

Big Balloon Goes Up Next Month; To Study Ozone Layer



WELL DONE — These students from Michigan State show that the sun's energy is good for mundane tasks too — like cooking lunch. They were at Sandia last week along with 300 other students to demonstrate different approaches to the production of energy. From left, Roberta Zapp, Marilyn Forbes and Carol Mowinski. For more on SCORE, see page 9.

In late September a huge balloon carrying a 310-kilogram (680-lbs.) payload of scientific experiments will be launched before dawn from Holloman Air Force Base near Alamogordo and will rise to an altitude of 40 kilometres (25 miles). Called Stratcom VI, the experiment is part of Sandia's continuing upper atmosphere research program. During the 32-hour period that Stratcom VI is aloft, a second smaller balloon will follow, two instrumented aircraft will gather data, and the meteorological satellite NIMBUS 6 will monitor the same air mass.

"This is the most comprehensive and complex program we've attempted to date," says Frank Hudson (5443), the scientific director. "We will be taking samples and making measurements of stratospheric constituents and their relationships — some 40 instruments will be making 20 different types of atmospheric measurements. Of particular interest are the time periods during sunrise and sunset."

The main balloon — as large as a football
(Continued on Page Two)

Phase I Complete

Coal Project 'Going Well'

The in situ coal gasification experiment near Hanna, Wyo., is "going well," according to Hap Stoller, Manager of Geo Energy Technology Department 5730. Sandia is providing instrumentation for the program which aims at developing control technology for the in situ processing of coal, oil shale and other fossil fuels.

Conducted by ERDA's Laramie Energy Research Center, the project consists of burning a 30-ft. coal seam located 300 ft. beneath the surface in order to produce and, ultimately, extract gas suitable for use as a fuel.

"Phase I, now essentially complete, has been a successful experiment based on current evaluation," Hap says. "Two million cubic feet per day of gas is being produced with a heating value of 150 Btu/scf."

The concept for the experiment is called "linked vertical wells." Initial experiments showed that air flow through the coal seam between two wells 60 feet apart could be achieved by air injection alone. However, a small burn, drawn counter-current to the air flow, established a localized channel which permitted flows adequate to sustain gasification. The direction of air flow was reversed and a successful combustion of the coal seam between the two wells was made.

"Sandia thermal instrumentation established the extent and location of the burn," Hap says. "We are now assessing our instrument performance and working on computer programs to reduce and analyze the data. Instrumentation wells for Phase II and III of the program are now being drilled. ERDA has provided \$1 million for our participation during FY 76."

In the upcoming activity, Sandia will concentrate on in situ diagnostics — detailed information on processes as they happen — with thermal instrumentation, pressure gages and gas sampling devices. In addition, there will be continuing development of remote
(Continued on Page Four)

LAB NEWS

BIG BALLOON

field containing about 4.2 million cubic metres (15 million cu. ft.) of helium — will be launched in the pre-sunrise hours when rocket probing of the stratosphere indicates the winds at float altitudes are suitable. Surface weather conditions at the launch site must also be favorable. Measurements will be taken before and during the morning hours at the peak altitude of 130,000 ft. About noon a slow descent will be started to study changes with altitude, and to correlate data with measurements from the aircraft during mid-afternoon. In late afternoon the second balloon will reach altitude, and measurements will be made as ultraviolet energy decreases during sunset.

“There is currently serious concern that a number of man-made factors may be affecting the protective ozone layer of the upper atmosphere,” Frank says. “This is the layer that filters ultraviolet light on its way to the surface of the earth. Reduction of the ozone could have serious effects. Scientists are particularly concerned with the effects of aircraft exhaust, past atmospheric nuclear testing, and the fluorocarbons used in some spray cans and in refrigeration and air-conditioning systems.

“Although based on simplified mathematical simulation of the very complex atmosphere, the fluorocarbon problem has been brought to light by the best work now possible with our incomplete knowledge of the stratosphere and it must, therefore, be taken seriously. Such calculations provide strong warnings of potential problems but, in addition, they specifically indicate where knowledge is lacking and the direction that research must take. Stratcom VI will not provide immediate answers, but it will be a significant step in establishing base line data and developing methods necessary for the required measurements that must be made over the next few years.”

The program is sponsored by four federal agencies. Scientists from 10 laboratories are participating. Sandia is providing scientific direction, payload engineering, experiment coordination and three of the instruments. Program director is Harold Ballard of the Atmospheric Sciences Laboratory at White Sands Missile Range. The work at Sandia is centered in Instruments and Sensors Division 1255 under Keith Smith. Preston Herrington (1255) is the project engineer.



Bob Nickell (5431), Bob Jefferson (5430) and Dave McCloskey (5410).

Supervisory Appointments

DAVE McCLOSKEY to manager of Nuclear Fuel Cycle Safety Research Department 5410, effective Aug. 1. He joined Sandia's weapons effects research group in November 1966. In May 1969, Dave was promoted to supervisor of a defense technology division concerned with ballistic missile studies. More recently he has been supervisor of Reactor Systems Safety Division.

Dave received both his BS in chemical engineering and MS in mechanical engineering from Stanford University. He earned a PhD in engineering science and applied mathematics from California Institute of Technology. Dave served in the Navy for three years where he taught nuclear reactor theory and engineering courses in the Navy's Nuclear Power Program. He is a member of the American Nuclear Society.

Dave enjoys bicycling, skiing and backpacking. He and his wife Joanne live at 1706 Ridgecrest Dr. SE.

BOB NICKELL to supervisor of Design Technology Division 5431, effective Aug. 1. Since coming to the Labs in August 1973, Bob has worked in the engineering analysis department on numerical analysis of weapon systems designs, primarily in the areas of structural dynamics, heat transfer and fluid flow. Bob was supervisor in a solid mechanics group at Bell Labs in Whippany, N.J., for three and a half years. Before joining Sandia, he taught soil mechanics and structural analysis at Brown University.

He earned BS, MS and PhD degrees in engineering science from UC at Berkeley. From 1953-56, Bob served in the Marine Corps and Navy. He is a member of several technical societies — ASME, ASCE, ANS, Society of Rheology — and is a member of the executive committee of ASME's pressure vessels and piping division. Bob's leisure time activities include playing softball, basketball and golf. Bob, his wife Margaret and their two children live at 7934 Academy Trail NE.

BOB JEFFERSON to manager of Nuclear Fuel Cycle Technology Department 5430, effective Aug. 1. Since joining the Labs in February 1957, Bob's work has been in reactor design, safety and applications. He was named supervisor of Reactor Application Division in 1965, then transferred to Reactor Safety and Waste Management Division, and most recently has supervised the Regulatory

and Transportation Systems Programs Division.

Before coming to the Laboratories, Bob served three years in the Air Force, primarily as an instructor with the Training Command on Sandia Base. Bob has a BS in ME from Michigan Technological University and an MS in business administration from UNM.

Bob is a member of the American Nuclear Society and has been chairman of ANS's National Publications for four years. He is a deacon in the Heights Christian Church and is activity coordinator for the Southwest Arts and Crafts Festival to be held in Albuquerque in November. Bob served as technical program coordinator for the Reactor Operations Division of ANS conference, held earlier this month in Albuquerque.

Bob, his wife Anne, and their three children live at 10905 Elvin NE.



PETER McGRATH to supervisor of Fuel Cycle Risk Analysis Division 5413, effective Aug. 1. Since joining Sandia in July 1974 as a member of the technical staff in the Reactor Safety Management group, Peter has been

primarily concerned with risk assessments of major nuclear accidents. Before coming to the Labs, Peter had worked for five years for the West German government's Research Center in Karlsruhe. His work involved reactor physics and safety studies and, subsequently, systems analysis studies of the nuclear fuel cycle.

Peter earned a BS in ME from San Jose State College, and MS and PhD in nuclear engineering from the University of Wisconsin. He is a member of the American Nuclear Society. Currently, he is on temporary assignment in Washington, D.C., with the Nuclear Regulatory Commission, studying safety aspects of light water reactors.

When he does have some spare time, Peter enjoys skiing, swimming and bicycling. He and his wife Susan and their three children live at 12109 Woodland NE.



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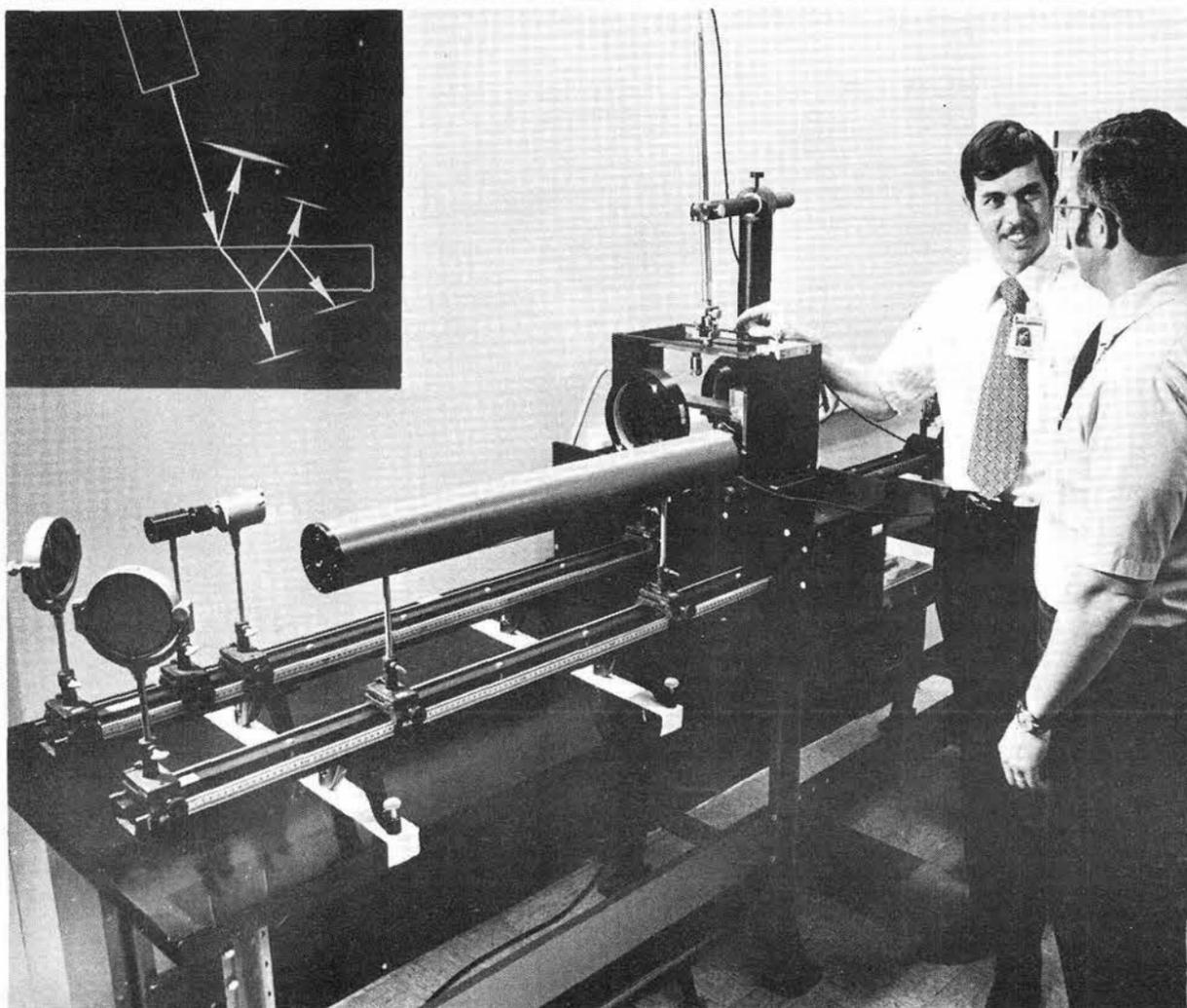
lorena schneider reports on livermore

