

# 'Significant Progress Since 1965'

"Sandia Management—and all employees—can take pride in the accomplishments of the Labs' Affirmative Action Program over the past few years," says George Banos, manager of Equal Opportunity and Affirmative Action Department 3510. "We have significantly increased the percentages of minorities and women, both on roll and in staff positions, since the program started in 1965."

Although the Civil Rights Act of 1964 guaranteed equal opportunity for minorities and women, President Johnson sought immediate progress for both groups. He issued an executive order in 1965 that required government contractors with 50 or more employees, such as Sandia, to take positive steps to increase the employment of minorities and women, especially in supervisory, professional, and technician jobs. Regulations implementing the executive order were written, and the Department of Labor was given compliance responsibility.

Contractors are required to take several actions: monitor the percentages of women and minorities applying for and receiving job offers, analyze their work force to assure that women and minorities are represented in proportion to their presence in the appropriate labor market, evaluate selection procedures to ensure that only job-related criteria are used, review all personnel-related activities for possible discriminatory effects, encourage minority businesses to bid on subcontracts, develop on-the-job training opportunities, contact minority and women's community organizations, and disseminate EEO policy.

"Affirmative Action is more than the written document that we publish each year," George says. "The written program describes the positive actions Sandia is taking. It reports the accomplishments of the prior year. And it makes a commitment to goals for the future. Thus, affirmative action is the sum total of all the activities and programs that are discussed in the document.

"The bottom line of the program is how well women and minorities are represented at Sandia," George continues. "Each year we determine, from authoritative sources, the percentages of minorities and women available in the labor market for each job group. Then we compare the percentage actually on roll against those available. If the percentage on roll is below that available, we set goals and timetables for eliminating the under-representation.

"In spite of a reduction in our work force in 1973, Sandia has made great strides in most areas. More effort is needed, however, to improve our performance in other areas." The table shows the percentages of minorities and women by major classifications before Affirmative Action (1964) and today.



**Minority and Women Representation at Sandia  
1964 and 1982 (Albuquerque and Livermore Combined)**

Job Category	Percent Minority		Percent Women	
	1964	1982	1964	1982
Supervisors, Managers	1.3	9.7	1.6	3.7
Professionals	1.8	9.7	2.2	9.4
Technicians	3.5	21.4	2.0	13.6
Clerical Workers	16.8	42.5	64.0	86.5
Craft Workers	17.7	43.0	.2	2.7
Operatives	50.4	73.8	5.2	7.4
Laborers	70.0	75.0	0	12.5
Service Workers	43.4	60.0	3.1	22.9
Apprentices	18.9	39.8	0	21.9
Laboratories Average	12.2	22.7	18.6	20.1

## Labs Committed To Affirmative Action



Affirmative Action has been the policy of Sandia for many years. While some social issues have come and gone during that time, the Laboratories' commitment to affirmative action has been constant. My personal commitment to this fundamental issue is unwavering and absolute for three reasons: it's right, and it's sound business, and it's the law. People are our principal resource at Sandia, and it's in our best interest to fully utilize and develop each person to his or her maximum potential. To accomplish this task, we must create a working environment that is free from discrimination and is supportive of women, minority, and handicapped employees—an environment that encourages growth and development and

that allows for a full contribution to the Laboratories.

We have been increasing the total numbers of qualified women and minorities in our ranks. However, we need to concentrate on increasing the number of American Indians, Blacks, Hispanics, and women in staff member positions. A review of supervisory statistics indicates that the numbers of female and minority employees in these positions are not as yet in proportion to their population, in the Laboratories or in the community. While it does take time for staff to gain the experience to prepare for promotion into supervision, it also requires management's commitment, guidance, support, and—finally—action.

An important part of Sandia's continuing progress in affirmative action is effective supervision. Supervisors have daily contact with employees. They make the decisions on hiring and work assignments which affect career development and advancement. I believe that Sandia's supervisors have been doing a good job at creating an effective affirmative action program while at the same time maintaining and improving the Laboratories' capability. It goes without saying that supervision needs to continue counseling and developing all employees, but especially women, minorities, and handicapped. I will be taking a personal interest in the affirmative action performance of supervisors and managers, and I will do what I can to reinforce their efforts.

Sandia's excellence now and in the past has been based on the contributions of its employees. In a time of more limited resources, we truly need the most from the entire staff. Only by encouraging the development of the full potential of all of our employees will we maintain the climate in which excellence flourishes.

—George Dacey, President



ILLUSTRATING our Affirmative Action section in this LAB NEWS are (front row) Ernest Nevada (3613) and Claudia Jeffrey (3618). Next is Fay Tamashiro (1126), then Pro Padilla (3743) and Olivia Armijo. In the next row are Phyllis Sanchez (3510), Helen Gallegos (9251) and Leroy Holmes (3425). Next are Shirley Wallace (3212) and Sharon Fletcher (315), then on top are Willie Doyeto (3613) and Hsi-Tie Chang (9741).



An examination of the 80-million-year-old skeletons of baby hadrosaurs led John R. Horner (Princeton U.) "to fascinating and controversial inferences. The clearly worn teeth indicated that the nestlings had been eating coarse vegetation for some time. To Horner this suggested that duckbill (hadrosaur) parents continued to care for their young for months after they hatched. The evidence, he said, suggests that the babies, after they hatched and until they were four or five feet long, remained in the nest and the parents brought food to them in the nest." At other sites, Horner found adults and juveniles together in apparent family foraging herds. These are among the first revelations of dinosaurian social behavior, and they hardly square with what is known of modern reptiles, nearly all of whom leave their young pretty much to fend for themselves."

—New York Times Magazine

### Affirmative Action

## New Supervisory Workshops Coming

Maureen Baca, Awareness Program Coordinator for the EO/AA Department 3510, is developing a two-day workshop for supervisors to be offered this fall. Called "Affirmative Action Awareness Workshop for Supervisors," the sessions will provide participants with knowledge and skills to more effectively implement Equal Opportunity and Affirmative Action at Sandia.

"The workshop will cover seven areas that line supervisors and managers have indicated are most important to them," explains Maureen. "These include 'Men and Women at Work,' 'Minorities,' and 'Handicapped.' The workshop is designed to help supervisors understand and carry out their Affirmative Action responsibilities.

"Sandia has a long history of providing affirmative action training for supervisors. Our first course was in 1971. From 1973 to 1978, we ran a three-day Supervisory Awareness Workshop. Two years ago, there was a series of one-day workshops that 90 percent of supervisory and management personnel attended.

"We'll be conducting the workshop every week in the fall. We plan to use 10 instructors in teams of two—to avoid teacher 'burnout,'" Maureen continued. "The course is designed to stimulate discussion—the sessions will not be just lectures by instructors. Participants will be actively involved; this will truly be a *work* shop. Some of the topics will be developed into mini-courses that supervisors can pass along to their employees."

Maureen emphasizes that the workshop is designed to deal with actual concerns supervisors have voiced recently. For instance, if the supervisor is considering a person who's confined to a wheelchair, he or she might worry about the new-hire's access to buildings and other facilities: "We point out that the Plant Engineering Organization will make appropriate modifications to accommodate the needs of handicapped employees," she explains. "This is the kind of highly job-related information that will be emphasized throughout the workshop."

The same workshop or a similar one will also be developed for use at Sandia Livermore.

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## Handicapped Sandians— A Job-Oriented Bunch

*Physically handicapped people at Sandia ask for, and get, little more special attention than the non-handicapped employees. After talking with a few of them, it's clear that that's the way they want it.*

*The theme expressed, one way or another, by each of them is, "My handicap may influence my choice of recreational activity, but it sure doesn't affect my ability to do my job."*

\* \* \*

Judy Tripp is a good example. She has earned an MBA degree and a TIE certificate in information systems during her career at Sandia. In spite of severe hearing impairment since birth, she has few problems with her job—data reduction in Test Data Analysis Division 7522. She uses a computer terminal as a tool for many tasks, and she has a phone that permits her to adjust volume levels up so they're audible. Like most of us, Judy confesses to occasional frustration in using Mardix booths, but overall she's not bothered noticeably by her handicap. She plans an in-hours course or two this fall, then a degree in math or computer science at UNM.

\* \* \*

David Vopicka is a computer programmer in the Statistics, Computing, and Human Factors Division 7223. After getting an MS in computer science from Southern Illinois University in 1980, he was interviewed by Bell Labs but, when the interviewer mentioned Sandia and New Mexico, David went for the Sun Belt. Although he's a quadriplegic, his battery-powered wheelchair gets him to the places he needs to go at Sandia. "Some buildings are more accessible and some elevators easier to use than others, but," he says, tapping his head, "I make my living up here." His infectious grin is testimony to his pride in his computer programming abilities. Currently, he's involved in a study that is modeled on the Cray computer to predict the safety of a facility with respect to an aircraft crash.

