

**SOLAR COLLECTOR BASES**, fabricated from a special concrete filled with small strands of steel filament one inch long and 1/16th inch in diameter, are now being assembled in the Solar Total Energy Systems Test Facility east of Bldg. 832. The filament eliminates the need for rebar or mesh in the concrete. An array of these collectors, one of three collector fields by separate private contractors, will be tested and evaluated by Division 5712 to determine efficiency, economic and maintenance factors. Ben Petterson (5712) examines

the grooves in the collector bases where strips of glass mirrors will be bonded. Leroy Torkelson (5712) is the project engineer for this design which has been developed by General Atomic of San Diego. The collector bases will not move. An overhead receiver tube, mounted at the line where the mirrors focus reflected sunlight, will follow the line of focus as the sun moves across the sky. Fluid pumped through the receiver tube will thus be heated to 600°F.

# LAB NEWS

VOL. 29, NO. 17

AUGUST 26, 1977

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



**INTO PRODUCTION**—The plutonium oxide heat source for this radioisotopic thermoelectric generator (RTG) is now entering production after a labs-wide development effort which began in 1971. From left are Tom Young, Division 2531 supervisor; Gary Jones (5719), heat source project leader; Dick Jankowski (2531), responsible for production liaison; and Bill Abel (2531), RTG project leader.

## Milepost Reached In Sandia RTG Program

A milepost in the Radioisotopic Thermoelectric Generator (RTG) development program was reached this month when the tiny plutonium oxide heat source (MC2893) went into production at Mound Laboratories. The complete RTG unit (MC2730), which incorporates the heat source to produce 25 milliwatts at two volts power for a minimum of 25 years, is scheduled to begin production next year at the GE Neutron Devices facility.

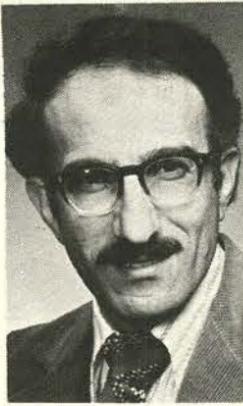
The RTG, developed for weapon applications, is the result of a laboratory-wide effort since 1971. Smaller than a pint jar, the device incorporates many advanced technologies and meets many stringent requirements:

- Failure probability, less than  $10^{-4}$  per year per pair (two units used per system)
- Lifetime, 25 years
- Output, minimum of 25 mW at 2 volts
- Heat source survival, following an

[Continued on Page Four]

## 1977 ECP Drive Shaping Up

"The need of our community is great," says George Samara (5130), chairman of the Employees Contribution Plan (ECP) committee. "The various United Way agencies are under strong pressure to increase and broaden the range of their services. This year's United Way campaign goal is 10 percent more than last year. We hope that Sandia, as a leading employer in the community, will lead the way in helping United Way achieve this goal."



George Samara

The ECP committee announced this week that the 1977 campaign will be held at Sandia Laboratories Oct. 7-14. George reports that there are new members and new assignments within the committee this year.

Calla Ann Pepmueller (3140) heads the

solicitation subcommittee. Del Olson (2330) heads allocation; Jim Kenagy (9580), publicity; Larry Garrison (3254), treasurer; and Willie Garcia (3163), executive secretary.

Vice Presidential representatives on the ECP committee who will conduct the campaign within their organizations are Jack Hinde (1000), Howard Sander (2000), Ray Chavez (3000), Eleanor Kelly (4000), Dillon McDaniel (5000) and Ed Barkocy (9000).

Union representatives on the ECP committee are Gene Romero (3430), Guards; Willard Rappleyea (9583), Metal Trades; and Jane Lord (3141), Office Workers. Bernice Sanders (3533) is new hire coordinator.

"About 85 percent of our contributions go to the United Way of Greater Albuquerque and the remaining 15 percent goes to support the local chapters of eight national health agencies," George notes. "It's clear that Sandia's help makes a big difference in the lives of thousands of people in the community."

## Automatic Building Shutdown Is Here

A program of heating, ventilating, and air conditioning (HVAC) building shutdown for nights and weekends has been pursued at Sandia for several years. In fact, 61 buildings already have automatic shutdown controls. Others are being shutdown manually by energy monitors and maintenance personnel.

Now, construction is in process or designs are being prepared for automatic shutdown controls for 92 additional buildings in two phases.

Shutdown of Sandia buildings should save about half the HVAC energy it would otherwise take to heat and cool them. That's the premise underlying over \$500,000 worth of automatic controls for the 92 major buildings in Areas I, II, III, and V.

The savings figures come from a 1973 study, conducted in Bldg. 887, that showed night and weekend shutdown would reduce consumption of HVAC energy by about half. Extrapolating to our

major buildings indicates a savings of  $113,000 \times 10^6$  BTU's annually. With the energy cost escalations predicted, the BTU saving translates into significant dollar savings. In fact, it will take only about 1.1 years to recover the cost involved in Phase II of the project.

Phase I (approximately \$150,000) includes automated controls to 13 buildings and changes in the steam plant's blowdown system so that more waste heat can be recovered. Construction has started and is due to be completed before winter. Phase II covers 79 other buildings. Design is in progress and construction is due to be completed next spring.

The automated controls will do more than simply turn thermostats down in the evenings and up in the mornings. Each building's system is based on a seven-day clock that activates motorized dampers and pneumatic and electrical controls. Except for 24-hour test devices, water coolers, clocks, and the like, each building will be powerless evenings and weekends. (Certain buildings, such as the Tech Library, will have a five-hour override timer on the system. An after-hours user can delay the shutdown as much as five hours, if necessary.)

A second feature is a thermostatically controlled override which turns heating equipment on if a severe winter storm causes the building temperature to drop below 55°.

Another feature is a fast warm-up capability for early mornings. By recirculating inside air and heating it, temperatures in each building should reach the normal indoor temperature specified by ERDA regulations by 8:00 a.m. each workday.

All the hardware is commercially available, but the design work on interfacing each of the system's devices has been considerable. Project engineer is Charlie Champe in Don Knott's Building and Facilities Design Division I 9742.

## Patent Awarded For Murine Radar

The Murine Radar was the result of an advanced development program Sandia performed for the U.S. Army in 1971-75. Function of the helicopter-mounted radar was to detect incoming heat-seeking (infrared) missiles in time to initiate deployment of a flare to decoy the missile away from the helicopter. In the competitive program, the Army selected Sandia's design for further development.



Jack Webb

The U.S. Air Force recently was awarded a patent for the discrimination circuit within the Murine radar which made it possible to "ignore" the helicopter rotor blades. Inventors of the circuit are Jack Webb (2345) and Roger Gray, who has since terminated Sandia and resides in Dallas.

"There were two major problems in the radar development," Jack says. "First problem was how to detect very small signals originating from a tiny missile within the immense ground clutter signals, a ratio of about  $10^8$  to one. This was solved by making the radar discriminate on the basis of velocity—and then we had to cope with the signals coming from the helicopter's rotor blades. We looked carefully at rotor blade signals and were able to build a circuit which would discard them. The rotor signals were repetitive but the peaks did not last very long. Our circuit would discard these and react only to a signal which continued longer than a few milliseconds."

## Retiring



Julian Perea (3413)



Glen Wright (9561)

### LAB NEWS

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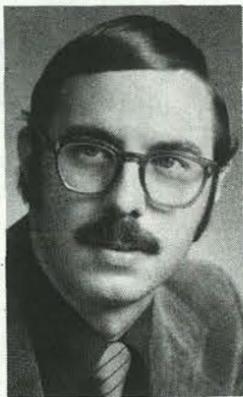
## Supervisory Appointment

AL WEST to supervisor of Exploratory Chemistry Division II, 8315, effective Aug. 1.

Joining Sandia/Livermore's Exploratory Materials Division in 1971, Al developed surface analysis instrumentation and studied hydrides and hydrogen getters. Since transferring to Special Projects Division in 1975, he has coordinated a nuclear safeguards project.

Al received a BA from the University of Oregon in 1967 and an MS and PhD from UC/Berkeley in 1969 and 1971, respectively, all in chemistry. His graduate work was completed under a National Science Foundation fellowship program. He is a member of the American Chemical Society and the American Physical Society.

For recreation, Al enjoys snow skiing, sailboating and amateur winemaking. He and his wife Carol live on Doris Court in Castro Valley.



## Take Note

Sandia/Livermore participated in a recent Job Fair at the East Bay Skills Center in Oakland. Working with unskilled and unemployed residents of the five Bay Area counties, the Center is funded by the Federal Comprehensive Employment Training Act (CETA) and administered by the Peralta Community College District.

Purpose of the Job Fair was to encourage the involvement of Bay Area employers in the Center's training efforts. Evelyn Foote, supervisor of Secretarial and Clerical Development Section 8212-1, and Gertrude Williams, EEO and Women's Coordinator at SLL, represented Sandia at the Job Fair event.

### Sympathy

To Joe McManus (8265) on the death of his father in Boston, Mass., Aug. 6.

To Ed Holbrook (8411) on the death of his mother-in-law in Orchard, Neb., July 30.

## Authors

Joseph Iannucci (8326), "Effects of Gas Composition on the Pressure Difference of Helium Solubility in Vitreous Silica," JOURNAL OF APPLIED PHYSICS, Vol. 47, No. 9.

Jack Dini and Rudy Johnson (both 8312), "Techniques for Quantitatively Measuring Adhesion of Coatings," METAL FINISHING, Vol. 75, p. 42.

Bill Hoover (8314), "Graphite/Aluminum: An Evaluation of State-of-the-Art Material," JOURNAL OF COMPOSITE MATERIALS, Vol. 11, pp. 17-29.

Charles Hartwig (8432), "The Radiation-Induced Formation of Hydrogen and Deuterium Compounds in Silica as Observed by Raman Scattering," JOURNAL OF CHEMICAL PHYSICS, Vol. 66, No. 9, p. 227.

Ted Dellin (8342), Dan Tichenor (8344) and Ed Barsis (8342), "Volume, Index of Refraction and Stress Changes in Electron-Irradiated Vitreous Silica," JOURNAL OF APPLIED PHYSICS, March 1977.

Carl Melius (8341) and Susan Niemczyk (5151), "A Discussion of the X Alpha Statistical Exchange Approach for Atoms and Molecules," CHEMICAL PHYSICS LETTERS, Vol. 46, No. 2, p. 236.

# LIVERMORE NEWS

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LIVERMORE LABORATORIES

AUGUST 26, 1977



B52'S LIKE THIS, and F111's as well, were the subject of in-flight corrosion contamination experiments by Carl Schoenfelder and Karen Pashman. Results indicate no damage to either the aircraft or crew air supply.

