

ECP AGENCY FAIRS held Monday, Wednesday, and Friday this week featured Agency presentations and demonstrations, music, entertainment, and celebrities. Here, President George Dacey talks with Larry Ahrens, KOB-AM,

and Mayor Harry Kinney—all this to call attention to the ECP drive starting Monday. *PM Magazine*, KOB-TV, Channel 4, will run clips of the Agency Fairs on Wednesday, Oct. 13, at 9:30 p.m. See story on Page Four.

DOE Chooses Radwaste Location After Sandia Study

The permanent disposal of commercial spent fuel and high-level nuclear waste is one of the most pressing questions to be answered if nuclear power is to continue to be used for the generation of electrical power. DOE is aggressively pursuing this problem. A new method to identify favorable potential locations at the Nevada Test Site for a waste repository was developed by Joe Fernandez of NNWSI (Nevada Nuclear Waste Storage Investigations) Engineering Projects Division 9761 and Scott Sinnock of NNWSI Technical Overview Division 9764.

"We're part of a larger DOE Nevada effort to determine the feasibility of disposing of commercial high-level nuclear waste at NTS," says project leader Scott. Administered by the Las Vegas DOE office, the Nevada project is only one part of a larger national effort for siting repositories. "For the Nevada project, we assimilate information from a variety of labs and agencies such as Los Alamos, Lawrence Livermore, and the U.S. Geologic Survey, as well as from divisions within Department 9760, which is headed by Dick Lynch. There are many players,

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each having a share of the program.

"DOE has the mission of finding the best spot on or adjacent to NTS for a waste repository that will be safe for thousands of years. The Sandia team assisted the DOE by modifying a fairly standard concept for organizing objectives *vis-a-vis* data. It's called 'Multiple Attribute Decision-Making Theory.' This was the first time the method has been systematically applied to nuclear waste repository siting."

Scott explains that this methodology employs a step-by-step screening approach for locating a site. The team starts with a large area and successively focuses on smaller sections, eventually selecting repository sites. The step that Scott's group provided was formally defined by DOE as screening from "area" to "location." An "area" is about 1000 square miles, a "location" about 10 square miles.

"The area we evaluated is on and adjacent to the southwest portion of NTS," says Scott. "We were restricted in our repository search to an R&D area, generally the area where the old nuclear

rocket research took place. For security and operational reasons, we would not consider placing a repository in areas that would intermingle with the weapons testing activities.

"Using the system approach, we established objectives and goals, organized the available data for the area, and established criteria to tie the data to the objectives. The whole system was then digitized, and weights were assigned to the objectives. All this information was processed on the APPLICON Graphics System by Division 9761 to produce digital maps that show the most and least favorable locations for construction and long-term safety. We worked out an elaborate cross-referencing system to pinpoint the most desirable locations with respect to each or all of the many objectives."

In addition to long-term safety, repository sites would have to allow for efficient construction and operation of facilities as well as satisfy environmental

[Continued on Page Six]

Antojitos

Untapped Energy Source--The Ironman is a triathlon held in Hawaii that demands a 2.4-mile swim in the ocean, a 112-mile bike race, and a full 26.2-mile marathon, back-to-back. It may be the most grueling of the species, but it's far from the only one; counting the contests that include such Tinman events as cross-country skiing or canoeing, more than 200 triathlons were held in the U.S. this summer, according to the *Wall Street Journal*. And they're popular--an Alabama triathlon had to turn away 400 entrants. Over 800 people competed in each of five West Coast races, the U.S. Triathlon Series, this summer.

Triathlons, in other words, account for an impressive amount of energy expended--for absolutely selfish reasons. Technology--high and low--to the rescue! Continue triathlons, sure, but run on treadmills and bike on exercycles, and hitch both to, say, water pumps that raise water several hundred feet, then let it fall on turbines and generate some usable electrical power. (Swimming is more difficult to harness--maybe do it tethered in locks or irrigation ditches and compete to see who can move the most water to a place where it's needed.)

High technology comes in when we link the treadmills and exercycles to computers, videogames, and motion picture photography and thus allow a runner or biker to go up and down hills and avoid chuckholes (and spectators), all the while enjoying wide-screen images of spectacular scenery passing at a rate corresponding to the contestant's cardiovascular conditioning. (Swimmers don't see scenery anyway, but we could heighten the realism by tossing in a few jellyfish.)

It's either this or pay Social Security to the fitness freaks for forty years after they retire. ●BH

Donde hay gana hay maña. (Where there's a will, there's a way.)



