

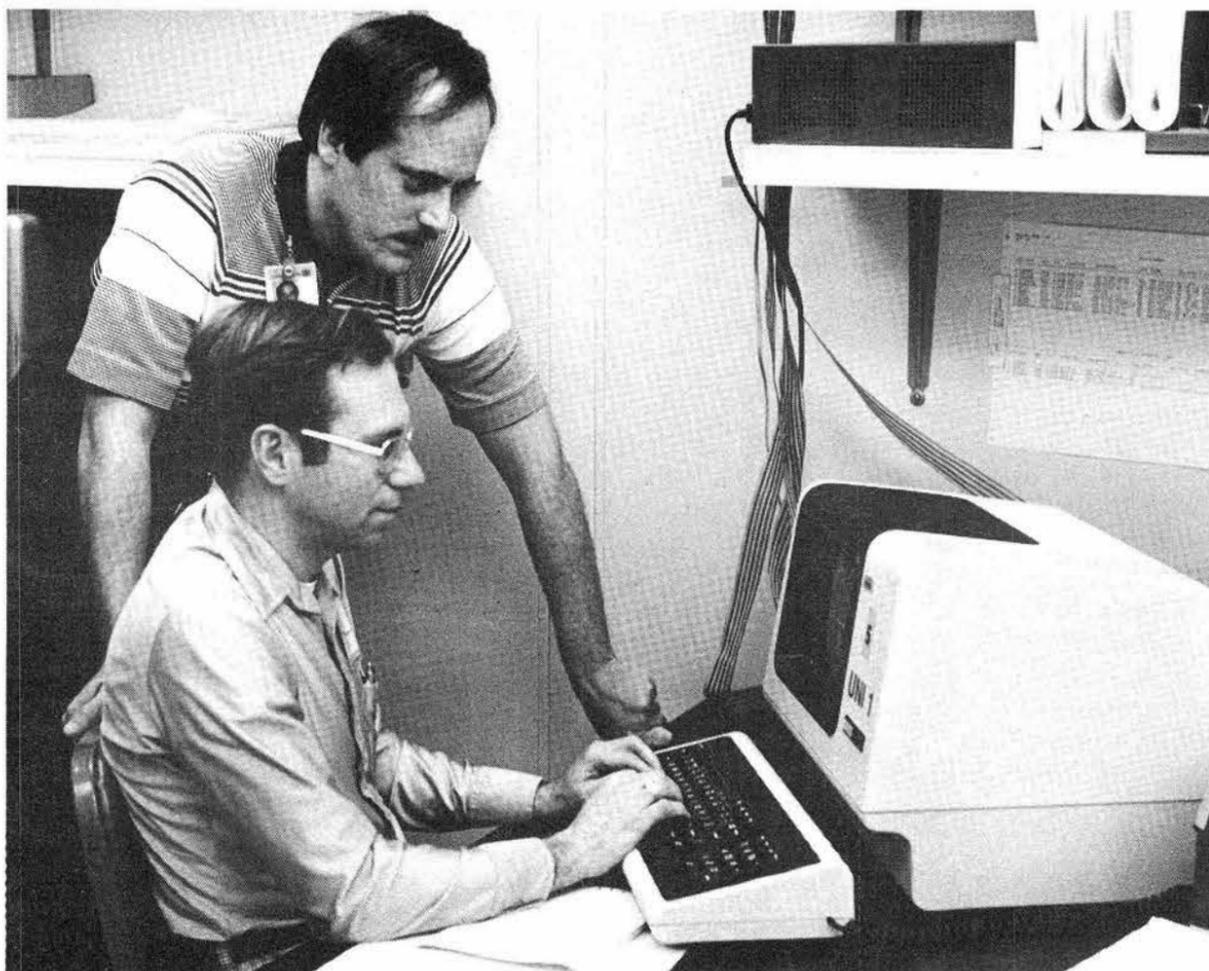


UNUSUAL VACATION—A dozen Sandians were members of an expedition climbing three of Mexico's tallest peaks. Carl Smith (1112) was one of them,

and he took this dramatic photo of the climbers as they descended the snow-covered flanks of Ixtacihuatl, and prepared to take on Popocatepetl (17,887') in the distance. Other photos, page 8.

**Minicomputer Network**

## New System is Convenient and Time-Saving



LARRY TOLENDINO (SEATED) AND MIKE VAHLE (both 2648) try out one of the terminals in the minicomputer network they designed.

To many of us, getting data into the central computing facility means a walk with a magnetic tape under arm over to Bldg. 880. A new minicomputer network, now in operation, makes such walks unnecessary for many computer users.

Installed 10 months ago, the minicomputer network currently has 12 users (one in Area II). "It's designed to exchange data from one minicomputer to any other in the network, as well as sending big jobs to the scientific processors in Bldg. 880," says Don Schroeder, head of Computer Communications Design Division 2648. "For instance, you can exchange messages and data with someone else in the system and, if you need information from the central computer, you can get it without leaving your minicomputer."

Don points out that there are some 500 computers at Sandia and, formerly, transferring information between them or to the central processor meant carrying tapes or disks. In addition, the different computers all seem to have their own unique storage devices and methods of using them. Even when a user was fortunate enough to find a machine with compatible devices, he was still faced with the problem of physically

[Continued on Page Two]

## New System Convenient, Time-Saving

transporting the data to the other computer.

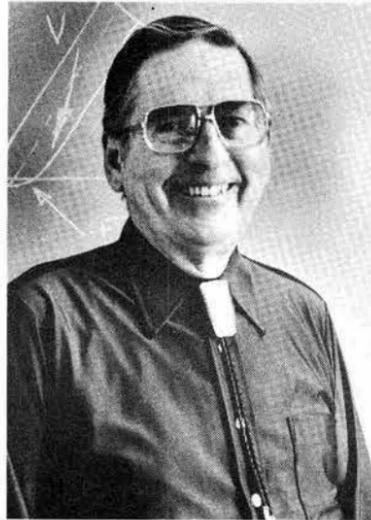
"This was a nuisance and waste of time," says Don. "The minicomputer network provides the point of commonality and a quicker, more convenient transport mechanism. For instance, people who want the central computer to store large amounts of data on microfilm can send it via the network directly from their own disks. In the past, the user had to transfer the data from disk to magnetic tape and then take the tape to the central computing facility."

"The minicomputer system also has an 'electronic mail' feature," reports Larry Tolendino (2648). "A user can send short, postcard-size messages to any other user in the system. But the recipient doesn't have to be there to receive the message because the network stores it. It's like a post-office-box—the recipient has the responsibility to check periodically and retrieve the 'mail.'"

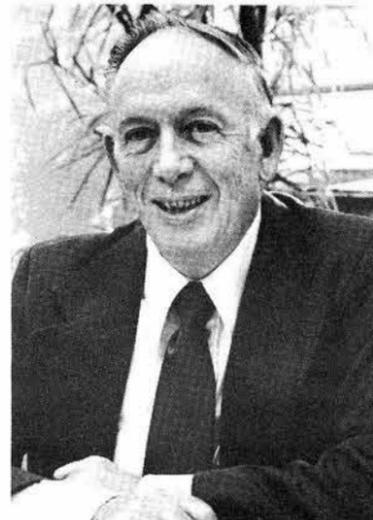
Mike Vahle (also 2648) gave us more details on the minicomputer system: "It's starting to handle large amounts of data—in November the equivalent of 1.1 million card images were processed, each of which is equivalent to one 80-column punch card. The system's data rate is 9600 bits a second each way—input and output. Thus, it can handle a total of 19,200 bits a second. And although the backbone of the network is DECNET, a software product from Digital Equipment Corporation, minicomputers from Data General, UNIVAC, and Hewlett Packard are also connected to the system.

Don tells us the network is designed for 47 minicomputer connections, and they now have enough software on hand for 32 new customers. "And these slots are available now at bargain-basement prices" he reports. You can reach Schroeder & Co. on 4-4921.

## Retiring



Dick Othmer (5524)



Ernie Bolton (3743)



Herb Jewett (1482)



Roger Anderson (2452)



Jess Wright (1423)



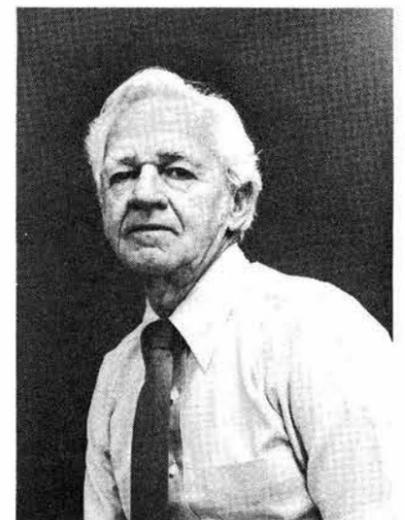
John Stott (2452)



Frank Valencic (1482)



Wilda Ward (1522)



Ed Connelly (3721)

## LAB NEWS

Published every other Friday

SANDIA NATIONAL LABORATORIES

An Equal Opportunity Employer

ALBUQUERQUE, NEW MEXICO  
LIVERMORE, CALIFORNIA  
TONOPA, NEVADA

Editorial offices in Albuquerque, N.M.

Area 505 844-1053

FTS 844-1053

ZIP 87185

In Livermore Area 415 422-2447

FTS 532-2447

john shunny is editor

&

don graham ass't. editor

carl mora & norma taylor write

louis erne does picture work

aided by gerse martinez

barry schrader reports livermore.

## Events Calendar

Feb. 21—Musical Jokes & Diversions II, benefit for Friends of Music, 8:15 p.m., Keller Hall, UNM.

Feb. 21-22, 27-March 1—"Hamlet," Classics Theater, 8:15 p.m., \*2:15 p.m. only, Popejoy, 277-3121.

Feb. 22—Albuquerque Philharmonia Orchestra concert with St. John's Episcopal Church Choir, 3 p.m., Albuquerque High School auditorium, 800 Odelia Rd. NE, no admission charge.

Feb. 22-May 21—"From Generation to Generation," folk culture in Albuquerque, Albuquerque Museum.

Feb. 22—Chamber Orchestra of Albuquerque Pop Concert, 8 p.m., Rio Grande Ballroom, Sheraton Old Town.

Feb. 23—The Original Jack Daniels' Silver Cornet Band, 8:15 p.m., Popejoy.

Feb. 24—Travel-Adventure film "Enchanted Bali," 7:30 p.m., Popejoy.

Feb. 24—The Beach Boys concert, 8 p.m., UNM Arena.

Feb. 25-March 28—A Sound Selection: Audio Art, Albuquerque Museum.

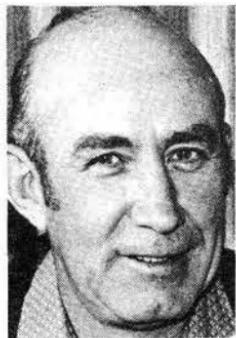
Feb. 27—Navajo Rug Auction, 7 p.m., Crownpoint NM elementary school.

