

**Water, Willard & Sun Power, page 4**

# LAB NEWS

VOL. 29, NO. 14

JULY 15, 1977

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

## Continuing Education

### **INTEC & Sandia Labs**

If you were graduated from a university in some technical field, say 10 years ago, then you are likely to be aware—perhaps painfully aware—that technology has changed and that which you learned back then didn't (and really couldn't) prepare you to work with today's technology. Sandia's weapon engineers are continually challenged to utilize this new technology to build more capability into ever smaller, safer, more reliable packages. In addition, in the past few years the Labs has begun to work in some new areas in which it lacks past experience—solar energy and geology for instance.

"To keep up, to keep Sandia a vital laboratory, we must maintain and improve the skills of our technical staff, and that's the basis of INTEC. The Labs' future depends on the competence of its staff." The speaker is Orval Jones (1700), chairman of the On-Premises Educational Committee, and he is describing the In-Hours Technical Courses program

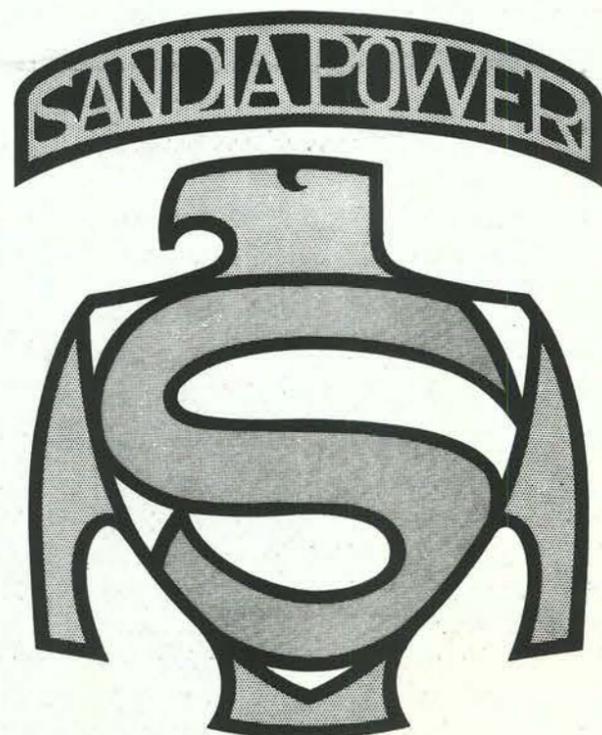
which this fall will offer nearly 20 courses to the technical staff.

"The Committee arrived at this course offering only after surveying our technical people, finding out from them what was needed," Orval continues. "These courses are relevant, with strong emphasis on application to Labs' work."

INTEC has become a cornerstone of Sandia's education program. Through 1976, there were some 1900 course completions at Sandia Albuquerque, and this past spring's enrollment totaled about 400.

Why not simply go to the university? Orval replies: "We continue to depend on the university for courses for our staff who are pursuing degrees. However, most of our people are not seeking additional degrees, and we've found that they tend not to participate because of problems of course scheduling and required business travel. Our engineers and scientists do

[Continued on Page Four]



**IT'S T-SHIRT DAY**—According to plan, with this issue of LAB NEWS you should have received on a separate sheet your copy of this prize-winning T-shirt iron-on emblem. Winners are Bob Helgesen (9473) and Richard Cernosek (1354). A few extra copies of the emblem are available in the LAB NEWS office. If you don't plan to use your copy, we suggest passing it on to someone else.

# Afterthoughts

The sting, Old World style--A release from AT&T carries a warning which Europe-bound Sandians will want to remember: "Beware the hotel telephone surcharge, a fee that can swell transatlantic phone charges 300 percent or more." A Berlin hotel charged a guest \$70 for a \$27 call to the U.S., and one in Paris billed another transatlantic caller \$90 for two \$7.50 calls. The imaginative French claimed the fees covered the cost of manning the switchboard and leasing telephone equipment. "In most parts of Europe this price-gouging is still a common practice," the release continues. To avoid the sting, follow a few simple rules: check with the hotel manager in advance about surcharges; place the call collect--the surcharge is relatively small in most cases on collect calls; don't call from the hotel--use one of the special telephone centers at railway stations or airports.

\* \* \*

Bathtubs & self-improvement--We've always viewed the practice of lolling around in a bathtub as just a little decadent. After all, vigorous and purposeful people take showers--right? This view of bathtubting may undergo change, though. The LAB NEWS mail recently turned up an item describing the Bathtub Reading Rack, a contraption of aluminum tubing that sits astride the tub rails as it holds your book or magazine. Benefits are truly astounding. "The daily habit of reading in the bathtub is a positive means for the development of the intellect," says the flyer. You emerge looking like a prune, but for \$24.95 who can pass up intellectual development?

\* \* \*

The stern ethic--"Keep the faculty of effort alive in you by a little gratuitous exercise every day. That is, be systematically ascetic or heroic in little unnecessary points, do every day or two something for no other reason than that you would rather not do it, so that when the hour of dire need draws nigh, it may find you not unnerved and untrained to stand the test." --Philosopher William James

\*js

## A Matter of Degree

Congratulations to these Sandians, who received degrees during the last quarter: Bachelor's--Thomas Covert (4336), David Heinze (5825), Gary Schuster (5215), Robert Vasquez (1126) and William Carter (9524); Master's--Joseph Curzi (9656), Thomas Oglesby (1213), and Elizabeth Snow (1112); PhD's--Charles Albright (9573) and Harold Walling (1136).

## Congratulations

Mr. and Mrs. Larry Stevenson (5831), a daughter, Hilary Nichole, June 25.

Mr. and Mrs. Joe Kubas (9752), a son, Matthew Joseph, July 8.

## Sympathy

To Berny Shea (3522) on the death of his mother, June 29, in Alton, Ill.

To Lorenzo Garcia (9573) on the death of his father, June 29.

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## LAB NEWS

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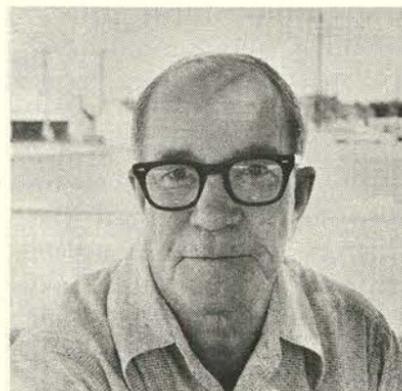
bruce hawkinson & norma taylor write  
bill laskar does picture work  
so does russ smith

&

lorena schneider reports on livermore



Rex Rozelle (9581)



Phillip Beasley (3727)



Andrew Lunsford (9718)



Chester Laskowski (9561)

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## INTEC & Sandia Labs

want to maintain their technical competence and INTEC is the Labs' way of going half-way to help them. They attend INTEC courses in-house and in-hours in a one two-hour class per week format (which minimizes travel interference) but they are expected to complete assignments on their own time. And our courses are closely tailored to our needs."

In addition to helping maintain competence in a given job, INTEC complements the job announcement system for technical staff positions. The system is successful to the extent that qualified candidates apply for the advertised jobs. The completion of INTEC course work can help people into a new career direction at the Labs--and this can be an exciting and revitalizing experience.

INTEC courses fall into one of two categories: assignment-related and mission-related. Assignment-related courses aim to develop skills needed in present or near-future job assignments. Mission-related courses are designed to maintain technical competency and encourage broad analytical capability. Besides the instructor, a course supervisor is assigned to each course to oversee the effort and to serve as mentor/consultant/sounding board for students and instructor alike.

The INTEC faculty is a mix. Most are Sandians, others are faculty members at UNM, still others are Sandia consultants. Many Sandians are experienced university teachers, and many others would enjoy the teaching experience. To both of these Orval extends an invitation to teach in INTEC. Simply call Jack Hueter, 4-6508.

The full schedule for this fall's INTEC courses was published in a Sandia Bulletin this week. The catalog of courses was also distributed at the same time. July 29 is the deadline data for enrollment. Classes begin on September 6 and conclude on December 23. George Banos and his division, Education and Training 3522, administer the INTEC program.

## Retiring

# Heat for Better Living—Through Chemistry

Remember being warned in your chemistry class about the heat generated by mixing water with sulfuric acid? Turns out that kind of reaction may be more than a laboratory curiosity after all. We could use waste heat (from an industrial process or even from the sun) to drive off the water from dilute sulfuric acid. Later, when we needed thermal energy, we could add water to the now concentrated sulfuric acid and release heat.

That's just one of the kinds of chemical reactions Sandia Livermore is currently interested in. Livermore has been selected to manage the Thermochemical Energy Storage Program, one of three parts of the National Thermal Energy Storage Program. (NASA - Lewis Research Center and Oak Ridge National Laboratory are responsible for storage systems based on the use of sensible heat and of latent heat of transitions.) Sponsored by ERDA's Office of Conservation, the Thermochemical Storage Program's objective is to develop and disseminate a new technology—thermochemical energy storage and transport—which will address itself to ways to store and transport thermal energy using reversible chemical reactions.

Principle underlying the Sandia program is the fact that at some point in almost all energy-consuming processes the energy is converted to thermal energy. Frequently, however, a mismatch (in either location or time) occurs between energy supply and demand. Thus there is a tremendous potential for energy conservation through the use of systems which store and/or transport thermal energy.

Ray Mar, supervisor of Exploratory Chemistry Division 8313, and Taz Bramlette of the same division head the effort. Says Ray: "Our program consists of both out-of-house and in-house activities. Our FY77 budget is approximately \$2 million, with 16 subcontractors now performing work. The in-house efforts complement the subcontracted projects and, in general, are higher risk, longer term projects."

"By reversible chemical reactions," says Taz, "we mean that they proceed in one direction with the addition of thermal energy. They then release this energy when they return to their original state."

These are program goals: to identify reactions which occur at useful temperatures; to establish their reversibility and cyclability, to characterize and solve potential containment problems; to analyze heat transfer techniques; and to establish the viability of a particular concept by analyzing it in the context of a complete system.

