rectangular and L-shaped; free if you haul. Morrison, 299-4757.

IBM PC, 20M disk, 360K floppy, 640K RAM, software, \$750; king-size waveless water-bed mattress, liner, heater, \$75 firm. Campbell, 296-5792.

SEARS LAWN MOWER, w/grass catcher, \$25. Montoya, 296-4268.

COUCH AND LOVE SEAT, \$200. Rebarchik, 299-1385.

REAR CAB WINDOW, for '85 Dodge D-50 Ram pickup, new in box, seal not included, make offer. McConnell, 831-0471.

QUASAR COLOR TV, 19", no sound, \$25; 2 studio couches, green, \$30. Chavez, 243-9530.

OVAL KITCHEN TABLE, oak, 60" maximum expansion, w/leaf, 4 chairs; 3-globe ceiling-mount light. Shrouf, 821-0765.

DRAFTING TABLE, new, \$135; light-box, \$200; Artwaxer, \$250; glass dining set, cost \$1200, sell for \$225; portable dishwasher, \$145. Raisen, 294-2364.

TRANSPORTATION

'83 **CHEV. CAPRICE SW**, 305 V-8, 78K miles, PS, PB, AC, tilt, cruise, AM/FM cassette, \$3400. Thompson, 292-2877.

'77 **MMH**, 23', sleeps 6, 460 4-barrel, color TV, \$9500. Dinsmore, 292-6643.

'83 **BUICK LeSABRE 4D**, all power options, cruise, \$2950. Moore, 345-4030.

'85 **TOYOTA LANDCRUISER**, 5-spd., 4-WD, AC, cruise, \$9300. Spires, 275-3655.

'88 **YAMAHA BANSHEE**, 350cc, 4-wheeler, cost \$3200, \$2200 or trade for 3/4-ton pickup. Martin, 296-8154.

'87 **CAGAVIA MOTORCYCLE**, 650cc sport bike, 5.3K miles, red, \$1950. DeLap, 292-3611.

'85 **HONDA MAGNA**, 700cc, 16K miles, new tires and brakes, w/cover, helmet, extra tank, \$1800. Montoya, 836-3859.

'73 **MAZDA RX3 SW**, new engine, transmission, brakes, tires, \$1000. Flores, 299-4971.

'84 **JEEP CHEROKEE**, 51K miles, 4-cyl., PS, PB, 2-dr., 4-WD, 5-spd., new tires, battery, brakes, \$4800. Green, 899-1109.

'74 **CHEV. MALIBU CLASSIC**, 4-dr., w/service records, new parts, \$800. Rogulich, 298-5261.

'88 **CHEV. PICKUP**, Fleetside Series 3500, AM/FM, AC, 8K miles, \$10,500. Glauner, 884-3729.

'84 **VW VANAGON**, 4-spd., AC, AM/FM stereo cassette, \$5000. Campbell, 296-8304.

14' **VAGABOND SAILBOAT**, w/trailer. Bluett, 281-1146.

'86 **HONDA HELIX MOTOR SCOOTER**, 250cc, 2-person, highway-legal, \$1695 OBO. Babcock, 881-3563.

'73 **VW BUG**, one owner, \$2200. Williams, 873-1875 after 5:30.

'84 **MOBILE TRAVELER MOTORHOME**, 23', 11K miles, self-contained, extras, \$21,000. Sanchez, 831-2645.

'87 **LeBARON COUPE**, 4-cyl., AT, AC, AM/FM stereo, power options, trip computer, 64K miles on dealer-rebuilt engine, warranty included, \$7995. Andrews, 299-1319.

'84 **FIERO SE**, AM/FM cassette, speaker seats, PW, PL, AC, more, \$4300. Gutierrez, 884-7568.

SHOGUN RACING/TRIATHLON BICYCLE, 21", 12-spd. w/index shifting, Shimano light-action components, loaded, \$300 OBO. Quatrochi, 255-6073.

'81 **KAWASAKI 175 DIRT BIKE**, new tires, engine recently worked on,

\$400. Tichenor, 265-3843.

SCHWINN LeTOUR BIKE, 10-spd. Gonzales, 266-2302.

