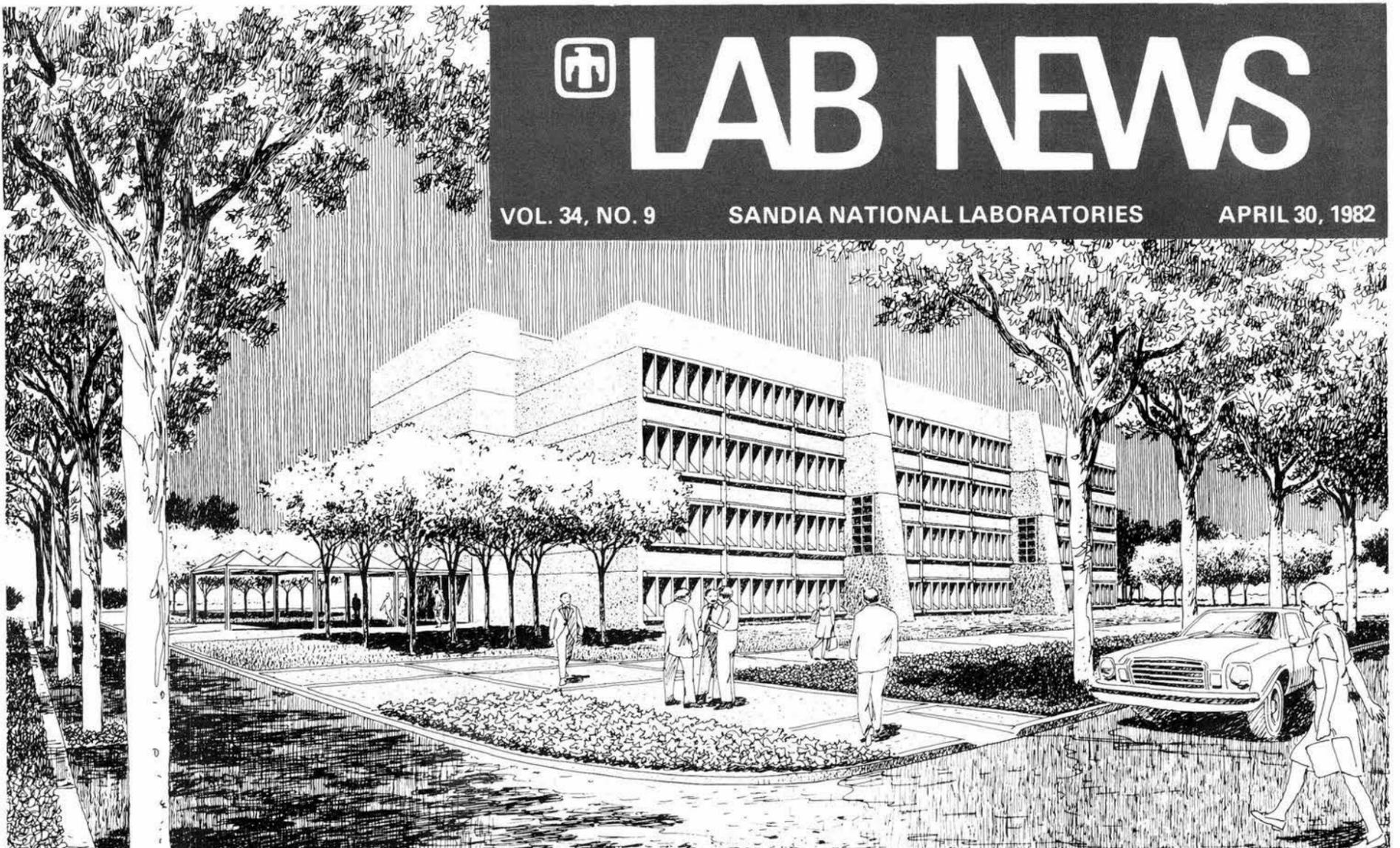




FIRST ELECTRIC POWER—A field of giant heliostats reflects the sun's rays to Solar One's boiler/receiver atop a 300-ft. tower to produce super-heated steam

and operate a turbine generator on the ground below. Additional photos and story on Page Eight.



# LAB NEWS

VOL. 34, NO. 9

SANDIA NATIONAL LABORATORIES

APRIL 30, 1982

SANDIA'S NEW \$12.2-million Energy Technology Laboratory will provide office and laboratory space for about 500 employees. The four-story building will contain 144,000 square feet, including a full basement, and will incorporate passive solar heating and use solar collectors to produce hot water. The

Energy Technology Laboratory is the first structure in a three-building complex scheduled for completion in the fall of 1985. See groundbreaking photos on Page Three.

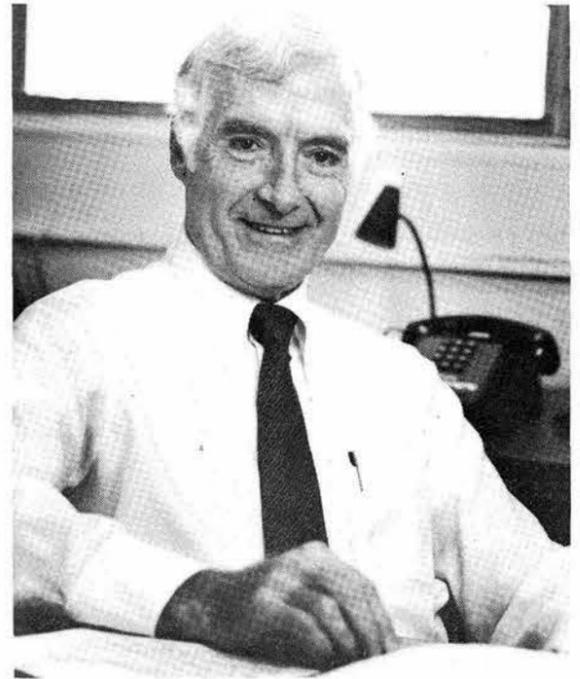
# Antojitos

Communications Central--After five years as a LAB NEWS writer and one month (almost) as editor, I should no longer be amazed at the versatility of Sandians. But Sandians are an active bunch--on and off the job. A curious bunch too, and by that I mean nothing pejorative--we're full of curiosity. LAB NEWS serves, more or less by default, as the clearinghouse for all manner of questions from inside the Labs and out: Who broke ground for the solar facility on the day it rained? (Senator Montoya in February 1975.) Who invented the ultralight Eagle, the subject of a colloquium? (Larry Newman of Double Eagle fame.) Why are the flags at half-mast again? (Call the Security desk lieutenant.) Why can't I call my car a creampuff in my ad? (We hate subjectives, and we'd be happy to refund every cent you paid to run the ad.) What impresses me sometimes is not that we do such a magnificent job on the paper; it's that we find time to do our job at all.

But, generally, we love it--keep those cards and letters coming, folks . . .

\* \* \*

Amar y saber no puede ser. (It's impossible to love and be wise at the same time.) BH



**Hank Willis New**  
3100 Director

Hank Willis, manager of Public Affairs and Employee Communications Department 3160, has been named Director of Information Services 3100, effective May 1. He succeeds Ken Smith who is retiring after 30 years at Sandia. Ken has been Sandia's Director of Personnel or Information Director for 21 years.

Since 1978, Hank has been a member of Management Staff 400 where he was Sandia's liaison in Washington, D.C., as well as supervising editor of *Sandia Technology* and *Sandia Weapon Review*. Last December he was named to head the public affairs department.

Joining Sandia in 1949, Hank was promoted to supervisor of a drafting division the next year. Later he headed Technical Information Division and Weapons Development Planning and Scheduling Division. He was promoted in 1961 to manager of Security Standards and Development Department and, subsequently, headed Systems Programming Department and Organization and Manpower Development Department.

Hank earned his BS in business administration from NMSU. He served three years during WWII on active status with the USNR, and retired as a USNR Commander in 1972. During his career at Sandia, Hank has also served the community in civic and educational affairs. He was president of the Albuquerque Board of Education for six years, a member of the Urban Observatory Board, a board member and president of the YMCA, a member of the Albuquerque Kiwanis Club and, since 1974, has been on the board of directors of the Rio Grande Valley Bank. Currently, Hank is working with Senator Schmitt and the Association of Commerce and Industry to present the New Mexico Technology Exchange Conference which will be held in the city in September.

He describes himself as a fitness buff and lives up to the description. Hank has built several additions to his home in the NE heights and enjoys working on his home and garden. He and his wife Bernice have a daughter and two sons, and five grandchildren. Their daughter Diane lives in Virginia, John lives in California, and Rick in Farmington.

## Take Note

An award-winning dramatization of the life and career of the Manhattan Project's J. Robert Oppenheimer will begin on KNME-TV on May 11, with six more one-hour segments on the following Tuesday nights. The series was filmed in the US (at Camp Carson, Colorado, because the original lab at Los Alamos no longer exists) and in Britain, where it was voted Best Drama Series in 1981.

\* \* \*

UNM's Mechanical Engineering Department and the student section of ASME announce a seminar, "Some Physics and Chemistry of Explosives," led by Selma Goldstein of Los Alamos today at 2 p.m. It's at UNM's ME building, room 218.

\* \* \*

## Savings Bond Drive Set

The 1982 Sandia Labs Savings Bond campaign is scheduled for May 17-21. This year's Bond Committee is headed by Morgan Kramm (1730) who is aiming at a Labs-wide goal of 95% participation. Current enrollment is 88.5%. Another of this year's goals is to increase the allotment of one out of every two employees already participating.

The 8th Annual Plasma Technology Seminar, sponsored by the Tegal Corporation, takes place May 24 in Palo Alto. Emphasis is on plasma applications in the semiconductor industry. Info from Zoe Zuber, Tegal Corp, 11 Digital Drive, Novato, CA 94947.

\* \* \*

Color me green. Sanada Woman's Club will meet May 11 at the NCO Club East. Speaker will be Antoinette Malizzo, personal color and style consultant. Social time is 12:30, luncheon at 1, meeting at 1:30. Reservations with Joan Cilke, 296-3665, by May 5.

\* \* \*

Sanado Art Group holds its annual Mother's Day Art Show at the north end of Winrock Mall on May 5-8 from 10 a.m. to 9 p.m. Along with the drawings and paintings in a variety of media will be demonstrations by Betty Reuscher, May 5, 5-6 p.m.; Freida Johnson, May 6, 3-4 p.m.; and Ann Olson, May 7, 2-3 p.m.

 **LAB NEWS**

Published Fortnightly on Fridays

**SANDIA NATIONAL LABORATORIES**

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Editorial Offices in Albuquerque, 87185  
Phone 505/844-1053 FTS 844-1053  
In Livermore 415/422-2447 FTS 532-2447

BRUCE HAWKINSON, Editor  
DON GRAHAM, Assistant Editor  
CARL MORA, NORMA TAYLOR, writers  
LOUIS ERNE, photographer  
GERSE MARTINEZ, assistant  
BARRY SCHRADER reports Livermore

## Take Note

Shutters open May 6-9 on a display of photographs sponsored by Images photography school at 1500 Indian School NE. Free admission, refreshments. Call 243-0484 for hours, other info.

\* \* \*

Spring cleaning at a standstill because your place is saturated with Stuff? Sell it at the flea market sponsored by the PTA at Gov. Bent School, 3901 Woodford NE, tomorrow from 9 to 3. Your \$4 rental fee goes to PTA projects. Info at 884-8567.

\* \* \*

Experienced parents are needed by Parentcraft, a non-profit parent education agency, to serve as volunteer group leaders. The leaders offer a program of information and support to groups of first-time parents, receive free training in parent education and child health, have their babysitting fees reimbursed, and spend about four hours a week. More info at 256-1191.

\* \* \*

*Storyteller Figurines and Other Figurative Pottery* is the title of the May show at the Adobe Gallery in Old Town. Fifty potters from 11 pueblos will be represented by over 200 pieces of figurative pottery. Details and gallery hours from 243-8485.