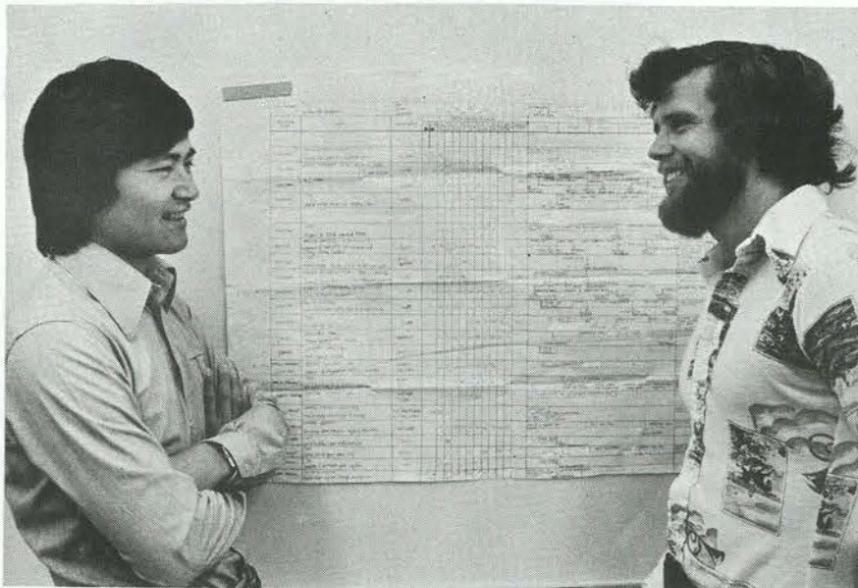
"In addition to the sulfuric acid-plus-water reaction mentioned earlier, we're investigating several other chemical reactions and concepts," says Ray. "Just to name a few, thermal decomposition of hydrated salts, ammoniated salts, methan-

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PRINCIPALS in Livermore's thermal energy storage and transport systems program, Ray Mar and Taz Bramlette (both 8313), relax before concentrating on the program plan behind them. Both in-house and out-of-house studies are underway.

olated salts, sulfur trioxide—all of these appear promising."

Adds Taz: "We're also involved with potential applications. Some, like using chemical reactions to store the periodic heat collected in solar energy systems, are pretty obvious. But we're eager to explore the feasibility of solar chemical heat pumps—self-contained systems which could heat and cool buildings. Another possibility is a chemical heat pipe which would be used to send thermal energy from a central point to industrial complexes and communities."

Reversible chemical reactions are the most complex and least understood of the three techniques typically used for storing thermal energy, sensible and latent being the other two. However, when compared to these, thermochemical systems offer some unique advantages:

- High energy densities—Based on mass or volume, energy storage densities are between two and ten times higher than those of sensible or latent heat systems.

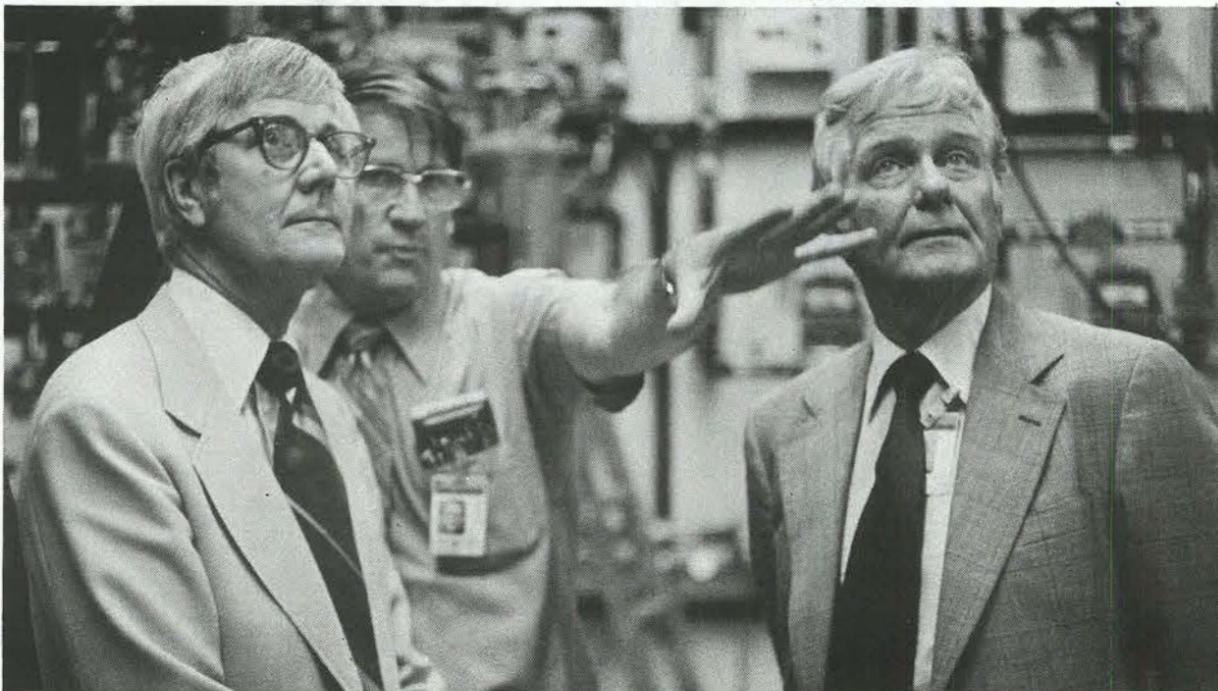
- Ambient storage—Some thermochem-

ical systems can store reaction products at ambient temperatures but can discharge energy at high temperatures. This eliminates chemical interaction problems between the storage medium and the container, eliminates the need for thermal insulation, reduces overall system heat losses, reduces environmental impact problems, and provides long-term storage capabilities.

- Transportability—The reactants and products of some reactions can be easily transported over long distances (for example, as gases in a pipeline).

- Thermal pumping—It is possible, by varying the pressure, to achieve energy discharge temperatures higher than the charging temperature.

Says Ray, "Ahead of us at Livermore lie such tasks as chemical characterization of reactions, heat transfer modeling, work on materials compatibility, and systems analyses. The knowledge we gain will enable us to select the most practical and promising chemical reactions and applications for continued development to the point of commercialization."



FINANCIAL PLANNING DIRECTOR Frank Prange (4100), left, was at Sandia/Livermore recently, his first visit since joining the Laboratories early this year. Here Pat Gildea (8143) explains environmental controls in one of the research laboratories. At right is Homer Pierce, Manager of Compensation and Benefits Department 4110.



## ***Irrigation By Sun Power***



The first solar powered irrigation system, located in New Mexico's Estancia Valley at Willard, was dedicated last week. In the demonstration project, shown at left, an oil-like fluid heated by the parabolic collectors in turn heats Freon R113 to a gaseous state. The high pressure gas drives a turbine, operating the irrigation pump which fills the pool. System is closed-loop. Above, Don Beattie, ERDA's AA for Solar, Geothermal & Advanced Energy Systems addresses dedication gathering. Governor Apodaca and Senators Domenici and Schmitt, to his left and right, also spoke. Below, the Governor, President Sparks and ALO Manager Herman Roser, who was MC for the dedication, examine collector. Nearly one thousand people attended the ceremony, demonstration and barbecue lunch.





Hazlet Edmonds (3511)

### Hazlet Edmonds New Women's Program Adviser

Career Counselor and Women's Programs Advisor are new job assignments for Hazlet Edmonds (3511).

Hazlet joined the Laboratories 11 years ago as a Grade 33 Clerk. During the years that she worked in the Library and the Training Organization, she attended UNM under Sandia's Educational Aids Program. She received her BA in psychology in 1975. Hazlet is now well along in the MAS trainee program and expects to receive her Masters degree in psychology next year.

As Career Counselor, Hazlet will conduct the Career Counseling Workshop, an out-of-hours course designed to help individuals evaluate their vocational interests and goals and to develop their own plan for achieving them. Sandians interested in attending the workshop are invited to call Hazlet directly. She is also available for individual counseling on request. To get the counseling program off the ground, Hazlet is presently interviewing a group of randomly selected employees to get a fix on the need in this area.

To her assignment as Women's Program Advisor, Hazlet brings not only enthusiasm and academic preparation but a very pragmatic approach. "I hope the women at Sandia will help me by sharing their concerns and suggestions," she says.

Hazlet's office is in room 80 of the Personnel Building (832) and her telephone number is 4-9481.

### Death

Tom Mickey of Specialty and Branch Shops Division 9582 died suddenly July 8. He was 55.

He had worked at the Labs since March 1957.

Survivors include his widow and three daughters.



## MAC Sets New Base Entry Rules

The Base's new boss, MAC, has set new rules for access to Kirtland. To take effect August 1st, the new rules are more stringent than present ones:

- all vehicles must bear a decal; those without a decal must park at the entrance and get a visitor pass—gate guards will not hand out passes as they now do
- from 10:30 p.m. until 6:00 a.m. every entering vehicle will be stopped for ID check of all occupants. Your Tech Area badge or your Sandia ID card is acceptable; for dependents, a C-Club identification card is acceptable for the time being (more on this below)
- at other times, except 6:30 to 8:30 a.m. and 3:30 to 5:30 p.m., a random ID check of entering vehicle occupants will be made about once every ten minutes
- random vehicle inspections, such as are now in effect, will continue
- access procedures for buses will not be changed.

With respect to personal identification, present plans call for the provision, ultimately, of Air Force ID cards to those people who have legitimate access to the

## Special Pension Increase OK'ed

A special increase in pensions for eligible retired employees or their surviving annuitants has been approved by Sandia's Board of Directors. The increase, which follows the benefit structure of the Bell System, is effective retroactively to Jan. 1, 1977.

To be eligible, a retiree or annuitant must have elected to participate in the modified plan in July 1975 and have been receiving a pension on Dec. 31, 1976. The minimum increase is 0.3 percent (one month), and the maximum is 10.8 percent (36 months). A retroactive lump sum payment for the period January through July 1977 will be mailed by Prudential in early August; and the amount of the increase will be included in the regular pension checks beginning with August 1977.

This increase affects approximately 1600 retirees and annuitants of Sandia. Here's how it works:

## Summer Science Program Underway

Thirty-five local high school students are enrolled this year in the Summer Science Program sponsored by the Labs and the Albuquerque Public Schools. Students participating in the program, now in its fourth year, were selected by their science teachers. The program's aim is early development of an interest in the sciences so that, as juniors and seniors, students can elect to take courses in the sciences.

Students attend classes for six weeks, two hours a day, at either Albuquerque or Highland High Schools and receive one-half credit. Instructors for the program are Sandians. Classes are offered in materials science, energy resources, physics, math/computing, and electronics. APS science department heads Gladys Anderson and Marshall Floyd work with these Sandia instructors: Bernie Kenna (5824), Ray Harrigan (5711), Eldon Boes (5719), Mike Butler (5154), Fred Magee (2643), Bill

Base but who do not possess Sandia identification. This would apply to dependents of Sandians, including Coronado Club members. Retirees already have an acceptable ID and, if they wish, they may obtain a vehicle decal through the Benefits office in Bldg. 814. A driver's license is not acceptable for identification purposes.

Visitors from Sandia Livermore will continue to be issued visitor's passes for Base access by Sandia Security, and the new rules do not affect this procedure.

During vehicle occupant checks, any person not possessing authorized identification may be signed-in by another person in the car who does possess authorized ID. Sandians may also sign in expected visitors in advance.

Purpose of the new procedures is enhanced security for the Base. Colonel Simon, head of Air Police on Base, emphasizes that while August 1st is the target date for these procedures to take effect, allowance will be made in the matter of personal identification so that all Base workers, residents, and dependents have ample time in which to procure this identification.

