

ROCKET PAYLOAD, 16.5 ft. in length and weighing 550 lbs., is checked for spin balance in the Mass Properties Lab in Bldg. 892 by Ted Krein (1525), standing, project leader; Ernie Niper (1525); Hovey Corbin (1525), and Harry Blechinger (1137). Two of the payloads will be launched into the shadow of a total eclipse off the coast of East Africa Feb. 16.

CPR Saves Sandian's Life

Keith Culver, an electronics technician in Communications Systems Division 1715, has the best reason of all to feel thankful about Sandia's Cardiopulmonary Resuscitation course because that CPR training, taken by four co-workers, kept him alive.

Wayne Olson and Tom Maull (both 1715) noticed Keith slumped over his desk. He was unconscious, his color had changed to blue, and the men could detect no heartbeat. They laid him on the floor; Tom immediately began mouth-to-mouth resuscitation and Wayne started chest compressions. The two were relieved by Emil Bernard and Gayle Self (both 1761), who continued the treatment in the ambulance until the emergency team at Bataan Hospital took over.

"We were told later," Wayne said, "that we had worked for a total of 25 minutes plus the time of the trip to the hospital. Although we couldn't revive him, the doctors told us that the CPR kept him alive until they could treat him."

The men urge Sandians who have not taken the cardiopulmonary resuscitation

Two Research Rockets to be Launched to Study Solar Eclipse



From an Italian launch platform three miles off the coast of Kenya in the Indian Ocean, NASA will launch two Nike-Black Brant rockets into the shadow of a total eclipse on Feb. 16, 1980. The rockets will carry Sandia-designed payloads with instruments to measure the temperature structure and density of the solar corona.

These data will provide a better understanding of how energy moves from the photosphere—the sun's luminous surface—outward into the solar corona and the solar wind.

The project is centered in Rocket Systems Division 1525 under Dick Eno, and the expertise involved is an outgrowth of an earlier program to maintain a capability for atmospheric testing of nuclear weapons. LASL is responsible for the scientific experiments. NASA is sponsoring the project. Eleven Sandians will be in Kenya with the eclipse expedition starting in mid-January.

Both rockets will carry identical payloads, and launches will be about 30 seconds apart, timed to reach apogee as totality of the eclipse occurs. At 335 kilometers above the earth, the payload will be ejected forward from the Black Brant booster. The nose shield will fall

away to expose the primary measuring instrument—a special telescope coupled with a high resolution spectrograph and camera. A Sandia attitude control system will keep the payload pointed at the eclipsed sun.

The camera is programmed to make 20 exposures varying in length from one to 60 seconds. The spectrograph has multiple slits, allowing 21 cross sections of the corona to be photographed simultaneously. The payload and instruments will be in the shadow of the eclipse taking pictures for approximately 300 seconds.

After exposure, the density of the special spectrographic film gives a direct measurement of corona temperature. After the photography operation, the instrument compartment will be sealed. As it falls to 15,000 feet, a parachute will deploy so that the package impacts lightly in the sea. The Sandia recovery system includes a high intensity flashing light, an RF transmitter beacon and flotation gear.

The flights will be tracked by radar, and followed closely by two aircraft in the vicinity. The payloads will be recovered by surface ship.

Other Sandians involved include Ted Krein, Ernie Niper, Dan Miko, John Smelser, Hovey Corbin, Don Johnson, Bill Millard, Jack Bahlman, Dick Rudolph and Kip Blossom.

LAB NEWS

VOL. 31, NO. 24

DECEMBER 7, 1979

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

course to enroll and to follow up with the refresher course. "I had the training about two years ago," Wayne says, "and completed the refresher course this past summer. You *never* know when you might need this training; we all were able to recognize the symptoms and felt confident in our actions." (Ed. Note: This is not the only instance of CPR to the rescue at the Labs. Several incidents have taken place in which CPR was administered.)

Keith was moved to Presbyterian's heart care center where he underwent surgery. "I've checked his progress every day," Wayne reports, "and he's conscious and off the respirator. The pacemaker has been removed and, best of all, his doctor reports no detectable brain damage. This was a concern because no one knew how long he had been unconscious before we found him."

Keith has been accepted by the Stanford Medical Center in Palo Alto, Calif., for a heart transplant as soon as a donor is available. Keith is 22 years old. (Ed. Note: Keith is now at Stanford, awaiting a donor.)



CHRISTMAS is for kids, and the Kids' Christmas Party starts tomorrow at 10:30 a.m. at the Coronado Club. Santa Claus, above, tells Reynaldo Gallegos (son of Frank, 4500) that he'll be there. Also at the party, the Enchanters will sing, Ron and Mary Kay Day will entertain with puppets. Members' kids only, please.

Afterthoughts

Modest leap forward--We've arrived. LAB NEWS has received a letter from a New York outfit called "Books New China, Inc." which reads as follows:

"Enclosed please find our purchase order 1980 subscription to periodicals published by your firm. We are placing this order on behalf of the China National Publications Import Corporation (CNPIC) in the People's Republic of China."

There's more, including a purchase order that specifies "Sandia Lab News."

Should we honor this request? Our immediate response is "no" and this is largely based on the absence of any quid pro quo arrangement. They get LAB NEWS and a look at high technology, we get nothing save perhaps the tacit acknowledgment of a Chinese scientist/official who wonders at the openness of American society. If we're overlooking some critical point here, we'd be interested in your views. (Then again, they may only want to check out the ads...)

* * *

The Air Force & the F-16--A plaintive note in the KAFB Bulletin caught our eye: "The F-16 'Falcon' No Longer Exists. Pan American Airlines owns the 'Falcon' trademark, and won't let the Air Force use it. We want to name the F-16 as soon as possible, but we want to select a name that is popular throughout the Air Force. If you have any ideas..." Well now. That certainly is tightfisted of Pan Am. But don't despair Air Force. There's all sorts of bird names. A few off the top of our head: Turkey. Dodo. Pigeon. Titmouse. Chickadee. Loon. If you want to get fancy, how about scissor-tailed flycatcher? The thing that's good about these names is that they are disarming. The enemy learns you're sending a squadron of F-16 Titmice, laughs it off, then zap! It's the classic element of surprise, and here's a chance for the Air Force to add it to the arsenal.

* * *

It does have a certain ring--Barbara Stearns (4731) received a mailing from the Labconco Corp. of Kansas City addressed as follows:

Ms Barbara Stearns
Sandia Laboratorys
K.A.F.B. East
Alluifuerfue, NM 87115

*js



BRIAN BANKS, ARA Food Services, is the new Sandia cafeteria manager, replacing Vic Schmidt who has been promoted to a supervisory position with ARA in California. Brian comes to Sandia from directing food service at the College of Santa Fe. He has eight years experience in food service, holds a business degree from Metro State College in Denver.

Wanted: Bikers to Car Pool

Leo Apodaca (DOE/SAO) called to describe "a small problem." Seems that the combination of darkness and cold weather is enough to remove him from bike riding to work. So he wants to get in a car pool, but only for a few months, that is until balmy weather returns and he can get back on his bicycle.

Leo figures there must be other bikers in the same fix, and we suggested that perhaps we could use the approach employed to get our listing of "Bike Guides." In brief, if you're interested in a cold weather car pool (and you don't have to be a biker), then send LAB NEWS your name, home address, work and home phone number plus the nearest intersection to your home derived from these two columns of arterials:

West/East	North/South
Academy	Broadway/Edith
Osuna	University
Montgomery	Girard
Comanche	Carlisle
Candelaria	San Mateo
Menaul	San Pedro
Indian School	Louisiana
Lomas	Pennsylvania
Central	Wyoming
Garfield	Moon
Kathryn	Eubank
	Morris
	Chelwood
	Tramway

Send this information to Biker's Car Pool, LAB NEWS. When the returns are in, a copy of the completed listing will be sent to you and you can then contact those who live in your area of the city to make arrangements.



With the blessings of the Canadian government, a small FM station near Montreal is regularly broadcasting subliminal messages--messages urging listeners to relax and take it easy. Designed by a consulting team of psychiatrists, the hidden messages are imprinted over "easy listening" music. If the Canadian form of this bland and mindless music resembles our own, we predict extreme difficulty in measuring the success of this effort. How can you relax when you're already asleep?

Smoke Detectors Save Lives

Fire protection engineers Vern Duke and Ray Cohrs (both 3652) worry about national statistics--8621 Americans died in fires in 1978.

"Seventy-five percent of the deaths were caused by smoke inhalation," Vern says, "and 82 percent of the deaths occurred in homes while residents were asleep."

A little inexpensive device called a smoke detector which sounds an alarm could have prevented many of those deaths, Vern believes.

"Smoke detectors can be purchased locally or ordered by mail--costs start at \$12.95 plus postage. We have descriptive literature and order blanks," Vern says.

For additional information, call Vern or Ray on 4-1958.

Death



Frank Gillespie, a security inspector in Security Operations Division 3432, died Nov. 23 following surgery. He was 62.

He had worked at the Labs for 21 years.

Survivors include his widow, two daughters and a son.

LAB NEWS

Published every other Friday
SANDIA LABORATORIES

An Equal Opportunity Employer

ALBUQUERQUE, NEW MEXICO
LIVERMORE, CALIFORNIA
TONOPAH, NEVADA

Editorial offices in Albuquerque, N.M.
Area 505 264-1053

FTS 475-1053

ZIP 87185

In Livermore Area 415 422-2447
FTS 532-2447

john shunny is editor
&

don graham ass't. editor

chuck cockelreas & norma taylor write
bill laskar does picture work
aided by gerse martinez

barry schrader & lorena schneider report livermore.

Supervisory Appointment



PAUL VAN DYKE to supervisor of Standards, Calibration and Photography Section 8413-1, effective Nov. 16.

Since joining Sandia/Livermore in 1959, Paul has worked in photometrics with occasional assignments at NTS and Tonopah Test Range to perform photo instrumentation on weapons test programs. He has also designed and developed a variety of optical devices, most recently an optical probe for use in a fossil fuel combustion system.

Paul earned an AAS degree in photography at Rochester Institute of Technology and did course work at MIT, University of Rochester and USF. He is a member of the Society of Photo-Optical Instrumentation Engineers. A history buff with a special interest in WWII, Paul also enjoys collecting antiques and stamps. He and his wife Anne live on Lakehurst Road in Livermore. They have three grown children, two married and one attending UC/Berkeley.

Death



Jim Schimmel of Projects Division 8111 died suddenly Nov. 10. He was 39.

Jim had worked at Sandia/Livermore over nine years.

Survivors include his wife, a daughter, two sons and mother and father.



FAULTY LOOKING—Valerie Raymond, head of the Alameda County Board of Supervisors, toured the Tritium Research Laboratory recently and visited the trench which was dug to examine near-surface faulting in the vicinity. Shown with Mrs. Raymond are Tom Cook (8000) and Leo Gutierrez (8400). The seismological investigation is sponsored by DOE; its initial phase will be completed late next year and results published.