'83 **YAMAHA XJ900**, adult-owned and maintained, 13K miles, \$1500. Wright, 296-3850.

'80 **KAWASAKI 750 LTD. MOTORCYCLE**, Vetter fairing, AM/FM cassette stereo, lowers, trunk, 15.5K miles, \$1625. Gentry, 298-6508.

'86 **RINKER RUNABOUT BOAT**, 140-hp Mercruiser I/O, 17', trailer w/spare, travel cover, AM/FM cassette, original owner. Jakubczak, 892-6322.

'89 **TOYOTA PICKUP**, 4-WD, new camper shell, \$11,500. Shope, 293-7697.

'81 **DATSUN 210 WAGON**, new battery, 2 new tires, shocks, \$1500 OBO. Heifetz, 275-2648 leave message.

'69 **VW BAJA**, needs work, \$350; '76 VW Bug, fire-damaged inside, runs, \$500. Powell, 877-4939.

'84 **YAMAHA YZ-80 DIRT BIKE**, never raced, not street-legal. Richards, 281-9471.

'76 **DREAMLINER RV**, 23', self-contained, \$7850. Cibicki, 877-7098.

YAMAHA 125IT, 1 hour on overhauled motor, \$450; Honda 250XT street/dirt bike, needs work, \$400 OBO. Bercaw, 275-1691.

'78 **HONDA CAFE BIKE**, 250cc, 4-stroke, Super Trap, Hawk front brake, \$325. Kaplan, 293-0500.

'87 **SUZUKI GSXR-1100**, custom paint, 2.1K miles, Comp-Ks, metal braided hydraulic lines, Bates leathers, Shoei and Arai helmets. Gonzales, 296-4704.

'82 **FIREBIRD**, V-6, AT, AC, tilt, PS, PB, stereo, 30K miles, \$3500 OBO. Jackson, 836-1013.

'84 **PONTIAC FIERO**, 2-dr., 4-spd., 58K miles, white, AM/FM, PB, PW, tinted, AC, 4-cyl., sunroof, \$3375 NADA, sell for \$2800. Hernandez, 268-5000.

WOMAN'S BICYCLE, Schwinn, 10-spd., w/baskets, 26" wheel, blue fenders, \$45. Stang, 256-7793.

SPORTCRAFT BOAT, 15', semi-trihull, open bow, canopy top, w/trailer, ladder, vest, gas can, oar, anchor, \$1850 OBO. Cianciabella, 268-7150.

'86 **FORD XL CLUB WAGON**, 15-passenger, see at lot south of Atomic Museum, \$8900. Grandjean, 292-5517 or 281-3636.

TWO FUJI ESPREE BICYCLES, 25" & 19", CroMoly frames, touring handlebars, Diacompe brakes, Suntour derailleurs, thorn-proof inner tubes, \$100/ea. Montoya, 296-4268.

'85 **CHEV. S-10 BLAZER**, 4-WD, V-6, Tahoe package, AT, AC, PS, PW, PL, AM/FM cassette, 39K miles, \$7800. Nuckolls, 298-4393.

'87 **KAWASAKI KE100**, 99cc, \$700. Wrobel, 293-0283.

'78 **YAMAHA 250 DT ENDURO**, 5.2K miles, \$450. Draelos, 296-3078.

MOUNTAIN BIKE, 18", Shimano components throughout, pump holder, rear rack, toe clips, Araya wheels, \$300 OBO. McConnell, 831-0471.

REAL ESTATE

3-BDR. **MOSSMAN HOME**, NE, 3-bdr., 1-3/4 baths, den, double garage, 1570 sq. ft., solar heat/hot water. Hays, 897-1335.

2-BDR. **MOBILE HOME**, 12' x 60', Terrace Park, 1-1/2 baths, washer, covered patio & carport, skirting, landscaped, \$2900. Fisher, 881-8072.

UNIMPROVED LOT, residential area, Island of Hawaii (approx. 15 miles from Hilo). Thompson, 822-9920.

3-BDR. **HOME**, NE Heights, wood-burning stove, gas range, dishwasher, refrigerator, and W/D stay, \$80,000. Davis, 298-5868.