\* \* \*

Gary Montague has nearly 20 years with Sandia. He's now coordinator of the film and audiovisual library in Safety Engineering Department 3440. As such, he keeps track of the extensive safety film library and previews film and videotapes for prospective clients. He also does the research necessary to locate new films applicable to Sandia and writes memos, news notes, and announcements about such films.

All of this with a visual acuity of only three percent. "I've had vision problems all my life," Gary says, "but I do my job. It just takes some accommodation. I can't read or write as fast as people with normal vision, but I can use a tape recorder to take notes in meetings and various devices that magnify small print, like the phone book, so I can see it."

\* \* \*

Vin Davis has no legs. But he has a bachelor's degree in architecture from UNM, and he's got what it takes to be a layout engineer who plans efficient use of space in Plant Engineering's Planning Division 3651. "I work primarily on changes in Bldg. 880, an area I can easily tour in my wheelchair," says Vin. "And 880 changes often enough that I've got real job security," he adds with a grin.

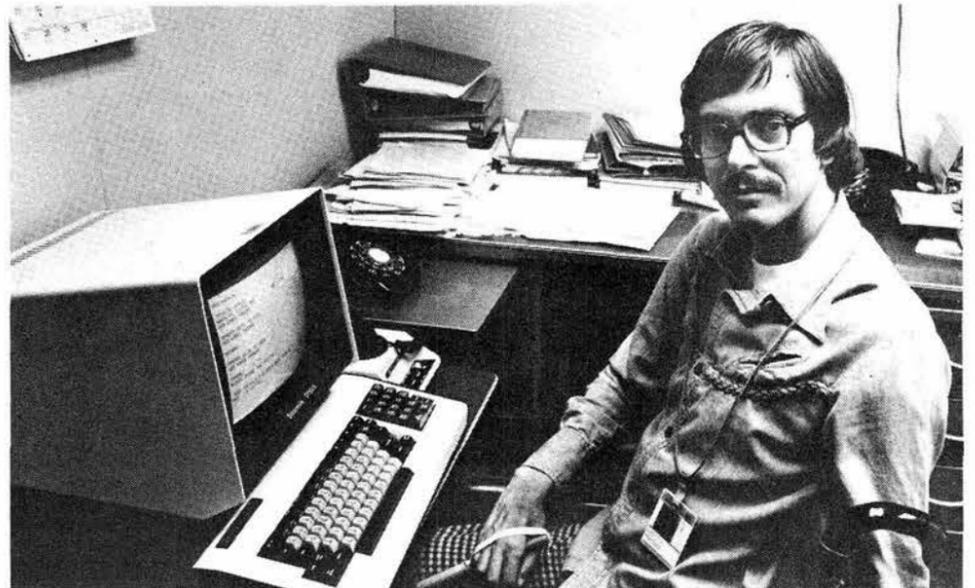
Vin occasionally helps to modify other buildings, a program that permits access to any Sandia location where a handicapped employee works. "Sometimes I can notice barriers that a more mobile person might miss," he reports. "All in all, I'm pulling my weight in Plant Engineering even if I do sit down on the job."

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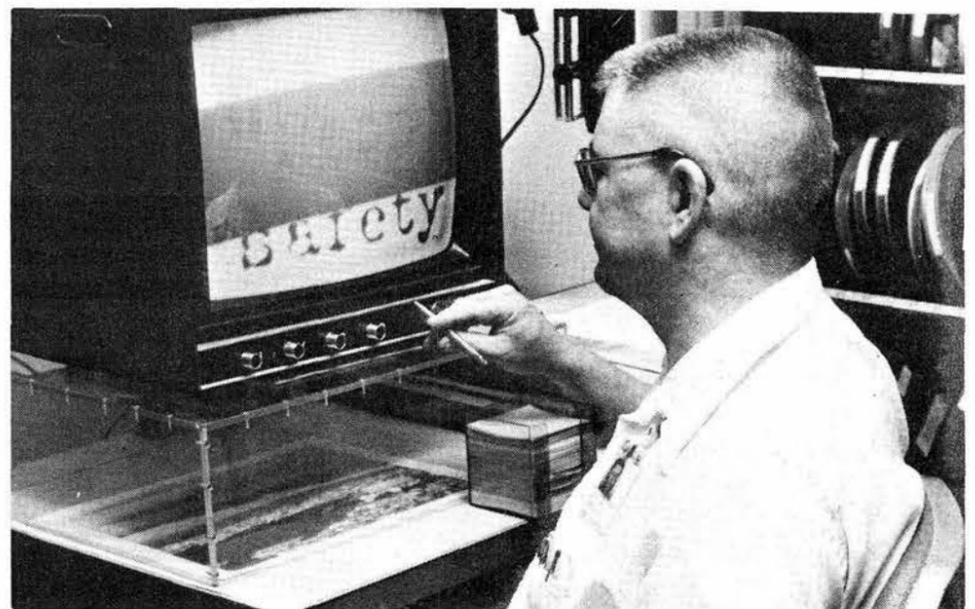
*Many other handicapped people are on Sandia's rolls, although, as handicapped employee coordinator Ann Marie Griego [3511] points out, no one knows exactly how many. That's because handicapped workers, like these four, seldom consider themselves handicapped when it comes to getting a job done—and done well.*



TOO OFTEN Judy Tripp's great smile and sense of humor get wasted on a computer terminal. Ann Griego (right), handicapped employee coordinator, is there to appreciate.



INTERRUPTED during a conversation with the Cray computer is David Vopicka. He's doing a probability study to predict the likelihood of an aircraft crash at a given site.



CLOSED CIRCUIT TV device magnifies small print for Gary Montague.



THOSE MUSCLES can move Vin Davis's wheelchair. But here he's at work on a new layout for the Bldg. 880 computer annex.

## Outreach Committees Have Challenging Role

Sandia's Outreach Committees have a common goal: to seek out and identify qualified minority and female candidates for possible employment at Sandia. The committees—Black, American Indian, Hispanic, and Women—are headed by staff members in the Equal Opportunity and Affirmative Action Division 3511. Ann Griego heads the Black Outreach Committee, Gerda Kreff, Women, and Al Villareal, Hispanic.

An example of what an outreach committee can do is the American Indian Committee chaired by Ruth Bitsui. An Indian of Navajo and Omaha origin, Ruth grew up in Chinle, Ariz. She graduated from Northern Arizona University at Flagstaff with a BS degree in education and a master's degree in business administration. Before joining Sandia a year ago, she was a high school teacher in Arizona.

Her committee is faced with a problem that can be solved only by long-term efforts. Ruth explains: "It's difficult to fill staff positions with qualified American Indians because there are so few professionals available. Those few are snapped up by business and industry immediately upon graduation from college, or they return to their reservations or pueblos because they feel their talents are needed there. We are, therefore, working with high school students to encourage them to pursue a college education and future professional employment. Of course, we are always looking for qualified non-professionals to fill graded jobs."

The long-term project has many facets: the committee works closely with local

Indian organizations and tribes to keep them informed of Sandia's employment opportunities, committee members visit colleges and high schools with large Indian student enrollment, and they participate in career conferences and job fairs.

"I particularly enjoy speaking to parents and students on the reservations and at the pueblos," Ruth says. "Both groups are becoming increasingly aware of the opportunities available to them. We reinforce this new awareness by emphasizing the need for young people to stay in school and to take more math and science courses because math is a basic skill for most careers."

"I don't want the 'old ways' to die out," Ruth continues, "and I don't believe they will. When I visit my home, I'm still comfortable with the 'old ways.' But there are such opportunities for the young people through education! I tell them to take as many math and science courses as they can—the more they know, the better chance they have to make a choice. Whether they choose the reservation, the pueblo, or the outside, they'll have much to offer."

As a member of the Navajo Education Association, Ruth has been instrumental in its task of setting standards in schools. One of the recent changes was to increase by one-half credit the number of math credits required to graduate. This fall, Ruth will teach an out-of-hours course on "Career Development."

The American Indian Outreach Committee has six other members: Dick Fairbanks (White Earth Chippewa), 3541; Lori Lauriano (Sandia Pueblo), 3432; Andy



RUTH BITSUI (3511)

Quintana (Cochiti Pueblo), 3731; Diana Suina (San Felipe Pueblo), 3533; Susan Supernaw (Muskogee Creek), 3521; and Mary Tang (Jemez Pueblo), 3521.