LIVERMORE NEWS

VOL 31, NO. 24

LIVERMORE LABORATORIES

DECEMBER 7, 1979

Writes Book On Composer Father

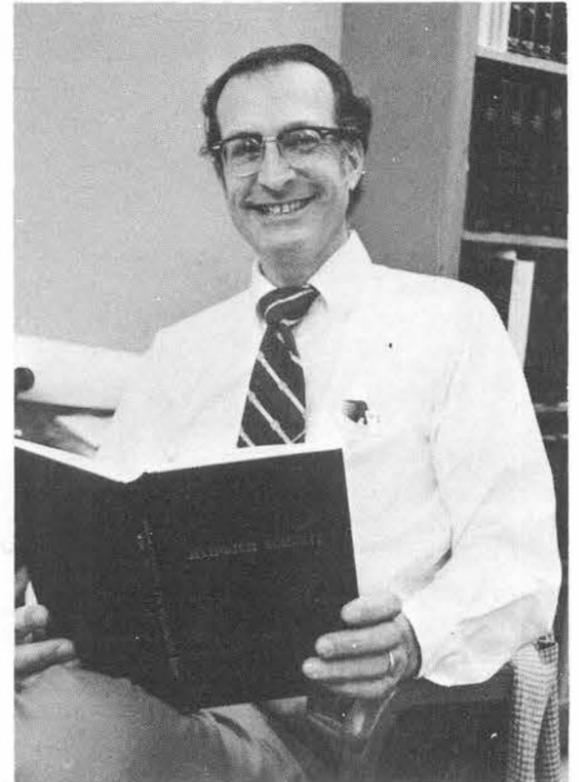
Where does musical creativity originate and how is it molded, developed and brought to fruition? These questions fascinate reference librarian Michael Schalit (8266) and led to the publication of his latest book, a biography of his composer father, entitled "Heinrich Schalit—The Man and His Music (1886-1976)."

"I view the book," says Michael, "as a memorial to my father, a condensation of his life and his musical contributions."

"I also like to say that talent skips a generation," he continues, "but apparently it's skipping two generations, since my children, though they have musical ears, definitely don't have the self-discipline to play instruments. My father, on the other hand, possessed and practiced true creative musical talent."

Heinrich Schalit was recognized as a prolific composer (songs and sacred compositions for string quartet and orchestra) and as a concert pianist; he was also synagogue music director and organist in Vienna, Munich and Rome and, later in the United States, in Rochester, Providence and Hollywood.

He did all this in spite of extremely poor eyesight from childhood on, as well as economic and social deprivation; and, after managing to survive WWI, he succeeded in extricating himself and family (Michael is the second of three sons) from the later European perils that



MICHAEL SCHALIT (8266) with his latest book, "Heinrich Schalit—The Man and His Music (1886-1976)."

swallowed up six million fellow Jews. "Our entire family was spared and we came out relatively unscathed—no trauma, tatoos, concentration camp memories—for which I'm eternally grateful," says Michael. "Publishing the book is also an expression of gratitude for that."

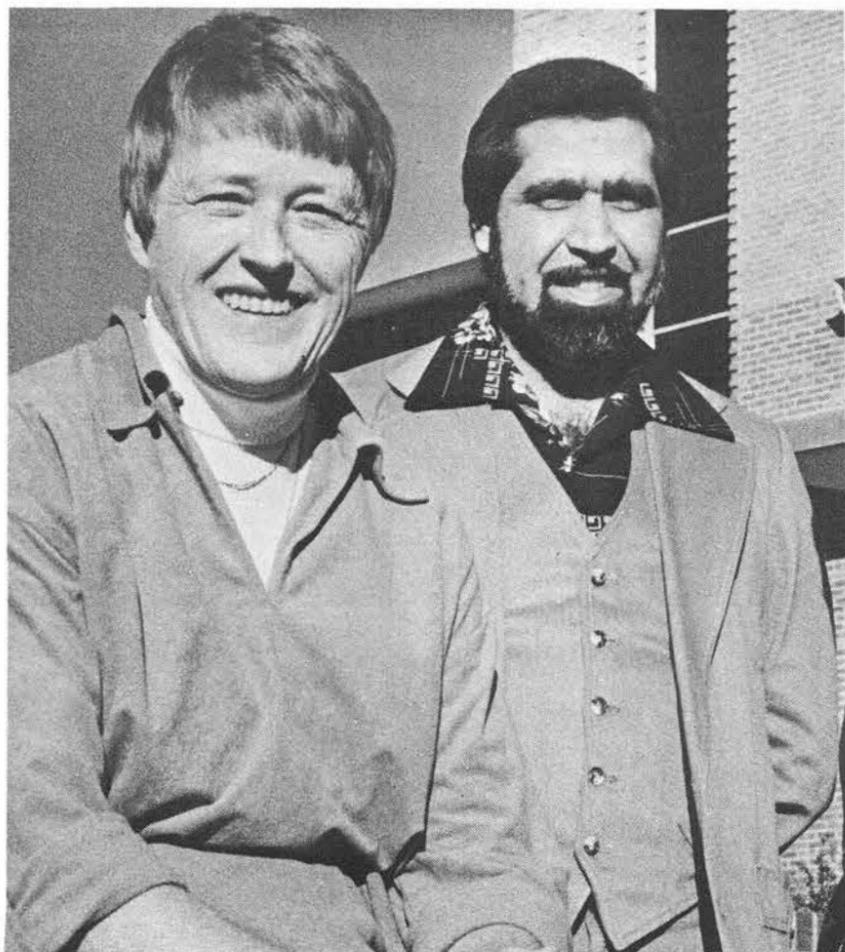
Michael notes that the book can be used as a departure point for more extensive research into the musical aspects of his father's life and creations. To this end, he had appended to the book a chronology of his father's musical works, a manuscript catalog, and a cross-reference index.

Michael has published several other books: a translation from the German to English language of William Hauff's "The Cold Stone Heart" and a reference book, "Guide to the Literature of the Sugar Industry." Also, he is the author of the four-volume reference book, "Fused Salts Bibliography," published by Sandia in 1973. Before he came to Sandia, while working as a research chemist for a sugar beet firm, he wrote over 60 technical reports and prepared 60 translations from the original German, French and Italian manuscripts.

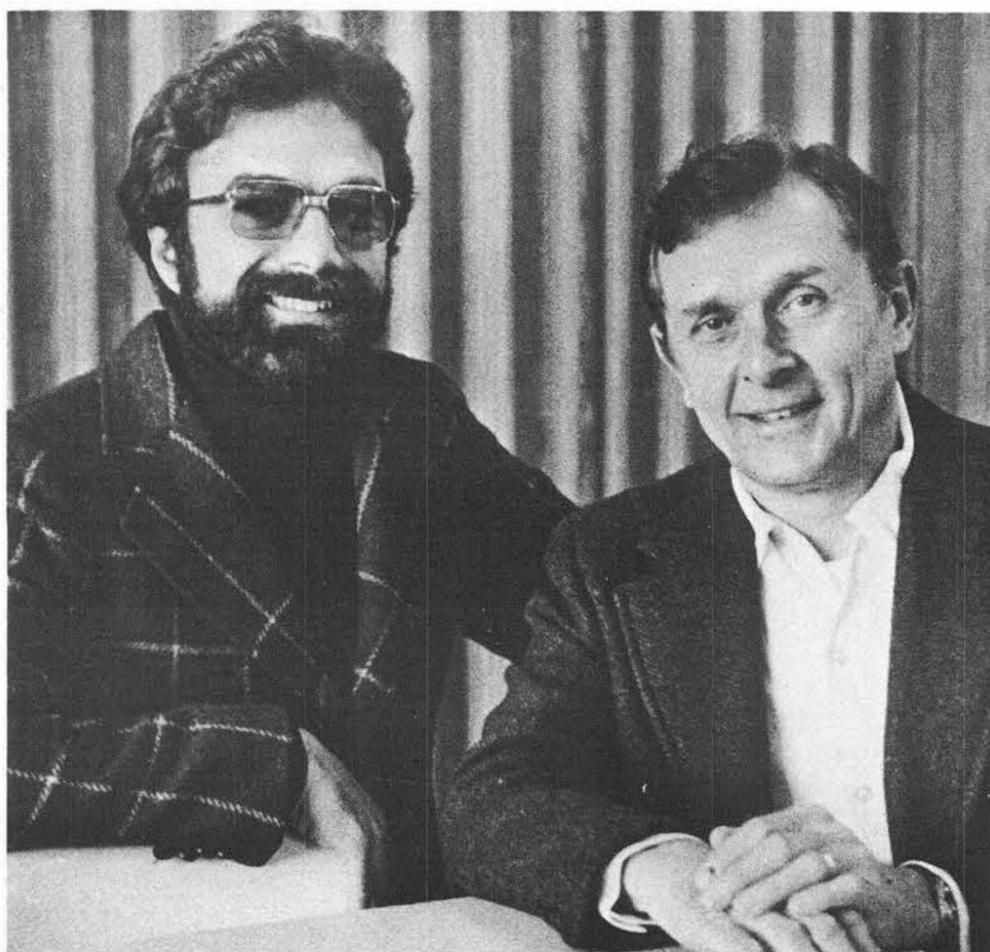
Michael received his early education in Rome and London and, after coming to this country, earned a BS degree in chemistry, and an MS in library science, both from the University of Denver.

Sympathy

To Russell Miller (8162) on the death of his father in Butte des Morts, Wis., Oct. 30.



SANDY BORGRINK (3744) and JOE GONZALES (2631)



NICK MAGNANI (5840) and JOE SZYMANSKI (6011)

Supervisory Appointments

SANDY BORGRINK to supervisor of Travel Planning and Reservations Division 3744, effective Nov. 16.

Joining Sandia in June 1961 as a clerk typist, Sandy later worked as a personnel clerk, employment clerk, and tour coordinator in the Community Relations division. She was promoted to supervisor of Travel Reservations Section in 1966.

Sandy earned a BA in history and an MA in personnel and vocational guidance from UNM, where she served as a graduate assistant for two years before coming to the Labs. Much of her leisure time is spent maintaining her home and garden in Corrales. She also enjoys fishing and opera. But please—don't ask her if she likes to travel!

* * *

JOE GONZALES to supervisor of Computer Operations Section C, 2631-3, effective Nov. 16.

Joe joined Sandia in October 1971 as a building custodian. Six months later he joined the computer organization as a computer facilities clerk and was promoted to computer operator in 1974. For the past year, Joe has worked in the production control section of Engineering Applications & Computer Operations Department 2630. Joe's new position entails computer operations for the second shift.

Before coming to the Labs, Joe was enrolled in T-VI's computer technician program and, while working at Bendix Field Engineering in California as a computer operator, attended Cal Poly College. Joe enjoys fishing, golfing and softball. He and his wife Georgia and their two sons live in Belen.

* * *

NICK MAGNANI to manager of Chemistry and Ceramics Department 5840, effective Dec. 1.