### Sensitive Chemical Tests

## Gas Generator Emissions Proved Safe to Aircraft

A warm gas generator developed at Sandia Livermore is used to control the orientation of the B77 after release from an aircraft. In use, the generator's propellant decomposes to (among other substances) hydrogen chloride and hydrogen sulfide. These gases corrode most metals. The Air Force was naturally concerned that these corrosive gases might damage aircraft structural members and electronics components, for in some instances the generator is ignited very soon after release from both B52's and F111's. In the case of the F111, the gases might even enter the crew's air supply. Without proof that the gases weren't contaminating either aircraft or air supply, the Air Force was reluctant to utilize the weapon's full range of capabilities. Karen Pashman and Carl Schoenfelder (both 8315) devised experiments which convinced the Air Force there was no problem.

To determine the level of contamination (if any) to B52's, Carl and Karen used glass tubes which, when the ends are broken off, can detect the suspect gases in the parts per million range. Gases were pulled through the tubes by battery-powered air pumps. In addition, with the cooperation of Thiokol, the maker of the generator propellant, they mixed a known quantity of europium oxide powder with the propellant. Subsequent neutron activation

analysis of captured propellant particulates gave a detection capability in the parts per billion range. Filters attached to air pumps and double-sided tape were used to trap these particulates.

For the F111, in addition to tapes attached to the aircraft, they provided a gas sampler to be held in the co-pilot's lap to detect any corrosion products in the cockpit.

"The techniques proved to work very nicely in feasibility flights," says Carl, "so we scheduled further measurements on bomb drop tests aboard both B52's and F111's out of Edwards and March Air Force Bases."

"Most of the data we collected has been analyzed," says Karen, "and it's clear that the planes and the air breathed by the F111 crews were not contaminated. Apparently, even when propellant ignition times occur very shortly after release, the gases are rapidly dissipated."

### Congratulations

Marlene Ballou (8256) and Tim Cody (8323), married in Yosemite National Park, July 23.

Ray Baldonado (8432) and Connie Brenton (SLL Credit Union), married in Livermore, Aug. 6.

John Didlake (8366) and Suzanne Parrott, married in Starkville, Miss., June 18.

## Sandia to Launch Rockets from Kauai

Sandia Laboratories will launch two rockets starting next week from Kauai Test Facility at Barking Sands as part of an upper atmosphere research project.

The first Terrier-Sandhawk rocket is scheduled for flight Aug. 31, the second on Sept. 5. Both of the instrumented rockets will release an explosive charge into the ionosphere at about 290 kilometres altitude. The explosive charge package will be separated from the instrumentation package and boosted away by a spring system so that a separation distance of approximately 2000 ft. exists at the time the 200 lbs. of HE is detonated. The instrumentation package will follow into the debris cloud to measure particle characteristics in the affected region.

LASL's Group J-10 is responsible for the scientific experiments. The group has developed a set of computer models to predict natural spatial and temporal changes in the atmosphere's chemical composition. Accurate descriptions of certain regions of the atmosphere are now possible; however, application of these models to artificial perturbations, such as supersonic aircraft flights or weapons effects, is limited as a result of limited experimental data. The upcoming rocket project is designed to test the models of several interactions between atmospheric constituents which strongly affect the charged particle inventory and spatial distributions.

Both rockets will explode a mixture of nitromethane and ammonium nitrate into what is known as the "F-region" of the ionosphere. The charged particle inventory in this dynamic atmospheric layer is expected to be depleted by the injection of

large amounts of hydrogen, oxygen and carbon dioxide from the explosions. Four instruments in the instrumentation package will characterize the changes:

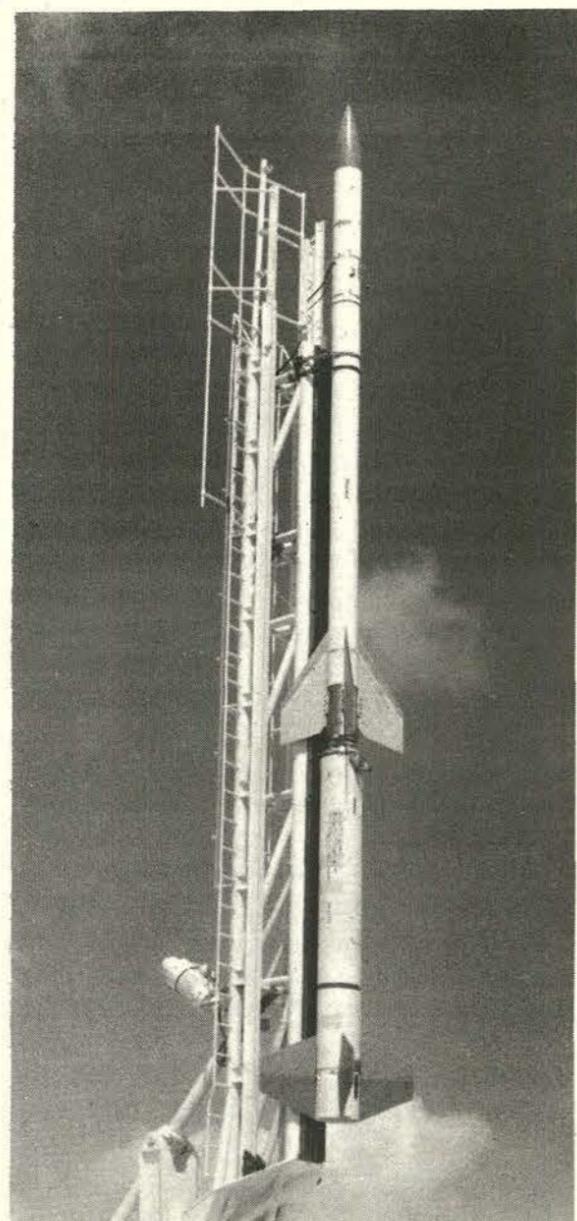
- A thermal-ion detector provided by the National Research Council of Canada
- An ion mass spectrometer provided by the Naval Research Laboratory
- A Langmuir probe, which measures electron properties, provided by the University of Texas
- A dual frequency phase coherent beacon transmitter from Stanford University Electronics Laboratory.

In addition to the on-board instrumentation, ground-based optical analysis from stations on Kauai and Maui will investigate formations and compositions of the affected region. LASL is providing and manning the optical stations.

Both rockets will be launched shortly after sunset. At 290 kilometres, sunlight will still illuminate the F-region.

Sandia is providing the rockets, payload integration, telemetry and range support for the experiments.

Project director is Ted Krein (1327). Participating in the program are Ernie Niper, John Smelser, Dave Ryerson (all 1327), Jack Bahlman (1324) and Dulin Westfall (1756). The aerodynamics and flight safety are the responsibility of Bill Barton and Bill Millard (both 1335). Range operations are being provided by Division 9487 under Al Hutters. At the range will be Bud Murphey, Alan Bolles, Andrew Sayers, Charles Nelson, Richard Rudolph (all 9487) and Al Brazda (9471). Frank Rivera and Onella Allen (both 1135) are providing administrative and logistics support.



SANDIA LABS will launch two Terrier-Sandhawk rockets from Kauai Test Facility starting next week as part of a LASL upper atmosphere research experiment.

PAGE FOUR  
LAB NEWS  
AUGUST 26, 1977



**Continued from Page One**

## Milepost Reached in RTG Program

RTG impact of 550 metres per second; experiencing a nearby HE detonation; and experiencing a 1010° C fire for two hours at the end of service life.

The development program is centered in RTG Development Division 2531 under Tom Young. Gary Jones (recently transferred to 5719) was the heat source project leader during development. William Abel (2531) is the RTG project leader. Dick Jankowski (2531) has the responsibility for technology transfer and production agency liaison for both the heat source and the RTG.

"The MC2730 is a laboratory-wide achievement," Tom says. "In the beginning the complexity of the project made it essential to call on the expertise and facilities of diverse Sandia organizations. The core project group was formed with program responsibilities, but major development tasks were also performed by many 2000, 5000 and Development Shop organizations. These tasks included process

development in the areas of thermoelectric materials preparation and analysis, thermoelectric glass-bonding, and thermoelement electrical intraconnections. We also had to establish prototype fabrication capabilities for the hot pressing and slicing of silicon-germanium alloy, thermoelement glass-bonding, and photolithography for thermoelement electrical intraconnections. It should also be noted that the substantial contributions by Mound Laboratory to the heat source design and development made the heat source a joint Sandia/Mound effort."

Thermoelectric generators operate on the principle that a temperature difference within a material creates an electrical potential difference, causing current to flow in an external load circuit. By using two materials with different thermoelectric characteristics, a net potential difference exists within a circuit so that usable power may be obtained.

Sandia's RTG consists of four thermal-watts of plutonium oxide triply encapsulated within a nonvented pressure vessel, a

glass bonded silicon-germanium thermopile, and silica thermal insulation that maintains a temperature difference of 350°C across the thermopile. Microcircuit techniques are used to intraconnect the 54 fragile thermoelements of each thermopile channel. A 2 micron thinfilm of tungsten is sputtered over the entire surface of each end of the thermopile. Contact pattern masks, photoresist and tungsten etches are used to define the thermopile intraconnections.

"Our confidence in the high reliability and long life of the RTG is based on extensive physical and chemical analysis of failure modes," Tom says. "We accelerated the aging process on prototypes and subjected them to stringent tests. Other functional prototypes, fabricated in December 1971, are on the shelf and still operating. The remaining task is to transfer a very complex fabrication technology to the GE Neutron Devices facility. We expect delivery of the first production units in June 1978."

## Take Note

Ray Powell (3000) is serving as Associate General Chairman, Community Services Divisions, for the Albuquerque United Way this year. "Loaned Executives" who will be working with United Way during the coming campaign Sept. 8 - Oct. 28 are Angie Gurule (3152), Fred Martinez (3212), John Cantwell (3522) and Bruce Horton (3732). The United Way goal is up this year—\$2.5 million to support the 32 agencies of the organization.

\* \* \*

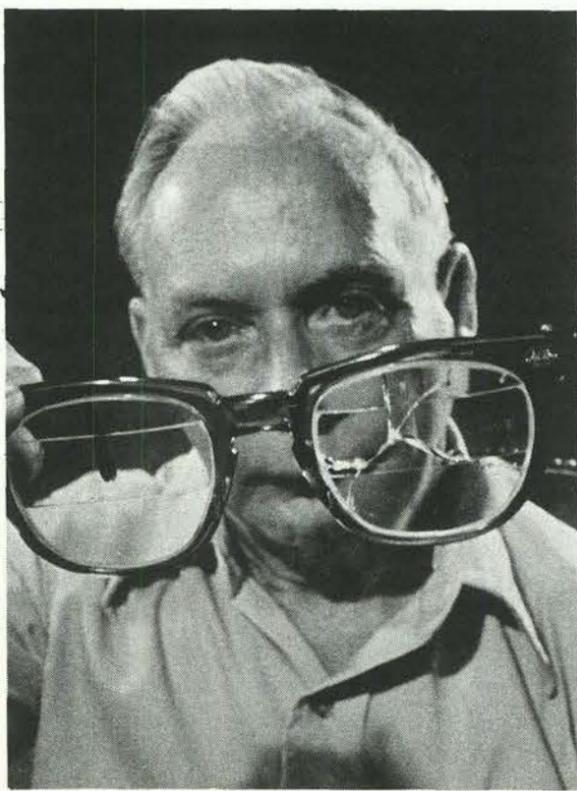
A class in conversational German is being offered in UNM's Community College this fall. The class meets Wednesdays starting Sept. 7 from 7 to 9 p.m. The class is one of many credit and non-credit courses offered. Catalogs are available from Division 3521, Bldg. 632, Rm. 11.