The group has worked with other organizations at the Labs to produce a film and a booklet about Indians working at Sandia. With Community Relations Division 3163, they arrange tours of the Labs for interested students and organizations, and serve as speakers at numerous career days. The committee members serve as counselors for on-roll Native Americans. The group was instrumental in initiating the Summer Science Program for Bernalillo High School, which has a large minority student population, and has established a Mentor Program to tutor Native American students enrolled in the engineering field at UNM.

### Schoolgirls' Concern

## Where The Jobs Are

The United States has a valuable, untapped resource—its middle and high school girls. Severe shortages of scientists and engineers are foreseen for the 1980s and 1990s. "In view of this," says Gerda Kreff (3511), "we can't neglect the 50 percent of the potential work force that's female—we must develop and use that talent."

The New Mexico Network for Women in Science and Engineering seeks to increase the number of women qualified for jobs based on math and science. To make girls aware of the opportunities in these fields, the Network sponsors a series of conferences called "Expanding Your Horizons." The Network is a nonprofit organization founded in 1978 to promote the participation of women in science and engineering and to encourage their entry into—and success in—nontraditional occupations.

"In 1974 we began the Visiting Scientist Program in which Network members visit mid and high schools to discuss their work in science and engineering, the rewards of such careers, and the preparation necessary," says Gerda, who is the 1982-83 president of the Network. "This and other activities developed into 11 'Expanding Your Horizons' conferences held through-

out New Mexico for girls in grades 9 through 12. The last conference, in Albuquerque, included 8th graders for the first time." In 1982, three conferences were conducted in the spring (Albuquerque, Las Vegas, and Las Cruces) and three more are planned for the fall (Portales, Santa Fe, and Farmington).

The Albuquerque conference on Feb. 27 was attended by over 500 girls and attracted students from as far as the Gallup area, Estancia, and Mountainair. Says Ruth Bitsui (3511) who grew up in Chinle, Ariz.: "I was especially pleased to see so many Indian students. In rural areas, especially, girls have no idea of the opportunities available to them."

Ruth, a member of the keynote panel, stressed in her talk the importance of an education. Michi Wada (2113), first keynote speaker, discussed some statistics, supply and demand of college graduates, and starting salaries in different fields. She was followed by Terri Olascoaga (9259) who spoke of her own experience as a native New Mexican who graduated from NMSU and went to Bell Labs in New Jersey.

A total of 100 professional women from UNM, PNM, APS, Sandia, and other local firms conducted the workshops. Not only were the women role models, but they also

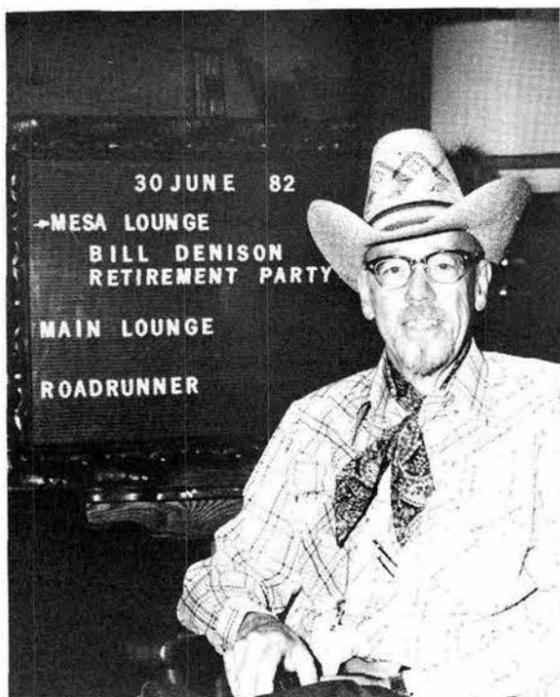
provided information on schools in New Mexico, jobs, salaries, and how to apply for financial aid.

Among the 28 Sandia women who participated was Jane Blasi (5821) who summarized the overall impressions:

"We emphasized the range of opportunities available to them, and we stressed the importance of taking optional math courses—they need to start now to build up their math and science before they reach high school. I was very encouraged because we doubled the number of students attending over the previous conference. It reflects a more positive attitude toward science among girls—the 8th graders especially were very enthusiastic. The most popular workshops were computer science and engineering, which shows that the students know where the jobs are."

Typical of the many enthusiastic comments is the following from a high school student: "The workshop . . . was a wonderful experience for myself and others. It also helped me out in continuing my education toward a career which will be truly rewarding. Furthermore, I enjoyed meeting many women who attained their goal."

## Retiring



Bill Denison (7421)

## Events Calendar

July 10—Rio Grande Zoo: Workshop "Keeping Birds As Pets," 10-12 noon, \$7, meet at 9 in Atrium, Zoo business office; July 17—Workshop "Your Photographic Paintbrush," 9-12 noon, \$9, Zoo business office, 766-7823.

July 12—Lecture Under The Stars, Charles Gallenkamp, "The Ancient Maya: New Perspectives," Student Union Ballroom, UNM, 8 p.m.

July 12—National Radio Theater, KUNM 90.1 FM, 10 p.m., "La Ronde";

July 19—"Who'll Save the Plowboy?"

July 14, 23—Sante Fe Opera, "Die Fledermaus"; July 16—"The Marriage of Figaro"; July 17, 21—"Mignon," (sung in French), 9 p.m., tickets at The Broadway Southwest.

July 16-18, 23-25, 30-31, Aug. 1—Albuquerque Civic Light Opera, "A Funny Thing Happened On The Way To The Forum," 8:15 p.m., 2:15 p.m. Sun., Popejoy.

July 17-18—Eight Northern Pueblos Arts & Crafts Show, San Ildefonso Pueblo.

July 18-Aug. 1—Anthropological Art, Downtown Center for the Arts, 216 Central SW, 243-0531.

## MANA Training Meet Scheduled July 16-18

The Mexican American Women's National Association (MANA) will hold its Sixth National Training Conference at the Convention Center on July 16-18. Theme of the conference is "Nuestra Cultura: Asi Somos." Several nationally known Chicanas will address the conference, the first held outside Washington, D.C. Goals are to help Mexican American women realize their potential; prepare them to participate and survive in power structures; and equip them with new tools, techniques, and information geared to their special needs but not readily available in other forms. Registration fee, \$50, includes lunches and a Fiesta. For more info, call Soila Brewer on 4-4443.

## Fun & Games

**Soccer**—Give your 7- and 8-year-olds something to kick around this summer. The Cobra organization of the Duke City Youth Soccer League is forming a new team for kids born in 1974 or '75. Tentative practice location is the Academy Acres Park at Eubank and Juan Tabo. Contact Coach Reg Durham at 821-5440 or Maj. Charles Allen at 821-2189 for further info.

\* \* \*

**Camping**—The American Lung Association is providing a camping experience for asthmatic teenagers this summer and is continuing its sponsorship of "Camp Superkids" for younger children with asthma. Called "Super Teens," the new program allows asthmatics aged 13 to 15 to participate in an outdoor, overnight campout. "Super Teens" will leave Albuquerque on July 21 for a camping location in northern New Mexico and will return on July 24. "Camp Superkids" is scheduled for Aug. 1-7 at Camp Stoney near Santa Fe and is open to asthmatic kids aged 9-12. Parents should contact the Association on 265-0732.

\* \* \*

**Running Back East**—Well, you can run to Charleston, W. Va., or you can drive or fly. But when you get there, all Bell System employees are invited to join the Labor Day festivities in the Mountain State and participate in a hilly, 15-mile road race that attracts 1500 runners from across the nation. In addition to competing for run honors, you can also get a trophy from the C&P Phone Company for being the fastest male or female runner employed by



**HOLE-IN-ONE**—Charlie Carter (7472) shot his first hole-in-one while playing the Pendaries Country Club golf course at Rociada recently. He was shooting blind—a slight rise hid the green on the par four, number eight hole 292 yards away. He had played the course earlier and knew he had to aim "slightly left of the two visible tall trees." Charlie and the four others in his group searched several minutes to find his ball with no luck until Charlie decided to check the cup before going back to the tee to shoot it again. Sonofagun! There it was—his first hole-in-one in 13 years of golfing.

the Bell System. Get entry blanks from the Charleston Distance Run, P.O. Box 2749, Charleston, WV 25330. Designate "Bell System Runner" on the form and get a Bell racing singlet as well as a chance for Bell honors.



