



New Coring System for Oil Wells Successfully Tested

As an oil well is drilled, it is desirable to periodically determine the composition of oil- and gas-bearing strata through which the bit passes. For this purpose, the industry has developed a coring technique called "pressure coring" in which, ideally, a core is cut and isolated downhole and maintained in its downhole condition until analysis can be performed. A problem with current pressure coring techniques is that while cores can be reliably sealed to maintain downhole pressure, the slow drilling rate permits the drilling mud to wash away a number of residual fluids (oil, salt water, natural gas, etc.) that are important in the analysis of the sample.

Now Sandia and the Diamond Oil Well Drilling Company have developed and successfully tested an advanced pressure coring system using a bit equipped with synthetic diamond cutters and a special fluid that blocks invasion of the core by drilling mud.

In the test, the bit, which cuts a core 2½" in diameter, drilled 17 eight-foot-long cores at an average rate of 20 feet an hour, some seven times faster than the rate

achieved by the conventional natural diamond core bits. Both the new and the conventional bits were tested in the same 5000-foot dolomite/anhydrite formation.

During two of the coring runs, a Sandia developed, brine-based polymer fluid was stored in the core retriever to form a gelatin-like protective film around the core.

"Studies show that the longer it takes to cut a core, the more time drilling mud has to wash away the residual fluids," says Leonard Baker of Drilling Technology Division 4741. "The erosion makes it very difficult to accurately characterize the strata from which the core came.

"This first test of our new, fast-drilling bit and the special fluid shows that the combination permits much more accurate core analysis," he adds. "The rapid cutting speed alone significantly reduces core washing. When used in combination with the protective fluid, we get a good picture of what the strata contain."

The bit itself features 15 polycrystalline diamond cutters (PDC), which protrude 1/10" above the bit face, in contrast to a protrusion of 8/1000" for natural diamonds on conventional coring bits. This increased exposure permits deeper cuts and faster cutting rates. The PDCs are also sharper than natural diamonds and "machine the core much like a lathe," Baker adds. Because of the cutting speed and bit design, the core is exposed to regular drilling mud for only a short time before entering the barrel and being coated with the fluid sealant.

Sandia provided basic design criteria for the bit; the Diamond Co. completed the design layout and built the bit. Field testing shortly begins on a bit slightly redesigned to extend life and to more quickly coat the core with protective fluid. Tests will also be conducted with a similar PDC bit designed and built by Sandia. It will have a one-inch-long PDC pilot bit designed to reduce core invasion by drilling muds ahead of the core bit.

The non-invasive fluid (hydroxyethyl cellulose polymer) which coats the core is easily distinguishable from hydrocarbons in laboratory testing of core samples. The fluid, effective in temperatures ranging from 300°F to -50°F, also contains calcium carbonate particles which plug small holes in the core to help prevent the protective gel from invading the core.

The new fluid is easy to manage, a major advantage over the existing method. Conventional cores are frozen inside the barrel at the field, and removal of the



LEONARD BAKER of Drilling Technology Division 4741 and Sandia's pressure coring drill bit. In recent tests, the new bit performed significantly better than a conventional pressure coring bit.

Sandians Pledge \$738,000 Total To ECP Drive

Sandia employees pledged a total of \$738,000 to the Employees Contribution Plan, an "outstandingly generous record," according to Gene Blake (1710), ECP committee chairman. Average gift of those who contributed is \$131. Almost 87% of employees pledged gifts to ECP.

"The total amount is an 11.6% increase over last year," Gene says. "This is remarkable in view of rising prices and inflation. We can all be proud of the generous record of Sandians responding to community needs. Traditionally, Sandians account for 20% of the funds raised by the Albuquerque United Way. Again, we have done our share."

Fifty-three percent of employees contributed at the Fair Share level—one hour's pay per month or more. "It's interesting," Gene says, "that Fair Share gives accounted for \$633,000 of the total."

ECP supports the 39 agencies of the Albuquerque United Way and eight other national health agencies.

Jerry Hood (4360) will head next year's ECP committee.

Labs, Bell System Mark 30th Anniversary

The *New York Times* noted the event in a short item which began: "Washington, July 12 (AP)—The Atomic Energy Commission announced today the Western Electric Company and the Bell Telephone Laboratories will take over operation of its Sandia Laboratory at Albuquerque, N.M., to conduct atomic weapon research and production."

The year was 1949, and the agreement between the AEC and WE specified that Western would assume control on November 1st.

To mark this 30th anniversary, LAB NEWS is having printed, in color, a recent aerial view of Sandia Laboratories in Albuquerque. The color print, suitable for framing, will measure approximately 11 x 14 inches. If you would like a copy of this print, send your name and organization to "Color Print, Lab News, 3162." (Note: if you have previously requested this color print, you need not repeat your request.)

[Continued on Page Two]

Afterthoughts

Small world--The Benefits people, next door to us, report a curious development. When a person retires, Benefits sets up the open house in the cafeteria and lays out a spread of cookies, cake and other refreshments for the guests who come to visit with the retiree. Now it seems that we've grown a kind of professional open house attender, someone who knows the retiree not at all or only slightly and who views the occasion as a means to take an hour's break complete with coffee and cake. Not only that, but some even load up on the cookies before they leave, filling a container or plastic bag thoughtfully brought along just for that purpose. By most measures, this is a trivial matter, but one wonders at the smallness of the people who do this. For them, is there ever that solitary moment of reflection when he or she turns to the mirror and feels discomfited by the image seen there?

* * *

Some distinction--Out of the Three Mile Island incident there now appears a new category of champions for the Guinness Book of Records. The category would bear a rather clumsy title, something like "Most Expensive Foul-Up Ever Perpetrated by a Few Individuals," and the several technicians at TMI involved in the incident should win hands down. The latest estimates to repair the facility run from 1 to 1.68 billion dollars.

* * *

From statistician George Steck (5641) comes this along with a disclaimer ("Can't agree with it, but I like it."):

"In an age swamped by mechanistic physics and mechanistic psychology, the only rock left above the surface is coincidence--beautiful, anarchistic coincidence. In a society that bows down and worships at the altar of statistics, coincidence is the one remaining manifestation of a higher Providence." Nicholas Blake, End of Chapter *js

Continued from Page One

Coring System

drilling mud which surrounds them is a long and tedious process. The new fluid, because it doesn't easily freeze, can quickly be wiped off the frozen core.

A final part of the Sandia/Diamond Co. pressure coring system development program, sponsored by the DOE's Bartlesville Energy Technology Center, involves work by Diamond to improve pressure coring barrels. This includes development of new bearings, new pressure regulators, solid state pressure transducers, digital pressure readouts, and pressure capabilities greater than 5000 psi.



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NOVEMBER 2, 1979



FORTUNATELY, IT'S NOT A SUPER MAX. Back in the spring, Rich Schmidt (4732) planted a couple of hills of pumpkin seeds (the label called them "Big Max"). Past watering, Rich mostly ignored the vines until a month ago when three baseball-sized pumpkins suddenly started to balloon. "You could almost see them grow," Rich said. The biggest one, which Rich happily displays here, weighed 90 lbs. The other two barely lived up to their bloodlines. One made it to 60 lbs.; the other (the runt of the litter) quit at a mere 40 lbs.

Take Note

"Into the Eighties: Women on the Move" is the theme of a YWCA symposium to be held Nov. 17 at 316 4th St. SW from 8:30 a.m. to 4:15 p.m. Workshops and discussions will cover family relationships, female sexuality, aging, positive self-image, feeling good about staying at home and mother-daughter relationships. It's \$8 for members, \$10 for non-members, and registrations will be accepted (247-8841) until Nov. 13.

* * *

Paul Robertson (1758) was honored by his alma mater recently when he was selected to be Delta State University's "Outstanding Alumnus of the Year." The school, located in Cleveland, Mississippi, tendered its honors to Paul during homecoming week in October. After graduating from Delta State, Paul went on for MS and PhD degrees, the latter from Oklahoma State Univ. On two occasions, he has been on leaves of absence from Sandia to develop technical educational programs in foreign countries. Employment at Sandia Labs began in 1952.

* * *

Bill Leisher (4552), project leader for a series of tests conducted for the Electrical Power Research Institute, called LAB NEWS to task after our last issue was published. For the series of photos on the front page showing an automobile subjected to a 300 mph rocket sled run, the caption should have read "rolled and tumbled" instead of "sailed several hundred feet." The whole point of the test, as predicted by computer program, was to show that the auto would not "fly" in a 300 mph wind.

Bus Notes

Jeff Gammon of the Employee Transportation Committee asks us to remind Sandians that when a passenger is transferring to another bus and the connection will be close, then that passenger should ask the driver to radio ahead to the other bus driver. The connecting bus can wait up to three minutes when the driver has advance notice of transfers.

If you ride the #3 Louisiana-Central bus in the morning, you can ask your driver to radio ahead to the #33A Louisiana-South bus, whose driver is now authorized to wait up to five minutes for passengers from #3. (The #33A is scheduled to leave Central and Louisiana at 6:55, 7:25 and 7:55, while #3 is scheduled to arrive at that intersection at 7:00, 7:30 and 8:00.) Note that you do have to ask the driver to radio ahead--he won't do it routinely.