Metropolitan Opera Radio broadcasts: KHFM 96.3 FM, KZIA 1580 AM, 12 noon:

Feb. 21—Rossini's "Italian in Algiers"

Feb. 28—Ravel's "Child & the Sorceress" and Poulenc's "Les Mamelles de Tiresias"

## Supervisory Appointments



**PHIL LANE** to supervisor of Equipment Maintenance Section 3612-4, effective Feb. 1.

Following retirement from a 23-year U.S. Navy career, Phil joined Sandia in January 1976 as a plant facility operator in the steam plant. For the past two years he has been a standards analyst in Maintenance Operations Planning Division 3615.

Phil, a native New Mexican from Cloudcroft, enjoys hunting and fishing. He and his wife Fran have two children and one grandchild. They live in NE Albuquerque.

\* \* \*

**THERESA PHELPS** to supervisor of Payroll and Travel Section 3252-1, effective Feb. 1.

Theresa joined the Labs in February 1957 as a document clerk. Two months later, she transferred to the accounting department and has since worked in a number of assignments. Most recently, she worked in the financial information center in General Accounting Division 3251. Theresa attended UNM, taking accounting and computer related courses.

She and her husband Wayne (3613) enjoy church activities, fishing and traveling. They have three sons and two grandchildren and live in the NE heights.

\* \* \*

**JOHN MITCHELL** to supervisor of Sensor Systems Division 1246 (newly created), effective Feb. 1.

Joining the Labs in July 1958, John worked for several years in field test groups and, later, with a full-scale testing organization. Transferring to the space systems department, he has worked on various satellite systems. His most recent assignment has been with the Satellite Sensors Division 1243.

John earned his BS in EE from UNM. John, his wife Ann, and their three children enjoy boating and camping; they live in the NE heights.

\* \* \*

**LARRY ELLIS** to supervisor of Data Processing Division 1248 (newly created), effective Feb. 1.

After joining Sandia in June 1968, Larry worked in a computer group, but since 1969, has been with the space systems department where he's been concerned with flight hardware and ground-based computer activities.

Larry received his BS, MS and PhD in EE from Iowa State; the latter was earned under Sandia's Doctoral Study Program. He enjoys skiing, golf and basketball. Larry, his wife Molly (a former Sandian) and their two young sons live in the NE heights.



**NEW SUPERVISORS**—(Standing l to r): Larry Ellis (1248), George Allen (4553), John Mitchell (1246) and Tom Sellers (1750); (seated l to r): Theresa Phelps (3252-1), Jim Bushnell (1554) and Pat Walter (1585).

**TOM SELLERS** to manager of Safeguards Development Department 1750, effective Feb. 1.

Tom came to Sandia in 1958 following graduation from the University of Oklahoma with a BS in EE. He joined the field test organization, participating in numerous overseas assignments including the Dominic series of nuclear tests. He was named supervisor of a systems development section and, in 1965, was promoted to supervisor of an instrumentation division where much of his work dealt with counter-insurgency programs. In 1971, following a two-year assignment in Washington, D.C., with the Defense Communications Planning Group, Tom returned to Sandia to head a division concerned with nuclear materials safeguards, both domestic and international. In his most recent assignment, he was supervisor of Advanced Facilities Protection Division 1761.

Tom is a member of the Institute of Materials Management and is chairman of that organization's Physical Protection Technical Working Group. He has served on various committees for international safeguards for nuclear facilities. Tom enjoys skiing and the yardwork and gardening he does at his North Valley home. He and his wife Doris have four children.

\* \* \*

**JIM BUSHNELL** to supervisor of Electromagnetic Environments Instrumentation Division 1554, effective Feb. 1.

Since coming to the Labs in 1964 as a staff member in the research directorate, Jim has conducted R&D work on radiation-induced defects in semiconductors, on high-energy lasers, and on nondestructive testing techniques. He worked with the Management Staff for a year and a half and, most recently, his work in Division 1554 has been concerned with the development of a lightning simulator.

Jim received a BS in general science from MIT and his MS and PhD in physics from the University of Illinois. His favorite

leisure-time activities include camping and playing a Japanese board game called "Go." Jim and his wife Anne (3244) have three children and live in NE Albuquerque.

\* \* \*

**PAT WALTER** to supervisor of Test Measurements and TM Component Development Division 1585, effective Feb. 1.

Following graduation from Penn State in 1965 with a BS in ME, Pat joined Sandia as a member of the Technical Development Program; he received his MS in ME from UNM. As a DSP participant, Pat received his PhD in engineering sciences from Arizona State in 1978. His work at the Labs as a test engineer has been divided between field testing and environmental testing.

Pat is a member of the Society for Experimental Stress Analysis and the Instrument Society of America. Off the job he enjoys racquet ball, backpacking, hiking and hunting. Pat and his wife Teresa have two boys and live in the NE heights.

\* \* \*

**GEORGE ALLEN** to supervisor of Transportation Systems Development and Testing Division 4553, effective Feb. 1.

Since joining the Labs in September 1976, George has had assignments in the nuclear fuel cycle area; the transportation safety technology evolved from this early work.

George was awarded simultaneous degrees from MIT in 1971—a BS in civil engineering and an MS in nuclear engineering; he received his PhD at MIT, also in nuclear engineering, in 1976. While earning the latter, George was supervisor of mechanical engineering for the redesign of an MIT nuclear reactor. George is a member of the American Nuclear Society and ASME. He enjoys fishing, hunting, playing ice hockey, and making stained glass windows. George and his wife Carol live in SE Albuquerque.



## Commuter Notes

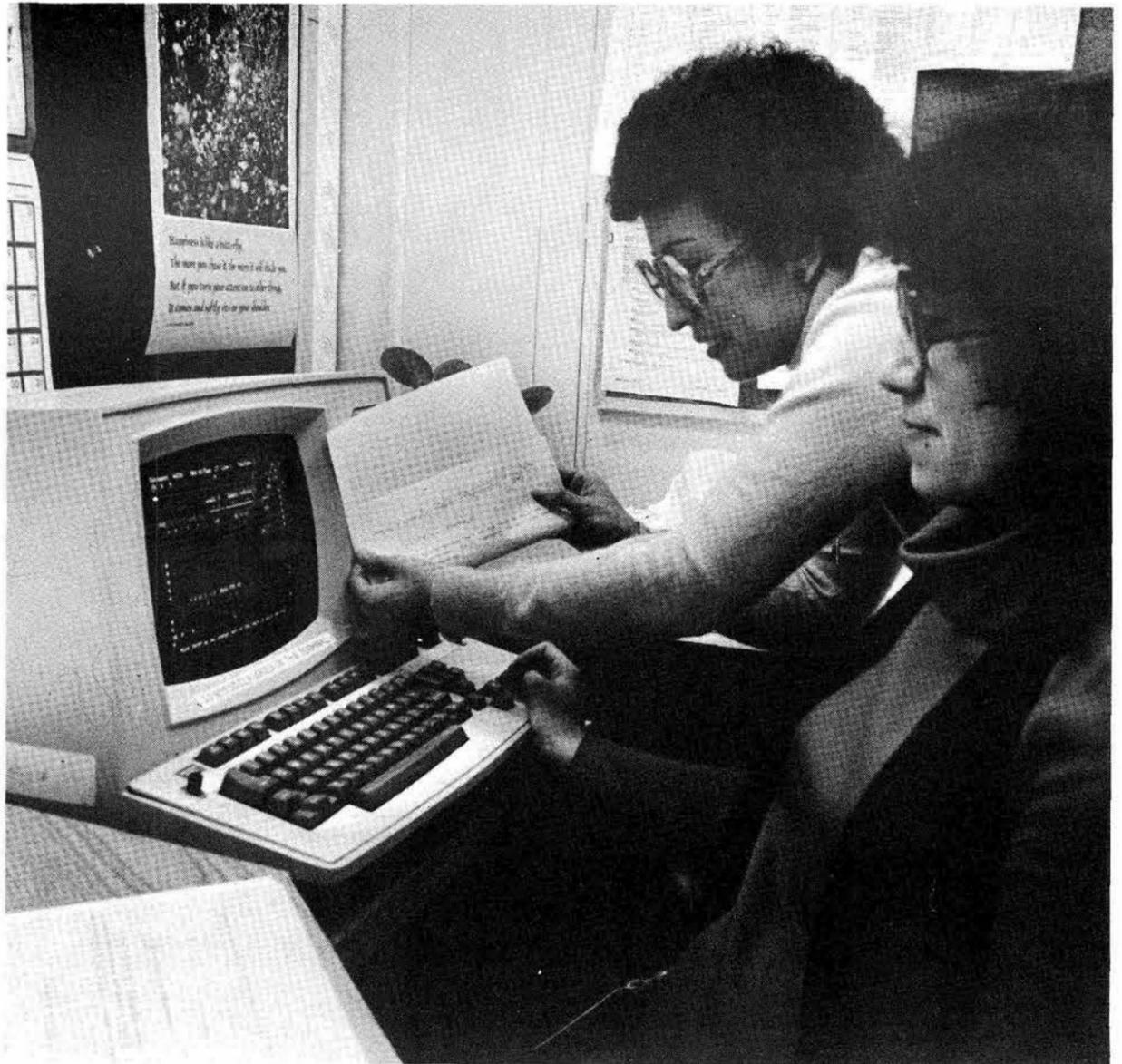
Commuter's Assistance Barbara Champion reports that now is a good time for Sandians from southern areas—Belen, Los Lunas, Peralta—to consider busing to work. There are two buses, one originating in Belen, the other in Peralta. It's \$1.50 from Belen, \$1.25 from Peralta when you use the 20-ride ticket, otherwise \$2.00 and \$1.50 if you prefer to pay per ride. Given the present price of gas, lone rangers driving in from these areas "must like to burn money" states Barbara. You can reach her for schedule information on these and other buses on 4-RIDE.



**BEFORE RETIREMENT** last December, Corry McDonald was Sandia's metric conversion coordinator. Last month, Corry was awarded the U.S. Metric Association certified metric specialist rating and will make a presentation at the U.S. Metric Board's Public Forum, to be held March 5 at the Albuquerque Convention Center. The public is invited to the Forum. It begins at 10 a.m.



**JOHN CANTWELL**, supervisor of Community Relations Division 3163, was recently elected to the Albuquerque Public Schools Board of Education.



RUBY COCHRELL AND JO CHAVEZ-HARRIS (at terminal) compare printed copy with the CRT display. The Division 2613 Word Processing Center serves users in the 2000 organization.

### A Successful Experiment

## WPC Benefits Users

Three years ago an experimental Word Processing Center was established in Bldg. 880 to serve the 2000 organization in that area. That experiment has been highly successful, and the WPC, administered by Dept. 2610, is at full capacity assisting 450 users.