**SHARPSHOOTERS**—Sandia's Security Pistol Team walked off with most of the trophies at a recent regional shootout at Los Alamos among 92 members of top police and security teams of the Southwest. From left are Celso Montano, Claude Potter, Ralph Garcia, Joe Yambrovich, Gary Malin, and Harold Garcia (all 3435). The Sandia team scored 2300 out of a possible 2400 in the combat shooting course. Top gun was Gary Malin who won the .357 Model 19 Magnum as his prize for shooting 1473 out of 1500 in individual competition. Ralph Garcia took second place. Harold Garcia took first place in the snub-nose "undercover match" using pistols with a 2½-inch barrel, shooting 488 out of 500.

## Supervisory Appointments



**MARK PERRA** to supervisor of Materials Development Division II 8314, effective July 1.

Mark began his career at Sandia Livermore in 1976, joining the Analytical Mechanics Division in the Applied Mechanics Department. After two years there, he transferred to the Experimental Mechanics Division where he has been until now. His group is primarily responsible for studies of the processes that lead to degradation and fracture of engineering materials.

Mark holds a bachelor's degree in mechanical engineering and materials science from the University of California at Davis, a master's degree in material science from UC Berkeley, and a PhD in mechanical engineering, also from Berkeley.

A California native, Mark and his wife Joanne reside in Danville. His hobbies include woodworking, cycling, and backpacking. Mark is on the executive committee of the local chapter of the American Society of Mechanical Engineers.

\* \* \*



**JIM WRIGHT** to manager of the Central Solar Receiver Department 8450, effective July 1.

He started his career at Sandia Livermore in 1958, first working on the B41 project, then on the W55 warhead for the SUBROC missile, Operation Dominic in the Pacific, and later in preliminary design and on the W68 warhead for the Posiedon missile. He became supervisor of the Nuclear Safety Division in 1969, transferring to the Preliminary Systems Division, the B77 Electrical System Division and then to Special Projects. His last assignment before this promotion was as supervisor of the B83 Electrical Division.

Jim has a bachelor's degree in electrical engineering from UC Berkeley. He also spent four years in the U.S. Navy from 1950-54.

He is a past chairman of the East Bay subsection of the IEEE. He and his wife Judith have three children and reside in Livermore.



One extreme view is that anatomically modern people evolved outside Europe, the classic Neandertal\* homeland, and then invaded Neandertal territory, wiping out the natives.

At the other extreme is the view that the Neandertals evolved directly into modern Europeans. Many authorities favor a middle ground. Generally they hold that there were migrations from outside Neandertal Europe and that, although there may have been clashes, the two peoples interbred, producing racial blends that survive today in at least some European populations.

(\*This nontraditional spelling is used by some anthropologists.)

—Boyce Rensberger in *Science* 87



## SANDIA LIVERMORE NEWS

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**DEMONSTRATORS, REMONSTRATORS**—Sandia Livermore, across East Avenue from LLNL, was witness to the biggest anti-nuclear rally to date at LLNL on June 21 and 22 when an estimated 3500 protesters filled the roads surrounding the labs. Even though the demonstration was peaceful, there were 1300 arrests for blocking traffic over the two-day period, causing some delays for Sandians getting to work. Some 900 California Highway Patrol officers, Alameda County Sheriff's deputies, Livermore police, and University of California police who are assigned to LLNL kept the roads as clear as possible during the height of the demonstration and quickly arrested those who sought to stop employees from getting to work. Despite the size of the crowd and magnitude of the activities, there were no injuries and everyone who wanted to drive to work both days made it.



### Congratulations

Joan (8522) and Jim (8115) Woodard, a son, Thomas James, June 20.

### Sympathy

To Norm Wagner (8329) on the death of his mother in Turlock, Calif., May 28.

## Tom Cook Looks Back—And Ahead

Packing up 14 years' worth of memorabilia and paperwork from his office, Tom Cook (formerly 8000, now 20) took time out to reminisce about his tenure in Livermore and to look ahead at what the Labs can expect in the coming years.

It was quite a surprise in 1968, when then-Sandia president John Hornbeck asked him to go to Livermore and assume the vice presidency after Bernie Biggs retired. "It has proven to be an exciting 14 years," Tom recalls, "and we have done a lot of very important things for the country." He feels that most of his time at Livermore was uplifting; the exceptions were the 1970 and '73 layoffs, "which were the most painful times for me in my career." He was quick to add that the staff at Livermore "maintained at least as good and maybe even better morale than any other complex faced with the same situation. The *esprit de corps* here has always been exceptional over the whole history of the labs," he emphasized.

Looking back at some other highlights, he mentioned "the late '60s, when the Labs, along with our friends at LLNL across the street, designed some of the most highly sophisticated nuclear weapons in the country." Another period he saw as exciting was "the diversification into energy research beginning in 1975. It certainly has been a great thrill to be associated with the people who have brought Sandia into the national and international scientific community spotlight through their work in combustion. That is something that would have been hard to even imagine a decade ago. Our solar program again is an area in which we have done a really good job. And another thing we have done in a technical field that has been very satisfying and that the Laboratory is very proud of is our understanding and use of light isotopes. We have a depth of expertise here that is respected around the world."

Touching on the recent flareup of anti-nuclear activities here and around the country, Tom said he feels "the political pressures are as extreme as they have ever

been, but it has always been true we've had protests; they just take different forms at times. People may wish nuclear weapons would go away, but they won't. The U.S. policy must be to maintain a competitive nuclear posture." He added, "I have to say that some of the people now speaking out against nuclear weapons are from a very respected category of our population, perhaps more so than at any other time . . ."

Looking ahead at Sandia's future, he sees Sandia following the national administration policy and decreasing near-term energy development and demonstration activities. "Another side of that, though, are activities, such as our combustion research, that are getting very good support from the government. They are long-range, high-risk, and high-payoff programs for the country and should continue to grow. I also believe that the country must improve its abilities in conventional weapons; we must also remain competitive with potential adversaries in this area. I would expect that all the national labs will get more involved in this."

How does he feel about turning the reins over to Dick Claassen? "I have known Dick for a long time, and he is extremely well qualified to come to Livermore. He will do an excellent job as leader of SNLL." Tom admits he will keep a strong interest in the health and vitality of SNLL and said he will support Dick in every way he can to improve the productivity of the 8000 organization.

Will he ever move back here? "Both Virginia and I like this area very much and we plan to come back to the Bay Area when I retire. But we also like the surroundings of Albuquerque—Sandia is fortunate in having two quite different but very attractive locations."

And so he completed his packing, trying to condense a decade and a half of his work into 20 cardboard cartons destined for a new office and new challenges as executive vice president.



BEING GIVEN some parting advice by Marv Glaze (8260) at a farewell reception are Tom Cook (20) and wife Virginia.

## feed<sup>!</sup> feedback

*Q. The next-to-last tab run summarizing vacation and flex time arrived in July 1981. Then two came within a week of each other in February 1982. When we try to reconcile discrepancies with Payroll, we are told that the machines are busy, or it's time to do the payroll, or the timecards are not handy, some such put-off. Could not the tab runs appear more regularly, and could not the original timecards be kept handy for immediate double-checking? Occasionally, the cards are apparently lost so the only records are our duplicates—whose word prevails then? Corrected timecards are often late in getting posted. Is a fix in the works?*

A. Starting with your last question, a "fix" is in the works that is expected to minimize many problems of this nature. Beginning in January 1983, the new payroll system will provide for each employee's vacation balance to appear on his weekly or biweekly (for annually-rated employees) paystubs. In addition, with the one-week lag between the pay period and pay date, the present time crunches should not be quite so critical. Together, these features should enable vacation discrepancies to be noted and corrected earlier. However, future vacation and flex time tab runs will be issued six months apart.

It is recognized that immediate resolution of discrepancies between Payroll and the line organizations' records have not been and will not always be possible. The "put-offs," as you call them, are valid reasons in most instances. Even in the case of "lost" time cards, the cards are usually out of file for use by others at that time—but rarely lost. When there will be a delay, the payroll clerks have been advised to record the inquiry, then as soon as possible to resolve the problem and notify the line of the results.

Corrected time cards are, and have been, a problem. Due to the manual processing involved, it is entirely possible that a corrected time card may not get into the system until the ensuing period. This is another area under study for the new payroll system.

C. R. Barncord—3200

*Q. I understand that, at the Bell Labs Holmdel plant, employees can grow vegetables on company property. Apparently, employees may select a small plot of company land and plant vegetables and flowers if they wish. Cultivation, I'm sure, takes place on their own time.*

*Is there any possibility that Sandia, with its vast amount of land, could do the same?*

A. I'm a gardener, too! But I'm afraid that it won't be possible to provide garden plots for Sandia employees. We don't have much suitable land, and water for irrigation would be a problem. In addition, all of Sandia's land is government owned, and there would be the concern about using government property for private purposes.