3-BDR. **HOME**, 1-3/4 baths, great room, custom cabinets, solar heat, landscaped, 9.5% FHA assumable,

Lomas/Tramway area, \$86,900. Akau, 293-7085.

4-BDR. **COUNTRY HOME**, new, 2-6 acres, w/home or sell separately, assumable terms for equity. Senglaub, 281-8697.

2-BDR. **RIO RANCHO HOME**, 1 bath, single garage, landscaped, upgrades, assumable FHA, 8.95%, \$45,000. Nelson, 891-1789.

3-BDR. **HOUSE**, Peralta, double garage, pitched roof, landscaped, sprinklers, 1/2 acre, 2 wells, \$73,500. Tafoya, 865-9816.

1-BDR. **MOBILE HOME**, in 5-star adult park, furnished or unfurnished. Southwick, 281-3782.

2-BDR. **MOBILE HOME**, 12' x 60', '78 Liberty, \$8000 negotiable. Silva, 881-6544.

2 **ACRES**, East Mountain area, water, power, covenants, view of Sandias, \$24,000. Fulcher, 296-7149.

TOWNHOME, 4 yrs. old, 2 master bedrooms, 2-1/2 baths, FP, corner lot, 1200 sq. ft., Candelaria/Tramway area. Puissant, 291-8474.

WANTED

KITTEN, small, cuddly, cute, female, under 6 months. Doran, 299-2635.

SCHWINN XR-8 EXERCYCLE. Mills, 897-2817.

WHITE CRIB, in good condition. Flores, 299-4971.

WILL TRADE LOCKER/Bldg. 823 basement for locker in building closer to T-53. Strip, 292-7490.

RV STORAGE POD, for 20' RV, awning must be beige or brown; adjustable basketball pole and backboard. Garcia, 888-4735.

WOOD HAND-CARVING TOOLS, full or partial set. Menicucci, 842-6330.

BELT SANDER, 6 x 48, with or without disk, bench or pedestal; Lego children's block sets. Kureczko, 281-8206.

HOUSECLEANER, approx. 4 hrs./week, Tramway/Menaul area. Dubicka, 296-6557.

WATER SKIS, for small children ages 5-8. Jakubczak, 892-6322.

HEARTS PLAYERS, to replace retirees, will teach, Bldg. 880, across the hall from Rm. X-5, 12-12:30 p.m. Long, 889-9130.

SHOP REPAIR MANUAL for '86 Buick Century. Weaver, 242-1058.

SOMEONE TO MOW LAWN, 1500 sq. ft., provide own mower and edger, \$10/week. Patterson, 822-1196.

QUALITY MORSE KEY, Vibroplex, bencher, etc., needed by new ham. Ludwick, 296-6447.

HOUSEMATE, to share Mission Hill apartment, NE, 2-bdr., 2 baths, \$200/mo. plus 1/2 utilities. Mesibov, 292-1249.

CLOTHES LINE POLES, heavy-duty, will dig and haul. Morrison, 299-4757.

STAINED-GLASS GRINDER. Nuckolls, 298-4393.

WORK WANTED

UNM STUDENT & PARTNER can provide trumpet duet music at weddings, references provided. Butcher, 884-4818.

HOUSESITTING, responsible UNM student, good w/kids and pets, references available. Maloney, 828-9610.

SHARE-A-RIDE

RIDE SHARE WANTED from Raven/Eagle Road area. Nichols, 281-0801.

RIDE WANTED, one-way to Sandia from 2nd and Rio Bravo, about 7:30 a.m., 1 to 2 times a week, vehicle to carry bicycle. Cibicki, 877-7098.

Coronado Club Activities

Tonight: the Red Hot Peppers and All That Jazz

IF YOU'RE CRAZY ABOUT JAZZ, head for a jam session tonight, courtesy of the Red Hot Peppers, from 8 p.m. to midnight. As every local jazzophile knows, this group really swings — on everything from turn-of-the-century Joplin tunes to New Orleans-style Dixieland. Beforehand, enjoy either prime rib or Cajun catfish (both \$7.95) for dinner, served from 6-9. Reservations definitely recommended; call 265-6791.