Ruby Cochrell, lead operator, has been with the center since it opened. "We have five operators who can handle almost any job," she says. "Our equipment is the Wang OIS 130 (Office Information System)—six keyboard terminals with cathode ray tubes which display the typed material and four printers with speeds from 30 characters per second up to 425 lines per minute. Our newest printer saves us hours of work. It's a dual-head printer with both an English and Greek alphabet. Previously, typing equations was time consuming because we had to apply each symbol by hand. Now the operator does it all on the keyboard—the new printer then follows through and prints the complete equation."

Bertie Denman, WPC coordinator, adds, "The capabilities of this system are just enormous. Our system has a 4000-page storage capability which enables us to expedite report updates and revisions. We use a standardized format where possible, but we can still handle jobs with unusual formats. Our second major service is a telephone "dial-in" dictation system—dialing the dictation service phone number activates a recorder and the caller then dictates into the phone. Rose Ann Schultz is our dictation typist—she transcribes

unclassified tapes. With our braille typewriter, we can now leave messages and instructions for Rose Ann. Dictation tapes receive priority handling—the requester usually receives one-day service."

The centralized method of word processing followed in Division 2613 is best suited to the physical layout of Bldg. 880, with the Center's clientele located around it. Other word processing setups at Sandia use different methods, also successful: cafeteria style, distributed work stations, or stand-alone systems. George Horne, the division supervisor, credits much of the Center's success to the early efforts of Clayton Guynes (2000), Bob Vokes (2611), and Marie Syme (3152), as well as to the guidance of management people in organization 400 and 2000, among others.

Bertie and Chuck Roehrig (also 2613) screen new equipment as it becomes available and arrange demonstrations for word processing coordinators from each of the other vice presidencies. A "Word Processing Center User's Guide" has been prepared by Ruby Cochrell who this month begins teaching an in-house class for word processor operators.

George notes that his group also provides a support service to other Labs organizations. "Although each vice presidency establishes its word processing requirements, we assist, where necessary, with consultation, recommendations, and evaluations. We can also help in fulfillment of Sandia and DOE procurement justifications."

## Take Note

If button collectors and people with flat feet can start clubs, then there's every reason for a club for people who don't do something to not do it together. According to its flyer, the PNS (Please No Smoking) Club of Albuquerque offers members many activities (besides not smoking)—house parties, dinners, movies, snowshoeing, X-C skiing. And more. It costs two bucks a year, address PNS Club, POB 25972, Albuquerque, 87125, phone 897-0131. We don't know what their stand is on tobacco chewers.

\* \* \*

Incidentally, the Que Pasa Rec Center also operates a snack bar that opens at 11:30 a.m. and "features a wide variety of hot and cold sandwiches, pizza, green chili (sic) stew, and the best hot dogs at Kirtland," so states their release. On weekends they have a 99-cent breakfast special from 9 a.m. on.

\* \* \*

The nomination of Linda Garcia (3252) for selection to the Outstanding Young Women in America adds her name to the 15,000 women being considered by that organization for awards. Ten women from each state will be named national finalists. Linda, a payroll clerk, received her BBA from UNM and is studying for an MBA. She worked at the Labs as a co-op student and became a permanent employee last November.

\* \* \*

If money matters are getting to you, then consider a course being offered by the non-profit Consumer Credit Counseling Service. It's entitled "Money Management Education Course," runs through eight sessions, and covers subjects including credit buying, budgeting, checking and savings accounts, home buying and maintenance, and more. The course starts March 9, is held on Mondays from 7 to 9 p.m. at 5318 Menaul NE. Cost is \$15. You can get more information on 884-6601. LAB NEWS has a supply of brochures that gives course details.

\* \* \*

Cecil Land (5133) and Bob Eagan (5845) were elected Fellows of the American Ceramic Society by action of the Board of Trustees on Dec. 5, 1980. The Fellowship will be officially conferred upon them and 15 other new Fellows at a banquet during the annual meeting in Washington, D.C., this May.

\* \* \*

Gerry Yonas (4200) will be the guest speaker at the ASME meeting on Feb. 23. He will provide an update on recent progress in Sandia's pulsed energy programs. The meeting, to be held at the particle beam facility in Area IV at 7:30 p.m., includes a facility tour.

\* \* \*

National Engineers Week is next week, Feb. 22-28, and Paul Dressendorfer (2144)



CONGRESSMAN MANUEL LUJAN was here last week and, after briefing on the Labs' small business program, computer-aided design and safeguards, he toured the shops. Here he talks with machinist apprentice Clarence Esquibel (1481) in Bldg. 840.

informs us that a luncheon is planned for the 25th at the Hilton Inn at 12 noon. Speaker for the luncheon is A. J. Pfister, who will discuss the investigation of the Three Mile Island incident. You can get tickets for the luncheon, at \$7, from Paul; call 4-5684. Another event planned for the week is an open house at UNM's Engineering College on Feb. 27 from 9 to 5.

\* \* \*

The Feds are offering a free course relating to energy information and how to get it (from them) in Albuquerque on March 16 & 17 and again on March 19 & 20. It's sponsored by DOE's Energy Information Administration. Day one of the course goes into EIA products and services, while day two covers something called the Federal Energy Data Index (FEDEX), a computerized bibliographic data base relating to energy. Says the brochure: "Participants could be librarians, energy professionals, information specialists, or writers." You may attend for one or both days. It's free. Call the local office on 846-2382 if you're interested.

\* \* \*

In case you hadn't noticed, it's income tax time and, if you've been laboring over your tax forms, you may have noticed that your income may have been increased by the cost of Sandia's group term insurance provided in excess of fifty thousand dollars. Taxpayer Al Hachigian (1213) has taken note of this increment to his income and did some research on where the \$50,000 figure came from. "It dates back to the '64 Revenue Act," says Al. "The figure has remained constant in spite of inflation. Seems to me it's time to up it to a level that reflects the 1981 dollar—I've written to my congressman accordingly."

\* \* \*

We're not sure if Security is aware of this, but Texans have infiltrated Sandia Labs and are planning a "celebration" right here in the Tech Area on March 2nd. (On this date in 1836, the Republic of Texas was founded.) The Texans will gather from 12 to 1 in conference room 114, Bldg. 836 and, it says here, "bring a sack lunch and lots of Texas spirit!" Note that the latter is singular. "So come on, y'all, for a brief interlude of armadillos and longhorn steers, Bob Wills and the Cotton-Eye Joe, pecans and bluebonnets, and lots of friendly folks!"

\* \* \*

Doug and Sara Balcomb from Los Alamos will be in town on Feb. 28 to present a talk on passive solar heating at 7:30 p.m. in T-VI's auditorium. Sponsor is the NM Solar Energy Assn. and the state's Energy & Minerals Dept. Balcomb is recognized as an authority on passive solar, especially in the residential context. There is no charge.

\* \* \*

Next talk in Medical's series "Let's Talk About Aging" will deal with the topic "Aging and Alcohol." It will be presented by Jim Kelly, alcoholism program administrator for the Labs, and is scheduled for Feb. 24, 12 to 12:30 p.m., in Bldg. 815.

\* \* \*

A new seminar series on transient electrical, optical and chemical phenomena is planned, and the first presentation is set for March 6 at 10:15 a.m. in Bldg. 815 (inside). Speaker is Bob Hughes (5152) and the title of his talk is "X-Ray Pulses for Studying Fast Transient Photoconductivity in Insulators."

## Applied Research Directorate 8300

The Applied Research Directorate 8300 was formed 12 years ago with the charter to enhance the breadth and depth of technical support of the weapons program at Livermore. In recent years, participation in energy endeavors has become an additional activity of Applied Research. The major activity here is combustion-related, but significant research programs are devoted to solar and magnetic fusion as well.

Byron Murphey, director of 8300, notes considerable growth of facilities in the last year—the Combustion Research Facility with its large lasers and VAX computer, and the Cray super computer addition in the Computation Department.

Looking at the five departments and 250 people of 8300, one finds a diverse operation.

### Materials Department

The Materials Department 8310, headed by David Schuster, selects, characterizes and develops materials and processes in support of Livermore weapons and energy programs. "Of our five divisions, three focus on metallurgical topics and two address chemistry and surface-related problems. We're looking at a broad spectrum of metallurgical areas—powder metallurgy, electroplating, stainless steel, titanium, beryllium and uranium metallurgy," David explains.

Of special concern are hydrogen and helium embrittlement and joining and deformation modeling. "Our new high heating and strain rate Gleeble machine, together with state-of-the-art electron optics and x-ray facilities, give us in-depth studies of engineering materials being considered for use in weapon and energy programs," he says. These capabilities have led to funding by DOE's Office of Fusion Energy of a program to study joining and hydrogen embrittlement of ferritic steels under consideration for use in fusion reactor walls.

The chemistry and surface studies divisions address topics such as the stability of chemical compounds used in weapons and energy systems. An array of surface analytical techniques, including a super scanning Auger microscope, is used to address long-term material compatibility and corrosion problems. These analytical studies are augmented by data from the controlled storage of simulated weapons.

Strategic materials shortages have extended the department's job. "Because of this national problem, we've had to, on occasion, reconsider our initial material selections. Cobalt, its cost and availability, is one example," David says. He adds that they are likely to be looking at many more material substitutions in the future.

### System Studies Department

System Studies Department 8320, under the direction of Rob Rinne, conducts analyses of the relative utility, cost,

safety and reliability of various weapon and energy systems.

Two divisions—safety and reliability—assess nuclear weapons systems to be sure that they perform "when and only when called upon to do so." Rob sees these tasks—safety and reliability—as two of the main missions of the Labs.

Also within 8320, two studies divisions concentrate on understanding nuclear war: how weapons should be deployed and employed, their configuration, their output and other aspects such as control, serviceability and security.

A third system studies division examines energy issues. These programs revolve around the solar central thermal receiver; the division also investigates alternative energy possibilities.

Rob comments that the system studies group tries to provide the Labs with an overview of issues, "a view of the whole forest," not on the individual trees . . . often we are talking about time frames that go beyond the year 2000." Computers are their main simulation tools. "Computers enable us to fight the war on paper to see how we come out," Rob says.

### Computation Department

The Computation Department 8330 helps get numerical answers and is headed by George Anderson. As a service organization, it provides technical support for Labs projects. "Computation is a growing fraction of the technical job at any laboratory. It's the indispensable activity at a national laboratory like Sandia," George says.

Bolstered by the world's fastest super computer—the Cray 1—his department is looking ahead to further expansion, partly with the arrival in March of a VAX, a minicomputer which will fill a time-sharing gap in Sandia's computing needs. The divisions in 8330 chiefly work with Labs people who need computer assistance on their projects. And they train people in the use of new equipment as well as research new computer applications and techniques for problem solving.

A growing area is computer graphics—using pictures and graphs instead of numbers. Staffers in 8300 help produce reproduction-quality graphics which until recently had to be drawn manually. The Computation Department now runs two shifts to handle the work load.

### Physical Science Department

The Physical Science Department 8340 consists of staff people with broad knowledge in a number of scientific disciplines, ranging from advanced laser and surface physics to theoretical quantum chemistry. Department head Walter Bauer explains that the mission of 8340 is to provide scientific support in both weapons and energy programs.