The #6 Girard-Indian School Rd. bus which leaves Girard and Central at 7:15 a.m. is scheduled to make a direct connection with the last morning #31 Wyoming bus which arrives on Base at 7:50. The connection takes place at Indian School and Wyoming around 7:32. Again, ask the #6 driver to radio ahead.

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NEW FACE in SLL's Public Information Office is Barry Schrader, editor of Livermore's *Tri-Valley Herald* for the past six year. He succeeds Bruce Hawkinson who has returned to Sandia Albuquerque in Motion Picture-Video Division 3153.

Retiring



Charlie Mauck (8168)



Bill Schmedding (8423)

Selvage Returns from Kabul, Dacca

Cliff Selvage (8420) spent much of July in two countries not exactly at the top of the I'll-go-there-someday list for most of us. Representing the US International Communication Agency (USICA), a group affiliated with the Department of State, he discussed solar energy potentials with audiences in Kabul, Afghanistan, and Dacca, Bangladesh (formerly East Pakistan).

Both countries are underdeveloped and impoverished—Bangladesh, the world's poorest nation, is overcrowded as well, with over 80 million people in an area smaller than Wisconsin. Both countries depend on firewood and dung for fuel, but even these two are increasingly scarce.

Based on his experiences in solar both here and in Europe last year (LAB NEWS, Jan. 6, 1978), the USICA asked Cliff to journey to the two countries and discuss with their leaders—government, industry, university people—the role that solar energy could play in meeting basic needs: cooking, space heating, water heating, irrigation.

"Neither country has much in the line of a fossil-based resource, so both are interested in exploring solar energy—cookers, water heaters, space heating, water pumping, and the like," says Cliff. "I generally talked about solar goals, missions, and budgets, not about high technology such as our solar central receiver program. Photovoltaics excited their interest, however."

One of Cliff's most vivid memories is his audience with Afghanistan's prime minister (and now president) Hafizullah Amin (no relation to Idi Amin). Although Amin was trained as an educator at Columbia University, his first love is science and physics. "He spent ten of our 40 minutes together describing his qualifications, and I got the impression that, if the country

LEAP '79 Campaign Exceeds Goal

The 1979 LEAP campaign is a success. Final results show employees responded by contributing a total of \$66,105, well over the \$65,000 goal. The amount represents more than a 7.4 percent increase over last year.

Employee participation was 84.5 percent, with the average gift per contributor \$75.29, up from \$71.97 last year. Of those contributing, 178 gave a FAIR or LEAP Share.

Chairman Marlin Pound (8214) says, "It's gratifying to see such response. Many thanks to all who gave and who helped. Your support really matters."



CLIFF SELVAGE

ever settles down—we heard artillery fire outside Kabul every night—he'd be interested in moving his country into solar.

"In Bangladesh, I gave two lectures a day for six days, tailoring each one to the group. Many audiences were highly trained people with PhDs who were very interested in what the US is doing and who have a good conceptual grasp of what must be done to meet the needs of the masses. Unfortunately, there are few trained technicians, and their facilities are abysmal.

"It's a teeming country—wall-to-wall people. But you see few women, maybe one out of 60, because Muslim women stay out of the public eye. What you don't see, except in Dacca, are many trees. They've been burned to cook the rice the country grows—or is given—to live on.

"Afghanistan is not as poor, but its open sewers are hardly attractive. Dangerous, too—both food and water can be polluted. I was sick once after I had ice cubes in my tea—the tea was okay, but the ice wasn't. I recovered quickly, though, thanks to the travel kit Sandia Medical sent with me."

Sympathy

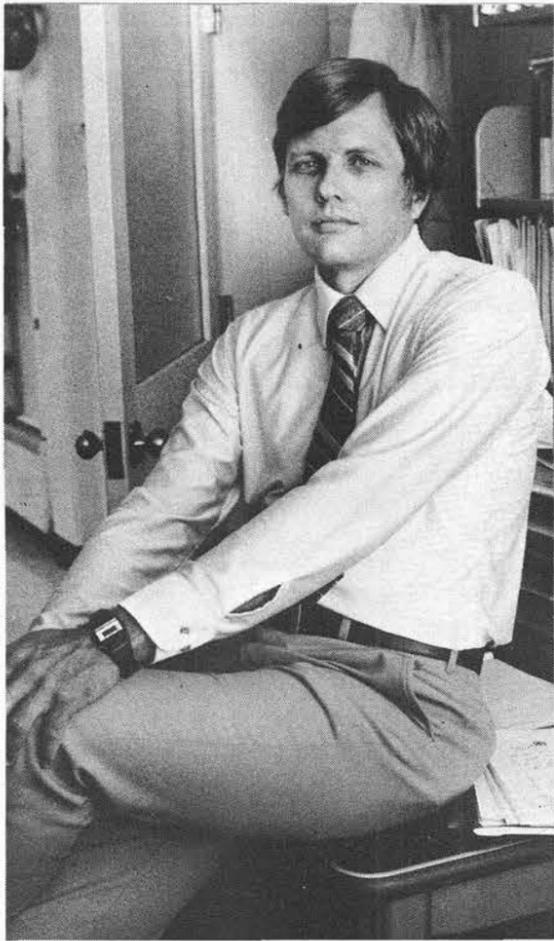
To Jess Floyd (8257) on the death of his mother-in-law in Albuquerque, Sept. 13.

To Diane and Dick Shimada (both 8271) on the death of her father in Berkeley, Sept. 25.

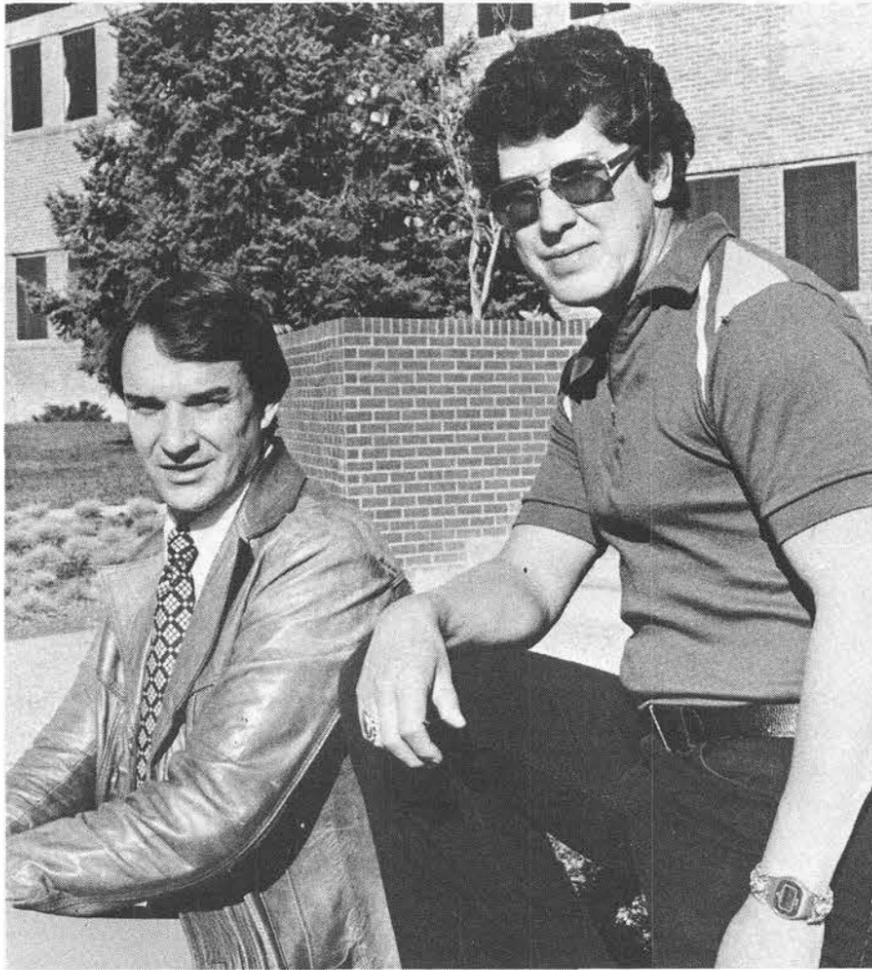
To Bess (8266) and Rocky Roach (8423) on the death of her father in Belleville, IL, Sept. 25.

To Walt Maupin (8255) on the death of his father in Okmulgee, OK, Oct. 1.

To Ruby Bell (8264) on the death of her husband in Livermore, Oct. 19.



JIM POWELL (4230)



MIKE KNOTEK (5114) and CHARLIE SALAZAR (1481-2)

Supervisory Appointments

MICHAEL KNOTEK to supervisor of Surface Physics Division 5114, effective Oct. 1. Mike joined Sandia's Solid State Sciences directorate in January 1973. He has worked on amorphous semiconductors, the theory of hopping transport, super ionic conductors and surface studies of those conductors. For the past two years, Mike has worked on stimulated desorption studies of surfaces and will continue with that work in his new position.

Mike earned a BS in physics from Iowa State and an MS and PhD, also in physics, from the University of California at Riverside. He is a member of the American Vacuum Society, American Physical Society, Electro Chemical Society and the American Chemical Society. His numerous hobbies and interests include basketball, racquetball, tennis, swimming, camping and photography. Mike and his wife Karen have three children.