An employee retired July 1, 1974, with a pension of \$300 per month. The new monthly annuity will be computed as follows:

1. 30 (months of retirement during the period 1/1/74 through 12/31/76) x 0.3% = 9.0%
2. \$300 (monthly pension) x 9.0% = \$27
3. \$300 + \$27 = \$327 (monthly pension effective Jan. 1, 1977)

Where a surviving annuitant's pension is in effect, or the survivor option has been elected, the same percentage increase that would apply to the retiree's pension also applies to the annuitant's pension.

A letter explaining this adjustment has been sent to all retirees and surviving annuitants whose pensions will be adjusted.

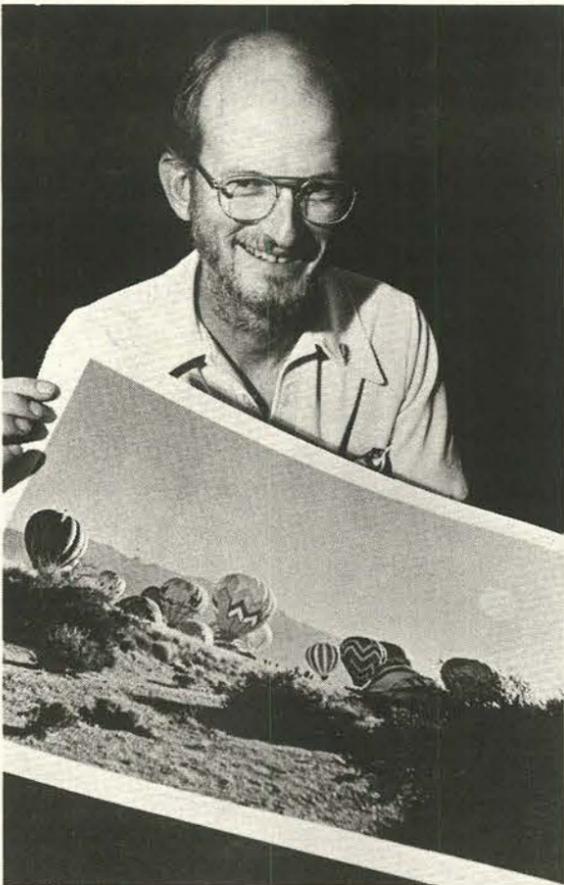
This special increase is subject to the approval of the Internal Revenue Service.

Brown (2144), Ruth David (1115), Gene Venturini (5132), Jerry Watkins (5719), Keith Johnstone (5846), Ron Allred (5834), Gary Shepherd (2634) and Dennis Rowley (2625). Wayne Trump (3521) is program coordinator.

Class projects include building transistor radios and solar collectors. A tour of Sandia Labs with their instructors is also included.

Steve Des Jardine, a YOT assigned to Division 2522 and a '76 alumnus of the program, is enthusiastic about it. "It was just super," he says. "The Sandia teachers were some of the best I've ever had." Steve is a student at Cibola High School and plans a career in chemical engineering.





LEW SUBER (1752) took this picture, selected as the '77 Albuquerque International Balloon Fiesta poster. Lew, a member of the Albuquerque Balloon Club, earned his pilot's license this spring.

## Balloon Fiesta Gets Off Ground

A popular and exciting annual event in our city is the Albuquerque International Balloon Fiesta. Charlie Hines (3172), president of the Fiesta, announces that fund-raising events for this year's Fiesta, Oct. 7-16, are underway. A large color print, judged to be the best of many taken at last year's Fiesta, is now available. The picture, by Lew Suber (1752), shows an early morning mass launching. Prints sell for \$1.50 and can be obtained from the Chamber of Commerce at the Convention Center. A copy is on display in the Credit Union.

On July 21 the Sunshine theater presents the southwest premiere of "Day of the Balloons," a film tour of America via hot-air balloons. Portions were filmed over the Havasupai Indian Reservation in the Grand Canyon; New York City; St. Martin's Parish, La.; Vail, Colo.; and Albuquerque. Also on the program is a film, borrowed from the Smithsonian, which depicts the history of flight. The 1978 calendars with color prints from past fiestas will also be available.

Tickets to the Sunshine program, at \$5, can be purchased from the Chamber of Commerce.

## Retiree Deaths

April - June 1977

Ruth Acher	June 17
Robert Dineen	April 19
Robert Elsbrock	June 30
Wilbur Leamon	June 25
James McGoorty	June 22
Thomas Muzzey	April 27
Robert Newman	June 30
Fred Stewart	May 13

## Fancy Calculator Eases Stock Control

Stock control is a problem that can strike terror into the hearts of grown persons. The usual solution is an elaborate computerized system. But Paul Benson of Satellite Systems Tests and Operations Division 1247, thinking small, adopted a Hewlett-Packard Model 97 fully programable printing calculator to handle his division's stock control.

The division maintains a stock of a thousand different types of high reliability, flight-qualified parts with a value approaching a million dollars. The parts are used in fabricating and modifying as many as 10 satellite (or satellite-related) projects simultaneously. Most of the projects are on short time scales. The division works with other labs, such as LASL on the Venus Orbiter program, and with the services: for example, the Air Force on the Vela and Radec programs and the Army on the Nuclear Burst Detector System.

If a part fails on any project, it's necessary to trace the part from system back to manufacturing lot. That's where the problems arose: many parts, many lots, and several people pulling what they needed from the parts bins and usually writing down how many they'd pulled from which lot for which project.

While watching his son Howard, a pocket calculator fanatic attending UNM, manipulate the small (1 x 7 cm) magnetic data cards on his HP 67 programable pocket calculator, Paul conceived the idea of using the magnetic cards as "bin" cards to keep records of each type of part. An HP 97, which has a print-out capability, seemed the best choice for the task. Howard, who is highly skilled in programming these calculators, made it an efficient working system.

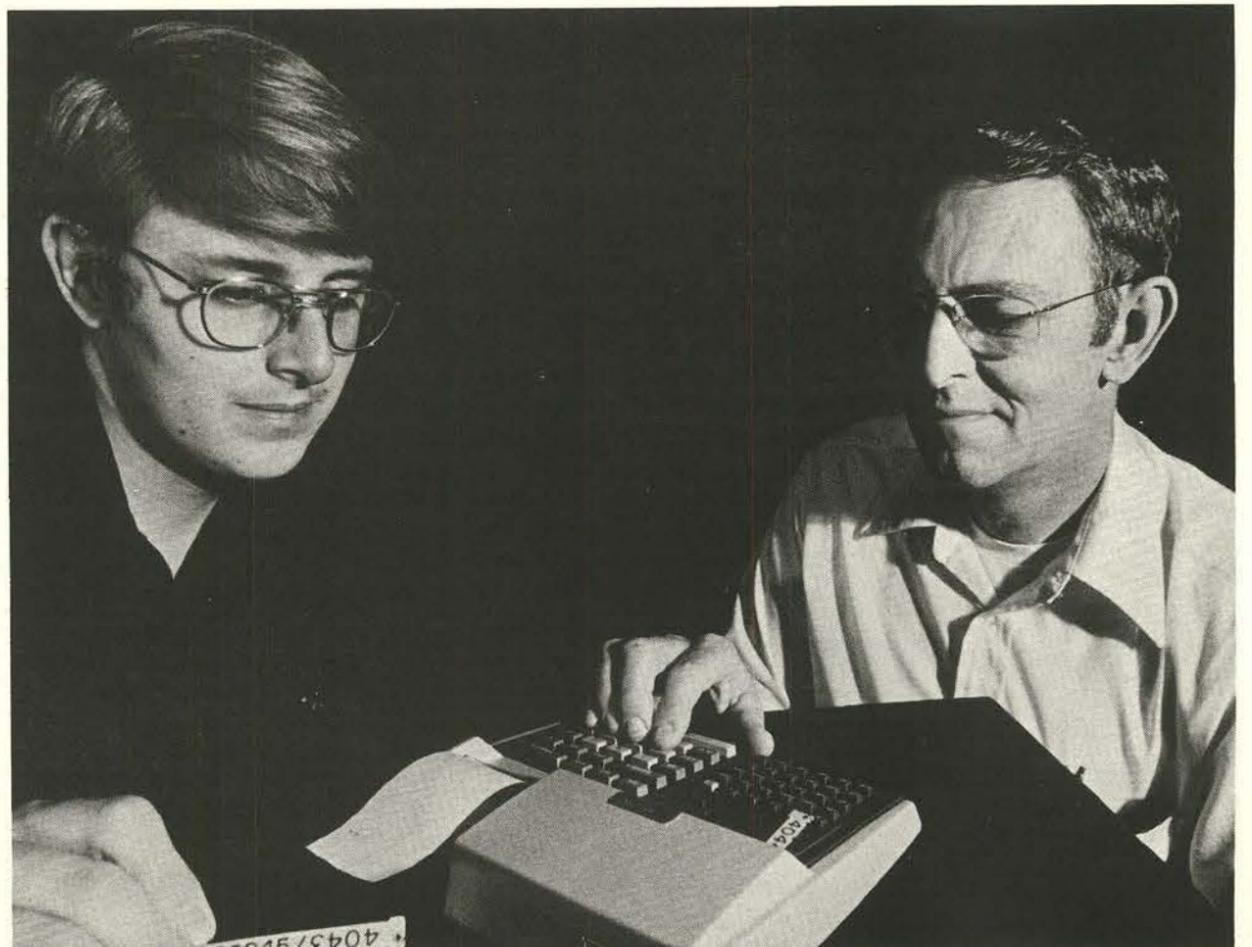
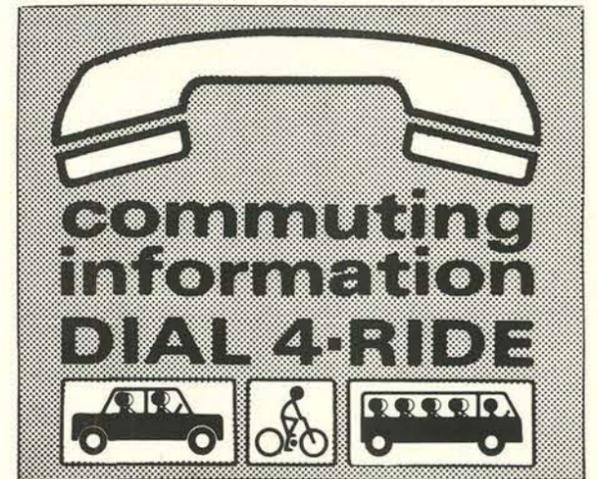
Now, when a new parts lot arrives for testing, a data card is prepared by keying in the information on the HP 97's

keyboard. The card contains part identification, date code, and the current balance-on-hand (the number of parts in the arriving lot).

Whenever parts are withdrawn, Paul keys in the quantity and the project code (if different from the last withdrawal). The program then records the entire transaction on the data card: identification of the part, date code, project it will be used on, current date, and the new balance-on-hand automatically. "Accurate and up-to-date totals of stock on hand is one of the system's advantages," says Paul. "Another is the speed with which transactions can be recorded—it's much faster than the old hand-written lists.

