

# Don Shuster & A First Look At ERDA & NRC



## Sandia's Wind Turbine

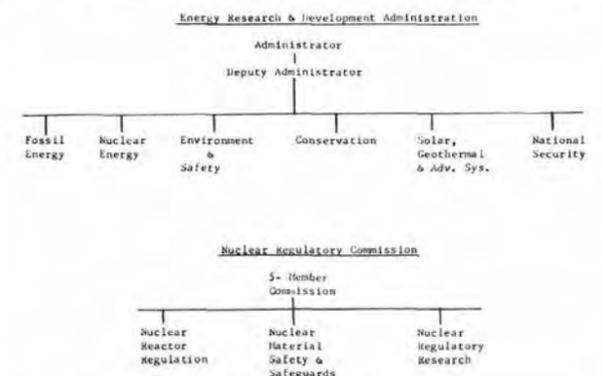
WITH PATENT APPLICATION filed, LAB NEWS can now publish a picture of Sandia's vertical axis wind turbine, mounted on top of Bldg. 802. Lou Feltz (5623), mechanical designer, and Ben Blackwell (5628), right, project leader, report that patent application covers design of the starter buckets and the air-foil blades. The 15-ft. blades drive into the wind, produce about three hp in a 20 mph wind. The wind turbine is an experimental program of Aerodynamics Projects Department 5620 under Randy Maydew.

A week or so ago the *Albuquerque Journal* headline marked the end of an era: "AEC Abolished; Agency Created."

Don Shuster, Director of Advanced Planning and Analysis 4700, is Sandia's resident expert on the new energy set-up, and we discussed with Don his first-look impressions. "The headline is incorrect. The AEC will be abolished when ERDA becomes operative — 120 days from date of enactment, or sooner if the president orders. Second, it should read 'agencies created,'" noted Don. "Two independent agencies are set up under the legislation — the Energy Research & Development Administration (ERDA) and the Nuclear Regulatory Commission (NRC — which used to be referred to as NEC). Here's what ERDA looks like," and he sketched the organizational chart shown below.

"It's clear that Sandia will have heaviest involvement in the National Security area, but we already have ongoing programs that would fall under Fossil Energy, Nuclear Energy, and the other areas as well. By definition, ERDA's responsibility is R & D in the field of energy, and Sandia's capabilities are very much oriented in that direction."

The Nuclear Regulatory Commission has a simpler organization (below). One passage



in the legislation illuminates the intent of Congress in establishing NRC: "The Congress finds that it is in the public interest that the licensing and related regulatory functions . . . be separated from the performance of the other functions . . ." Don comments — "He who designs and builds a reactor should not pass judgment on its safety."

It's likely that Sandia will work closely with NRC as well as ERDA. The Labs' present complex of nuclear reactors would be the hardware basis of NRC research into questions of reactor operation and safety.

"The passage of this legislation clears the air," says Don. "Previously, we might develop an energy related proposal and not be really sure about where to take the proposal. Now we know which door to knock on."

# LAB NEWS

VOL. 26, NO. 22

OCTOBER 25, 1974

SANDIA LABORATORIES • ALBUQUERQUE NEW MEXICO • LIVERMORE CALIFORNIA • TONOPAH NEVADA

## '74 ECP

With the highest dollar figure ever pledged, Sandia's ECP drive was virtually complete this week. A total of \$411,572 will be contributed over the next 12 months by Sandia employees to support the 34 agencies of the Albuquerque United Community Fund and eight national health and welfare agencies.

Some 85.5 percent of Sandians contributed to the drive, 50.6 percent at the Fair Share level. Average gift of those who contributed was \$86.70.

# Credit Union Reporter

By Earl Simonson  
President

## Truth-in-Lending & Those Tricky Words



Because of the Truth-in-Lending Act which became law in July 1969, many people assume that most interest rates are about the same. The new law presumably protects the consumer and we know that "annual percentage rate" and "finance charges" have to be specified in our contract. It isn't quite that simple though. There are sellers who, contrary to law, quote you an "add-on" or "discounted" interest rate as an incentive to use a particular finance plan. It all sounds great — a new car price of \$5000, financed at 8% add-on or 8% discounted over a period of three years. It looks cheaper than the 9.6% rate offered at the Credit Union. But it isn't!

In fact, the 8% add-on or discounted rate amounts to a 24% true annual percentage rate — more than twice as much as the 9.6% APR of the Credit Union. If you borrow \$5000, here is what your finance charges look like:

8% Add-On	8% Discounted	9.6% Credit Union
\$1200	\$1584	\$774

The message is obvious: when the salesman starts talking "add-on" and "discounted" is the time for you to start walking. If you've already been had, your contract may have an additional refinement under which you face a stiff penalty should you wish to pay the loan off early (prepayment). The Truth-in-Lending Act remedied many sharp practices, but not all. Check with the Credit Union before you sign any contract that seems to offer interest rates much below the norm.

## Nominating Committee

Ralph Hampy (2431) is chairman of the nominating committee, and he will be assisted by Willie Garcia (3321), Joe Maldonado (4713) and Clarence Sandy (9533). The Credit Union B of D has four openings, the Credit Committee one. Contact a member of the nominating committee if you're interested.

## LAB NEWS

Published every other Friday

### SANDIA LABORATORIES

An Equal Opportunity Employer  
ALBUQUERQUE, NEW MEXICO  
LIVERMORE, CALIFORNIA  
TONOPAH, NEVADA

Editorial offices in Albuquerque, N.M.  
Area 505 264-1053  
ZIP 87115

In Livermore Area 415 455-2111

john shunny is editor  
&  
don graham ass't. editor

bruce hawkinson & norma taylor write  
bill laskar does picture work  
gerse martinez lends a hand  
&  
lorena schneider reports on livermore

## Credit Union Bulletin Board

**Unleaded gas** — After you've driven that '75 model for a few miles and stop for gas, you'll encounter one fact of life: you *must* use unleaded gas. The catalytic converter on your new dreamboat is a pollution-control device that sort of goes bananas if you burn regular or premium gas, both of which contain lead. And it'll cost about \$150 to replace the converter. If you're the forgetful type, take heart because your new model's gas tank has a smaller diameter fill-pipe opening that won't accept a regular/premium gas nozzle. There's a special nozzle designed to fit the opening, and that nozzle is restricted to the station's unleaded gas. For that matter, a station that somehow puts leaded gas into a '75 model is subject to a fine.

Needless to say, unleaded gas costs more. You can use it in an older model car in lieu of regular without ill effect.

\*\*\*\*

As part of its normal audit procedure, the Supervisory Committee recently mailed statements to members with account numbers from 5000 to 5999 and 15,000 to 15,999. If your account number is in either of these series and you have not received your statement, please notify Otis Cox (4277), committee chairman.

## Events Calendar

- Oct. 25, 30, Nov. 2, 5, 8 — "When You Comin' Back, Red Ryder?" by Mark Medoff (NMSU professor), 8:30 p.m., Rodey Theatre.
- Oct. 25-27 — Ski Swap, Sandia Peak Ski Patrol, Ag. Bldg., State Fairgrounds.
- Through Oct. 31 — Guild Theater, "Zardoz" 3405 Central, NE., 265-0220.
- Oct. 27 — NM Mt. Club, Enchanted Mesa, call Don, 299-1040.
- Oct. 27 — U of Alb. Humanities Lecture Series, Fabian Chavez, "New Mexico Economic Development," 7:30 p.m.
- Oct. 29, Nov. 1, 7 — "The Torch-Bearers" by George Kelly, 8:30 p.m.; Nov. 3 matinee, 3 p.m., Rodey Theater.
- Oct. 30 — Opening of Southwest Theater Conference. For schedule of workshops, seminars & auditions call 277-4332.
- Oct. 26, 27, 31 — UNM Drama Dept. "Ghost Sonata," 3 p.m. on 27 Rodey Theater.
- Oct. 31 — U of Alb. "Cube & Rose Parade," Stage 1, 8:30 p.m.
- Oct. 31 — Albuquerque Dance Theater, 8:15 p.m., Popejoy Hall.
- Nov. 1-2 — "Puccini in New Mexico," evening of opera. Gene Ives (1560) will be one of the guest artists. 8 p.m.; Nov. 3 matinee at 3 p.m., Keller Hall, UNM.
- Nov. 2 — Football, UNM vs NMS, 7:30 p.m., UNM Stadium.
- Nov. 2-3 — "Richard Harding Bush-A Melodrama" and "Sleeping Beauty," Albq. Children's Theater, 1:30 and 3:30, Popejoy Hall.
- Nov. 5 — Election Day.
- Nov. 5 — Travel-Adventure Film, "The Soul of Japan," 7:30 p.m., Popejoy Hall.



WINTER APPROACHES, and a good way to conserve heat is to buy a roll of 1-mil transparent plastic and make your own storm windows. These are stapled to the wooden doors. Plastic comes in 36-inch wide rolls.

## Variable Annuity Unit Value

November	1.005
October	1.144
Average 1973	1.752

## Sympathy

To Ken Shinn (3733) on the death of his daughter, Elizabeth Carlyle, Oct. 11 in Austin, Texas.