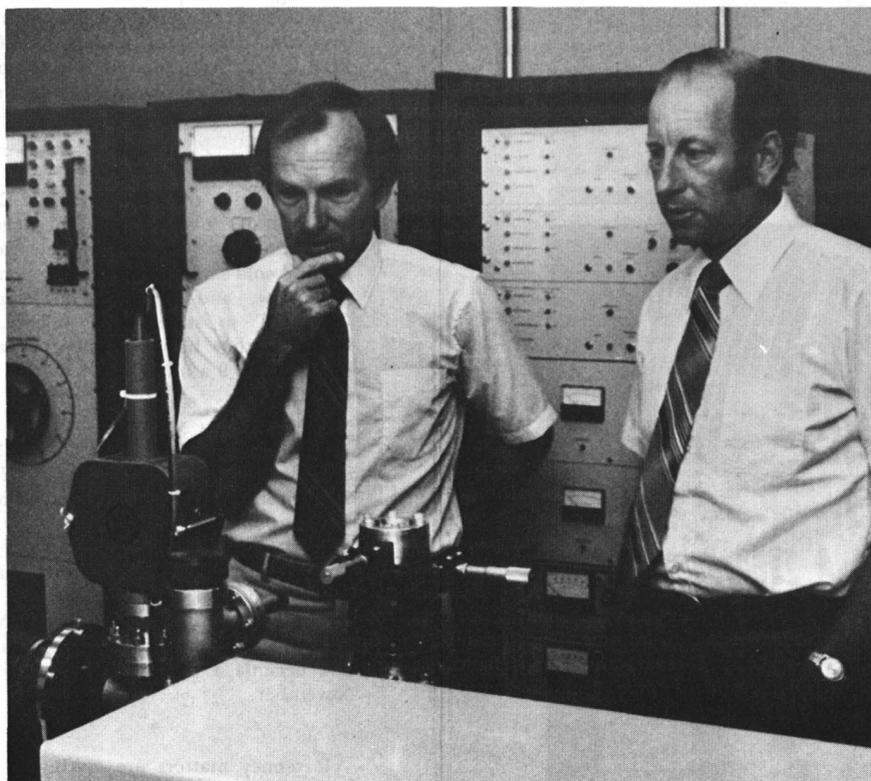
Specific areas of weapons research include advanced components, hydrogen

# LIVERMORE NEWS

VOL. 33, NO. 4

LIVERMORE LABORATORIES

FEBRUARY 20, 1981



LOOKING OVER the new pulsed dye laser in the Combustion Research Facility are Dan Hartley (8350), at left, and Walter Bauer (8340).

and helium embrittlement, and tritium compatibility.

Among the energy programs is one of long standing here—the study of plasma-material interactions in magnetic fusion devices. In this effort there is cooperation with Sandia Albuquerque as well as with LLNL in the mirror program, and with UCLA and Princeton in the tokamak programs.

Within 8340 the development of novel laser diagnostic techniques is an important part of Sandia's combustion research. An extension of this work, sponsored by DOE's Office of Basic Energy Sciences, concerns the use of advanced laser technology to study exotic materials for use in turbine blades. Fundamental research on tritium and helium in materials—conducted at the Tritium Research Laboratory—is also funded by Basic Energy Sciences.

"Our objectives are to remain at the frontiers of science in the areas of interest to Sandia, to do useful research, and to continue to attract the best staff in applicable disciplines," Walter concludes.

### Combustion Sciences Department

The Combustion Sciences Department 8350 has moved its staff and most experiments into the new \$10 million Combustion Research Facility, a modern office and lab complex placing Sandia in a position of world leadership in this field.

Dan Hartley, department manager, explains his group's functions as "providing a national, if not international, focus for advancement of combustion sciences in support of energy programs. To do this, we pursue research dealing with the application of new methods to a broad set of combustion problems." The work is supported by DOE's Office of Basic Energy Sciences.

Applied research is aimed at using laser diagnostics in conjunction with computer modeling to obtain a better understanding of combustion in internal combustion engines. Cooperative programs with GM, Ford, Chrysler, Cummins, VW and Exxon address problems in lean burning and stratified charge and in diesel engines. Other applied research deals with the combustion of pulverized coal and with application of Sandia's measurement technology to various energy systems.

For his staff, Dan foresees research into the combustion characteristics of synfuels and significant growth in the application of advanced diagnostics to new fossil energy systems.

"In the beginning we knew our forte was laser diagnostics—we used that to develop the program that exists today," Day says. "Our new facility has unique laser systems that clearly make us the world leaders. We are now ready to make a new thrust into the theoretical side of combustion."

## Fun & Games

**Racquetball**—A new club opens soon, the Rio Grande Yacht & Sporting Club, at 2500 Yale SE. If three or more people from the same company sign up, a discount is granted. If you're interested, call Tom Lenz at the C-Club on 4-8486.

**Swimming**—The City has a good indoor pool program for swimmers wishing to get in a few laps. Their four pools are open Monday to Friday for this purpose from 6 to 8 a.m. and from 6 to 9 p.m.; on weekends it's from 12 noon to 6 p.m. Admission is \$1.25 per visit and a monthly pass is \$10. Pools in this program are as follows: Highland, 400 Jackson SE; Los Altos, 10300 Lomas NE; Sandia, 7801 Candelaria NE; and Valley, 1505 Candelaria NW. Friday evenings are bargain night—25 cents per person.

**Weight lifting**—The Labs has a surprising number of participants in this sport and many are in the quality class—in the recent state power lifting championships, held on Base, seven Sandians placed among the 85 entrants. Firsts were taken by Chuck Barnes (5133), 165 lb. class, a total of 1235 pounds; Dallas Allen (1263), 181 lb., 1290 pounds; and Richard Cernosek (1254), 220 lb., 1620 pounds. Also placing in the competition were Hamp Richardson (4218), Jaime Castaneda (4218), Joe Schofield (2627) and Bob Smyth (3613). The power lifting totals in pounds come from three lifts—bench press, squat and dead lift.

**Boating**—The Coast Guard Auxiliary is again offering boating safety courses in sailing and power boating. The 13-week courses begin Feb. 25 and are held at 7:30 p.m. at the Reserve Ctr., 400 Wyoming NE. The \$7 fee includes cost of the textbook. To register, call 255-3483 or 821-0672.

**Biking**—LAB NEWS has received a bunch of new bikeway maps. If you'd like one, stop by. We're in the trailer next to Bldg. 814.

**Running**—Is vigorous exercise dangerous? Not so says the Harvard Medical School Health Letter. True, there is an occasional sudden death among joggers but this is largely due to underlying—and unsuspected—heart disease. Says the Letter, "In short, the overall risk of dying from a heart attack while exercising seems to be exceedingly small." One caveat for would-be exercisers over age 35; get a medical evaluation before you begin. The National Safety Council would answer our question along a somewhat different line. A clipping from an NSC publication discusses some melancholy figures, gathered over a one-year period, on the number of joggers hit by motor vehicles. In reports of 60 such collisions, involving 65 joggers, 30 joggers were killed, 35 injured. A word to the wise: more than half of the

collisions and two-thirds of the fatal collisions occurred during non-daylight hours. If you must jog after dark, wear light colored or reflective clothing.

**Soccer**—Darryl Bouchard (5154) is looking for a few soccer players to fill out a Sandia team that will play in the city league from March to May. Call him on 4-8634 if you're interested.

A clinic for women soccer players is scheduled for the next three Saturday mornings—Feb. 21-28-March 7—starting at 11 a.m. at the field on the UNM campus east of Johnson Gym. Players will work with coach Sonia Hindi on the basics of the game. "Beginners are welcome," says Frances Stohl (4746), VP of the Albuquerque Women's Soccer League. For more info, call Frances on 4-7991.

**Co-Rec Softball**—Tom Lenz from the C-Club is trying to start a co-rec league—men and women on the same team. Rules are modified somewhat, and a 16" mushball is used. Tom suggests forming teams from your division or department and give him a call, 4-8486.

**Aerobic dancing**—An eight-week session starts Tuesday, March 24, meeting from 5 to 6 p.m. on Tuesdays and Thursdays at the C-Club. Then there are two 12-week sessions set to begin Monday, March 9, also meeting at the C-Club on Mondays and Wednesdays, one from 9:30 to 10:30 a.m., the other from 5:30 to 6:30 p.m. Donna Ness is the instructor and the contact is Lou Gibson, 293-0316.

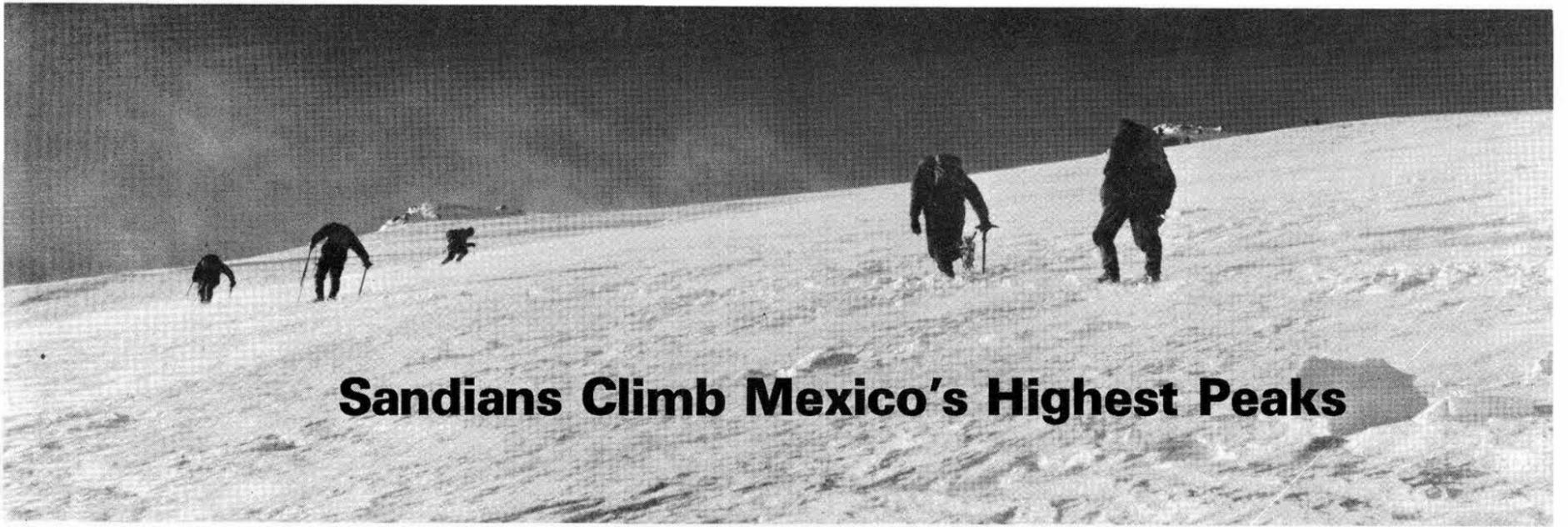
**Volleyball**—Larry Azevedo (5152), president of the Sandia Volleyball Association, reports that teams for three leagues are now being organized to start play the second week in April. The leagues are described as "competition" league, "recreation" league and "fun" league. To sign up or for more info, call Larry on 4-2358.