\* \* \*

Easel come, easel go. The New Mexico Watercolor Society will present *La Primavera*, an open competitive show, from May 3 to June 1 at the Main Branch of the Albuquerque Public Library. The show is open to all New Mexico watercolorists and society members. Jurors will be Tom Hill and Cal Dunn of the American Watercolor Society. Prospectuses are available at the main desk of the Albuquerque Public Library, Main Branch, and California Art Supply stores. More information from Pat Jackson, 265-4562.

\* \* \*

Elsewhere in this issue is a photo of three retirees, Ken Smith (3100), Mollie Miller (3321), and Vern Henning (3543) who is going off to test the validity of his own retirement counseling. All three joined the Personnel Division at Sandia within a year of each other and, collectively, have 92 years on-roll.

\* \* \*

Retiring this week and not shown in LAB NEWS photos are June Christy (4000), Geraldine Wright (2426), Peter Cook (3741), Bill Leslie (2515), and Otmar Stuetzer (2362).

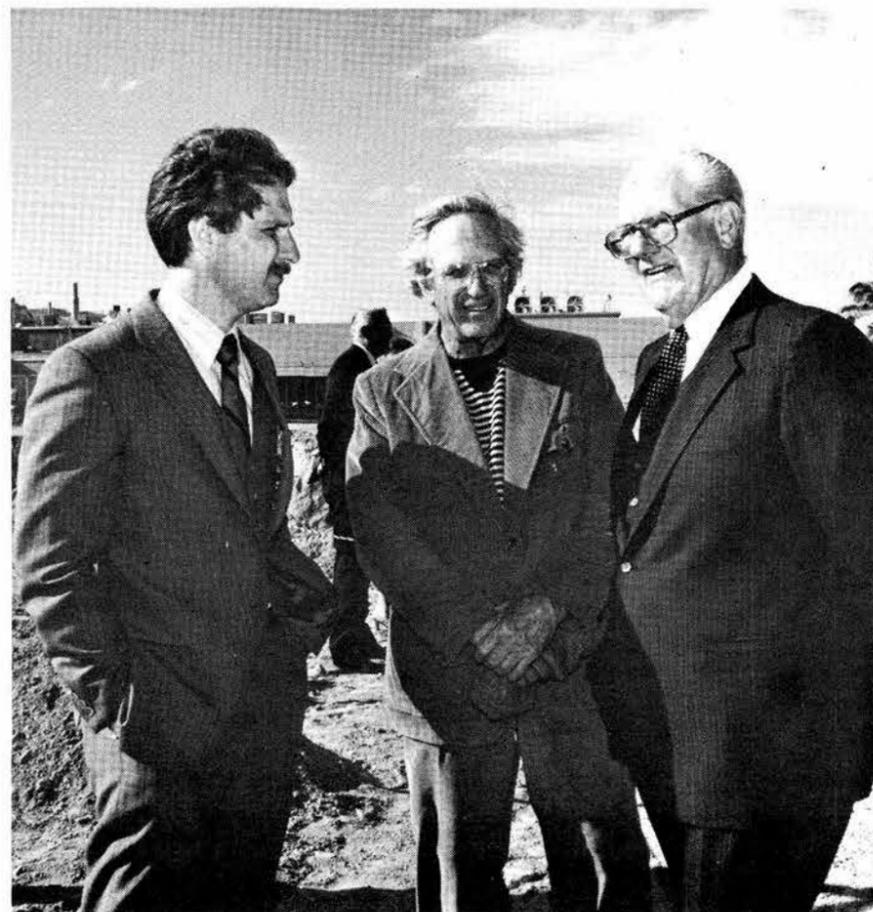
\* \* \*

Lil Katzenstein (3421) was elected Woman of the Year by the Charter Chapter of the American Business Women's Association at its April meeting. Lil has served as president and as chairman of the publicity, education, and hospitality committees. She will represent the chapter at the national ABWA conference in New Orleans in October.



**GROUNDBREAKERS ALL**—Speaking to the crowd before manning their shovels on April 17 were (l to r) Ray Romatowski (manager of DOE/ALO), Senator Pete Domenici, Senator Jack Schmitt, Jean Lujan (filling in for her husband, Rep. Manuel Lujan, who was recovering from an appendectomy), Rep. Joe Skeen, and Sandia President George Dacey. New Mexico's congressional delegation played key roles in securing the funding for the \$17.6 million complex. The crowd included Tim Shea, a retired executive vice-president at Sandia.

## Congressmen Here for Groundbreaking



**ARCHITECT** for the complex is the firm of Flatow, Moore, Bryan and Associates. On site with President Dacey are Jon Moore, son of firm principal Jason Moore, and firm president Max Flatow.

Move fast to listen well. May 14 is the cutoff date for a 42 percent discount in season tickets for the June Music Festival's 41st annual chamber music festival in early June. Among the artists featured will be the Guarneri String Quartet. For complete listings of programs and ticket prices, call or write the Festival in care of NMSO, Box 769, Albuquerque 87103, 842-8565.

The Three R's are passe. It's now R, W, and C—Reading, Writing and Computation. That's the word from the Coronado Academy, a new private school for grades 4-8 that opens this fall. Including an after-school activities program, the school day will run until 4:30 p.m. Headmaster is Anthony Pino. Phone is 881-9300.

## Sandia Helps Host International Uranium Meeting

Sandia Labs is one of the sponsors of an International Symposium on Management of Waste from Uranium Mining and Milling scheduled May 10-14 at the Albuquerque Hilton Inn. More than 200 delegates from 23 countries are expected to attend, according to Harold Rarrick of Project Engineering Division 4772, symposium arrangements director.

The technical program will present reviews of the waste management programs of the US, Canada, Australia, France, Sweden, Italy and India. Three Sandians will present papers on specifics of DOE's Uranium Mill Tailings Remedial Action (UMTRA) project—Don Diego Gonzales (4731), Paul O'Brien (4772) and Harold Rarrick. From DOE/ALO, Mark Matthews and Richard Campbell will discuss the UMTRA project.

The technical papers will be simultaneously translated into English, French and Spanish during the presentations. The symposium program includes tours of uranium mill tailings and open pit uranium mines near Grants.

Other symposium sponsors are DOE, International Atomic Energy Agency and OECD Nuclear Energy Agency.

For further information, call Harold at 4-2652.

## Retired Sandian Returns From Peace Corps Duty

Retiree Gabby Gabaldon and his wife Pauline have returned to Albuquerque after completing a two-year volunteer assignment with the Peace Corps in Jamaica.

Gabby's work, as an instructor and coordinator, included design, construction and set-up of automotive, diesel, and general repair workshops. He initiated a program for auto repair training and modification of equipment to improve agricultural production. He also trained boys in metal work, welding, masonry and auto mechanics. Pauline worked with underprivileged young girls, teaching them homemaking skills. Pauline and Gabby also designed modifications for a vehicle/trailer to be used as a mobile clinic for the handicapped.

The Gabaldons are enthusiastic about the Peace Corps program. "It's an opportunity to travel, to really get to know people with different cultural backgrounds, and to use your own knowledge to help others," Gabby says.

Asked about future plans, Pauline replied, "We're going to stay home for a while and catch up with family and friends."

Added Gabby, "But I'm sure we'll accept another assignment. There are lots of places to see and people to meet."

Pauline and Gabby would be happy to discuss their Peace Corps experience with any interested retirees.



DORI MILLER (1543) and DAVID KELTON (1483-2)

## Supervisory Appointments

DORI MILLER to supervisor of Climatic, Centrifuge, and Devices Testing Division 1543, effective April 16.

Since coming to the Labs in 1978, Dori has worked primarily with vibration testing and as a project engineer on modal testing. She completed a brief assignment in the applied mechanics department, working with project groups as a consultant.

Dori did most of her undergraduate work at the University of Wyoming. She moved to New Mexico and received her BS and MS in ME from UNM. She is a member of ASME, and she enjoys tennis, alpine skiing and gardening. Dori and her husband Keith (5651) have two children and live in the south valley.

DAVID KELTON to supervisor of Numerical Control Parts Programming Section 1483-2, effective April 16.

David joined the Labs in 1970 as a machinist apprentice, completing the program in 1974 when he joined the programming group. He now supervises this newly created section. He has also completed his Technical Institute Equivalency studies and is currently attending UNM where he's working toward a degree in computer sciences. Before coming to Sandia, David received a diploma from T-VI in welding.

David enjoys biking, hiking and camping, and plays drums in a Western band. He lives in the NE heights.

## Speaker

G. R. Reif (2522), "In-Process Quality Detection of Friction Welds by Using Acoustic Emission (AE) Techniques," invited speaker, 63rd Annual American Welding Society Convention, Kansas City, April 25-30.

## Events Calendar

*April 30*—Free public concert, Albuquerque Boys Choir; 7:30 p.m., 1st United Methodist Church, 4th & Lead SW.

*May 1*—New Mexico Jazz Workshop presents the Leroy Jenkins Mixed Quartet, Woodward Hall, UNM, \$7.

*May 1*—"Astronomy Day '82," Four Seasons Motor Inn, 1-12 midnight, admission free.

*May 2*—"John Muir's High Sierra," a film covering four seasons in the Sierras, using quotations from Muir's journals to recreate his travels; 7 p.m., Woodward Hall, UNM.

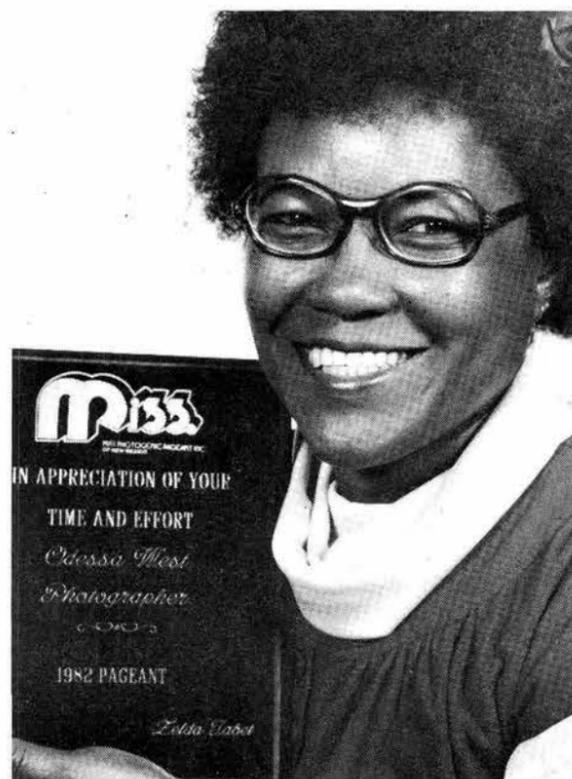
*May 5*—Lecture, "Origins of Southwest Weaving," 8 p.m., Maxwell Museum.

*May 7*—Lecture, "The Sky's the Limit," by Dr. Wayne Dyer (author of *Your Erroneous Zones*), 7:30 p.m., Kiva Auditorium, Convention Center, \$7.

*May 9*—NM Symphony Orchestra, 12th Annual Mothers' Day Concert, picnic facilities, box lunches available or bring your own, 2 p.m., Rio Grande Zoo.

*May 9-Sept. 11*—"Three Looms, One Land: Shared Horizons II," Southwest weaving: Navajo, Rio Grande, Saltillo exhibit, Wheelwright Museum, Santa Fe.

*May 13-14*—NM Symphony Orchestra, Chorus and Soloists, 8:15 p.m., Popejoy.



ODESSA WEST, a photprinter in Still Photo Services Section 3155-2, received this plaque of appreciation from the Miss Photogenic Pageant of New Mexico for her photographs of the contestants and layout of a special section of the program. Odessa took on the job to gain experience in photographing people in a crowd and under pressure.

## Women's Committee Organized

Gerda Krefft (3511) announces the formation of the Women's Program Advisory Committee. An extension of Gerda's own responsibilities as Women's Program Coordinator, the committee will offer advice to any woman who is seeking counseling regarding her career.