To Nina Clark (3613) on the death of her mother in Yorkville, Ill., Oct. 13.

## Deaths

Paul Dailey of EMR/EMP Division 9353 died suddenly Oct. 11. He was 54.

He had worked at Sandia since July 1946. Survivors include two sons and a daughter.



\*\*\*\*

Thomas Reinhardt of Battery Development Division 2522 died Oct. 12 after an extended illness. He was 48.

He had worked at the Laboratories since January 1952.

Survivors include his widow, two daughters and a son.



# LIVERMORE NEWS

VOL. 26, NO. 22

LIVERMORE LABORATORIES

OCTOBER 25, 1974



President Morgan Sparks welcomes Gil Oliver (center) and Frank Moore.



VP Tom Cook (8000) (right) with Jake Ludington, Jake's wife, and Doris Ward.



Former VP at Livermore Burnie Biggs (left) and VP Charlie Ross (6000) renew acquaintances.



VPs Glen Fowler (1000), (left), and Ray Powell (3000), (right), recall Albuquerque days with Bill Funk and his wife.



Wil Williams (right), oldest retiree attending, with Smokey Culver (left) and their former supervisor Bud Pearson, also retired.

**LIVERMORE RETIREE REUNION** — Sandia retirees from the Bay Area and other parts of California gathered recently for their annual get-together. Members of Sandia's Small Staff were on hand for the occasion.

## Take Note

The Twilight Golf League wound up recently after 19 weeks of play by over 80 Sandians at the Los Positas and Springtown Golf Courses. The 20-team league competed each Wednesday evening on the bogie point system. Members of the winning team were Jim Mitchell (8413), Jim Shelby (8334), Larry Weirick (8312) and Marshall Meyer (formerly 8314).

\*\*\*

The recent playoff in the 1974 Slo-Pitch Softball League concluded three months of competition among five teams; about 85 Sandians were active on the teams. The winning team was captained by Pete Dean (8265). Other teams were captained by Harold

Hunt (8257), Gordon Ross (8212), Tim Sage (8432), and Al Scott (8168). Highest batting average honor went to Curt Franklin (8163), and Vic Ham (8312) was named the most valuable player.

For the first time, women took part this year and three or four Sandia women played on each team. League coordinator Bob Reese (8113) says, "The idea proved to be a great success, so we expect much interest again next year."

## Sympathy

To Norm Toly (8434) on the death of his father in Livermore, Sept. 21, and his father-in-law in Livermore, Sept. 23.

## Retiree Gil Rhodes Named Fellow In Safety Society



Sandia retiree Gil Rhodes has been named a Fellow of the American Society of Safety Engineers, the highest recognition for contributions to the advancement of the safety profession. The honor has been conferred to date on only 33 of its members.

Since retiring four years ago, Gil has headed his own consultant firm and has been safety director for a number of organizations, including the Port of Oakland. In addition, he's been training director for the National Safety Council and was first in the Bay Area to establish a portable audio-metric van unit for testing the hearing of industrial workers.

"Most challenging, though," says Gil, "was developing a curriculum for teaching safety in over 100 community colleges in California. This curriculum has been used across the United States, plus France and England, and now an international labor organization plans to urge its use in many other countries."

In the safety field since 1941, Gil holds patents on safety bottle caps and is the author of numerous articles relating to industrial safety. He praises the Livermore safety program: "The accident record during my Sandia experience was exceptional, considering the potential problems in R&D work — something less than one disabling injury per million man hours worked, when the average is like 15. I'm also proud of the research I did in home safety before joining Sandia," he continues. "The work was a first in California and it influenced a lot of federal legislation."

Having sold his consulting business, Gil is looking forward to his second retirement. He plans, however, to specialize as an expert safety witness in legal cases. "Over the past several years, I've worked with some 80 attorneys, investigating cases and testifying in court. Continuing to work with them is the best way I know to reveal to the world safety hazards and how to overcome them."

## Congratulations

Mr. and Mrs. Joe Iannucci (8341), a son, David William, Sept. 6.

Donna Walker (8314) and Jim Mitchell (8413), married in Concord, Sept. 21.

SANDIA LABORATORIES | Livermore

Invites you to attend

*Une Soirée Dansante*

Saturday · NOVEMBER 23, 1974  
CASTLEWOOD COUNTRY CLUB

FEATURING

*Larry Cabral*  
and his ORCHESTRA

NO HOST COCKTAIL 7 O'Clock  
DINNER - 8 O'Clock  
DANCING - 9 to 1

\$22.00  
per couple

# Our Town: The Senior Citizens Center

Stay busy, keep learning, get involved. Most senior citizens have heard that advice plenty of times. What they need is a place to make the advice fun to follow.

Voila! The Senior Citizens Center. Located behind the Erna Fergusson Library on north San Mateo, it offers things to do, and learn, and play, and people to share the experiences with.

Classes — a dozen types of arts, crafts, creative writing, judo, ham radio, and many more. Clubs — for painters, photographers, seamstresses (and seamsters), anglers, rockhounds, gardeners. Games — bridge, bingo, canasta, chess.

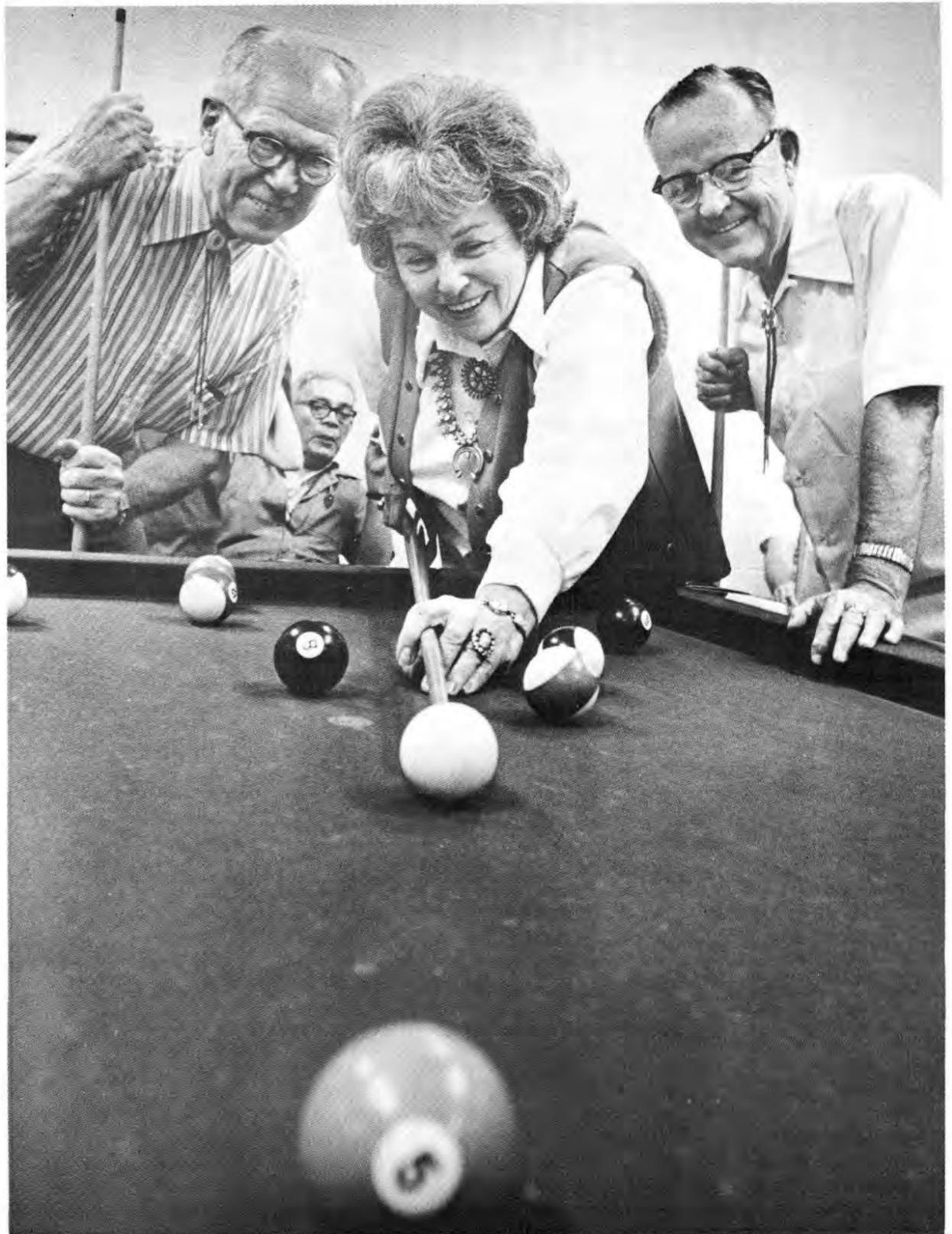
Among retired Sandians at the Center the day LAB NEWS visited: Dan Wood heads the Center's Advisory Council and belongs to the Gem & Mineral Club; Ray Smelich uses a talent he gained at Sandia to help other retirees — he serves as an unpaid consultant in insurance, especially that involving health care claims.