* * *

CHARLES SALAZAR to supervisor of Project Machining Section 1481-2, effective Oct. 16. Charlie first joined Sandia as a graded employee in 1958. Two years later he was accepted into the machinist apprentice program; he completed the five-year course and worked as a machinist until 1975 when he left the Labs to move to Iowa. Since returning to Sandia last year, Charlie has been an apprentice instructor, working as a lead man with apprentices in the machine shop. He also teaches shop theory in-hours in the apprentice program.

Charlie graduated from Albuquerque High and attended UNM for one year. Off the job he enjoys golfing, bowling and coaching little league football. Charlie and his wife Pat have one son.

* * *

JAMES POWELL to manager of Simulation Technology Department 4230, effective Oct. 1.

Jim came to the Labs 10 years ago as a staff member working with the weapons effects simulation program. Promoted to division supervisor in 1972, he headed the Laser Plasma Physics Division and, later, the Radiation Physics and Reactor Safety Division which was conducting fast reactor safety studies for NRC. Before coming to Sandia, Jim had worked on safety aspects of reactors for the Argonne National Laboratory and the Phillips Co.

Jim earned a BS in physics from Texas Christian University and his MS and PhD in nuclear engineering from Texas A&M. He is a member of the American Nuclear

Society. He and his wife Carolyn have three children. In addition to church activities, Jim enjoys playing classical guitar, hunting and fishing.

Sympathy

To Phil Gelt (2343) on the death of his mother-in-law in Albuquerque, Oct. 16.

To Boyer Martel (1126) on the death of his mother-in-law, Oct. 8.

To Jim Holpp (2425) on the death of his father in Albuquerque, Oct. 23.



GARY SHEPHERD (2642), center, and the Neighborhood Drama Project are going into their ninth year of existence with the presentation of "Switcheroo" Nov. 10-11 at 8 p.m. A matinee at 2 p.m. is scheduled Nov. 10 (1020 Edith SE). Gary founded the Project, works with kids from elementary through high school age and directs and produces the shows. And writes the words and music. "Switcheroo," a western musical, combines elements from a medicine show and a visit from outer space.

New Credit Union Manager Discusses 'Money Crunch'

"It's not a good time to borrow money," says Red Turner, acting general manager of the Sandia Laboratory Federal Credit Union. "The interest rates are simply sky high."

Red is talking about the 'money crunch' instituted by the Federal Reserve Board in a national effort to curb inflation. The nation's prime interest rate stands at 15% and interest on consumer credit loans exceeds 20% in many places. The crunch has led the Credit Union board of directors to impose new restrictions on loans.

The maximum the Credit Union will now lend for any new loan (with some share-secured exceptions) is \$2000. The maximum new signature loan is \$1000. "This is a complete reversal from last year," Red says, "when we had more money than borrowers. Right now, we have a cash flow problem and there isn't enough money to provide service at previous levels. We're trying to make the money we do have serve as many members as possible."

Federal regulations limit the interest that a credit union may charge on loans to a maximum of 12%.

"This means," Red says, "that the Credit Union can't borrow money on short-term notes (as we did in the past), pay the prime interest rate of 15%, and then turn around and make loans to our members at 12%. The money for new loans must come from depositors."

Federal regulations also govern the amount of dividends that the Credit Union can pay on savings. The top is 7% on regular share accounts and 7¾% on long-term fixed rate share certificate accounts.

Two other forms of savings certificates pay higher and varying rates. Variable rate share certificate amounts pay 1% less than the average yield on 4-year U.S. Treasury securities. This rate is fixed monthly. (For October 1979, it was 8.5%.) Members may invest in these certificates for a minimum of \$1000 for two years.

Money market share certificates (a minimum of \$10,000 for 26 weeks) pay the average yield on 26-week Treasury Bills; the yield changes every Thursday. Last week it was 12.65%.

"These rates are equal to or better than the yield of funds by other financial or federally insured financial institutions," Red says. "There's not a better deal around for insured savings."

"The Credit Union is caught in a money squeeze like everyone else," Red continues. "Our long-range planning is now down to one day at a time."

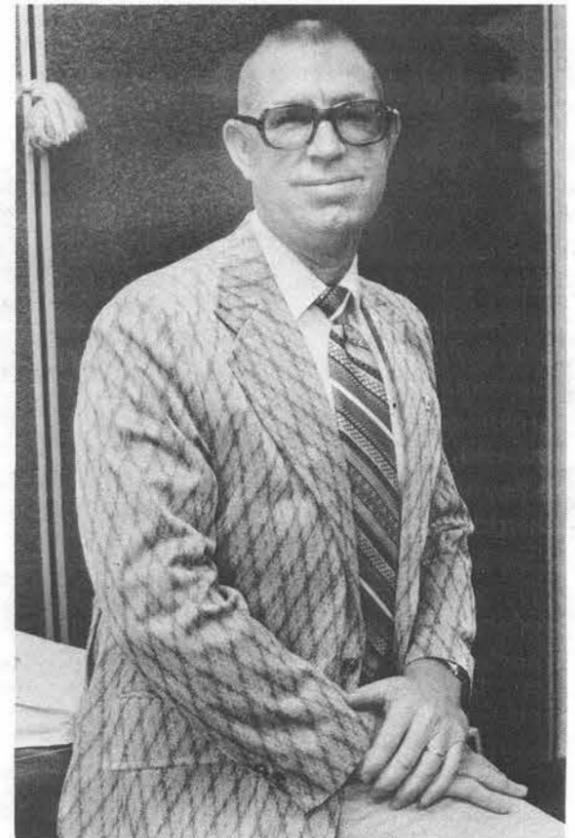
Red has been in charge of day-to-day operations of the Credit Union since 1969, joining the operation after managing a finance company in Nebraska for 10 years. He is a business administration graduate of the College of Emporia in Kansas.

"I don't like what's happening on the money market," Red says, "but I think it's the right approach to slow inflation. People will borrow less money and buy fewer high-priced items—we'll see more of a pay-as-you-go economy. But this may slow production and could lead us into a depression. We have to wait and see. The inflation rate has been out of control for a long time."

Red becomes manager of the Credit Union in January when the retirement of Bill Bristol becomes effective. After two bouts with heart surgery, Bill is retiring for health reasons.

Red is married, has a daughter in high school and a son attending UNM.

"I know about the cost of living," he says. "Purchase of major items will have to wait until our economy is healthier."



RED TURNER, soon-to-be general manager of the Sandia Credit Union.

Base Rec Facilities, Locations Described

Last issue, we reported the Base's change of policy under which Sandians and their dependents may now use the extensive recreational facilities that had previously been restricted to military people.

The table below shows the days and hours of operation of most of these facilities. We suggest you cut it out and keep it for reference.

A few of these facilities are probably new to Sandians, so we'll tell you how to get there.

The wood shop (Bldg. 20440), auto shop (Bldg. 20375) and recreation equipment rental facility (Bldg. 20414) are all fairly close to each other. Drive south on Wyoming past the Atomic Museum to the next street, "M" St., and turn right (west) You'll drive through a warehouse complex and, on the right (north) you'll encounter first the equipment rental facility. When you get to the Stop sign at Texas, the wood

shop will be on your left and the auto shop a half block or so north on Texas.

The Breakaway Recreation Center (Bldg. 20226) is just across the street from the east side Base gym on Texas. You get there by going west on F St. (the street next to the firehouse) for 4-5 blocks to Texas and turning left. Finally, the Arts & Crafts Center (Bldg. 954) is on Kirtland West. If you're not familiar with that side of the Base, perhaps the easiest route is to enter the Base through the Truman Gate (a block west of San Mateo on Gibson), turn right on Aberdeen (first stop light), then turn left (south) at the first street on the left (Eileen Ave.). Arts & Crafts is just past the bowling alley shortly after you make the turn.

In future issues of LAB NEWS, we will carry features describing in greater detail the facilities and programs that Sandians may now use.

Facility Operating Hours

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Bowling Lanes 4-4327	1-10	9-11	9-11	9-11	9-11	9-11	9-11
Golf Course 4-4427	8-sunset	closed	8-sunset	8-sunset	8-sunset	8-sunset	8-sunset
Gym 4-1818	1-5	8-8 8-6	8-8 8-6	8-8 8-6	8-8 8-6	8-8 8-6	9-5
Library 4-0795	closed	9-9	9-9	9-9	9-9	9-5	9-5
Oly. Pool 4-4008	1-5 11-7	closed	Tuesday-Friday 11-1 & 4-7 closed 11-7			11-7	11-5 11-7
Thrift Shop 265-3902	closed	10:30-2	10:30-2	3-6	10:30-2	closed	closed
Wood Shop 4-9127	9-5	closed	closed	1-9	1-9	closed	9-5
Auto Shop 4-2410	9-10	closed	closed	2-10	2-10	2-10	9-10
Arts & Crafts 4-0222	9-5	closed	closed	1-9	1-9	9-1	9-5
Recreation Equipment Rental 4-4990	closed	7:15-4	7:15-4	7:15-4	7:15-4	7:15-4	closed
Breakway Rec. Ctr. 4-5420	9-10	12-10	12-10	12-10	12-10	12-12	9-10



RUTH (3521) AND JERRY BROOKS (1481) traveled to Canada and back recently on this Yamaha-750. Ruth said she could never have made it without the special custom padded seat. On the trip, the bike averaged 55.5 mpg.