LIVERMORE NEWS

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AUGUST 22, 1975



USE OF SCHLIEREN SYSTEM for viewing pulsed ultrasound is discussed by Dan Tichenor (left) and Alec Willis (both 8344). Inset shows ultrasonic wave packet from a transducer (at top) as it strikes a flat plate.

Sound You Can See

Sound is audible. Light is visible. But, by using the right equipment, sound can become visible and inaudible.

"And useful," says Ken Henry (8344), "in examining the interior of, say, a metal component or weld."

"To make sound visible," says Dan Tichenor (also 8344), "we use an optical system known as schlieren (from the German, meaning streaks) which forms optical images of ultrasound; that is, high frequency sound waves ranging in this case from 1 to 20 MHz."

Pulses of ultrasound are used in nondestructive testing to detect internal flaws. In this technique a transducer converts electrical energy into a train of narrow ultrasonic wave packets which travel through water and into the test object. As the test object is scanned, internal flaws partially reflect the sound creating ultrasonic echoes. The echoes are converted back to electrical signals and are used to drive a plotting device that generates an ultrasonic image of the part. By thus enabling the engineer to examine the behavior of the ultrasonic wave packets, the schlieren system becomes a valuable aid in design work.

In the schlieren system a light beam shines

through the water intersecting the sound beam at right angles. Some of this light is bent slightly from the normal light path by the sound beam. A laser having a 1/3 microsecond pulse length currently serves as the light source for making stop-action images of the sound waves.

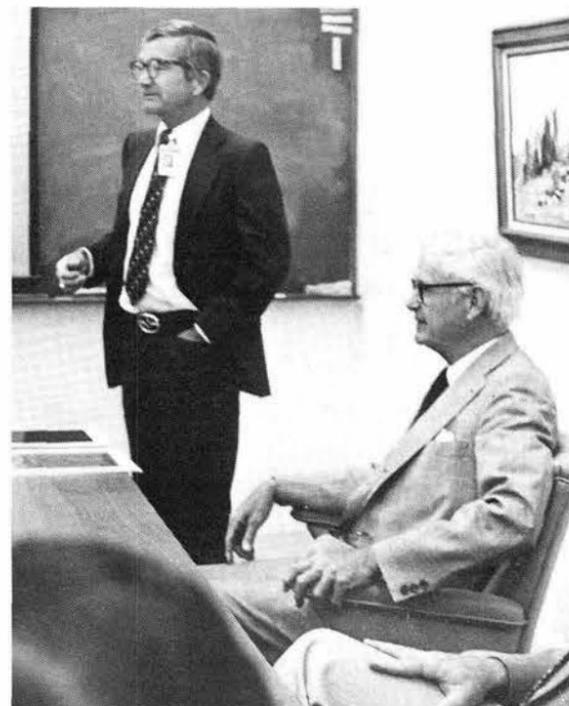
Dan's and Ken's schlieren work has two major goals. One is to provide the data necessary to design special application ultrasonic transducers. They are studying the effects of spatial filters and ultrasonic mirrors, hoping to gain improved flaw sensitivity and resolution. New ways to test the transducer beam for proper focus are also a part of the "improved design" effort. Eventually they hope to be able to view in detail individual wavefronts in the ultrasonic beam, which means shortening the laser beam pulse to 30 nanoseconds (a tenth of the current speed).

The second major goal is to study the propagation of sound in complex geometries. The interaction of an ultrasonic wave with a flat plate is well defined and easily characterized. However, just as a curved glass lens can bend light rays, a curved metal can bend sound. This can adversely affect the focus of the sound beam in a part, causing serious difficulty in detecting and resolving possible flaws. Experiments are planned to explore and define this effect.

"The schlieren technique is not new," concludes Dan, "but as a nondestructive testing research tool, it is very useful. We expect to use it extensively in our research and development programs." • bh

Congratulations

Jack Casey (8344) and Cathy Bianchani (LLL) married in Mendocino, Calif., Aug. 9.



VISITOR — ERDA Administrator Robert Seamans (right) was at Sandia/Livermore recently for briefings by Vice President Tom Cook (8000) and others of the staff. Briefings dealt with current SLL technical programs.

Jim Swisher Moves To ERDA Hdqtrs.



Jim Swisher, supervisor of Exploratory Materials Division 8313, is taking a one-to-two year leave of absence to assume a two-fold assignment with ERDA Headquarters.

As Branch Chief, Materials and Fabrication, in the Division of Conservation Research and Technology, he will direct materials program planning under the Assistant Administrator for Conservation. In addition, he is Vice Chairman of the Energy Task Group of the Committee on Materials (COMAT) under the Federal Council of Science and Technology. The task group has been formed to determine materials requirements and provide guidance for some 12 government agencies, including NASA, DOD, ERDA, for near-term and long-term national energy programs.

A Bell Labs employee since 1967, Jim transferred to Sandia/Livermore in 1971 where he has done research in metallurgy, applied physical chemistry and hydrogen technology.

Retiring



Lenore Petersen (8433)

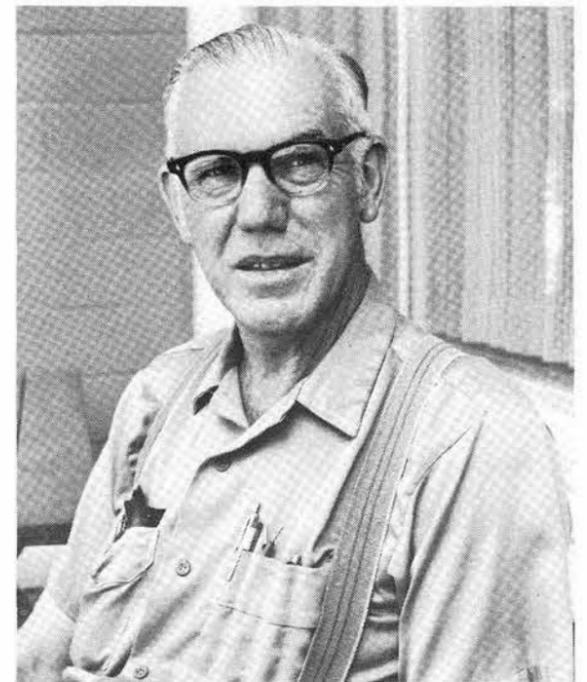
Take Note

A concert by the United States Army Field Band and Soldiers' Chorus is scheduled Saturday, Aug. 30, at 8 p.m. in the Convention Center. Although free, tickets are required for admission. Write to Clarence Sandy (9533), president of the local Association of the United States Army, Box 5417, KAFB, 87115. Other sponsors include the Albuquerque Chamber of Commerce and the U.S. Army Recruiting Service.

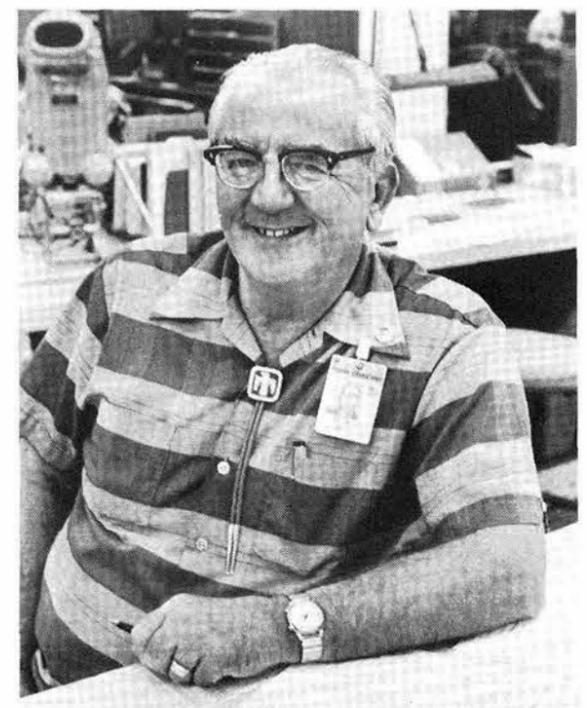
Purchasing's Jay Hughes (3731) will head a National Association of Purchasing Management committee which will select an award winner for the 1976 J. Shipman Gold Medal Award. The medal is given to that person who has performed distinguished service for the cause and advancement of purchasing.

Registration for the KAFB Kindergarten and Pre-School is now underway. Facilities are located on both east and west Kirtland. Kindergarten costs \$32 per month, and sessions run from 9 to 11:30 or from 12:30 to 3:30. Pre-School costs range from \$16 to \$32 per month, depending on the age of the child. A nursery is also available.