The Diabetes Association needs teams to play in their volleyball marathon money raiser on March 13 and 14. Each team plays for a maximum of two hours and solicits pledges. Sandia potentials should contact rec manager Tom Lenz, 4-8486 for info.

**Bowling**—SBA holds its next tournament of the season at Fiesta Lanes on March 7-8. This will be a four-game, no-tap event with low game thrown out. Entry forms are being mailed, and guests are welcome. Contact Glenn Folkins on 4-2304 or Dorothy Castro on 4-4910 for other information.

### Congratulations

Patty (2613) and Larry Lujan, a daughter, Michele, Jan. 26.  
Craig (4214) and Virginia Melville, a son, Brent Alan, Jan. 27.



## Sandians Climb Mexico's Highest Peaks

**HIGH ON** Citaltepec, climbers trudge toward summit. Several suffered frost-nipped toes. Note ice axes, chiefly carried to arrest slide down slope in event of fall.

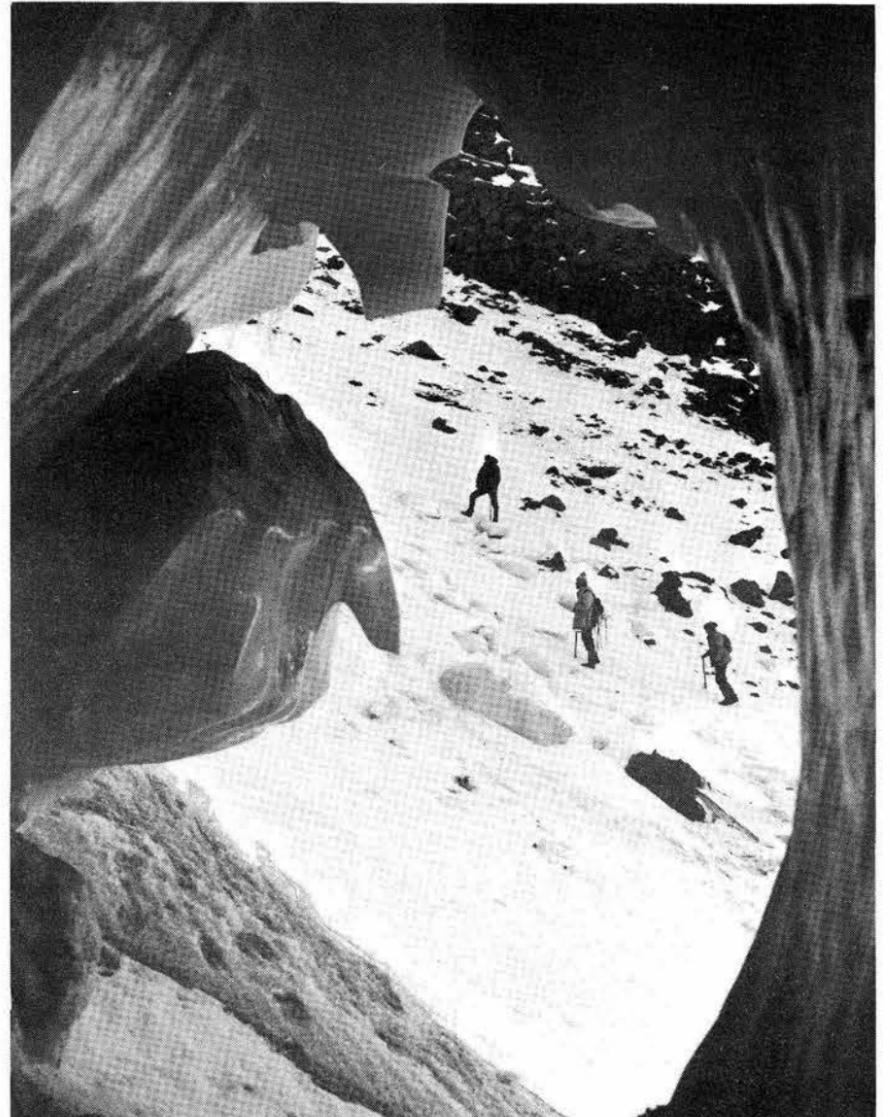
A mountain that reaches to 5000 metres, or more, is a respectable challenge to any mountain climber, and to surmount three such peaks in the space of a week is a physical feat of considerable dimension. Led by Ric Davis (1723), a dozen Sandians recently completed such climbs of Mexico's highest: Ixtaccihuatl (17,343'), Popocatepetl (17,887'), and Citaltepec (also known as Orizaba (18,700').

The three mountains are all within a hundred miles of Mexico City. Their summits have permanent snow. "These aren't technical climbs," Ric explains, "no cliff scaling—they're mostly a matter of trudging. But you should have crampons, an ice-axe and winter gear for snow traverses."

Veteran mountain climber Carl Smith (1112) took these pictures (and developed and printed them as well). They show elements of the high altitude world.



**HAIRIEST** crossing was this log bridge with several missing logs. Party rented two VW vans to reach mountain bases.



**ICE CAVE** entrance frames climbers on Popocatepetl.



**RIC DAVIS** (1723), expedition leader, reads curious inscription on Mexican bus.

**AT CLIMBING HUT** on Citaltepec, from left: Dave Williams (4424), Mike Murphy (kneeling, 2341), Bob Thomas (5521), Steve Negler (former DNA), Gordon Pike (5815), Walt Herrmann (5530), Dennis Grady (5534), Ric Davis (1723), Bob Biefeld (5154), Doug Drumheller (5534) and Carl Smith (1112). Hut is at 14,000'. Climbers made tent camp higher up before going on to summit.