R. W. Hunnicutt—3600

# MILEPOSTS

## LAB NEWS

JULY 1982



LaVonne Pickens - 8213 10



Florindo Salas - 2334

20



Randy Maydew - 1630

30



Don Hurt - 7213

25



Max Hodge - 2621

30



Doyl Frasier - 9337

25



Chuck Smith - 7423

30



Lyle Whelchel - 3726

25



Marlin Pound - 8214

25



Tom Jones - 8322

25



Jim Gallagher - 1653

30



Nels Magnuson - 7222

20



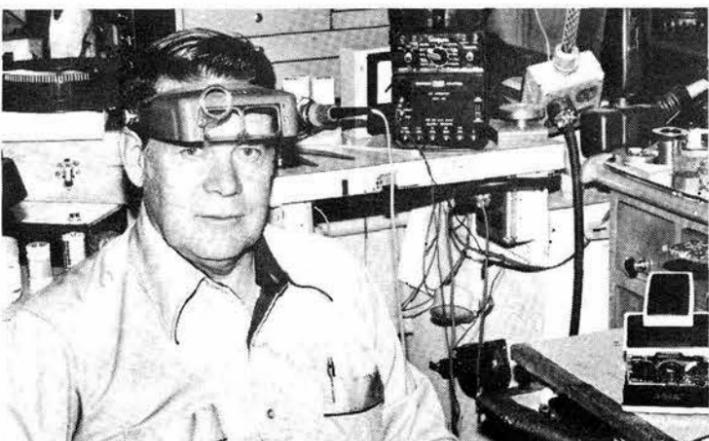
Lou Wittkopp - 8413

20



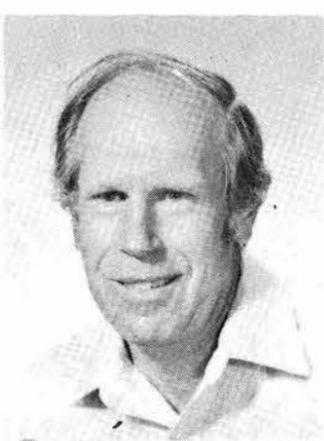
Cathy Banks - 8264

30



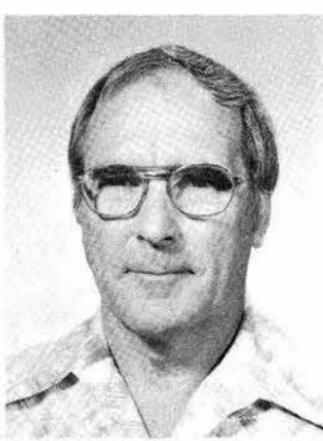
Orval Talley - 3425

25



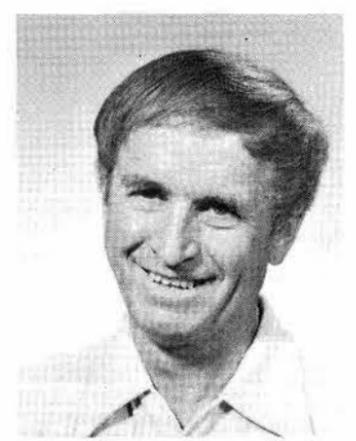
Ken Prestwich - 1253

20



Al Tucker - 9221

30

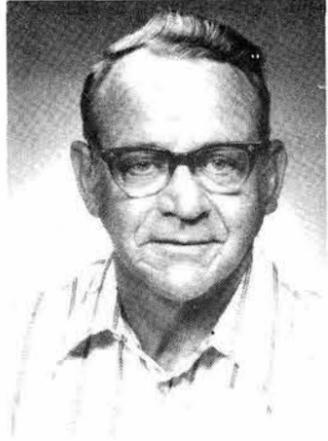


Earl Simonson - 121

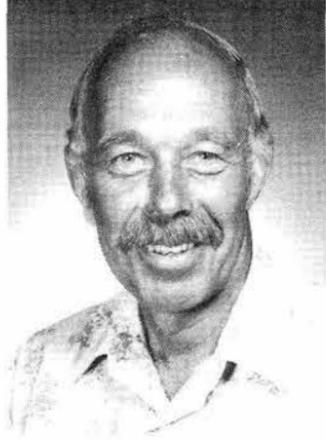
30



Steve Sheffield - 2513 15



Dominic Russell - 3742 25



Bob Sonnenburg - 9323 25



Dean Thornbrough - 400 30



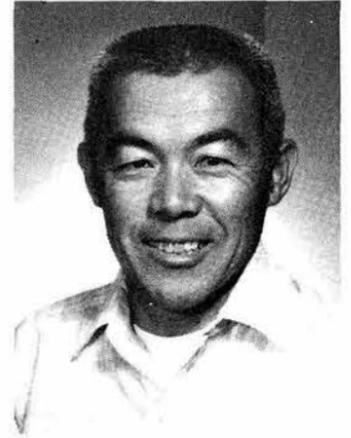
Gene Reed - 2000 BTL 35



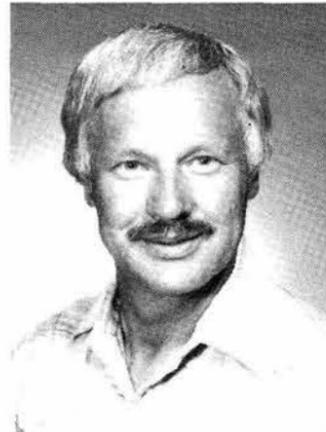
John Duncan - 9343 20



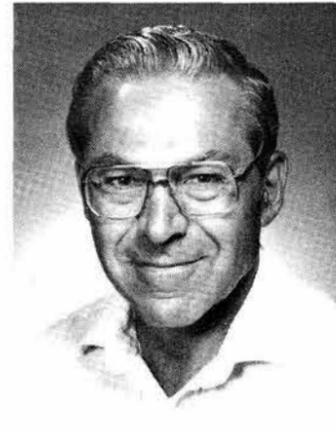
E. E. Alexanderson - 1651 25



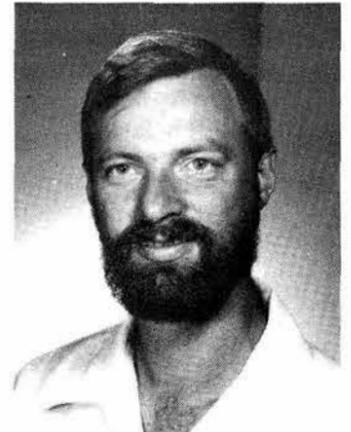
Kazuo Ioshi - 9364 20



Dale Breeding - 323 20



Jim Scheibner - 1732 25



Jim Opalka - 7121 15



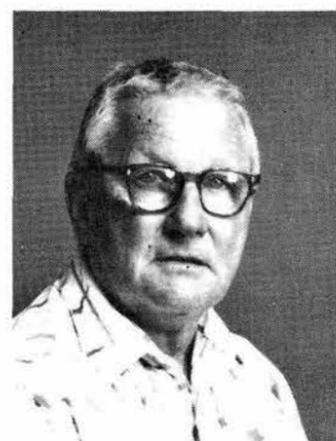
Charlie Decarli - 8329 20



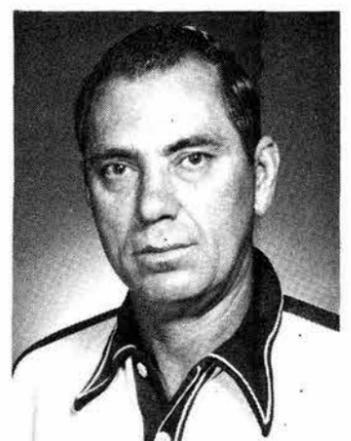
Jack Wirth - 8150 20



Everitt Davis - 8466 15



Bob Frost - 8168 25



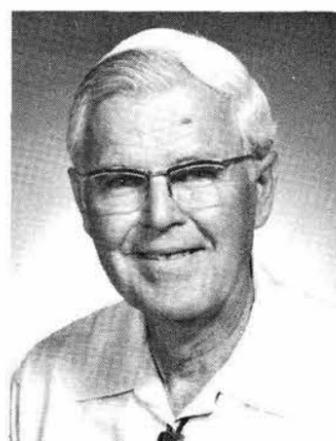
Robert Crotzer - 7481 15



Zern Phillips - 2454 25



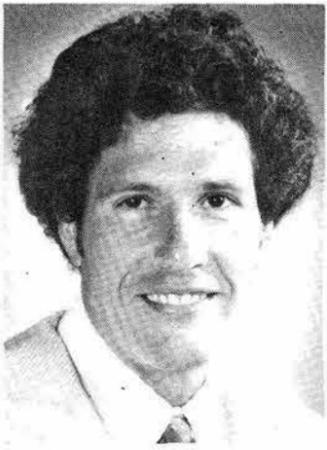
Roger Everett - 8152 20



Charles Lee - 9222 25



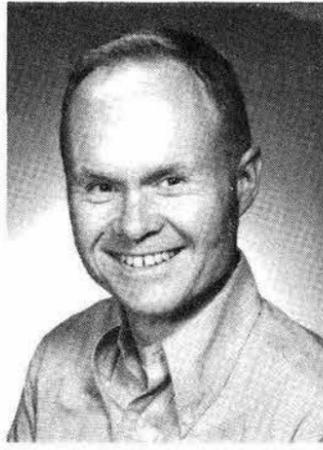
John Guth - 2124 20



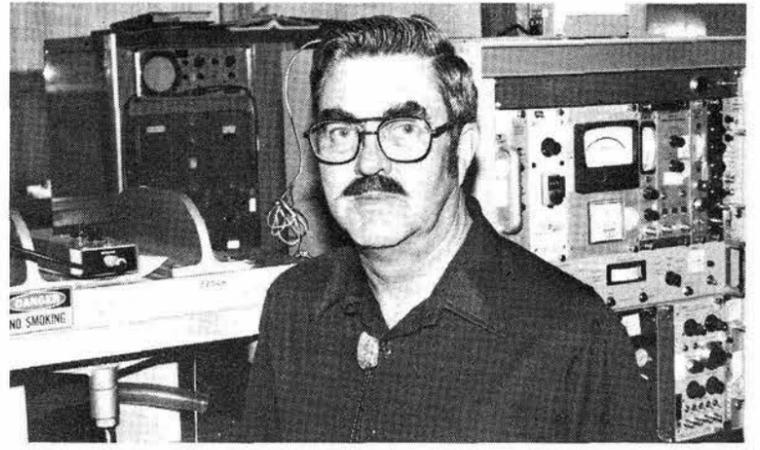
Mike Birnbaum - 8254 15



Roscoe Champion - 9728 30



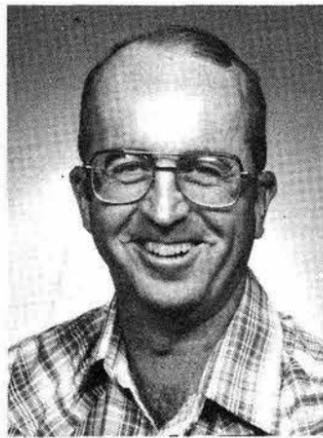
Mike Kittredge - 7581 20



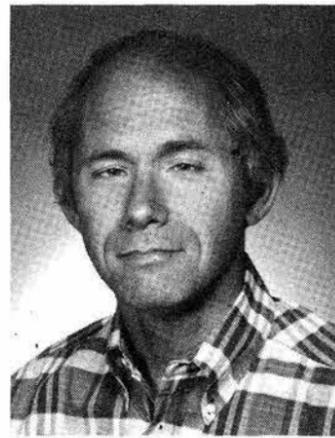
Richard Womelsduff - 2552 35



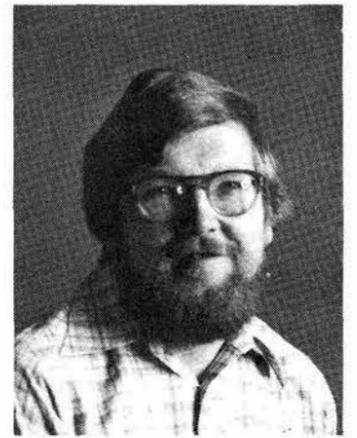
Don Sayers - 7587 25



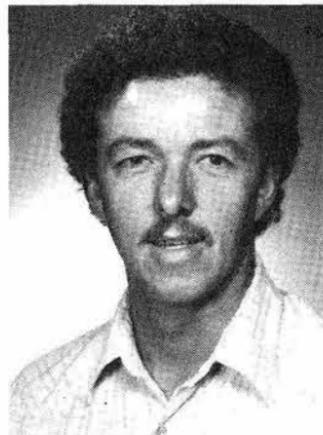
Charles Greenwood - 7242 20



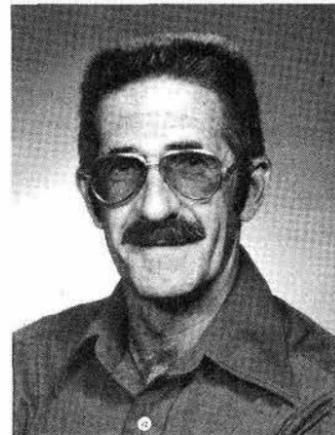