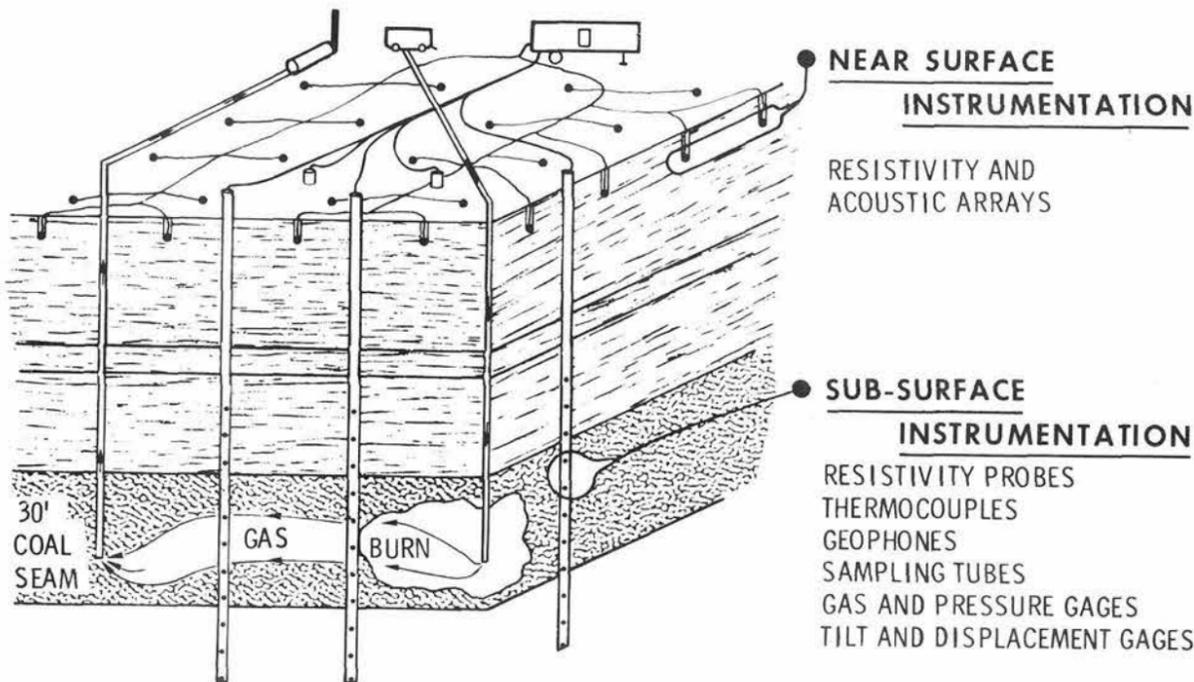
Retiring



Robert Orr (9712)



Kenneth Campbell (3613)



DRAWING SHOWS in situ coal gasification experiment now underway near Hanna, Wyo. Sandia is providing diagnostic instrumentation and developing techniques for process control.

Continued from Page One COAL GASIFICATION

sensing methods — earth electrical resistivity techniques, active and passive acoustic techniques, and measurements of such factors as earth motion, tilt and displacement. Numerical and analytical models of the different instrumentation techniques will be developed as well.

Dave Northrop, supervisor of Underground Process Control Division 5732, is the Sandia project manager. Jack Beyeler

(1123) is field project engineer, and Steve Winters and Rick Sanderville (1123) are technicians assigned to the site. Others contributing to the project include Sam Beard (5732) and Ray Reed (1116), thermal modeling and instrumentation; Bill Beckham (5732), Doug Garbin and Sam Stearns (both 1111), acoustic modeling and instrumentation; and Lew Bartel (5732) and Bob Seavey (5733), resistivity modeling and instrumentation.



STUDENTS don't let any obstacle stand in the way of their tutoring sessions.

short module quizzes which, if passed, enable him or her to progress to the next module. The tutor may be checking one of those tests or explaining a concept to a group of students.

"I like CRI," says Len, "simply because it seems to work well. It takes more time for the teacher than a conventional system does — at least the first time through a course. But it pays off — students learn.

"Some teachers," Len adds, "wouldn't like CRI. You can't play God. You're a guide, coach, and a resource tool."

Len's course development work is part of a team effort. John Cantwell (3132) was instrumental in introducing the CRI concept to Sandia. Gene Bates (also 3132) is responsible for the overall instructional design and administrative support of the program. Joe Stiegler (9480) is the course supervisor. "Our experience with CRI," says Joe, "is positive enough that we're recommending it to others who supervise similar courses." As a result of the experience of Joe and others, the in-hours Engineering Math course has been reorganized and will be offered in a CRI format this fall.

What? No Lectures

CRI at SLA

The traditional "listen to a lecture, take a couple of tests" format has been replaced in some of Sandia's In-Hours courses by CRI (Criterion-Referenced Instruction). CRI is a way of organizing and presenting the information students need to do their jobs — at a pace and order determined by the student. Each one has access to all instructional resources (tutors, texts, hand-outs, videotapes, etc.); each can study as much as or little as he or she needs to until specific predetermined objectives for a block of material are reached.

The flexibility is what makes CRI an attractive approach for courses like the Engineering and Science Assistant Training program. New people enter the program (which qualifies graduates for a variety of 210 ESA positions) at irregular intervals; their backgrounds and abilities vary widely. CRI works well here — "We can tailor the course to fit each person's capabilities and specific job need; we can go fast or slow; the student sets the pace for mastering the objectives for each unit," explains Len Beavis (2413), the instructor.

The secret behind the flexibility is a lot of work behind the scenes. Len spends about 70 percent of his time in preparation — designing and writing the "modules" or units of instruction. Actual class meeting time takes about five percent. The remainder is spent in individual tutoring.

In a typical class, one student who is a little ahead may explain to the others some of the tools and techniques (and potential pitfalls) coming up in, say, the geometry module series. Some students may be taking

Recreation Notes

FUN & GAMES

Sandia Flag Football — It's that time of year and Joe Maez (3617) is organizing Labs teams for league play with teams in the city. Play will start next month, and the schedule calls for two games a week, most weeks. Call Joe on 4-5689, or Ted Montoya on 4-3346, or Buddy Sanchez on 4-6730 if you're interested.

Bowling — Gary Miller (5842) sends us this schedule for the coming season: Oct. 4 & 5, Scotch Doubles, Fiesta Lanes; Nov. 8 & 9, 12th Annual Handicap, Holiday; Dec. 13 & 14, Doubles & Singles, Fiesta; Jan. 24 & 25, 4-Man Doubles & Singles, Holiday; March 27 & 28, Scotch Doubles (may change). All tournaments except the Scotch Doubles will be sanctioned.

Annual Retiree Picnic — The 10th annual picnic for retirees is slated for Thursday, Sept. 4, from 4 to 7 p.m. on the Coronado Club patio. Nearly 1450 invitations have been extended to retirees and their spouses, who now reside in 37 states. Last year 734 attended. Morgan Sparks will speak at 5:30; other members of Labs management will also be present.

Sandia Bicycle Ass'n. — A gate count of bicyclists last week tallied 204 coming into the Tech Area at the start of work. Add to this the 10 or so who work outside the Tech Area, and that brings the total to about 215 — a most respectable number. Consider, for example, a line of 215 automobiles trying to leave the Base during the evening rush hour. An earlier SBA survey indicated the average round trip — home to work and back — was 10.4 miles. In terms of fuel savings, then, the cyclists pedal about 11,000 miles per week; at 13 miles per gallon that comes out to some 850 gallons of gas not expended. Our estimate: Sandia Labs leads all non-university institutions in the number of commuting cyclists. Any challengers?

Sandia Runners Ass'n. — The La Luz Trail Run, sometimes called the Ultimate Folly, takes place this weekend, Sunday. A dozen SRA'ers are expected to compete in the event, which covers 7-1/2 miles with an elevation gain of 4000 feet up to 10,600-foot Sandia Crest. Race time is 8:30 a.m.

The annual membership meeting of the Southwest Masters Running Club is also scheduled for Sunday the 24th, at 2 p.m. at the Ramada Inn East. Jesse Castenada, who holds the record for distance walking, will speak, and plans for the coming year will be discussed. Members and potential members, please come.

Tuesday next, the 26th, Road Runners meet at Montgomery Park (San Mateo and Ponderosa NE). The events start at 6:15 p.m.

Coronado Ski Club — First meeting of the season was held Tuesday last. Club President Jack Hanna (9300) reports that members can still sign up for most of the trips, though Crested Butte has filled. If you join the Ski Club by Oct. 21 you'll get a \$1 discount on the \$7 dues. Next meeting is third Tuesday in September, the 16th.



LORELLA SALAZAR (212), a member of AHA, admires one of the puppies from the association's nursery. This cute little pup is healthy and happy now and looking for a home but came to AHA a few weeks ago as a discarded stray.

Art Auction to Benefit Animal Humane Association

The Animal Humane Association of New Mexico is celebrating its 10th anniversary with a benefit Arts and Crafts Show and Auction. Barbara Rush (200), secretary of the AHA board of directors, and her five member working committee have arranged the show and auction. Felix Padilla (9754) and Lorella Salazar (212) are on the committee.

The Humane Association is a volunteer organization whose aim is to educate the public on animal care. The association has no outside source of income but has a membership of more than 1000. They are supported by membership dues, donations, bequests, and their own fund-raising activities.

AHA headquarters at 615 Virginia SE has room for 100 animals. Barbara says the strays always include dogs and cats and usually some birds and rabbits. "We even had a couple of horses in the backyard at one time," adds Barbara. AHA has the only complete

lost and found service in the state and has an extremely high return rate. "We have thousands of names on our lost and found lists," Barbara says. "The lists are categorized by breed and our volunteers spend many hours trying to match up owners and pets. If we fail to find the owner in 10 days we put the animal up for adoption, and we have one of the highest adoption rates in the nation."