Unusual Vacations

Sandia Couple Travels 4100 Miles by Motorcycle, Two-Up

[Ed. Note—Have you taken an unusual vacation? Tell us about it—call 4-1053.]

Ruth (3521) and Jerry Brooks (1481) earlier this summer traveled two-up on a Yamaha-750 motorcycle more than 4100 miles in two weeks. They left Albuquerque, headed north into Canada, then returned via Oklahoma.

Highlights along the way included:

—Mt. Rushmore in South Dakota. "Monumental. Those gigantic faces of Washington, Jefferson, Lincoln and Teddy Roosevelt. You can see the pictures, but still not sense the impact of the actual site. It's something everyone ought to see."

—Waterton Lakes in Canada. "Beautiful. Anyone from New Mexico enjoys seeing mountains, lakes, rivers, lush forests."

—Devil's Tower in Montana. "A fantastic mountain."

—Pioneer Village in Minden, Neb. "More than 30,000 antique items, 24 buildings, antique classic cars and motorcycles. A long and interesting look at early America on the prairie."

Ruth and Jerry took time out to spend a few days with his grandparents on a farm near Braman, Okla., and then returned to Albuquerque.

Ruth says, "The trip would not have been possible for me without the custom padded seat Jerry had installed on the bike—it was very comfortable. I even fell asleep a few times."

Jerry says, "Traveling by motorcycle is a great way to see the country. There's a sense of being free on a bike. We stayed off the freeways, used the CB a lot for local guidance to restaurants and motels. And people were friendly, helpful. Being on a bike is an easy starting point for a conversation."

The couple carried all necessary baggage in two duffel bags strapped to a rack over the rear wheel. They stayed each night in motels and occasionally visited a laundromat.

"The weather was great," Ruth says. "The only rain was on the way home. We hit a rain storm with a little hail near Edgewood."

T-VI Pre-registration

Pre-registration for T-VI's winter trimester evening division runs from Nov. 19-Dec. 7, while registration itself takes place on Dec. 27 and 28 for those accepted into classes.

Sandians may enroll in T-VI evening courses on a cost-free basis provided the course is job-related or relates to a job to which the employee may logically aspire.

Pre-registration forms and T-VI catalogs may be obtained from Ruth Brooks of Education and Training Division 3521, Bldg. 632, Rm. 3. The T-VI forms as well as Sandia enrollment cards must be validated by Division 3521 if you wish to take the course at no cost. T-VI classes start Jan. 7.

Great American Smokeout Gets Early Start at Labs

A pack-a-day smoker smokes about 7,300 cigarettes a year.

There are 35 million ex-smokers in the U.S.

The percentage of adults who smoke has markedly declined since the mid-60's, from over half to less than 40%.

When does the smoker who wants to quit actually fix upon a resolve to quit? Some need a nudge that's coupled with a small amount of reinforcement.

Next week, on Nov. 8, Sandia Medical is offering its Stop Smoking clinic for the third time. Moderators Phil Cheremiah and Arlene Price report a good—for smokers—success rate: 25% and 45% quitting after their first and second clinics.

The eight sessions for the clinic are held Tuesday and Thursday afternoons from 3:30 to 5 p.m. There's a limit of 20 people. Call Phil on 4-3993 or Arlene on 4-1057 to sign up.

Meanwhile, for the rest, there's an opportunity to experience what a day can be like without massive infusions of a foreign and toxic substance into the lungs. The third Great American Smokeout is scheduled for Nov. 15. That's the day when smokers demonstrate to a watching world what real courage is by not smoking for 24 hours. Of course, the smoker's non-smoking friends are expected to help with moral support. You don't have to sign up—just don't smoke on Nov. 15.



CIGARETTES & SMOKING—Your very own self-destruct mechanism.

A Bit More Than Carrots: The Rush Garden

When the nights grow cold and the sun traverses a low arc on the southern horizon, most of us have to be content with dreams of white sand beaches and the smell of mangoes and bananas ripening in the long, languid days of some eternal tropical summer.

Not Earl Rush (4725). When winter comes to Albuquerque, Earl simply slides wide the glass doors of his family room and strolls out into his own tropical paradise—2800 square feet of enclosed garden heated mostly by the sun and rank with vines and trees and plants that surround a solar-heated swimming pool.

Eight months out of the year, Earl eats tree-ripened grapefruit for breakfast. Fresh limes are there for the picking all year long, and the seasons come and go on such delicacies as figs, oranges, guavas, avocados, kumquats and macadamia nuts.

In an area not noted for its tropical climate, the humidity in Earl's enclosed garden ranges between 80 and 90 percent—which encourages the plants to grow swiftly and tall. With the sliding doors open, the humidity inside the house is a comfortable 40 percent.

Before he joined Sandia's Plant Engineering Department in 1966, Earl was a custom builder. But he wasn't really into solar energy then. Now that he's in Solar Energy Department II, he'd make greater use of sunpower if he ever built again.

"What I've got now is effective as far as it goes, but two or three months during the winter I've got to use a backup gas heating system to keep the garden area above 45 degrees, the absolute minimum for tropical plants. And I've got a conventional heating system in the house that could just as well have been solar."

Earl's garden area, with 15 foot ceilings, is covered with clear corrugated fiberglass panels, some of which are removed in the summertime to keep the inside temperature from getting too hot. Sun through the fiberglass provides passive solar heat, and Earl supplements this with an active solar system on the south wall, a Tomalson-type trickle collector.

In this system, about 30 percent of the water pulled through the pool's filtering system is pumped to the top of the flat plate collectors on the south wall. The water trickles down the black collector plates and flows by gravity back into the pool. Eighty degree water at the top goes back into the pool at about 100 degrees. In the winter, with all the roof panels in place, the swimming pool functions as a heat sink, holding heat absorbed during the day and releasing it at night.

When we discovered Earl was born in Wichita, Kan., we asked about his interest in tropical plants: "I guess maybe a Tarzan movie got to me when I was a kid," he told us. "All I know is I've been interested in large leaf tropical plants for about 20 years." His interest has paid off not only in fresh fruits unknown to all but the habitués of gourmet food stores, it's also paid off for the city.

"You do a lot of experimenting," Earl says, "and sometimes a plant described as dwarf or semi-dwarf shoots up and



PRUNING BACK THE FOLIAGE is an ever-present problem in a tropical garden. Using active and passive solar heating systems, Earl Rush (4725) has created his own little banana belt right here in the arid Southwest.

threatens to lift the lid off the courtyard. I dug up half a truckload of plants like that and gave them to the city when they were putting in the rain forest at the zoo."

Does it take a lot work to maintain your own homegrown corner of paradise?

"Not really," says Earl. "Tropical fruits are easier to grow than the peaches and plums and cherries and almonds I grow along the east, west and north sides of the house. Mostly, you put tropical plants in the ground and stand back and watch them grow."

Earl thought a moment, then smiled: "The toughest job of all is chopping out a path where you want to walk."

•cec



JUST ABOUT READY. Earl Rush (4725) inspects a cluster of grapefruit. Eight months out of the year, such tree-ripened delicacies (grown in his own enclosed garden) are standard fare on the Rush family breakfast table.



ONE WEEK FROM TODAY THE WORLD'S LARGEST solar-electric generating plant will be dedicated near Coolidge, Ariz. The 150kW facility is a collaborative effort involving the Department of Energy, the State of Arizona, the University of Arizona, the Arizona Cotton Grower's Association and Sandia. Solar energy from the 23,000-square-foot collector field is converted to electricity by an organic Rankine-cycle engine (a sort of steam engine). When the sun is out, the system operates continuously, powering the pumps on three wells. Energy collected in a thermal storage tank will operate the pumps for up to six hours during periods of cloudiness or after the sun goes down. The project was funded by DOE's Small Solar Power Systems Division and built by Acurex. Sandia provided technical direction under project leaders Bob Alvis and Earl Rush (both 4725).

Ski Touring Comes On Strong



Howard Stephens (4538) came by the LAB NEWS office to give us a progress report on the New Mexico Ski Touring Club, of

which he is vice president. As it turns out, the 500-member club has two other officers who are Sandians—Marcella Madsen (5531) is president and Dave Saylor (5531) is treasurer.

The Club has been around for a number of years but really hit its stride—and its large membership—when cross country skiing began to take off around 1975. The quiet pleasures of ski touring appealed both to newcomers to the sport as well as to downhill skiers put off by the ever-mounting hassle and expense of downhill skiing.

For ski tourers and would-be tourers, here are a few details about the Club and its programs.

Club meetings are held monthly, October through March, on the second Thursday of each month at 7:30 p.m. at St. John's Methodist Church, 2633 California NE. The meetings are devoted to movies and talks on ski touring, equipment displays, and discussions of Club business.

For novices, a feature of the Club is its excellent program of beginning and intermediate instruction, offered in the classroom and on-the-snow. This year a beginning class for children is also offered.

The mainstream activity of the Club is, of course, its schedule of weekend tours. Every Saturday and Sunday during the snow season, tours are scheduled throughout New Mexico and Colorado. Each tour has a trip leader and is categorized according to the difficulty of the tour, so that the novice isn't over-extended. Mem-



bers meet early on Saturday and Sunday mornings at some convenient shopping center in town and share transportation to the area being skied that day.