"The position of Women's Program Coordinator was created in 1972 by the Department of Labor," says Gerda. "It was made mandatory for companies doing business with the federal government. Sandia has had the position since then, and it has been filled by several staff women.

"I became interested and volunteered for the job because of my concern that some women may encounter problems when working in nontraditional fields. However, I'm just one person, and I felt that a committee could be more effective. After checking around at Bell Labs and other DOE laboratories, I found that many other companies have committees to assist the Women's Program Coordinator, and I suggested to management that we do the same."

Women at Sandia can contact the committee with questions or suggestions by calling the individual members. Union-represented women should continue to contact their union stewards or other officials on all union matters. The

### Astronomy Day '82

## The Sky's the Limit

Astronomy Day is well on its way to becoming a local tradition. Initiated last year by the Albuquerque Astronomers club, the sidereal kermess will feature NASA displays, an inflatable planetarium holding up to 40 people, discussions, slides and movies. Weather permitting, 17 telescopes will be set up for day and night observation.

Club members will be identifiable not only by their starry-eyed gaze, but also by dual nametags displaying their own names along with that of a famous astronomer on whom they'll be happy to expound, as well as any other aspect of astronomy. So if you want to know about Aristarchus, Ptolemy, or Kepler, come on down.

Astronomy Day will be held tomorrow, May 1, at the Four Seasons Motor Inn from 1 to 12 midnight. Admission is free.

- |               |  |
|---------------|--|
| 1-5 p.m.      | Inflatable planetarium<br>Daytime tracking of stars  |
| 1:30-5:30     | NASA presentations by<br>Angelo Cassaburri<br>(Johnson Space Center),<br>continuous (30-40 mins.<br>ea.) |
| 1-12 midnight | Slide shows, NASA films<br>and displays, lunar rock<br>samples, telescopes.                              |



NEWLY FORMED Women's Program Advisory Committee gets down to business. From the left, Gladys Rowe (3144), Linda Graham (2626), Terri Olascoaga (1759), Chairperson Gerda Krefft (3511), Edwina Kiro (4250), Ann Webb (1121), Elaine Bergeron (4425), and Jane Blasi (5821).

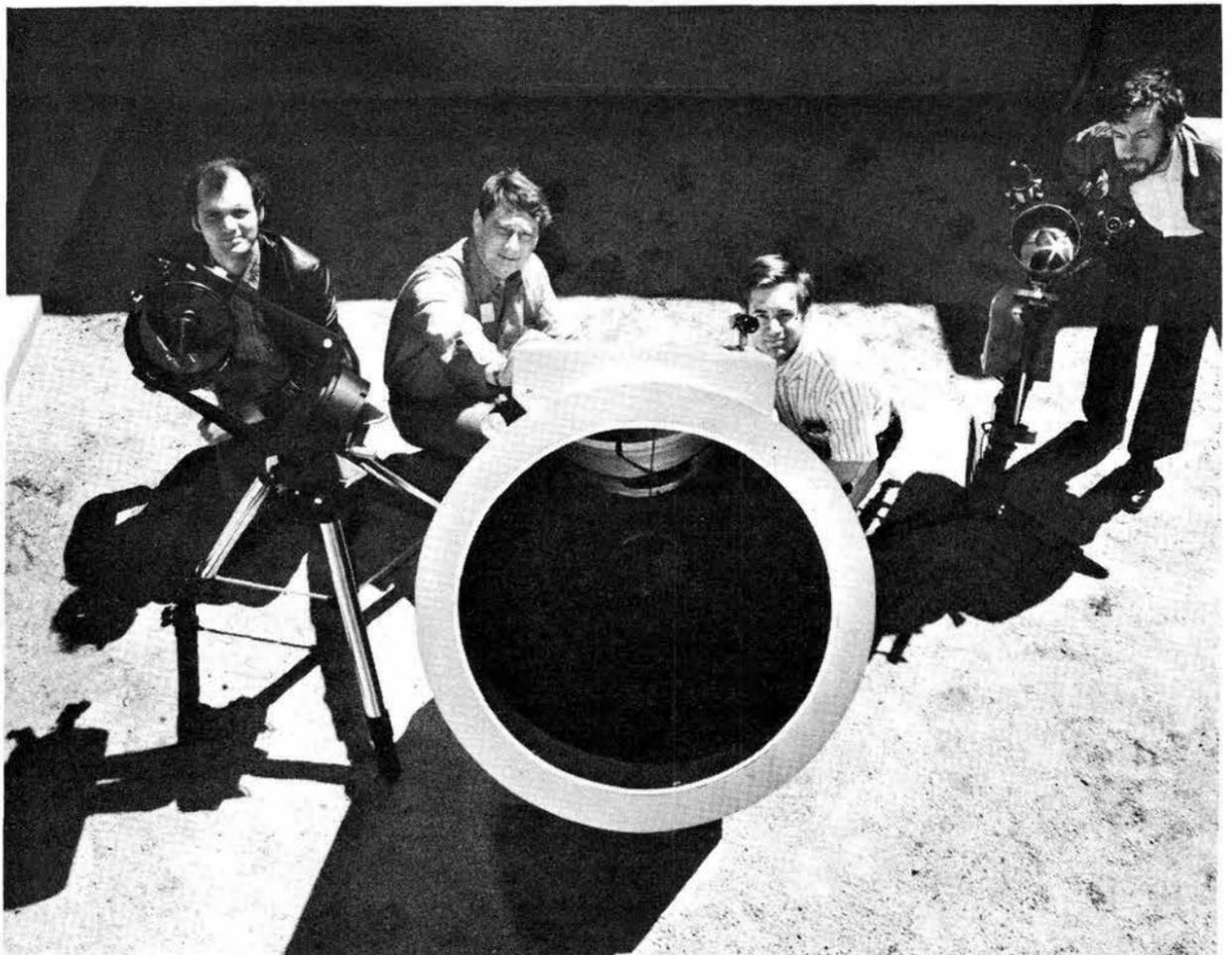
committee will also be involved in identifying qualified professional candidates for Sandia employment, and in outreach activities such as career days and mentor programs designed to motivate girls in mid and high school to embark on a technical career.

### **Congratulations**

Leonard (4413) and Patricia (5836) Duda, an adopted daughter, Pamela Elizabeth.

T. J. (DSP at Stanford) and Helen Baca, a son, Feb. 26.

Margie Mech (5822) and Fred Yost (5832), married in Albuquerque, April 17.



SETTING THEIR SIGHTS on Astronomy Day '82 are Albuquerque Astronomers club members (l to r) Bill Wampler (5111), Sam Myers (5111), Allan Lampson (AFWL), and Lou Baker (4247). Bill's telescope is an eight-inch Schmidt-Cassegrain, Allan's (the big baby in the center) is a 17 1/2-inch Dobsonian, and Lou's is a six-inch Newtonian.



EMERGENCY PREPAREDNESS DRILL, held April 20, was a rehearsal for a full-scale disaster at the Labs. A simulated explosion and fire in Bldg. 907, Area II, checked responses of KAFB firefighters and Sandia's security, medical, safety, plant engineering, and public info staffs. Here, one of ten simulated

casualties is rescued. Gunner Gunerson (3432), Emergency Preparedness Planner, pronounced the current exercise a success—"We're getting better all the time."

## Fitness Day '82



ALL THIS and more at the second annual Fitness Day at the Parade Ground on Friday, May 14, from noon to 1. (Participants get an extra half hour for lunch that day.) These photos come from last year. This year's event, sponsored by Sandia Friends of Health and calculated to lure you away from a lifetime of lethargy, includes: a 1½-mile walk/jog/run (not a race); instruction in aerobic dance, stretching exercises, and calculating your ideal pulse rate; music; free juices (bring your lunch); a drawing for one of a dozen Friends of Health T-shirts; and fun, sun, companionship.

A bus will leave Area III at 11:45; stop at Areas V and IV, then return at 1. The rest of you—walk!

Yes, spouses, dependents, and retirees are welcome, too. Attend, exercise, and enjoy!

## Fun & Games

*Corrales Run*—Eva Duran (5811) took second place in her category in the 10-km Corrales Run April 17. Her several detractors are asked to better that accomplishment before gibing.

\* \* \*

*Basketball*—The recent end-of-season basketball tournament for the Labs' Recreation Program saw Brenda Langkopf's women's team finish the season with a perfect 14-0 mark. In the men's competitive league, Kirk Racknow's regular season champs were defeated by Don Overmyer's wild bunch in the tournament. The same was true in the two-tiered recreational league as Jeff Reich's BI thinclads were downed in the finals by Paul LeFebre's B19 team. BII league was won by Steve Williams' vitamin B12 team which defeated Mario Ramirez' gang in the tourney finals.

\* \* \*

*From Vigas to Vegas*—Two Sandians, Louie Roybal (1471) and the LAB NEWS' resident pool shark, Gerse Martinez (3162), took top honors in the regional eight-ball tournament sponsored by Miller Lite last week. First place winner Louie won a trip to New York City back in '46 where he took second place on the national level as a boy, and he's been wearing his prize, a wristwatch, and practicing ever since. Each man received a certificate, a cash prize, and a trip to Las Vegas to compete in the nationals June 1.

\* \* \*

*Tennis*—Get in the swing with the Sandia Tennis Association (STA). One dollar membership dues to STA treasurer Dick Kavet (1713) makes you eligible for ladder match play (men's and women's singles, doubles, mixed doubles) plus lessons, clinics, and tournaments at nominal fees. Non-Sandians pay an extra \$7.75 to the C-Club since STA is a subsidized program for employees. STA president Max Sandoval has all the info.

## Fun & Games

**Whitewater Rafting**—If you've always had the urge to run the Colorado River on a raft but couldn't find the time or money to do it, substitute another river and consider your prayers answered. The Rio Grande offers some exciting whitewater thrills, and now you can partake in a one-day raft trip through the Rio Grande Gorge (near Taos). Professional river runners Bob Parker and Jack O'Neil will lead a group through on Friday, May 28th. Cost is \$50/person; maximum load is six persons. Contact Tom Lenz, Recreation Manager, on 4-8486 for signups and more information.

\* \* \*

**Canoeing Class**—Up the creek with a paddle is where you can be May 11, 15 and 16. A class designed to teach you the basic skills necessary to enjoy the sport of tandem canoeing will include an indoor pool session from 9 to 11 in the evening on May 11, and a full weekend of river work May 15-16 near Pilar, N.M., on the Rio Grande. Class is limited to 12. Cost is \$65/person. Again, sign up with Tom Lenz, 4-8486.

\* \* \*

**Biking, Backpacking, & Breathing**—The American Lung Association of New Mexico is sponsoring a 500-km Bike Trek (June 5-11), a 100-km Backpacking Trek (July 10-17), and a 40-km Backpacking Trek (Sept. 4-6) with trekkers obtaining sponsors (as in bikeathons and walkathons) to raise funds for the Association. Glen Kepler (5810) and Ron Malpass (1751) are on the steering committee. But if you and/or your family are interested in outdoor adventure, an inexpensive vacation, and helping a good cause, write ALA of NM, 216 Truman NE, 87108 (265-0732) for more info and an application form for the event you prefer.

\* \* \*

**Boogie Thin**—Mary Self's exercise-to-music class begins a new four-week session on May 3. Geared to the non-working spouse, the class meets at the East Base Gym from 12-12:30 on Mondays and Fridays and sets your feet tapping and your heart pumping. Call Mary quickly at 296-4137 for sign-up.

\* \* \*

**Bike Tour**—Join the NM Touring Society's roundtrip overnight tour to Coronado State Monument near Bernalillo on May 8-9. Leave from Popejoy; camp overnight at the Monument. \$2 sagwagon fee; optional \$3 for Saturday night picnic. More info from Carol Joiner, 881-9182, or Ron Malpass.