Participants in the Arts and Crafts show are all professionals, including Sandians Anne Morrow (4100/4200), Dick Strome and Jim Walston (both 3155) and retiree French Stewart. Among items to be auctioned are paintings, sketches, silkscreens, ceramics, jewelry, macrame; and the private art collection and unusual roll-top desk of the late Dr. Stanley Turner Gustin, which was bequeathed to AHA. The show and auction will be held Aug. 24 at 1 p.m. in the Mediterranean Rooms at the Hilton Inn.

Events Calendar

- Aug. 22-24** — Albuquerque Civic Light Opera: "Applause" 8:15 p.m., 24th 2:15 only, Popejoy Hall.
- Aug. 22-24, 28-31** — Corrales Adobe Theater: "Antigone," 8:30 p.m.
- Aug. 23** — N.M. Mt. Club, Winsor Trail, out of Santa Fe Ski Basin, 8 mile hike, 7:30 a.m., Gulf Mart.
- Aug. 24** — N.M. Mt. Club, Cienega to the Crest, east side of the Sandias, 5 mile hike, 8 a.m. Western Skies.
- Aug. 24** — Annual La Luz Trail Race, 7.5 miles up Sandia Mountains, for details call Sgt. Bachis, 766-7669.
- Aug. 26-Sept. 28** — Barn Dinner Theatre: "6 Rooms Riv Vu" 281-3338.
- Aug. 27-28** — Spanish Fiesta-Carnival; for details call Pueblo Office, 869-3111, Isleta Pueblo.
- Aug. 28-31** — Old Town Studio: "Small Craft Warnings," 8 p.m.
- Aug. 30** — The United States Army Field Band, 8 p.m., Convention Center.
- Aug. 30-31, Sept. 1** — N.M. Mt. Club, San Pedro Park Wilderness, for details call Jim Iden, 277-5622.
- Sept. 4** — Harvest Dance — St. Augustine's Day Celebration, Isleta Pueblo.

Deaths

Dorothy Mohart of Education and Training Division I 3131 died Aug. 8 after a long illness. She was 61.

She had worked at Sandia Laboratories since July 1952.

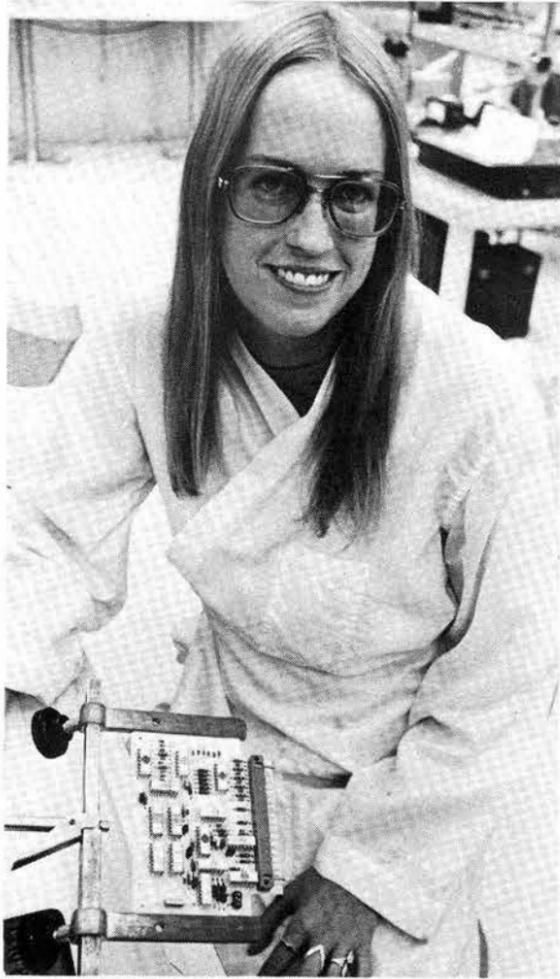
Survivors include her husband and two daughters.

Arthur Kraft of Composites, Abrasives and Branch Shops Division 3645 died Aug. 11 after a long illness. He was 54.

He had worked at the labs since March 1953.

Survivors include his widow Darlene (1252), a son and a daughter.





CHRIS ROTH (3622), Sandia apprentice.

Sandia Apprentice

Chris Roth: Young Woman with Plans

With a degree in cultural anthropology and a year as a Sandia apprentice behind her, Chris Roth (3622) at 26 finds her life much different from that visualized when she was an undergraduate at the University of Kansas.

"I was never a militant feminist," she says, "and I'm still not. But I did see myself pursuing a career in an exciting field — first, I was interested in medical technology and then I found anthropology. I wanted to do archeological field work. That's why I came to New Mexico. But have you applied for a job lately in archeology?"

Chris answered a Sandia classified ad for apprenticeship trainees and was selected for the materials processing technology program.

"What an eye-opening experience," she says enthusiastically. "Women belong in technical areas. After a year in the labs I could never go back to a desk job — I was a bookkeeper for a while after graduation. Believe me, this is more challenging."

For the past year Chris has worked in six specialty laboratories (called an introductory tour in the apprentice program) consisting of the plastics, ceramics, scientific glass, microcomponents, plating and coatings, and physical electronics labs. She has completed two mathematics courses, two chemistry

courses and a class in mechanical drawing and blueprint reading in addition to six weeks of formal machine shop training. Before the 44-month program is finished, Chris will take physics courses, materials science courses and various specialty classes in conjunction with her permanent Lab assignment — she will choose one of the six specialty laboratories. Most of the class work is taken in Sandia's Out-of-Hours program.

"This is a good program," Chris says. "We're continually learning — and there's so much to learn. I want to complete the apprenticeship program, but then I'll continue to take advantage of Sandia's educational programs."

"Women must continue their education," she says, "and technical fields offer more opportunity. I'm thinking now about my friends with liberal arts degrees who are still unemployed. Women like these or those in office jobs should at least take some introductory technical courses to find out what they're missing. Late in the twentieth century is an exciting time to be a woman."

Chris is still interested in anthropology and archeology. On weekends she backpacks into the mountains, visits ruins and Indian pueblos with her boyfriend.

"Mostly I enjoy the scenery," she says. "There are no mountains in Kansas." • dg

Backyard Oasis

His Friends Have a Great Time

"I built it as a place to relax," Tony Shannon (3646) says discussing his terraced, landscaped and manicured backyard, "but I haven't had time yet." The place is a lush, green, shady, flower-filled oasis with a lava rock fountain as a center piece surrounded by curved rock walls, concrete and rock paths, plus a few surprises.

One of them is the turtles — nine of them form a parade as they follow Tony around waiting for their daily handout of raw hamburger. "They also eat insects," Tony says, "I guess."

Tony has been working on his backyard in the NE Heights for six and a half years. He figures he has mixed and poured some 40 yards of concrete, hauled 50 pickup loads of material and shoveled a ton of manure. "And I'm not finished yet," he says.

The lava rock fountain is about seven feet tall with three small pools at different levels before the water reaches the larger pool at ground level. A submerged pump keeps the water circulating. The rock was gathered (with permission) near Isleta Pueblo, wrestled into position (one large rock alone weighs 600 lbs.) and mortared into place with black mortar. Design of the fountain incorporates hidden and submerged lighting plus curved planter areas.

"It's most attractive at night," Eileen (Mrs. Shannon) says, "The green lights reflecting on the lava make it look frosty. It's a great place to entertain friends." Eileen worked at Sandia as a secretary before leaving in 1963.

Fruit trees, ornamental plums and five varieties of evergreens provide most of the shade, together with the high grape arbor along one wall. Flowers, including a dozen varieties of roses and several of Rose of Sharon bushes, bloom everywhere. A neat



TREES, bushes, shrubs and flowers fill Tony Shannon's backyard along with rock walls, decorative stonework, an unfinished wishing well and concrete paths.

vegetable garden is tucked into one corner, and it appears that the Shannons will harvest ample tomatoes, squash, brussels sprouts, beans and green chilis.

The low rock walls lining the terraces were built from rocks individually gathered from six western states during Tony's many hunting and fishing trips. He brushes the rocks with log oil once a year to bring out their color and make them shine.

"I wouldn't do it if I didn't enjoy it," Tony says. "Believe it or not, I like to pour concrete, I like to build things out of rock, I like to trim trees and I like to shape shrubs. Maybe one of these days I'll relax. In the meantime, I want to put a stone walk here, fill that area with concrete, plant some flowers there, hang a pot here, build a . . ." • dg



CENTERPIECE of Tony Shannon's backyard is this massive three-tiered, lava rock fountain. Submerged pump circulates water.

feed *back*

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

Q. I recall a Feedback question and answer some time ago concerning the possibility of adding vacation information to the payroll statement. As I remember, the reason for not making the change was that the 7090 could not handle any more data.

Now that the payroll is on the 1108, will this modification be adopted?

A. Development of an absence reporting system is presently in process by Department 4270. A part of this system will include vacation status reporting. While the ultimate method of reporting vacation status on a more frequent basis has not been decided, the Payroll statement is one method being considered. It will probably be spring of 1976 before any part of this new system becomes operational.

C.R. Barncord — 4100
* * *

Q. At Sandia Livermore scrap lumber from the carpenter shop plus wooden shipping crates are hauled to the dumps about once a week. Why not make this available to the employees? If employee accidents are a problem, why not have interested employees sign a release similar to that signed for slow-pitch softball, thus releasing Sandia's liability.

A. Currently scrap lumber from the carpenter shop goes to our salvage yard which is open on Friday afternoons from 4:15 p.m. to 6:00 p.m. If wooden shipping crates can be reused by our shipping department, they are utilized in this manner; otherwise they are hauled to the dump. Management has looked into the question that you have posed and in the very near future the present small and crowded scrap lumber yard will be replaced by one that is larger. At that time we will start putting the scrap wooden shipping crates as well as the scrap lumber in this larger yard.

C.H. DeSelm — 8200
* * *

Q. Now that we have a rest haven in front of the library, why not encourage its use during break and especially at lunch by putting in comfortable benches and tables?

A. Canopies or shelters to provide shade were considered in the original plans for this landscaped area. Both the size of the mall and the associated equipment had to be scaled back because of the high cost of construction and a shortage of available funds. Concrete benches were selected for ease of maintenance. As funds and time permit, we plan to improve and extend landscaped areas here at Sandia. Such items as canopies, tables and improved benches will be considered.