DICK SCHWOEBEL

New Director Named for 1800 Organization

Dick Schwoebel has been named director of Materials and Process Sciences 1800, effective today.

Dick came to Sandia in 1962 and performed research on single crystal growth processes. The result was a theory of atomic step motion on single crystal surfaces and a prediction of step ordering. The theory was later confirmed for the first time by low energy electron diffraction studies.

He was promoted to supervisor of the Surface Physics Research division in 1965, then to manager of the Ceramics and Surface Sciences department in 1969. Since 1978, he has been manager of the Radiation and Surface Physics Research department.

Dick earned a PhD in physics from Cornell in 1962. He is a fellow of the American Physical Society, a senior member of the American Vacuum Society, a fellow of the American Institute of Chemists, and a councillor of the Materials Research Society.

Off the job, Dick sings in the Albuquerque Opera Theatre, chairs his church council, and enjoys swimming and tennis. He was also technical director for the first trans-Atlantic and first transcontinental balloon flights.

Dick and his wife Jenny have four sons. The Schwoebels live in northeast Albuquerque.

Sympathy

To John Woodworth (1821) on the death of his mother in Gallup, Sept. 19.

To Charlie Allen (3435) on the death of his father in Oklahoma City, Aug. 3.

New Board Member Named



Named to Sandia's Board of Directors is Frank Heffron, executive vice-president of Bell Labs. He replaces Harold Collier, recently retired, in both Bell Labs and Sandia Board positions. Heffron has been with the Bell System since 1953, most recently as vice-president of manufacturing, cable and wire products, at Western Electric in Morristown, N.J.

Events Calendar

- Oct. 2-3--25th Annual NM Gun Collectors Assn. Gun Show, 8 a.m.-6 p.m., NM Fairgrounds Exhibit Hall, 898-2983.
- Oct. 2-10--11th Annual Albuquerque International Balloon Fiesta, Cutter launch site, south of El Pueblo Rd. NW.
- Oct. 3--NM Jazz Workshop, James Newton Trio, 8 p.m., KiMo.
- Oct. 3-Jan. 16--West/Southwest Art Exhibit, 20 artists, all but one currently living in NM, Albuquerque Museum.
- Oct. 7--"The Country Wife," John Houseman's Acting Company, 8:15 p.m., Popejoy.
- Oct. 8-10--NM Wildlife Federation Art Show, painting and sculpture representing North American wildlife, Winrock Center.
- Oct. 11--"Pilobolus," dance group, 8:15 p.m., Popejoy.
- Oct. 14--Ballet Folklorico of Mexico, 8:15 p.m., Popejoy.
- Oct. 15-16--Albuquerque Opera Theater, "Tosca," 8:15 p.m., KiMo.



NOW FOR A GOLDEN OLDIE...FROM 323 B.C. Sounds that are many thousands of years old, perhaps even human voices, may be recorded in the grooves of ancient pottery and glass artifacts, a Toronto pediatrician and amateur archaeologist believes. Peter Lewin, recognized for his work on ancient mummies, is trying to replay the chance sounds he thinks may have been captured on pots, vases, and plates from former civilizations . . . At first Lewis attempted to "play" the pottery on a record turntable, using a diamond stylus. "That was too noisy," Lewis says. "So now we're using a laser similar to those on video-disc machines . . . We've run three or four items through so far, without any success. Our next step is to try to prove a point. We're going to engrave a copper plate and see, experimentally, whether sounds can be captured in this way.

—Allan Maurer in *Omni*

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feed **back**

Q. The new VISA card system will force all traveling employees to use their family checking accounts for Sandia travel and business expenses. I believe the central billing system should process VISA-charged expenses.

A. A provision for requesting direct payment by Sandia to VISA of vouchered expenses is being incorporated into the credit card system. At the time you complete a voucher, you will be able to choose either direct payment to VISA or personal reimbursement for the vouchered credit card charges.

P. M. Stanford—0100

Q. I sometimes walk to work along the sidewalks on either side of Gibson Blvd. outside the west gate. I and others find that walking along Gibson is really an obstacle course, and I would like to know who is responsible for the paving of these sidewalks. I am specifically interested in the military housing area in the vicinity of Truman, Maxwell, Carlisle, etc.

A. A call to the KAFB Engineers office determined that the authority for sidewalk paving in that area rests with the City of Albuquerque. A good starting point would be the Municipal Development Department. Good luck.

D. S. Tarbox—3400

Q. What can be done to reduce waiting time at the intersection of F Street and 5th Street? For vehicles traveling south on 5th Street, the light at F Street remains green only long enough to permit three cars [at the most] to turn east onto F Street. [An automobile traveling north on 5th Street next to the KIVA cafeteria is out of luck.] That light definitely needs adjusting.