\* \* \*

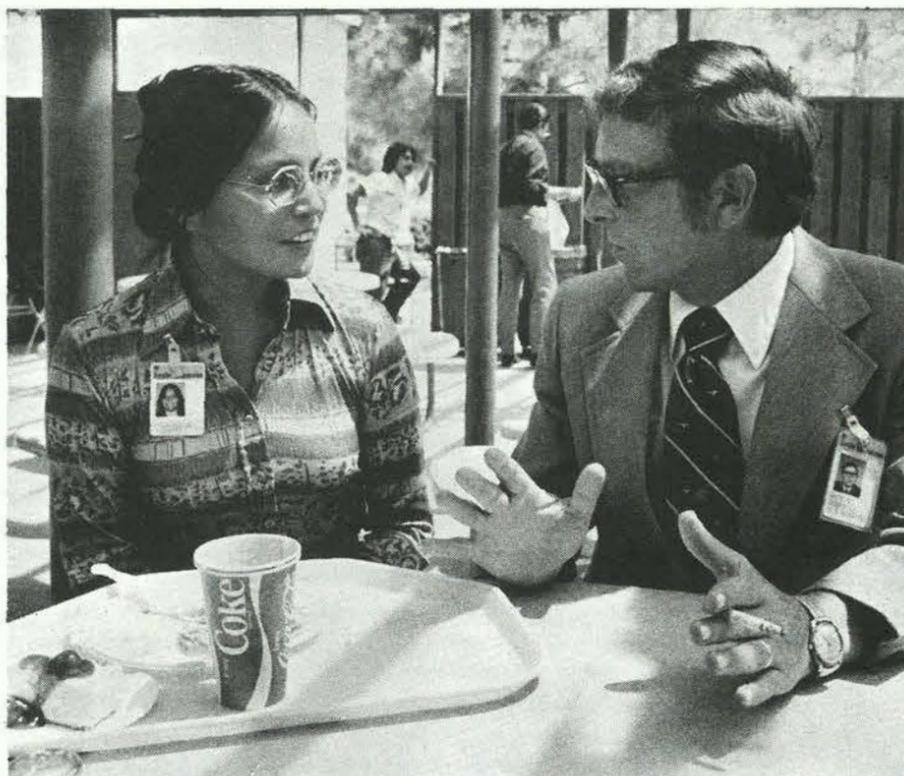
The League of Women Voters of Albuquerque/Bernalillo County reminds all registered voters in the city of Albuquerque of the Oct. 4 election. Voters will decide 13 bond issues and a charter proposition, and elect a mayor, judges and council members. For those voters who will be out of the city on Oct. 4, absentee ballots will be available Sept. 10 from the office of the City Clerk, First and Marquette NW. The last day for casting an absentee ballot in person is Sept. 30.

\* \* \*

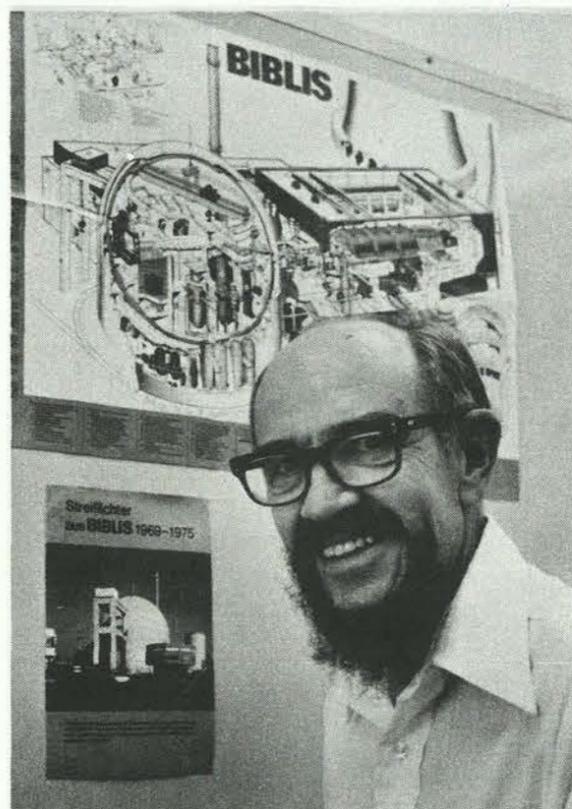
The Sandians, an organization of employees' wives, will meet Sept. 12 at 7:30 p.m. at the home of Kitty McClellan, 4500 Largemont NE. Program will be a slide show of Albuquerque and surrounding area. For more information, call Kitty, 299-0266.



LARRY WILLIAMS (9561-2) is the latest Sandian to escape an eye injury because he was wearing safety glasses. Larry was making a test cable when one strand, with a plug on the tip, flipped up and shattered the lens.



SENATOR PETE DOMINICI presented a colloquium talk last week, "The Enigma of Energy: Problem or Promise for New Mexico?" After the presentation, he visited with employees having lunch in the Tech Area cafeteria. Here he talks with Lavinia Shorty (3414).



WALT MURFIN of Nuclear Fuel Cycle Systems Safety Division 5412 left last week for a two-year assignment to work with the Gesellschaft für Kernforschung (GfK) at Karlsruhe, West Germany, a nuclear research center. He will coordinate nuclear reactor safety research efforts between the US and West Germany and report status of programs in Europe to NRC. He will also actively participate in core meltdown research projects.

### Construction Starts on Gibson Between Yale and Carlisle

Preliminary work started this week on the Gibson Boulevard Project between Carlisle and Yale SE. Scheduled for completion in mid-summer 1978, the construction will widen Gibson to six lanes and establish controlled access from side streets to improve traffic flow. In the meantime, Sandians who use Gibson to get to work and return home will find changing traffic conditions. Next week, for instance, only one lane of traffic each way will be open. The Carlisle entrance to KAFB-West will be closed.

PAGE FIVE  
LAB NEWS  
AUGUST 26, 1977



## Fun & Games

*Sandia Runners Ass'n.*—Sandians are beginning to dominate the La Luz Trail Race, in both quality and quantity. As near as we can determine, 30 Sandians participated in last weekend's race, a 7½ mile run with a gain of nearly 4000 feet in elevation up to the Crest at 10,600 feet. A total of 286 runners were entered. These Labs people turned in notable performances: Ron McCurley and Jim Harrison (4361) were 1st and 3rd respectively in the 30-39 age brackets; Pete Richards (5132) was 1st in 49-49's; and Larry Johnson (4342) was 3rd in the 50-59's.

Even more grueling was the recent Pike's Peak race—14 miles with a gain of 7700 feet in altitude. Jim Harrison with a 2:42 placed 2nd in the 30-34's. Pete Richards with a 2:49 was 26th overall in the field of 600 and 3rd in the 40-49's. Phil Walkington (9335), who says he's a flatlander, finished in 3:29.

\* \* \*

*Horseshoes*—The Sandia Labs Horseshoe Tournament was held Aug. 13 at the Los Altos courts. For the third consecutive year, retired Sandian Bill Sweatman retained his singles champion title. Runnerup to Bill was Earl Saxton (9412). In the doubles play, the team of Leo Bressan (2552) and Dan Padilla (1247) took the championship. Earl Saxton and Jim Fisher (2635) were runnersup.

## Death

Jack Bloomquist of Radiation Physics Division 5423 died Aug. 11 after a long illness. He was 46.

He had worked at the Labs since May 1956.

Survivors include his widow and a son.





GEORGE SKINNER (3153) built this 2600 sq. ft. adobe home in Peralta in three years. Next he plans to add outside adobe walls, landscaping and a brick floor to the 110 ft. portal on the back side of the house.



FAMILY ROOM features massive beams in ceiling, corner fireplace and polished brick floors. Formal study, three bedrooms, two baths and a utility room are in the other wing of the house.

## George Skinner Builds Adobe Home Near Bosque Farms

In January 1974 George Skinner (3153) took a course, "Adobe—Build It Yourself," at UNM's Community College. During the class he drew up plans for his L-shaped adobe home near Bosque Farms in Peralta.

"Great class," George says. "I just didn't understand the tremendous amount of backbreaking physical labor involved in building an adobe house. I'm not sure that I'd do it again."

With the exception of building the adobe walls and putting the tar on the roof, George, his wife Doris and teenage daughter and son (with occasional help from Sandia co-workers) built the entire house. This includes laying the foundation, putting the concrete bond beam on the walls, building essentially a double roof with a six-inch insulation layer in between, laying more than 5000 bricks for the floor, installing the plumbing and wiring, and all interior finishing—a tremendous accomplishment in three years' time.

From the outside, George's house is a

conventional adobe—massive and flat-roofed squatting in the middle of an alfalfa field. Only the vertical stained glass window offers an insight to the different touches inside.

The entry way resembles a greenhouse with a skylight and large potted plants. Directly ahead is a large window and the view is of a long portal to the right, open fields and trees in the distance. The polished brick floor gleams a dark red. Overhead are massive rough-sawn pine beams.

To the right is a carpeted study area. To the left is an open dining area, an archway to the compact kitchen, and a large expanse of family room with a fireplace wall and flagstone hearth. Skylights flood the space with sunlight.

Three bedrooms in a row separated by two large bathrooms—sunken tubs with patterned tile—and a utility room form the bedroom wing. A long hall provides access. Large windows opening to the portal form one wall of the hall.

The master bedroom at the end of the hall contains a corner fireplace, two walk-in closets and hand-carved Mexican furniture. The house has 2600 sq. ft. of living space plus a double garage and workshop.

"We moved in when it was only a shell," George says. "It took two years for the interior finishing. Plastering was the hardest job—it took forever and I had to learn as I went along. I have to do one wall again. It's just not right."

As a craftsman, George is something of a perfectionist. The kitchen cabinets (containing oak boards obtained from damaged fork-lift pallets from Sandia's Salvage Yard) are beautifully finished. The same care is reflected in all of the features of the house.