**Jump Rope**—Jump rope? Yep. If you can leap a lasso and have five friends, you can join Jump Rope for Heart, a three-hour event in which 6-60-year-old participants take turns jumping in teams. You'll secure donations for each minute your team will jump and, if you're good, earn prizes as well as cardiovascular conditioning. It's on Saturday, May 8, at the Spanish Village in the Fairgrounds. LAB NEWS has registration forms and more info.



HOWARD STEPHENS (4746) displays a sample of finely-ground coal and a beaker of liquid fuel produced in coal liquefaction experiments. Howard has developed a new method of evaluating catalyst performance for the liquefaction process.

## Catalyst Work Receives Award

The work of Howard Stephens of Process Research Division 4746 was honored recently at a meeting of the American Chemical Society, Division of Fuel Chemistry. His paper describing a method to evaluate catalysts for coal liquefaction received the R. H. Glenn award for best paper presented.

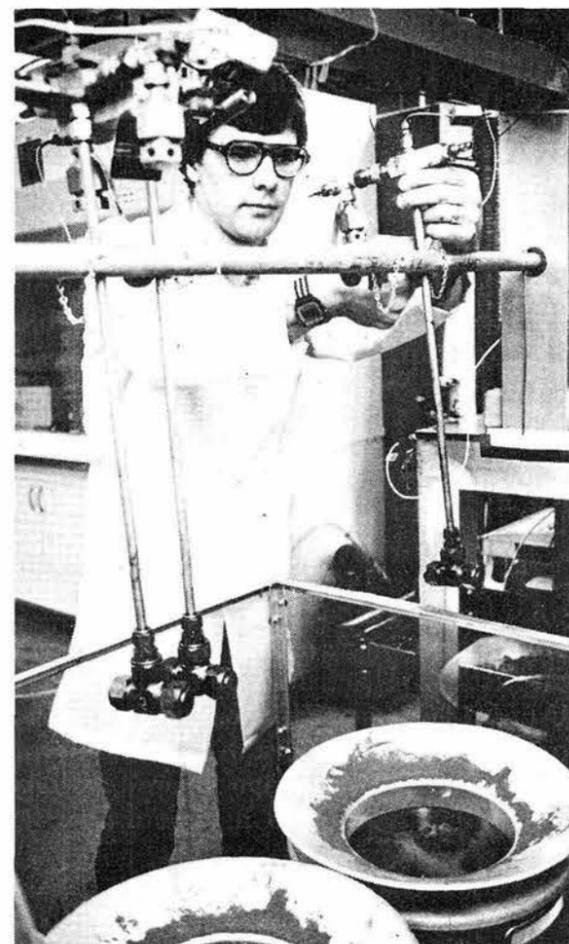
The paper discusses a method of laboratory testing and data analysis which isolates the hydrogen conversion and product/by-product yields due to catalyst action. This enables rapid testing and evaluation of various catalyst materials.

Direct coal liquefaction requires the heating of finely ground coal to high temperatures (400°C) under high pressures (2000 psi) in combination with a coal-derived solvent, a catalyst and a hydrogen in a reactor chamber.

The economic success of direct coal liquefaction processes depends on the amount of oil produced relative to unwanted by-products as well as the efficiency of hydrogen consumption—which can account for up to 30 percent of the process cost. Catalysts act to speed up conversion of coal to liquid fuels and improve product quality.

In the laboratory apparatus, precise amounts of coal, solvent, catalyst and hydrogen are placed in a small reactor (35cc volume), pressurized and immersed in an air-agitated container of hot (400°C) sand. Four experiments can be performed at the same time. Data acquisition is computer controlled, available in real time on CRT screen or paper printout.

At the end of an experiment, chemical analysis of the reaction mixture gives the amount of hydrogen used, oil, and waste hydrocarbon gases produced. Hydrogen efficiency is calculated as a percentage ratio of hydrogen in hydrocarbon gases to total hydrogen consumed, and is a measure of catalyst selectivity.



RICH KOTTENSTETTE (4746) prepares reactor chambers (35cc volume) containing coal, coal solvent, a catalyst material and high pressure hydrogen for insertion into hot (400°C) sand in coal liquefaction experiment.

"Numerous catalyst materials are available," Howard says, "some only marginally better than others. Our testing method makes the search for a superior catalyst simpler."

Howard's method of catalyst evaluation also offers potential for correlation with coal liquefaction plant processing data. It offers a means for improving product yields under plant processing conditions through low-cost, small-scale laboratory studies.

Rich Kottenstette (4746) assisted in the catalyst experiments.

# Turbine Roll at Solar One

The sun bore down on 1818 heliostats focused on the central receiver tower, steam was produced which turned the turbine at the Solar One plant in the Mojave Desert this month, and the world's largest solar power facility produced its first net electrical output.

"This is the culmination of more than five years of research and development on the part of Sandia National Labs and several other groups around the country, quite a milestone in America's search for alternate means of energy production to meet our needs into the next century," said Al Skinrood, supervisor of Systems Evaluation Division 8452.

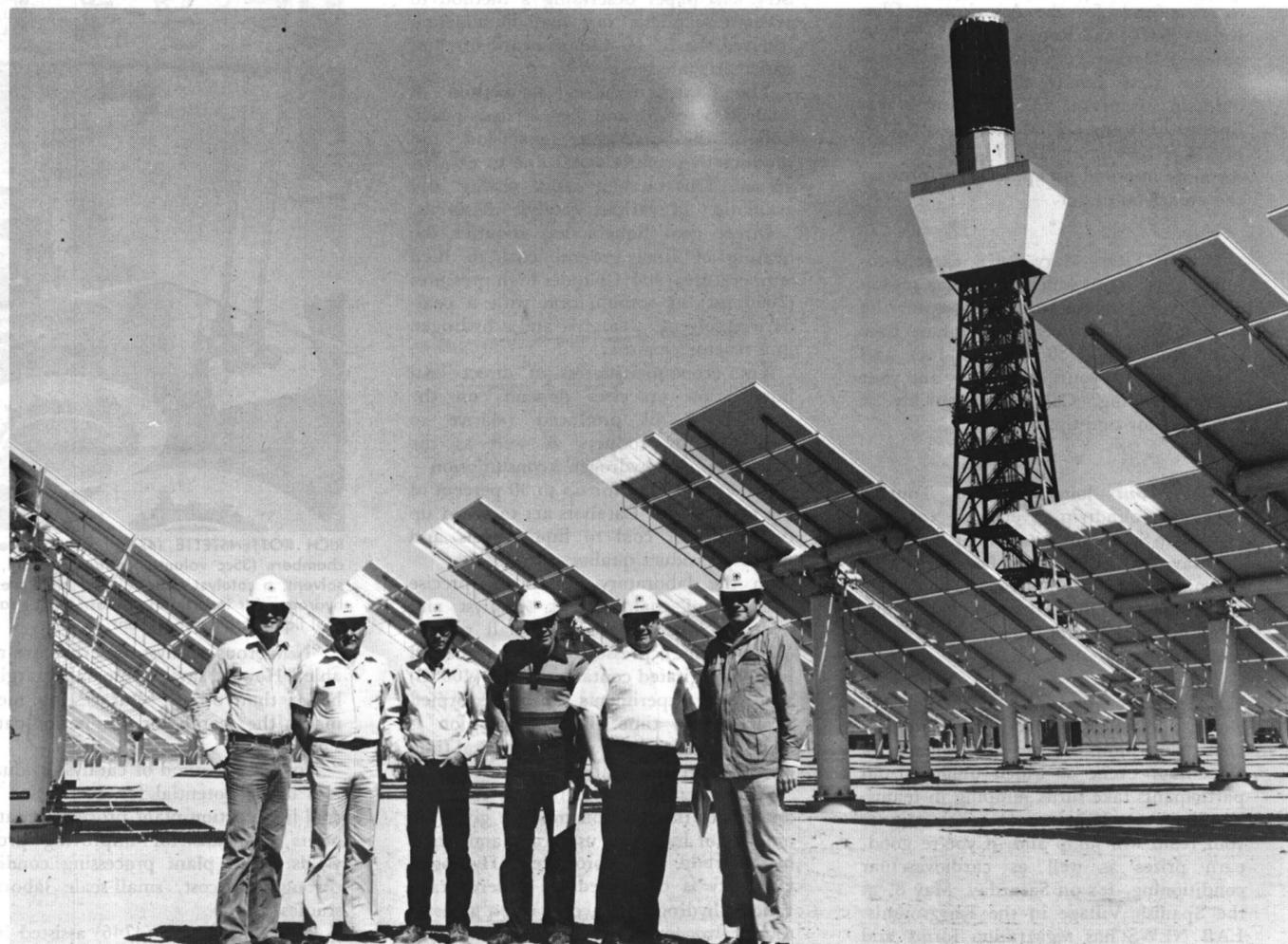
In announcing the first turbine roll, Secretary of Energy James B. Edwards said, "The technology of concentrating the sun's rays to generate high temperatures has been known for many years, but it was not until recent escalation of the price of fuel that it became potentially economically feasible to use this technology for the generation of electricity. The DOE has funded the unique solar parts of the plant. From the operation of this facility, data will be gathered [and evaluated by Sandia] on which future decisions by the private sector may be based when they consider using the energy of sunlight to replace conventional fuels."

The first electricity generated from the

\$141 million pilot plant this month went to the Southern California Edison Company grid from the facility located just outside Daggett, Calif. The plant will continue startup tests for several months before achieving full-rated power of 10 megawatts. It will eventually be able to provide energy needs for the equivalent of 6000 customers of Edison.

Sandia Livermore has been designated as the technical manager of the project during the startup and experimental test phase, taking over from the DOE San Francisco Operations Project Office which headed the construction phase. Teams from Sandia Livermore will oversee the plant through at least July 1984. Those on site along with project coordinator Jim Bartel include Al Baker, Scott Faas, Bill Rorke, Jim Smith and Duncan Tanner (all 8452). Bartell explains that they will be collecting operations and maintenance data and instituting automatic controls with the goal of having one or two operators able to run the entire plant.

Southern California Edison, a partner with DOE in the project, is the operator of Solar One, providing the site and all conventional generating equipment along with LA Water and Power Company. Solar One is constructed on 130 acres of Edison land adjacent to Edison's coal water generating plant in Daggett. Solar One's



SOLAR BROTHERS—The SNLL team at Solar One includes (l to r) Bill Rorke, Jim Smith, Scott Faas, Al Baker, Duncan Tanner, and leader Jim Bartel.



SANDIA  
LIVERMORE NEWS

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SANDIA NATIONAL LABORATORIES

APRIL 30, 1982

energy collection system consists of a large surface area exposed to the sun—1818 heliostats (occupying 80 acres), each heliostat with a surface area of 430 square feet—to reflect and concentrate adequate amounts of thermal energy onto the central receiver mounted atop a 310-foot tower.

The heat-receiving boiler panels on the tower shine brilliantly during operation and produce superheated steam which is piped to a turbine generator below. When fully operational the plant will produce 10 MW of power during an eight-hour period each day in the summer, four hours during the winter and up to 7 MW from its thermal storage system for about four hours after sundown. The storage tank contains 240,000 gallons of oil and 7200 tons of sand and rocks which serve as heat absorbers for use in creating steam during sunless periods.

The plant has instrumentation which is used to control the facility as well as diagnostic instrumentation to evaluate how well the plant is performing. Information can be displayed in real time and

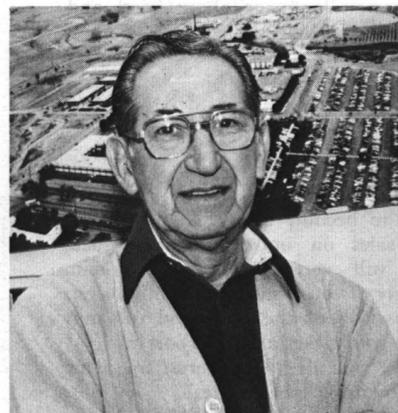
simultaneously recorded for analysis at a later time as well.