IT'S ALWAYS ON THURSDAY, and it's always fun. "It" — Bingo night — is a real bargain for Club members because they receive a \$1 discount toward any bingo package. Card sales start at 5:30 p.m., and reasonably priced food is available throughout the evening. The new program lineup includes three sessions: early-bird — five

games starting at 6:45; regular — 15 games, including three with special jackpots; and last-chance — two games.

FUN AND GAMES are on the agenda for the T-Bird card sharks next Thursday, April 12, starting at 10 a.m. This is one session you don't want to miss; Jim McCutcheon is back in town and has promised to wear his Easter-bunny outfit.

TWO REMINDERS FOR KIDS: Don't forget the annual Easter egg hunt tomorrow, April 7, starting at 9 a.m. Entertainment besides the egg hunt — scheduled at 10:30 — includes cartoons and a visit from Peter Rabbit and his spouse. Breakfast specials are available for both children and their parents. Members' kids only, please.

Children ages 1 through 8 are eligible to enter their creative best efforts in the Easter egg coloring contest. Deadline to deliver decorated hard-boiled entries to the Club office is next Wednesday, April 11. Winners will be announced at noon during the Easter brunch (see next item).

A VERY SPECIAL BRUNCH on Easter Sunday, April 15, served from 10 a.m. to 2 p.m., features an outstanding menu: turkey/giblet gravy, Virginia baked ham, western omelets, baron of beef au jus, chicken drumettes, vegetable trays/dip, fresh fruit, and an assortment of goodies for dessert. A complimentary glass of the bubbly is included for each adult. Prices: \$10.95/adults, \$5.95/children 3 through 11, and free/toddlers under 3. This event is usually jam-packed, so make that reservation early.

Events Calendar

Events Calendar items are gathered from various sources. Readers should confirm times and dates of interest whenever possible.

April 6-7 — Classical Concert VIII: New Mexico Symphony Orchestra, music by Franck, Ravel, Stravinsky; 8:15 p.m., Popejoy Hall, 842-8565.

April 6-8 — "La Fille Mal Gardee," (The Unchaperoned Young Girl), pastoral tale of life and love among the country folk, presented by the Southwest Ballet Company; 8:15 p.m., 2 p.m. Sun.; KiMo Theatre, 294-1423.

April 6-May 13 — Annual MA/MFA Exhibition, 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues. evening, 1-4 p.m. Sun.; UNM Art Museum, 277-4001.

April 6-July 1 — Exhibit: "Audubon and Family: Drawings From Nature," rare paintings by 19th Century wildlife artist John James Audubon and his family; 9 a.m.-5 p.m. daily; New Mexico Museum of Natural History, 841-8837.

April 6-Aug. 5 — Exhibit: "From the Land of Dragons," collection of rare, actual fossils, mostly from China; 9 a.m.-5 p.m. daily; New Mexico Museum of Natural History, 841-8837.

April 7 — Children's Pillow Concert: Chamber Orchestra of Albuquerque presents program for children and their families; 2 p.m., St. John's United Methodist Church (2626 Arizona NE), 881-0844.

April 7 — "Chinese Zodiac and Animal Masks," Explorations! class for children ages 9-12; 10-11 a.m., New Mexico Museum of Natural History, 841-8837.

April 7 — "The Magic of Ballet," a behind-the-scenes introduction to ballet designed for young children ages 4-8, presented by Southwest Ballet Company; 1 p.m., KiMo Theatre, 294-1423.

April 7-8 — "Picture A Violet," Albuquerque African Violet Club's 22nd annual spring show and plant sale; 2-6 p.m. Sat., 10 a.m.-4 p.m. Sun.; Albuquerque Garden Center (10120 Lomas NE), free, 299-0453.

April 8 — Land of Dragons Speakers Series: "Early Mammals in China," by Kansas Museum of Natural History paleontologist Miao Desui; 2 p.m., New Mexico Museum of Natural History, 841-8837.

April 9 — An Evening with Noam Chomsky, 7:30 p.m., Popejoy Hall, 277-5813 or 277-3121.

April 10 & 12 — "The Unwanted," by Jose G. Garcia, two-act play about the prostitute, drug-addict mother of the protagonist, presented by Teatro Consejo Youth Development, Inc.; 1:30 p.m., free, South Broadway Cultural Center, 848-1320.