"Still another is the ease with which summary information can be secured. It's a simple matter to have the calculator print out a listing from the cards of the parts used on any of the several active projects.

"Finally, the system is completely self-contained and portable—it's battery powered. And it's cheap compared to a remote computer terminal and its associated software."



HOWARD AND PAUL Benson (1247) with the HP97 Paul uses for stock control. Howard, who did much of the programming, holds a magnetic data card that contains the entire history of one lot of satellite parts.

# Library Reference Service Expanded

The Tech Library is coping quite well, thank you, with the information explosion. That's because computers now assist reference librarians of Library Systems and Reference Division 3144 who perform literature searches for the technical staff.

"A complete literature search used to take several weeks," says librarian John Gardner. "We can now perform a search in as little as two days, including the interview with the requester, devising a pre-search plan, conducting the search itself—which may take only 20 to 30 minutes thanks to the computer—and an overnight wait for the computer-printed list of full citations on the subject requested."

During the search, the librarian can fine tune data furnished by the computer. Say the requester has asked for material on glass oxides published since 1970—with abstracts, if possible. Using the keyboard terminal, the librarian asks the computer how many references to glass are available (probably a couple of thousand) and how many references to oxides (another couple of thousand). At that point, the searcher can ask for references to both glass and oxides—which will probably narrow the selection to 40 or 50.

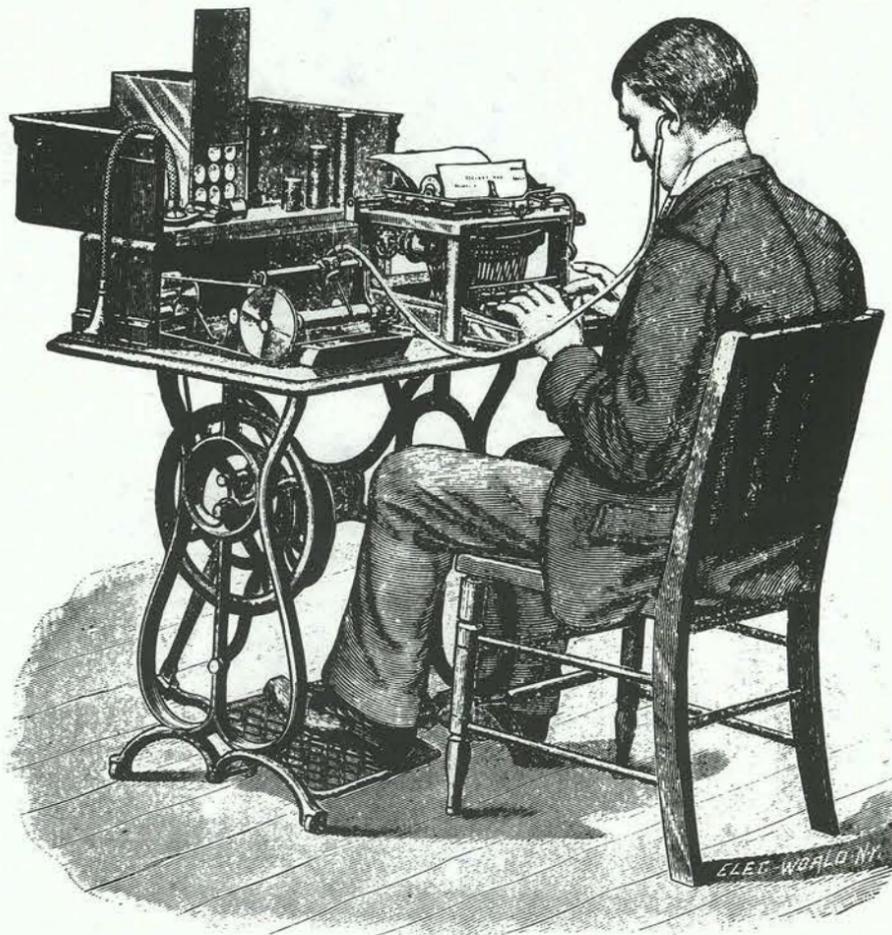
"It's this flexibility that speeds up searches tremendously," says reference librarian Gladys Rowe. "The computer accesses the citations you're after almost instantaneously."

Actually there are four computers and four major data bases: 1) RECON at Oak Ridge with 18 files, including Nuclear Science Abstracts since 1967 and several files on energy; 2) the Defense Documentation Center (DDC) which includes DOD reports since 1953 up to the Secret level; 3) DIALOG, a commercial service from Lockheed whose 38 files include Physics Abstracts, Chemical Abstracts, the Science Citation Index, and half a million citations covered by the publications available through the National Technical Information Service; and 4) ORBIT, another commercial service which has 20 files, including the publications of Congress and those indexed by the American Geological Institute.

RECON is open to anyone needing to search the open literature (after a brief lesson by one of the reference librarians). The other three are used only by staff librarians.

No, the Tech Library doesn't have a copy of every document cited in the four data bases and never will; there are just too many of them. But it does have most documents referenced through RECON on microfiche and most of the periodical articles. If the library doesn't have a document, it can probably locate a copy on interlibrary loan.

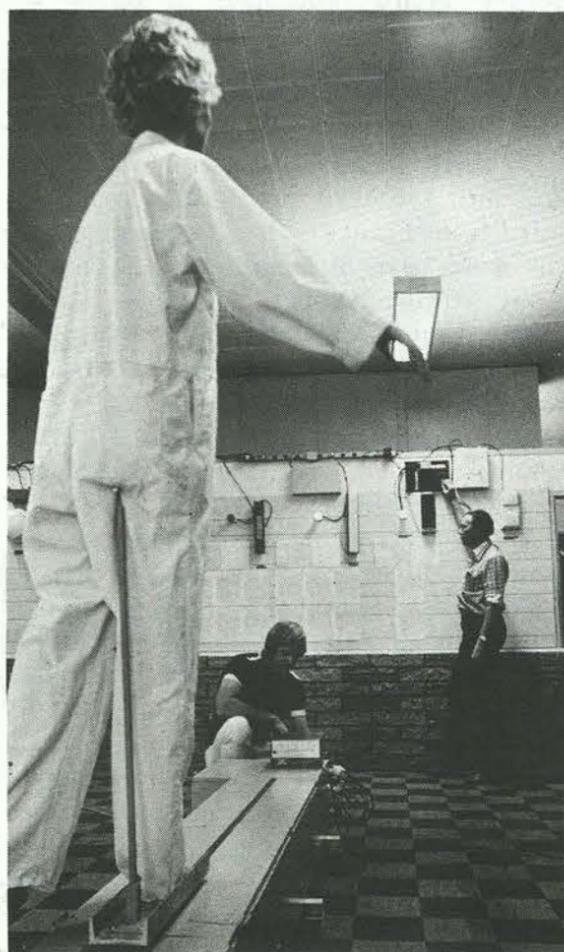
"The computer-assisted search is a valuable tool that saves hours of manual searching and produces better bibliographies," says division supervisor Danny Seager. "Most of our customers go away quite satisfied with the new service."



OUR REFERENCE LIBRARIANS use only the most modern equipment.

**SANDIA SENSOR  
DEVELOPMENT LAB.  
THIS BUILDING IS  
ALARMED**

**SANDIA SENSOR  
DEVELOPMENT LAB.  
ESTE EDEFICIO ESTA  
ALARMADO**



## ***Intruders Don't Stand a Chance***

... when they enter Sandia's Sensor Development Lab. Sited in the old chow hall on Manzano Base, the Lab is set up to run tests on the performance of various commercial intruder alarms. The alarms propagate some form of energy—usually infrared, microwave, or ultrasonic—within a closed area, and an intruder disturbs the signal pattern, setting off the alarm. Currently under test are some ten alarm systems, and this mannequin-on-a-track permits a close degree of control of test conditions. Simulating an intruder, the mannequin can proceed quickly or at snail's pace, while the track itself can be moved to vary the angle of approach. Final result is plot of sensitivity of alarm over area of concern. Here DeWitt Miller (EG&G) and Dick Sons of Intrusion Detection Division 1739 prepare equipment for next test run.

# A Snake In The Grass

☛ This isn't a lesson in herpetology. It is a reminder to watch your step! With more than 170 species, the Southwest has a large snake population. They range in length from one to eight feet and can be found from sea level to around 11,000 feet altitude; and they like the desert, the prairie and the mountains. But most snakes found in New Mexico are harmless, with two exceptions—the rattlesnake and the Arizona coral snake.

The Arizona coral snake is found in the southern desert areas of the state. A member of the cobra family, the coral snake is small, usually under 20 inches, with short rigid fangs and a very small head. These brilliantly colored snakes closely resemble a number of non-venomous desert snakes. The colored bands encircle the body and the snout is black. The relationship of the colors to each other—red, cream, black, cream, red, cream, black, cream—identifies the coral snake.

About two dozen varieties of rattlesnake are found in the Southwest. Members of the pit viper family, rattlesnakes are heavy-bodied with thin necks, wide heads and long fangs which fold back against the roof of the mouth. The "rattles" on a rattlesnake are added each time skin shedding occurs, normally several times a year, but it is *not* true that the snake always rattles before striking. The sound is a sign of nervousness or irritation.

Here's our lineup:

*Western Diamondback*—largest of the species, average length about five feet; has a wide range (inhabits the grasslands and foothills of the Sandia Mts.); black and white banded tail.

*Mojave*—averages four feet; black-tailed and greenish color body; same range as the diamondback.

*Prairie*—medium size; found over high plains country north and east; not found in extreme desert.

*Speckled and Tiger*—pink coloration; found in low desert mountains.

*Sidewinder or Horned*—inhabits low, sandy desert of extreme SW; light coloring blends with soil; leaves distinctive track.

The three smallest rattlesnakes—the ridge-nosed, the rock, and twin spotted—are found in the higher mountains and are under two-and-a-half feet in length.

Rattlesnakes are born venomous, so a small one can inflict venom also. They can strike over a distance equal to one-half their body length. And a snake can strike more than once, injecting venom each time.

In a snake area, observe these precautions: wear boots; avoid walking through grass or in brush areas at night without a strong flashlight; avoid gullies and holes where dens might be found; don't lay your fishing pole down in high grass; if you're climbing over rocks, look before you place your hand down or pull yourself up—you may end up eyeball to eyeball with a snake.

Don't panic if you're bitten or have to give first aid—it's bad but not that bad.



JERRY BROOKS, equipment mounter at WE's Oklahoma City Works, is an experienced herpetologist. He recently gave classes on "snake avoidance" to employees who maintain telephone service in rural areas. He tells Terry Cleburn and Paul Herrera to avoid holes like this where a diamondback rattler has curled up to avoid the heat of the day.