"Solar One's successful testing and operation will help support a determination to proceed with more advanced projects," according to Joe Reeves, project manager for Edison. "Studies are already under way for the possible design and construction of larger followup plants," he added. Operation of the plant achieves a national goal set in mid-1974 to have a pilot-scale thermal central receiver plant operating by the early '80s.

Nationwide interest in Solar One's development has increased dramatically since construction began in 1979. In addition to extensive news media coverage, more than 36,000 people have visited the project's information center on National Trails Highway nearby since it opened in 1980.

Major private sector contractors participating in the development of Solar One include three major aerospace firms—McDonnell Douglas, Rocketdyne and Martin Marietta—as well as Stearns-Roger, Townsend and Bottum and the University of Houston.

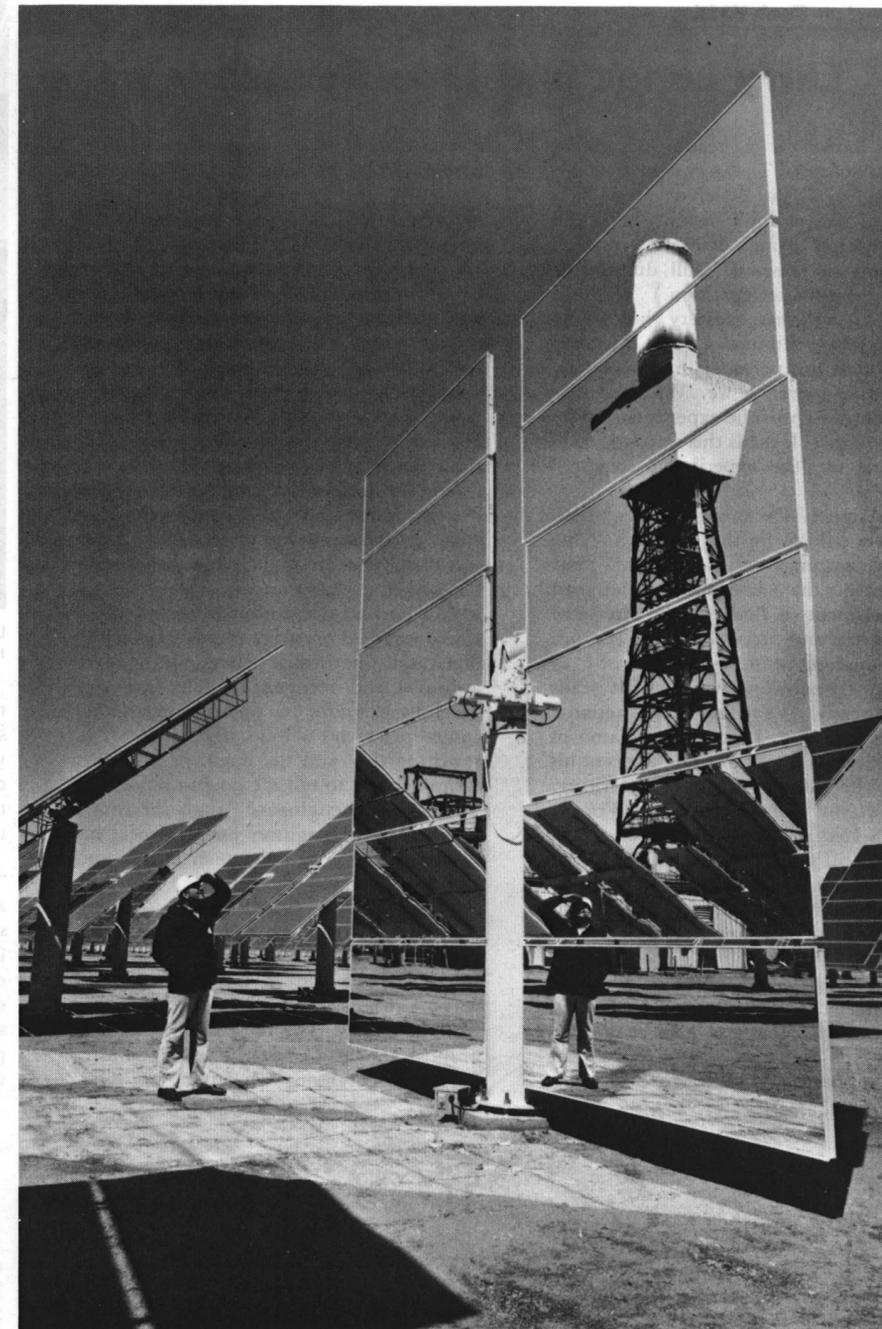
## Retiring



George Dawson - 8414



Joe Darginis - 8216



PLACED in a vertical position, one of Solar One's 1818 heliostats reflects the glowing boiler/receiver atop the tower as a plant operator indicates the scale of the 23-by-23-foot reflective surfaces. The world's largest solar-powered central-receiver demonstration project experienced "turbine roll" and generated its first electric power earlier this month.



DIRECTOR OF OPERATIONS Arlyn Blackwell (8200) greeted two Chabot College Valley Campus students who won 1982 Chabot Transfer Scholarships in science and engineering. They are Elizabeth Johnston and Tim Ornellas, both of Livermore. Elizabeth is majoring in chemical engineering and will transfer to UC Berkeley next fall. Tim is also a chemical engineering major and will be going to UC Davis next year. Both students have accepted summer employment in the Materials Department at SNLL.

## Larry Lopez Is a True Believer

Larry Lopez is a technical writing missionary of sorts. The essence of his Zeal, or Passion or Great Belief or Message is "technical papers don't have to be dull."

He indicates a stack of manuscripts on his desk. "Dull," he says. "Dull, dull, dull." (Note the emphatic repetition.)

"There's a great mystery here," he confides. "Who dunnit? I read this stuff and I find no personal pronouns, no I-persons, not even a we. Who did this work? Who designed the experiment? Who made the study? It reads this way—'a study was made' or 'the experiment consisted of . . .'"

Larry smiles. He smiles a lot. "Tech writers get paid to fix this," he says. "One of the first things we do is recast most sentences into the active voice—'I designed the experiment to find out the effects of temperature and stress on . . .' or 'we studied the long-term degradation of . . .' See the difference? Active voice. It reads better already. We've got some action."

In his own way, Larry is a dynamo of action. He has three technical papers of his own on the subject of technical writing: *Abbreviations for Technical Writers*, SAND78-1341, *Style Guide [Mechanical] for Technical Writers*, SAND78-0014, and *Who Dunnit? A Crash Course in Style for Sandia Authors*, SAND80-0530. Each has been reprinted, and another is in preparation.

The *Who Dunnit?* paper carries the basic message. The abstract reads, "This is a short course for the busy engineer-scientist who wants to write reports that meet minimum standards of modern tech-

nical writing. The text stresses some cardinal rules of good writing: personal pronouns, strong verbs, active voice, clear expression and avoidance of jargon and noun modifiers."

Larry started technical writing in the Navy. More than half of his 20 years and a half-dozen oversea assignments were spent as a communications and language specialist. Besides English, he speaks Spanish, French and German. After the Navy, Larry returned to his native New Mexico to earn a masters degree in history from UNM and to work on his PhD. He should finish the degree work this year. In the meantime, he's published articles in *New Mexico Historical Review*, short stories in several small magazines and a book, *Taos—A Historical Survey*.

"Authorship is the ultimate act of ego," Larry says. "Writers lay their work on the line and, naturally, they want some approval and recognition. The engineer carefully prepares his paper. Then along comes a tech writer who says, 'I've rewritten this' and the engineer is angry. 'Who are you to tell me how to report my work? I'm the engineer.' That's the whole point. He's the engineer and I respect his professionalism. I'm the tech writer and I'm a professional, too."

"Tech writing has changed," Larry continues. "A modern tech paper can be exciting—modern technology is exciting. Ideas can be told in a straightforward way—subject, action verb, object—without jargon. The data (charts, tables, graphs) can be carried in the appendix. For some reason—academic training,



LARRY LOPEZ (3151) spreads the word on technical writing.

modesty or peer pressure—engineers and scientists insist on writing in the passive voice, loading their work with jargon, and couching their conclusions in fence-sitting terms. This practice is 40 years behind the times.

"We have a responsibility," Larry says, "to Sandia. Every Sandia report should be a credit to the company. And we have a responsibility to the public for concise, easily understood reports. They don't have to be exciting, but they should always be interesting. Americans have great faith in science and technology. We owe them plain, honest language about good and valuable scientific work."

## feedback

*Q. I travel a lot for the Labs. Last week I flew roundtrip to Denver from Albuquerque, and the cost of the tickets was more than 100% greater than advertised economy rates. Last year I flew to Boston during the advertised rate of \$279 roundtrip anywhere in the country, but my tickets cost \$454. Since I was making the arrangements under the airline's rules for the cheaper fare, I called SATO and had them change to the cheaper fare.*

*Apparently, SATO is not in business to save the Labs money but instead is working for the airlines. Isn't this a conflict of interest? SATO will not book flights for Southwest Airlines and, consequently, the Labs misses out on all of the economy flights to Southwestern cities. Why is this costly arrangement allowed to continue?*

A. The people who make all official travel arrangements are Sandia employees, not SATO. It is at the time that you talk with Traffic that the chance of obtaining a special fare (class of service, specific flight,

or alternate carrier) occurs. SATO writes tickets per Traffic's orders. (SATO will also book personal trips for Sandia employees on a time-available basis. SATO employees are quite skilled at locating the most economical fares for which your trip qualifies.)

Whether official or personal travel, special fares are usually "capacity controlled"—only so many seats per flight can be sold at that rate. Special fares are usually applicable only to certain days, certain departure times, and/or certain lengths of stay as well. The moral is that airlines' advertising nowadays requires more than a cursory glance at prices; read the small print restrictions.

Contrary to your assertion, SATO does save the Labs money. A report by the Air Traffic Conference shows that Traffic and SATO have saved the Labs more than \$587,000 in the first quarter of FY82 by using special fares and routings.

Finally, Sandia routinely books flights on Southwest; however, that carrier will not "interline ticket" with other carriers, so all passengers must buy their tickets directly from Southwest. If Southwest

decides to become an ATA carrier and honor sales on universal ticket stock, SATO will certainly represent them. Currently, if you wish to travel Southwest, Traffic will book the space and you may pick up your ticket at the airport.

Thank you for your interest in saving money by using special fares.

J. C. Strassel—3700

*Q. People walking along the west side of 12th Street east of the Sandia cafeteria are forced into the street, if they are to move comfortably, because of the decorative cinders filling that area.*

*Why not a sidewalk along that stretch?*

A. Pedestrians can walk on an existing paved area on the west side of 12th Street by walking next to the cafeteria. In fact, the walkway along the east side of the cafeteria is wide and well away from the vehicular traffic. Of course, the parking lot north of the cafeteria is paved all the way to the back of the curb and, therefore, provides an adequate sidewalk.

R. W. Hunnicutt—3600

## Sandia Research Explores Alternatives

Several recent Sandia studies, funded by DOE, reveal the painstaking care exercised by scientists seeking answers leading to the permanent disposal of nuclear waste.

The search is not new to Sandia. As early as 1974 Bob Dosch (5843) conceived the basic method for converting liquid radioactive waste into a titanate ceramic. Titanate waste forms were developed as an alternative to borosilicate glass forms. More recently (1978), SYNROC, a type of titanate for this purpose, was developed in Australia. The borosilicate glass forms are used in Europe for nuclear waste disposal and are considered the standard, or reference waste form, for waste solidification planning in the U.S.

Some components of nuclear waste must be effectively isolated for many thousands of years. The most probable path for the escape of radioactivity from a geologic repository involves transport via groundwater. Since this implies the dissolution of the waste out of the waste form, the leachability—how much of the waste will dissolve in a given period of time—becomes an important waste form property.

In comparative leach tests under simulated repository conditions, leach rates of radionuclides from titanate waste forms are typically several orders of magnitude lower than those observed for glass waste forms. Other factors, such as thermal stability, radiation stability, transmutation effects and container interactions, are still being evaluated.