For downhill skiers, an unanticipated bonus in touring is that much less snow is needed—just a few inches will do. And, if you run into a dry spot, your relatively slow speed means that you incur little damage, to yourself or your skis.

Finally, for ski tourers looking for challenge, the Club sponsors at least three cross country races each season, with the premier contest being the annual Albuquerque Avalanche held on Sandia Crest. (This writer participated last season when the Avalanche was co-sponsored by Jose Cuervo Tequila. Following the race, the co-sponsor graciously dispensed samples and, at 10,400 feet elevation, there never was a jollier crew of cross country skiers!)

Club dues run \$5 for a family membership and \$4 for a single. If you need more information, call 255-1954.

Fit Is Better

Running in Seattle and St. Petersburg

Last issue, we asked Sandia runners to send us descriptions of good running courses in the many cities that Sandians have occasion to visit. Cities of particular interest are: Washington, Amarillo, Las Vegas, Kansas City, Livermore, San Francisco, Los Angeles, Santa Barbara, Santa Maria, Tampa/St. Pete., Seattle, Pasco, Philadelphia, Hartford, Boston, Providence, San Diego, Dallas and St. Louis. Response has been good, but more is needed. Descriptions follow of courses in two cities.

* * *

Seattle/Karen Haskell [2623]—"Green Lake is a small lake in a residential area and adjacent to Woodland Park and the zoo. It's a popular running spot. One trip around is about three miles and, at sea level, it's an easier three miles than I'm used to! The location is convenient to those staying in the vicinity of the Univ. of Washington, and there is at least one bus you can take from there to the lake.

"The whole university area, though hilly, is pleasant for running—lots of pretty, tree-lined streets. The Univ. of Washington arboretum would also be a

great place to run. And you don't need a car—buses to the campus are frequent."

* * *

St. Petersburg/Jack Willis [2153]—"I travel to the GE plant in this city quite frequently and always take my running shoes. I try to stay either at the Bilman Hotel or Howard Johnson's on Treasure Island on the beach. A wide sidewalk runs for about a mile along the beach side of the Bilman and HJ's is just across the street. This walk is usually lightly covered with sand which provides a slight cushion and is not nearly as difficult to run on as deep sand.

"If the tide is out, you can run along the water's edge for more than a mile in either direction from the Bilman. I've tried this without shoes and regretted it. An occasional shell produces the same effect as one of our goatheads, and the long-term abrasion was too much for my tender hide.

"If you run before work it will generally be in the dark. After work, the heat and humidity can be oppressive for folks from the high country. Even so, the humidity keeps the throat moist, and the dense air at sea level makes even the fun runner feel like Bill Rodgers or Frank Shorter."

Go For Health III

Nutritionist To Discuss Diet at Next GFH

Healthy People is the title of a report released this year by the U.S. Surgeon General, and its message is that Americans should alter their dietary habits. At the next Go For Health session, sponsored by Sandia Medical, nutritionist Nancy Gerlach will discuss this report as well as one published by the U.S. Senate entitled *U.S. Dietary Goals*.

Thrust of these reports is that Americans should reduce their intake of simple sugars, sodium (salt) and calories, while increasing intake of complex carbohydrates (starches) and fiber.

Ms. Gerlach, who is dietitian for the ARA Food Service which now operates Sandia's cafeteria, will discuss how these dietary goals have been incorporated into new menu items at the cafeteria and identified by a rainbow motif. She will also describe how you can modify your diet at home, when traveling or brown bagging to achieve a healthier diet.

The program is set for Nov. 13 in Bldg. 815 (outside the Tech Area) and will run from 12 noon to 12:30. For those who can't attend, the program will be videotaped. Call Susan Brammer, 4-7169, to schedule a viewing.

Fun & Games

Running—In last month's Albuquerque Marathon, the redoubtable Dodd, Henry that is, of Org. 4716, tied for first in the 35 to 39 class with a 2:48. Jim Harrison (4311) was close on his heels, and Terry Bisbee (2654), Bill Hendrik (3643), Mark Percival (4536) and Al Alvarado (2653) also participated.

* * *

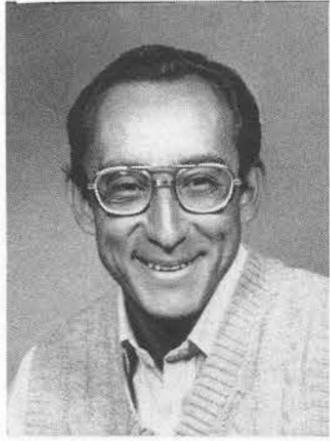
Triathlon—This event is set to go this Sunday, Nov. 4, here on Base at 8 a.m. It's ten miles by bike, five miles of running, and a quarter-mile swim, all back-to-back without pause. Entry forms are available in the LAB NEWS office, Bldg. 814.

* * *

Basketball—Signups for the winter basketball league are now being taken by league President Ron Van Theemsche on 4-4380. Cost is \$6 per player. Play begins the week following Thanksgiving and continues until March, three games a night, four nights a week, at the east gym. There will again be two divisions and a season-concluding double elimination tournament.

As a primer for this league play, a clinic is scheduled for all team captains, managers and players in the C-Club ballroom on Thursday, Nov. 8, at 5 p.m. League officials plan to cover calls and give a full explanation of the rules governing their calls. All league participants are urged to attend.

MILEPOSTS
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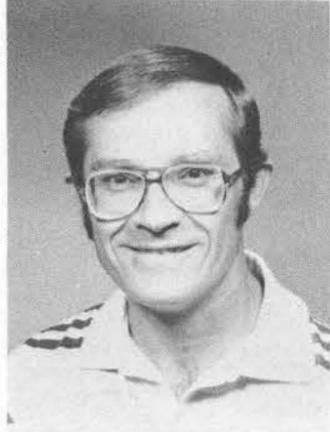
Ralph Trujillo - 5811 10