R.E. Hopper — 9700
* * *

Q. The telephone service from my phone, and several others that I have talked with, is very poor. Often I dial a number and it reverts back to dial tone halfway through the dialing sequence. Invariably the noise level is very high on the line. And dialing outside is even worse, both on direct dial and FTS. Repeated inquiries on 114 have not resulted in any improvement. Can you help?

A. On May 23, all of the telephone lines on Kirtland West were cut over from Mountain Bell to the military exchange. During this period approximately 30 telephone repairmen from the Air Force Communications Squadron, out of

Oklahoma City, worked in the exchange pulling in cable, installing equipment and making the cut-over. This work contributed to some confusion in the exchange and caused some trouble.

Also, because of the expansion, the automatic checkout equipment has exceeded its capacity and can only handle 10 of the 12 bays of equipment. This computer equipment, which is turned on at night, is set up to put a false load on lines and equipment and locate trouble. Over a period of two weeks all lines and equipment on the 10 bays are checked out. Additional computer equipment is being ordered to pick up the last two bays, and in the meantime, the exchange supervisor has agreed to manually check out the lines and equipment on a periodic basis.

A couple of suggestions for users to assist the exchange operators are as follows:

1. When a line drops out while dialing, leave the telephone off the hook and go to another telephone and call 114 and give your number, the number called, and on what digit the dropout occurred.
2. When you get a noisy line — leave the telephone off the hook and go to another telephone and call 114 and report the problem so they can get on the line and locate the trouble.

Our review of the trouble log at the

exchange did not reveal a significant amount of the type of trouble you reported. The recent modifications in the exchange did cause some problems and it is anticipated that some problems will continue until the new equipment is received and all exchange equipment can be thoroughly checked out.

R.E. Hopper — 9700

Hot Stuff

If you have a '75 model car, it's probably equipped with a catalytic converter. If so, keep the engine well tuned and don't drive where a fire hazard may exist. Seems that in the improperly tuned car, unburned fuel combusts within the converter, creating temperatures above 1000° F. That's hot, and if you're driving or stopped over vegetation, you may have an inflammatory situation. And it wouldn't be wise to park your pride and joy over spilled gasoline either — the fire/explosion could ruin your whole day.



A PHILODENDRON PLANT, potted in Bldg. 829 some four and a half years ago, now is a 100-foot-long sinuous presence throughout the south wing of the building. Tech artist Yvonne Riley (3155) says she doesn't do anything special to promote such spectacular growth — just regular watering, periodic addition of plant food, and soothing words.



BREEDING POND containing millions of gambusia is one of several at Montessa Park maintained by the Albuquerque Environmental Health Department.

Our Town

Mosquitoes: Something Fishy Here

The fact that residents of Albuquerque are rarely bugged by mosquitoes is no accident. They enjoy fine summer evenings on the patio in comfort. There are insects, but few of the variety that bite.

Since 1967, the Albuquerque Environmental Health Department, responsible for insect and rodent control among other things, has relied on a two-inch fish called gambusia as their primary weapon against mosquitoes.

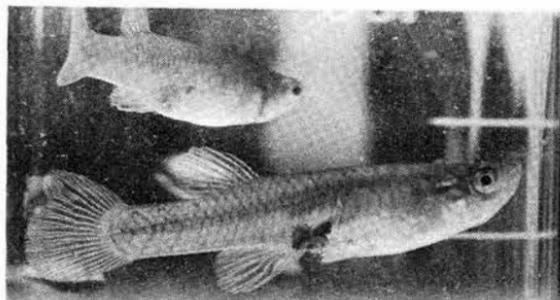
In addition to being a first-class itch, mosquitoes carry disease. Encephalitis is the big worry these days — in 1917, it was malaria. That was the year that the U.S. Health Service first planted gambusia in quantity in the Rio Grande Valley where malaria was rampant. It is non-existent now, although officials worry about those Vietnam veterans who carry the disease; conceivably, a carrier could re-introduce it into the area.

Encephalitis is another story. It is endemic here. Humans and horses are susceptible, and six to a dozen cases are reported every year. It is usually fatal in horses but people, treated in time, recover. It is a terrible disease in humans, attacking the central nervous system and, untreated, causing serious brain damage.

Birds carry encephalitis without being affected.

And contrary to popular belief a hungry mosquito prefers birds to any other protein. It is with considerable pique, thus, that a famished mosquito attaches to you or your horse.

The Environmental Health Department



WHERE GAMBUSIA thrive, mosquitoes do not.

maintains several "sentinel" flocks of chickens in the North and South Valleys that are periodically sampled for encephalitis. Any positive result triggers the department to saturate the area with chemical spraying. Only short-lived, specialized (and very expensive) chemicals are used.

Gambusia, on the other hand, are inexpensive (the Department maintains millions as breeding stock) and very effective. They are dumped in early spring in every standing pool, ditch and slow-moving irrigation system in the area. They feed continuously on mosquito larvae or anything else the right size that wiggles on the surface. Where gambusia live, mosquitoes do not.

The fish reach maturity in about 90 days; females bring forth live young (from three to a dozen) every three to four weeks thereafter throughout their three-year lifespan. They must be restocked in the low-level water or ponds that dry up. Extended freezing temperatures in water also reduce gambusia population.

Gambusia are native to warm North

American waters; they are no threat to any other fish species. As a matter of fact, any gambusia that wind up in the Rio Grande eventually find their way to Elephant Butte, to be welcomed by local bass, crappie, bluegills, and other game fish.

The problem with mosquitoes is that any water that stands for a couple of weeks provides a breeding ground — puddles after rain, even water trapped in a discarded beer can.

Mosquitoes will be an annual problem. There are "gaps" in mosquito control along the Rio Grande. The state and federal governments (which used to do it) have passed the responsibility for mosquito control to local communities, some of which do not have funds for the activity.

The \$80,000 the city provides for insect and rodent control is well spent. Bernalillo County contributes another \$40,000, so the department is responsible for the area from Algodones to Isleta Pueblo. Thanks to their efforts, and a two-inch fish, the County is relatively free of pests. • dg

Sympathy

To Leonard Kracko (1125) on the death of his father-in-law, in Albion, Mich., Aug. 4.

To Carol Dauphinee (9742) on the death of her husband, in Albuquerque, July 28.

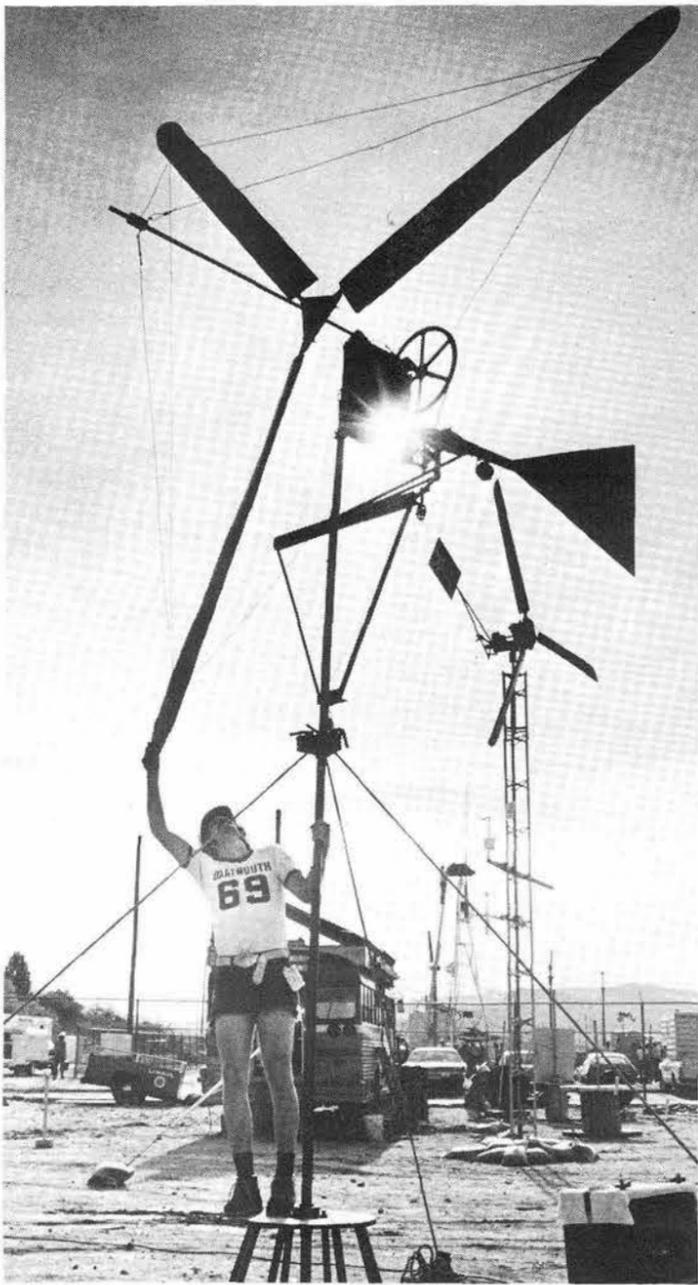
To John (4151) and Lewis (3723) Sisneros on the death of their mother, in Albuquerque, Aug. 18.

SCORE —

Students Show Energy Ways & Means

By the time the 40 exhibits and working models were set up, the SCORE area near Sandia's Exhibit Center resembled a carnival midway. Sunburned young men and women in shorts and hardhats hustled about, tightening up guy wires or adjusting solar reflectors. The Labs' Glen Brandvold, manager of Advanced Energy Projects Department 5710, brought this year's SCORE (Student Competition on Relevant Engineering) to Sandia, and he spent much of the week hovering about the exhibit area. Glen had promised good, i.e., Albuquerque, weather and he produced. Well, there was that hurricane-like thunderstorm one afternoon . . .