Then there's Dorothy Matlack, already something of a painter but perfecting her skills in a Center painting class; Sol Azouz teaches darkroom techniques and takes classes in silversmithing, ceramics, and lapidary; Bill Fleming is part of the garden club; Dennis Baca often drops by for the companionship — the Center's a friendly place to visit.

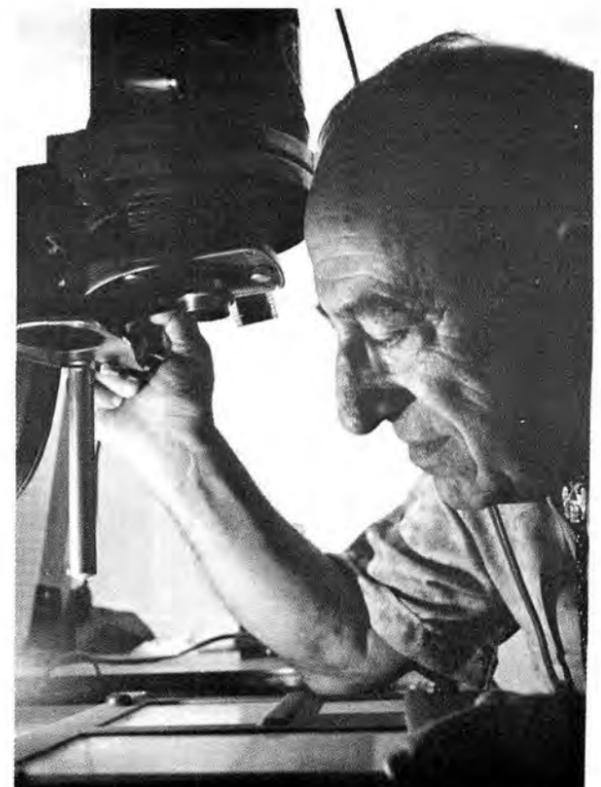
Ginger Grossetete manages the Center. With all the activities, and with some 2000 people using the place regularly, she's busy. And a little frustrated — "We're reaching a couple of thousand senior citizens; 30,000 people over 60 live in Bernalillo County."

But she's grateful too — "It's the 42 volunteers who make the Center the vital, worthwhile place it is. Some are retired themselves, but most are Albuquerque people with skills they enjoy sharing. A plug here — we could use more volunteers; call 766-7875. Oh, Meals on Wheels needs some more volunteers too — drivers who'll deliver meals to shut-ins; call Betty Sims at 255-3525 for that.

"Must run now. Thanks for your interest in the Center. And come back." We intend to. •bh



RETIRED SANDIANS AT THE CENTER. Above, Dorothy Matlack joins Bill Fleming and Leonard Best (since deceased) for a pool lesson. Below, left: Ray Smelich and Dan Wood check a Matlack landscape. Below right: Sol Azouz focuses a negative in the enlarger.



## Speakers

R.A. Lefever (2432), "Preparation of Single Crystal Garnet Films by Liquid Phase Epitaxy"; R.J. Baughman, G.L. McVay (both 5154) and R.A. Lefever, "Chill Casting of Silicon-Germanium Alloys"; McVay, Lefever and Baughman, "Reduction of Silicon-Germanium Alloys"; Baughman and Lefever, "Sodium Beta-Alumina Crystal Growth"; Lefever, McVay and Baughman, "Vacuum Hot Pressed Silicon-Germanium Alloys"; Baughman and McVay, "Making Water Free Glass"; Lefever, W.F. Windle and T.D. Harrison (both 2334), "Effects of Hot Pressing Time, Temperature, and Pressure on the Properties of Silicon-Germanium Alloys"; L.L. Pierce and C.A. Hall (both 2521), "Lanthanum-Doped PBZT Ceramic Compositions for Energy Storage Capacitors"; R.J. Eagan (5846), "Glass-Ceramic Materials Development"; R.H. Dungan and G.S. Snow (both 2521), "Hot Pressing Large PLZT Slugs for Electrooptic Windows"; P.D. Wilcox (2521), "Making Wire Interconnected Thermopiles"; E.K. Beauchamp (5846), "Measurement of Fracture Velocity in Glasses and Ceramics"; S. Spencer (5846), "Crystallization in Glasses"; J.A. Gilbert (5846), "A Plasma-CVD Process for the Deposition of Doped Silica," New Mexico Section fall meeting and Ceramics Materials Seminar, ACS, Sept. 13, Albuquerque.

D.S. Drumheller and H.J. Sutherland (both 5163), "The Computation of Stress Wave Propagation in Composite Materials"; J.W. Nunziato (5131), K.W. Schuler (5163) and D.B. Hayes (5162), "Numerical Wave Propagation Calculations for Nonlinear Viscoelastic Solids"; R.T. Walsh (5166), "Dual Coordinates for Bulk Mechanics"; L.D. Bertholf (5162), W. Herrmann (5160), and S.L. Thompson (5166), "Computational Methods for Stress Wave Propagation in Nonlinear Solid Mechanics"; P.J. Roache (5643), "Recent Developments and Problem Areas in Computational Fluid Dynamics," First International Conference on Computational Methods in Nonlinear Mechanics, Sept. 23-25, Austin, Texas.

J.M. Hueter (3131), "Creativity - Choice or Chance?," American Business Women's Assn., Sando Chapter, Sept. 23, Albuquerque.

G.E. Tucker (3313), "Radiation Monitoring Techniques," Sept. 3, Duke City Civitan Club.

O.L. Wright (4820), "The History of Sandia Base," Sept. 11, Belen Rotary Club.

G.W. Hughes (9474), "The Metric System and the Citizen," Sept. 17 — First Presbyterian Church Adult Fellowship Group, Sept. 19 — Eldorado HS science survey class, and Sept. 25 — Belen Rotary Club.

D.B. Shuster (4700), "Sandia Energy Programs," Sept. 19, staff, AEC-NVOO.

B.W. Marshall (5717), "Sandia's Solar Energy Research Program," Sept. 25, Albuquerque chapter AIEE.

R.J. Baughman (5151), "Crystal Growing," Sept. 25, Eldorado HS science survey class.

G.C. McDonald (9623), "Why Wilderness?," Aug. 29, Los Altos Kiwanis Club.

G.B. Krefft and E.P. EerNisse (both 5112), "Ion Bombardment Induced Volume Changes in Single Crystal Alpha-Al<sub>2</sub>O<sub>3</sub>," Fall Meeting, American Ceramic Society, Sept. 29-Oct. 2, Williamsburg, Va.

P.B. Herrington (1255), "Balloon Gondola Measurements"; R.O. Woods (1255), "Design & Operating Characteristics of a Balloon-Borne Vacuum System," 8th AFCRL Scientific Balloon Symposium, Sept. 29 - Oct. 4, Hyannis, Mass.

C.M. Tapp (2430), "Future Technology Trends," Third Annual Microelectronics Workshop, Sept. 29 - Oct. 3, Dallas, Texas.

G. Pike (5155), A.W. Mullendore (5748), J.E. Schirber (5150), and J. Napier (Union Carbide), "Superconducting Properties of Thin Film Niobium Carbonitrides on Carbon Fibers," 1974 Applied Superconductivity Conference, Sept. 30-Oct. 2, Oakbrook, Ill.

B.R. Steele (2515), "Transient Pulse Testing of Electroexplosive Devices"; W.B. Leslie and R.W. Dietzel (both 2515), "Titanium Hydride-Potassium Perchlorate: A Spark Insensitive Pyrotechnic Material," 1974 Annual Meeting Pyrotechnics and Explosives Applications, ADPA, Oct. 2-4, St. Louis, Mo.

C.E. Dalton (5721), "A Task Analysis Scheme with Implications for Supervisory Control of Remote Manipulators," IEEE Systems Man & Cybernetics 1974 International Conference, Oct. 2-4, Dallas, Texas.

A.C. Switendick (5151), "Transition Metal Hydrides," Seminars: Oct. 3, Stanford University, and Oct. 7, Science Center, Rockwell International, Thousand Oaks, Calif.

J.L. Jellison (5833), "Solderability Testing With the Meniscograph," IMOG Joining Subgroup Meeting, Oct. 2-3, Miamisburg, Ohio.

C.E. Land (5113), "Electrooptic, Light Scattering, and Surface-Deformation Effects in PLZT Ceramics," EE Colloquium, Oct. 3, UNM.

G.B. Krefft (5112), "Application of Ion Implantation to Solid State Research," Invited Seminar at Rutgers University in the College of Engineering, Dept. of Ceramics, Oct. 5, New Brunswick, N.J.



### 10-Month Project

## Mel Vick Builds Home

Ten months ago Mel Vick, a programmer in On-Line Systems Division 2643, bought a lot in the Northeast Heights and started making drawings for his dream house. On Feb. 15 he rented a tractor and started breaking ground for the foundation.

Now he can stand in the sunken living room of his new 2400 sq. ft. home, view the Sandia mountains through huge glass windows, and enjoy the satisfaction that comes from having built it himself.

Mel is quick to give much credit to his 20-year-old son David, a senior at UNM, who spent his summer vacation working on the house. "Dave did all of the framing and was the workhorse of the project," Mel says.