John Finger - 9741 20



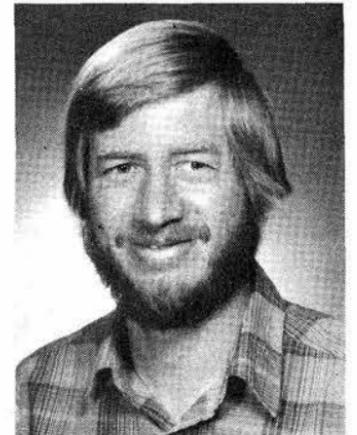
Allen Salmi - 8251 10



Fred Brown - 7541 10



Dave Miller - 2525 30



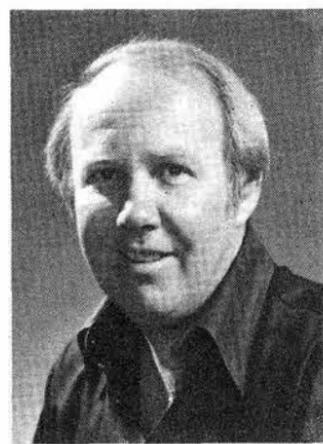
David Haaland - 1823 10



Bob Johnsen - 8501 25



Dave Kirk - 8255 25



Rod Nissen - 8443 20



Don Wagner - 8212 25



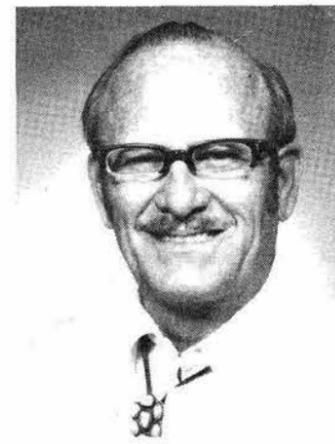
John Anderson - 8452 25



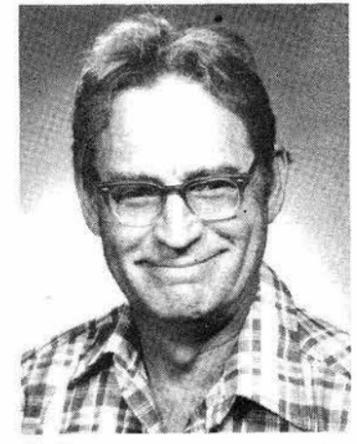
Mark Percival - 9734 15



William Roherty - 331 30



Robert Peet - 7123 30



David Holt - 7242 20

# Take Note

After reading last issue of LAB NEWS with its three pages of Milepost pictures, Leroy Tafoya (2142) sent us a note: "Last issue exhibited 1185 years of Sandia experience and ingenuity." We like that.

\* \* \*

A one-day geology tour and visit to a dinosaur dig at Ghost Ranch near Abiquiu, sponsored by the New Mexico Museum of Natural History, leaves at 7 a.m. from Sheraton Old Town Mercado July 24. UNM geologist Jon Callender is trip leader. Cost is \$35. For more information, call 842-3006.

\* \* \*

Go for Health: a 30-minute film, "Health and Life-Style: Positive Approaches to Well-Being," will be shown on Monday, July 12, at noon in Bldg. 815 (outside the Tech Area). The film is an upbeat guide to stress management, nutrition, weight control, exercise, and the psychology of dependence, and is designed to make positive changes in the way that viewers live their lives.

\* \* \*

The Medical Department's next Quit Smoking class starts July 20 and runs through Aug. 12. It meets on Tuesdays and Thursdays from noon to 1 p.m. in the Personnel Conference Room, Bldg. 832. Contact Arlene Price for sign-up at 6-0021.

\* \* \*

UNM's Division of Continuing Education has several workshops and other courses available. Some titles: Making Changes in Your Life: Control Eating, Smoking, Other Behaviors; Drawing; Oil Painting; Watercolor; Women in the Wilderness; Computers and You; Parenting; and a National Solar Water Heater Workshop. For more info, call 277-6542 or review course descriptions in the LAB NEWS office (MO 125).