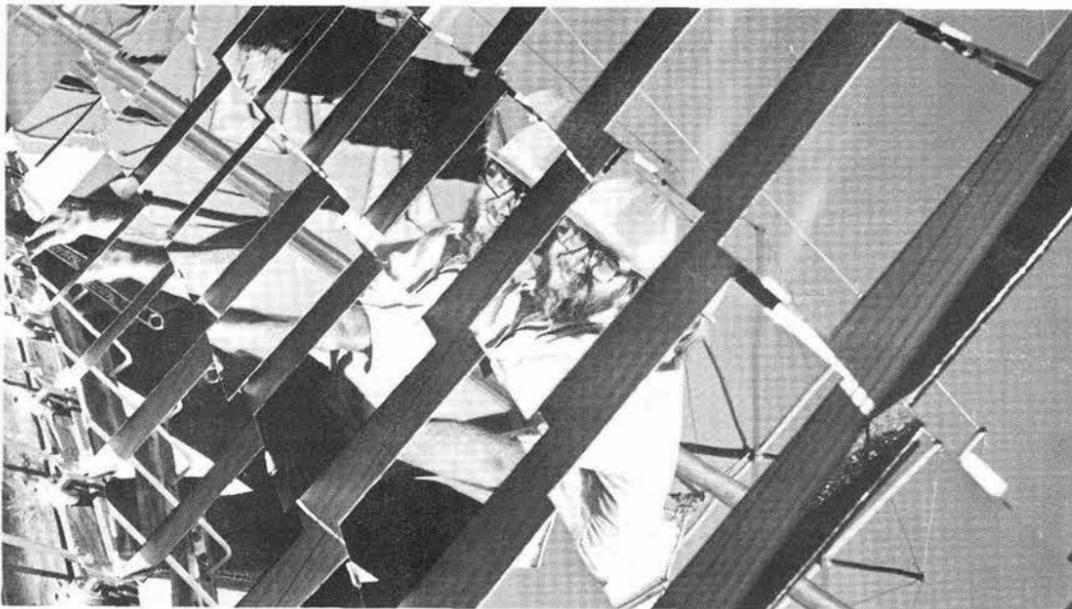
To the many Sandia people and groups who helped, Glen says "thanks." The SCORE people awarded the Labs a handsome plaque in recognition of Sandia's support. This will shortly be on display in the Personnel Bldg.



WINDMILLS were abundant. This the Univ. of Hartford entry.

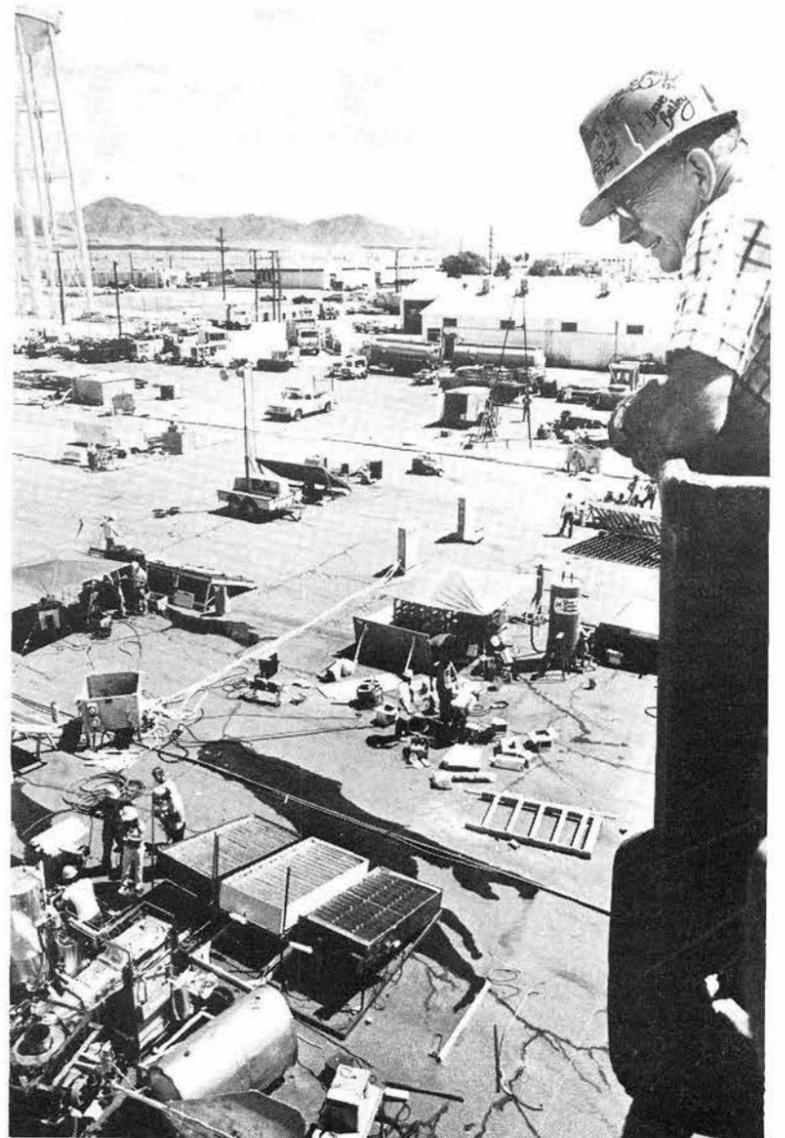
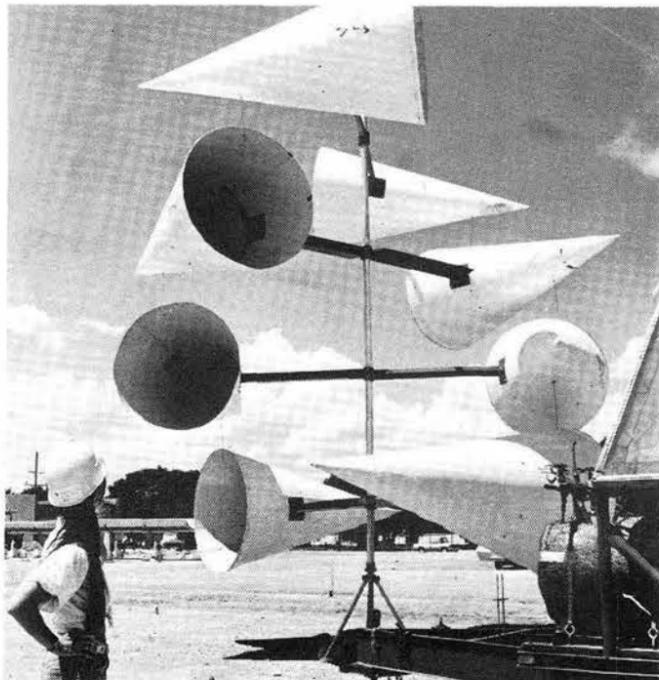


WICHITA STATE solar collectors are designed to provide space heating.



RENSSELAER POLYTECHNIC INSTITUTE solar reflector creates optical illusion.

DESIGNED to catch the wind, these cones caught a little too much wind in the Wednesday afternoon thunderstorm. They hail from North Carolina State Univ.



DAVE BAILEY (9711) scans SCORE scene from cherry picker.

MILEPOSTS

LAB NEWS

August 1975



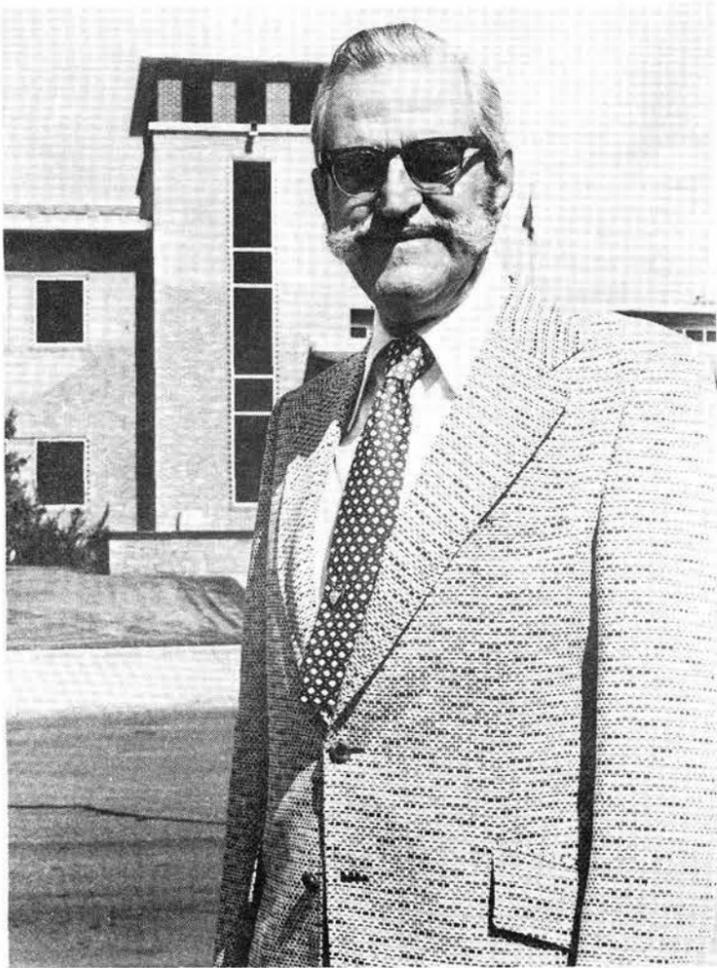
Jake DeVargas - 2645

20



Carl Lundbom - 8433

20



Harold Jeblick - 9542

WE 30



Owen Berg - 1563

15



Kenneth Paul - 4277

15



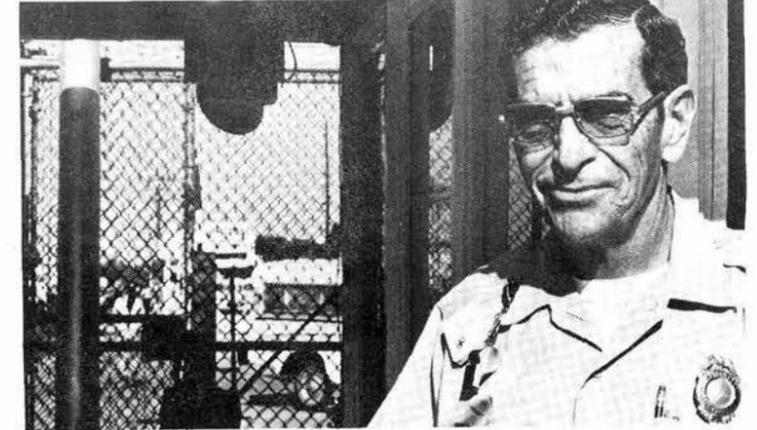
Geoffrey Lynch - 9511

20



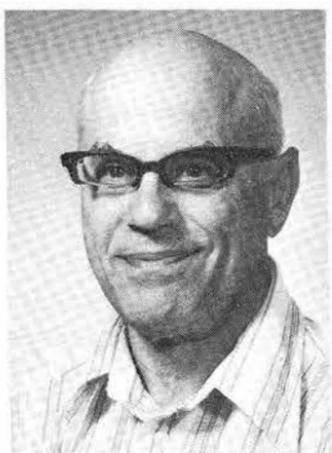
Vaun Atkins - 9753

25



Verne Honeyfield - 9550

25



Oscar Fligner - 1562

25



Oscar Oren - 4723

15



Robert Parker - 9353

20



Elizabeth Frost - 1223

25



Pat Anderson - 9415

25



Edward Sims - 9550

25



Jack Graham - 9551

25



Marvin Reichenbach - 2344

15

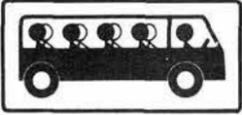


Bruce VanDomelen - 2523

15

Retirees

Returned your retirement election form yet? If not, please do so, ASAP!