# MILEPOSTS

## LAB NEWS

FEBRUARY 1981



Jim Coughlin - 1212 30



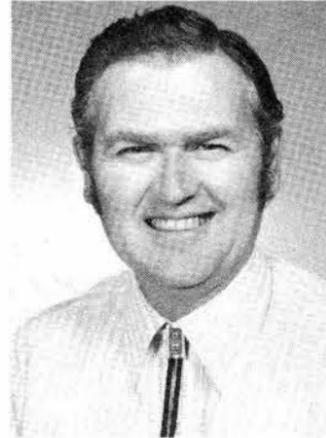
Jose Martinez - 3426 25



Charles Barncord - 3200 35



Rudy Walter - 3715 30



Roger Aden - 4713 25



Norman Brown - 5821 15



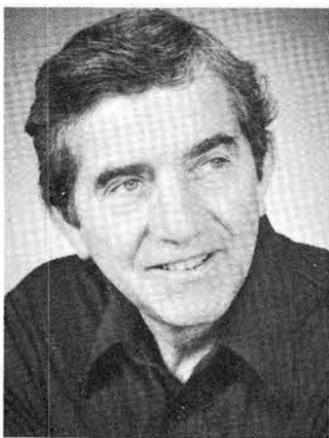
Henry Hinricks - 3613 30



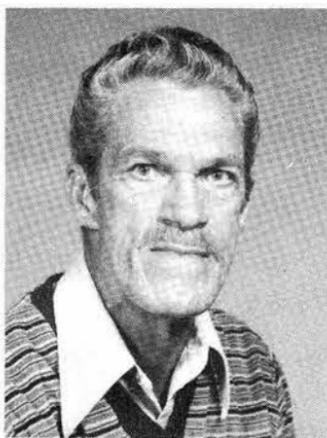
Richard Moyer - 3441 25



Jack Casey - 8444 20



Walt Dzugan - 8214 30



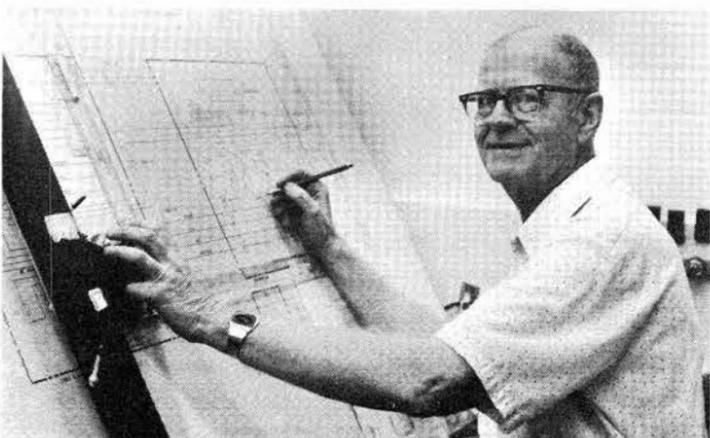
Ed Strance - 3742 30



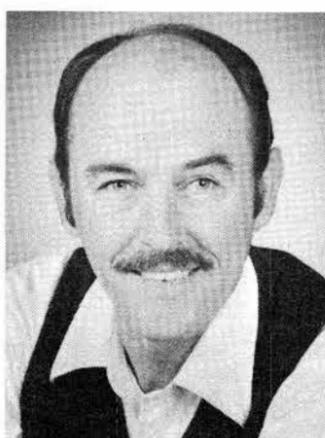
John Dobias - 2522 30



Ron Husa - 2332 20



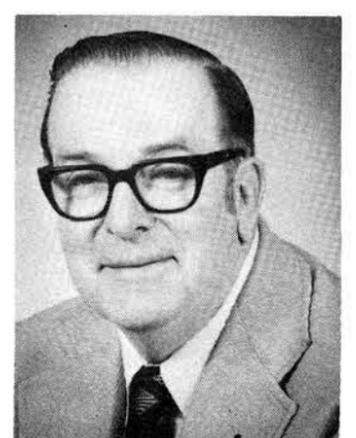
Norbert Molter - 2451 30



Elmer Smith - 8161 20



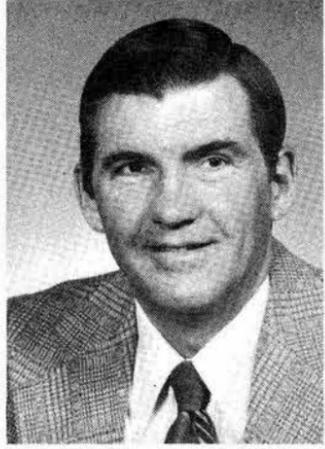
Keith Mead - 5811 30



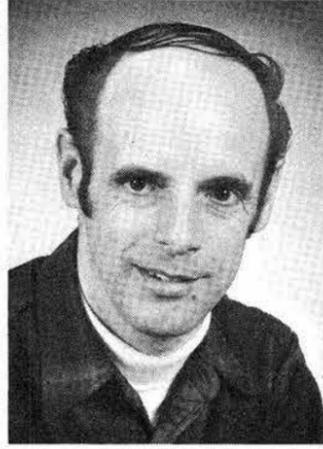
Jim Henderson - 8214 30



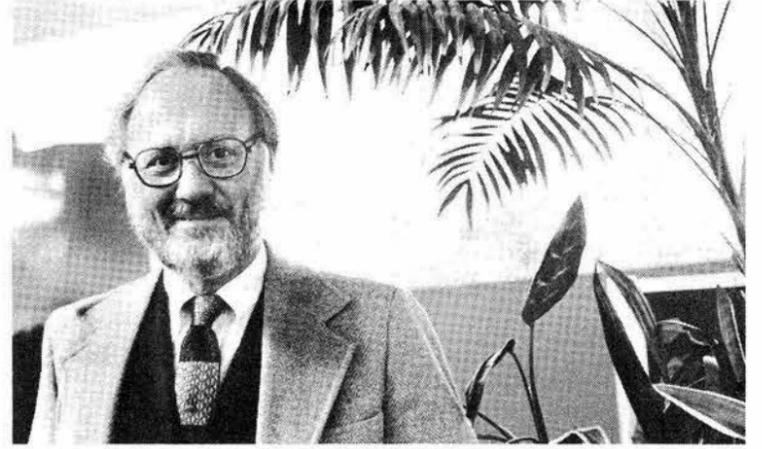
Dorothy Evans - 1474 30



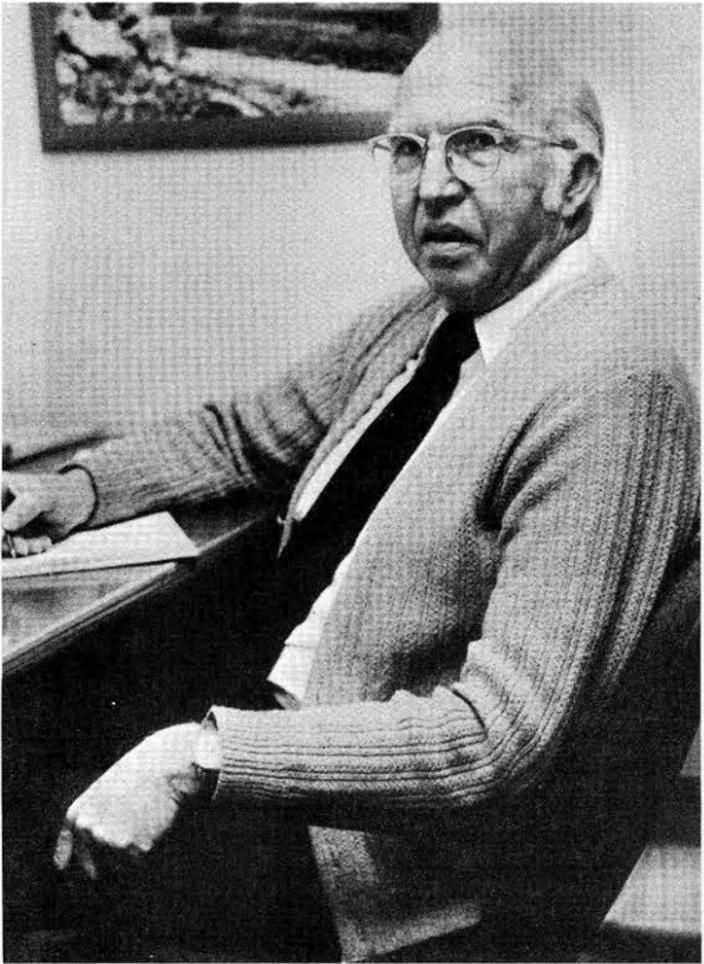
Bill Emrick - 1253 20



Don Swanson - 8461 20



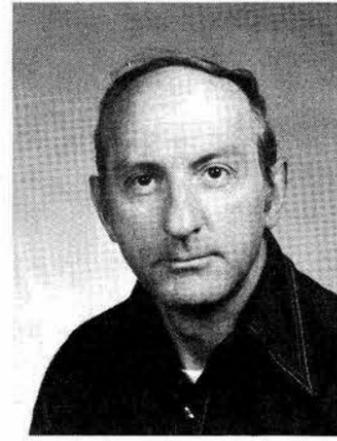
Chuck Cockelreas - 3161 20



Phil Dailey - 1135 35



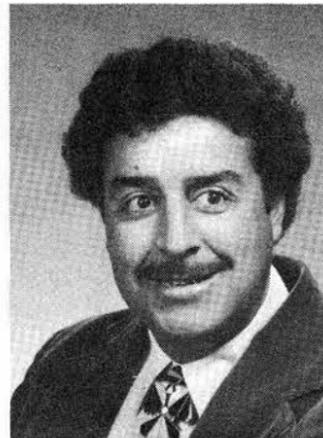
John Ashworth - 3434 15



Alveo Gendreau - 1485 15



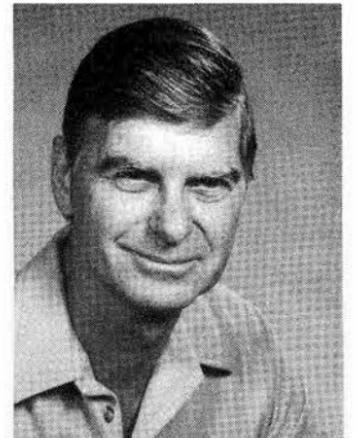
Gene Medina - 1522 30



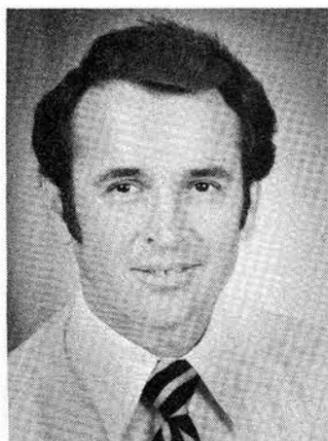
Manuel Vigil - 4553 15



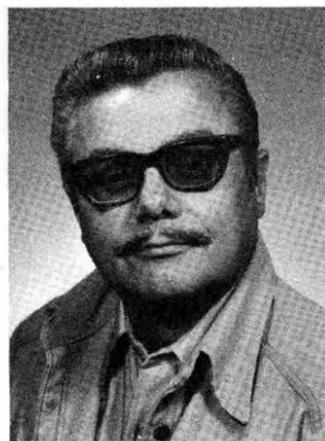
John Stang - 1732 25



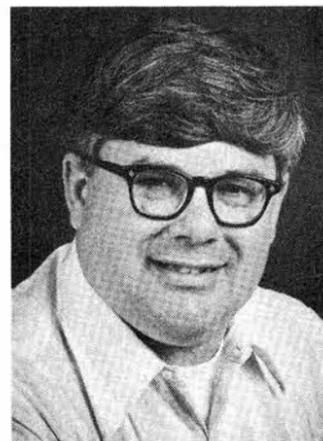
Kent Johnson - 3425 20



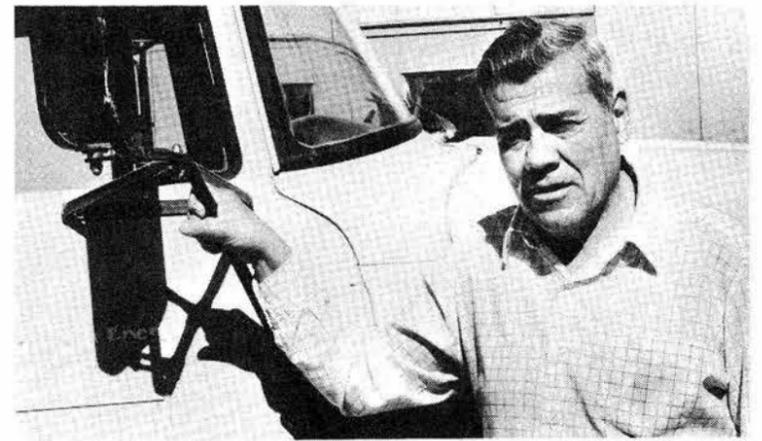
Len Hiles - 8151 15



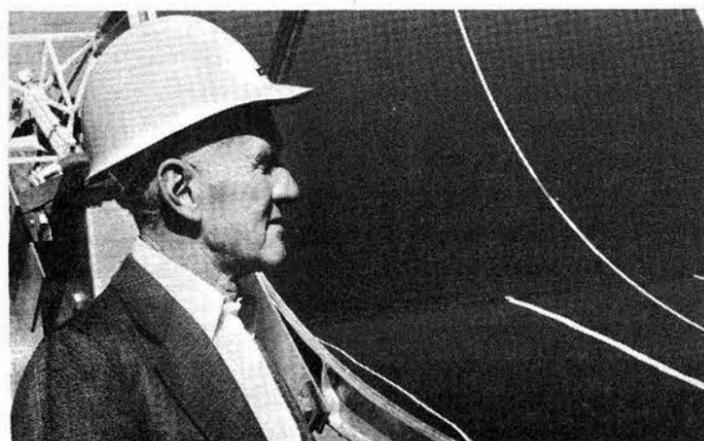
Dan Miko - 1525 20



Duncan Tanner - 8451 20



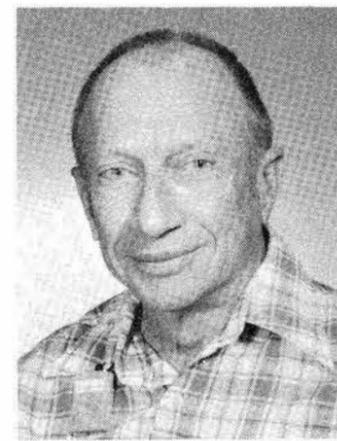
Joe Gurule - 3618 30



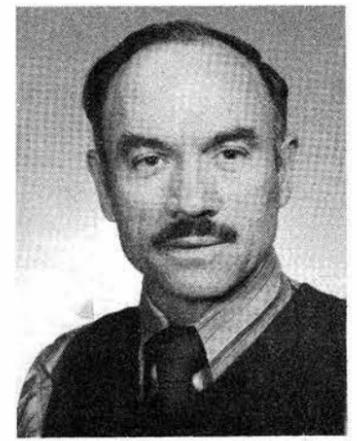
Bob Gall - 3161 20



Alec Willis - 8444 20



Norm Richardson - 1551 30



Chester Claghorn - 1541 20

# Woodburning Furnace Saving Fuel Costs

[Ed. Note—This is another in a series of articles about home energy saving systems. If you have an operating system, give us a call, 4-1053.]

When B.C. Brown, supervisor of the Sheet Metal Shop 1485-2, and Bette bought their new home in Tijeras Canyon in the summer of 1978, they knew the liquid propane (LP) furnace had to be replaced. It cost about 47 cents a gallon then, and now the price is at 60 cents.

Brownie ordered a woodburning furnace from Wisconsin and installed it himself. Total cost of the installation was about \$1000.