Nick joined Sandia in 1968 as a member of the physical metallurgy group and, in 1973, was promoted to supervisor of that division. His work has been primarily concerned with research on the stress corrosion cracking of metals; however, for the past few years the division has worked closely with energy organizations on the interactions of materials with the environment.

Nick earned his BS in chemistry and PhD in metallurgy from Iowa State University. He is a member of the American Society of Metals and the National Association of Corrosion Engineers. Nick belongs to the Albuquerque Breakfast Civitan Club and, for some time, has worked with a handicapped scout troop. During the winter, his main interest is wood working; he's made much of the furniture in their home. He and his family, Louise and two sons, enjoy camping and fishing. Nick's busy—he's active in his

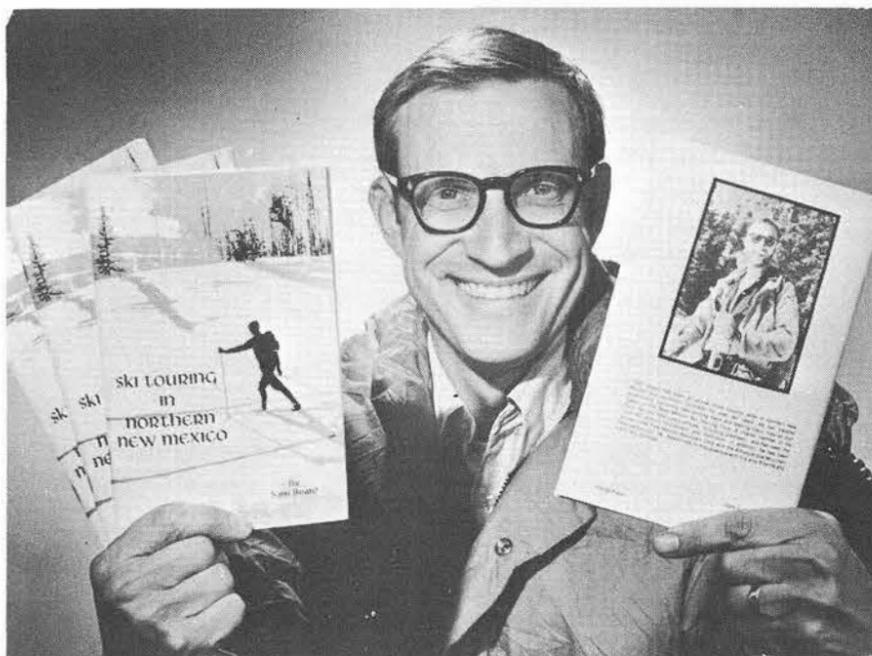
church, takes Spanish lessons, and is learning to play the bagpipes.

* * *

JOE SZYMANSKI to supervisor of Invention Reports Division 6011, effective Jan. 1.

Joe joined an R&D group at the Labs in September 1950 as a technician. He has worked with Sandia's COIN group and, for the past eight years, has been an engineer in the Technical Security Division 3434. Joe studied electrical engineering at NY State University, Southwest Missouri College and UNM. Before coming to Sandia, he worked as a radio station engineer. He served in the Signal Corps, both in England and in continental Europe, during World War II.

Joe's hobbies include his home computer, amateur radio, jogging, camping and hiking. He and his wife Leta have three children and one grandchild. They live in the NE heights.



THAT'S the smile of author-hood, and Sam Beard (5633) displays his recently published creation, *Ski Touring in Northern New Mexico*, in which he details more than 70 ski tours with cookbook-like directions for those wishing to follow in his tracks. Former president of the New Mexico Ski Touring Club, Sam spent several years gathering data for the book. It's available in most ski shops and at the Little Professor Book Store.

Field Test of Deep Steam Generator Set

Sandia's first prototype unit for Project Deep Steam goes into the field this month for tests in an oil reservoir near Bakersfield, Calif.

Goal of the project is to develop a steam generator that will perform at depths down to 4500 ft. to aid in the recovery of "heavy oil." This substance, tar-like in consistency, is usually not recovered by conventional methods of drilling and pumping an oil reservoir. Heavy oil at depths of about a thousand feet, however, is being pumped to the surface near Bakersfield using surface-generated steam to reduce the viscosity of the heavy oil.

The effort is expensive—one barrel of oil is consumed in the steam boilers for every three recovered, and the boilers require expensive "scrubbers" to keep the burn waste within California environmental air quality standards. Heat loss between the surface and the oil's depth is also a major problem.

"Although our first unit will be operated on the surface, the burn waste will be injected into the underground oil reservoir along with the steam," says Ron Fox, supervisor of Enhanced Oil Recovery Division 4738. "This test is important to gather data on the interaction of combustion gases with the reservoir. We want to measure these chemical reactions as well as the 'sweep rate'—the amount of oil pumped to the surface—for our computer modeling efforts.

"The performance of the high pressure steam generating system will also be monitored. This will be a 24-hour a day, six-month test."

The Deep Steam project is funded by DOE's Division for Oil and Gas Technology. Chevron USA is cooperating in the test, furnishing producing wells where steam recovery methods have been used before. Prior production values can be compared with those obtained with Sandia's unit.

The prototype steam generator—six inches in diameter and about 20 inches long—uses propane for fuel which is mixed with high-pressure air (400 psi) for combustion. Water is injected into the combustion chamber to create a steam flow rated at 1.2 thermal megawatts, a volume of 1500 standard cubic feet per minute. In down-hole operations, the propane, high pressure air and water are delivered to the generator by hose lines.

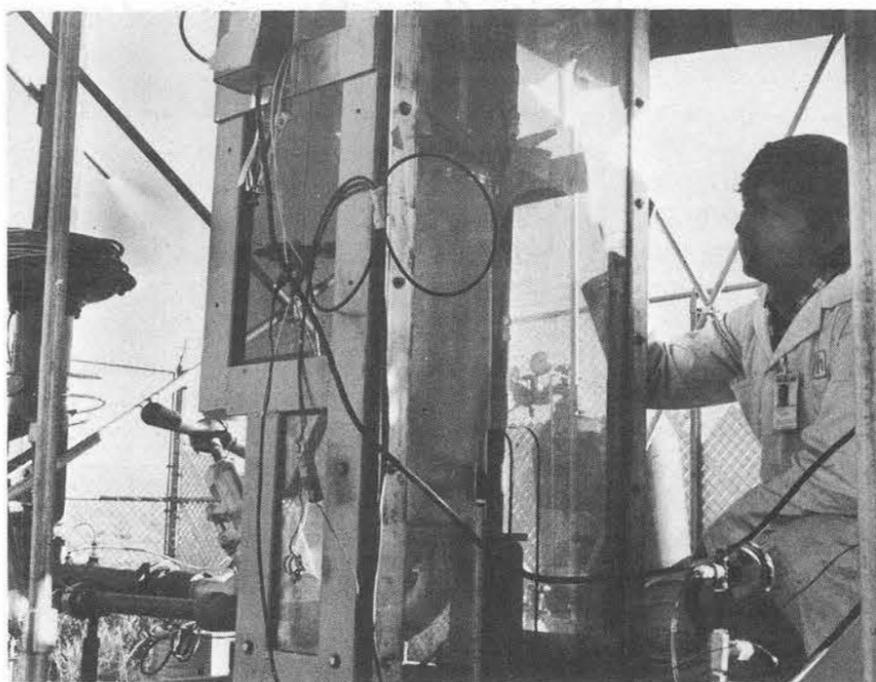
A second high pressure steam generating unit for down-hole operation is under full-scale laboratory testing in Area III. It is scheduled for field evaluation next fiscal year in another well at a depth of about 2500 ft. Design changes may occur as a result of the current test.

"We're looking very carefully at the high pressure combustion/steam generating process," Ron says, "and considering ways to use the produced oil as fuel for the generator."

In addition to the two high pressure down-hole systems, Division 4738 is also evaluating two low-pressure designs. Future tests will determine the most productive and economical system.



RON FOX, supervisor of Enhanced Oil Recovery Division 4738, watches operation of a prototype steam generator that is scheduled for field testing this month in an oil reservoir near Bakersfield, Calif. The unit is rated at 1.2 thermal megawatts and produces a steam volume of 1500 standard cubic feet per minute.



SANDIA'S DEEP STEAM GENERATOR, six inches in diameter and 20 inches long, operates behind lexon plastic shielding for initial testing in Area III. Burl Donaldson (4738) observes the unit's ignition system. High to the left and several yards away, the steam flow is vented. Goal of the project is development of a steam generating system to operate in oil wells at depths to 4500 ft.

The division is also developing new elastomer seals, insulating and packing materials for the steam systems, and performing extensive physical and mathematical simulation studies.

"What we want," Ron says, "is a system that creates no surface pollution, increases oil production and performs economically at depths to 4500 ft. The potential of this project is tremendous—it's estimated that some 300 billion barrels of heavy oil remain in American reservoirs, oil that is the target of the DOE's enhanced recovery projects, including the deep steam generating system we're developing."

Don Johnson is in charge of site preparation for the upcoming field test, Tony Mulac is task force manager, Burl Donaldson is project leader for down-hole steam generator development, and Bob Clay is field test manager at Bakersfield. All are in Division 4738.

Division 1125 contributed data acquisition instrumentation, Division 2165 designed the skid system (platforms for field test operations), Division 5512 helped

with flow diagnostic instrumentation, and Division 4533 contributed environmental impact monitoring equipment.

Booze & You at Next GFH

"You and Your Alcoholic Friends" is the title of the next Go For Health program on Tuesday, Dec. 11, in Bldg. 815. Dewey Bullard is the featured speaker at the program which is sponsored by Sandia Medical.

The theme is responsible drinking during the holidays, and Mr. Bullard will explain a "drink-drive" calculator to be given to those attending. The calculator takes several variables into account such as body weight, food recently eaten, and the number and type of alcoholic beverages consumed to predict whether a person is sober enough to drive.

Suggestions will be offered to holiday hosts concerning ways guests can be sent on their way not completely overcome by holiday spirits.

The program runs from 12 noon to 12:30. Brown baggers are welcome.

Take Note

Boy Scout Troop 165, sponsored by St. Paul's United Methodist Church, 9500 Constitution NE, is again selling luminarias for the holiday season. Prices are \$1.75/doz. picked up at the church; \$2.25/doz. (3 dozen minimum) delivered. Delivery dates are Dec. 15, 21 and 22. Orders will be taken by the following scout mothers: Linda Bollman, 296-6970; Sally Kelly, 293-4783; Nancy Haas, 299-6620, and Caran Redington, 294-3067.

* * *

Richard Wexler, an Albuquerque accountant and tax specialist, is featured speaker at the December meeting of the New Mexico Section of ASME. His topic will be tax shelters for salaried professionals, with special emphasis on the investment role of residences and other real estate. The meeting will be held Tuesday, Dec. 11, in the Isabella Room of the Kirtland Officers Club West (1900 Maxwell S.E.). Social hour is at 7 p.m. and the program at 7:45.