Minimize movement to reduce circulation; wash the wound with water; bind off above and below the bite area but do not completely stop blood flow; get yourself or the victim to a doctor as soon as possible. *Do not* cut and bleed or suction the wound. This formerly accepted treatment often produced infected wounds that became a bigger problem than the bite. Snakes do not always inject venom when they bite but, of course, you have to assume the

worst when the bite occurs.

Over 6000 snake bites are reported in the U.S. each year—less than two dozen of them fatal. If you see a snake, remain still until it moves on or calms down. Snakes are often found in pairs, so slowly retrace your steps to avoid the second one. They have poor sight and usually strike out of fear or in self defense. And don't bash a snake just because it's a snake—they play a useful role in the natural scheme of things.

## Students from Many Lands Visit US

A high school student from New Zealand, another from South Africa and a third from France—all were guests during the past year of Sandians (respectively) Tom Strome (1211), Herman Mauney (4330) and Jerry Hood (4310). The students were three of the several hundred who each year come to the States from some 60 countries to stay with American families under the sponsorship of the American Field Service (AFS).

For 30 years AFS has arranged for young people to live with families in another country, for as long a period as a year or for as short a period as a summer. A domestic program arranges exchanges within the US for a summer or semester. Many young Americans participate in the AFS program, living abroad and gaining a fresh perspective, not to mention a new language.

In Albuquerque, volunteer Betsy Lackmann coordinates AFS activities. Her principal job at the moment is lining up host families for the next influx of foreign

students, who generally arrive on the scene in late summer. It's not an "exchange" in the sense that you and a foreign family swap youngsters. In fact, the total experience of the visit is most rewarding when the entire family and the foreign student can be together through the year.

Are you interested in being a host? Or in enrolling one of your children in the program? (They should be juniors or seniors in high school.) Hosts can elect either short or long-term visits. Call Betsy at 836-5793 or 277-4901 to get more detailed information.

### Schmitt Visits Labs

New Mexico's Senator Jack Schmitt visited Sandia last week for briefings on various programs. Making presentations to the Senator were Bill Snyder (5400) and Wendell Weart (1140) who described the Waste Isolation Pilot Plant; Everett Beckner (5200) and Gerry Yonas (5240), electron beam fusion; and Glen Brandvold (5710), solar energy.