The house is territorial style with flat roof. Inside, the rooms are large and comfortable. There are four bedrooms, three baths, living and dining area, den with fireplace, kitchen and utility room, large entryway and a double garage. Construction is frame stucco.

Mel did the plumbing and wiring. Toward the end of the project, his former home sold more quickly than he had planned for and the family had to move into the new house before it was completed.

"We had to sub-contract the plastering," Mel says, "plus the fireplace and roofing. We were rushed and had a lot of confusion here for awhile."

Mel's wife — Bette Lee, a former Sandia mathematician — and his daughter were in

MEL VICK (2643) built his territorial style four-bedroom home in 10 months. Son David, left, worked throughout the summer on the project. Sitting are Mrs. Vick and Debbi.



charge of the interior decor. Carpeted throughout, the colors are light pastels with accents of blue in the living/dining area.

"Now that we're settled into a routine," Mel says, "the family can concentrate on homework and I can finish up the outside — walls and landscaping."

Bette Lee will be awarded her Master's diploma in June while Debbi and Dave will earn BS degrees — all in mathematics and all will be in the same graduation ceremony.

R.T. Walsh and N. Ruiz (both 5166), "Version Selection and Storage Minimization," Workshop on Fortran Preprocessors for Numerical Software, Oct. 7-8, Jet Propulsion Lab, Pasadena, Calif.

J.W. Reed (5644), "Some Notes on Wind Power Climatology," AMS Climatology Conference and Workshop, Oct. 8-11, Asheville, N.C.

J.T. Cutchen and J.O. Harris (both 2521), "Compositional Dependence of Electrical and Electrooptic Characteristics of X/65/35 PLZT Ceramics for X from 8.0 to 10.0," 1974 Conference on Display Devices and Systems, Oct. 9-10, New York City.

J.E. Schirber (5150), "deHaas-vanAlphen Studies of the Fermi Surface of Uranium," International Symposium on the Electronic Structure of the Actinides, Oct. 9-11, Argonne, Ill.

R.T. Dillon (5251), "Rates of Mutant Production in *Bacillus Subtilis* by Dry Heat and Gamma Irradiation," Sixth Annual International Spore Conference, Oct. 10-

13, East Lansing, Mich.

T. D. Padrick (5215) and R. E. Palmer (5216), "Pressure Broadening of the Atomic Iodine 5<sup>2</sup>P<sub>1/2</sub> - 5<sup>2</sup>P<sub>3/2</sub> Transition"; J. Chang (5242), "Time Resolved Measurements of Super Pinched Relativistic Electron Beam and Its Interaction With Targets"; and M. A. Palmer (5243), "Use of an Ultra-Fast Streak Camera in Laser Diagnostics," NM Academy of Science Annual Meeting, Oct. 11-12, NM Highlands Univ., Las Vegas.

R. Weaver (3622), "Fire, Plastics and the Modern Home," Los Altos Civitan Club, Oct. 10, Albuquerque.

D. Emin (5155), "A Qualitative Discussion of Small-Polaron Formation and Motion," Solid State Seminar, UCLA, Oct. 9; and "Phonon-Assisted Transitions Between Electronic States," Solid State Seminar, Univ. of Calif., Oct. 10, Riverside.

F.G. Blottner (5643), "Survey of Finite-Difference Methods for Computing Two- and Three-Dimensional Boundary-Layer Flows," Seminar, NASA-Ames Research Center, Oct. 24, Moffett Field, Calif.



RUINS of an ancient pueblo as well as cliff dwellings are part of Bandelier National Monument, located less than two hours north of Albuquerque.

### Vista New Mexico

## Bandelier Is Close, Spectacular

Less than two hours north, through some of the most spectacular and dramatic scenery in New Mexico, is Bandelier National Monument. Ruins left by an ancient people are located in the deep slash in the Paharito Plateau known as Frijoles Canyon. The ancients chose their site well — it is a beautiful and protected place with a small stream meandering down the green valley floor. Along the north wall of the cliffs lining the valley are natural and man-made caves which are the original dwellings of the people. In the valley itself are the remains of stone "apartment" houses, the classic pueblos of a peaceful and productive people who farmed the area for more than 300 years between 1200 and 1550.

Anthropologists call Bandelier an example of the "regressive" period in pueblo development. The people who lived there came from Chaco Canyon or Mesa Verde or were descended from those people. Chaco with its magnificent stone structures, huge underground circular kivas, and network of irrigation dams represents the highest achievement of any pre-Colombian culture in North America. Still, the great pueblos were abandoned about 1200. Drouth, exhausted fields, forests gone for firewood, perhaps plague, harrassment from raiding Plains Indians — all were factors that could have caused the abandonment.

So the people scattered across New Mexico and Arizona. One of the places where they rebuilt was Bandelier. (There are many resettlements — Zuni, Gran Quivira, Acoma,

Pecos, Abo, and Gila Pueblos are among the best known.)

The period is called regressive because never again did the people build as well or on such a large scale as at Chaco or Mesa Verde. However, the culture flourished — elaborate religious ritual, advanced social customs (government in the pueblos was democratic, not hereditary), and art (great skill in weaving, pottery making, dance).

Bandelier is unique because of the shrine of the stone lions. Life-size effigies of crouched mountain lions are located about six miles south of the main ruins. Crudely carved out of lava and badly eroded by centuries of weather, the twin figures are still recognizable. Originally, the figures were surrounded by 13-foot walls and an extended passageway. Archeologists speculate that the shrine was a place where the ancients asked for bountiful hunting. There are no known similar figures in the Southwest. The trail to the shrine is strenuous and takes several hours. Near the main ruins and museum are concrete replicas of the original figures.

Some 2000 inhabitants could have lived at Bandelier at the peak of its culture. In addition to the caves and the excavated ruins, the canyon contains a number of unexcavated pueblo sites.

The early Spaniards who explored New Mexico did not mention the people of Bandelier in their journals. Bandelier was abandoned about the time that Coronado wintered near Bernalillo in 1540-41. Here again, we can only speculate about the

reasons. The design of the main pueblo — only one narrow ground level entrance — indicates that defense was a prime concern. Tree ring records indicate a 20-year period of drouth during that time.

There are good indications that the people of Bandelier founded the modern pueblos of Cochiti and San Ildefonso.

\* \* \*

A good way to get to Bandelier from Albuquerque is to drive north to Bernalillo, turn west on Rt. 44 to San Ysidro and then turn north again on Rt. 4 to Jemez Springs. The monumental cliffs through this valley are spectacular. As you continue on Rt. 4 you'll pass Valle Grande — site of one of the largest volcanos that ever existed. The Jemez Mountains are its rim. The Paharito Plateau was formed from the lava and ashes spewed from the Valle Grande. As you approach Los Alamos, the way to Bandelier is well marked.

### Watch That Clock

On Oct. 27, Standard Time is reinstated for four months. Turn your clock back one hour. Daylight Saving Time will be restored Feb. 23, 1975.

# feed *li*back

To get a response to your comments and questions about Sandia Labs, complete a Feedback form (available near bulletin boards) and return it to the Feedback administrator. The substance of questions and responses of wide interest is published in LAB NEWS.

*Q. I understand that the Coronado Club and its facilities are open and available to military people.*

*This being the situation, why then is the Olympic pool not open to laboratories employees and their dependents? Seems like a one sided deal . . .*

A. A limited number of service personnel are accepted as Associate Members of the Coronado Club. This number is set by the Club Board of Directors. They, of course, pay dues and are entitled to all member privileges except voting. Further, I am assured by Base Special Services that the Olympic pool is open to employees of AEC and Sandia from 11:00 A.M. to 1:00 P.M. daily. They do not, however, extend this privilege to civilian dependents.

R. J. Edelman - 4200  
\* \* \* \* \*

*Q. What is the purpose of the TV camera on top of Bldg. 802?*

A. The TV camera on the roof of Bldg. 802 is a low-light-level camera that is used primarily for surveillance of the west half of the Tech Area and the 800 parking lots during nonoperational hours.

L. H. Heilman - 9500  
\* \* \* \* \*

*Q. The Labs' training of certain staff and supervisors to act as a supplemental guard force is discriminatory to graded people. The function of the full-time guard force is graded now, so why must the supplemental cadre be nongraded? There really is NO reason why we graded people cannot perform this task as efficiently as people with college degrees!*

A. AEC regulations specify certain levels of security for Category A-1 facilities which must always be maintained, under all circumstances and conditions. One very basic requirement is the presence of a minimum number of trained, armed personnel to guard certain facilities, material, documents, etc. The primary purpose of an auxiliary guard force is to have a group of trained (to some degree) personnel to serve as these armed guards in the absence of or in support of the regular guard force.

Our guard force is unionized (International Guards Union of America) and one reason for the absence of the regular guard force would be if that group exercised its legal right to stop work, i.e., "strike." In the event of a work stoppage by the IGUA, Management would have to turn to the auxiliary guard force to provide the required armed guard force protection. If represented, graded employees were members of the auxiliary guard force, these people would be members of and/or represented by other unions (Metal Trades Council or Office and Professional Workers) and it would be quite improper for members of those unions to fill in, as auxiliary guards, in place of guard union members on strike.