* * *

The non-profit Albuquerque United Artists is seeking the donation of a piano. Their request notes: "This tax-deductible gift will make possible the continuation and further development of a music series at the Downtown Center for the Arts." AUA, located at 216 Central SW, sponsors artistic and other cultural events at the Center several times each month. If you can help in the matter of the piano, their number is 243-0531.

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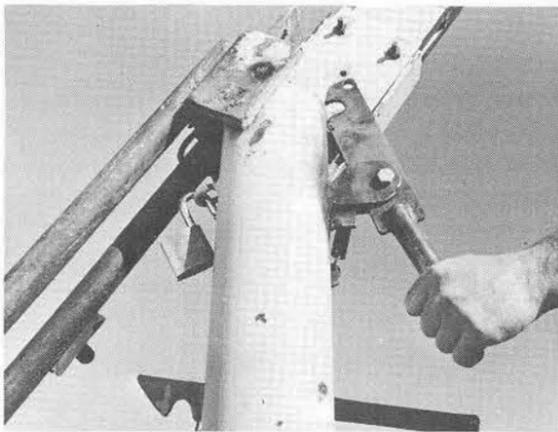
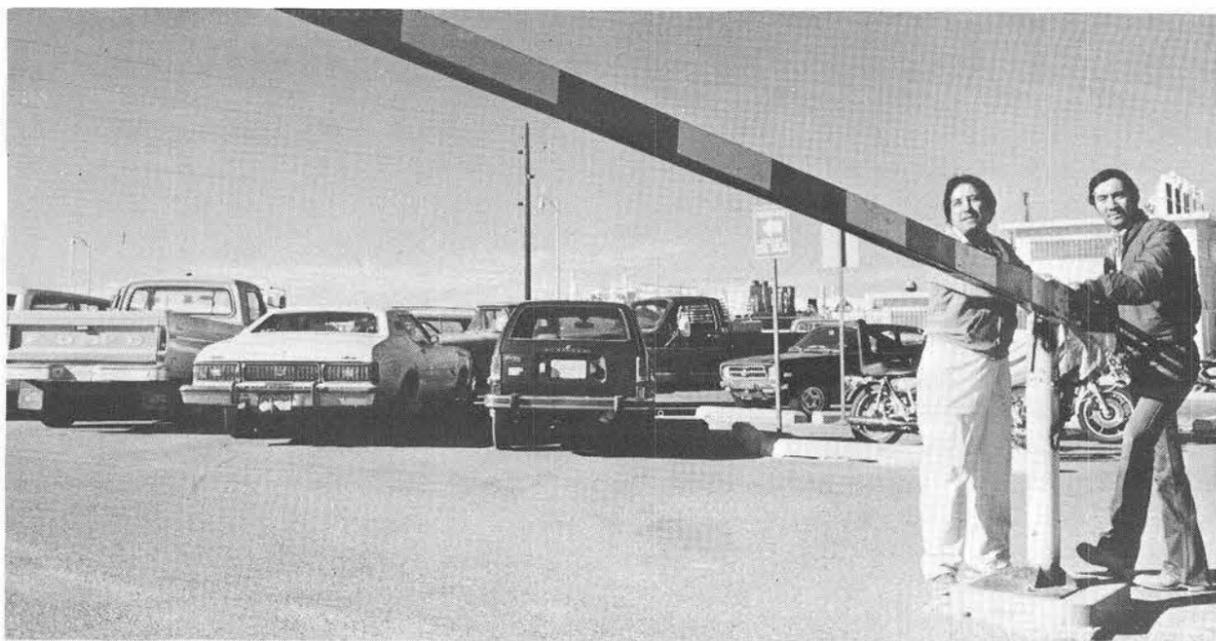
"American Images: Documentary Photographs by the Farm Security Administration, 1935-42" opens at the East Area Office of Albuquerque Public Schools on Sunday, Dec. 16. Over one hundred photographs are included in the show which continues through Jan. 6, Sunday through Wednesday, 1 to 5 p.m. The exhibit has been brought here by the Community School Program, and the selections portray the American state of life in that troubled time. FSA photographs in the exhibit include Russell Lea, Dorothea Lange, Walker Evans, Ben Shahn and Arthur Rothstein. The APS East Area Office is located at 2611 Eubank NE.

* * *

The Christmas season approaches, and LAB NEWS plans its usual coverage of the various Christmas projects that employees undertake. If your organization is planning such a charitable project, be sure to let us know so that we can carry your story in our Christmas issue. Call Norma on 4-7841 with the details.

* * *

Optimist member Richard Yoshimura (4552) reports that this civic organization is raising funds this year by selling Christmas trees at the lot on the southwest corner of Lomas and San Mateo and by wrapping Christmas presents at the booth between Dillard's and Cooks in Winrock. The Optimists sponsor many youth-oriented activities and, during the Christmas holiday, are holding a basketball tournament for boys and girls.



WHAT'S THE CATCH? Well, actually there are two of them, one up, one down. Just south of the cafeteria, traffic barriers are locked vertically in the morning to let cars in and horizontally in the afternoon to keep cars from backing out. After a rash of problems with a locking pin that kept shearing off, millwright Levi Anaya (top left) and millwright apprentice Lonnie Trujillo (both 3613) designed and built the positive locking system shown at left. The notch in the spring-loaded horizontal lever hooks over a peg to hold the barrier upright and the notch in the vertical lever snaps over a piece of metal plate to lock the barrier in the down position.

Coal Gasification

Labs Has Tech Manager Role In Project

The largest coal field in the state of Washington, the Centralia-Chehalis Coal District, is the focus of a Department of Energy project to identify a site in that state for the commercial application of underground coal gasification.

The district, a 570-square-mile area in west-central Washington, contains about 3.3 billion tons of subbituminous coal. More than half of this reserve cannot be easily reached using traditional surface or underground mining techniques; however, significant portions may be amenable to the gasification approach.

Basically, underground coal gasification consists of drilling holes into a coal seam, establishing airways in the seam between these holes, igniting the coal, injecting air or oxygen to sustain combustion, and withdrawing the gas by-product from neighboring wells. Because the energy is extracted without mining, most ash and sulfur contaminants remain underground.

The gas produced can then be burned on site to generate electricity, or be used as a petrochemical resource or, possibly, be upgraded to synthetic natural gas.

The objective of the new \$800,000 project is to select and characterize at least one site in Washington that appears suitable and to develop a relatively simple gasification experiment for the area. Sandia Laboratories is technical manager. The Laramie Energy Technology Center and Lawrence Livermore Laboratory have responsibility for several major tasks; state agencies, universities, and industrial contractors will also participate.

"Although the Centralia-Chehalis District looks good for coal gasification," says Stan Love of Thermal Processes Division 4737, "we may learn in the next year that we should study another site or that

gasification is not economically or technically feasible.

"The area we are looking for should contain at least 50 million tons of subbituminous coal in one parcel or several adjacent parcels," he adds. "Coal seams at least six feet thick should be sandwiched between relatively impermeable strata twice as thick as the seams.

"The seams should be between 300 and 1000 feet deep and in zones with fairly simple geology and no major faults. The area should be near market centers but away from populated areas."

During the next year the Centralia-Chehalis District will be the focus of detailed geophysical, geologic, hydrogeologic, and environmental studies; at least 15 boreholes are planned, some as deep as 1000 feet.

The hydrogeologic and environmental tasks will be conducted by LLL. The aim of these tasks is to identify aquifers, to determine the impact of process pollutants on these aquifers, to define land subsidence caused by gasification, and to prepare the statement of environmental assessment of coal gasification in the area.

Also during the next year, Sandia will conduct an economic assessment of methods by which this area's coal resources may be exploited, whether by strip-mining, conventional underground mining, gasification, or a combination of any of the three.

Sandia has been working for the past five years with the Laramie Energy Technology Center to define more clearly what happens during underground coal gasification. The Washington State project is seen as a major contribution to the commercialization effort.

Events Calendar

- Dec. 7-8, 14-15—"The Lion in Winter," Tiffany Playhouse, Sheraton Old Town Inn, 8:15 p.m.
- Dec. 8-9—Albuquerque Children's Theater, "Sleeping Beauty," 1:30 and 3:30 each day, Popejoy, 277-3121.
- Dec. 9—Jazz concert: three local groups sponsored by the NM Jazz Workshop, tickets at door, 7 p.m., Kimo Theater.
- Dec. 9—UNM Jazz Band, 8:15 p.m., Popejoy.
- Dec. 10—Moods in Blue Singers, an ensemble from the U.S. Air Force Band, performing popular music, 8 p.m., Kimo Theater.
- Dec. 11—The Charles Woodall Chorale, special Christmas performance of medieval, baroque and modern music, tickets \$2, 8 p.m., Kimo Theater.
- Dec. 12—Cultural Entertainment Series: "Jacques Brel Is Alive and Well and Living in Paris," 8 p.m., Popejoy.
- Dec. 12—"The Choir of Our Lady of Sorrow," presented by Albuquerque Radio Theater, tickets \$3, 8 p.m., Kimo Theater.
- Dec. 14-15—NM Symphony Orchestra and Chorus present all Beethoven concert, 8:15 p.m., Popejoy.
- Dec. 15—Ballet Folklorico, 1-2 p.m., Old Town Plaza.
- Dec. 15—Las Posadas de Barelitas, Barelitas Community Center, 801 Barelitas Rd., SW, 6 p.m.
- Dec. 16—Museum of Albuquerque: Fiesta de Guadalupe, 1 p.m.; Clarita's Flamenco, 2:30 p.m.

Fun & Games

Skiing—Next meeting of the Ski Touring Club is set for Thursday, Dec. 13. Location is St. John's Methodist Church, 2633 California NE. Ski trips, instruction and the racing program will be discussed, and non-members as well as members are welcomed. The meeting starts at 7:30 p.m.

If you can make it to Purgatory next week, Dec. 10 to 14, you can get a six dollar discount off the daily lift ticket (usually \$12). You must be a member of the Coronado Ski Club and have a special coupon for each day of skiing. Dale Buchanan (4314), 4-3451, has the coupons.