"Next comes the outside," George says. "Adobe walls all around, landscaping and a brick floor for the portal—it's 110 ft. long, 7 ft. wide, and that's a lot of brick to level. Maybe in a few years I can relax and enjoy it."

*Q. One morning, our car pool group noticed a lone person parking in the car pool reserved area. To get this straightened out, I proceeded to start calling. Four calls later I contacted the person who told me where to locate the driver's name and organization number so I could contact his supervisor as you recommended. It took 30 minutes of company time. Could you please post a sign so we know where to go to get this information?*

*A week ago this same thing happened again so instead of taking another jog over to Bldg. 802 to get the driver's name, etc. I approached the individual and told her the area was for vehicles with two or more people in them and here's her answer: "My rider is coming in later and will go home with me."*

*Is it right to park in these areas when there is only one person in the car?*

A. Conscience and peer pressure seem to be the appropriate controls for pool parking. You've apparently found at least two individuals whose consciences need bolstering by peer pressure, and you're providing that. You asked two questions:

*Q. Is it right to park in these areas when there is only one person in the car?*

A. No, it's not right. The slots are reserved for vehicles arriving with more than one person.

*Q. Could you please post a sign so we can know where to get information we need to be able to call the supervisor involved?*

A. I'm sorry you had trouble finding the right source of data, but we'd rather not post signs; instead, call the Desk Lieutenant at 4-3155, provide the sticker number if possible (license number if not), and you'll get the offender's name.

W. J. Howard - 2

## feed miback

*Q. I'm not a professional, nor am I in a bargaining unit. How can I find out how my pay and the pay of similar Sandians compare to others?*

A. As stated in the Salary Program booklet for your classification, it is the

responsibility of every supervisor to have regular discussions with his employees concerning job, performance and salary matters. Your supervisor has a copy of the Supervisory Salary Administration Manual, and it includes salary structure and frequency distribution charts for your classification. From this, you can see your pay relative to that of Sandia peers in your kind of work. Your performance and contribution on the job are key factors that determine your salary relative to others in your classification.

Additionally, there are charts by classification that compare Sandia's salaries with salary surveys of other local, regional and national organizations. These charts tell you how our salaries compare with similar classifications outside Sandia.

Although your supervisor can't compare your classification with other classifications within Sandia, please be assured that internal equity—a proper relationship among classifications—is a constant objective of our compensation program, as is proper external relationship.

F. P. Prange - 4100

## Safety Film Pays Off

A few months ago, Mike O'Neal (2354) attended a department safety meeting which featured the film "The Heimlich Maneuver." The film explains a procedure for aiding someone who is choking by pushing the diaphragm to expel air from the lungs, thus forcing the obstruction from the windpipe.

On a recent vacation in Los Angeles, Mike had reason to remember the film. At a dinner-dance, the O'Neals were seated near a couple with whom they were acquainted. The lady had difficulty eating and attributed it to some recent dental work. At one point, she appeared to be choking but recovered. There was some joking about it and Mike mentioned the film he had seen and that he did know what to do if she really choked. A short time later the lady choked on a piece of meat. "She couldn't talk," Mike says. "She first lost color and then began to turn blue. She was still conscious so I told her to stand up. I used the Heimlich maneuver but it didn't work the first time. I repositioned my hands and tried again and this time it worked just like the film indicated. A doctor examined her, and later she returned to the table. But she didn't try to eat any more steak."

Persons interested in seeing this film should contact Jim Gravlin, supervisor of Safety Administration Division 3441.

## Events Calendar

Aug. 26-28, Sept. 2-3—Civic Light Opera, "Cabaret," 8:15 p.m., 2:15 on 28th, Popejoy Hall.

Aug. 26-28—Corrales Adobe Theater, "The Effect of Gamma Rays on Man-in-the Moon Marigolds," 8:30 p.m., 898-3323.

Aug. 27-28—San Augustine Fiesta, Carnival, Isleta Pueblo.

Aug. 28—Chamber Orchestra of Albuquerque concert, jazz ensemble, First United Methodist Church, 4th & Lead SW, 4 p.m.

Through Sept. 11—"The Girl in the Freudian Slip," Barn Dinner Theater, 281-3338.

Through Sept. 11—"The Santero Experience"—religious folk art, Museum of Albuquerque. Sat. & Sun. 1-5, other days 10-5, closed Monday, free.

Through Sept. 12—Mimbrenos Indian Pottery, "Iconography: The Meaning of Images," Maxwell Museum of Anthropology, UNM. Weekdays 9-4, Sat. 1-4, Sun. 1-5.

Through Oct. 2—"Indian Art Today—Traditional & Contemporary," Museum of Albuquerque.

The Indian Pueblo Cultural Center: New Hours: 9-5 Mon.-Sat., 12 noon to 5 Sun. 2401 12th St. N.W.

### Sympathy

To John Cunningham (2553) on the death of his mother-in-law in Albuquerque, Aug. 9.

To Truman Daniel (4141) on the death of his mother Aug. 8 in Wickes, Ark.



THIS IS CALLED "getting into the thick of things." Ira Sprecher Road, aka the South Valley Road, is maintained, more or less, by the local chapter of the Operating Engineers Union. They decided they would put in a culvert at Tijeras Arroyo last week. Mother Nature decided they wouldn't. Here a crane, an earthmover tractor, and a crawler work on the easy one of the two dozers left in the arroyo the night before the rain.



SHOW A SANDIAN a safety shoe sale and stand back. Dial thinks of it as \$5500 worth of business. Customers think of it as an investment in toes.



LAB NEWS photographer Russ Smith, always on the lookout for the unusual, was moved to take this shot last week on an unaccustomed visit outside the city. Just a bunch of pigs, you say? No! These are the breed we've been hearing so much about. The farmer assured Russ they were the genuine article—real chauvinist pigs and mostly male besides. Somehow they look less exploitative than we expected. Russ claims he caught one of them furtively rooting through a copy of *Penthouse*.

# For Cardiovascular Fitness Try LSD

by *Ralph LaForge*  
Exercise Physiologist  
Lovelace-Bataan Medical Center

*Ed. Note—The author recently addressed Sandians on this subject at a colloquium; because of the large number who were unable to attend, the substance of his talk is presented here.*

The term "cardiovascular fitness" is used, generally, to denote the capacities of heart, lungs, and the blood vessel system.

\* \* \*

Cardiovascular performance is best enhanced by forms of exercise that are aerobic, i.e., of the endurance type: rhythmic, repetitive movements performed at a submaximal rate (with respect to pulse rate) for prolonged periods, 20 to 60 minutes, without exhausting the oxygen transport system. We are concerned here with dynamic/endurance forms of exercise, as opposed to those exercises which are essentially static or isometric.

If you are now out of condition, your goal should be to establish a cardiovascular endurance foundation which will then enable you to pursue other vigorous recreational activities.

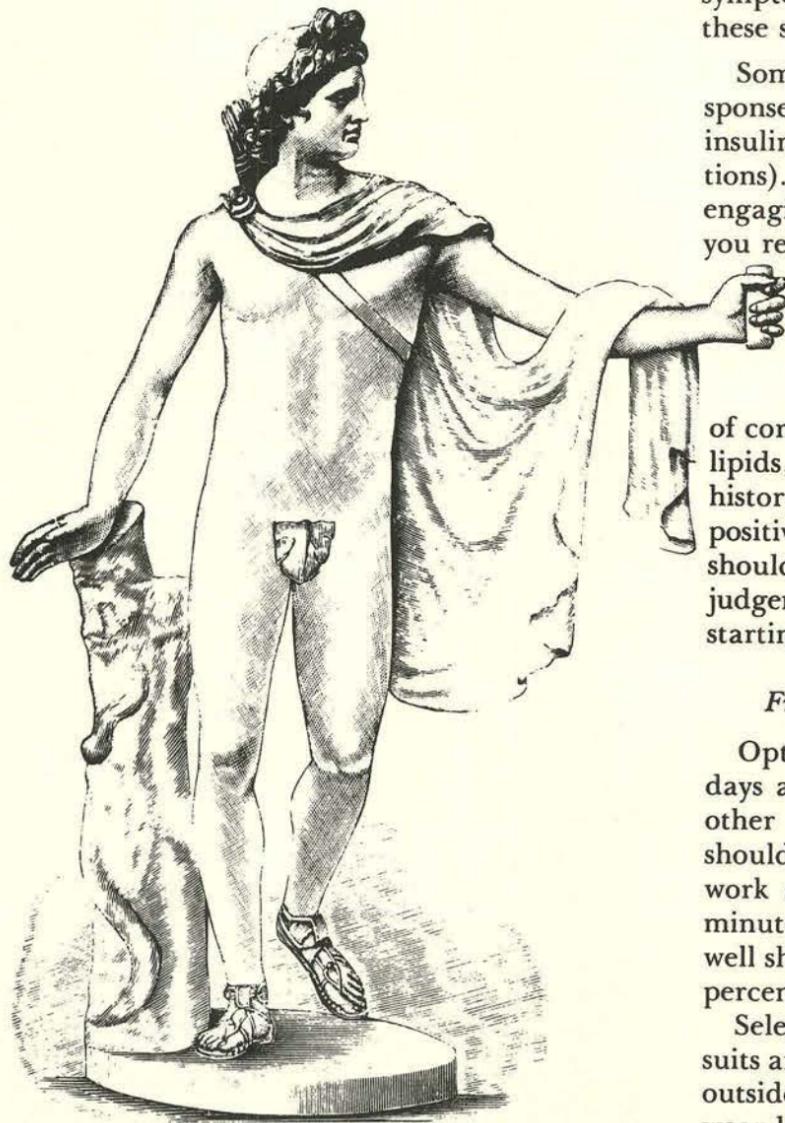
Physical training produces many physiological responses and, to a large extent, these will depend on the individual. One response, easily observed as a training effect, is a reduction in heart rate for a given activity level. Associated with this response is a greater physical work capacity with less fatigue. Most adults are aware of these changes after four to six weeks of training. In general, however, it takes 18 to 24 months to acquire an optimum level of cardiovascular endurance fitness. To maintain this optimum level a slightly lesser amount and intensity of work is required.

While in training, fat weight loss (not necessarily body-weight loss) is slow and gradual initially, assuming that the individual does not increase food consumption. If you are significantly overweight, some 6 to 12 weeks of training are necessary before weight reduction occurs, assuming that you are not on any diet.

In general, there are three modes of endurance training: 1) Long, slow distance (LSD)—where one maintains a given submaximal pace from the start to the finish; 2) interval training—moderate to high levels of work with regular intervals of rest (e.g., run 150 yards, walk 150 yards, repeat); and 3) combined LSD and interval training—where you start very slowly, then moderately vary your pace at regular intervals and eventually conclude the session by going slowly again.