Vernon Kerr - 1133 25



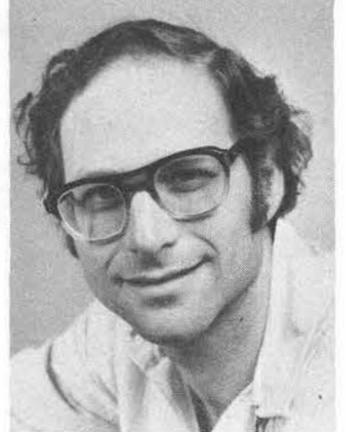
Harold Rarrick - 1535 30



Harvey Ogden - 1125 10



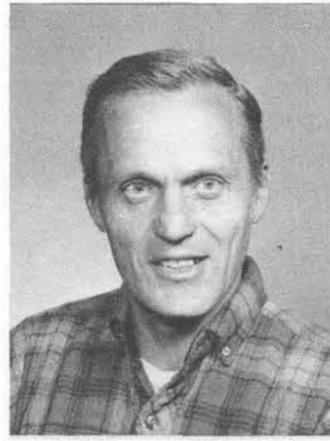
Sanford Markowitz - 1734 20



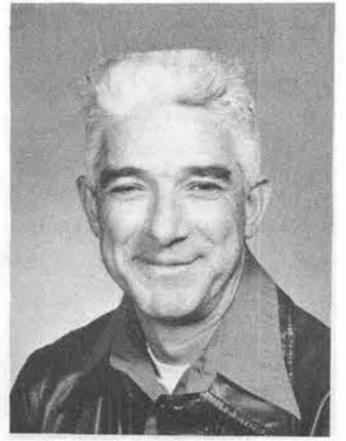
Mike Baskes - 8341 10



Jesse Bozone - 1414 25



Leonard Beavis - 2354 25



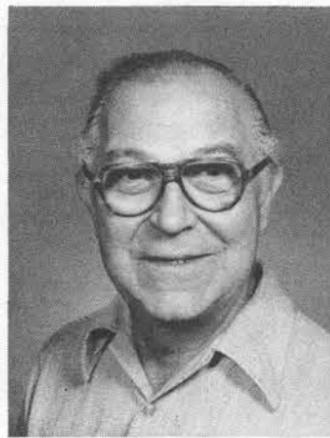
James Collier - 1423 25



Lutz Dahlke - 8444 10



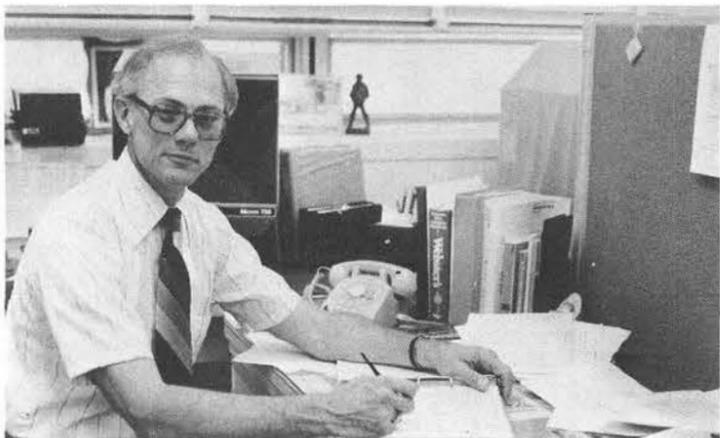
Dee Ellett - 4541 30



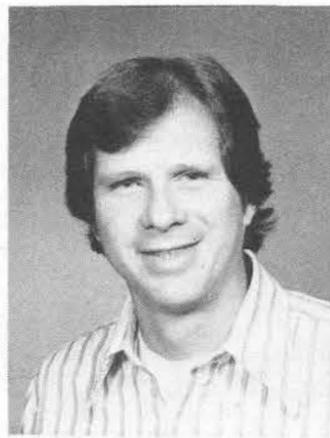
George Wladika - 2433 25



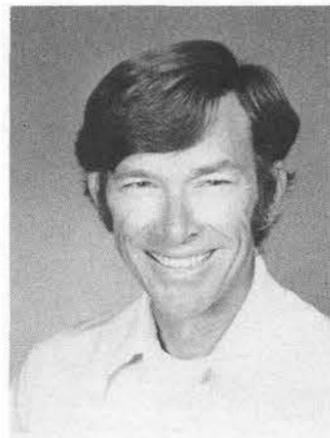
Jim Gravlin - 3441 30



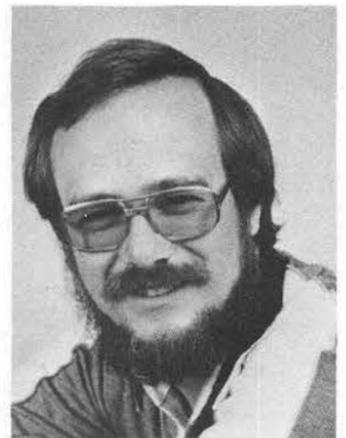
Alva McGuckin - 3251 15



Larry Clark - 2458 10



Dick Shead - 1252 20



Hilary Jones - 8334 10



Mary O'Shea - 8266 20



Howard Phillips - 1481 20



Bill Benedict - 5131 25



Wayne Ebaugh - 1716 20



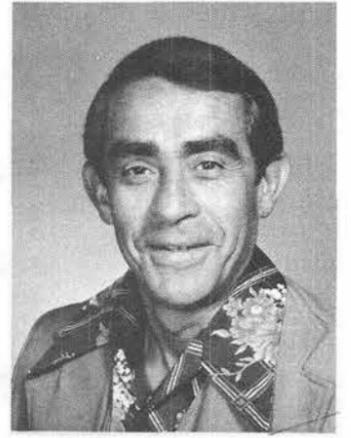
Fred Eichert - 8274 30



Clarence Mehl - 1112 25



Henry Aira - 3421 25



Jim Gilbert - 1471 20



Robert Vermillion - 1485 30



James Brewer - 1424 25



Celso Sanchez - 3425 25



John Gieske - 1552 10



Cecil Page - 4321 30



Luke Vortman - 1111 30



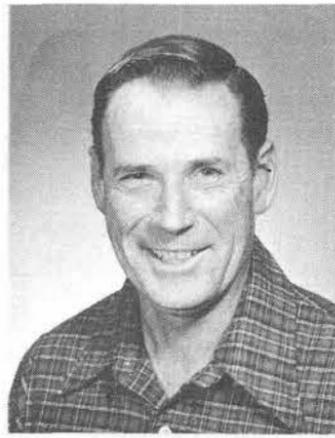
Diego Gonzales - 3421 20



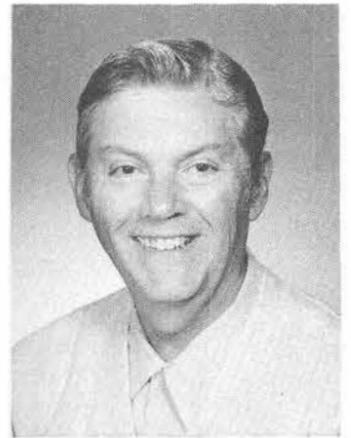
Gene Harrison - 3411 15



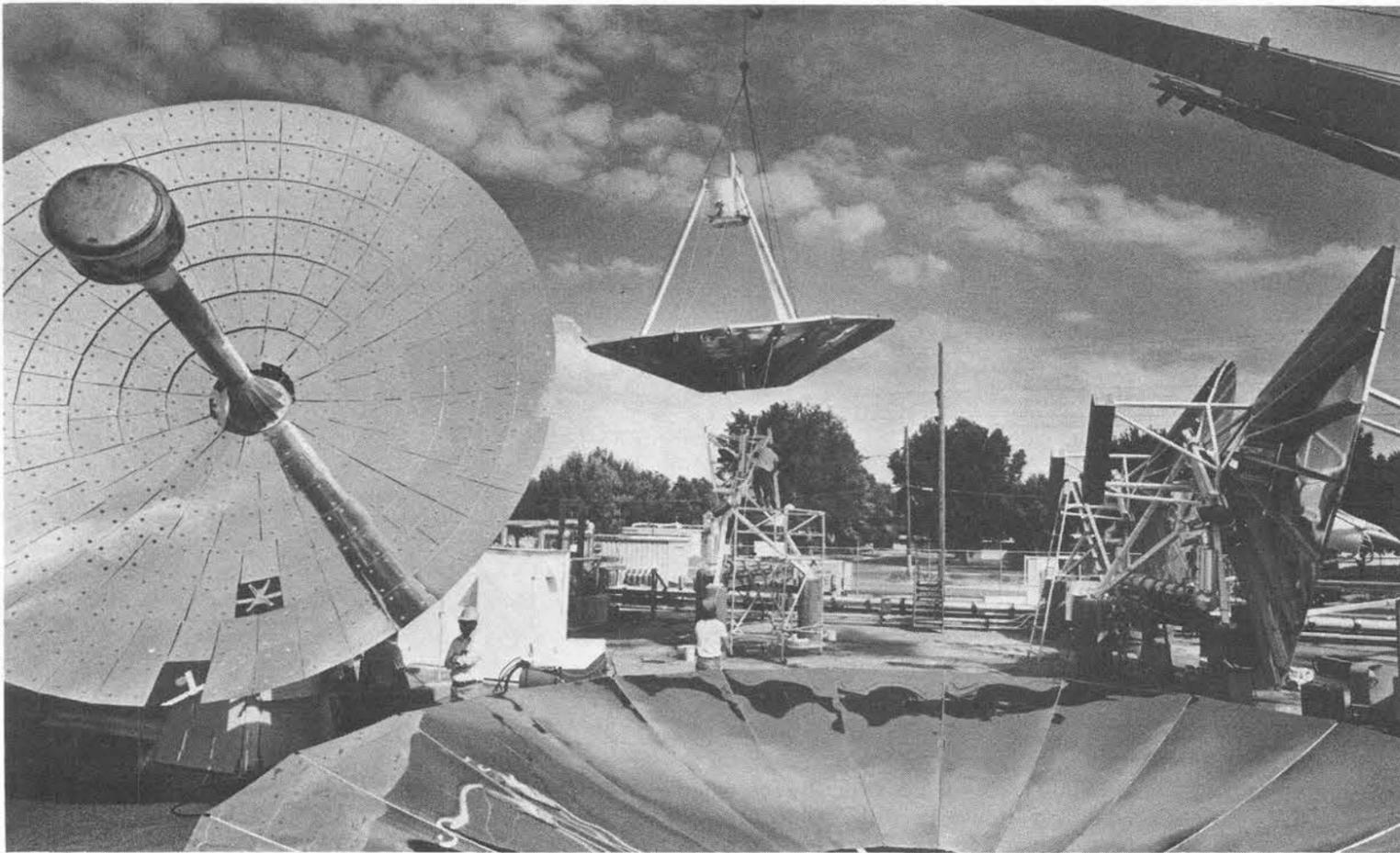
John Shane - 2331 15



Hovey Sealey - 3432 30



Dick Strome - 3155 30



SOLAR REFLECTORS, possible prototypes of a system to power a fashion knitwear manufacturing plant near Shenandoah, Ga., are moved into position in the solar test area near Bldg. 832. Components of the system are undergoing test and evaluation by Small Power Systems Application Division 4725 under Jim Leonard.

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

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

COLLECTOR PLATES: Bing & Grondahl Christmas series: \$23 for 1972; \$27.50 for 1971; \$30 for 1970. Benson, 296-4282.

MAGAZINES: *Road and Track*, '69-'78, 76 issues, \$10; *Popular Photography*, '74 to '76, 26 issues, \$4; *Petersons Photographic*, '75-'77, 29 issues, \$4. Smith, 242-9576.

'74 FORD car shop manual, 5 volumes, \$12. Duggin, 881-1898.

CAMPER SHELL, lwb, insulated w/ clearance lights, opening windows, \$220; 5-hole, 11x15 Jackman rims w/tires, 4 for \$190. Olson, 898-8909 after 6.

PLYWOOD, 1/2" CD 5-ply, 11 sheets, \$66; 2 2x4's, 8', cabin grade, \$19; transferrable trailer hitch, \$50. Hueter, 242-1620.

BUMPER RACK for Moped or Honda Express bikes, never used, \$20. Jeffery, 298-1231.

POOL TABLE, slate top, \$1150; Piano, Wurlitzer console, French Provincial. Hawn, 298-1231 after 6.

UNITED AIRLINE coupon, 50% off, expires Dec. 15, \$25. Jarrell, 293-9671.