A. Fifth Street along the west side of the Parade Ground has traffic lanes to indicate one lane north, one lane south for a right turn (toward Wyoming) and one lane south for a left turn east on F Street.

The traffic light is controlled by a detection wire buried in the pavement in the right turn lane only. This means that the traffic light fails to detect a line of left-turning traffic. Therefore, left-turning traffic gets a short green signal.

The Air Force traffic engineer prefers that south bound traffic turning east on F Street use Wyoming rather than 5th Street and has no plans to install a detector wire in the left-turn lane. However, the controller has been adjusted to give a slightly longer green signal to 5th Street each time the light changes. But you may want to try using Wyoming to see if it reduces your overall travel time.

R. W. Hunnicutt—3600



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LEAP committee members visited Valley Community Health Center where Larry Thorne (8315, left) talks with center assistant director Joyce Berger as Fred Johnson (8414) and Don Nissen (8312) look on.

LEAP Higher This Year

The Livermore Employees Assistance Plan (LEAP) Committee has set an ambitious \$85,000 goal in its annual fund-raising campaign. The goal is approximately 10 percent higher than last year's \$77,000. But, according to chairman Mike Gusinow (8512), "It's certainly within reach, and increased funding is especially important in the present climate of governmental cutbacks at the state and local levels."

The LEAP committee has been meeting since last spring to interview agencies requesting help from the funds raised through LEAP. Being aided for the first time this year are two local groups: Hope Hospice and Horizons Youth and Family Services. The Valley Chapter of Hope Hospice serves people who are terminally ill. Counselors provide home care, emotional support, help with effective pain management, counseling for the family after a member's death, and training of family members in nursing techniques.

The second new group to be aided by LEAP funds is Horizons Youth and Family Services (a civilian adjunct of the Livermore Police Department). This agency provides professional help to children who have been in trouble with the law and to the families of those children. Services also include shelter for runaways and truants to decrease their chances of winding up in juvenile court. This organization has suffered funding cuts because of a dwindling city budget in recent years.

Other agencies selected for continuing financial support include Buenas Vidas Youth Ranch, The Center (formerly

Hotline), Good Samaritan Home, Hope Education Center, Livermore-Amador Valley Emergency Fund Center, New Directions, Nursery School Scholarship Fund, Twin Valley Learning Center, Valley Community Health Center, and Valley Connection.

Again this year, employees will have the option of specifically designating either a portion or all of their pledges to any human service agency in California. The designated funds will be handled through SNLL and the United Way Donor Option Plan. Approximately 63 percent of the undesignated funds from LEAP will be turned over the United Way of the Bay Area in support of their agencies. Also, Sandia will be giving a corporate gift of \$12,400 to United Way of the Bay Area.

Serving on the LEAP committee this year in addition to Mike are Mo Jones (8168), Peg BonDurant (8212), Joan Bersie (8300), Dave Timmer (8412), Fred Johnson (8414), Bob Perry (8513), and deputy chairman Don Nissen (8313).

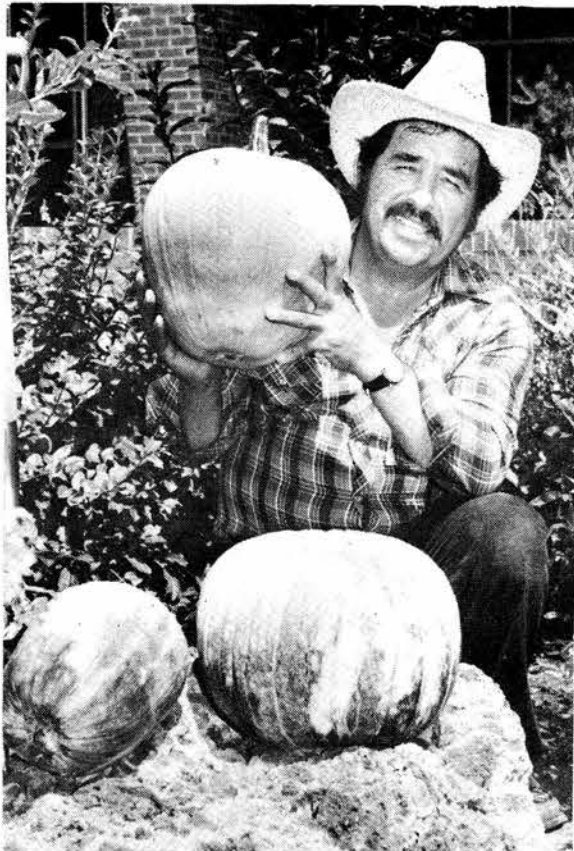
Death

Yvonne Kludt, 32, of the Engineering Procedures & Design Definition Division 8272, died Sept. 20.