Square Dancing—The annual Coronado Grand Squares Christmas party will be held at the Club on Monday, Dec. 17. The party offers a potluck supper, a singalong with Mike Michnovicz on the accordion, and square dancing. The program runs from 6 to 10 p.m. Contact Vickie and Bud

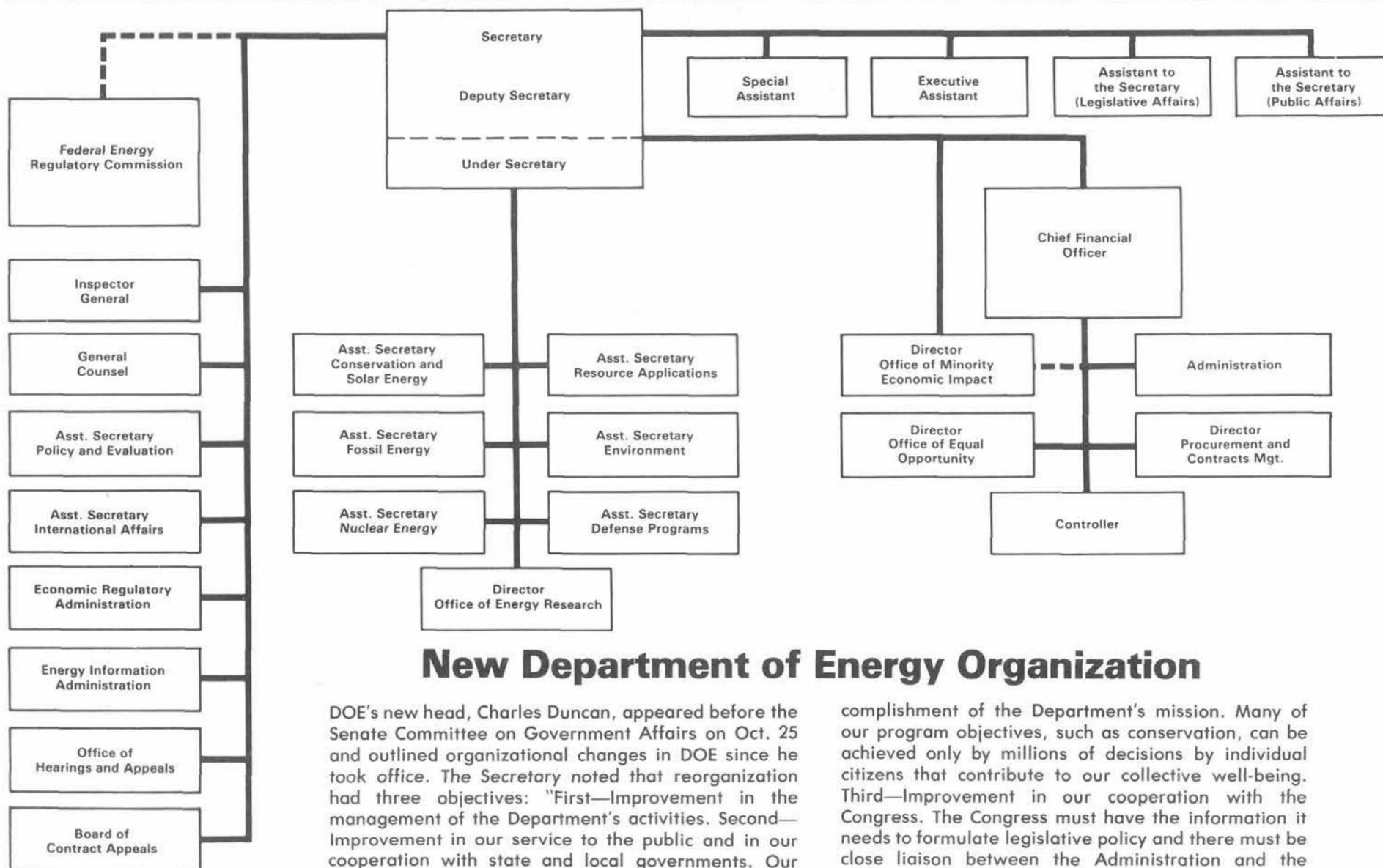
Clark (DOE/SAO) on 881-3625 for more information.

Sandia Golf Assn.—The final SGA activity for this year ended Nov. 15, with a 2-Man Best Ball Tournament at the Tijeras Arroyo course. It was followed by a presentation awards banquet at the C-Club. These officers were elected for the 1980 season: President, Paul House (3155); VP, Paul Robertson (1758); Sec./Treas., Dave Kendall (1426); League Dir., Marty Gonzales (5811); Tourn. Dir., Don Markwell (1426), and Handicap Dir., Bob Langoria (1426).

Special awards for the '79 season went to Dennis Chavez (3723), the President's Cup (low net); Leon Chapman (4416), SGA Champion (low gross); Tom Cordova (3441), Most Improved Golfer; Larry Dyer (1524), special award for SGA service; and Charlie Adams (5524), golfing achievement.



DOE's Charles Duncan, recent successor to James Schlesinger, visited Sandia last week and toured the Midtemperature Solar Facility. He's shown at right, with Herm Roser, head of DOE/ALO, in center, and Jim Scott (4700). Mr. Duncan came to DOE from DoD and previously had been head of the Coca Cola Co.



New Department of Energy Organization

DOE's new head, Charles Duncan, appeared before the Senate Committee on Government Affairs on Oct. 25 and outlined organizational changes in DOE since he took office. The Secretary noted that reorganization had three objectives: "First—Improvement in the management of the Department's activities. Second—Improvement in our service to the public and in our cooperation with state and local governments. Our public information systems are critical to the ac-

complishment of the Department's mission. Many of our program objectives, such as conservation, can be achieved only by millions of decisions by individual citizens that contribute to our collective well-being. Third—Improvement in our cooperation with the Congress. The Congress must have the information it needs to formulate legislative policy and there must be close liaison between the Administration and the Congress in dealing with energy matters."

Q. I just returned from a noon walk during which I stopped at the library to check the latest publications. I looked at three different periodicals, all of which were damaged. Two of these had one missing page each. Each page occurred in an article I was attempting to read. The third was a total disaster, with four pages and ten pages removed. This one may have more damage but I gave up and left. I really wanted to read those ten pages.

This damage has deprived me, as well as others, of information which is impractical for me to duplicate, as these are foreign publications. I believe the library is the property of everyone and this kind of premeditated damage is a serious matter, being both illegal and immoral. Perhaps better security is in order, with stiff, publicized penalties for those doing the damage [week off, no pay?].

A. You've provided a very clear description of the impact of misuse of Sandia property. Although the library has already taken several steps (Weekly Bulletin article, 24-hour availability of copy machines, signs), we must agree that we obviously have not solved the problem.

Library supervision is currently working with the Library Advisory Committee and the security organization and is looking at its own routines in order to determine what new control procedures will be applied. It looks as if we'll take a series of actions until the problem is resolved; you'll see publicity on each new procedure.

K. A. Smith — 3100

Q. Having been at work for the entire month of September, I have observed that it is somewhat difficult to get any work done due to the absence of most of my colleagues. Most of them have waited to the very last minute to use up their vacation time and are now "burning" it, i.e., just taking the time off to avoid losing it. A number of years ago we had the privilege of cashing in unused vacation time instead of actually taking the time off. I would like to suggest that we return to that old policy.

A. Sandia's intent in discontinuing the "sell-back" policy in 1973 was to bring the vacation plan back to its intended purpose; i.e., to permit an employee to spend time with his family in travel and recreation and to rekindle the "spark" for the tasks ahead.

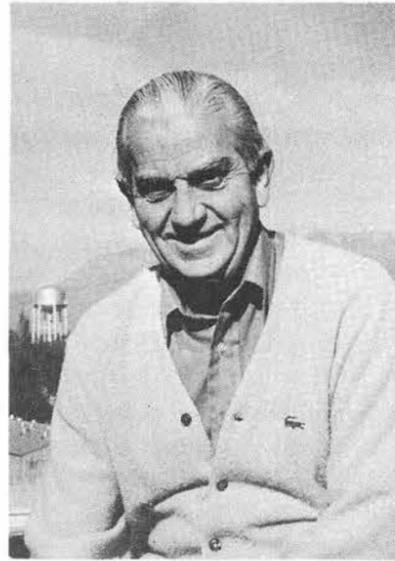
Another reason for the change in policy is that sale of vacation days is costly, since Sandia must accrue the cost of vacation when the liability for the vacation is recognized. Vacation days not taken during the fiscal year in which they are earned have the effect of a double cost in that fiscal year.

Your concern is indeed valid, but it appears the most reasonable solution is that work planning and vacation scheduling be done on a more orderly basis.

C. R. Barncord — 3200



D. D. Hesselbarth (3212)



Harold Schulte (2457)



Charles Appel (4400)



Buford Eagan (2532)



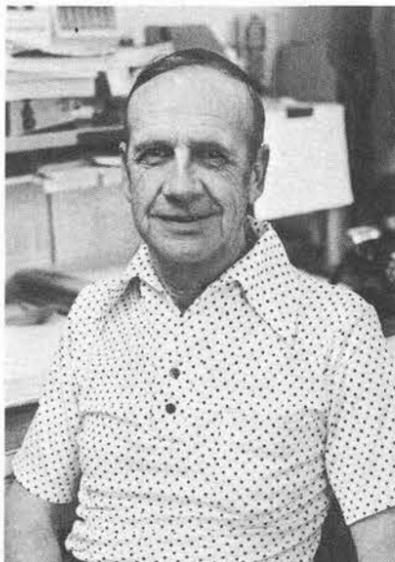
Earl Johnson (3651)



Genese Shieler (1543)



Bruce Barth (1727)



Walter Adams (4719)



Antonio Pino (1485)



Gene Newlin (6011)



Carroll Lowe (3642)



Cliff Olson (1584)