"I didn't complete the installation until mid-November of that year," Brownie says, "so I had a couple of months of cold weather with only the LP furnace operating. Fuel was costing about \$200 a month and I couldn't get the temperature in the kitchenette above 65 degrees. It was always cold. Now, with the woodburner, I can heat the house comfortably and the fuel cost is simply the price of gas to Jemez or Clines Corners."

Brownie has a cabin north of Jemez and during the summer spends many weekends there. He cuts and hauls wood for both his cabin and Albuquerque home during the summer. He burns about five

cords of wood during winter months in Tijeras.

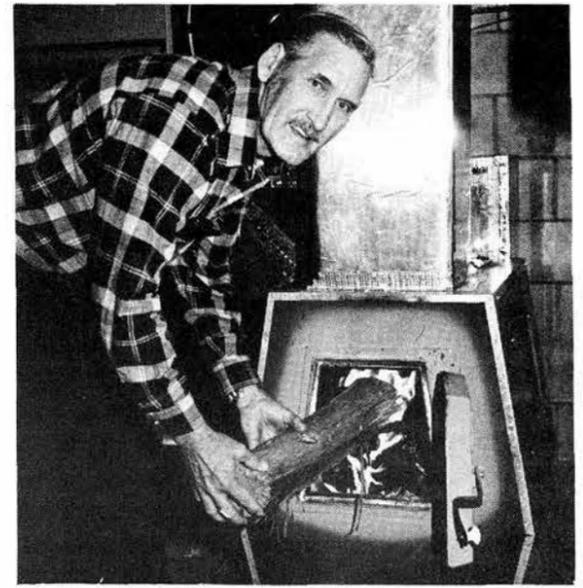
"I cut and split it myself," Brownie says. "I figure I need the exercise."

One of the important things Brownie did at his home was to insulate all of the ducts under the house with two-inch bats of fiberglass. He says this makes about a 40 percent more efficient installation.

He tied the woodburner into the existing central forced air heating system. Heated air from the woodburner is blown into the plenum of the LP furnace, and at 130° activates the forced air system with its larger fan. The LP system is still working—occasionally, on really cold mornings, he uses it to get immediate heat while waiting for the woodburner to get fired up. He loads the woodburner twice a day with about 30 or 40 pounds of wood. A load will usually meet his heating requirements for about eight hours.

"With the cost of LP increasing," Brownie says, "the woodburner has already paid for itself twice."

Brownie also reworked his fireplace, which opens to both the living room and family room, to include glass doors and a new air intake and venting system. "The old installation gave us very little heat. Now we have some control over the burning rate at least, and we're not losing interior heat to the outside."



B. C. BROWN (1485) tosses another log into his woodburning furnace which he installed to replace an LP furnace. He now burns about five cords of wood each winter, saves an estimated \$1000 on his fuel bill.

To vent the new woodburning furnace, Brownie ran the chimney from the basement workshop/furnace room up through the master bedroom, thus gaining a little extra heat.

Since the basement and furnace is directly under the bedrooms and baths, the carpeted wood floors are usually warm.

The 1850-sq.-ft. house is located on three acres off Rincon Loop in Tijeras. Brownie has substantially remodeled the place, built a barn and corral for his three horses and cow, and a chicken house.

"It's back to the farm," he says, "when I retire."

## JUNK • GOODIES • TRASH • ANTIQUES • KLUNKERS • CREAM PUFFS • HOUSES • HOVELS • LOST • FOUND • WANTED • & THINGS

### CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday. Mail to: Div. 3162 (M0125).

### RULES

1. Limit 20 words.
2. One ad per issue per category.
3. Submit in writing. No phone-ins.
4. Use home telephone numbers.
5. For active and retired Sandians and DOE employees.
6. No commercial ads, please.
7. No more than two insertions of same ad.
8. Include name & organization.
9. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

### MISCELLANEOUS

- ALL TECHNICAL books are 50 cents at the S. Hw. 14 Project book sale, Bldg. 814.
- SOFA: 3-piece sectional pit group, dark brown, 1 yr. old, \$200; walnut bookcase w/glass doors, 36" h x 30" w x 11 1/2" deep, \$30. Paul, 299-6387.
- SHOP MANUALS, Ford 75-76, 5 vols., all for \$20. Schuch, 266-2279.
- AKAI 7" reel-to-reel model X360 w/X cross field head, complete w/accessories. Harrison, 883-5411 after 5.
- REFRIGERATOR, 19 cu. ft., gold, Whirlpool, 3 yrs. old, frostfree top freezer w/place for ice maker. Allen, 292-7369.
- SNOW BLOWER, 21" Toro #421, 2-stage, self-propelled, 1 yr. old, \$300. Burgess, 345-2369.
- TWO matching occasional chairs, beige & white Herculon, \$30 ea. Robertson, 299-7561.
- NIKON motor drive MD-11 for FE/FM, includes new set of batteries, \$175. Passman, 821-4999.
- NEW sofa, beige & brown, matching chair, removable & zip bolsters; walnut dining table w/2 chairs, all for \$350. Griffin, 294-5702 after 5.
- CASSETTE DECK, Sanyo RD-5030 w/Dolby, still under warranty, \$100; BSR 2260BX turntable, direct drive,

- cartridge not included, \$30. Meyer, 821-0123.
- BALDWIN model 210D organ, two 61-key keyboards & one 25-pedal pedalboard, \$3000. Smith, 299-6873.
- COLT New Frontier Buntline .22LR/.22 mag, 7 1/2" blue, color case hardened frame, \$235. Haaker, 293-1077.
- ANTIQUÉ woodstove, Wedgewood, \$250; lg. upright freezer, \$150; 2 frame dbl. beds, \$35 & \$20; 2 dbl. bed mattresses, \$15 ea.; toilets, sinks, misc. Kaping, 292-7721.
- JOHN DEERE riding lawn mower, 8 hp, 34" cut, \$600. McFarland, 292-8136.
- GREENHOUSE, 4'x8' lean-to type, \$100, can help move. Coleman, 884-5009.
- PING PONG TABLE w/legs, \$30. Delollis, 299-5384.
- MAHOGANY top round table, 43 1/2" dia., 12" leaf, \$30. Price, 265-2327.
- ALUM. extension ladder, two 8' sections, \$30. Borders, 897-1911 after 5.
- PIANO, Lowrey console, model CK, pecan, 1 yr. old, 14-yr. transferable warranty, \$1550. Conley, 296-0695.
- BODY LIFT KIT for VW bug, made by T mag welding, new, never used, \$110. Wray, 344-5363.
- WHEEL & TIRES, Ford 16" split rim w/L78-16LT, Load Range D. Simmons, 299-3823.
- .22 BOLT action Remington Model 582 rifle in box, never fired, sell for less than wholesale, \$117. Stark, 298-6139.
- FP GLASS DOOR front & heat transfer system w/2-spd. fan. Liguori, 255-7551.
- .22 CAL. RIFLE, make offer. Webb, 294-8341 after 5.
- TWO gals. alum. pigment, \$20/gal.; 1/4 HP elec. motor, \$10; 1/2 HP elec. motor, \$15; elec. mot. w/reducer, 60 RPM, \$20. Stuart, 299-9190.
- FOOSBALL TABLE, \$125; Marlin shotgun, 3" mag, vent rib, \$150. Plunkett, 821-7757.
- WIRE WHEEL DISKS, 14", set for \$25; quality steel & wood school desk, adjustable formica top, \$20. Atkins, 298-5762.
- SOLITAIRE diamond wedding ring set, appraised at \$1200, asking \$600. Barela, 873-3245 after 5.
- ASSORTED SIZES curtains, drapes, rods, \$4-\$15; water skis, \$25; packing boxes, book size, \$20. Sherman, 292-3297.

- CENTRAL air conditioner, complete w/3 1/2 ton compressor, A-shape evaporator coil; several 400-lb. steer calves. Dees, 869-6949.
- PEAVEY GUITAR AMPLIFIER, cabinet w/6 10" speakers, PA speaker cabinets, other items. Esterly, 881-1973.
- CALCULATOR, TI-5040, electronic display, memory, paper tape, desk top, almost new, \$50. Moss, 298-2643.
- CARPET, 110 yds., gold, \$1/yd.; drapes: gold antique satin, lined, 1 pr. 96" w x 54" l, 1 pr. 140" w x 100" l, w/valance. Caskey, 296-6372.
- 4 EA. 13" mag wheels, 4-hole pattern w/tires, \$150; 240 Swan transceiver w/microphone & power supply, \$200. Bluett, 281-1146.
- 8HP reartine tiller, Rotohoe, 2 yrs. old, w/modifications. Martinez, 865-6983.
- BLACK POWDER revolver, .44 cal. Model 1858 Remington from Western Arms, includes target sights, holster flask, ammo, \$85. VanDenAvyle, 898-6474.
- FIREPLACE hot air circulator, \$10; fp screen, \$5; built-in kit for microwave, \$10. Miyoshi, 821-9118.
- FRIGIDAIRE built-in dishwasher, copertone, 30-day guarantee, \$75. Berg, 296-2695.
- BIKE ROLLERS, for inclement weather exercise on your favorite bicycle, \$75. McConnell, 268-3109.
- 2-VOL. manual for '69 Chevy trucks/vans, \$5/val. Baxter, 344-7601.

- light weight, \$55. Stang, 256-7793.
- '66 RAMBLER Rogue, 6-cyl., rebuilt engine & trans., \$200. Loescher, 299-9477.
- '66 OLDSMOBILE, new tires; refrig. room AC, 5000 BTU. Riley, 869-2119.
- '66 CONTINENTAL, 68,000 miles, power, leather interior, vinyl top, CB mount/antenna, maintenance history, \$950. Thorne, 255-4875.
- '77 TOYOTA Land Cruiser, 4-wd, HT, winch, AM/FM-8 track, more, best offer over \$4250. Stark, 293-4842.
- '79 JEEP Wagoneer, 14,000 miles. Strassel, 298-3816.
- '73 CHEVY pickup w/camper shell, PS, PB, AT, AC, all gauges, tilt wheel, extra tank, 454 engine, AM/FM, 8-t, equalizer hitch, 59,000 miles, \$3500. Greenwood, 298-5268.
- '75 DATSUN 710 2-dr., 4-spd., book \$2295, make offer. Henderson, 294-5164.
- '75 HONDA CVCC hatchback, 32 mpg city, needs work, \$1600. Mogford, 898-1416.
- '65 MUSTANG, 289 V8, 3-spd., one owner. Mauth, 821-5911.

- \$75,000, \$20,000 down, \$500/mo. at 10%. Rinks, 298-0749, 844-8389.
- '71 TOWN & COUNTRY mobile home, 14x70, 3 bdr., 2 bath, partially furnished, Terrace Park, Zuni & Wyoming, adults only. Walko, 292-3193.