Second, and equally important, during periods when it would be necessary to activate the auxiliary guards, management must use these people to deal with a variety of

situations (some on an emergency basis) without regard to their job description or pay scale. To do so without creating serious problems relating to pay treatment, hours of work, etc., requires a certain amount of flexibility and limits the Labs personnel to whom such assignment can be made.

In summary, because of complicating administrative factors and in order for us to be sure we meet company policy and/or statutory requirements relative to certain categories of employees, membership on the Auxiliary Guard Force is limited to staff and supervisory personnel.

L. J. Heilman - 9500  
\* \* \* \* \*

*Q. The newly passed pension reform bill includes a provision for increasing the tax-exempt savings of self-employed professionals to 15% of their income. (They pay no income tax on this until they retire.) Does the bill include any provision for deferring the income tax employees pay on a contributory plan like Sandia's?*

*Another question: What changes will need to be made in Sandia's retirement plan to conform to the new law?*

A. The Pension Reform Act of 1974, signed into law by President Ford on Labor Day, is of considerable interest to many of us. It is going to be some time, however, before the Treasury Department and the Department of Labor will promulgate their regulations, so it is premature to anticipate the full impact of the law on Sandia's Retirement Income Plan. We are working with Prudential on various aspects of the Plan provisions, and requirements of the Pension Reform Act are considerations that will have high priority.

In replying to your first question, let me point out that the \$1500/15% provisions you refer to will apply to the private-industry employees who are not covered by any pension plan other than Social Security. Self-employed people are permitted to put portions of their income each year, free of taxes, into a fund that can earn tax-free income until it starts paying out at retirement. The maximums under the new law range up to \$7500. Because you are in a qualified plan, which means in a plan where the employer contributions are tax-deferred until retirement, you are not eligible for these other provisions.

No answer is yet available to your second question, and it will be some time before we and Prudential will be able to determine what specific changes will be incorporated into the Retirement Income Plan as a result of the new pension legislation.

R. J. Edelman - 4200  
\* \* \* \* \*

*Q. It was interesting to note that the Secretarial Committee was formed to advise the 4200 Director on issues relating to the nonrepresented secretary. It thus appears that the Personnel organization is interested in issues that pertain to the higher secretarial levels. Aren't they interested in issues of division secretaries too?*

*Does this committee represent all secretaries or just those at the higher levels? They do not represent the majority, only the elite. They certainly do not represent my issues.*

*Does Personnel have any plans to alter this committee so that division secretaries are equally represented, at least one from each Vice Presidency, or do they have plans for some other kind of representation for this group?*

A. The Secretarial Committee is, of course, interested in matters of a general nature which pertain to all secretaries. However, since almost all division secretaries are represented by the Office and Professional Employees union, matters concerning working conditions, etc., must be negotiated with and by the union.

R. J. Edelman - 4200



TABLE PLUS refinisher, Clem Wagner (left), and owner, John Stathis (3141). John wanted the fifty-year-old piece refinished, checked the Retiree Job Reference Service file at LAB NEWS, and found Clem. Result: a paying project for Clem, a renovated table for John, satisfaction for both. The Service needs to register more Sandia and AEC retirees with skills for sale — call 264-7841 for a registration blank.

# Warren Nilchee: Quite a Man

Born in 1910, father of eight, drafted in '43, combat decorated three times, joined Sandia in 1956, graduated from the Apprenticeship Program in 1974. But the statistics don't do Warren Nilchee (9711) justice. He's quite a man who has lived quite a life.

Born and raised on a farm south of Shiprock, Warren got into hot water as a young man. That is, he took a job as boilerman in the steam plant of the Bureau of Indian Affairs in Shiprock.

Then came WWII. Though married and the father (at the time) of three-and-a-half kids, Warren was drafted, trained a bit, and shipped to France just after Normandy. As the troops slogged toward the German border, his group was surrounded by the enemy. Warren and three other foot soldiers managed to knock out two tanks, permitting the group to rejoin the 319th Infantry. Gen. Bradley presented Bronze Stars to all four.

His second and third decorations came shortly thereafter. Several platoons trying to cross the Mozelle River were pinned down by heavy machine gun fire out of pillboxes high on the opposite bank. Warren remembered the advice of a Navajo buddy — "stay away from the bunch." The bunch (the remainder of his platoon) was wiped out trying to scramble out from under the gunfire. "Then they were shooting at me and a few survivors from other platoons. I was almost out of ammunition and I caught a piece of shrapnel in my lip — I just kept digging. Tanks were on their way, and we figured we were better off staying in our foxholes and fighting than trying to retreat.

"Food we could do without, but we had to have ammo. A helicopter laid a smokescreen, then dropped both food and ammunition. And we held on until the tanks came and wiped out the pillboxes."

Warren knew he'd get a Purple Heart, thanks to the shrapnel wound. He was surprised when Gen. Bradley presented him with a Silver Star as well.

Then came the Battle of the Bulge, V-E Day, service in occupied Austria, and home. Shiprock seemed a bit tame and educational opportunities a bit limited so the Nilchees settled in Albuquerque in 1946. Warren took advantage of the GI Bill to train in painting, cement finishing, and carpentry.

He still seeks training. He recently finished a Maintenance Technician apprenticeship course and is currently working in Plant Maintenance in the steam plant.

So Warren isn't surprised that his eight children have sought education too: Erma Mae is a Registered Nurse at University Heights Hospital; Mary Lene, also a Registered Nurse, works at Anna Kaseman; Thelma has an associate degree in dress design from the University of Kansas; Betty has a BS in Fine Arts and is working on a masters in fine arts in New Jersey; Rutnie has an associate degree in business education and works with Umatilla Indians in Oregon; Warren, Jr., earned his BS in civil engineering from NM State this year and now works in Kansas; Robert graduates from UNM next year with a degree in architecture; and Melissa is now at NM State heading toward a degree in biology.

Warren will retire next spring — from



Warren Nilchee

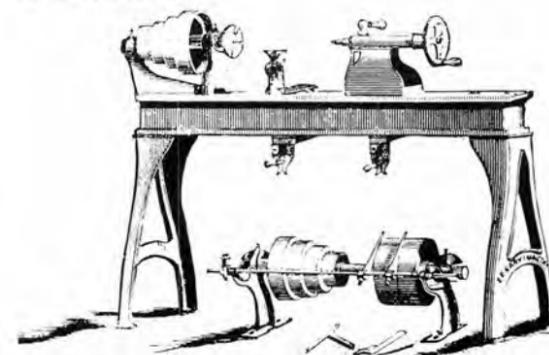
Sandia, not from work. "I'll relax a few months," says Warren. "First I'll visit Betty and my new grandchild in New Jersey, then stop in Kansas to see young Warren, and end up in Oregon with Ruthie in time for elk season."

"But then I'm settling on the family farms where I was born. One is irrigated so I'll be busy. And one is halfway up a mountain — we'll live there in the summer, down below in the winter. We'll raise some beans and squash and corn and potatoes and wheat and maybe some oats if we can keep the deer out."

## Making It — Metrically

Development Shops have successfully completed one all-metric job.

That doesn't mean engineers should now ask only for metric machine work. But it does mean that both the drafting and the machine shops are ready to take on a limited number of new metric projects. Says Jim Kenagy, manager of Machining Department 3640, "We learned from that first job. We're ready to learn more."



Adds Fred Eichert, who heads Specifications Engineering Department 9610, "We want to learn by doing — gradually. We don't propose instant metric for every job, but neither do we want to wait till that utopian day when we have every conceivable metric tool and every person is totally trained."

"Right," says Art Eiffert, manager of Design Definition Department 9650. "We're ready to move out on metric."

Engineering groups planning hardware which could go either SI metric or conventional are urged to discuss the choice with Jim, Fred, or Art. "No group should go metric in one big step," points out Corry McDonald (9623), metrication coordinator. "Rather each one should try the water temperature — in degrees C, naturally — before jumping in."



**PSYCHO-CYCLIST** — The hairy hazard doesn't believe in stop signs or common sense or Sharon Husa. She knows better — stop signs are for stopping.

## Take Note

The 16th annual meeting of the American Physical Society's Division of Plasma Physics will be held in Albuquerque next week, Oct. 28 to 31. More than a thousand people are expected to attend, and some 800 papers will be presented. Everet Beckner (5200) is the local committee chairman. The Convention Center is the site of the meeting.

\*\*\*\*\*

The Albuquerque Section of ASQC will sponsor a one day conference on "Quality — The Competitive Advantages of Better Quality" on Nov. 2 at Woodward Hall, UNM campus. Following registration at 8:15 a.m., Jim Hillman (9515), chairman of the Albuquerque Section, will give the welcome address. During the afternoon Ed Roth (5712) will present a paper on "Reject Analysis by Data Manipulation." Speakers from local companies will discuss various aspects of quality management. Registration fee, \$6, includes lunch. For more details or registration forms (deadline is noon, Oct. 31), contact Don Harwood (9515), ext. 8779; Chuck Wells (9718), ext. 7072; or Jim Hillman, ext. 2842.