### Specific Activities

Each exercise session should include a warm-up phase (low-gear rhythmic activity), a moderate to high activity phase, and a 5 to 10 minute cool-down phase



IN SUMMER joggers & runners doff warm-up suits for simpler attire.

(low-gear rhythmic activity, e.g., walking).

Your activity can be one or many so long as it involves rhythmic use of at least the leg muscle groups. Walking, olympic walking, jogging, running, hiking, swimming, rope-skipping, bicycle riding, cross country skiing, continuous dancing, and rowing are such activities. There is no unanimous agreement among investigators as to which activity is "best"; the objective is to maintain a constant level of physical effort.

### Cautions

The majority of adults who embark on their own training programs terminate training within four weeks because of over-eagerness to progress too fast. Your progression, in terms of distance and/or speed, should be held to a minimum for the first 8 to 12 weeks. If, at this time, you have not encountered any unusual orthopedic or cardiovascular symptoms, then faster rates of progression may be undertaken.

Do not attempt to increase your work-load if you have tenderness in a joint (lower back, hip, knee, or ankle) that tends to worsen with activity. Tendonitis is frequently, though not always, the cause of this tenderness and it usually can be remedied by withdrawing from exercise for a week or two.

If you experience chest discomfort on exertion (pressure, aching, tightness, or burning sensation) or become dizzy, or light headed, slow down and stop. By no means should you walk or run off these

symptoms. Further, inform your doctor of these symptoms immediately.

Some medications can alter your response to exercise (e.g., tranquilizers, insulin, blood pressure and heart medications). Check with your doctor before engaging in regular strenuous exercise if you regularly take medications.

If you are sedentary, over 40 years of age, and clinically display two or more risk factors associated with a higher incidence of coronary heart disease (e.g., high blood lipids, high blood pressure, strong family history of heart disease, heavy smoker, or positive cardiac diagnosis), then you should see your doctor and, based on his judgement, have an EKG stress test before starting a physical training program.

### Frequency & Intensity of Training

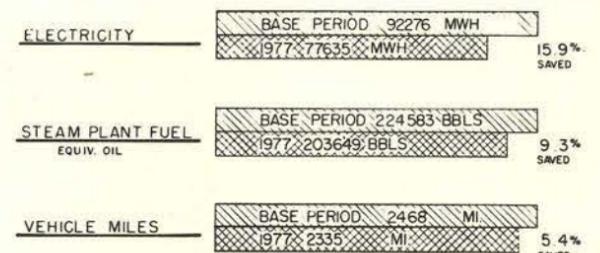
Optimally, you should train five or six days a week. As a minimum, train every other day. The duration of each session should be at least 30 minutes (i.e., actual work should eventually total at least 30 minutes). The intensity of work should be well short of maximal, in a range of 50-80 percent, especially in the first 8-12 weeks.

Select loose, comfortable clothes. Sweatsuits are not a good idea if it is warm or hot outside. If you walk or jog long distance, wear low-cut distance running shoes.

Avoid hard surfaces in the beginning if at all possible. Dirt trails or cinder running tracks, grass playing fields, parks, and golf courses are suggested. Varying locations (and activities) add interest to your program.

### ENERGY SAVINGS

COMPARED WITH USAGE IN BASE PERIOD - JULY 1972 THRU JUNE 1973  
CURRENT REPORTING PERIOD ENDING JUL '77



### Congratulations

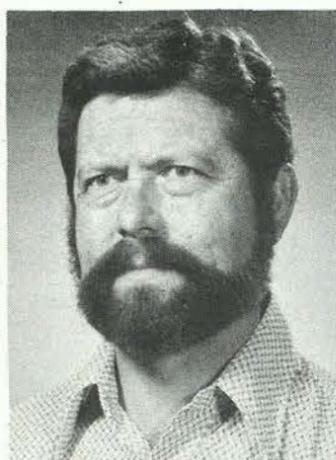
Mr. and Mrs. Gary Zinkann (9354), a daughter, Candice Chaka, July 23.