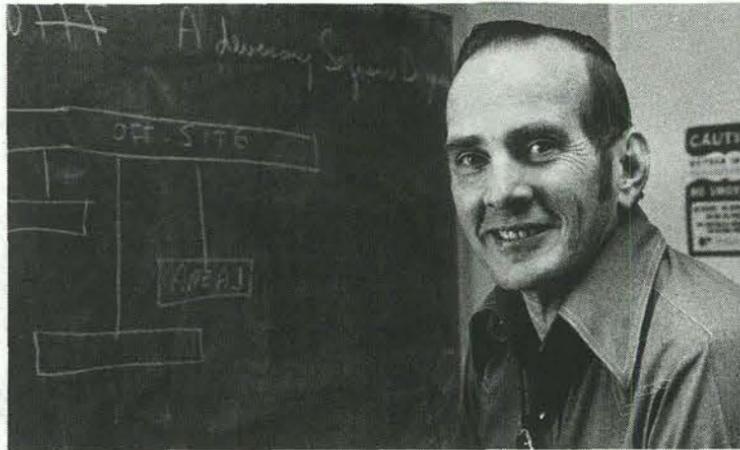
# MILEPOSTS

## LAB NEWS

JULY 1977



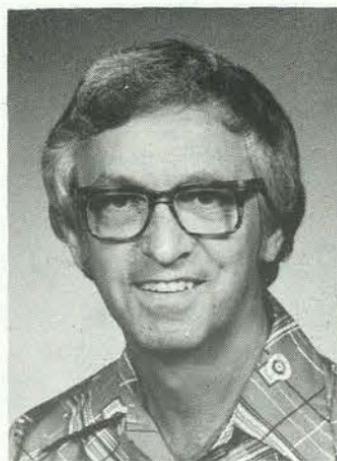
Bill Caudle - 1736 20



Al Winblad - 1751 25



Frances Hale - 9636 30



Zern Phillips - 9658 20



William Barton - 1335 25



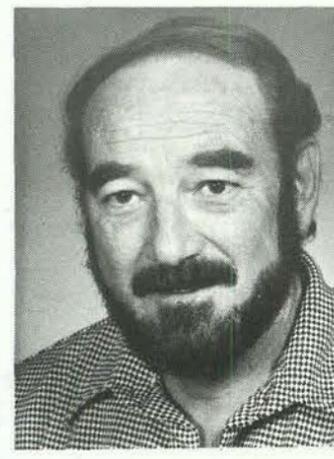
Max Hodge - 2622 25



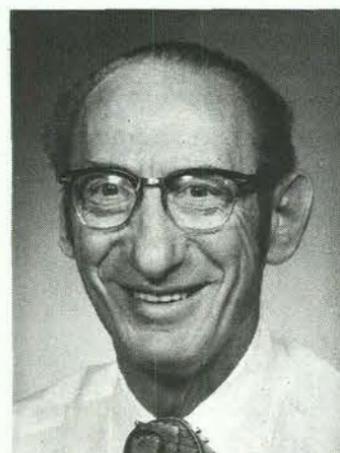
Orval Talley - 3425 20



George Novotny - 4342 10



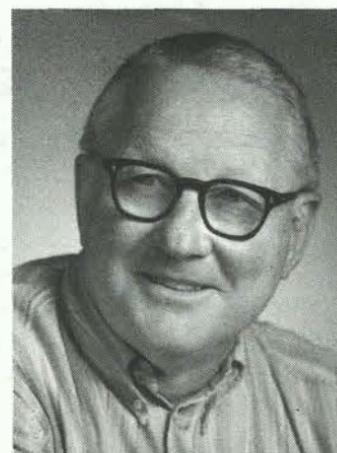
Ira White - 1752 20



Herman Levine - 5824 20



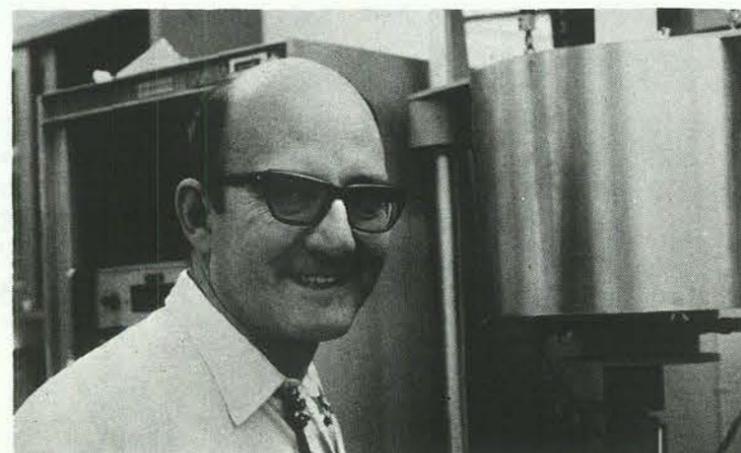
Lee Stinnett - 3442 25



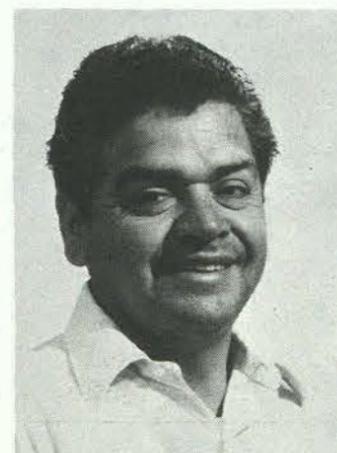
Bob Frost - 8168 20



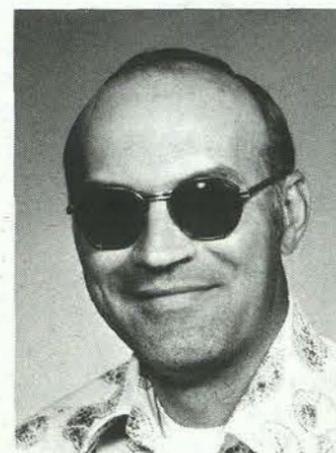
Arlene McCarty - 3732 20



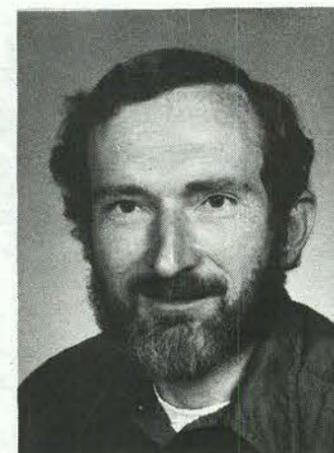
Paul Wilcox - 2521 15



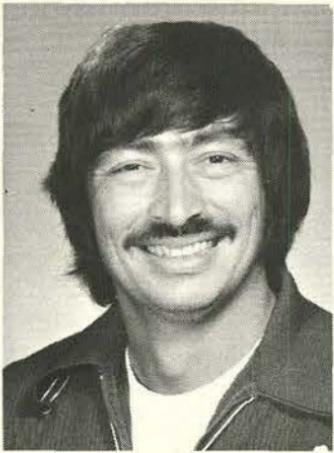
Victor Lira - 9654 10



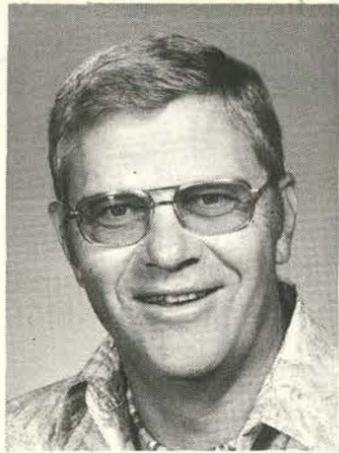
Thomas Evans - 2532 15



David Morrison - 9583 20



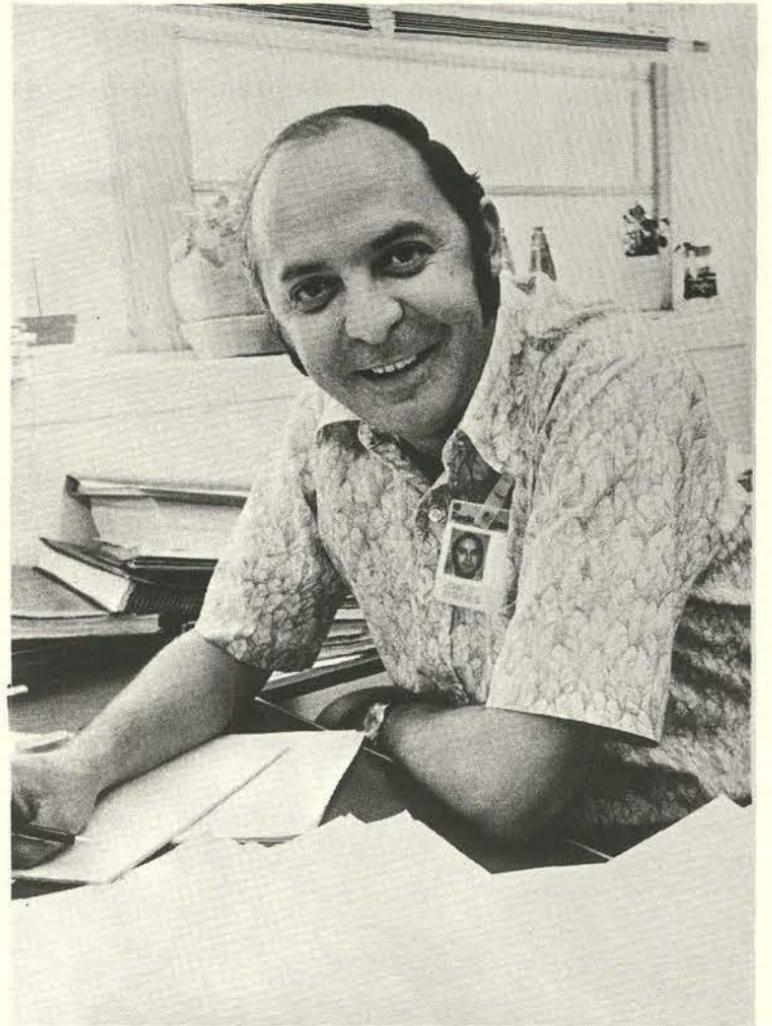
Florindo Salas - 2325 15



Frank Muller - 9525 20



V. Leatherman - 9631 10



John Sisneros - 3253 25



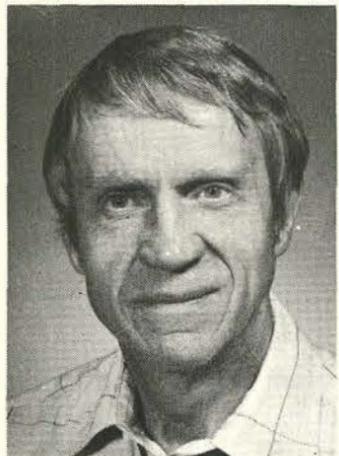
Ben Garcia - 2631 20



Jack Wirth - 8340 15



Jack Kidd - 2622 20



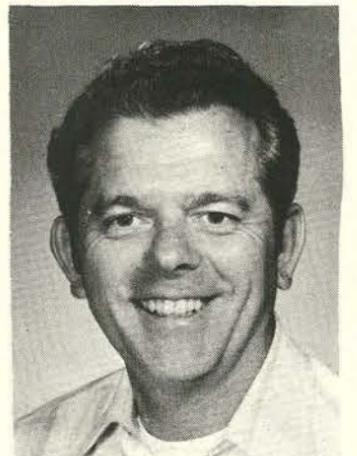
Joseph Taylor - 3727 20



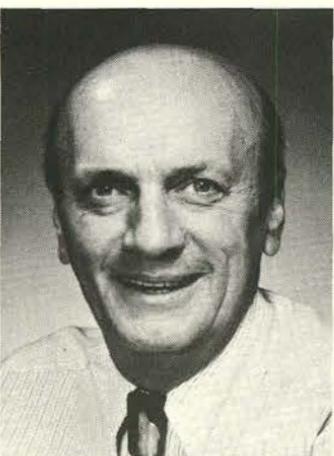
Francis Sieradzki - 5834 10



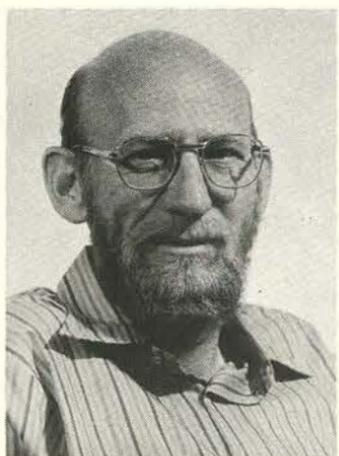
Lyle Whelchel - 3721 20



Donald Johnson - 1332 20



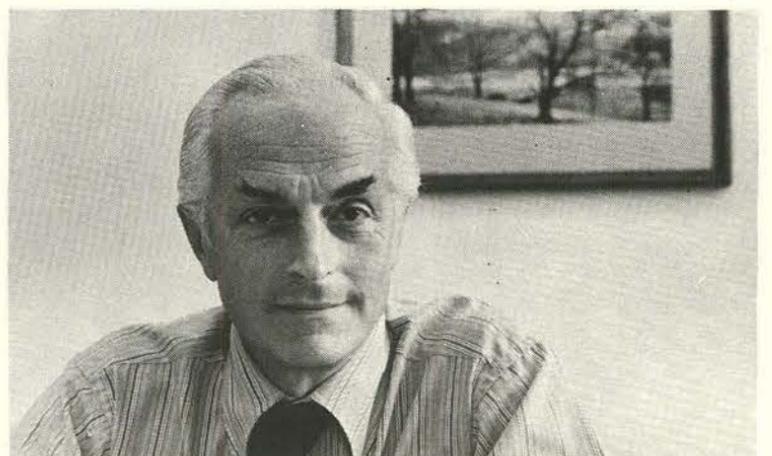
Michael Kuliasha - 9751 25



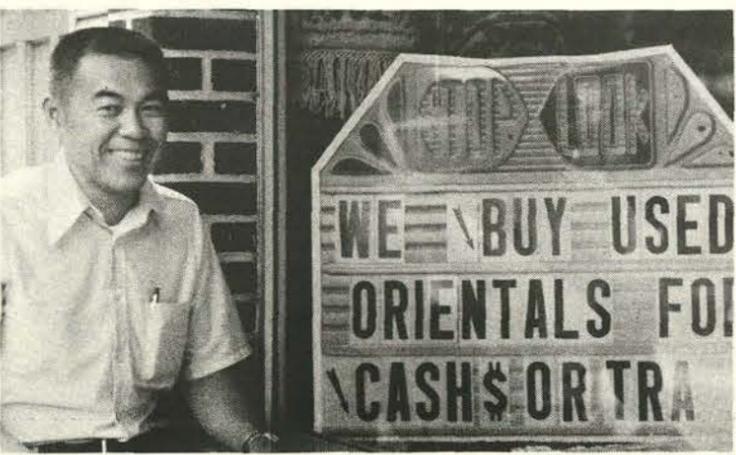
Mark Percival - 2351 10



Pat Didomenico - 3254 25



Eugene Reed - 2000(BTL) 30



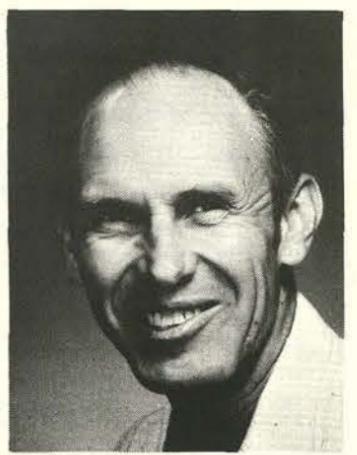
Kazou Oishi - 9482 15



Pierce Brown - 4337 25



James Kessinger - 3442 10



John Johnson - 1132 20

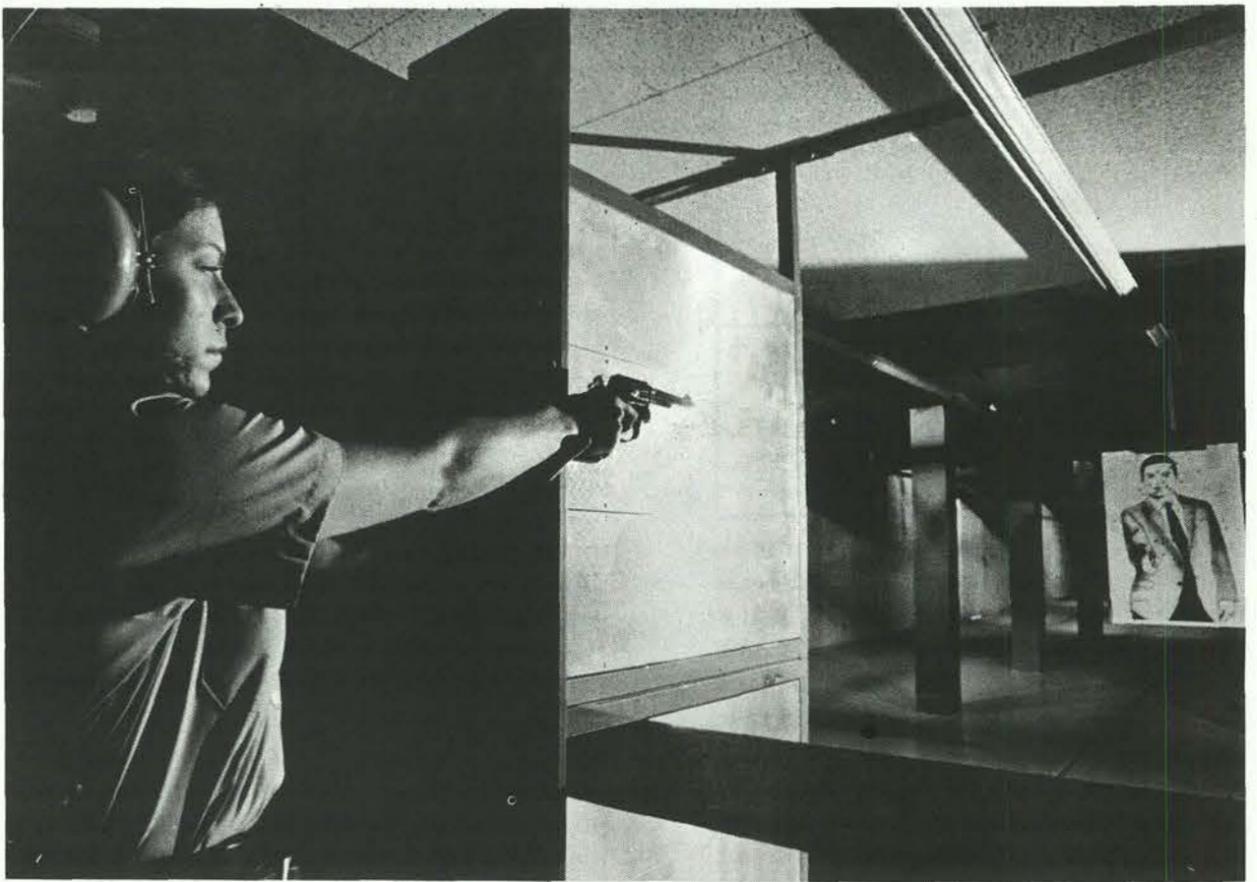
# LBL Study Warns Of Great Indoors

A report by Lawrence Berkeley Lab warns that air pollution indoors is frequently worse than pollution levels outdoors and possibly hazardous to health.