### WANTED

- WILL CUT elm and ash trees for firewood. John, 265-1620.
- 3/4 LENGTH bench seat for van, prefer blue color. Shannon, 821-6017.
- RELIABLE transportation for teenager, prefer AT & American-made, have approx. \$1000 to spend. Jacklin, 298-3046.
- ENCYCLOPEDIA SET, recent edition, Britannica or equivalent. Boade, 298-6120.
- SET OF DUMBELLS. Snyder, 296-5771.
- NEED low-cost housing May-Aug., law student, wife, no pets, children; Sandia security guard will maintain house. Shepherd, 299-9066.
- GOOD ROTOTILLER. Miller, 873-3450.
- JEEP repair manual for '74 or nearby years. Baxter, 344-7601.
- FIBERGLASS camper shell for full size Ford pickup, LWB. Dees, 869-6949.

### REAL ESTATE

- CEDAR CREST, passive solar, 2220 sq. ft. on 1 acre, adjoining bird refuge, \$80,000. Henning-Sachs, 266-9841.
- 2-BDR., 1 1/2 bath, 2 fp home on 2.1 acre in Sandia Knolls. Smith, 281-3430.
- MOBILE HOME, 14x70, 2-bdr., 2 full baths, new built-in oven & dishwasher, wet bar, Tramway/Central area. \$14,300. Battles, 294-4373.
- SELL OR TRADE: 2-yr.-old home, \$42,000, \$10,000 CTL, \$279/mo., Rio Rancho, 3-bdr., 1 1/2 bath. McFadden, 892-6167 or 298-4800.
- 14x60 ACADEMY mobile home on 1/2 acre Bosque Farms, 1 1/2 bath, lg. LR & kitchen, must sell before March 1. Dees, 869-6949.
- 20 ACRES meadowland beside mountains, \$500 down, 9 1/2% interest, \$18,000, South Hwy 14, 33 miles from Albuquerque. Dytzel, 881-4973.
- 5-BDR. HOUSE, 3 full baths (converted into duplex), corner lot, 3 driveways, carport for 4 cars, office/storage rm, appraised \$79,000;

### SHARE-A-RIDE

- NEED fourth person for carpool from Paradise Hills area. Arnold, 898-1467.

### LOST & FOUND

- LOST—Feb. 6, dangle part of earring, cultured pearl on black coral. Eckart, 299-3888.
- LOST—A Carnelian (reddish-orange stone) & gold bracelet near Gate 7 or in Bldg. 880. Reinarts, 4-1192.
- LOST—White toy poodle w/apricot ears, back, near Moon and Indian School. Reward. Aguilar, 867-2990.

## Kids Karnival Set For Feb. 21

**HAPPY HOURS**—Tonight king crab tops the buffet menu. Family Reunion plays for dancing. Next Friday, Feb. 27, surf and turf is the buffet feature while the County Showmen hold the bandstand. Happy Hours start right after work on Fridays and run until midnight with reasonable prices in effect all evening. The buffet is served from 6 to 8 p.m.; the music starts at 8. To reserve buffet tickets, call the Club office, 265-6791, by mid-week. Admission is free to members, but guests pay \$1 at the door.



**TOMORROW** is kids day at the Club with the annual Kiddie Karnival opening its doors at 11 a.m. The Club's board of directors decorate the ballroom to resemble some kind of wonderland and man the carnival booths. Games of all kinds testing skill and luck appeal to the youngsters who pay \$1.25 for a book of 10 tickets. There are lots of prizes including drawings for special door prizes. Food service is available along with the soda pop/popcorn bar. Parents can get the real thing in the main lounge. Youngsters under 12 have a ball.

**PLAN NOW** for a big evening on Friday, March 6, when the Club offers another sit-down dinner with a couple of new wrinkles. First, the early nibblers can order platters of escargots, oysters or nachos for a couple of bucks to hold them until the main entree—your choice of T-bone steak or boiled shrimp at \$7.50. Second, the reservation system has been changed. The plan is to make reservations and pay for dinner tickets by noon on Thursday, March 5. This *guarantees* your dinner. Now, if you're one of those impulse people who don't make plans for Friday

night until Friday night, you still might luck out. If you feel like steak or shrimp Friday at dinner time, try the Club. They will take care of you if the dining room is not filled to capacity.

**VARIETY NIGHT** at the Club on Saturday, March 7, brings a Walt Disney classic—*101 Dalmatians*. Get the family organized about 6 p.m. and stop by for an early supper. The movie starts at 7. Admission is free to members and families.

**TONIGHT**, starting at 4:45, an informal gathering of singles is scheduled in the El Dorado Room, downstairs at the Club. Refreshments and snacks are planned. All singles are cordially invited.

**TRAVEL DIRECTOR** Frank Biggs (4231) is organizing a C-Club special interest group for travel. The idea is to arrange travel-related activities—slide shows, talks—and work on plans for future trips. If you're interested (and spouses are invited), call the Club office, 265-6791, and leave your name and number. Or see Frank in the lobby tonight between 6 and 7.

In the meantime, the Club is sponsoring five trips in the upcoming months:

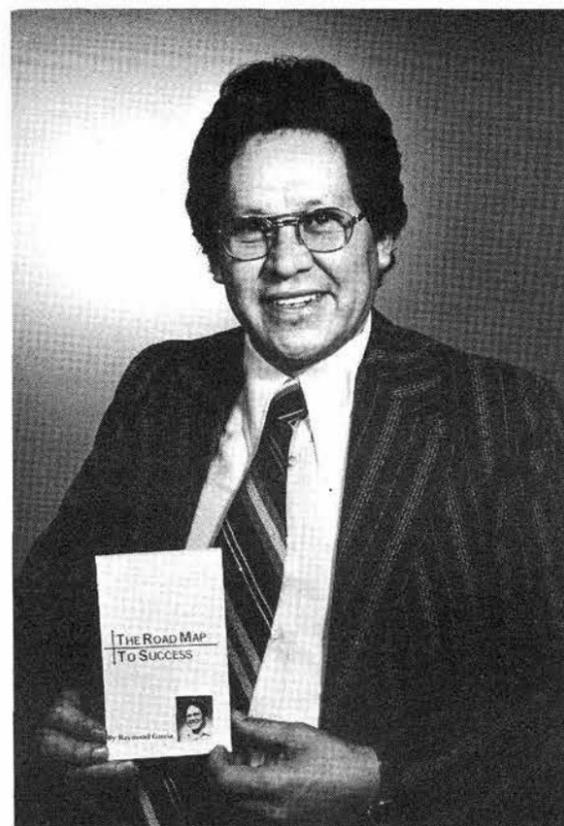
*Disneyland*, April 14-18, with prices ranging from \$301 for adults to \$240 for kids.

*Chaco Canyon*, April 25, \$20.

*Puerto Vallarta*, May 5-12, \$399.

*Las Vegas*, May 24-27, \$132.

*Mazatlan*, June 1-8, \$354.



**RAY GARCIA** (3154) has combined several careers—printer (here at Sandia and runs his own shop), real estate investor, state legislator for three terms—and now adds author to that list. His new book, *The Road Map to Success*, details Ray's formula for making it and is now on sale.

### Sympathy

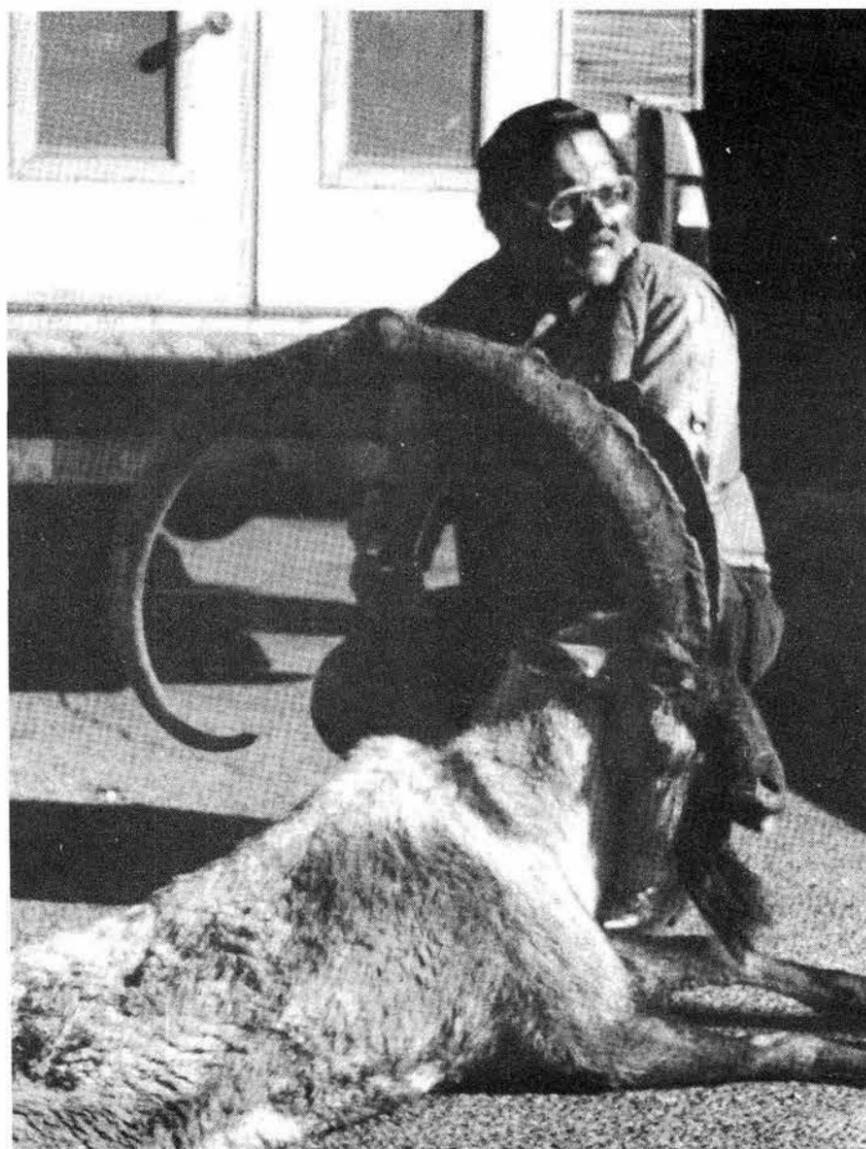
To Ken Nowotny (2532) on the death of his mother in Albuquerque, Jan. 22.

To Robert Meier (2532) on the death of his mother in Nebraska, Jan. 26.

To R. H. Altherr (1471) on the death of his father in Kokomo, Ind., Feb. 3.

To Ed Barreras (1485) on the death of his mother in Tucumcari, Feb. 4.

To Jerry Campos (1471) on the death of his son in Albuquerque, Feb. 4.



**RECORD IBEX** was downed by Tony Trennel (1232) during the recent hunt in the Florida Mountains south of Deming. The trophy horns measure 59½ inches, are a world record insofar as Tony has been able to determine. The ibex, native to Iran, was introduced into New Mexico in the early '70s and is a species of goat. The New Mexican animals have proliferated to the point where thinning is required—more than 400 ibexes (ibices?) have been counted in the herd.