She had worked at Sandia Livermore since June 1980.

Survivors include her husband and two small sons.





GARDENER Willie Lucero of Division 3613's Support Services group grew these pumpkins near the Bldg. 800 entrance. The vines make excellent ground cover. In years past, huge pumpkins have been grown there but miraculously disappeared before LAB NEWS got around to taking a photo. Made it, this time.



ESCHEW OBFUSCATION!

Perhaps it is time to distinguish between jargon and that essential of all disciplined thought, technical language. Technical language is a more precise and condensed form of thought and communication than colloquial language. It is designed to fix definite meanings in which each word has ideally only one denotation and is deliberately deprived of connotations. Jargon, in contrast, is a muddled and wordy imitation of technical language. The mere unfamiliarity or unesthetic quality of language is no criterion. Jargon and technical language sound alike to someone untrained in the discipline where the language is employed.

—Robert K. Merton in *New York Times*



GLEN KEPLER (1810) ECP committee chairman, second from left, discusses ECP campaign plans with union representatives **Mary Rodriguez** (3418), OPEIU, left; **Gene Romero** (3430), IGUA; and **Patricia Appel** (7473), Metal Trades Council.

Goal Is \$915,000

ECP Drive Set. Oct. 4-8

Annual Employees Contribution Plan campaign starts Monday, Oct. 4. ECP funds support the 38 agencies of the Albuquerque United Way and nine national health organizations.

Goal of this year's drive is \$915,000.

Glen Kepler (1810), ECP committee chairman, told LAB NEWS this week that the record of Sandia employees supporting United Way is the pride of the community.

"Last year, Sandians contributed 23 percent of the funds raised by the Albuquerque United Way—and Sandia is recognized for this tremendous achievement," Glen says. "Our total was \$897,000

—an average gift of \$152 by those who contributed. With this kind of support—86 percent of our people contribute—this year's goal is realistic."

Glen also commented on the enthusiasm and energy of the ECP committee members, union representatives, directorate coordinators, and other workers conducting the current campaign. The Agency Fairs held this week at Sandia are an outgrowth of worker enthusiasm, he said.

"We felt that agencies have an important story to tell about their work and the people they help in our community," Glen continues. "Most of the Agency people are volunteers working with professional staff. They stretch the dollars available to meet human needs. I'm sold on the United Way—we take care of the people in our community, and the United Way is the way we do it."

Glen thinks the new Donor Option Plan makes the United Way even better—more flexible, and more responsive.

"The Donor Option Plan makes available the payroll deduction method of giving to more agencies," he says. "Donors may designate a minimum of \$25 to any non-profit, human service organization in New Mexico and have the contribution deducted from their paycheck. This makes it possible for those with special feelings for the work of a particular agency to support that work in a painless way. Money never seen is never missed. The United Way will handle the distribution of the funds, even to non-United Way agencies.

"I anticipate that most Sandians will continue to support the ECP agencies and designate others for additional support."

Details of the Donor Option Plan will be discussed in employee meetings scheduled next week. The campaign will be conducted within directorates by coordinators working with the ECP committee. All employees should be contacted next week; the results of the drive will be reported by the end of the month.

Favorite Old Photo

[Do you have a favorite old photo? Bring it to MO125.]

LITTLE RASCAL LOOK-ALIKES—Herbert and Jack Gray just finished helping their father paint—without his knowledge! Tonimarie Stronach (3152) and her family were delighted to find this picture among other family photographs. They couldn't determine when the photo was taken but it was some time ago—the two were Tonimarie's great-uncles. Wasn't it fortunate that someone decided to record the event before leading the two off to the woodshed?





NO EXIT for cars maybe, but this elm found one—right up through the top of the signpost near Medical.

Singers Sought

The Albuquerque Civic Chorus is seeking new members. The group rehearses Tuesdays at 7:30 p.m. at St. John's Episcopal Church, Fourth and Central. First concert of the upcoming season is scheduled in December. For more information, call Paul Brannan (9251), 4-8895.

How many ways can you serve cucumbers?

The Wise Gardener Calls Tell-A-Tip

Last spring when you decided to convert part of the backyard into a vegetable garden, it seemed like a great idea. You followed all the suggestions about watering, feeding, weeding, and cultivating. You enjoyed the early crops—green onions, radishes, lettuce. And the addition of fresh peas and green beans to a few of your meals was nice—they were tasty.