\* \* \*

A reminder: Sandians and dependents are eligible to participate in KAFB's extensive summer recreation/hobby/crafts programs. Call Sherryl Zuk at 4-0425 for a copy of "The Southwest Connection" that describes each activity.

\* \* \*

Ever wanted to poke around some of those neat houses in Santa Fe? Join the YWCA tour on July 27 and you'll visit four homes there, two noted for their architecture, two for their gardens. Leave town at 9:15, return at 5, pay \$35.50 (\$30.50 for members). Reservations, due with payment by the 16th, are available in the LAB NEWS office.

\* \* \*

The Graduate Institute of St. John's College brings its unique method of study

to Albuquerque this fall. The curriculum consists of 70 classic works beginning with Homer and the Bible; carrying through the Greek, Roman, medieval, and Renaissance periods; and continuing into the present century. Each of the four segments of the curriculum carries nine hours of graduate credit. Classes will be held at the Albuquerque Academy on Monday and Thursday evenings beginning Aug. 30 and continuing for 16 weeks. Tuition is \$900 with financial aid and installment payments available. John Cantwell (3163) attended St. John's in Santa Fe. Or contact Marie Hirst in Albuquerque (226-5637) or the school at 982-3691, ext. 226, in Santa Fe for more info.

\* \* \*

Enjoy a Barbara Mandrell and Roger Miller concert, and benefit the College of Santa Fe and the Santa Fe Community Foundation at the same time. The concert, sponsored by Penney's, will be held July 29 at the Downs at Santa Fe. Reserved seats in the Jockey Club are \$40, of which \$28 is a contribution; reserved seats in the Turf Club are \$25, of which \$13 is a contribution. General admission tickets are \$12.50. For reserved seats, send a check, made out to Penney's, that covers all the people in your party at either of the above rates to J. C. Penney, P.O. Box 1943, Santa Fe 87501, Attn: Steve Hubanks. Enclose a self-addressed envelope. Your letter must be received by July 15. General admission tickets are available through Giant Tickets in Albuquerque.

## 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 (MO125).

#### 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

- 5 WARDROBE, 2 mattress, 20 packing boxes. Duda, 292-1142.
- BEDROOM SET, girls, white 7-piece: vanity w/mirror, night stand, desk, chair, bed, triple dresser, dresser, \$325. Seamons, 298-5683.
- LUMIDOR rollaway 12-drawer tool box, separate locking center drawer, black & red, \$160. Baca, 299-2036.
- SEARS Kenmore dishwasher, regular hook-up or faucet adaptor, w/wheels. Holmes, 836-1428.
- SOFA & 3 chairs, brown, \$190. Chirigos, 884-5686.
- 7MM Argentine mauser rifle w/custom thumb hole stock & high Monte Carlo cheek piece, 4X scope, \$250 firm. Johnson, 888-3406.
- UTILITY TRAILER, 5'x8', 2000 lb. capacity, metal floor, used once, \$400. Rightley, 296-0877.
- WEDDING DRESS, short sleeve, size 7, \$50; B/W TV, \$30. Hall, 268-1434.

- CAMP SITE shell for lwb; 3-spd. bike. Rodriguez, 345-0212.
- JENSEN car speakers, 5" coaxials w/paper cones, 10 oz. magnets, \$35/pair. Magnuson, 821-5330.
- AIR CONDITIONER, Sears, fits slider & casement windows, 10,000 BTU/hr., 115V, 12 amp, \$250. Christensen, 884-8249.
- TV wall bracket swivel, same as hospital. Kindschi, 256-0531.
- SAW, radial arm mounted on cabinet, \$200. Krahling, 268-8126.
- GAME TABLE, Drexel leather top French provincial Louis XV w/4 folding chairs, \$195. Horton, 883-7504.
- FILMSTRIP projector, self-contained w/screen & tape cassette player in briefcase, \$125. Campbell, 298-9265.
- BUMPER POOL TABLE, \$75; green shag rug w/pad, \$45; upholstered chair, rust tweed, \$65; misc. light fixtures. Luikens, 881-1382.
- KINGSIZE HEADBOARD, massive, comfortable backrest, lg. storage compartments, tan vinyl, pecan veneer, \$35. VanBerkel, 897-2541.
- BEDROOM SET w/dbl. bed, nite stand, dresser & mirror, white, \$175; Schwinn bike, ladies' 3-spd., \$45. Cano, 296-6955.
- GIUITAR, 12-string Acoustic Madeira A12 by Guild; sell/trade for electric guitar of equal value, \$200. Chavez, 836-4069.
- GIBSON elec. guitar w/four 10" speakers. Kruse, 881-4169.
- GE B/W portable 12" TV, \$40. Paul, 299-6387.
- USED TIRES: ER78-14, \$10 ea., all 3, \$25. Garcia, 293-3937.
- BELL HELMETS, sizes 7 & 7 1/4, open faced, \$50 ea. Prior, 296-2930 after 6.
- LEATHER armchair, Brazil Contempo, brown, hardwood frame, contemporary, \$290. Dalphin, 265-4029.
- BARBIE dream dollhouse, complete, \$50. Jones, 881-1918.
- STORM DOOR w/screens & glass, 35x80 1/2. Campbell, 299-4830.
- GAS DRYER, Kenmore, \$60. Richardson, 265-0207.

- UTILITY TRAILER, 4'x6'x37", licensed, \$125; AM-FM stereo & phono in console, \$75; boys' BMX bicycle, unbreakable frame, \$85. Davis, 294-0139.
- AKC Wirehaired Fox Terrier, 2 1/2 yrs. old, male, free to good home. Rivord, 296-9151.
- COLLECTOR QUALITY dollhouse, all wood farmhouse w/wrap-around porch, 7 rooms, 2 staircases, closet, ready to furnish, \$750. Ruvolo, 296-1316.
- BICYCLES: ladies', 26", 3-spd., \$25; 10-spd., \$45. Hale, 298-1545.
- INFLATABLE RAFT, Sea Eagle SE5, 450 lbs. capacity, 4 air chambers, oars, pump, seats, new, \$85. Carnicom, 281-3421.
- TWO bedroom sets w/mattresses; couch w/matching chairs; lamp table, coffee table; lawn mower; roto tiller. Lundergan, 299-8368.
- ROOM SIZED CARPET, \$15; asphalt tile, 168 pieces, 9x9", \$10; bathroom lavatory, \$15; workbench, \$25. Mozley, 884-3453.
- 140 EA. clean used 6x8x16 cinder blocks, \$40. Martin, 255-8030.
- BEDSPREAD, queen custom made, quilted, shades of blue w/subtle floral print, \$50; Strolee car seat, 1 yr. old, \$35. Tapp, 821-3843.
- VIVITAR 75-205/f3.8 zoom lens w/macro, Canon mount, accepts 58mm accessories, \$150. Kawka, 299-1216.
- TIRES, radial, 4 ea. 175R14, \$100. Salazar, 255-1301.
- CAMPER SHELL, short wide bed, insulated, paneled, wired for 120 VAC, \$260. Dourte, 881-2494.
- ELECTRIC GUITAR, Hondo II, Les Paul copy, tempo amplifier, waawaa pedal & extras, \$175. Caffey, 296-3320.
- 79 YAMAHA, IT 250, 1700 miles, \$875. Lassiter, 255-7991.

### TRANSPORTATION

- '75 HONDA Civic (CVCC), engine overhauled, \$2800. Riley, 292-2092 daytime.
- '66 OLDSMOBILE 98, 4-dr., AC, PB, PS, high miles—110,880, \$600 cash. MacPherson, 293-1090.
- '81 SUZUKI GS 650E, low mileage, adult driven, \$2200. Prevender, 299-5253.
- SAILBOAT, 13' Banshee, 88 sq. ft. sail, for fun or competition, \$750. McConnell, 268-3109.
- VESPA MOPEL, 125 mpg, 1 yr. old, 1200 miles, never raced, \$275. Guttmann, 243-6393.
- '75 CHEVELLE MALIBU stn. wag., most extras, \$1650. Cano, 296-6955.
- '55 CHEVY for restoration, exterior good, interior needs work. Hunter, 865-5745.
- '72 HONDA CL350, 6000 miles, \$595. Koone, 881-2646.
- '74 MAVERICK, 6-cyl., needs body work on fender area, price negotiable. Richardson, 265-0207.
- '70 VW BUG, new engine, clutch, tires, never wrecked, \$2000. Murray, 268-9772.
- '64 FORD Falcon van, \$400; Raleigh 10-spd. bicycle, \$110. Mozley, 884-3453.
- '77 CORVETTE w/L82 engine, 4-spd., AM/FM cassette, PS, PB, below book. Clark, 298-8254 after 6.
- BOYS BIKE, 20", banana seat, 1-spd., \$15. Eldredge, 881-4528.
- '68 TR-4A sports car; new upholstery, carpeting, hardtop & tonneau; wire wheels, AM-FM radio, rebuilt engine, overdrive, \$2500. Schimmel, 296-2295.
- '76 YAMAHA street bike, 400cc. Nogle, 298-3753.
- '68 MERCURY Monterey, 4-dr., AT, PS, PB, \$550. MacKenzie, 299-1806.
- '78 FORD Fairmont Futura, white, AT, AC, AM/FM, PS, PB, V8, 29K miles, below book. Kinoshita, 299-6491.
- '72 FORD Maverick, 2-dr., 6-cyl., 3-spd., \$800 firm. Gendreau, 268-3436.
- '64 FORD Galaxie XL, 68,000 orig. miles. Kaspar, 821-5521.