\*\*\*\*\*

The Conference on Professionalism, sponsored by the N.M. Academy of Science, has been rescheduled for Nov. 7-10 at the D.H. Lawrence Ranch near Taos. Keynote speaker Prof. Edward Stern, Dept. of Physics, Univ. of Washington, and a member of the Committee of Concerned Scientists, will talk about the "Professional Position of Scientists in the Soviet Union." Cost of the conference, \$48 per person, includes room and board. For more information, contact NMAS President Dick Meyer (5824).

\*\*\*\*\*

The Sandians, an organization of wives of employees, will meet Monday, Nov. 4, at the home of Mary Novotny, 3900 Inca NE. A program on crafts will be presented. The group is seeking members. For more information call Anita Solbert, 298-9248.

**Hunters** — The Sandia Gun Club is sponsoring a sight-in shoot tomorrow from 9 a.m. until 12 noon on the KAFB (West) range. The range is located behind Bldg. 707 which is south of the East-West runway and near the control tower. For more details contact Dick Vivian (1611) or Al Smailer (9710).

\*\*\*\*\*

**Golf** — The Scotch Foursome Tournament, sponsored by Sandia's women golfers, was played Oct. 13 on the Los Altos course. Results:

Low Gross — Ann Michele (3100/9700) and Bill Saric (5643)

Runner-up — Pat Anderson (9415) and Jerry Smith (2415)

Low Net — Sandy (1712) and Rick (5832) Blose

Runner-up — Pat Chisholm (3141) and Beryl Hefley (3144)

Low Putts — Rose Hainlen (Ret.) and Jack Reynolds (3721).

\*\*\*\*\*

**Sandia Bicycle Ass'n.** — If you enjoyed cycling in the cancer cyclethon last weekend,

## Career Education

### Liza Snow Heads Advisory Board

Liza Snow, a chemist in Radiation Division I 1112, just six years out of undergraduate school is a young woman vitally interested in the quality of education in public schools. She chaired an advisory board last year for Albuquerque Public Schools which addressed the question "How could high schools graduate students with more employable skills?"

Liza's advisory board was asked to make specific recommendations in the fields of mathematics and science.

After a year of work, some of the group's suggestions are coming to fruition, and next year will see more of the recommendations implemented.

The effort stemmed from a national program conducted by the U.S. Chamber of Commerce. Businessmen were concerned that young people applying for jobs had few employable skills and that an alarming number did not possess even basic skills — reading, writing, math. Also of great concern was the fact that young people with jobs did not really want to work. Absenteeism, shoddy workmanship and a lack of responsibility were very real problems in the business world.

"The national program was a reaction to these concerns," Liza says. "And it also reflected a concern of industry to make work more satisfying. This is still a concern — one the country will have for a very long time. In the meantime, there are some practical things which may be accomplished."

Now in the final design stage is a new \$3.5 million facility called the Career Enrichment Center which is scheduled for operation on the new Albuquerque High School campus next semester.

The Center's program will incorporate the recommendations of Liza's science group and



the suggestions of 11 other similar advisory boards that explored other career fields.

The Center is envisioned as a place where students will find up-to-the minute information about jobs in Albuquerque, career counseling, and advanced facilities for studying science, computer technology, electronics, communications, and subjects representing many other career fields. The facilities will be flexible and will respond to specific student needs. Perhaps the key to success of the entire program is the plan to use active professionals from various career fields as instructors or as "resource" people to augment regular educators.

"The idea is to get more business people and professionals involved in education," Liza says, "and to get more students acquainted with the realities of various careers so they can make intelligent decisions about their life's work. I believe that the 25,000 young people in city high schools are worth the effort."

Other Sandians serving on the science and math advisory board include Al Stephenson (9333), William Alzheimer (1562), Pat Newman (3144), Wallace Newman (2411), Lynn Rigby (1642), J.D. Williams (2122) and Paul Robertson (3132).

you'll have an opportunity to take part in another one on Sunday, Nov. 3, this time in behalf of the Heart Association. The course is different — a 12 miler generally around Pennsylvania, Constitution, Chelwood and Comanche. Registration forms are available at bike shops, in schools, or you can call the Heart Ass'n. on 256-7335.

For the umpteenth time, Labs safety people have complained to SBA about Sandia cyclists running stop signs and cycling in a hazardous manner in the Tech Area. It's safe

## Recreation Notes

### FUN & GAMES

to conclude that bikers who persist in these dangerous acts are pretty dense — they just haven't got a message that's been repeated many times. SBA is urging that citations be issued to the law-breakers and that a biker who gets two citations be banned from cycling in the Tech Area.

\*\*\*\*\*

**Bowling** — SLBA Scotch Doubles tournament was a huge success. Gary Miller (5823) and his wife Sylvette were first, Lyle and Esther Russel (AEC/ALO) were second, and Bob and Bonnie Parks (9614) gained third place. Upcoming, Nov. 2 and 3, the Sandia Labs 11th Annual Handicap Tournament.

\*\*\*\*\*

**Sandia Runners Ass'n.** — The Tour of Albuquerque Marathon was held last weekend, and three SBA'ers were among the field of 86. Mark Percival (2411) led the SRA group with a time of 3:00:13, finishing first in the senior division and 11th overall. Others completing the 26-miler were Irv Hall (1643) and Henry Dodd (4751). Pete Richards (5132) was so hot to trot that he ran in the Denver Marathon the week before, finishing 7th with a time of 2:57.

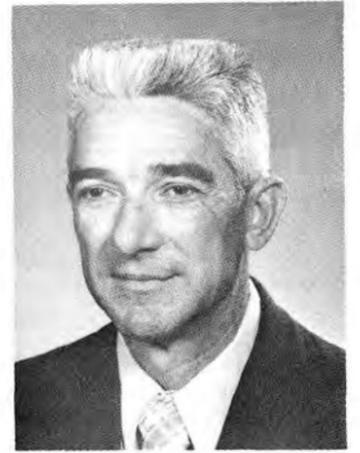
We have received literature from the National Jogging Ass'n. urging joggers to join up. NJA publishes a newsletter and books relating to jogging and physical fitness, and offers other benefits. If you'd like to see the literature, call LAB NEWS on ext. 1053 for a copy.

**MILEPOSTS**  
**LAB NEWS**  
*October 1974*



Judy Hawbaker - 3141

10



James Collier - 9521

20



Harold Rarrick - 9411

25



Paul Krogdahl - 9511

25



Robert Pedersen - 9533

20



Mel Snyder - 6021

25



Thaddeus Stetz - 1245

20



Gene Walter - 9631

10



Jesse Rehberg - 1247

25



Bernhardt Lorenzen - 9743

20



Luke Vortman - 1111

25



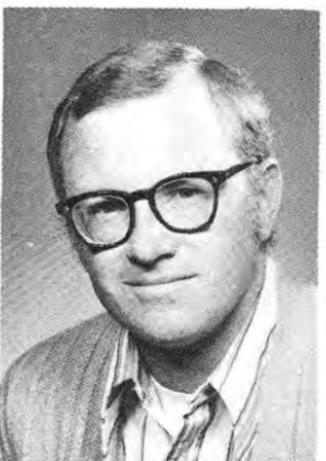
Ray Powell - 3000

30



Stan Reynolds - 1251

25



John Shane - 2134

10



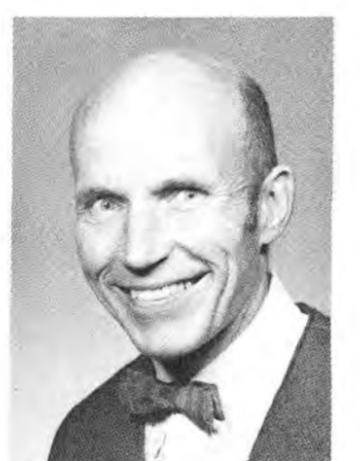
Myrna Walla - 5640

10



Celso Sanchez - 9754

20



Pete Wakeland - 1200

20

# Authors

J. Halbleib (5223), "Theoretical Model for an Advanced Bremsstrahlung Converter," Vol. 45, No. 9, JOURNAL OF APPLIED PHYSICS.

R.L. Fox (5643), "Multipoint Distribution Calculation of the Isotropic Turbulent Energy Spectrum Using Self-Consistent Initial Conditions," Vol. 17, No. 4, THE PHYSICS OF FLUIDS.

L.M. Barker and K.W. Schuler (both 5163), "Correction to the Velocity-per-Fringe Relationship for the VISAR Interferometer," Vol. 45, No. 8, JOURNAL OF APPLIED PHYSICS.

C.E. Barnes (5112), "Increased Radiation Hardness of GaAs Laser Diodes at High Current Densities," Vol. 45, No. 8, JOURNAL OF APPLIED PHYSICS.

J.A. Borders (5111), "Helium Ion Stopping Cross Sections in Bismuth, Lead and Tungsten," Vol. 21, No. 3, RADIATION EFFECTS.

J.P. Brainard (2412) and D.H. Jensen (2413), "Electron Avalanche and Surface Charging on Alumina Insulators During Pulsed High-Voltage Stress," Vol. 45, No. 8, JOURNAL OF APPLIED PHYSICS.