Listed as typical indoor air pollutants are carbon monoxide, nitric oxide and nitrogen dioxide from gas stoves and furnaces; carbon monoxide and other substances in cigarette smoke; vinyl chloride and fluorocarbons from aerosol spray cans; and organic compounds from products used in cleaning, cooking, etc.

The report cautions that since most individuals spend the majority of their time indoors, indoor air pollution should be considered when residential and commercial buildings are retrofitted to meet energy conservation specifications.

"Energy conservation measures call for sealing up buildings more tightly and this may have a detrimental effect on indoor air quality," the scientists note. "If indoor air is significantly polluted from indoor sources, then the need for exchange with the outside air is in conflict with those energy conservation measures which would restrict this exchange."



NEW PISTOL RANGE is on the mark, according to Security Guard Maggie Lane (3430). The building was completely remodeled and now has new, automated target equipment. Controls at each of the six stations and at a master console can set targets at any of six distances, can turn them edge-on after a preset time interval, and return them to the shooter's position for checking. Building and Facilities Design Division I 9742 oversaw contracts involved in the project.

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

### CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday. Mail to: Div. 3162 (814/6).

### 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 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; trashy paperbacks, 5¢ ea., S. HW 14 Project. LAB NEWS office, Bldg. 814.
- OPERA TICKETS**, two in center section for SFO's FEDORA on July 23, \$20 the pair. Hawkinson, 281-5239.
- RADIO**, Philco model 20, cathedral style, \$10. Merritt, 299-1482.
- 19" PACKARD-BELL color TV** in wood cabinet. Burress, 298-5061.
- AIR CONDITIONER**, GE model AGAE-906LA, 5500 BTU/HR, EER 8.8, warranty, \$125; baby stroller, \$7. Glaser, 293-8110.
- BSR/McDONALD 260AX turntable**, Shure cart., 1 yr. old, \$30; Crosman .22 ca. CO<sub>2</sub> pellet gun, 6-shot revolver, \$25. Paul, 299-6387.
- ELEC. GUITAR**, solid body, w/case, \$100. Traeger, 298-0728.
- HARDTOP & SEATS** for Triumph Spitfire, \$30. Crafts, 345-4042 & leave message.
- ROLLAWAY BED**; elec. skilllets; other household articles. Callahan, 299-9645.
- WHEELS**: stock Chevy 15" rims, 5 on 5-hole pattern w/matching hub caps, new, set of 4, \$20. Faychack, 821-4833.
- SAMOYED puppy**, female, 6 mos., has shots, good w/children, \$70. Pedro, 296-6122.
- TRAILER HITCH**, Valley Tow-Rite receiver assembly, 5000-10,000 lbs., bolt on model 7338, fits most Gen. Motors & Fords, '62-'73 pickups, \$45. Burken, 255-8534.
- CAMPER JACKS**; heavy duty winch, \$80. Werner, 298-3370 after 5.
- EQUALIZER HITCH**, 7000-lb., factory bolt-on for Chev. Suburban; window, 4x6', sliding, alum. cased, w/glass. Preston, 299-2331.
- YORKSHIRE puppies**, 3, male, AKC reg. Cronin, 883-2689.
- B&S ENGINE**, 1½ hp, horizontal shaft, \$10; helper springs, bolt-on-axle type, 3½" dia. 7" long, \$4; 55-gal. water barrel w/valve, \$5. Coalson, 298-0061.
- VAN cargo divider & side luggage rack**, from '73 Ford van, make offer.

- Binder**, 299-2937.
- RUG**, lt. tan short loop nylon, w/padding, 84 sq. yds., \$150 firm. Pavelko, 296-3346.
- INDIAN COLLECTION**: includes lg. 100+-year-old Navajo rug - artifacts, will trade for equity in Sandia High area home. Williams, 293-6331 or 296-7107.
- TRAVEL TRAILER**, Jayco, 20', '72, fully self contained, shower, refrig., tandem axles, \$3400. Shepherd, 299-9066.
- TWIN BED**, spring, mattress, \$30; early American blue chair, \$30; washer & dryer, both for \$150. Dodd, 293-5393.
- NECCHI sewing machine**, Supernova, portable, zig-zag, w/cams & carrying case, recently cleaned, adjusted & oiled, \$70. Work, 293-9508.
- AQUARIUM**, 15-20 gal., w/pump, filter, light, etc., \$45; dishwasher, built-in type, 15 yrs. old, but runs, \$15. Duke, 298-4427.
- 12" B&W GETV**, new, never used, \$80. Tischhauser, 293-9768.
- MAPLE DINING SET**: 40" round table, 12" leaf, 5 mate's chairs. Mogford, 898-1416.
- MOBILE HOME**, 14x68', 2-bdr., 2 bath, 5 appliances, patio cover, Oct. 1 occupancy, \$10,600. Tata, 897-0580.
- WATER PIK**; Hanimex auto flash unit; fiberglass tonneau cover for Ford Ranchero; Coor's Beer tap, including CO<sub>2</sub> bottle. Lewis, 296-7896.
- '75 TRAVELEZE trailer**, fully self contained, AC, carpeted, \$6500. Smith, 256-3764.
- '70 MARLETTE mobile home**, 12x60, 2-bdr., 1½ bath, 8x32 awning, skirting, \$6275. Johnston, 869-6922.
- AKC REG.** German Shepherd puppies, \$200, select now, available July 31; triple chest-of-drawers, \$40; Sport-yak II, small boat w/motor mount & car-top rack, \$100; alum. oars, \$5. Worrell, 299-0381.
- TIRES**: 7.10x15 snow on 5-bolt wheel, \$20; new 5.60x15 Dunlop Gold Seal polyester, \$17. Senter, 255-0594.
- MOTOR OIL**, Sears best (Spectrum), 10W-40, retails for 78¢/qt., sell for 55¢/qt. or \$12.50 case (24). Schkade, 293-7453.
- REVOLVER**, S&W model 27, 357 mag., 5" barrel, custom grips, holster, \$225. Parks, 293-9598.
- HEATHKIT** frequency counter, model 18-101, counts to 15 MHz, \$70; Schober autotuner for tuning organs, \$40. Henry, 266-6467.
- COUCH**, 8', beige, \$175; mattress, box spring, steel frame, \$65; lg. picnic table w/2 benches; redwood; dining table w/4 chairs, 1 leaf. Mueller, 299-1079.
- GEESE**, ducks, chickens, Polish roosters, will trade, need hay or Polish hens. Lackey, 898-6638.
- TAPE RECORDER**, GE port. cassette, \$10. Simons, 821-9343.
- SHETLAND SHEEPDOGS**, AKC, sable & white, born May 18, excellent temperament, see both parents,

- \$100. Schroll, 299-9142.
- RCA Whirlpool range**, custom model, elec., 30", white, \$60 or offer. Atkins, 298-5762.
- TURNTABLE**, Garrard zero 100C, walnut base, dust cover, Ortofon M15E cartridge, \$225 or best offer. Wilcoxen, 298-8420.
- DRYER**, Sears Kenmore elec., white, new heating element & thermostat, \$60. Tenbrink, 299-0679.
- THREE PAIR** used water skis, one slalom ski, \$65. Johnson, 298-1011.
- COUCH & loveseat**, green & white plaid; new AM-FM radio; fireplace grate. Prevender, 299-5253.
- MAG WHEELS**, 15"x9" 5-hole, fit Jeep, Ford, IHC w/2 L60 & 2-G60 tires, \$200. Schuler, 298-8196.
- SMALL sturdy trike**; lg. chain-driven trike; 21" girls' 5-speed; triple-action exercycle; Scandinavian-modern recliner. Norwood, 262-0073.
- LABRADOR PUPS**, 2 mos. old., black, 1 male, 1 female, either free to good home; 2-yr.-old female also available free. Weston, 296-2929.
- BUNNY clarinet**, used 1 school year, \$125; child's Magnus chord organ, \$7.50. Inman, 299-6500.
- CHINA**: Flintridge pattern Cocoa Rose, grey band, rose center, platinum finish, 4 dinner plates, 2 butter plates, 4 cups/saucers, \$25. Geck, 299-5095.
- S&W .357 ammo**, 3 boxes, new holster for small frame revolver, wholesale. Watterberg, 294-6759.
- AIREDALE**, 3 yrs., AKC reg. male, needs good home, applicants will be screened. Waymire, 299-9612.
- CAMERA**, Canon Pellix, 58mm 1.2, 35mm 2.5, 135mm 2.5 lenses, cases, hoods, filters. Brooks, 299-1884.
- CAMPER SHELL** for LWB, glasstite fiberglass, sliding side windows, current price \$550, asking \$400. Follstaedt, 883-1649.
- UTILITY TRAILER** w/spare wheel, \$35; Sears Best firm mattress, queen size. Johnson, 298-9926.
- TIRES**, mounted, 4-hole 6.50x13; 8-hole, 7.00x15; 4-hole 4.80x12; fishing boat canopy, \$10; BB goal, back board, \$5. Schuster, 299-1072.
- ENGINE**, '69 Toyota Corolla, 1100cc, carb., alt., starter, \$125. Butler, 296-8095.
- RIMS** for Datsun truck, set of four, 14" wide. Berg, 294-4112.
- BATTERY BOX** for boat, Sea Guard, large size w/tool space, cost \$14, sell for \$8; car radio, \$3. Arnold, 898-1467 after 5:30.
- DOGHOUSE**, 27x36", best offer. Edmonds, 266-9248.
- REFRIG./FREEZER**, Gemini, Frigidaire; short & long-sleeved shirts, size 15-31, best offer. Garcia, 298-8460 after 6.