But now, panic time! The kitchen is beginning to look like a produce market—counters and tables are covered with ripe (and sometimes overripe) tomatoes. "Why," you ask your mate, "did you buy so many tomato plants?" The answer—"I didn't think all of them would live"—is the same one you get when you ask about the cucumbers. "Will somebody please explain what to do with 183 cucumbers?" And, they keep coming, and coming, and coming. You've lugged grocery bags to work, the neighbors don't want any more, and, frankly, you're getting a little tired of searching for recipes—poached cucumbers, Yuk!

And the backyard? Well, it *is* nearing the end of the growing season, and gardens tend to look a little shabby at this time with the exception of those bright green, yellow

and orange squash and pumpkins. Back to the third degree, "Why?" "But I didn't plant any squash this year—those are freebies from last year." And you wonder why someone doesn't develop a pumpkin seed that produces only one pumpkin. "Well, really, what are two people supposed to do with 18 pumpkins?"

* * *

If you are faced with any of these problems, don't despair. The Bernalillo County Extension Service has the answer. Just call their Tell-A-Tip service. An education program of the NMSU Cooperative Extension Service, Tell-A-Tip home and garden messages have been prepared by extension agents and specialists to help you.

The tapes, with a maximum three-minute message, are updated every six months. Subjects include: Food Preservation: canning, pickles, jams and jellies, freezing, drying, and substitutions and adjustments; Vegetable Gardening; House and Yard Plants; Pest Control; Controlling Problem Animals; Soils and Field Crops; Livestock & Range Management; Pets; Poultry; Careers in Agriculture and Home

Economics; and a group of miscellaneous subjects. (No, there's no tape on how to force your neighbors to crave zucchini.)

The LAB NEWS office (MO-125) has a supply of brochures listing the tape numbers and titles. Stop by and pick up one, find the number of the message you're interested in, and dial 242-9623.

This winter, while you're enjoying the food you've preserved from your garden, you'll probably begin to study the 1983 seed catalogs.

"Let's try some egg plant. What about cabbage? We don't really need that much lawn. How much space do strawberries need? Let's see—okra, chard, artichokes. I know, we've got to have some watermelons . . ."



NOW HERE'S A REAL KNEE-SLAPPER . . .
A new theory of the creation of humor, the theory of tragicomic reconciliation . . . holds that the humoristic product is the result of a creative transformation which consists initially in implicitly or explicitly opposing the tragic and comic poles of a given phenomenon, then subsequently in reconciling these two poles in a humoristic synthesis which triggers laughter. In most cases, the tragicomic reconciliation is concretized in the punchline.

—Waleed A. Salameh, psychotherapist at Patton State Hospital, California.



Sandia Laboratories Policy Statement

Once again I wish to reaffirm both my personal and Sandia National Laboratories' commitment to the principles of Equal Opportunity and Affirmative Action. In Fiscal Year 1983 we will continue our policy of conducting all activities including recruiting, employment, compensation, benefits and services, advancement, promotion, transfer and termination without regard to race, color, religion, national origin or sex, and in accordance with the laws and regulations concerning age, physical or mental handicap and disabled or Vietnam Era veterans. Not only will we comply with the letter of the laws and regulations of federal and state governments but we will practice the true spirit of equal opportunity as a matter of Laboratories' policy.

The program of affirmative action to which we have pledged our efforts has had gratifying results. These efforts have advanced the cause of equal opportunity both within the Laboratories and throughout the communities with which we interact. Internally, our progress is reflected not merely in the numbers of minorities and women on roll, but in their greater representation in supervision and in the professional, technician and craft classifications. Externally, our efforts are focused on support of, and interaction with, community organizations, educational institutions, and minority-owned businesses.

I ask all employees to create a work environment that is free from discrimination and is supportive of women, minority, and handicapped employees and in which the full potential of all employees can be realized. Supervisors are expected to be familiar with the Affirmative Action Program, to discuss its contents with their employees and to take an active and positive role in fulfilling our equal opportunity commitment. The ultimate objective toward which we continue to strive is optimum use of our human resources.

J. R. Garcia, Director of Personnel, and staff will continue to monitor all equal opportunity activities and report to me on the effectiveness of our Affirmative Action Program, including recommendations for necessary action to ensure attainment of our objectives.