W.B. Gauster (5167) and I.J. Fritz (5132), "Pressure and Temperature Dependences of the Elastic Constants on Compression-Annealed Pyrolytic Graphite," Vol. 45, No. 8, JOURNAL OF APPLIED PHYSICS.

M.L. Lieberman (5826) and H.O. Pierson (5834), "Effect of Gas Phase Conditions on Resultant Matrix Pyrocarbons in Carbon/Carbon Composites," Vol. 12, No. 3, CARBON.

J.H. Stichman (2312), "A Sonic Velometer," Vol. IM-23, No. 3, IEEE Transactions on INSTRUMENTATION AND MEASUREMENT.



SCRAP PAPER, tons and tons, is loaded for shipment by fork lift operator Joe Billings (4822). Since September '73, total of paper sold in recycle program is 151 tons. Both AEC and the Lovelace Foundation (on Base) participate in the Labs paper recycling program.

P.M. Richards (5132), "Electron-Spin Resonance in the Impurity-Doped Heisenberg Linear Chain  $(\text{CH}_3)_2\text{NMnCl}_2\cdot\text{Cu}$ ," Vol. 10, No. 3, PHYSICAL REVIEW B.

W.H. Smyrl (5831), "Mass Transfer of Minor Components in a Propagating Crack," Vol. 121, No. 8, JOURNAL OF THE ELECTROCHEMICAL SOCIETY.

H.J. Stein (5112), "Ge-Nitride, Ge-Oxide, and Ge-Oxynitride Formation by Ion Implantation," Vol. 121, No. 8, JOURNAL OF THE ELECTROCHEMICAL SOCIETY.

## ENERGY SAVINGS

COMPARED WITH USAGE IN BASE PERIOD-SEPT 1972 THRU AUG 1973  
CURRENT REPORTING PERIOD ENDING SEPT. '74

ELECTRICITY	BASE PERIOD 91,200 MWH	14.4% SAVED
	1974 78,036 MWH	

STEAM PLANT FUEL EQUIV. OIL	BASE PERIOD 228,669 BBL'S	15.0% SAVED
	1974 194,291 BBL'S	

VEHICLE MILES	BASE PERIOD 2,475,000 MI	17.4% SAVED
	1974 2,044,000 MI	

## 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.  
A maximum of 125 ads will be accepted for each issue.

**RULES**

1. Limit 20 words
2. One ad per issue per person
3. Must be submitted in writing
4. Use home telephone numbers
5. For Sandia Laboratories and AEC employees only
6. No commercial ads please
7. Include name and organization
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin

### MISCELLANEOUS

FORD Tot-Guard car seat, new, list price \$28, my price, \$20. Hatch, 296-2773.

BICYCLE infant seat, \$5; playpen, make offer. Shenk, 296-6015.

DUNE CAT, reinforced frame, asking \$400. Lucero, 243-7517.

SNOW tires, G-78-14, studded, glass belted, 5000 miles, Wards, \$12 ea. Leisher, 281-5258.

SNOW tires, 8:25- 14 on 5-hole rims, \$25 for 2; 7:00-15 snow tires, \$15 for 2. Copeland, 344-1133.

TWO work benches, Formica tops, 1 has sink; 1 pair alum. clothesline poles w/wire. Eden, 266-7456.

VIOLIN, full size, high quality. Moss, 298-2643.

TWIN size mattress & box spring. Peterson, 256-7514.

KITCHEN dinette set, 30x40, wood grain plastic table, plus 8" leaf, 4 chairs, \$40. Troum, 292-1783.

VITAMASTER home gym equipment: roller, belt & bike, purchase as group or singly. Devor, 293-6710.

CATALINA amplifier, AM/FM, 8-track, 2 speakers, MGA 8-track tape deck, MGA 4-sp. turntable, dust cover, \$175. Daut, 255-2529.

PALOMINO gelding, AQHA-PHBA registered, work or show, youth or adult, \$1000. Clem, 296-5204.

GETZEN 300 series trumpet w/new case, \$200; Swift microscope w/case, model No. SST w/built-in substage condenser, N.A.O.65, \$150. Villa, 298-0435.

TWO mattresses, box spring, attachable legs, twin size, both for \$150; other items also. Valerio, 345-2173.

385 ROMAN bricks, cloud autumn in color, \$50. Gatto, 298-8493.

PONY, saddle, bridle & blanket, \$80; camper, 1/2-cabover, sleeps 4, \$350; goats, nanny & 6 mo. old billy, \$25 ea. Morrison, 877-7425.

MOTORCYCLE helmet, \$12. White, 299-6411.

FILLY, Wammy Cat & Silver Skip breeding, \$300 or best offer. Baca, 864-8331.

SHERIDAN silver streak 5mm air rifle w/250 pellets, \$20. Roth, 877-4997.

WILL sacrifice \$3000 equity, '72 Henslee mobile home, 14x72, 2 full baths, many extras, 4 Hills Mobile Park. Johnson, 296-7210.

TWO almost new snow tires, size 750-16, mounted on Ford 3 4-ton pickup wheels, \$65. Falacy, 344-9548.

SINGER sewing machine, portable w/case, straight stitch, \$60. Neiswander, 293-0694.

PUREBRED English Springer Spaniel puppies, AKC registered, excellent hunters & family companions, liver & white color. Barth, 345-0172.

'68 CHILDCRAFT, by World Book, deluxe binding, \$60. Lefever, 298-4091.

8 FT. cab-over homemade camper, propane hot plate & space heater, pressurized water tank, Travel Queen, jacks, \$200. Shock, 877-3728.

CRIB mattress, \$5; baby chair, \$3; skis, Skitique, 180cm, \$40, Head, 190cm, \$30; wide angle lens, 28mm f2.8, \$40. Hardesty, 294-3430.

AUSTRALIAN shepherds, 7 wks.

old, all puppies are blue eyed, 2 male, 3 females left. Wladika, 255-9166 evenings.

GE washer, w/mini basket, used. Bland, 265-6286.

MODEL 37 Featherlight Ithaca 16 ga. shotgun, \$110. Liguori, 256-3613.

DISHWASHER, portable Frigidaire Imperial, white, wood grain top, \$110; child's electric Ride-On car, forward & reverse gears, \$15. McIntire, 299-5791.

FREE clothesline poles and cable. You dig. Graham, 293-8823.

### TRANSPORTATION

'62 CHEVY, 4-dr., std. trans., 6-cyl., AC, blue w/white top, \$375. Caskey, 294-3218.

'72 PONTIAC Firebird Formula 400, has everything. Braasch, 268-8416.

'64 RAMBLER, needs clutch & battery, \$90. Sanchez, 864-8494.

'70 HONDA, CL-70, street transportation, blue book priced \$125, recent valve overhaul, 80-90 miles per gal. McEwen, 268-1440.

'72 SUZUKI 750, liquid cooled, \$1095. Jordan, 255-7000.

'71 FORD 3/4-ton camper special, 390 V8, AC, full power, AT, approx. 28,000 miles; '71 Cavalier 8-1/2 ft. camper, \$4100. Wempe, 281-5260.

'72 CHEV. Vega GT, 4-sp. hatchback, \$1750. Baczek, 255-3429.

'58 VW BUGGY, got all the parts, you rebuild, 36 hp engine, 32 mpg. Chacon, 294-0065.

BICYCLE, boy's 20" Schwinn, \$50. Siska, 298-5756.

'62 FORD station wagon, R&H, PB, PS, 390 cu. in., \$150 or best offer. Tipping, 296-3492.

CHASSIS mount camper, Chev. 1-ton, 5-sp., self-contained, 3 air conditioners, duals, 57-1/2 gal. tanks, switchable

batteries, 42,000 mi., \$3900. Tollison, 298-9360.

'62 PLYMOUTH station wgn., std., 1 owner, \$400. Peckumn, 256-3363.

'66 VW squareback, new muffler, nearly new brakes, radial tires, \$690. Clauser, 296-1948.

'74 YAMAHA, Enduro 360, 3100 miles, Buddy seat & rack. Leiker, 298-1090 after 5.

BIKES, matched his & hers, 26", 3-sp. Gray, 265-1883.

### REAL ESTATE

BLOCK OF 4 acres, near Tramway & Bellamah Development, \$6500 per acre when purchased as a block. Wolowicz, 298-0434.

TWO lots Baca Grande Colorado, 3/4 acre, \$3950; 3 acres, \$7300, well below list price. Palmer, 296-1028 after 5.

\$1000 DOWN, will consider trade, new 2-bdr. Townhouse, balcony, carpeted throughout, appliances, pool, garage, 240 PITI. Reynolds, 299-5157.

### FOR RENT

AVAILABLE Nov. 1, 3-bdr., bath & 3/4, unfurnished, fp, garage, landscaped, covered patio, \$220/mo., water paid. Brin, 281-3834.

MOBILE home, 12x60', 10 mo. old, furnished/unfurnished, 6 miles from KAFB, 2-bdr., storage shed, \$150/mo., \$50 deposit, utilities paid except gas. McCampbell, 292-2762.