Bus Notes

A yearly pass arrangement has been worked out with Sanchez Charter Coach for Los Lunas and Belen busers. Riders who wish to purchase such a pass should complete the form available at the LAB NEWS office and return it to the bus company. Or you may buy the pass directly at the bus company office on 5320 Edith NE.

Congratulations

Mr. and Mrs. Eugene Royer (2316), a son, Paul Christopher, June 29.

So You Want To Be a Docent

The docents at the Museum of Albuquerque are a trained group of volunteers who conduct Museum tours and answer questions about exhibits or functions of the Museum. An orientation program for new docents, beginning next month, offers general information on the history, art and science of the southwest. Continuing informational programs include guest speakers, field trips and preparational backgrounds on each new exhibit. Persons interested in this type of volunteer work should call the Museum on 766-7878 for more information.

CU Bulletin Board

As part of its normal audit procedure, the Supervisory Committee recently mailed statements to members with account numbers from 13,000 to 14,999. If your account number is in this series and you have not received your statement, please notify Joe Holdridge (4275), Committee Chairman.

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.

RULES

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

MISCELLANEOUS

- FURNITURE for den, black vinyl sofa & large chair, \$100; rocker, \$50; chair, \$15. Klemm, 298-9541 after 6:30.
- GIRLS std. bicycle, 20", Sears Spyder model, \$20. Flower, 298-0632 after 6.
- PORCH or lawn swing, 5 ft. Grant, 255-6105.
- DINETTE SET, 7-pc. oak-grained top, mottled hues of wine & bronze, wrought iron trim, tubular steel frame, \$70. Gutierrez, 821-4512.
- MINOLTA SRT-101 camera, SLB, 35mm, f/1.4 lens, 135mm telephoto plus carrying case & accessories, \$300 or best offer. Stewart, 296-4341.
- PARTICLE BOARD, 20 large sheets, plywood & 2x4's, cheap, misc. furniture, rugs, antique treadle sewing machine. Sander, 299-5761.
- CRUSHED red lava rock (scoria), approx. 2 cubic yards, \$5, you haul away. Snyder, 296-5771.
- TRAVEL QUEEN 10½' cab-over camper w/jacks, heater, port-a-potty, etc. \$650. Chambers, 281-5187.
- TRACTOR, International 560, diesel, PS, hydraulic & 3 point lift, 10 forward spds, \$2250. Donaldson, 255-4024.
- ZENITH TV, 21" console b&w, will trade or sell for small portable b&w. Stoeber, 296-3717.
- TYPEWRITER, Royal portable, custom II, w/case, used very little, \$60. Philgreen, 256-1956.
- VIOLA, Roth, ¾ student, w/bow & case, quality tone, \$220 new, sell for \$110. Church, 4833 Northridge Court NE, 299-2175.
- TRUMPET, York Superba, student model, w/case & lyre, \$40. Reynolds, 256-3670.

HARMON Kardon Citation IV & V stereo amplifier system, Scot tuner, 2 JBL Minigon speakers, mahogany, Heathkit monaural amplifier system. Auerbach, 296-1489.

AIR compressor, Wards, ½hp motor, 2 CFM at 40 PSI, \$150; 6" metal lathe, Atlas, \$300. Lucero, 836-5375.

OPEN weave, unlined draperies in muted blue & green stripe, custom made, 2 panels, 55"x46". Guilford, 255-6294.

POOL table, regulation size, \$100; 4-pc. Koehler living room sectional, \$100; LP gas stove, \$45; bathroom vanity, \$25. Miller, 281-5290 after 6.

GIUITAR, hollowed body, electric, 4 pickups, tremolo arm, \$110 or trade for 12 string guitar. Montoya, 883-9115.

2 CRAGAR SS mag wheels, Ford, \$60; Craftsman grass catcher, reel type mowers, new, \$10. Andrzejewski, 255-9404.

CHRYSLER Airtemp 23,000 btu refrigerative air conditioner, 220 single-phase, \$150. Ruminski, 256-0770.

YEARLING Hereford steers, \$125-\$175. Kadlec, 869-2198 or 881-2543.

JACKOBSEN 18" reel lawn mower, \$75; RCA whirlpool washing machine, \$95. Donham, 299-0028.

METAL storage building, Wards, 10'x7', white w/green trim, \$70. Freyermuth, 299-2053.

FUN BOAT, 22' Sterncraft, 140 hp Mercruiser I/O, tandem trailer, extras, \$4500. Hansen, 898-3173 or 293-8664.

WILSON tennis racquets, 1 T3000, 1 T2000, nylon strung. Windham, 293-8107.

CHAIN saw, McCulloch 35, old heavy but cuts well, 24" bar, new chain, \$55. Copeland, 344-1133.

STEEL garage doors, 8'x7', including hardware, \$30 ea., \$50 both, can deliver. Class, 281-3836.

BICYCLE, girl's 1-spd., Schwinn, 26", \$35; AMF, 24", \$30; unicycle, \$5; wall heater, \$50; closet door, \$5; bunk beds, \$50. Bryant, 299-8315.

MOBILE home, '71, 12x44, AC, skirting, patio cover,

carport, landscaping, 1 mile from Sandia. Huerta, 293-2086.

KELVINATOR elec. range, white, 40" w/storage compartment & drawer, timer & appliance outlets, \$65. DeWitt, 881-4348.

BABY ITEMS: crib & mattress, Cosco jump seat, backpack carrier, Cosco high chair, buggy, GE heat & serve dish, single stroller. Linnerooth, 299-6154.

SALT water Mitchell reel & salt water rod; Winchester model 12, 12 ga. shotgun; size 10 root shoes, almost new, ½ price. Carlson, 294-5746.

GAS cooktop, Modernmaid, 5 burners including grill/broiler, fits in 20x35 inch opening, \$45. Reed, 299-7425 mornings.

GARBAGE bags, \$3.25; 6-digit 4-function calculator, \$13, cost \$30 new; slatted wood end table, \$6. Koletar, 255-4751 after 5.

GOLF clubs, Wilson 1200, irons & covers, 3 thru wedge, used 16 times, \$250, sell for \$160. McBride, 299-4347.

SET Wilson X31 golf clubs, 4-woods, all irons, \$130; 4 bowling balls w/bags; 2 sets dishes, service for 8. Brooks, 296-3751.

KENMORE washer & electric dryer, \$100. Stirbis, 299-5363.

DROPLEAF formica table w/2 chairs; Harvard bed frame; 5mm Sheridan pellet gun. Schwoebel, 298-4295.

BLACK & DECKER, elec. lawn mower, grass catcher, used 10 times, \$35; golf clubs, 1, 3 woods, 3, 5, 7, 9 irons, bag & cover, \$20. Dishman, 296-2457.

'73 MOBILE home, 2 bdr., Country Squire, 14x64, furnished, skirting, AC, carpet, utility area, \$2550 down & take over payments \$116.75/mo. Miller, 877-6363.

GOLF clubs, First Flight Golden Eagle woods, 1, 3, 4, \$45; MacGregor Tourney irons, 9-3 plus Wilson 2 iron, \$30. Harley, 898-0594.

GIRL'S bike, full size, 1-spd., balloon tires, Western Flyer w/chrome fenders, \$15. Baxter, 344-7601.

SHARE in 8 member Flying Club. '65 Cherokee 180, well equipped, IFR cer-

tified. Dawirs, 281-3630 or 299-7225.

FOR SALE TRANSPORTATION

'67 SHELBY, GT-500, factory air, 4-spd., 42,000 miles, 1 owner, never raced, \$3500. Dyckes, 299-7280.

'69 CHEV C-50 truck, dual wheels, split axle, 12' dump bed, 19,500 GVW, 26,000 miles, \$2500. Stevens, 299-6086.

'73 FORD Gran Torino wagon, PS, PB, AC, 3rd seat, luggage rack, trailer hitch, AM/radio, power rear window, \$2900. Chacon, 294-0065.

'61 STUDEBAKER, has safety sticker, \$60. Fishburn, 299-7370.

'69 PLYMOUTH Sport Fury, 55,000 miles, PB, PS, Garcia, 256-3162.

'65 VOLVO P-1800 Sport Coupe, R&H, 2 chrome wire wheels, \$600. Sundberg, 292-2168.

'71 HONDA CB-350, low mileage, \$525. Huddle, 881-2971.

'73 SUZUKI TS-185-K, trail bike, street legal, \$450. McEwen, 881-3913.

'72 BRONCO 4-WD, low mileage, needs tires, \$3-300 or best offer. McHaffie, 821-2119.

'71 VOLVO 142-S, AM/FM, radials, \$1500. Green, 255-8518.

'60 JEEP station wagon, 4-WD, new paint, brakes, seats, spotlight, towbar, 12-volt, 6-cyl., 3-spd., \$1500. Souther, 842-9630.

'70 TORINO GT, AT, PS, \$1100. Prevender, 299-5253.

'74 COUGAR, bronze, vinyl top, AM/FM stereo, custom interior, AC, power accessories, mag. wheels, steel belted radials, \$4400. McCoy, 294-1305.