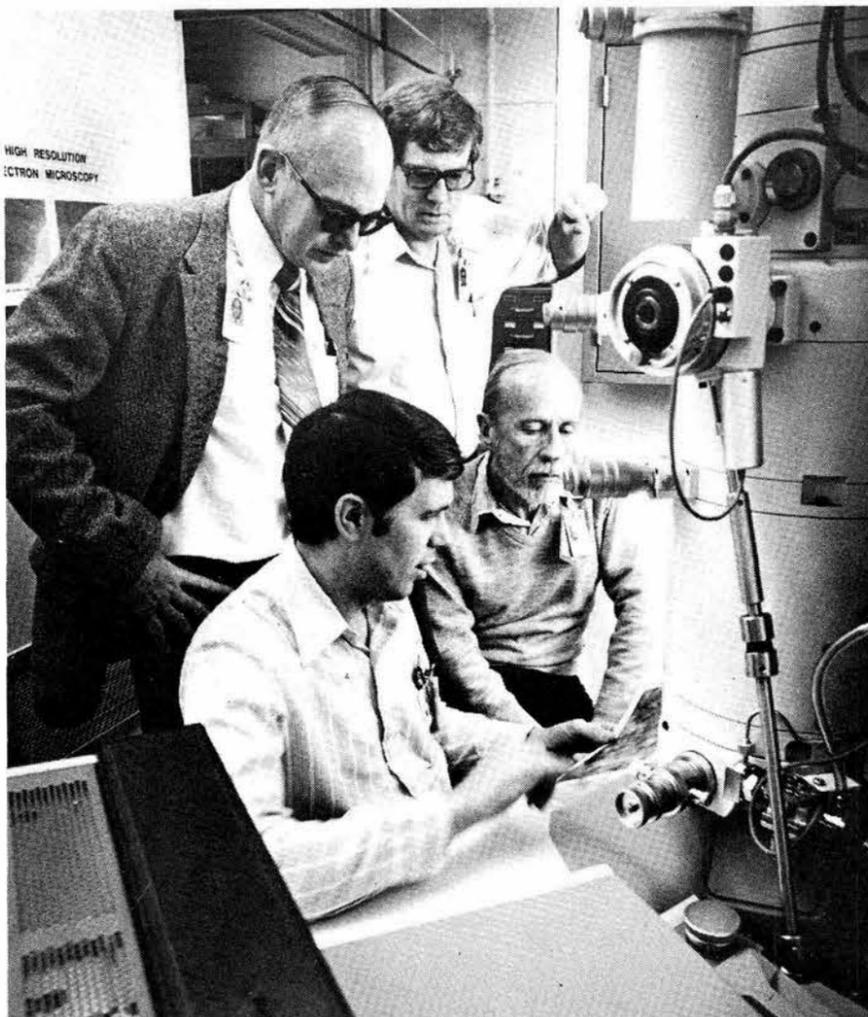
So how do you answer questions about what a material's characteristics might be thousands of years or more in the future?

How about looking a million years into the past?

There is a class of minerals called metamict which has puzzled scientists for 200 years. Among other characteristics, metamict minerals may glow for a while in the dark after being heated (thermoluminescence). Metamict minerals chemically resemble known crystalline minerals but when their structures were analyzed, they were discovered to be glassy-like or amorphous, not crystalline. Gem quality zircons, for example, are crystalline but metamict zircon is amorphous. Further studies determined that the metamict minerals were originally formed as crystals, but internal radiation damage from naturally occurring uranium and thorium destroyed the crystalline lattice structures over geologic time.

Knowing this, Clyde Northrup (5843) and Tom Headley (5822) decided to focus upon Dosch's titanate waste form to determine its response to radiation damage and to see if it could be driven to the metamict state. Using ion implantation techniques developed at Sandia, George Arnold (5112) used an ion accelerator to zap titanate waste form samples with lead ions to the various levels required by Northrup's experiment.

The lead ion penetrating the titanate ceramic displaced atoms in the crystal lattice, simulating the natural radiation damage process by alpha recoil nuclei—



**RADWASTE STUDY**—Tom Headley (5822), center, explains his electron microscope photos of metamict minerals to George Arnold (5112), right, and Clyde Northrup and Bob Dosch (both 5843), standing. The Sandians contributed to a study of radwaste forms resembling metamict minerals which have had their crystal lattice structures destroyed by internal radiation through geologic time.

the alpha particle travels in one direction while the recoil nucleus recoils in the opposite direction. This technique reduces millions of years of geologic time to seconds of accelerator time.

Tom Headley checked the results by transmission electron microscopy and made comparisons with the damage observed in natural minerals. He was helped in the selection of natural samples by Rod Ewing and Richard Haaker of UNM's Geology Department.

Headley's electron microscope photos clearly reveal the similarity between laboratory-generated and naturally damaged metamict materials. More importantly, since the dose of the lead atoms from the accelerator can be accurately calculated, the effects of radiation damage on the titanate waste forms can be extrapolated for 10,000 years, 100,000 years, or even longer. The Sandians devised a number of "bench marks" in crystalline structure changes that correlate with this extrapolation:

The experiment demonstrated that waste forms artificially aged in this manner closely simulate natural damage. Now materials can be prepared for further testing—for example, the effects of radiation damage on leaching behavior can be determined on artificially aged materials.

Their conclusion from such leaching experiments is carefully worded: "It appears that radioactive decay and the change to an amorphous state does not necessarily change the dominant leaching characteristics of the original titanate ceramic waste form."

These studies are only a few in the complex radwaste problem and while results are promising, the final answers will depend on many factors—political as well as scientific.



**BIRTHDAY CELEBRATIONS** we don't cover. But, sometimes, if the celebrator is Ted Church (1580) and the balloon bouquet is delivered by a genuine bunny, we make exceptions.

## Of Amazons and Cities of Gold

We usually take names of places for granted, which is natural since they are in daily use and we tend to dwell in them, not on them. But reflecting on how our town, city, or state received its name usually provides a fascinating history lesson.

The origin of some place names is hardly mysterious. For instance, New York was renamed for the Duke of York after the English wrested the settlement from the Dutch who called it New Amsterdam — also of obvious antecedence. Closer to home for Sandians, there's Albuquerque named, of course, after the Duke of Alburquerque (*sic*) and Livermore after Robert Livermore, an Englishman who settled in the area in 1835.

But how about the big enchilada? How and why did California acquire that particular name — and what does it mean anyway?

In 1539 Francisco de Ulloa explored the coast of what is now Baja California, and it is thought that he named the peninsula "California" (another source claims it was Cristóbal de Olid). Subsequently, the name was applied to the entire western North American coast as far north as the present state of Oregon.

So much for the "how" — now for the "what" and "why." *Las sergas de Esplandián* (*The Adventures of Esplandián*) was a romantic novel written about 1510 by Garcí Ordóñez de Montalvo. It was a sequel to a cycle of European chivalric romances dating from the Middle Ages and reaching their height of popularity during the Renaissance. The hero is a knight named Amadís de Gaula (Amadeus of Gaul). A glorification of the ideals of chivalry, the book recounts the adventures and loves of Amadís and his protégé Esplandián, and their combats with monstrous humans and beasts.

One incident in *Las sergas* describes an encounter between the knight Esplandián and King Armato when the pagan princes are trying to wrest Constantinople from the Christians. Armato's army includes a tribe of Amazon women whose queen came from a mythical island — named California! The queen led her woman warriors and some man-eating griffins. (Sounds like the kind of crowd one might run into any night on Hollywood Boulevard — but *never* in Livermore.)

Whoever was responsible for bestowing the name California on the rugged Baja coast, we can be sure that both Olid and Ulloa whiled away their leisure hours reading about Amadís and Esplandián. After 1500, these chivalric novels circulated among those literate few who in turn read them aloud to the restless crowds of fortune-seeking, unemployed soldiers abounding in Spain at the time. Many of them made their way to the New World where they formed the armies of Hernán Cortés and Francisco Pizarro and saw their literary fantasies come to life in the Aztec and Inca empires.



So much for California.

In the Spanish colonial era (1521-1821), the present-day states of New Mexico and Arizona were called the provinces of Nuevo México, i.e., "new" Mexico. This appellation was applied to the region in 1562 by one Francisco de Ibarra, governor of the province of Nueva Vizcaya (the modern state of Chihuahua). Prior to that, these lands were known to the Spaniards as Cibola and Quivira. (It should be apparent by now that most Europeans found it more convenient to just take an Old World place name and stick "new" in front. Thus New Spain, New Granada, New England, New France, etc. Saved them the trouble of trying to be original.)

During the colonial period, "Mexico" referred to Mexico City and its environs. It was the capital of the Viceroyalty of New Spain — a huge territory encompassing Spain's possessions between the Columbia River and Panama. Early Spanish explorers of the Southwest returned to Mexico City with tales of fabulously rich Indian cities, reminiscent of the Aztec Empire — a "new" Mexico. As is well known, these stories turned out to be quite exaggerated, but the name stuck. Incidentally, New Mexico is quite a bit older than "old" Mexico — by 259 years, to be exact.

In 1821 when the Viceroyalty of New Spain gained independence, it became very briefly the Empire of Mexico and then the Republic of Mexico which it has remained ever since. Through all these upheavals, New Mexico kept its original name — be it as Spanish colonial province, Mexican territory (it was never a state), U.S. territory, and, finally, in 1912, one of the United States.

But what does the Náhuatl word "Mexico" mean? This is one of those place names whose origin is lost in the mists of antiquity, if not the fogs of fable. The Aztecs called their city México-Tenochtitlán. Tenochtitlán means "city of Tenoch" — some think Tenoch was a high Aztec Priest, others think it means simply "place of the Tenochas" which is what the Aztecs called themselves. The name Mexico antedated the arrival of the Aztecs



"Landing party just returned, *mi capitán*, with some typical native headgear."

which is all that is known with any certainty. Some scholars see the word as a combination of *Meztli* (moon), *xictli* (navel), and *co*, (place), or "in the navel of the moon." The name probably referred to an ancient moon cult which the Aztecs incorporated into their sun-worshipping religion, thus México-Tenochtitlán.

Sorting all this out must have given Cortés a headache, and he wisely decided to retain "Mexico" instead of renaming the place something like New Badajoz. Which is how we come to live in New Mexico instead of the state of South Colorado or (*aargh!*) West Texas. •cm

### Sympathy

To Ivy Dunn (2124) on the death of his father in Mobile, Ala., April 12.

To Cliff Kinabrew (1116) on the death of his mother-in-law in Philadelphia, April 7.

To Glen McFall (2553) on the death of his father in Oklahoma City, April 13.

To Clyde Northrup (5843) on the death of his father in Albuquerque, April 23.

## Retiring



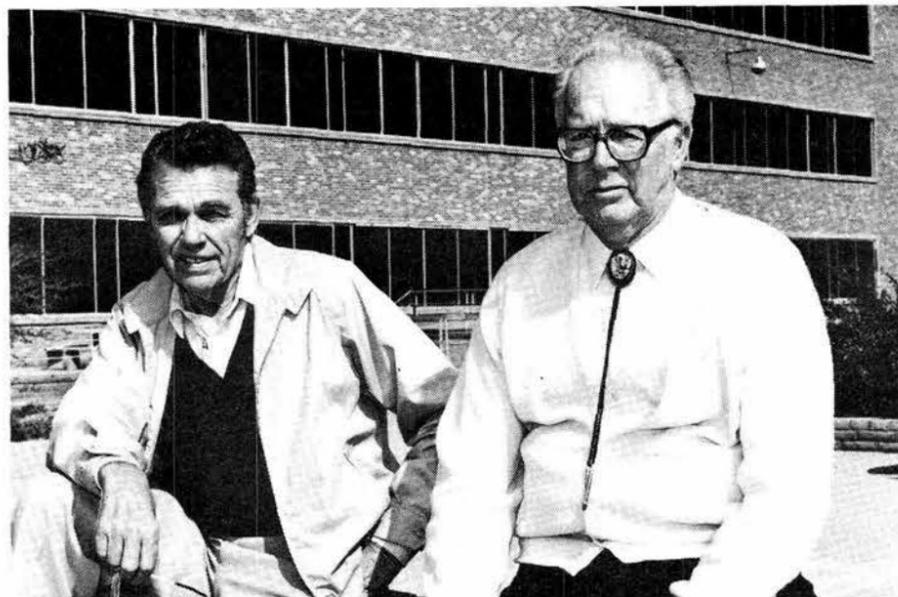
RETIRING—Mollie Miller (3321), Vern Henning (3543) and Ken Smith (3100).