3-BDR. home, Winrock area, couples preferred. Schwoebel, 298-4295.

NEW 3-bdr. furnished house, Volcano Cliffs, available from Dec. 15, '74 to Aug. 15, '75, \$250/mo. plus utilities. Quigley, 277-5238.

### WANTED

PORT-A-CRIB (folding baby

crib). Hughey, 265-2190.

INFORMATION on Lake Obregon, South of Guaymas & other bass fishing lakes south of Nogales. Westman, 255-6048.

RIDE from 704 Tomasita, NE to the vicinity of Bldg. 806. Richardson, 294-0568.

USED band saw, 10 or 12 inches. Rex, 299-6264.

LP or gas operated refrig. for use in a cabin. Have electric refrig. or set of 5 steel belted Sears 205-14 tires to trade. Cover, 268-0921.

JOBs by Sandia retirees who repair autos, do hauling & yardwork, fix watches, refinish furniture, type, & carpenter. Review skills file in Lab News office, Bldg. 832.

URGENTLY need for group home for retarded citizens: pots, pans, dishes, furniture or what have you that's usable. Albq. Assn. For Ret. Citizens, 256-3613.

PANEL type wall heater, 15000 BTU or more. Liguori, 256-3613.

WINDSHIELD & hood latches for '58 TR-3. Desperate! Kepler, 298-5652.

LARGE windows w/frames, steel casement, jalousie or whatever. Bauhs, 281-3497.

USED cross-country skis for 150-lb. person. Roth, 877-4997.

### LOST AND FOUND

LOST — 3 keys on brass ring; man's gold Elgin watch w/gold band; long black windbreaker, (London Mist); 5 keys on small ring hook; man's Rx yellow large rim brow piece sunglasses; man's bi-focal, dark safety sunglasses; Nalco sign, fits on side of car. LOST AND FOUND, tel. 264-2757, Bldg. 832.

FOUND — 2 keys on safety pin; Sears unbreakable thermos. LOST AND FOUND, tel. 264-2757, Bldg. 832.

FRIDAY	SATURDAY
25 — HAPPY HOUR ROAST ROUND OF BEEF Adults \$2.95 Under 12 1.95 Glad Rags on Stage COUNTRY SATISFACTION	26 — SOUL SESSION 8:30 - 12:30 TESS Harvey Wallbanger Night Members Free Guests \$1
1 — HAPPY HOUR NEW ENGLAND SEAFOOD Adults \$2.75 Under 12 1.75 Fashion Show SHALAKO	2 — FAMILY VAUDEVILLE BACA FAMILY BAND The Horse in the Gray Flannel Suit Food at 6 Show at 7

**MAKE** — the fashion scene bright. Get enlightened and inspired at the Fall and Holiday Fashion Show Nov. 1. Women's fashions from Arleen's, men's from Charles Williams, models from Flair, coordination by Rosario Ayers. Also on the Happy Hour agenda are New England seafood and the Shalako Country Swing Band.

**SOMEONE** — called the Bac Family Band an Explosive Population. They are — in size and in talent. Almost a dozen kids from 6 to 16, each with the kind of musical versatility that makes you sorry you didn't practice piccolo more diligently. The Band is just part of Family Vaudeville Nov. 2; *The Horse in the Gray Flannel Suit* (with button-down collar?) is the other. Sandwiches available.

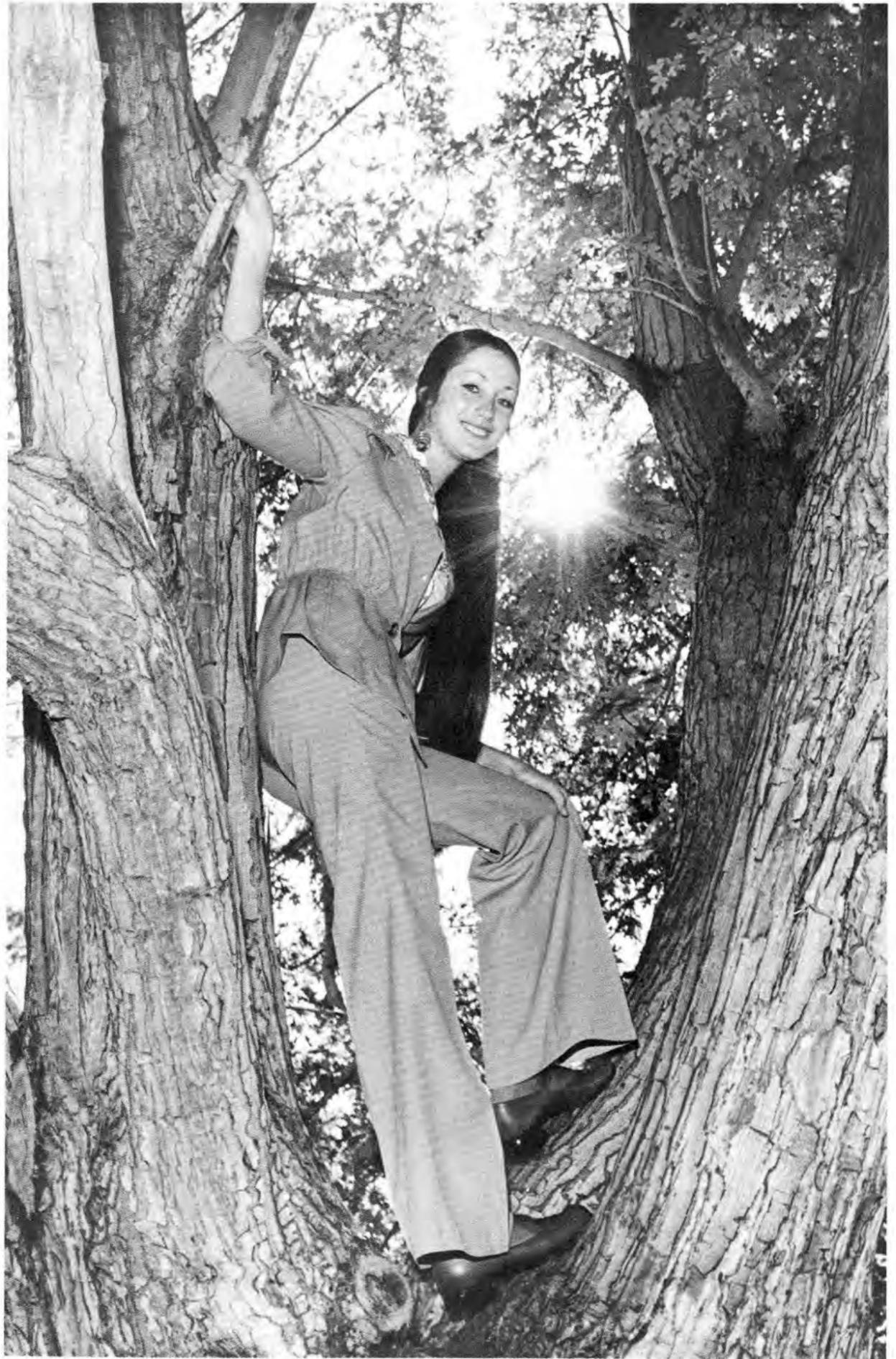
**VERY** — good idea from the Wolfpack: hot buttered rum at the Club after the Aggie game Nov. 2. All Wolfpackers and other C-Clubbers are invited.

**HAPPY** — Halloween! Your kids are assured of a delightfully terrified evening (safe too) if you bring them to the Club for movies, games, and the fantastic Haunted House. Prizes for best costumes. 6:30 on the 31st. Free to members but members only.

**TODAY** — at Happy Hour you'll find Roast Beef, Glad Rags, Country Satisfaction, and Mr. Freebee.

**LOSE** — your inhibitions, forget your cares. Join the Soul Session crowd tomorrow night — and meet Harvey Wallbanger (a memorable experience in itself). Music by Tess and Her All-Girl Band.

**YOUR** — big bash for November is the



AUTUMN LEAVES, old tree, and Michelle Sandoval. She and several others will model fall fashions at the Club during Happy Hour Nov. 1.



Wild West Barbeque on the 16th. BBQ spareribs, BBQ chicken, pinto beans, and more. Four turkeys get raffled, and the Wagonwheel Square Dancers get exhibited. \$4.50 for members, \$5.50 for guests, Nov. 9 for tickets.

**WALLET** — stays fat even after one of the Club's vacation cruises. Deadline for the Carribean trip is Oct. 29, for the Mexico City trip Nov. 8. Or wait for the Greece-Mediterranean trip next spring.

MORE INFO — 265-6791.

## CUBE Symposium Held at LASL

Computer Use By Engineers (CUBE) is the subject of a symposium now underway at the Lawrence Livermore Laboratory and attended by representatives from LLL, LBL, LASL and Sandia. Purpose is to exchange information on the variety of ways that engineers can use computers to advance engineering technology.

From Sandia Laboratories, members of the technical program committee include Larry Bertholf, Gino Carli, Ron Detry, Charles Hoyle, James Rogers, and Walt Von Riesemann. Over 30 of the 79 papers being presented are Sandia-authored.

CUBE is the first symposium of its type to be held by the four Laboratories.