J. R. Garcia



Fun & Games

Triathlon—It's time now to get serious about shaping up that body for the 6th Annual Coronado Club-sponsored Triathlon of Albuquerque, the Jay Benson Memorial. It's set for Nov. 7 at 8 a.m. just west of the Olympic pool here on KAFB-East. All you have to do is run five miles, bike 10 miles, and swim a quarter-mile faster than anyone else in your category to win the laurels. Last year's participants will receive this year's entry forms in the mail by Oct. 4. Others can get the forms from the Club (4-8486) or at either Gardenswartz Sportz location.

Softball—The American Sandwich Shop team emerged champs of the Sandia Softball League for the second year in a row when they took the recent league championship tournament by defeating Toma 21-18. Before the 20-game season started, they also took the pre-season opening tournament, and finished league play with 18 wins, two losses. The Los Borrachos team also finished with an 18-2 record but went down in the tournament.

Twenty-one teams and some 300 players compete in the Sandia league.

Members of the championship team are Coach Floyd Salas (2334), Fred Yost (1835), Al Lappin (9737), Ken Varga (1822), Jim Salas (2514), Bill Hammetter (1846), Tom Spindle (1472), Ken Ronquillo (1632), John Stalanis (2458), Dave Renniger (2454), Dennis Gutierrez (1535), Ron Von Theemsche (2455), Robert Martinez (1811), Karlan Boultinghouse (9716), Ernie Montoya (7471), and Ernie's son, Greg Montoya.

Bowling—Keglers, it seems, avoid kegs, at least until after a requisite number of lines. If that esoteric comment intrigues you, check out the Sandia Bowling Association as it starts another year and its annual membership drive. SBA sponsors fun-type tournaments, and it awards prizes to bowlers-of-the-month for high scorers in any Albuquerque league. Membership, at \$2 per person, is open to all Sandia and DOE employees or retirees and their immediate family members.

Tennis—The KAFB Open Tennis Tournament is set for Oct. 9-11 from 8 to 8 at the west courts. It's a single elimination event with youth singles, women's singles, and men's singles competing. Get more info from Steve Schmidt on 4-9975. \$5 per player.

Shooting—Load your blunderbuses and head for the city's newest facility, Shooting Range State Park, on Oct. 5 at 10 a.m. Facilities include rifle, pistol, and muzzle-loading ranges; target and field archery ranges; trap ranges; and skeet ranges. Normal schedules (through the end of the year) are from 10 to 5 Wednesdays through Sundays, but not all ranges are open every day. The Park, funded by the State, operated by the City, is located west of the volcanoes on the West Mesa. Dave Bennett



STUDYING a digital map of NTS for potential waste repository sites are (from left) Scott Sinnock (9764), Claudia Johnson (2457), and Mike Sharp (9761). Scott coordinates the effort to identify the most effective sites at NTS for the permanent disposal of nuclear waste.

Continued from Page One

Radwaste Sites Studied

concerns and the regulations of a number of government agencies, including DOE, NRC, and EPA. This was no easy task.

"USGS provided us with geologic and hydrologic data, while Los Alamos was responsible for analyzing the chemistry of the site's rocks and water," explains Scott. "The site decisions are DOE's—therefore we didn't recommend any particular sites. We just organized the diverse technical information to help DOE make the choices."