MILEPOSTS
LAB NEWS
DECEMBER 1979



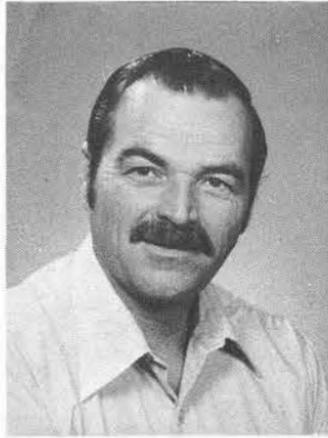
Gil Esquibel - 8463 20



Wanda Cupp - 3332 20



Jim Robinson - 3612 30



John Stomp - 4713 20



Silviano Candelaria - 2553 15



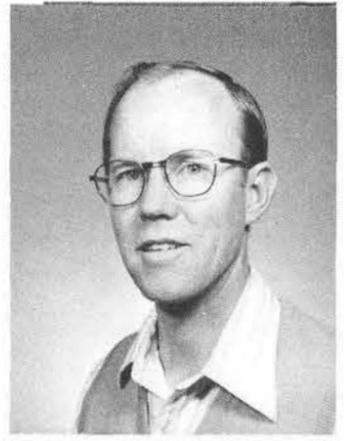
Charles Allen - 1213 25



George Buddrius - 1415 25



George Hiatt - 4251 15



A. V. Farnsworth - 4247 10



Victor Schaeffer - 1481 25



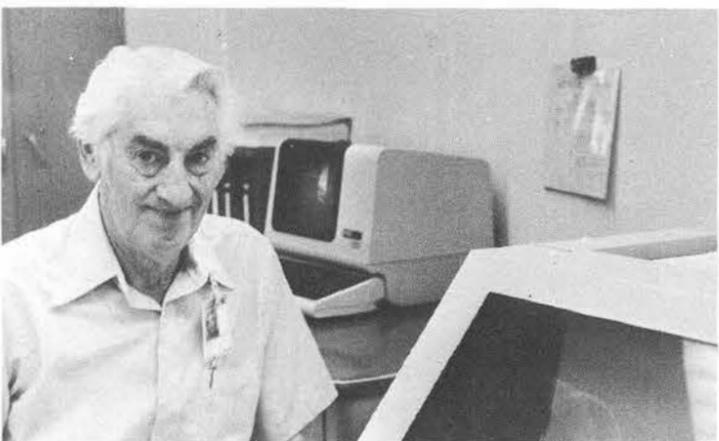
Charles Griffin - 2510 25



Henry Togami - 2533 25



Jim Lyons - 1471 15



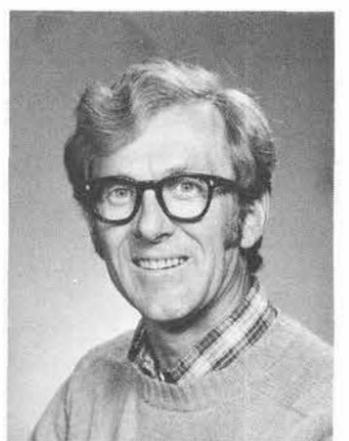
Roy Dell - 2457 25



James Pacini - 1241 20



John Maurin - 2141 10



Donald Hoke - 4738 20



Jean Kamp - 8161 20



Ralph McRae - 2457 25



Robert Newman - 1585 25



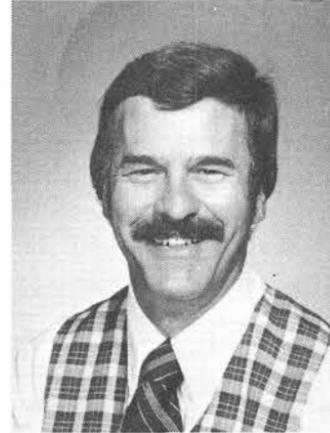
Curt Bates - 1247 25



Dick Vivian - 1211 25



George Peterson - 1247 25



John Boyes - 3723 30



Helen Bond - 8412 20



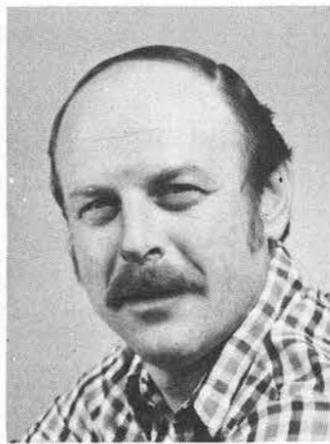
Richard Rogers - 3243 15



Barcus Keller - 3611 30



Sandra Anderson - 2551 10



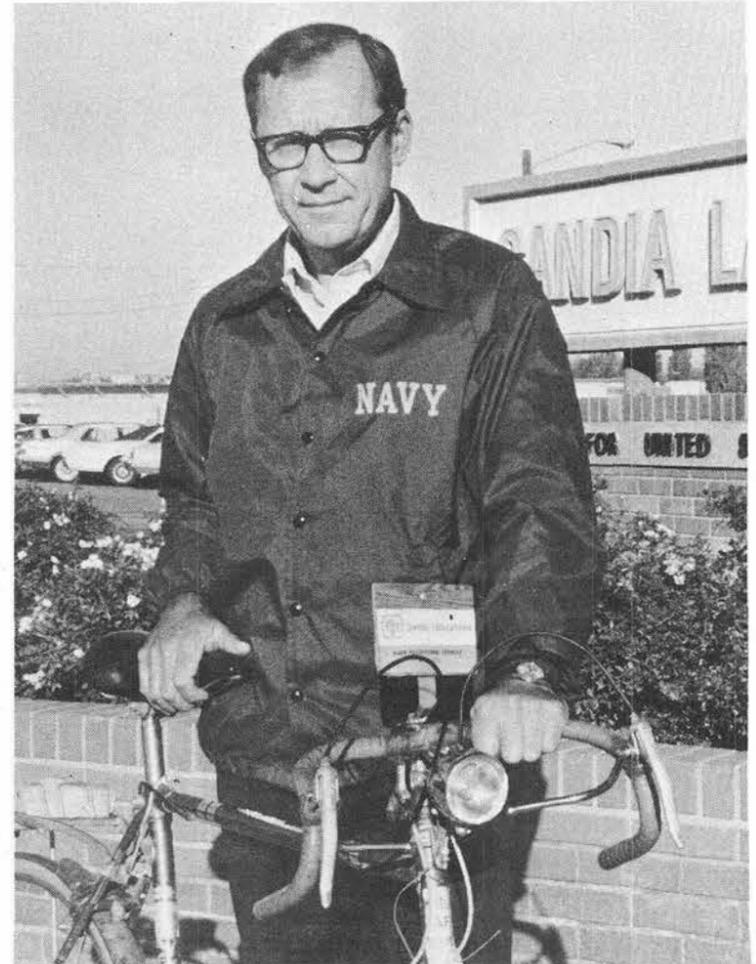
Dwayne Mohrman - 8111 20



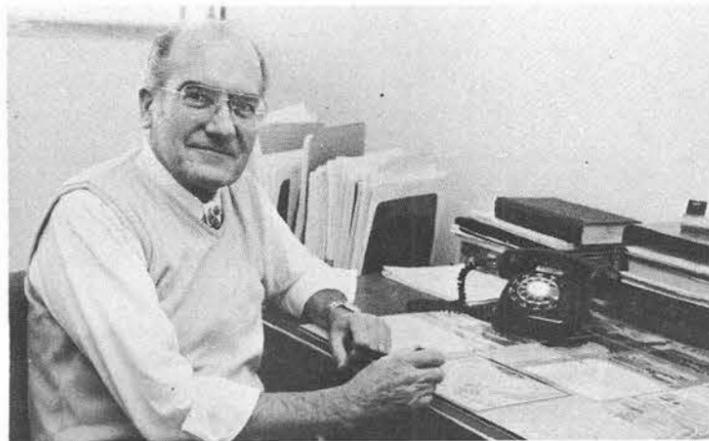
Cecil Fitzgerald - 3425 15



Donn Stewart - 1471 15



Emery Postenrieder - 3532 20



Phil Nicovich - 2458 30



Fred Perez - 8257 10

Sympathy

To Forest Baker (1473) on the death of his mother in Kansas City, Nov. 25.
 To Pedro Ortiz (3618) on the death of his father-in-law in Santa Fe, Nov. 19.
 To Joe Valdez, Jr. (1471) on the death of his father in Denver, Nov. 26.

Congratulations

Kathy Porter (4741) and Harvey Copass, married in Pueblo, Colo., Nov. 17.
 Mr. and Mrs. Robert Padilla (3618), a son, Nov. 20.

Speakers

W. H. Trump (3521), "Sandia/CEC/T-VI Drafting Program," Cooperative Education Class, Southern Illinois University at Carbondale, KAFB Branch, Nov. 17, KAFB.
 J. M. Heuter, (3521), "Creativity in Engineering," UNM Freshman Engineering Assembly, Sept. 14; "Creativity—Choice or Chance?" keynote workshop, National Secretaries Assoc., Oct. 17, Albuquerque.

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

CLASSIFIED ADVERTISING

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

RULES

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

MISCELLANEOUS

SANDIA LABS caps, \$4.25. LAB NEWS office, Bldg. 814, S. Hwy. 14 Village Project.
 CAR BIKE CARRIER, \$5; dbl. bed-headboard, footboard, mattress, box springs, \$60; VW wheel, \$3. Simons, 821-9343.
 LA-Z-BOY dbl. recliner, gray/beige/rust plaid, \$350. Pike, 292-5080.
 RADIAL SNOW TIRES, 2 175 SR 14 Fulda, made in Germany, \$20 ea. Kraynik, 294-1043.
 MEMBERSHIP in Tom Young's Racketball Club & Health Spa for half-price. Altwies, 292-3884 after 5.
 MATCHING sofa & chair, beige w/black & Brown lines, \$60; foldable bumper pool table w/top, \$40; sofa & chair, herculon, brown plaid, \$60. Johnston, 881-1280.
 DINETTE SET: table, 36x60 including leaf & 4 chairs, green & white, \$60. Kolesar, 293-8367 after 5.
 FIVE TIRES, G78-14, on 5-hole Ford rims, 2 at \$30 ea.; other \$15 ea., all for \$90. Cilke, 296-3665.
 MG MITTEN for an MGB. Smith, 242-9576.
 POOL TABLE, 8' Fredrick-Willys, \$400; 2 16.5x12 mud-snow tires w/8-lug wheels, \$50 ea.; World Books, '68 edition, w/all year books, \$175. Curry, 298-9105 after 5.
 HEAVY 4x4 V-mesh wire fencing, new, 58"x100+', \$90. Garrison, 281-1539 after 5:30.
 9'x12' GOLD plush carpet, used 3 mos., paid \$90, make offer. Rodacy, 293-2668.
 600x16 4-ply TIRE mounted on Plymouth wheel, used 800 miles, \$12. Stuart, 299-9190.
 IRRIGATION PUMP, electric, 1 1/2", 3/4 HP. Leyba, 1-864-4037.
 CONN electronic organ, 2 full keyboards, 25 pedals w/separate Leslie speaker, \$800; newspaper log roller, \$8. Bircher, 268-0726.
 LABRADOR Retriever pups, black, AKC reg., whelped 10/30, available before Christmas, price varies. Hueter, 242-1620.
 FIVE long dresses, 1 short dress, worn only once, sizes 10 & 12. Chavez, 256-1087.
 CORNING cook top, built-in unit, new. Marker, 298-3985.
 BEDROOM SET: dresser, chest, 2 night stands, mirror, dbl. Hdboard & frame, \$300. Gasser, 255-6244.
 OLD lavender lead glass bottle, about 4" tall, \$15; old railroad spikes, 50 cents ea. Summers, 881-7765.
 TWO mounted mud/snow tires for Datsun truck, 5:50-14 6-ply rating, wsw, 6-hole rims, \$10 ea. Ottinger, 242-7935.
 BALDWIN Orgasonic, walnut wood, dbl. keyboard, \$450; Head skis, poles, boots; 10-spd. bike. Jennings, 299-3082.
 SANDSTONE SLABS, various sizes for walkway, 16 ea. from 1 1/4" to 2" thick, sell lot for \$20. Henry, 266-6467.
 TOOL BOX, 4-tray cantilever, \$10; Owell tach meter & timing lite, \$10; croquet 6-ball set, \$6. Shepherd, 299-9066.
 SKI BOOTS, Orange Hanson's, used