'70 BUICK, 2-dr., 6-cyl., 3-spd., radio, heater, 1 owner, 52,000 miles, \$1350 or best offer. Trujillo, 344-5090 after 6.

'63 CHRYSLER N.Y., 13/17 mpg C/H, \$250. Hollingsworth, 298-8283.

MATCHING '70 Honda CT-70's, street or trail, will take 20 ga. and/or Pacific Pie-Loader as partial trade, \$225 ea. Conklin, 298-8217.

'69 CHEVELLE SS, auto, AC, headers, mag wheels, \$875. Mason, 296-1839.

'65 CHEV Impala, 2-dr., hardtop, new brakes,

tires, battery, \$600. Hawn, 299-7835.

REAL ESTATE

3-BDR. HOME, 1½ bath, carpet, fenced back. Thompson, 298-5800.

10 ACRES, 4 miles east of Edgewood, w/electricity, \$7500, \$500 down. Coalson, 298-0061.

MOSSMAN Stardust Skies, 4-bdr., 1¼ baths, den, carpeting, remodeled kitchen, new appliances, fully landscaped, sprinklers; near schools, shopping, buses. Fugazzi, 299-1279.

WANTED

HOMES for Pancho-Dipities, 8-week-old shaggy dogs, ½ Airedale, ½ generally Irish sheepdog, males. Hawkinson, 281-5239.

POTTERY WHEEL, motorized or kick; kiln for cone 6 firing. Carlson, 294-5746.

VOLKSWAGEN bug, convert., sedan, any year, will pay cash. Smitha, 293-1177.

STUDENTS & RATED PILOTS: Club w/Piper Warrior offers economical flying, \$25/mo., \$7.50/day. Bertram, 294-8350.

WINTER PASTURE for 55-60 cows during the approx. period, Dec. through March. Causey, 881-7534.

SMALL BIKE, girl's, in good condition. Hall, 298-8617.

USED BRASS for reloading in cal. .243, .270 and .300 Win. Mag. Jelhom, 296-9155.

PORT. TYPEWRITER in good condition, prefer late model. Dickason, 299-8125.

FLUTE for Jr. High student, reasonable. Carrillo, 836-4072.

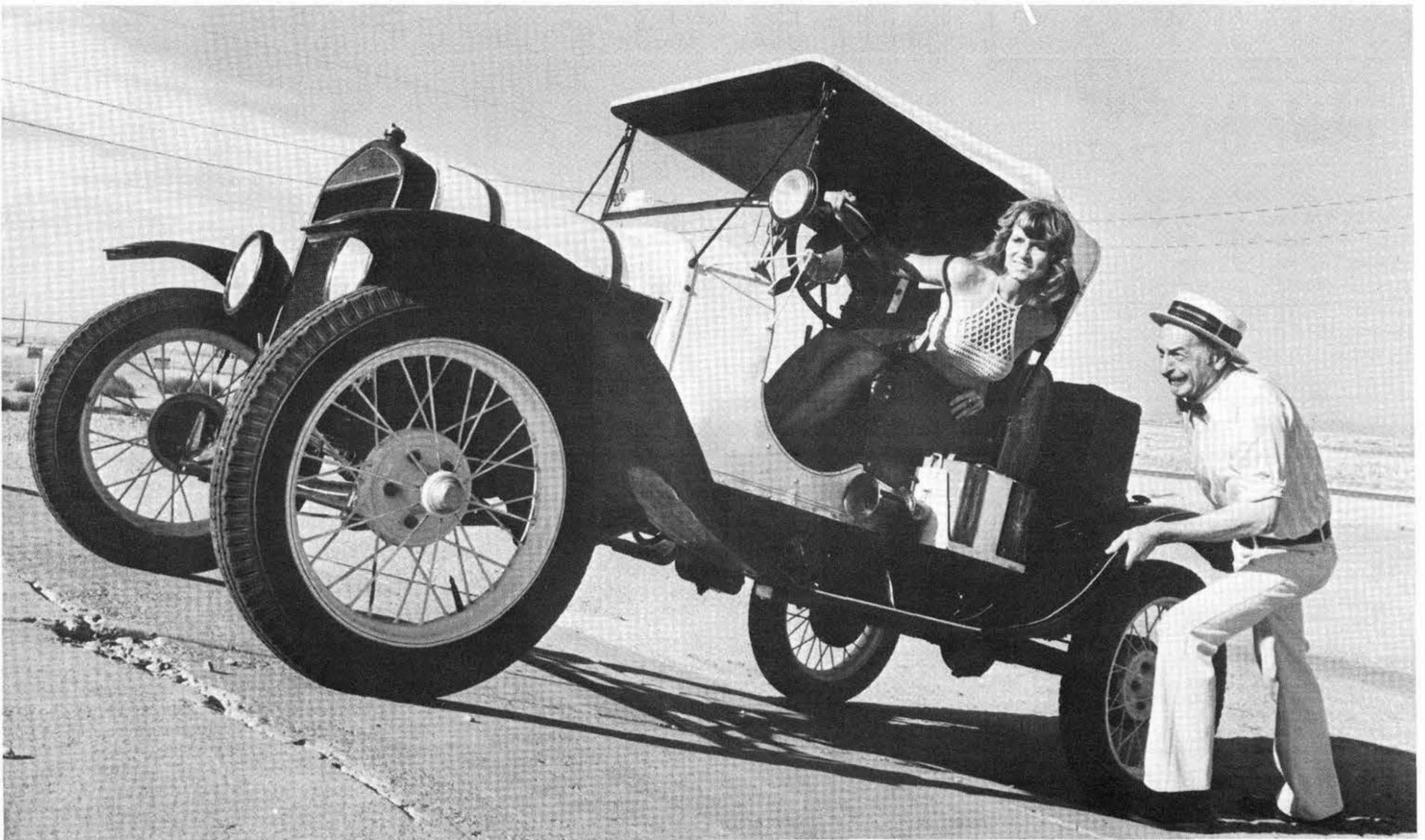
SHOP MANUAL for '66 Ford Thunderbird. Nielsen, 299-0198.

MOP PAIL & WRINGER for use w/string mop, good condition. McBride, 299-4347.

LOST AND FOUND

LOTS — Man's stainless steel watch, alligator umbrella, 3-loop earring w/diamond in center, white gold Hamilton watch. LOST AND FOUND, Bldg. 832, 4-3441.

FOUND — Medic alert bracelet, ladies metal frame glasses, metal key ring. LOST AND FOUND, Bldg. 832, 4-3441.



PUSH if you must, but join Brenda Carrasco (ERDA) and Lou Baudoin (9655) at the Summer Olympics tomorrow and Sunday at the Coronado Club. The 1925 Ford Raceabout is usually a stellar performer.

FRIDAY	SATURDAY
22 — HAPPY HOUR SEAFOOD BUFFET Adults \$2.95 Under 12 1.95 <i>Tom McCohan On Stage</i> BILL MASON'S BAND	23 — ADULT SUMMER OLYMPICS 11 - 6 <i>Sign Up At Club Office</i> (Continued Sunday)
29 — HAPPY HOUR CORNED BEEF BUFFET Adults \$2.95 Under 12 1.95 <i>Denny On Stage</i> UP COUNTRY	30 — OFFICIAL HIBERNATION, STAG- NATION, & DOE- NATION DAY

CANNIBALS — like their hors d'oeuvres anthropomorphic. If you don't share that proclivity, be at the Club for Friday night Happy Hour goodies (now only 50¢). Stay for the Buffet, the entertainment whilst you eat, the music whilst you dance. Tonight it's fried catfish, shrimp jambalaya, cod (what a beautiful mornay, and corn fritters (it does?). Bill Mason's Band is a new one to the Club — Mason will jar you, that's for sure. Next Friday, it's hand-carved corned beef with steamed cabbage. Denny and his Six-Stringed Bludgeon will brighten your buffet, Up Country will do it for dancing.

Publicity; Hugh Jones — Bar; Bud Rufsvold — Travel; Joe Shelby — Special Events; Luke Stravasnik — Entertainment. They're the people to see about what you want to see at the See-Club.

UP — to now, swimmers have had it easy at the Club. That happy state of affairs ends Labor Day when the pools close. (Well, they won't close exactly, but two great white sharks arrive Sept. 2 for their biggie of the month — a People Peel.) So celebrate the closing with the Dixie Kings, the Coors truck, and the wettest water in the West.

SOMETIMES — those chances for great bargains on football season tickets slip away before you can take advantage of them. That's almost true right now — Wolfpacker George Horne has a handful of the \$36 beauties for \$24. But hurry; call 296-1416.

WITH — the dryness of August, an Oasis can be most refreshing. You'll find one at the Teen Dance on Thursday, the 28th, from 7:30 to 10:30. They're a new group — enjoy!

GET — in shape tonight and you'll be a winner tomorrow and Sunday in the Summer Olympics. Run distances, run dashes, throw darts, course obstacles, swim laps, put shots, shoot golf chips (?), ping pongs, and peg cribbage. There will be a broad jump contest too. Super-jocks get ribbons, trophies, acclaim, and Ben-Gay.

PEOPLE — heading Bahamas-ward have to month's end to sign up for the Oct. 25-Nov. 4 Nassau Beach bash. Jet your set there and back; swim, sail, fish, golf and bask in between. What a way to spend Halloween.

MORE INFO — 265-6791.

LADIES & GENTLEMEN
 FROM THE
 PRODUCTION
SOLAR ENERGY
 THE MUSICAL...
SCORE
 YOU ARE OUR SUNSHINE

A SANDIA LABS.
 PRODUCTION

FED — into the Club's giant voting machines and tabulated on the Club's abacus, the votes are in for the new Board. A Gallegos name of Pete is now a Repeat as President. He's named committee heads as follows: Vice-President Julian Lovato — Capital Improvements; Secretary Felix Almaraz — Special Interest Groups; Treasurer Bill Davis — Retiree Representative; Bill Fay — ERDA Representative and Food Coordinator; John Foster — Swimming; Thelma Foster — Membership; Bob Guerin — Sandia Representative; Bruce Hawkinson —

commuting
 information
DIAL 4-RIDE