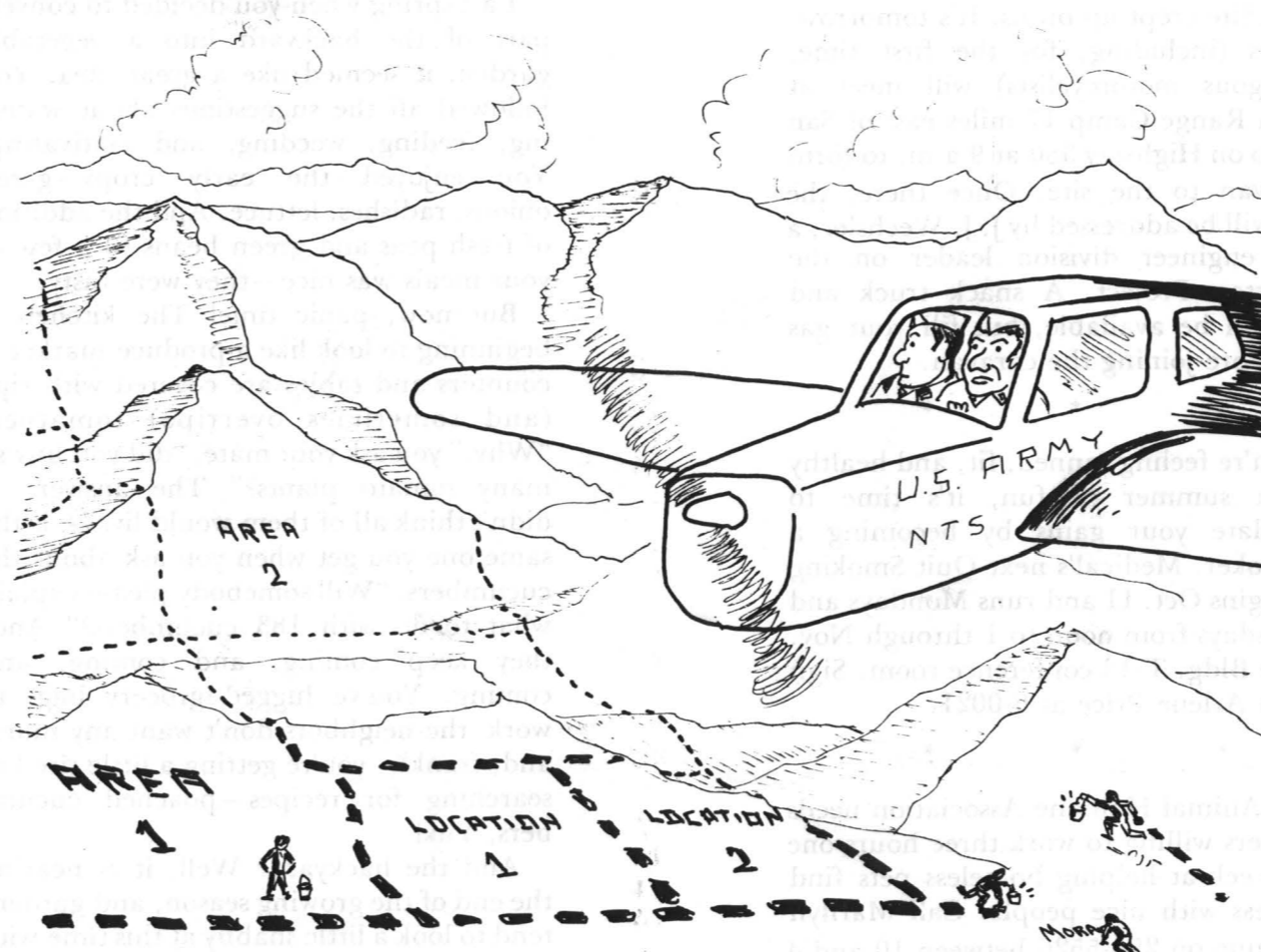
"We anticipate that mining of an exploratory shaft will begin sometime in 1983 at a site within the location we identified and DOE selected. It will be about eight to 10 feet in diameter with a hoist to provide access to underground horizons. Plans are to excavate out from the base of the shaft and to drill horizontal core holes to characterize the horizon of interest. The eventual repository, if constructed, will be much like a conventional

(9415) chaired the technical advisory committee that planned the park. Call 766-7856 for fees, schedules, and precise location.

Guitar—An eight-week beginning guitar course starts Oct. 14. Taught by Jack Douthett of Jack Douthett Music Shop, the class will learn blues, country, and bluegrass. It's from 7-8:30 at the Coronado Club, it cost \$30 (rentals \$20), and it's open to Sandia and DOE employees, their spouses and dependents. More info from Recreation Manager Tom Lenz at 4-8486.

mine. Division 7417 provides an overview of NNWSI work to make sure all participants have adhered to quality assurance requirements, since the eventual repository will be licensed."

Leo Scully's Division 9761 is responsible for the conceptual design studies of the repository. Joe Tillerson's Division 9763 provides basic data, thermal and mechanical properties of rocks, and modeling of rock response to heat from nuclear waste. Division 7417, headed by Frank Muller, performs the QA overview, Lyn Tyler's group in 9762 is responsible for performance assessment, and, finally, all the programming for the systems analysis was done by Mike Sharp (9761).



Gosh, those Sandia guys are sure thorough, aren't they, cap'n?

Prototype Developed

Water Jet Drill Turns Corners

A drilling system that can drill horizontally from a vertical shaft would be a handy tool to drain methane from gassy coal before mining and to link vertical wells in underground coal gasification operations. A prototype of such a drill has been developed by a team in In Situ Technologies Division 9747 led by Dave Shirey.

"Conventional drilling equipment can turn a few degrees every hundred feet or so," says Dave, "so it takes a long borehole to reach the horizontal plane. But we can turn a 90-degree corner in less than three feet."