- '72 CADILLAC 4-dr., w/58K miles on '73 engine, first \$650 takes it. Herrera, 836-1768.
- '67 OLDS Vista Cruiser SW, total automatic, \$850 or best offer. Jones, 266-4186.
- '75 KAWASAKI, 175cc. trail bike, street legal, \$400. Emerson, 281-1281.

### REAL ESTATE

- 1.6 ACRE LOT, small down, REC, 12%, 10 yrs., off Norment SW. Padilla, 836-2279 or 877-1457.
- ASSUME 3-bdr. in Westgate, 8% interest, \$6000 down, \$359/mo., will trade for mobile home. Chavez, 836-2406.
- CABIN SITES, Bluewater Lake, .5 acre, \$2250; .85 acre, \$2750. Garcia, 293-3937.
- '78 CENTURION mobile home, 14'x64', 2-bdr., 1 1/2 baths, storm windows, fully skirted, Meadowbrook Park. Jones, 881-1918.
- '77 SKYLINE mobile home, 14'x70', 2-bdr., 2 bath, 4 Hills MHP, dbl.-wide lot. Cooper, 881-4503.
- 3-BDR. HOUSE, 1236 sq. ft., 1 1/2 bath, fp, microwave, 8 1/2 VA, 2-car garage, assume loan, negotiable terms. Lundergan, 299-8368.

### WANTED

- LATHE CHUCK, 3 or 4 jaw, 1/2-20 headstock, spindle thread. Brandvold, 296-4394.
- MOTOR HOME or camper to rent for two-week vacation end of Aug. or first of Sept. Chirigos, 884-5686.
- FACTORY MANUALS for Ford Fiesta. Baxter, 344-7601.
- OLD STYLE swamp type cooler that hangs on car window. Shepherd, 296-1238.
- EQUALIZER HITCH (receiver) to fit Ford van. Garcia, 293-3937.
- CARTOP CARRIER, enclosed type to hold around 15 cu. ft. Mills, 294-5219.
- ALUMINUM ROW BOAT, 10-12 ft. Carnicom, 281-3421.

## **Retiree Dinner Dance July 17**

TONIGHT at Happy Hour Jim Meek and the Country Showmen hold the bandstand from 8 until midnight, the buffet—steamship round of beef—is spread from 5:30 until 9, and special prices are in effect all evening. The buffet costs \$6.75 for adults, \$5.50 for children 12 and under.

Next Friday, July 16, Youngblood holds the bandstand while beef Burgundy and noodles are the buffet feature.

**ATTENTION RETIREES**—A retiree dinner dance is scheduled at the Club on Saturday, July 17. A prime rib buffet will be spread with all the goodies, the Mellotones will play for dancing, and television tapes from the recent Sandia retiree picnic will be shown on the giant TV screen. Cost is \$6.75 for members, \$8 for guests. Reservations please, by July 15.

**THE CLUB** will be closed on Monday, July 12, while workmen are in the building. The snack bar will also be closed, but the twin pools and patio area will be open.

**A BAR PROMOTION** by the Steel Schnapps people is set for Thursday, July 15. There'll be some special prices and prizes from 4:30 until 8 p.m.

**TRAVEL DIRECTOR** Frank Biggs (1231) announces a new trip which he calls "New England Fall Foliage and Québec City Tour" for Sept. 25-Oct. 3 for \$410 plus air fare (currently \$210 to Hartford, Conn.). The trip includes lodging, charter bus for New England and Canada, some meals, tours of Québec City, Old Sturbridge Village, Mass., Whipple (circa 1630), Heard Houses in Ipswich, Mass., the rocky coast of Maine, and more. Deposit \$50 now, remainder due Aug. 15.

Other scheduled trips include:

Gallup Indian Ceremonial, Aug. 14, \$32 adults, \$27 children 11 and under. Includes charter bus with snacks and refreshments, parade, rodeo, exhibit hall, museum, and ceremonial dances.

Las Vegas by air (\$185) or by bus (\$130) Sept. 12-15. Stay at Maxim Hotel and tour Hoover Dam. Deposit \$50 now.

Cumbres Toltec Scenic Railroad, Sept. 26 and again Oct. 2. Each trip is \$42 for adults, \$30 for children 11 and under. The trip includes charter bus with snacks and refreshments and the train ride *all the way across* from one end of the railroad to the other.

Mexican Pacific Coast cruise, Oct. 23-30. Spend one week on the MTS Daphne. Prices start at \$789.

Canyon de Chelly, Oct. 30-31, by charter bus, \$82. Includes lodging and admission. Deposit \$25 now.

Mazatlán, Nov. 1-8 or Nov. 8-15 for \$359.

See Frank in the lobby tonight between 5 and 7 and talk travel.

# Antojitos

On Anti-Nuke Demonstrators--Our Livermore Lab brethren on both sides of East Avenue survived admirably the inconvenience of human roadblocks on their way to work a couple of weeks ago. When it comes to nuclear disarmament, I can appreciate reasoned debate. I cannot appreciate, however vivid the TV coverage, rampant naivete that leads mobs in the street to embrace unilateral disarmament. The same for deliberate obstruction--whether of ideas or of avenues. I believe it's clear by now that the comparative peace the world has enjoyed since 1945 is largely the result of a balance of nuclear capabilities among the major nations. All nations have always had some weapon as a last resort. If we beat every one of our swords into plowshares, we had better be able to convince an enemy that our stones are absolutely lethal.

\* \* \*

On Pink Forms Titled "Important Message" That Announce That Someone Phoned You--If all messages are important, then none are important.  
oBH

\* \* \*

En boca cerrada no entran moscas. (Flies won't enter a closed mouth.)

## **Power Tower Tests Molten Sodium Receiver**

An advanced liquid-sodium solar receiver, designed to generate 2.5 megawatts of thermal energy for producing electricity or industrial process heat at "solar power towers," achieved a 90 percent conversion efficiency during a recent four-month test at the Central Receiver Test Facility (CRTF) operated by John Ott's Division 9722.

The exterior of the receiver is a 4x10-foot panel of black chromed stainless steel tubing. It was mounted atop the CRTF's 200-foot-high tower where concentrated sunlight from a field of 222 computer-controlled heliostats raised the temperature of the molten sodium—a soft ductile alkali metal—flowing through the tubing from 550° to 1050°F.

CRTF is not equipped with a generator, but in a full-fledged solar power plant the liquid metal would be used to produce super-heated steam to drive a turbo-generator.

The receiver's panel, built by the Energy Systems Group of Rockwell International and assembled into a heat transfer loop by Sandia, is the fourth solar receiver to be tested at CRTF.

The first receiver, tested at CRTF from October 1978 to March 1979, under the sponsorship of the Department of Energy and Electric Power Research Institute, was a one-megawatt (thermal), gas-cooled engineering prototype built by Boeing Engineering and Construction Company.

The second was a three-megawatt (thermal) water-to-steam receiver developed for DOE by McDonnell Douglas Aircraft Corporation and the Rocketdyne division of Rockwell International. It was tested for nine months.

The third receiver was an advanced molten-salt receiver designed by Martin Marietta Corporation to produce five megawatts of thermal energy. It under-

went more than 400 hours of testing, starting in August 1980. It used a high-temperature molten-salt working fluid consisting of 60 percent sodium nitrate and 40 percent potassium nitrate.

The molten-salt and liquid-sodium receivers are advanced concepts that offer a number of potential advantages over conventional water-to-steam receivers, including significantly higher system efficiency, lower working pressures, and higher overall heat-transfer rates.

CRTF's heliostat field of 88,800 sq. ft. of mirror surface can concentrate sunlight on a test item to produce up to 5.5 megawatts of solar thermal energy. The facility is part of DOE's Large Power Systems Project managed by Sandia.

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