### TRANSPORTATION

- '65 VW bug, custom, 1300cc, rebuilt eng, sun roof, mags, headers, cus-

- tom interior, sweet pea green, \$1000. Jarrell, 266-7444.
- '72 MGB**, gold/black top, tonneau cover, AM/FM radio, new radials, new batteries, 48,000 miles, below book. Horner, 821-0099.
- '71 TRIUMPH 650cc Tiger motorcycle**, needs tach & kick starter repair, \$425 or offer. Souther, 842-9630.
- '74 SUZUKI TS 400**, low miles, mostly for trails, new Desert tire, \$650 or best offer. Andazola, 344-2645.
- '72 PINTO** runabout, 4-spd., 42,000 miles, factory air, lug rack, Michelin radials, under book, \$1500. Melville, 296-3378.
- '73 YAMAHA 250 MX**, tricked out, all Enduro parts included, \$450; accessories available. Schellenbaum, 881-7589.
- 10-SPD. BICYCLE**: Raleigh Grand Prix, 25½" frame, recently tuned & adjusted. Lagasse, 299-8357.
- '73 DODGE VAN**, B-200 Tradesman 360-V8, LWB, AC, AT, PS, PB (disc.), R&H, radials, carpeted, paneled, CB antenna, windows in doors, 45K miles, \$3300. Ferguson, 266-4769.
- '69 FORD LTD**, 4-dr. HT, PS, PB, AC, AT, 80,000 miles, \$750. Griffin, 298-1174.
- '73 SCOUT II** or '73 Travelall, both loaded, will sell either below book value, make offer. Garcia, 293-3937.
- '72 OPEL Manta**, 1900cc engine, 4-spd. trans., new paint, \$1100. Prevender, 299-5253.
- '63 CHEVROLET**, 4-dr., Power Glide trans., R&H, 283 small V8 engine, \$195. Zurawski, 294-1078.
- '59 CHEV** pickup, rebuilt engine, new tires, 3200 model, fleetside, w/Holiday camper shell. Street, 294-6217.
- '74 KARMAN GHIA HT**, \$3000, Davis, 265-3005.
- '67 MUSTANG**, 6-cyl., AT, needs body work. Garton, 256-3015.
- '70 MONTE CARLO**, AT, AC, PS, PB, blue w/black vinyl top, snow tires included, \$1600. Biringier, 298-4032.
- '70 CHEVY**, 2-door, 6 cyl. Johnson, 298-4046.
- '72 VEGA** sedan, 4-spd., \$650 or best offer. Dees, 898-8049.
- '76 DODGE Adventurer** pickup, LWB, PS, radio, many extras, 18 mpg., low mileage, NADA \$3950, asking \$3400. Follstaedt, 883-1649.
- '71 CHEVY Biscayne**, AC, AT, PS, PB, low mileage, \$1250 or best offer. Johnson, 298-7020.
- '72 YAMAHA R5C**, low mileage, make offer. Berg, 294-4112.
- '29 FORD Model A**, special coupe, 4000 miles since complete restoration, rumble seat, 90% original parts, vagabond green. Doak, 299-5766.

### REAL ESTATE

- FROST ROAD**, new custom 3-bdr. "Smart Home", fp, 2 baths, dbl. garage, 2 wells, 3 acres, school bus, \$65,900. Browne, 881-3772.

- ROSWELL, NM**: 2-bdr., den, 1500 sq. ft., near NMMI; Estancia Valley; 20 acres, well. Smith, 298-7365.
- JEMEZ MTS.**, 1-2 acres near Fenton Lake, on gravel road, near fishing stream, electricity, pines. Randall; 299-3935.

### WANTED

- USED** exercise cycle (bike) w/speedometer, odometer & adjustable tension. Conrad, 299-6568.
- VIOLIN**, full-size, used, in fair condition, must be reasonable cost. Allen, 268-3654.
- OLD Lionel trains**, cash or trade, ask for Tim. Shepherd, 294-7297.
- RESPONSIBLE** couple wants to rent an RV for a week's vacation end of Aug.; will pay rental fees in advance & provide references. Ward, 281-5993.
- INCOMING SANDIA** employee desires furnished house or apt.; professional couple; no children or pets; arriving Aug. 1. Seager, 299-4137.
- GRASS CLIPPINGS**, leaves, 1 supply bags; also used cooler pads, old carpets. Olson, 898-8909.
- WOOD OFFICE DESK** in good condition. Lambert, 344-9012.
- 6" JOINTER**, any condition. Himes, 869-6559.
- REFRIGERATOR**, small, for NMSU dorm room, length, width, height total 7'. Erickson, 298-4416.

### FOR RENT

- SHORES** 3-bdr. townhouse, w/fp den & LR, 3 baths, basement, refrig. AC, dbl. garage, 2400 sq. ft.; 4-bdr. tri-level, Academy Acres, 2200 sq. ft. Jojola, 821-5950.
- LG. ADOBE HOME**, near UNM, furnished, from July 31 to Aug. 20. Keith, 265-1620.
- CONDOMINIUM**, Purgatory, 2-bdr., 2 baths, kitchen, fully equipped, daily or weekly. Carson, 898-8847.
- 3-BDR** nearly new in select NE Heights area, \$385/mo., first, last & deposit. Johnson, 298-9926.

### WORK WANTED

- SUMMER WORK** for girl, 17. Mason, 281-3052.
- ODD JOBS** including lawns, windows, cleaning, car polishing, air conditioners, etc. Rose, 298-4849.

### LOST AND FOUND

- LOST** - Small beige-colored transistor garage door opener, 6 or 7 keys - including 3 car keys - on plain key ring, man's black wallet, man's aviation-type sunglasses w/gold frames - green lens - ft. brown case.
- FOUND** - Green notebook marked "B. 20 - 832 West End," Rx glasses w/black frames & case, green leaf clip earring.
- LOST AND FOUND**, Bldg. 832, 284-1657

FRIDAY	SATURDAY
15—HAPPY HOUR BBQ RIBS BUFFET Adults \$3.50 Under 12 1.92 3 OF US & JEREMIAH	16—LUAU Cocktails 6 Dinner 6:30 South Pacific Dances MELLOTONES
22—HAPPY HOUR POT ROAST BUFFET Adults \$3.25 Under 12 1.92 LA ULTIMA	23 OPEN

**HONOR**—of the Week goes this month to Ed Neidel, Travel Director. He's done it again—scheduled three (3) brand new trips to exotic foreign lands for not much more than it costs to stay at home and be visited by in-laws. One package will take you to Spain! (You just get *into* the package, address yourself to your goal, and apply sufficient postage.) Actually, it's a Sept. 17 - Oct. 1 Spanish Holiday for just \$829 (dbl occ). That includes RT air fare, delux air-conditioned motorcoach from Madrid to Seville and Torremolinos, first class hotels (with private tubs or showers), continental breakfasts, English-speaking tour guides, tips, taxes, and more. (Actually, Ed needs sympathy more than honor. He just finished a stint as pig bedder with the *Convoy* crew—seems they asked him if he'd like a role in the hay and he somehow misunderstood.) *Pre-trip meeting* for Spain at 7:30 on the 27th.

**THE**—immortal words of Robinson Crusoe come to mind: "Thank God, it's Friday!" Crusoever to the Club after work today for Happy Hour after hour after hour. The buffet features barbequed ribs. The bandstand features *The Three of Us and Jeremiah* because *The Countrymen* went back to the.

**CLOUDS**—who bring glass into the patio aren't welcome, but everyone else is—at



Picnic Nights every Wednesday. Swim till 6, then munch your Big Macadam, Chicken Fried in Kentucky, or Long John Sliver whilst the kiddies terrorize the toys.

**THEY'RE**—big. They're the 16-ounce Mai Tais on sale at tomorrow's Luau. They'll give you a full pound, so to speak, for \$2.25.

**THE**—Happy Hour next Friday includes La Ultima with La Ultimatum: dance or else (or else, don't dance). Preface the dancing, face the music, with something like pot roast and fried chicken for your face.

**ONES**—of the Wolfpack persuasion gather in the patio Sunday eve from 6 to 9 for a potluck (bring your own meat and salad or dessert) picnic and swim and (maybe) visit with UNM coaches. (These too are delux and heir-conditioned coaches.) RSVP *today* with Henry Ward (which is what chicken feed is) or John Wichelns (which is what hard to pronounce is) at 869-3580 and 268-8773 respectively.

**THAT**—unpredictable Sanado crowd surprises its collective husbands next Friday at 5:30 by abducting them to a romantic rural rendezvous on South 14 that only an Elkhound could find. Should be quite a revel—we hear several spring chickens (other than Sanadoes) will be there tempting. And be sure any dishes you bring are covered modestly. Reserve by the 20th with Carol Larson or Donna Palmer or Joan Peterson.

**MAKE**—it with *Max*, teens. That is, make it out to see *Max*. And hear *Max*. Max pleasure all around at the Teen Dance on the 21st from 7:30 to 10:30. Tickets are 50 cents (a buck a guest), and the usual restrictions apply.

**US**—raft-down-the-river types get one more chance for the Grand Canyon trip August 17-22. Six more signups (at \$325 + tax) will permit a second raft to join the first one and double the fun. Yes, there's plenty of water—LA needs its delux air conditioning. Deadline is July 25, but don't wait.

**ABOVE**—your wildest dreams of Ori-

ental delight. That's Hong Kong, jewel of the inscrutable East: a blend of East and West, fantastic marketplace, crossroads of cultures, all in a beautiful harbor setting. Complete package begins at \$879 for the Club's Nov. 12-29 trip. See movies of what you'll see at the *pre-trip meeting* at 7:30 on the 26th.

**AVERAGE**—type groups get 40 or 50 people out for a ride on the Cumbres and Toltec. The Club finally had to cut off the signups at 235! We may be able to offer a similar deal in September—watch this space. (That's right, just keep watching it, no, don't stop . . .)

**PEOPLE**—may not realize that Mmexico is spelled with two m's. One is for Manzanillo, one of the new in-places on the Pacific coast beyond Mazatlan (which is the other m; see below). Go now before it gets so popular no one ever goes there. Package includes RT air fare, seven nights

**HOT FLASH**—Get over to the Annex pool right after work today and you'll catch the finals of the Aquatics Club-hosted National Junior Olympic Diving Championships. Competition runs from 2 to 5.

in condominiums at the Club Santiago (Robert Vesco lives in an abscondominium) with breakfasts and dinners, transfers, tips, cocktail party, free round of golf, tennis lesson. It's \$329 (dbl occ) and it's Nov. 7-14.

**ABOVE**—paragraph mentioned Mazatlan, the Club's all-time favorite travel destination (after Livermore, of course). Yes, Virginia, there is a Mazatlan, and you can be there Oct. 31 - Nov. 7 at the Playa Mazatlan, site of the best beach in the city, for just \$279. That includes European plan hotel (which means no meals, like in America), air fare both ways, cocktail party, fiesta party with dinner and floor show (featuring Waxy Yellow Buildup), and more. If you miss this one, don't beach. *Pre-trip meeting and initial sign up* July 19, 7:30 p.m.

**AVERAGE**—old Travelogue Night it's not on the 20th. That's when Bob Moll shares his slides of a very special place—the Holy Land. Come and enjoy. It's free.

**MORE INFO**—265-6791.

**BIG MACADAM • LA ULTIMATUM • IN • JEREMIAH • LUAU**

**Events Calendar**

- Thru Aug. 14—"Never Get Smart With an Angel," Barn Dinner Theatre, 281-3338
- July 16, 17—Albuquerque Skateboard Invitational, Tingley Coliseum, Fairgrounds.
- July 16—"My Fair Lady," KHFM 96.3 FM, 6:30 p.m.
- July 17—N.M. Mt. Club, Mt. Taylor Trip, 255-2640.
- July 17—Opanci Folk Dancers performance, Old Town Plaza, 3 p.m.
- July 18—"You and America's Energy

- Future: What Lies Ahead?" Lecture Under the Stars, UNM Central Mall, 8 p.m.
- July 21-24, 28-31—"Light Up the Sky," Adobe Theatre, 8:30 p.m., 898-3323.
- July 21—Albuquerque Childrens Theatre, free plays and comedies, Erna Ferguson Library, 7 p.m.
- July 24—Chamber Orchestra of Albuquerque concert, First United Methodist Church, 4 p.m.
- July 24-26—Fiesta de Taos