UNM season basketball tickets, Section 24, Row 17, seats 10 & 11, \$70 ea. Treadwell, 296-4626.

QUEEN SIZE hide-a-bed, green/brown/yellow flower pattern, \$50. Pennington, 256-9506.

MICROCOMPUTER, Aim 65, 4K RAM, 20K ROM, thermal printer, 20 char. display w/case & pwr. supply, \$400 firm. Scott, 281-5715.

SKI PANTS: Roffe men's 30" waist, new, never worn, grey pinstripe, \$15. Church, 281-5215.

14' CAMP TRAILER, sleeps 4+, best offer over \$700; 2 sewing machines, 1 portable, 1 desk. Tabor, 299-5272.

TWIN BED mattress & springs, \$25. Kenna, 298-6059.

3-PC. SECTIONAL, gold, \$50; exterior kitchen door w/glass, 32"x80", \$10; interior panel door, 32"x80", \$10; wood screen door, 32"x80", \$10. Denish, 256-1559.

CLARINET, Yamaha, \$80. Johnson, 884-8250.

PICNIC TABLE, 5'x6', heavy duty, metal frame, \$40. Rodriguez, 296-3277.

SKI BOOTS, ladies size 6 1/2, used once, \$50. Sheldon, 293-0467.

SKIS, 190cm, Harts, \$25. Baca, 293-8710.

UTILITY TRAILER, 5'x8', w/2' sides, 2-wheel, fixed (no springs), \$295/offer. Noack, 883-5098.

VIOLIN, \$200. Huston, 842-1831 after 7.

ORGAN, Lowry LHS, \$500. Phillips, 881-2450.

PUPPIES, Lhasa Apso breed. Kuehn, 293-2727.

COMPOUND BOW, 30" draw, 50-60# adj. w/sights, Bear-Whitetail Hunter, new, \$85. Bonn, 299-6258.

UNITED AIRLINES, 50% discount coupons, 4 ea., \$30 ea. Wyant, 298-0371.

RELOADING BRASS, 30.06 347 military, 40 commercial, 75 .308, 40 .270 Win., 24 .300 Sav., 16 7.7 Jap., military 5 cents ea., commercial, 10 cents. Mattox, 821-3945.

NIKON FM black body, \$150. Passman, 821-4999.

SKIS, Head 360, 205cm, Cubco bindings, \$35; American Airlines discount coupons, \$40 for two. Sutherland, 266-1734.

MOVING SALE: refrigerator; washers; elec. range & hood; misc. small appliances, other stuff, nothing over \$40. Hawkinson, 281-5239.

MURRAY 3-spd. bicycles, 1 ladies, 1 men's; 15 strings outside Christmas lights & Nativity scene. Young, 255-8193.

MATCHED SOFA & chair; coffee table w/2 end tables, \$450 for all, or make offers. Chapman, 296-4321.

SOFA & matching chair, \$80. McFall, 293-9741.

SAWYER 35mm slide projector, \$25; extra trays, 50 cents; Scott 40-watt FM tuner & amplifier, woodgrain, \$125. Gregory, 268-2022.

LUDWIG DRUM SET, 5-piece w/ Zildjian cymbals & deluxe stands, professional quality, \$900. Tucker, 877-1140.

SNOW CHAINS for Datsun, never used, \$18; couch, matching high-back chairs w/ottomans, \$150. Schubeck, 294-5666.

AMERICAN AIRLINES discount coupon, \$40. Mead, 294-2298.

SHOPSMITH Mark V, bandsaw, jointer, many accessories, rock maple woodworking bench, several hand tools, \$2600 value, \$1990. Ernst, 266-5495.

STEREO, AM/FM receiver, 8-track, turntable, 2 speakers, table; 2 swivel bar stools, black & chrome, gold padded seat & back. Sanchez, 836-6562 after 5.

AMERICAN AIRLINES 50% coupons, two ea. Crooks, 296-6182.

GULBRANSEN apartment piano, shorter keyboard makes it possible to use in small area. Shaffer, 881-9410.

MAYTAG washer & elec. dryer, both for \$75. Schneider, 299-6243.

WORM BEDS, by the bucketful or whole bed, excellent for lawns, gardens, shrubs, trees, flower beds

or house plants. Liguori, 256-3613.

FREEZER, 16 cu. ft. upright, \$100; full size mattress & box springs, \$35 or sell separately. Dees, 869-6949.

DOUBLE BED, maple bookcase headboard, box spring, mattress, Sears #1G14718N2, \$75; maple Boston rocker, \$50; misc. light fixtures. Eckelmeyer, 296-2148.

CAMPER SHELL, LWB, insulated, lights inside/out, sliding screened windows, \$225. Cook, 869-6921.

FIREPLACE SCREENS: black custom Mediterranean w/andirons, \$25; brass screen, \$12. Whitham, 266-9313.

MAZATLAN TRIP: last minute cancellation, 2 tickets available, leave Mon., Nov. 12, return 19th, trip & room, \$259 ea. Hoice, 821-7590.

T-HANDLE tap wrench, Starret surface gage, 5 calipers, 2 dividers, blocks; RCA port. stereo phonograph, plastic case, two 4" speakers. Easton, 256-7717.

CROCK, bottles, capper, caps, hydrometer for beer making; elec. built-in oven; steel desk; 60 sq. ft. mirror tile; guitar; kindling. Floyd, 292-2160.

ALUM Jeep top — doors for '76 Jeep CJ2, \$100; outdoor painting scaffolding, \$50. Falacy, 293-2517.

30" SEARS gas countertop stove, 4-burner w/memory burner, avocado, \$75; GE elec. wall oven, coppertone, \$75. Pilat, 292-4727.

LAS VEGAS? leave Abq. 12/27, return 12/30, group fare \$145, round trip save \$47. Phillips, 299-7074.

SKIS with Cubco bindings and boot plates, 200 cm, \$15; 35mm range-finder Fujica w/2.8 lens, auto exposure, \$35. Shunny, 265-1620.

TRANSPORTATION

'71 BUICK LeSabre 4-dr., \$600. Johnson, 884-8250.

'72 PLYMOUTH Fury III, 8-cyl., AC, PS, PB, \$1100 or best offer. Burstein, 821-4460 after 5.

'78 YAMAHA, IT175 Enduro, lights, licensed, 1800 miles, \$850. Lassiter, 298-2461.

'73 VW THING, 51,000 mi., nearly new tires-shocks-brakes, gasoline heater, trailer hitch, \$1650. Hughes, 255-4832.

'77 KAWASAKI 125 motorcycle, \$595. Baker, 268-1616.

'77 COUGAR XR7, AC, AM/FM, cruise, tilt-steering, decor group, 24,000 miles, below retail at \$4500. McKinley, 864-3691 (Belen).

'73 Z-1 Kawasaki 900, just rebuilt, new battery & seat cover, \$1500. Grubbs, 296-6440.

'63 CORVAIR 4-dr., AT, R&H, SR tires, \$2500. Kerr, 299-7527.

'75 CAN AM MX2 dirt bike, \$500. Bارسis, 293-5347 after 5.

'75 RABBIT, 4-dr., AT, Blue book price or trade for newer pickup at Blue book exchange. Gallegos, 255-5264.

'72 FIAT 128SL, 2-dr. coupe, best offer over \$1500. Shelton, 268-9569 after 5.

'72 Corvette Stingray LT-L, dk. blue, factory AC w/4-spd., 73,000 miles, \$10,000 or make offer. Frederiksen, 7207 Dreyfuss, Amarillo, 806-352-4620.

'78 JEEP CJ-7 Golden Eagle, 15,000 miles, w/hard top & soft top. Wood, 255-6501.

'65 MGB soft top, spoke wheels, rebuilt engine, new batteries, sell below book value. Ricker, 296-2191.

'78 DODGE Omni, 5100 miles, 26-28 mpg city, AC, 4-spd. Afanasjevs, 296-4527 after 5.

'67 FORD LTD, vinyl top, car not running—motor needs work, \$100 or best offer. Shipley, 298-2433.

'78 HONDA Hawk Hondamatic, 400cc, elec. start, mag wheels, 1700 miles, \$1295. Ellis, 821-7993.

'74 FORD Custom clubwagon van, 12-pass., PS, PB, AT, dual air, 3/4 ton, below wholesale, \$2950. Schindwolf, 897-0470.

'67 JEEPSTER Commando, 4-wd, \$2400 or best offer. Tucker, 877-1140.

'73 TOYOTA stn. wgn., 4-cyl., reg. gas, \$1100, below book value. Maes, 298-2294 after 5.

'67 CHEVROLET TRUCK, needs some work, \$750. Fenimore, 298-8052 or 298-9659.

'66 GMC 3/4 ton truck, \$600, V-6 engine. Hund, 299-2495 5 to 5:30.

'76 CHEVY Nova hatchback, 6-cyl., AC, AT, PS, PB, white w/blue interior. Brooks, 299-1884.

'72 DATSUN B210 coupe, radials, 35 mpg, \$1000; '66 Chevy truck, 1/2 ton Fleetside, rebuilt 350 engine. Hesch, 881-9874.

'78 CHEVY Luv truck w/cap, AM-FM, cassette, low mileage, \$4150. Ernst, 266-5495.