commuting information  
**DIAL 4-RIDE**

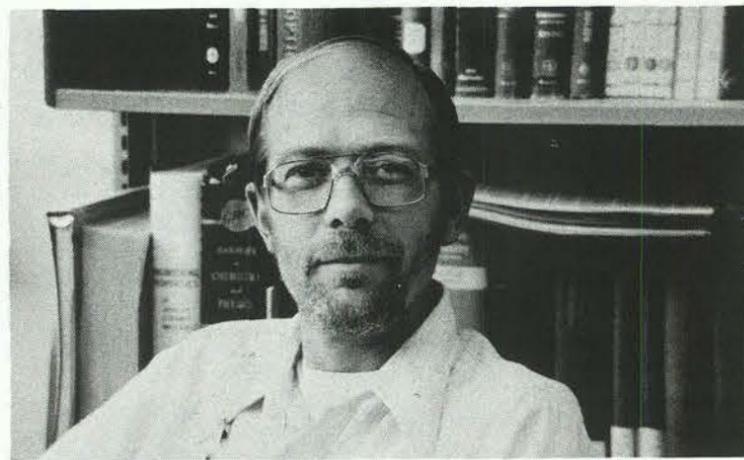
# MILEPOSTS

## LAB NEWS

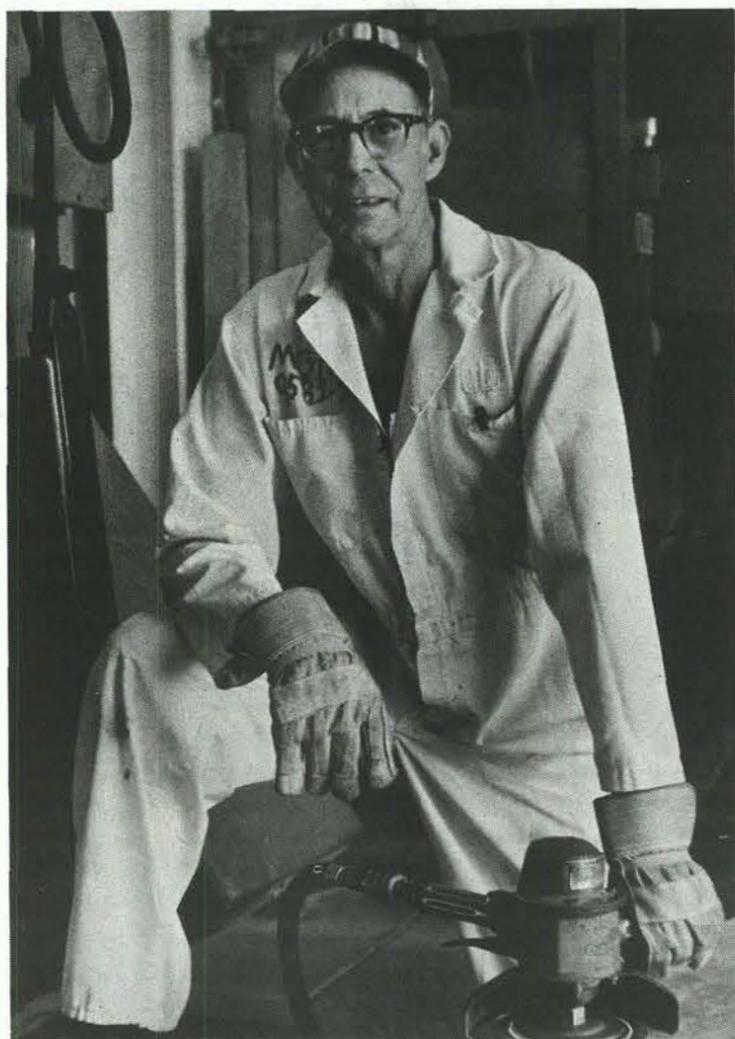
AUGUST 1977



Bob Mikkelsen - 9424 20



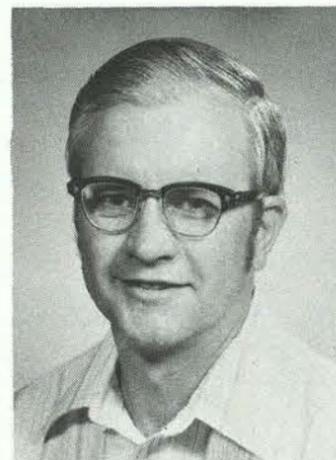
Gary Snow - 2521 10



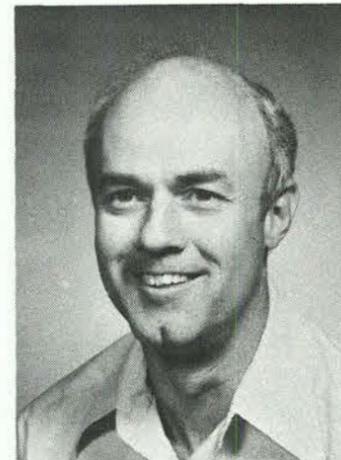
Manuel Martinez - 9582 25



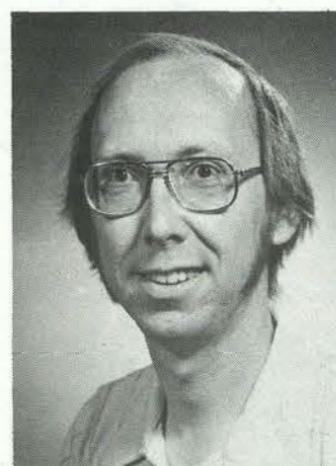
Vernon Brewster - 9414 30



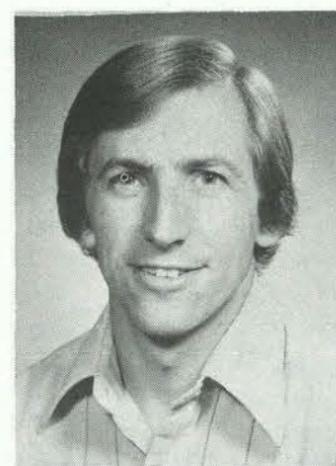
Eldon Julius - 1734 20



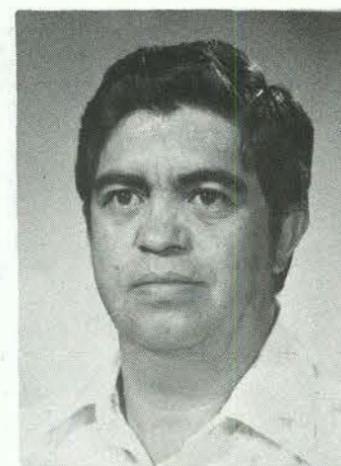
Ronald Williams - 9651 20



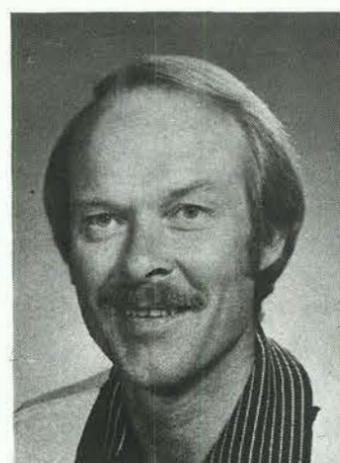
Richard Jones - 2633 15



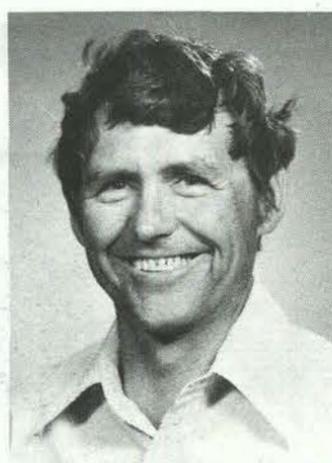
Lee Byers - 9654 10



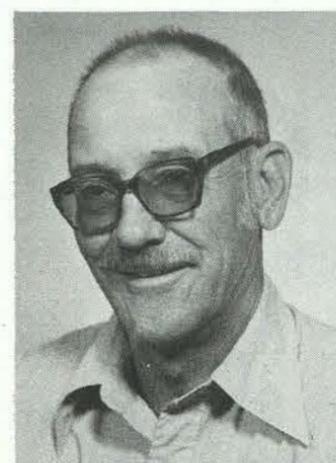
Paul Martinez - 2532 20



Ken Flynn - 4335 20



Ed Smith - 1321 10



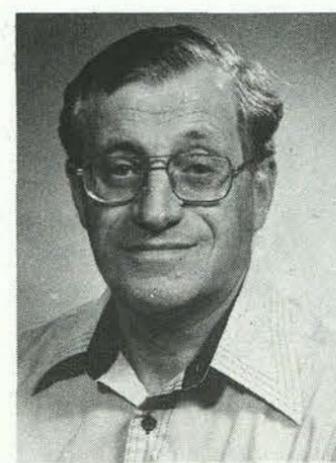
Stanley Whittet - 9335 20



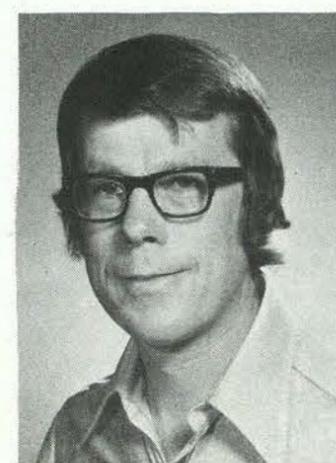
Harold Crass - 2625 15



Patricia Neiswander - 2516 15



Herbert Parsons - 4310 20



Nels Magnuson - 1221 15



Eugene Church - 1232 20



Dick Myers - 8412 25



Palmer Nelson - 1124 15



W. A. Stephenson - 2355 20



Larry Neibel - 3170 30



John Woodworth - 5821 20



Andrew Wilken - 1323 20



Isaac Griego - 4121 20



Oreste Puccini - 4314 20



Leslie Osmond - 1247 15



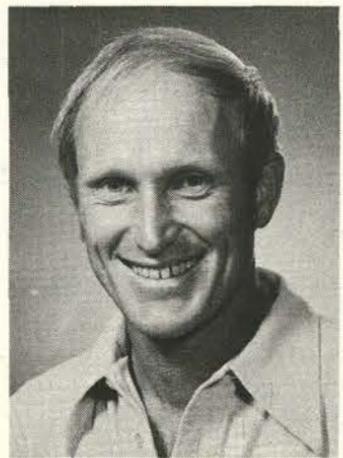
Calixto Soto - 3433 15



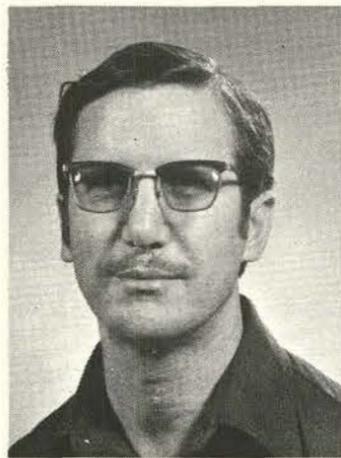
Ken Touryan - 1260 15



Raymond Bair - 2135 10



Ronald Madsen - 1734 15



Larry Stephenson - 5831 15



Frank Dain - 1124 30



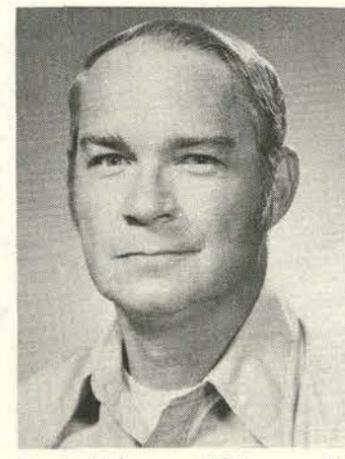
Fred Hansen - 1323 25



David Judd - 2625 25



James Trentham - 9421 10



Erwin Palmer - 4121 10

# City Museums Need Volunteers

Albuquerque's four museums are recruiting volunteers. Each museum conducts a training program for new volunteers (called docents) usually during the fall. In addition, training covering new exhibits occurs as needed and consists of city and regional field trips and lectures. Interested persons should call any of the following for information.

**University Art Museum, UNM, 277-4001.**

Docents with some art background help two and a half days a month in a program to teach art fundamentals to 5th graders. Docents also serve in gallery receptions, prints and photographs study room, and in providing tours of current exhibitions.

**Museum of Albuquerque, 299-8829, 345-1186, 255-5152**

Docents spend two and a half days a month conducting museum tours. Other activities include assisting in the gift shop, working with collections and on exhibits construction, doing research, assisting in

Museum reception, and manning telephones.

**Maxwell Museum of Anthropology, 247-4877, 294-0049**

Docents make possible the Museum's education program, offering tours in the Museum and presenting portable exhibits in schools. Volunteers also assist in the gift shop and serve as gallery attendants. Maxwell's Mini-Museum in the Albuquerque First Plaza Galeria is staffed by volunteer receptionists.

**The Indian Pueblo Cultural Center, 294-8282**

Community support to the Indian owned and operated center is provided by the Friends of the Indian Pueblo Cultural Center. This organization seeks volunteers for its own activities as well as those of the Center. Docents at the Center serve as guides for group tours. Training sessions for volunteers are held each month and include lectures and field trips to the Pueblos.

# Speakers

G. A. Samara (5130), invited paper, "Some Applications of High Pressure Studies of Phase Transitions in Solids"; P. C. Lynne (5131), "Electrical Response of Shock-Wave-Compressed Ferroelectrics"; D. E. Grady (5163), invited paper, "Stress Wave Propagation in Rock"; J. E. Schirber (5150), invited paper, "Studies of Electron Transitions Using Solid He Pressure Techniques"; R. J. Lawrence (5162) and J. R. Asay (5167), "The High Pressure Multiple Shock Response of Aluminum"; R. A. Graham (5131), invited paper, "Measurement of Wave Profiles in Shock-Loaded Solids," and "Acceleration Gauge Measurements to Characterize the Properties of Solids Under Rapid Impulsive Loading"; I. J. Fritz (5132) and J. D. Keck (2521), "Stress Effects in Ferroelectric Ceramics"; M. E. Kipp (5162), "Calculation of Oil Shale Fractures Generated by a Column of Explosive in a Borehole"; L. P. Baudoin (9655), "Circulation Pump for High Pressure Gas Systems," 6th AIRAPT International High Pressure Conference—Applications and Techniques, July 25-29, University of Colorado, Boulder.

L. F. Shampine (5122), "Report of Planning Project on Numerical Solution of ODEs," ERDA Review of Math, and Comp. Science Research, July 26-28, Chicago.

R. H. Marion (5846), "Thermal Stress Resistance of Graphite Matrix Fuels for Pulsed Reactors"; J. C. Swearingen (5846), R. J. Eagan (5845), and E. K. Beauchamp (5846), "Fracture Toughness of Reinforced Glasses," An International Symposium on Fracture Mechanics of Ceramics, July 27-29, University Park, Pa.

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

### CLASSIFIED ADVERTISING

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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 ERDA employees.
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

TRASH BAGS, city-approved, \$4, South Hwy. 14 Project. LAB NEWS office, Bldg. 814.

BRINKTUN POOL TABLE w/accessories, \$100. Vigil, 298-6188.

FOLD-OUT COUCH—double bed, green. Hueter, 242-1620.

.22 CAL. Crosman CO<sub>2</sub> Pellgun, 6-shot revolver, \$25. Paul, 299-6387.

QUARTERHORSE, 2-yr.-old gelding, gentle, being schooled in Western Pleasure, good blood lines, \$600. Morrison, 877-7425.

3-PIECE green Spanish sectional sofa, \$200 or best offer; dinette & 6 chairs, \$50. Pitts, 298-7946.

SOFA, \$80; butcher block table, leaf, 4 upholstered chairs, \$249; mirror, beveled edge, \$20; fp tools, \$12. Mueller, 299-1079.

BIKES: Girl's 20", chrome fenders, racing type handle bars, \$40 ea. Stuart, 265-7315.

72 FLEETWOOD mobile home, 12x64, 3-bdr., 1 1/2 baths, unfurnished, \$8000; Hewlett-Packard 97 programmable calculator w/all access. & extras, make offer. Madrid, 293-5954.

SHOTGUNS: 12 gage, Model 12, Model 50 Winchester & single shot Stevens. Wehrle, 255-4667.

CAMPER, 8' cabover lift top, sleeps 4-5, 2-burner stove, icebox, water tank, sink, 1/2-ton pickup will handle. Erdman, 298-3097.

INNER TUBES, \$1.25 ea. Stuart, 299-9190.

TWO YARDS striped upholstery velvet, Scotchguard, ruby. Miller, 281-3189 after 6.

BRITTANY SPANIEL, 2 1/2-yr.-old male, good watch dog, great w/children. Sanchez, 299-4119.

BAIR progressive 12 ga. reloader, \$50; Texan 12/16 ga. reloader, \$40; Remington 1100 trap gun, special myrtle wood stock, \$250. Hollingsworth, 298-8283.

SINGER portable, Futura II, 1974, used twice, \$275; 2 mattresses, twin, 74, \$35 ea. McIntyre, 345-6434 or 266-8578.

VW FUEL GAGE sending unit, new, sell cheap. Hymer, 298-2232.

BOY'S 20" BIKE, 1 yr. old, \$23. Jeffery, 298-1231.

DISHWASHER, coppertone GE port-

able, automatic, \$50. Moyer, 881-3879.

2 CHEVY mounted 7.00x15 mud & snow tires, \$45; used doors, \$1 ea.; 13 1/2 x 17 1/2 medicine cabinet, \$10. Baca, 296-8474.