RETIRING—Joe Gaynor (4372), Mary Simpson (3255), and Harold Jeblick (3441), W.E.



RETIRING—Luciano Archuleta (3435), Onni Perea (3423), and Joe Magruder (3163).



RETIRING—Cecil Johnson (2331) and Merlin McGirk (4325).



RETIRING—Al Fite (1312), George Volda (2522) and Ralph Wilson (1470).

## A Funny Thing Happened On The Way To Work . . .

"Can I help you?"  
 "I lost my badge."  
 "When?"  
 "After work yesterday."

"Where?"  
 "I'm not sure."  
 "What were the circumstances?"

This conversation is routine almost any day at the badge office. The circumstances are not always routine:

"You're not going to believe this, but . . .  
 (*hesitant smile*) I looked up and my cow was munching the badge.

(*embarrassed*) I accidentally flushed it down the toilet.

(*regretful*) My dog chewed it up.

(*sheepish*) My child used it for a teething ring.

(*disgusted*) It went through the washer.

(*frustrated*) When I dropped the badge, it ended up under the refrigerator, and I can't find anyone to help me move the refrigerator.

(*indignant*) It was hooked to my bike and someone stole my bike.

(*taciturn*) I was mugged and my badge was stolen.

(*mystified*) My kids were playing with it and they lost it.

(*resentful*) I was riding my bike in heavy traffic and my badge fell off my shirt."

Absentmindedness also plays a part in lost or forgotten badges.

How about the gentleman who purchased a movie ticket and then handed his badge to the ticket taker. Or, the fellow who dropped his badge in the mailbox and walked off holding his letters. And, you bus and van riders: how often have you handed the driver your badge and presented the security guard with your bus pass? Just ask any of the employees at the request counter in the badge office how often this scene takes place: An employee comes in to report a lost badge and has to be reminded that he really didn't lose his badge—he's wearing it!

Byron Gardner and his staff in Visitor Access and Administration Section 3434-1 report that they issue an average of 30 temporary badges each day to employees who have forgotten their badges. And, currently, the number of lost and unaccounted for badges is over 250. Many more badges are found and turned in to a security inspector or returned to the Labs by the Post Office.

Byron offers these suggestions:



DOG-EARED BADGES are all too common. Nothing common, though, about this badge-eared dog.

Treat your badge as you would any other piece of government property.

Wear your badge whenever you are on Sandia premises—outside as well as inside the technical areas.

When searching for a misplaced badge, check coat pockets and coat or jacket linings.

And, when the clip falls off your badge or it starts to look dog-eared, come in and get a new one. •nt

# MILEPOSTS

## LAB NEWS

APRIL 1982



Ken Miller - 3153 15



Fritz Arensdorf - 3155 25



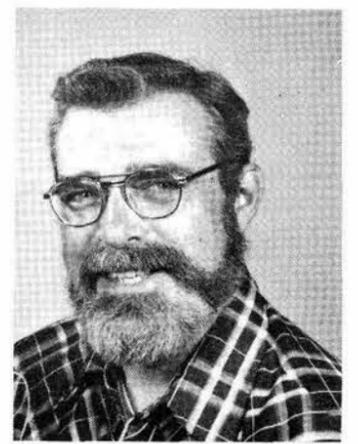
Fred Edwards - 1247 30



Harvey Morse - 1714 25



John Moore - 4337 15



Karl Schuler - 5522 15



John Lewin - 4445 15



Walter Hyde - 1769 30



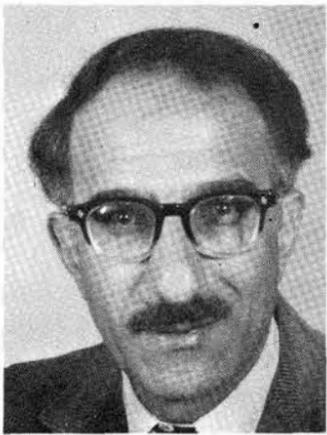
Emilio Torres - 3417 30



Bob Schuch - 4233 15



Clyde Northrup - 5843 15



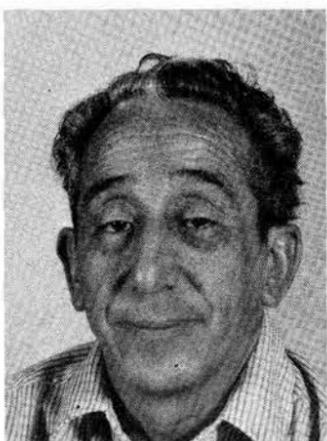
George Samara - 5130 20



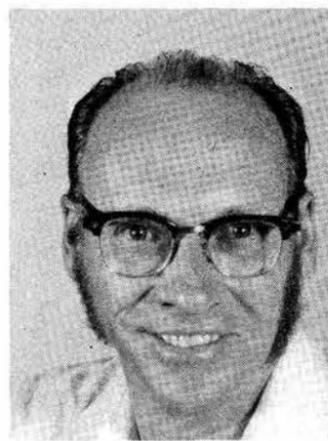
Eleanor Kelly - 3543 25



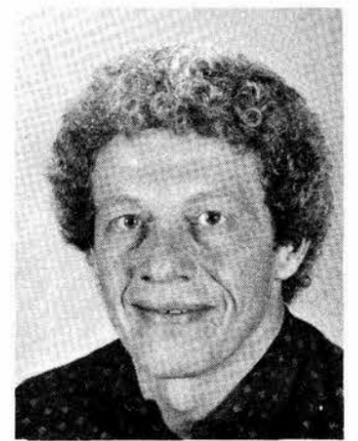
Dick Smith - 1233 15



Tony Torres - 3411 25



Charlie Barnes - 2141 25



Chuck Barnes - 5133 15



## Favorite Old Photo

This picture shows a few of the citizens of Splitlog, McDonald County, Missouri, on the morning of June 17, 1893. My father, John Wentz, wearing the dark shirt and white tie, was holding down his first job as railroad agent on what is now the Kansas City Southern RR. He started the job at 16, so at the time of the photo he was a seasoned hand of 20 . . . It's interesting to note that every man in this group is wearing or has a hat—fashions do change! (Lyle Wentz—retired)

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

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

### RULES

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

### MISCELLANEOUS

- AM/FM/8TK Audiovox car stereo, fits imports, \$30. Cox, 293-5518.
- FREE firewood & free gravel, you haul, SE hts. area. Strip, 255-7230 after 5:30.
- VIVITAR ZOOM LENS, 75-205mm/f3.8, Canon mount, macro, 55mm accessories, \$150. Kawka, 299-1216.
- CANOE, 13' Coleman, easily cartopped on small car, \$200. Baxter, 344-7601.
- WATER BED, x-large, complete, \$140. Perea, 255-7831.
- DINING ROOM SET, mfg. by Stanley, table w/ext., 6 chairs, hutch, antique white, Italian provincial. Fox, 299-9031.
- 75 STARCRAFT tent trailer, stove, icebox, heater, elec. water pump, \$1850. White, 877-4149 or 293-2219.
- JACOBSEN reel type mower, 18", gasoline engine, self propelled. Cox, 255-5657.
- TEAC 5 1/4" disk drive for TRS80, 35, 40, 70 or 80 tracks, new, \$350. Simons, 296-0974.
- LAWN MOWER, Wheeler, 22" side discharge, 3.5HP B/S engine, 4 HTS, used 5 times, \$110; Toro rechargeable 9" nylon cord trimmer, \$15. Nelson, 865-9616 after 6.
- PROM DRESS, never worn, Gunne Sax, size 3, natural beige, lace, tiny buttons, new \$75.98, sell for \$50. Paul, 296-6500.
- COMPOUND BOW, Jennings Shooting Star Hunter, 45-60 lb. variable pull, w/side bow quiver, almost new, \$250. Gauerke, 281-5876.
- LIGHT WEIGHT bicycle trailer, will carry 4 bikes, \$250. Campbell, 294-6000.
- ELEC. OVEN, self-cleaning, Hotpoint, gold, 2 yrs. old, make offer. Chapman, 897-2458 after 6.

- REMINGTON 1100 Lt-20 ga., 26" bl, IC vent rib, brand new in box; Shotgun News price + 10%. Scott, 293-2536.
- RECTANGULAR wood burning stove & chimney, \$80; scrap wood & kindling for the hauling. Brown, 268-5025.
- 2 AYSO soccer shirts, adult small, youth lg., new, never worn, \$6 ea. Treadwell, 884-4221.
- ELECTRONIC BUG KILLER, good for 1 full acre; ceramic tile & edges. Gallegos, 865-4024.
- ROAD-RUNNER pop-up camper, w/ stove, icebox & bed, \$450 or best offer. Randall, 344-8976 after 5.
- CAMPER, Bethany tent-trailer, sleeps 6, lt. wt., low profile, furnace, 3-way refrig., range, sink, used 6 times, \$3150. Holmes, 292-0898.
- SLIDING GLASS patio door w/screen, 6', \$45. Wayland, 299-2587.
- TIRE, Goodrich steel belted Lifesaver radial, 1/4" tread, \$20; baby carriage/stroller, \$25. Cook, 296-7019.
- CHROME & GLASS dining table w/2 matching chairs, \$100; 2 G78-15 belted tires, \$20 ea. Fuerschbach, 296-1652.
- FREEZER, chest type w/lock, 14.3 cu. ft., \$175. Craig, 293-5649.
- 2400 CFM Champion evaporative cooler, used less than 1 month, \$130 or best offer. Tolman, 296-8239.
- SE1000 Adler elec. typewriter, 14" carriage w/table, \$550. Jackson, 883-8834.
- SECRETARIAL DESK by All Steel Equipment Co., 44 1/2 x 29 1/2, 3-dwr. w/typewriter well, \$75. Chavez, 881-2711.
- DINING TABLE, 4-ft. diam. marble top on wrought iron base w/4 chairs, \$650 or best offer. Curtis, 881-2440.
- SNOW TIRES, Sears, 6.00-15, mounted on 2 VW bug wheels, \$40 ea.; chain saw, Sears, 3.7 cu. in., 17", \$140. Gear, 281-3166.
- FREE MALE RABBIT & hutch, 2 yrs. old. Garrison, 293-8633.
- SWIMMING POOL PUMP, heavy duty 1/4 hp, retails \$267, sell new at \$150; home use water filter & cartridges, unused, \$20. Stevens, 299-6086.
- ORGAN, Hammond church model C2, tone cabinet JR-20, \$1200. Biffle, 293-7043.
- SHEEP, young ram & others. Navalesi, 344-0598.
- FULL SIZE BED w/mattress & box springs, matching dresser, antique white, \$250; black vinyl sofa, \$50. Dishman, 296-2457.
- CAMPER SHELL, Smitty, 8x4x4, ladder, top luggage area, storage, built-in, vented top, \$395. Foster, 265-0069.
- TOOL BOX for small pickup, \$75. Bennett, 299-1144.
- QUEEN SIZE sleeper sofa, gold velvet. Burchett, 299-1689.
- CAMPER, slide in 8', insulated, paneled, \$300 or offer; 2 aux. gas tanks, \$10 ea.; storm door, 30"R, \$20. McNeill, 293-1897.