4 times, size 10-11, best offer over \$90. Grimes, 299-2548 or 294-3083.
 ACOUSTIC 150, 200 watt amplifier, solid state, six 10" speakers, \$435. Traeger, 298-0728.
 AKC white std. poodle puppy, champion sired. Baca, 294-5249.
 REFRIGERATOR & freezer combination, Frigidaire. Ulibarri, 864-7234.
 FOUR EA. used L78-15 Norseman mud/snow tires, mounted on wide Cepek black rims, Ford hole pattern for Bronco, F100, F150, \$75. Trentham, 255-7145.
 SOFA BED, Simmons, queen-size, green plaid, \$50. Ellis, 821-7993.
 CROWN stereo power amplifier, D-150A, \$275. Clement, 299-1501.
 MUSIC BITTERER 15 1/4 German Viola w/case. Gregory, 268-2022.
 TIRES: 8.75x16.5, 3 10-ply, 1 8-ply; car ramps; 4 mag wheels, 5.5x13, Datsun bolt pattern. Butler, 293-7699.
 BRASS crystal chandelier w/5 candle type lights, \$29. Kellogg, 299-3737.
 GIRL'S 20" Stingray style bike, \$35; two 1200x16.5 6-ply traction tread tires & white spokes, \$160/pr. Brown, 296-9009.
 COMPUTER, Motorola D2, Mother board, 8K Ram, Hex keyboard; San Marco ski boots, sz. 10; 4 new shocks, Jeep; AM radio, Jeep. Gingley, 884-4980.
 ENCYCLOPEDIA Britannica, 1960 edition w/annuals to 1970, \$125. Kohut, 884-4338.
 CHESS COMPUTER, Chafitz MK-1, for beginner to intermediate player, \$50. McConnell, 255-2488.
 HO model engines, in orig. boxes; children's books/clothes; baby items. Mayer, 294-3368.
 CHILD's roll top desk w/chair, \$15 or best offer. Maloney, 821-6661 after 5:30.
 TRIPLE DRESSER, dark walnut, contemporary style w/mirror & night stand, \$100. Schubeck, 294-5666.
 STEREO CABINET, Barzilay, 59" component section w/separate speaker enclosures, solid wood front. Denney, 268-0004.
 THE GREAT BOOKS in 54 volumes plus 10 program books, \$400 or best reasonable offer. McMaster, 884-8055.
 FLYING CLUB membership, Cherokee 180D, \$750; IFR instrumented, \$30/mo. dues, \$7/hr. dry rate. Oliver, 299-5512; Wilson, 268-3633.
 REFRIGERATOR, \$55; dishwasher, \$25; dinette table & 4 chairs, \$25; Krone, 292-3155.
 BARRECRAFTERS ski rack, fits cars w/raingutters, \$25; San Marco Men's ski boots, size 10, \$40. Fraser, 898-9479.
 GIRL'S 16" Schwinn, \$15; hand dolly, \$10; bean bag chair, \$8; ship models in box, 1/2 price. Watterburg, 294-6759.
 AMERICAN AIRLINES discount coupon, \$30. Scott, 293-2536.
 UNITED AIRLINES discount coupon, \$30. Cassell, 881-8695 after 5.
 BEER MEISTER, single pump, \$600. Martinez, 831-0876.
 MATTRESS & box springs, full size, w/bed frame; pin ball machine, large, \$25. Romero, 299-5189.
 GLASS DOOR for fireplace, deluxe black, Sears, w/screen, will fit opening 32"-40" wide x 28"-32" high. Gabriel, 298-3353.
 DOG HOUSE, medium size, \$15. Sullivan, 299-6545.
 LADIES' golf clubs, Spaulding matched set, 2 woods, 4 irons, putter, bag, \$40. Allen, 296-6453.
 TWO G78-15 steel studded snow tires mounted on rims, \$75 pr. Hartwigsen, 865-7836.
 AKC female poodle puppy, 10 wks. old, has had shots, \$140. Reeder, 298-0816.
 HAMMOND L-100 organ w/rhythm section & lg. library of sheet music, \$1200. Prevender, 299-5253.
 36" WOOD FRAME, full screen door w/hardware; 15" Chevy truck wheels. Edenburn, 869-2911.
 POLAROID Minutemaker, \$7. Claassen, 255-4347.
 FRIGIDAIRE refig, 2-dr., upper freezer unit, coppertone, 6 yrs. old; Norge

HD gas dryer, 5 yrs. old; Whirlpool washer, LKA-5600 WO, 10 yrs. old. Poole, 299-2642 after 3.
 ROLL-A-BED, twin size, springs, mattress, \$50. Stephens, 265-4341.
 19' TRAVELEZE camp trailer w/torsion bar hitch, LP gas refig. & stove, 12 VDC ext./int. lights, \$750. Hartenberger, 255-5052.
 LIONEL 027 engine, freight cars, switches, log dumper, track, crosses, trestle, transformer, HD transformer, sell all \$200 or piece out for good offer. Barnaby, 265-4353.
 BIANCHI holster, left handed, fits 4" or 6" Magnum, \$12; nude air brush painting, \$20. Malin, 268-5925.
 SWAP OR SELL large Servel propane refrigerator, needs paint & door seals; want FM receiver. Foster, 281-3975.
 CHANDELIER, 5-light, \$50; two 5-bulb amber pillow glass ceiling lights, \$25; beige custom patio drapery, lined, \$25. Prew, 296-3815.
 MAN'S 1/5 carat diamond ring, gold setting, size 9, \$400; GE food processor, new, in box, \$25. Golden, 265-2178.
 RESERVATIONS at the Circus-Circus Hotel (for 4), Las Vegas, Nev., for New Year's weekend, first day paid, price \$35. Kish, 298-7090.
 HUMMEL plates & bells. Fitzgerald, 265-3055.
 TWO-WHEEL TRAILER, \$95; irrigation siphon tubes, alum 6"x3", \$9 ea. Skender, 898-5647.
 COMPACT vacuum cleaner w/attach., \$75. Gray, 299-7035.
 CANARIES: Rollers, Red Factors, Borders, misc. singers, \$30-\$40; hens, \$15-\$25; young, tame, cocktiels, \$50; cages \$5-\$20. Riggan, 268-1961.
 SIX FOOT artificial Scotch pine Christmas tree w/stand, \$7.50. Vogel, 256-0975.
 KENMORE sewing machine w/cams; Kirby vacuum cleaner w/attachments; gas dryer; mag wheels for Datsun 240/260/280Z. Mercer, 821-6449.
 TV, Heathkit 19", no cabinet, color sync needs work, will donate to whoever can use it. Edwards, 299-5578.
 CUSTOM camper shell for Jeep truck; H78-15 tires & 6-hole rims; Sears 10" radial arm saw. Witkowski, 897-1257.
 GARRARD changer, \$50; Lafayette AM/FM tuner, \$20; Fisher X100 amplifier, \$25; STC speakers, \$20; girl's 7 1/2 ice skates, \$10; boy's 7 1/2 ice skates, \$10. Taylor, 869-2934.
 U.S. STAMPS for collectors: plate blocks & strips from 1898 to 1969, pieces individually priced, most well below catalog. Rohwein, 298-8391.
 AQUARIUMS: 28- & 15-gal., stand, pump, 2 lights, 2 filters, 2 heaters, lg. & small fish, food, gravel, plants, \$120. Berman, 296-5640.
 TIRES: 4 ea., 9.50x16.5 mud & snow, \$100. Harlan, 299-5337.
 DESK, 5-dwr., veneer top w/brown metal body, chrome legs, includes chair, \$50. Nogales, 247-1178.
 SINGER, Touch & Sew model 756, dial control, stretch & decorative stitch, \$150. Wrobel, 255-3062.

TRANSPORTATION

'76 CHEV. 3/4-ton pickup, new battery & tires, AT, AC, PS, PB, radio, reg. gas, \$3500. Cordova, 345-0619.
 '76 CHEVROLET Malibu Classic 350 V8, AC, radio, new tie rods & shocks, \$2000. Worledge, 294-7891.
 '70 HONDA Trail 90, 7200 miles, \$225 or best offer. Curtis, 881-2440.
 VW CAMPER pop top, sleeps 4 adults, SBR tires, just tuned up, \$2500 or best offer. Scott, 293-2536.
 '79 TOYOTA Corolla liftback, 5-spd., AC, radio, 5200 miles, \$5000. Smith, 294-7398 after 5.
 '79 GMC 1/2-ton 4x4, 350V8, AT, PS, PB, Positraction, cruise control, skid plates, tow plates, hooks, 6500 miles. \$6800 or take older truck in trade. Rechner, 881-3990.
 '77 LTD Landau, 8600 miles, fully equipped, \$4975 or best reasonable

offer. McMaster, 884-8055.
 '76 1/2-ton Chevy pickup, 6-cyl., 4-spd. Padilla, 831-3500 after 7.
 '67 VOLKSWAGEN squareback; '66 Datsun rear bumper. Singleton, 299-1613.
 BICYCLE, man's 10-spd., Penney's 26" wheels, recently overhauled, racing handlebars & seat, \$45. Hughes, 299-6674.
 '79 FORD Fairmont, \$3900, 4-dr., 6000 miles, 21 mpg city. Woodworth, 294-4477.
 '74 OLDS Custom Cruiser stn. wgn., loaded, \$1500; snow tires, H78-15, \$50 for pair. Strassel, 298-3816.
 '69 BUICK Skylark, AT, PS, floor shift console, snow tires. Adams, 256-7265.
 '78 CHEV. pickup C10, PB, PS, AT, cruise control, shell, AM-FM stereo w/cassette player, 13,500 miles, \$4695. Railsbach, 821-4188.
 '77 BUICK Estate wagon, 17,500 miles, PS, PB, AC, AM-FM stereo, Cruise Master, 9-passenger, \$4500. Hartman, 293-2862.
 '78 HONDA HAWK II motorcycle, 400cc, Hondamatic, elec. start, mag wheels, 1700 miles, \$1200. Ellis, 821-7993.
 '58 BUICK Special 4-dr. sedan, V8, re-built AT, orig. interior, bronze body, white top, \$2500 or best offer. Corradini, 292-2688.
 '73 FORD F-100 pickup, LWB, camper shell, AT, AC, PS, PB. Hermes-meyer, 268-1135.
 '70 BRONCO, 4-wd, AC, lifetime battery, \$2650. Witten, 299-5491.
 '71 FORD LTD 4-dr., AC, AT, PS, PB, AM-FM radio, \$700. Self, 296-4137.
 '75 BUICK Skylark, 2-dr., AT, AC, PS, \$1900 or best offer. Clement, 299-1501 after 5.
 SCHWINN 21" Varsity bicycle. Siemers, 296-0651.
 MOTO GUZZI Le Mans 1000cc, extras, \$3300, will trade for car, cycle or metal lathe. Watterberg, 294-6759.
 '70 OLDS 98 4-dr. sedan, AT, PS, PB, AC, one owner. Randall, 821-0388.
 '60 DODGE Dart Pioneer, V8, PS, new AT & differential, new battery, needs shocks, one owner. Philgreen, 256-1956.
 '70 VOLKSWAGEN squareback, recent clutch & brakes, new fuel system. Hartwigsen, 865-7836.
 '69 VOLKSWAGEN stn. wgn., new paint, recent rebuilt engine, AT, \$600 or best offer. Chavez, 831-9591.
 '73 PLYMOUTH, AT, AC, PS, PB, 4-dr., \$950. Schalleat, 298-8942.
 '79 CYCLONE-13 sailboat, sails, trailer, \$1395. Stephens, 265-5341.
 '72 CADILLAC Seville sedan, fully equipped, 46,000 miles, \$1500 firm. Ellis, 898-9636.
 '63 CADILLAC, new battery, \$250. Skender, 898-5647.
 14 FT. BOAT, alum. Lone Star, 6-hp Evinrude motor, Dilly tilt-trailer w/new tires, \$750. Meidal, 255-6690.
 BICYCLE, girl's 20", Wards Hi-Rise, \$20. Rohwein, 298-8391.
 '76 SUBARU stn. wgn., AT, 36,000 miles, new tires, bent fender, \$300 below book. Cover, 881-3860.
 '68 FORD Ranchero, loaded, recent paint, mag wheels, radials, stereo, more, \$2200 or best offer. Sheldahl, 299-4077.