LAWN MOWER, Sears elec. twin blade, 3 HP gasoline engine, \$45; 21" Zenith B&W TV, portable, solid-state, w/stand, \$40. Pierce, 268-6057 after 5.

CAMPER TRAILER, 14' Northwest Coach, sink w/elec. pump, propane stove & oven, sleeps 4, \$800. Ezell, 821-1768.

MARTIN TRUMPET w/case & stand, \$150. Nogales, 247-1178.

CHILD'S BICYCLE, 24" on wheels, thorn proof tubes, \$15. Wyant, 298-0371.

MAYTAG portable dishwasher, \$250; Sears gas stove, \$30. Adams, 296-9231.

RIMS, 15", wide, chrome plated, 5-hole, selling two for \$15 each. Keith, 242-2173 or 265-1620.

TRUMPET, Bundy, w/music stand & mute, \$115. Lohkamp, 298-6494.

TWO matching chairs, barrel shape, covered in green-gold leaf pattern, \$100. Harris, 299-4559.

SIBERIAN HUSKY, show quality, red and white adult male, delightfully dispositioned house dog, will discuss. Lambert, 293-8825.

BUNDY clarinet, used 1 school year; folding music stand; Hoover band jacket. Iman, 299-6500.

AMERICAN EDUCATOR encyclopedia, 20 vol. set, 1972 ed., \$50; steel clothesline poles, \$10. Tomchuk, 256-7049.

MOTOROLA HT-200 Handie Talkie, 2 freq. w/battery; carrying case & battery charger; crystals for 13/06 & 46/46. Erni, 268-1721.

STORAGE CABINETS, metal; cast iron kitchen sink, white; Honda 125S motorcycle. Laskar, 299-1024.

CLARINET, Bundy, w/case & music stand, \$60. Greenwell, 298-0959.

14" STEEL WHEEL, 5-hole, fits Ford Mustang & others, \$6; tire, F70-14, 4-ply nylon tubeless whitewall, \$4. Daut, 255-2529.

FREE: 2 Guinea pigs, female, plexiglass aquarium type cage included. Chavez, 298-0674.

CARPET w/pad, green, 24 sq. yds., \$40; sliding window, aluminum frame, 6'x3 1/2', solid pane, \$15. Barnett, 299-4009.

NET PLAY PEN, \$15; G.M. infant car seat, \$10; windup auto. infant swing, \$10; wood porta crib/mattress, \$20; infant carrier seat, \$2. Schroeder, 344-1011.

CORNET & case, \$65; Red Cross ladies shoes, 7 1/2 & 8. DeHaan, 268-6120.

OFFICE DESK, 55"x27", dbl. pedestal steel, tan enamel finish w/walnut grain laminated top; Lane coffee table, 70"x18", contemporary style. Linnerooth, 299-6154.

FREE to good family: Terrier, housebroken, spayed, shots, gray color, 14 lbs., good w/children & adults.

Darby, 255-6701.

FORD pickup rearend (1964), \$25; Corvette ring & pinion 3:56 ratio, \$10. Shaw, 296-2531.

POOL TABLE, 7', w/accessories. Tuck, 266-6561.

ELECTRIC MOTOR, 1/2 HP, reconditioned, never used, \$20. Peterson, 256-7514.

VIOLIN, half-size, \$85. Magnuson, 821-5330.

CLARINET, "Licorice-stick" type, \$40. Rose, 298-4849.

TWO sitting-sleeping 30" wide foam mattresses & foundations, walnut finish corner table, Herculon coverlets & bolsters. Esterly, 881-1973.

GIRL'S 24" bike, \$20; 20" Stebler unicycle, \$17; size 10D hiking boots, \$12; Reynolds trumpet, mute, case, \$75. Mills, 299-2130.

LAWN MOWER, push type, \$15; 13" steel wheels, 5-hole, 3 at \$3/ea.; rabbits. Benson, 268-3586.

TENT TRAILER, Nimrod type, sleeps 4, \$700 or best offer. Adams, 881-6836.

8 X 10 solid wood building, includes wood walls, & floor, pitched roof & windows. Archuleta, 821-5405.

MOVIE CAMERA, Sanyo Super C, E440 hi focus; 2 black padded bar stools; antique chest; bookcase; Zenith turntable. Dollahon, 293-8523.

### TRANSPORTATION

'69 VW Campmobile, engine rebuilt 20,000 miles, fully equipped. Hueter, 266-1638.

'72 MONTE CARLO, AM-FM, AT, PS, PB, AC, tilt wheel, new engine & paint; '72 Opel, 4-spd., new paint. Prevender, 299-5253.

TRADE '72 Pontiac Ventura II for late model fiberglass boat. Wehrle, 255-4667.

'70 VW BUG, extra gas tank. Owens, 881-0815 after 4:30.

SAILBOAT, Catalina-22, experienced, ready to sail, reasonable condition & equipment, \$4800. Wakeland, 881-7683.

'73 FIAT sedan, steel belted radials, adjustable bucket seats, disc brakes, front wheel drive, \$1185, will trade. Smitha, 881-1001.

'73 GRAN FURY, AC, PS, PB, AT, rebuilt radiator, new brakes, alt. Michelins, 93,000 miles, \$1995. Shumway, 865-7160.

'74 BUICK Electra Limited, loaded, all power, new tires, \$4200. Chapman, 294-0437.

'74 LINCOLN Continental Mark IV, white w/red leather interior, low miles, all extras, \$6400 or best offer. Chapman, 292-2800.

BICYCLES: men's, 10-spd. w/lock/chain, \$45; 3-spd. w/hand & coaster brakes, \$15. Beck, 294-8154.

'76 OLDS 88 Royale, silver, AT, AC, power, cruise control, 2-dr.; split vinyl roof, radio/8-track, \$5000. Wheeler, 296-4793.

'71 CHEVY stn. wgn., Nuttall, 821-2895.

'72 HONDA, 175 cc. street model, twin, 4-cycle, \$220. Marchi, 299-3653.

'67 CAMARO, blue/black vinyl top,

AT (floor), bucket seats, overhauled engine, V8, sell or trade for truck. Arana, 299-1214.

'75 GRANADA GHIA, 4-dr., PW, PB, PS, P seats, custom, high performance engine, 19 mpg, 48bl dual exhaust, HD suspension, \$3950. Schulze, 898-2880.

BICYCLE: girl's 3-spd. Schwinn. Blotner, 298-9459.

BICYCLES: 5-spd., 26" Sears, 5 yrs. old, \$30; 26" women's single spd., 10 yrs. old, \$12.50. Bartlett, 299-4861.

'66 BUICK Special, 2-dr., \$450. Vigil, 298-6188.

'75 MAVERICK, 4-dr., AT, AC, PS, under book at \$2950. Wagoner, 869-6791.

'72 DATSUN pickup, dk. red w/HD bumper & trailer hitch, \$1550. Weber, 255-5653 or 299-1389.

'72 PONTIAC Ventura, one owner, AT, 4-dr., 6-cyl., R&H, book value \$1525, best offer. Bartlett, 299-2996 after 5.

'72 CHEVY 1/2-ton pickup w/camper shell, V8, AT, PS, PB, AC, radio. Harris, 821-8524 after 5.

'74 MG-MIDGET, low mileage, one owner. Apodaca, 262-0947.

'77 MERCURY Bobcat, 1500 miles, AC, luggage rack, orange exterior, tan interior. Clouser, 296-1948.

'75 VEGA, 2-dr., 31,000 miles, \$1550. Dahlgren, 298-8168.

'70 VOLKSWAGEN Beetle, NADA retail \$1150, will sell for \$875. Garcia, 255-3201.

'69 FURY 2-dr. HT, AC, radio, PS, PB, \$850. Mills, 299-2130.

'76 CHEVETTE Hatchback coupe, many extras, 4-spd., 12,700 miles, 27 mpg city, well below book. Harrison, 296-7880.

5-SPD., boys 24" bicycle, \$35. AMF. Moyer, 2916 Florida NE, 881-0754.

'68 MERCEDES 250 sedan, 6-cyl., AT, AC, PS, PB (disc), AM/FM, Michelin radials, 63,000 miles. Nicovich, 299-1430.

'76 PLYMOUTH Volare stn. wgn., slant 6, AC, PB, PS, AM/FM/cassette, all offers considered. Madrid, 293-5954.

'71 VW Super Bug, 60,000 miles, \$700. Shipley, 881-9344.

10-SPD. man's bicycle, 22" lugged frame, cotteder cranks, Suntour/Shimano downtube shifters, center-pull brakes, rattrap pedals, kickstand, \$75. Joseph, 299-6989.

'73 MG Midget, new paint & brakes, R&H, tonneau, below retail, \$2100 or best offer. McHaffie, 299-6850.

'70 FORD LTD wgn., 9-pass., one owner. Beller, 299-0205.

'65 MERCEDES 300SE sedan, sun roof, PS, PB, AT, \$2795 or offer. Grace, 266-7405.

'69 NOVA, 4-cyl., 68,000 miles, stick shift, 2-dr., \$795; will take small trailer as a trade-in. Kennedy, 293-9455.

'73 OLDS Cutlass, low mileage, one owner, power & air. Syme, 293-9735.

'76 FORD 1/2-ton Explorer pickup, 360 V8, fabric seats, Jackman rims, long bed/custom tarp, PS, PB, \$5000. Jespersion, 255-5161.

### WANTED

MOTORCYCLE fairing. Shunny, 265-1620.

WOODEN DESK, medium size; 8mm movie projector; 6' casting fishing rod & reel; Coleman 2-burner stove. Ripi, 298-5170 after 5.

ONE OR TWO ACRES: Bosque area, Alameda or Corrales, reasonable. Arana, 299-1214.

METAL DETECTOR, used; small dog, good w/children. Holloway, 898-2110.

BABY CRIB; dbl. stroller; chest of drawers. Feibelman, 242-1946.

8" to 12" REFLECTOR (Newtonias or Schmidt-Cassegrain), especially interested in Celestron 8 or like quality. Burress, 298-5061.

RETURN BIKE that was parked next to Gate 4, no questions asked. Hammons, 4-3663.

CUSHMAN 8hp engine, for parts; Ronkon Trailbreaker transmission. Donaldson, 255-4024.

50MM SUPER TAKUMAR f1.4 lens or 35mm Pentax Spotmatic 1 camera w/50mm Super Takumar lens. Erne, 299-0565.

VIEW CAMERA w/lens & holders. Laskar, 299-1024.

RECYCLABLE TROPHIES (skiing, tennis, bowling, motorcycling, softball, volleyball, car racing) for Sitzmarkers Ski Club. Lassiter, 298-2461.