- ONE NEW Goodyear Cruiser H78-15, dealer list \$62, mounted & balanced on 5-lug 5 1/2" center rim, \$25. Davis, 293-1287.
- USED bathroom fixtures, sink w/ faucets, toilet, elec. light fixture. Schamaun, 298-5192.
- BED FRAME, steel, twin-full size, 39 to 54 x 75-inch, \$10. Dalphin, 265-4029.
- WATERBEDS: kingsize & queen; IBM typewriters, Models B and D; Coke machine. Caudell, 299-6157 after 5.
- GARAGE SALE: 9520 Dona Marquerita NE, 5/1 and 5/2, 9 to 4: furniture, books, records, odds & ends, 350 Honda Enduro, low miles. Hasenkamp, 293-2607.
- MAMIYA 528 AL, auto. SLR 35mm, wide angle & tele. conv. lens w/case, \$75 or best offer. Wilson, 298-6427.
- AIREDALE PUPS, male & female, registered, champion stock, \$200. Heff, 877-5537.
- LABS caps & T-shirts, \$6 ea.; new & used books. South Highway 14 Village Project, LAB NEWS, MO-125 (next to Bldg. 814).
- KITTENS (4) to be given away; outdoor raised, young enough to become indoor pets. Campbell, 256-1015 after 5.

### TRANSPORTATION

- 78 SUZUKI GS750 motorcycle, mag wheels, windjammer, disc brakes, \$1750. Wright, 296-3850.
- 75 TOYOTA Landcruiser stn. wgn., 4-wd, AM/FM, AC, elec. winch, \$3800. Strome, 256-3324.
- 25' MOTOR HOME, self-contained w/Mercury engine (rebuilt), rebuilt generator. Gunter or Campbell, 298-7783 or 888-3135.
- 82 HONDA Passport commuter motorcycle, 72cc, 3-spd., auto. clutch, brand new, \$500 (list \$778), 130 mpg, red & white. Bennett, 296-8041.
- 81 VW convertible, loaded, brochure model, SLFCU financed, \$10,000. Hamilton, 296-9445.
- 76 HONDA cycle, 400F, 8000 miles; motor speed control, never used, control power tools, etc., \$30. Prior, 296-2930.
- 78 4-wd SUBARU stn. wgn., new tires, 38-40 mpg. Sanchez, 266-8278 after 4.
- MEN'S 26" 10-spd. bicycle, Titan Shumano derailleur, \$50; 72 Yamaha CT-175, dirt/street motorcycle, \$450. Duimstra, 299-6106.
- 13' SAILBOAT, new boom, mast, sail; trailer w/Buddy wheels; insulated camper shell, SWB, has lights hook-up. Harrison, 883-5411 after 6.
- 69 MERCURY Marquis, AC, AT, R&H, as is, \$200. Owens, 294-3902.
- 79 FORD Lariat, loaded, \$7850; 1929 Ford, \$18,500 or best offer. Gallegos, 255-5264.

- 65 DODGE pickup, approx. 20K miles on new engine. Gallegos, 865-4024.
- 80 YAMAHA 250 Exciter I, 2400 miles, \$1200. Hesch, 294-3298.
- 81 HONDA 110, 2200 miles, street & trail equipped, 90 mpg, \$750. Mateo, 294-5596.
- 79 TRIUMPH Spitfire, low miles, all options, alloy wheels, luggage rack, new Michelins, \$4995. Doyle, 299-9331.
- 66 MUSTANG, 6-cyl., 3-spd. M.T., \$1900 since '79 in rebuilding. Constantineau, 298-6166.
- 71 T-BIRD, \$1500 or best offer. Puhara, 255-7447.
- 72 CHEV. 1/2-ton pickup, 350-V8, AT, PS, PB, orig. owner, \$1700. Schneider, 299-6243.
- NEW CHEVY Landmark customized van, 5000 miles, loaded w/extras. Bolton, 821-1793.
- 74 DATSUN B210 hatchback, 52K miles, \$1750. Wilson, 298-6427.
- SEA RAY, 22' Cruiser, hardtop, camper canvas, dinette, galley, teak swim platform, Mercruiser 188, low hours. Boyes, 281-1171.
- 80 KAWASAKI KZ650, 9500 miles, Vetter Q-Silver fairing, case, bars, luggage rack, misc. extras, \$1795. Foster, 265-0069 after 6.
- 68 GMC pickup w/8x10 cabover camper, sleeps 5, w/taillgate & jacks, \$1450. Copus, 294-4943 after 5.
- 67 HONDA CL160, 9347 miles, fairing, luggage rack, \$100. Greenslete, 268-8394.
- 80 YAMAHA 650 Special II, 4000 miles, windshield, custom seat, \$1500. Mowrer, 281-5595.
- 70 VOLVO 142, 4-spd., FM/cassette, rebuilt engine, trailer hitch, \$800 or best; utility trailer. Attermeier, 293-7088.
- 69 MERCURY Montego V6, 4-dr., one owner, \$650. Brown, 268-5025.

### REAL ESTATE

- MOBILE HOME, 12x65 3-bdr., re-decorated, set up in nice park, immediate occupancy, \$8500 firm. Carter, 242-8760 or 898-1840.
- LOMA DEL NORTE NE, 1530 sq. ft., 9 rooms (3-bdr.), 2-car garage, covered patio, landscaped, \$67,900, 11 1/2%, 5% down. Doyle, 821-2270.
- 3-BDR. house on one acre in Los Chavez, terms w/assumable loan. Gallegos, 865-4024.
- 4-HILLS HOUSE for sale or trade for smaller residence. Hymmer, 293-6029.
- 3-BDR./4-bdr., 1600+ sq. ft., large lot, 74K, 16K CTL, consider REC, 9113 Las Camas NE. Mattson, 293-5649.
- WINROCK condo, fp, wet bar, patio; club room, pools, sauna, jacuzzi, 8 1/2% assumable loan. Baca, 881-3046.

- EASTRIDGE ADDITION, insulated, 5-bdr., 3 full baths, walk to Chelwood Elementary. Morosin, 298-0994.
- 79 CENTURION mobile home, one owner, 14x64', 1 1/2 bath, 2-bdr., fully skirted. Meadowbrook Park. Jones, 821-6374.

### WANTED

- STAINED GLASS GRINDER. Wolfe, 298-6394.
- SOMEONE to fix my lawn sprinklers. Jennings, 298-6457.
- ELEC. wringer washer, prefer working condition. Spellman, 243-6455.
- BABYSITTER: mature woman, one or two days/week & one evening in our home, 1 & 3 year old. Tapp, 821-3843.
- BUY OR RENT (for 3 weeks in June), a port-a-crib. Borgman, 299-6010.
- RELOADING TOOLS & accessories to include press, scale, measure, etc. Roth, 243-3283.
- FEMALE roommate to share lg., luxury 2-bdr. apt/adult complex, NE hts., non-smoker preferred. Coffin, 298-9096 or 292-7224.
- SHELL for short bed Toyota pickup. Bennett, 299-1144.
- CAMPER JACKS, 3 or 4 point suspension. Owens, 881-0815.
- TO RENT: lightweight (under 1000 #) camp trailer w/capacity for 6, need 2 weeks end of July. Thompson, 293-8390.

### WORK WANTED

- TEENAGE STUDENTS want yardwork for team travel expenses; references, outside school hours. John or Luke Atkins, 298-5762.
- LAWN MOWING, rototilling, power-raking, light hauling or other yardwork. Tom Edrington, 881-2395, or Paul Holt, 294-6928.

### SHARE-A-RIDE

- Would like to join carpool from vicinity of North 4th & Osuna. Burt, 344-8045.
- FOURTH carpooler from Paradise Hills area. Arnold, 898-1467.

### LOST

- KEYS on ring holder lost in Area I. Martinez, 844-2555.

## Mothers' Day Buffet May 9

**HAPPY HOUR TONIGHT** is a dress western affair with a prize each (a LUAU ticket) for the best costumed cowboy and cowgirl. Two swinging country bands play music for dancing from 5 until midnight. Desert Dream is first, followed by Tom Black and the Fugitives. Special prices are in effect all evening, and the dining room serves *a la carte* fine steaks and seafood and a couple of chef's specials—beef spare ribs at \$4.75 and western barbecued beef or chicken with pinto beans at \$4.25.

**NEXT FRIDAY**, May 7, is Singles Mingle time at the old C-Club . . . as a matter of fact, the Board has declared the first Friday of each month as Singles Mingle time. The Friday night festivities include special bar prices all evening, dancing to Marci and the Talkabouts from 5 until midnight, and a fried chicken, fried fish buffet spread with fabulous salad bar, vegetables, and assorted desserts for \$4.75. No reservations required. Members may bring one guest of either sex; all other non-member guests pay \$1 admission.

**VARIETY NIGHT** on Saturday, May 8, sees another Walt Disney classic—*Darby O'Gill and the Little People*—on the silver screen at 6, a supper spread of hamburgers, hot dogs, French dip sandwiches and pizza available at 5. Admission is 25 cents.

**MOTHER'S DAY**, Sunday, May 9, is the big one this month with an elaborate and elegant buffet served at four different times—at 10, 11:30, 3 and 4:40. No more than 150 reservations will be accepted for



SANDIAN BEN ORTEGA (3424), who assists with frequency and radio network coordination for Sandia remote communications, spends weekends as a disc-jockey with Z-99 (formerly KZZX) radio station. Ben started in radio while a student at New Mexico Highlands, continued while in the Air Force and in the Dallas area while attending a radio broadcast school and attaining his first-class license. He joined Sandia in November '79 and landed a part-time slot at Z-99 the same month.

each time. The dining room will be cleaned up and the buffet spread replenished between sessions. A champagne fountain will flow continuously in the center of the dining room, surrounded by ice sculptures and flowers. The menu includes prime rib, honey-baked ham, breast of turkey, baked fish, dressing with gravy, salad bar, fruit and cheese trays, fresh fruit, choice of vegetables, candied yams, whipped potatoes, and assorted desserts. Cost is \$9.50, adults, and \$4.75, children 12 and under. Make reservations with the Club office, 265-6791, before noon Thursday, May 6. Discount tickets are not valid for this event.

**BAR PROMOTION**—The Schlitz Light people are holding drawings for

T-shirts and caps at the Club lounge on Thursday, May 13, while cans of their brew sell for 50 cents.

**TRAVEL**—New trips in the planning stage include a charter bus to the Gallup Indian Festival in August, Canyon de Chelly (Oct. 30-31), Mazatlan in November, the Dallas Cowboys Thanksgiving game (Nov. 24-28) and Mexican coast cruise later this year, reports travel director Frank Biggs (4231).

The Mexican coast cruise is on the MTS Daphne which sails from Los Angeles Oct. 23. It has ports of call in Puerto Vallarta and Mazatlan and returns to LA Oct. 30. The package, which includes airfare to LA and back, transfers, port taxes and the cruise, cost \$789.

In the meantime, Frank has a couple of charter bus-scenic railroad packages available—a one-day (June 26, \$42 adults, \$30 children 11 and under) Cumbres-Toltec tour *all the way across* between Chama and Antonito (a two-bus combination makes this possible) or a two-day trip to ride the Silverton-Durango railway. This trip includes lodging in Durango, treats on the bus, and visits to the Aztec Ruins and the Purgatory Alpine slide. The dates are July 10-11 and the cost is \$88, adult; \$68, children 12-16; \$58, 5 to 11; and \$48, under 5.

Another Club package is a week in Cozumel (\$409 after May 15) which includes airfare, transfers, one-week lodging and hotel taxes—various dates available.

Stop by the Club lobby any Friday evening between 5 and 6 to pick up travel literature or to talk travel with Frank.

**POOL AND PATIO** passes and Tennis Club memberships are now on sale in the Club office. Pool and patio pass costs are \$10, single; \$20 for two persons; and \$30 for families (three or more people). Tennis memberships are \$40 for family, \$32 for singles. Call Tom Lenz, 4-8486, for more info.



"Listen, buster, for this job I don't do windows or mirrors."