REAL ESTATE

3-BDR. HOUSE, NE, 1 1/2 bath, less than 2 yrs. old, \$15,000 down for 9.5% loan; or \$46,000. Sutherland, 266-4069.
 2300 SQ. FT., 4-bdr., Paradise Hills, 1 1/2 bath, new carpet, 2-car garage, storage bldg., corner lot, pitched roof, fenced, \$61,500. Skender, 898-5647.
 EDGEWOOD, 6 miles north of Moriarty, 5 level acres, \$7500, utilities in or close. Phillips, 881-2450.
 LOT, Angel Fire Resort, views, ski & country club privileges, & more. Van Theemsche, 299-9697.

FOR RENT

MAUI condominium, 1 bdr., reserva-

tions now for summer or fall, \$190/wk. Parker, 821-5999, Abq, or Schmedding, 602-299-0215, Tucson.
 STUDIO condominium near Winrock, indoor/outdoor pools, clubhouse, sauna, security, patio, covered parking, utilities pd., \$225/mo. Orlando, 262-2151 or 822-0225 after 5.
 2-BDR. unfurnished apt., dishwasher, laundry facilities, storage room, fenced yard, north of Lomas on Chelwood & Sandia bus route. Wiczer, 296-4496.
 FURNISHED 2-bdr. house, fenced front & rear yard, water paid, 205 Gen. Patch NE. Aragon, 294-4275.
 1-BDR. APT. in Belen, single person or couple. Ulibarri, 864-7234.
 NEW Candlelight 3-bdr., 2 bath home in NW, near Coors & Freeway, gas heat, dishwasher, disposal, carpeted, no pets. Adams, 256-7265.
 2-BDR. APT., near Base, drapes, carpeting, dishwasher, refig., stove, \$190/mo., \$100 DD, 400 Pennsylvania SE. Schalleat, 298-8942.
 FOR LEASE: 3-bdr., 1 1/2 bath, LR, fp, refig.-freezer, avail. Jan. 1, \$375/mo., \$200 DD. Luna, 298-3571.
 4-BDR., 1 1/2 bath, Westgate Heights, avail. Jan. 1, 6 mos. lease, 1st, last, & D.D., \$325/mo. Tafoya, 881-9564.
 6 MOS. OLD, 3-bdr., 2 bath, FR w/fp, sprinklers, avail. Jan 1; 1st, last, & DD, \$395. Preas, 292-2156.

WANTED

MICROSCOPE, good quality for a student. Bennett, 293-1217.
 RCBS reloading equip. in very good condition; .45 cal. auto. pistol brass. Montana, 898-9127 after 7.
 TO RENT garage space for car storage in NE Heights. Bisbee, 293-0356.
 300 SAVAGE reloading dies. Stuart, 299-9190.
 SNOWMOBILE to rent on 3 occasions this winter for race course preparation by NM Ski Touring Club. Kohler, 821-1802.
 GOOD quality audio power amplifier, stereo 35-100 watts/ch or mono 60+ watts; prefer tube type. Van-DenAvyle, 898-6474.
 SAILBOAT, 14' or 12'. Hueter, 242-1620.
 LIVE-IN WOMAN for my elderly but active mother. Swain, 265-0098.
 BICYCLE, 10-spd., light or med. weight in good condition. Adams, 256-7265.
 RIDE or car pool from far north Wyoming to Area I. Marrs, 822-0367.
 CAST IRON POT for outdoor cooking, buy or borrow for scout outing Dec. 8-9. Worrell, 299-0381.
 FRAME for twin bed, in good condition. Kellogg, 299-3737.
 ORGAN teacher for in-home instruction for adult student, located near Sandia. Prevender, 299-5253.
 KEYBOARD player for established musical group; play rock, Latin & western music. Chavez, 831-9591.
 O-GAUGE model train tracks, switches, accessories, etc. Krone, 292-3155.
 OLD TYPE Christmas tree light bulbs for series string; one goes out—the string goes out. Benedick, 268-8460.
 ANY TAYLOR RANCH residents interested in car pooling. Smith, 898-7787.
 KILN in good condition, prefer medium or large. Rodriguez, 883-8424.
 AMPLIFIER, modest, with or w/o tuner for use w/speakers and record player. Shunny, 265-1620.

LOST AND FOUND

LOST—Craftsman knife, book: "Towards the New Psychology of Women," man's silver link bracelet, man's rust-colored down jacket, black wallet, man's rust/tan shoulder parka, Datsun car key.
 FOUND—Small brass key, ladies' LH brown glove, lt. brown spectacles' case. LOST AND FOUND, Bldg. 832, 264-1657.

Recreation Equipment Rental Shop

If you want a 5-man tent, sleeping bags and a pile of other camping gear for a weekend or a week in the mountains, then don't buy—rent the stuff from KAFB's Equipment Rental Shop. Under the new policy announced by the Base Commander (LAB NEWS, Oct. 19), Sandjians and DOEans may now use most military recreational facilities on Base, and this facility is one of them.

The Rental Shop is located in Bldg. 20414. 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 this facility. It's open Mondays and Fridays from 7:15 a.m. to 4 p.m., and on Tuesdays, Wednesdays and Thursdays from 10 a.m. to 4 p.m. Phone number is 4-4990.

The table below lists equipment available and the rental charge for up to 14 days. The day of issue is the first day of charge; if the material is returned before 1 p.m. on the day of return, there is no charge for that day.



BENEFITS' Jim Beasley ran amuck in the Base Recreation Equipment Rental Shop and wanted one of each. Even so, he still has a long way to go. Virgil Thompson, who helps run the Shop, explains the rental setup. Shop is one of a number of military recreational facilities now open to Sandjians.

RENTAL EQUIPMENT & FEES

Select equipment by letter; find fee per number of days in matrix below.

	A		B		C		D							
	Axe, Hand Canteen & Belt Life Jacket, Small		Lantern Water Jug Ice Chest, Small Camp Stove		Cot, Folding Ice Chest, Large Back Pack, Large Heater		Fishing Rod & Reel Golf Clubs Tent, 2-man Ski Poles							
	E		Back Pack, Small Sports Balls Horse Shoe Set Badminton Set Volleyball Set		Tennis Racket Snow Shoes		H							
	Sleeping Bags		Life Jacket, Large		G		Ski Boots I							
	F				Tent, 5-man		Skis							
	Sleeping Bag, Arctic													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	.25	.40	.55	.70	.85	1.00	1.15	1.30	1.45	1.60	1.75	1.90	2.05	2.20
B	.50	.85	1.20	1.55	1.90	2.25	2.60	2.85	3.10	3.35	3.60	3.85	4.10	4.35
C	.75	1.25	1.75	2.25	2.75	3.25	3.75	4.15	4.55	4.95	5.35	5.75	6.15	6.55
D	1.00	1.65	2.30	2.95	3.60	4.25	4.90	5.40	5.90	6.40	6.90	7.40	7.90	8.40
E	1.25	2.10	2.95	3.80	4.65	5.50	6.35	7.00	7.65	8.30	8.95	9.60	10.25	10.90
F	1.50	2.50	3.50	4.50	5.50	6.50	7.50	8.25	9.00	9.75	10.50	11.25	12.00	12.75
G	1.75	2.95	4.15	5.35	6.55	7.75	8.95	9.85	10.75	11.65	12.55	13.45	14.35	15.25
H	2.00	3.35	4.70	6.05	7.40	8.75	10.10	11.10	12.10	13.10	14.10	15.10	16.10	17.10
I	2.25	3.75	5.25	6.75	8.25	9.75	11.25	12.40	13.55	14.70	15.85	17.00	18.15	19.30

Authors

L. H. Goldstein (2113), "Controllability/Observability Analysis of Digital Circuits," Vol. CAS-26, No. 9, IEEE Transactions on Circuits and Systems.

R. L. Iman (1223) and W. J. Conover (Texas Tech), "The Use of the Rank Transform in Regression," Vol. 21, November 1979, TECHNOMETRICS.

B. J. Roscoe (4443), "Integration Gain Associated With the Detection of A Moving Target At A Fixed Range," March 1980 issue, IEEE Transactions on Instrumentation and Measurement.

Coronado Club Activities

Kids' Christmas Party Tomorrow

HAPPY HOURS—During December, with all its organizational Christmas parties, Happy Hours will be in the main lounge only. No buffets will be served. Lots of munchables in the bar, however, and entertaining by guitarist/singer Gary Waters. Something special on the 21st—posole and green chile stew.

SANTA CLAUS and other nice people will be at the Club tomorrow morning for the Club's annual children's party. The Enchanters, vocal group, will present a special program of Christmas carols. Ron and Mary Kay Day, puppeteers, have a new show for this performance and, of course, Santa Claus will pass out goodies and talk to the little ones. The party starts at 10:30 a.m., and it's free to children of members. No guests, please.

TRAVEL DIRECTOR Frank Biggs is working on a new trip to Mexico—the resort city of Cancun—for early spring. Frank is also open for suggestions. Tell him your travel wishes tonight in the lobby between 6 and 7 p.m. In the meantime, he can fix you up with trips to Europe, Hawaii

or a Caribbean cruise next month.

NEW YEAR'S EVE PARTY—There'll be partying upstairs and downstairs for this gala event plus hats, noisemakers, champagne and breakfast. The Top Hats play upstairs, the Bob Banks Trio downstairs. Tickets cost \$15 for member couples, \$20 for guests, and must be picked up by Monday, Dec. 17.

SINGLES MINGLE starting at 4:30, Friday, Dec. 14, in the Eldorado Room. Yolanda and the Trio play for dancing. There'll be lots of goodies and good fellowship. It's the start of the holiday season.

THE C-CLUB is now handling arrangements for Disneyland discounts. Called the Magic Kingdom Club, memberships may be purchased at the Club office. With a membership, you save money at Disneyland in California and DisneyWorld in Florida on tickets, motel rates and various nearby recreational facilities. Call the Club office, 265-6791, for more details.