### REAL ESTATE

12 ACRES, irrigated, 2 miles south of River Rd. in Belen, \$3000/acre. Chavez, 877-4312.

2-BDR., den, fp, wet bar, beamed ceilings, landscaped, sprinklers, new stucco, remodeled kitchen, Sandia HS, priced in 30's. Brewer, 298-6018.

TOWNHOUSE in Chimney Ridge, 1900 sq. ft., 2-bdr., 2 1/2 baths, LR, DR, wet bar, den, breakfast rm., kitchen w/radar range & trash compactor. Syme, 898-3532.

### FOR RENT

1-BDR. APT., NW, near bus line, all utilities paid. Hill, 255-0336.

3-BDR., den, 1 1/2 baths, carpeting, drapes, fenced yard, Eubank-Candelaria area, lease \$350/mo., \$200 D.D. Whitman, 836-1216.

7RM. HOME, 1 1/2 baths, sunken tub, sundeck, unfinished den-loft, 2 ponderosa-covered acres, Sandias, caretaker, furnished, easy commute, rent/lease. Hawkinson, 281-5239.

### LOST AND FOUND

LOST—Wallet; TI pocket calculator, SR 50, B#928231; men's small grey leather gloves; approx. 12-14 Sandia Labs keys, 9940 brass tag; LED digital black plastic watch (TI).

FOUND—Bi-focal safety glasses w/ side shields, currency, Lloyd's pocket calculator in leather case.

LOST & FOUND, Bldg. 832, 264-6245.

**PEEL • C-CLUB • ACROBATICS • LABOR • LINDA • VIKINGS • TEA • ASPENS • CARIBBEAN**

| FRIDAY  | SATURDAY  |
|---|---|
| 26—HAPPY HOUR<br>GERMAN BUFFET<br>Adults \$3.50<br>Under 12 1.92<br>THE VIKINGS   | 27—SOUL SESSION<br>9-1<br>CASCABEL<br>Members Free<br>Guests \$1  |
| 2—HAPPY HOUR<br>ROAST BEEF BUFFET<br>Adults \$3.50<br>Under 12 1.92<br>COUNTRYMEN | 3—VARIETY NIGHT<br>Mike Haley Dancers<br>MAGIC WORLD OF<br>TOPO GIGIO<br>Food 6 Show 7<br>Free to Members |

**IF**—Labor Days make you want to labor (or to go into), lie down till the urge passes. Then head for the Club's Labor Day Picnic: singer-guitarist Linda Beattie, nickel dives for the kidlets, two-bit draft beer, Happy Hour bars, snack bar for lunch. And, of course, end-of-season swimming all day, with or without a ticket (but with a suit—else you'll have one on your hands). It's 11 to 6 on Sept. 5.

**YOU**—like some German food tonight? Maybe sauerbraten, knockwurst ("Knock, knock." "Who's there?" "Wurst." "Wurst who?" "Wurst 'knock-knock' joke ever."), hot potato salad, sauerbraten ("Knock, knock." "Who's there?" "Sauer." "Sauer who?" "Sauer you these days?"). On the bandstand later, it's another Germanic delight, *The Vikings*.

**WANT**—some good reasons not to go home next Friday? Prime rib *au jus*, *The Gountrymen*, and the most convivial and congenial companionship since circuses at the Coliseum. Come on out.

**TO**—give your kids something to talk (or mumble) about for a long time, make it to Variety Night on the 3rd. The Mike Haley Dancers do some pretty incredible acrobatic and jazz routines, featuring dancers who touch the floor only occasionally. The movie brings you *Topo Gigio*, the Italian mouse who makes Mickey jealous. A short feature. Color

cartoons. Inexpensive suppers.

**BE**—at the Club tomorrow night for Soul Session and let *Cascabel* do good things to your dancing.

**OUTRAGEOUSLY**—popular. That's the Club's Shrimp Peel. Three dozen Texas Gulf shrimp await your peeling pleasure on the 17th. After our appealing dinner will come a square dance exhibition and info on a series of square dance lessons at the Club. Then *Elton Travis* takes over with some real chip-kickin' music. It's a night for Levis and levity. \$6.50 for members, \$8 for guests.

**HAPPY**—picnickers usually gather at the Club patio on Wednesday evenings. But it will be different on the 31st—it's the last one (sob) of the season. Come on out and enjoy your goodies—or clean out the cracks in your picnic basket.

**REALIZE**—how many interesting things Sanado can do for (or to) you women? At last count, 18! Come out for the membership tea on the 31st. Info about when, where, and what to wear from Carol Larson (881-5293) or Judy Williamson (293-2572), but hurry!

**THAT**—\$3 you just spent to see *Star Wars* could have been \$2.15 if you had a discount ticket from the Club. For Cinemas I, II, and III and Wyoming Mall only. For members only.

**YOU'RE**—reading along here looking for the latest in Club travel bargains? Stop. (Speed readers, back up.) One new offering takes you on a Caribbean Cruise. By air from Albuquerque to San Juan, PR, then aboard the MS *Carla C* to South America. It's terribly cosmopolitan: you'll

go ashore at Curacao (it's Dutch), Caracas (Venezuelan), Trinidad (British), Martinique (French), St. Thomas and San Juan (both U.S.). Prices start at \$810. Dates? We have a block of staterooms reserved for Jan. 7-14, or you could do it earlier—a Caribbean Christmas Cruise. See Ed-in-the-Lobby Fridays 6-7.

**USUALLY**—Teacher's Convention means the kids are either pestering you or borrowing the car. Make it more fun this year—join the Oct. 27-30 Disneyland Tour. Adults are \$175 (dbl. occ.), kids 3 to 11 are \$125, and the prices include RT air fare and lodging across the street from the shrine.

**ONLY**—\$909 puts you in fabled Hong Kong Nov. 18 - Dec. 4.

**MODERATELY**—priced Mexico awaits you. A few spaces are still open for

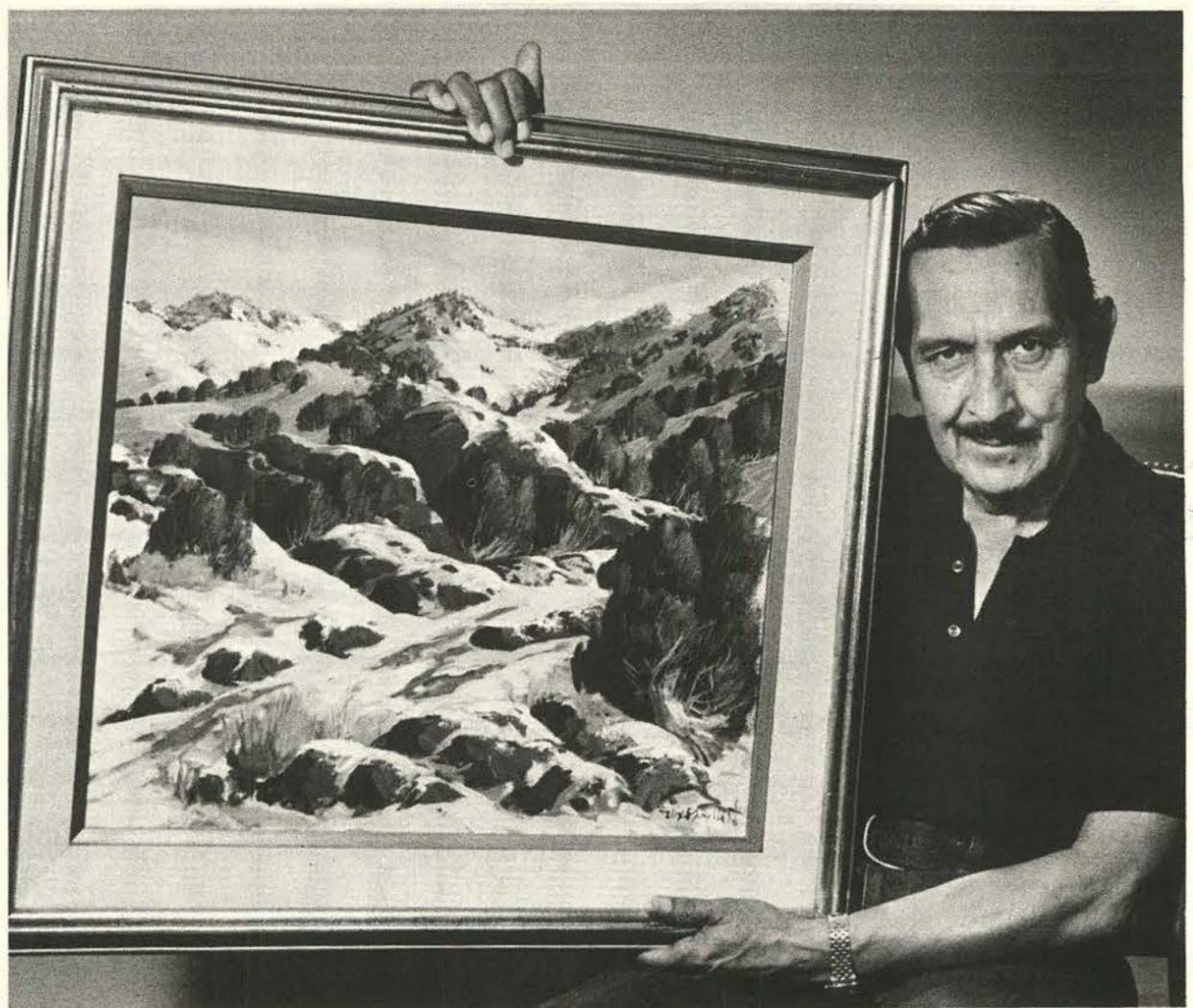
**HOT FLASH**—New weekender trip package to Carlsbad Caverns via Trinity Site, Space Museum, White Sands on Oct. 1-2. RT bus, lodging in Alamogordo. About \$40. Call Office or see Ed for details.

Mazatlan (Oct. 31 - Nov. 7, \$279, no meals) and for Manzanillo (Nov. 7-14, \$329, breakfast and lunch or dinner).

**MISERABLE**—because you missed the Club's last Chama outing on the Cumbres and Toltec? Despair not. Join Chama II on Sept. 24. It's an Aspencade, it's beautiful, and it's \$12.80 (\$4.80 for 11 on down).

**MORE INFO**—265-6791.

**DISNEYLAND • ED • NICKEL DIVES • ELTON T • CASCABEL**



**FELIX PADILLA** (3421) displays his prize-winning acrylic painting of the Sandia Mountains which recently took first place in the Carlsbad Area Arts Association Tri-State Arts and Crafts exhibit. Felix has won five other major awards in regional art shows throughout the Southwest in the past year. However, even though he's recognized as a fine artist, Felix assures LAB NEWS readers that he will continue drawing cartoons for the back page. Retirees and others who receive their copies by mail miss the cartoons since this space is used for addresses.