'77 MINI motorhome, Mobile Traveler, 22 1/2', Dodge chassis, 360 engine, completely self contained, 14,000 miles. Fuentes, 869-9164.

'77 OLDS Starfire, V6, 4-spd., AC, PS, AM/FM/8-track. Sanchez, 836-6562 after 5:30.

'71 DODGE stn. wgn., 318 V8 engine, all maintenance records available, \$500. Kane, 299-1717.

'64 CHEV. Impala, 48,000 miles, stored several years, many extras. Stilwell, 255-8022.

'79 CYCLONE-13 sailboat, sails, '79 trailer, \$1395. Stephens, 265-5341.

'78 CHEVETTE, air, std., 4-dr. hatchback, \$3500, 8500 miles. Anderson, 299-2595.

'74 OLDS Custom Cruiser stn. wgn., loaded, \$1500. Strassel, 298-3816.

'69 INTERNATIONAL 1/2-ton V8, AT, PS, PB, AC, 28,000 miles, new tires & brakes, \$1550. Romesberg, 869-6979.

'78 MUSTANG, 10,000 miles, 4-spd., bucket seats & console, Ghia pkg., AM-FM stereo, white, below book at \$4500. Ray, 298-0408.

REAL ESTATE

'79 MOBILE HOME, 14'x80', 3-bdr., 2 baths, skirting, all kitchen appliances, \$2500 down and take over payments. Hill, 299-3202 after 6.

NE HEIGHTS near schools, shopping, Sandia, 3-bdr., fp, AC, new roof-interior paint & trim, reduced to FHA appraisal. Wicke, 268-8263.

3-BDR., 1 1/2 bath, fp, extra lg. garage, 1 1/2 acres in Placitas, well, \$59,500. Price, 867-5719.

NE, 3-bdr. brick, den, fp, 1 1/2 bath, finished garage, refrig. AC, side yard access. Barth, 299-2668.

FOR RENT

SKI CHALET near Taos Ski Valley, fully equipped kitchen, sleeps 8. Peet, 294-1250.

2-BDR., unfurnished townhouse apt. near Central & Tramway, carpeted, dishwasher, view, \$215/mo. plus electric, \$100 DD. Berg, 296-2695.

NEW 4-plex, 2-bdr., all 1st floor, cul-de-sac, carpets, drapes, appliances, W/D, no pets, water paid, \$265/mo., \$150 DD. Kolaczowski, 821-4950.

1 BDR. deluxe condominium on Maui, Ha., ocean view, beach, \$190/wk. Leverenz, 821-5999 in Abq. or 422-3062 in Liv.

WANTED

ANTIQUE WOODEN wall telephone. Harrison, 883-5411 after 5.

AMMUNITION: .223 rifle, 9mm Luger pistol. Mattox, 821-3945.

BORROW '69 Mustang owner's manual, convertible if possible. Underhill, 294-5774 after 6.

CANVAS CANOPY for trailer or van. Baxter, 344-7601.

REFRIGERATOR, white, reasonably priced. Castellano, 265-8219 after 5.

SOMEONE to make Christmas stockings from kits. Yoder, 294-3875 after 5.

3-BDR. house, dbl. garage, backyard access, 1/4 + acre(s), \$55,000-\$65,000 range within 25 mins. of Labs, 1600-2000 sq. ft. Crooks, 296-6182.

OLD porta-crib; exercycle w/adjustable friction setting, speedometer, odometer, ect. Gabaldon, 255-7971.

LOST AND FOUND

LOST—Solar Magazine w/house plans on yellow pad, yellow T-shirt, 2 calculators, 3 keys on leather tab & truck keys, financial accounting books, gold chain bracelet, sunglasses w/gold frames.

FOUND—Gold chain necklace. LOST AND FOUND, Bldg. 832, 264-1657.

Coronado Club Activities

Shrimp Peel Tonight; Singles Mingle at 4:30

HAPPY HOURS—Tonight, the Club's kitchen staff is serving shrimp, clam chowder, hush puppies and assorted savory goodies on the shrimp peel buffet. On the bandstand, Youngblood is playing its heart out. Next Friday, Nov. 9, "Disco on the Go" is the music production while beef Wellington is the chef's production. Happy Hours start right after work on Fridays, run until midnight or so. The buffet is spread from 6 to 8, the music plays from 7:30 on. Call the Club by midweek to reserve buffet tickets and use the discount coupon on your Club calendar.

SINGLES MINGLE tonight starting right after work in the Eldorado room. Music and munchables are on the agenda.

TOMORROW is Family Night at the Club with some special entertainment scheduled from the Elks Club Clowns. "Little Wheels and Unicyles" is the name of the troupe and they specialize in action. The show is followed by a movie, "March of the Toy Soldiers," a Disney classic. Super sandwiches are available at 6; the show starts at 7. Admission is free to members.

THE BIG ONE this month is set Saturday, Nov. 17, and it's a surf and turf special—lobster tail and top sirloin steak. A jazz group called "Alma" that recently packed them in at the Albuquerque Inn is on the bandstand. The group is versatile, plays Latin and rock, and is *entertaining*. Tickets are \$7.50 for members, \$10 for guests. Pick them up by the 10th.

SANADO WOMEN meet Nov. 13 at Four Seasons for a fall fashion show and a luncheon. Call Donna Urish (299-1456) for reservations.

MARK YOUR CALENDARS now for a couple of items worth marking your calendar for. Denny Gallegos (3743), singer/guitarist of note, returns to the Club Nov. 16 and 30 to entertain in the lounge from 5 to 7 p.m. Also, for Happy Hour on Nov. 16, the Mellotones return to the bandstand (with a super Italian spread on the buffet that night).

YOUNGSTERS interested in competitive swimming are invited to join the Coronado Club Aquatic group. This highly-motivated and well-coached troupe works out every school evening starting at 4:50 p.m. at Highland High pool, participates in many swim meets, wins many trophies. For information, call Dave Waymire (1116), 4-1175, or Ron Detry (2620), 4-6485.

TRAVEL—The Club's travel committee is looking for suggestions. Call the Club office, 265-6791, if there's a place you want to go. In the meantime, travel packages are available to Hawaii or Europe plus a cruise of the Caribbean in January.



THEY ALL KNOW THE SCORE. The screening room in Motion Picture Production Division 3153 was used as a recording studio recently. Objective was an original music track for Sandia's new multiscreen presentation, *Sandia: Working Today For A More Secure Tomorrow*. Wayne Graving (3153), left, Cinematographer/Editor of the presentation and Chuck Cockerleas (3162) standing center, Writer/Director, keep tabs on the slides and film as Rudy Fox, percussion, Bob Brown, composer/guitarist, and Arlen Asher, wind instruments, make the music. The three-screen presentation will be shown in the theater in Sandia's new Visitor Center (the remodeled geodesic dome that formerly housed exhibits). Plans are to open the center before the end of the year.

Events Calendar

Nov. 2-4—7th Annual Southwest Arts & Crafts Fair, Ag. Exhibit Hall, State Fairgrounds.

Nov. 4 through Jan. 27—Reflections of Realism—paintings and sculptures of NM and other contemporary realists, Museum of Albuquerque, 19th & Mountain Rd., NW, Tues.-Fri. 10-5, S-S 1-5.

Nov. 6—Wimmer, Wimmer & Dancers, a contemporary dance group from Salt Lake City, Kimo Theater, 766-7816, 8 p.m.

Nov. 7-11—"The Three Sisters," UNM Dept. of Theatre Arts, 8 p.m., 2 p.m. matinee on Sun., Rodey Theatre, 277-4402.

Nov. 8—Chamber Orchestra of Albuquerque—concert featuring Albuquerque Boys' Choir, 8:15 p.m., Keller Hall, UNM.

Nov. 8—"Hollyberry Fair—"An Old Fashioned Christmas Bazaar," lunch served 11:30-1:30, St. Marks On The Mesa Episcopal Church; 9 a.m.-3 p.m., 431 Richmond Place NE.

Nov. 10—Alpha Phi Alumnae: Crafts for Christmas Benefit for Heart Ass'n., 9-3, Four Seasons.

Nov. 11—Magic Variety Show sponsored by Albuquerque Jaycee's Club —magicians, sword swallows, jugglers & mind readers, 2 and 4 p.m., \$5.50 admission, Kimo Theater.

Nov. 11-Dec. 31—Paintings of Philbert Hughte, Zuni Pueblo; Indian Pueblo Cultural Center, 12th & Menaul NW, M-S 9-5, Sun. 12-5.

Nov. 12—Cultural Entertainment Series: Big Band Festival—Fabulous Forties with Andy Russell, Helen Forrest, Pied Pipers, Gene Krupa Band, 8:15 p.m., Popejoy.

Nov. 12—Annual San Diego Feast Day: Jemez Pueblo, corn dance; • Tesuque Pueblo, buffalo, deer, flag or Comanche dance.

Nov. 13—Audubon Wildlife Film—"In the Domain of the Leopard," 7:30 p.m., Popejoy.

Nov. 15—Cultural Entertainment Series: "Ain't Misbehavin'—Fats Waller Revue," 8:15 p.m., Popejoy.

Nov. 15-17—Albuquerque Art Ass'n. Christmas Exhibit, Montgomery Plaza Mall, lower level, 9-10 p.m.

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NOV. 15

American Cancer Society