April 11 — Keller Hall Series: guest artist pianist Emil Miland, program includes Rachmaninoff's "Sonata for Cello and Piano"; 8:15 p.m., Keller Hall, 277-4402.

April 11-12 — "Bill Evans and Friends," Bill Evans celebrates his 50th birthday with premiere of new works; 8 p.m., KiMo Theatre, 848-1370.

April 12-May 24 — Exhibit: "Sun Drawings," a

3-D architectural model of Washington, D.C.-based artist Janet Saad-Cook's Sun Drawing Project at the Very Large Array west of Magdalena, plus 25 Cibachrome photographs of sun observation sites in New Mexico and India (lecture about the project by the artist April 11, 8 p.m.); 9 a.m.-5 p.m. daily, New Mexico Museum of Natural History, 841-8837.

April 13-15 — "Carmina Burana," interpreted by NM Ballet Company director David Chavez, full-length ballet set in New Mexico to music from 13th century; 8:15 p.m., Popejoy Hall, 299-3663 or 277-3121.

April 14 — Spring Concert: Albuquerque Concert Band, featuring trumpet soloist Robert Nagel; 3 p.m., free, KiMo Theatre, 768-3490 or 294-1959.

April 15-22 — American Indian Week: week-long celebration, Indian dances, arts and crafts, demonstrations, sales, Native American foods, trade fair, children's day, fashion show; call for times, Indian Pueblo Cultural Center, 843-7270.

April 16 — "Los Pleneros De La 21," traditional music of Puerto Rico; 8 p.m., KiMo Theatre, 848-1370.

April 19 — "Eiko and Koma," unusual avant-garde dance; 8 p.m., KiMo Theatre, 848-1370.

April 19 — Keller Hall Series: clarinet chamber music, with piano, percussion, cello, and soprano; 8:15 p.m., Keller Hall, 277-4402.

April 19-21 & 26-28 — "The Threepenny Opera," operetta in three acts by Bertolt Brecht, music by Kurt Weill, presented by the UNM Theatre Arts Dept.; 8 p.m., Rodey Theatre, 277-4401.

April 20 — Crownpoint Rug Auction, rug-viewing starts at 3 p.m., 7 p.m. auction; Crownpoint Elementary School (Crownpoint, N.M.), 786-5302.

Take Note

On April 10 at 9 p.m., KNME-TV Channel 5 will rebroadcast the Frontline program, "The Spy Who Broke the Code." For nearly 20 years John Anthony Walker, Jr., sold secrets to the KGB while serving as a US Navy chief warrant officer and later as a private investigator in Norfolk, Va., where he organized a spy ring that included his brother, his son, and his best friend.

Sandia Colloquium

E. Philip Krider (Institute of Atmospheric Physics, University of Arizona) will present "Natural and Triggered Lightning" April 13 in the Technology Transfer Center (Bldg. 825) at 9 a.m. Contact host Andy Boye (9225) on 5-8175 for information.

The Albuquerque Bonsai Club is sponsoring a demonstration and workshop with bonsai master Jim Barrett tomorrow, April 7, at Yonemoto's Nursery (208 El Pueblo NW). The demonstration is at 9:30 a.m. A prostrata juniper styled in 1989 will be raffled afterward. Although only club members may participate in the workshop at 1:30 p.m., others are invited to observe club members as they style individual trees into the bonsai form. Tickets are \$5 for admission and raffle. For information about the club and the demonstration, call Roger Case (7263) on 299-4775.



SEVENTY LOCAL BUSINESSWOMEN attended a recent seminar co-sponsored by Sandia and the WESST (Women's Economic Self-Sufficiency Team) Corp. The meeting focused on topics of interest to women in business, including marketing strategies and growth management. During a break, Sandia Small and Minority Business Coordinator Maria Feliz (3733, right) discusses Labs purchasing practices with Jean Chapman (left), owner of Creative Computer Services, and Annette Gallegos, owner of ATM Security Services.

Sympathy

To Mary Bachicha (6313) on the death of her sister in Belen, March 26.

To Toni Pierce (2612) on the death of her father in Oklahoma City, March 27.