Key to the sharp cornering is a non-rotating, rectangular drill string and head case; only a water jet nozzle assembly at the tip of the drill head rotates. In use, the system is lowered into a conventionally drilled 16-inch diameter borehole in which a six-by-six-foot maneuvering space has been cut with standard water jet equipment. A string of 3 by 5 by 17-inch rectangular hollow steel boxes, hinged to each other on the top side so that the string can bend in only one direction, is lowered into the maneuvering space. At the leading end of the string of steel boxes is the water jet drilling head that does the horizontal cutting.

The head, developed by the University of Missouri-Rolla, sprays about 25 gallons of 10,000 psi water against a coal face each minute as it is rotated by an electric motor. The high pressure jets break up the coal, which washes into a sump at the bottom of the vertical shaft below the horizontal cut.

The remainder of the system is a sump pump fixed underneath a rotation and advance (R&A) assembly. Both are lowered to the bottom of the cased hole on a pair of rigid pipes that serves as



DOWN AND OUT is how this new drill operates in order to drill a horizontal shaft from the bottom of vertical drillhole. Project leader Dave Shirey (9747) checks the cornering mechanism as the drill starts into a test block of simulated coal.

suspension components and as water supply and return lines for the sump pump.

A "shoe" suspended vertically at the end of the R&A is hydraulically driven into a horizontal position, forming a 90-degree cam in the maneuvering space. When the flexible drill string and head are lowered down the casing, the "shoe" directs them to a horizontal position.

The drill string and head are advanced or retracted by a hydraulically powered drive gear at the toe of the "shoe." The gear's teeth fit into slots in the string, driving it forward or backward in the horizontal hole.

The drill string employs a Sandia-developed electronic guidance system that uses a triaxial magnetometer and accelerometers to locate the string in the seam. Drill string location data are recorded and displayed in real time on a minicomputer.

A hydraulic pitch controller located at the surface can be used to adjust the drill head should it begin to rise as drilling progresses. A tension cable that stiffens the end of the string also helps to keep the head on course.

Multiple holes can be drilled from the same maneuvering area by removing the drill string, rotating the R&A, and reinserting the string in the hole.

The first test using the system's drilling and cornering components in combination was recently completed southeast of Tech Area I. Two holes were drilled through a block of simulated coal (a hardened slurry of crushed coal, fly ash, and concrete) at rates exceeding three feet a minute, the design goal.

Later this year, tests will be conducted in a coal seam with an exposed face and

undisturbed overburden. Horizontal holes longer than 100 feet will be drilled; downslope drilling, upslope flushing of coal particles, and sump pump operation also will be evaluated. Tests in buried coal seams will ultimately be used to verify long-term reliability of the string and head instrumentation. Drilling speeds of two to three feet per minute are predicted.

Researchers believe the new drilling system may also have applications in solution mining and direct coal mining.

Marv Timmerman (9331) did the original design of the cornering mechanism and drill string back in 1978-80. The project leader before Dave was Stan Love (now 7423). Dan Cooper (2336) and Stew Kohler (2334) contributed significantly to the instrumentation design. Along with Dave, the current test team is Bruce Engler and Bob Glass (both 9747). Development of the system is funded by DOE's Office of Oil and Gas Technology.

Take Note

Volunteers to help with this year's multicultural Very Special Arts Festival at Longfellow Community School on Oct. 18-23 are needed. The event, sponsored by the city's Parks and Recreation Dept. and the Albuquerque United Artists, benefits the handicapped. More info from Vincent Amendolagire at 242-0410.

A public reception for three of the artists whose work is included in "Native American Sampler: A Patchwork of Contemporary Art" at the Wheelwright Museum in Santa Fe will be held Oct. 3 at 3. The 10-artist show runs through Nov. 4 (Sundays 1-5; Monday-Saturday 10-5).

Take Note

Lightning struck the traffic light at Fifth and F Streets back in August and left it just blinking, but Sandians have solved a somewhat hazardous 4:30-going-home traffic rush by alternating right-of-way. In the meantime, KAFB traffic engineers are bugging the factory for replacement parts to fix the light. They told Plant Engineering's Wayne Burton (3631) last week that the light should be operating again by the end of October.

* * *

Wayne Goodman (1114) is the 1983 winner of the American Chemistry Society's Ipatieff Prize. The award is given every three years to a scientist under 40 who has conducted outstanding experimental research in the field of catalysis or high pressure chemistry. Wayne is being honored for his work on catalytic surfaces and his contributions to metal catalysis. He joined Sandia in 1980.

* * *

Computers were larger. Computing capabilities were smaller. To reminisce beyond those obvious truisms, join the Mountain Region Conference of the Association for Computing Machinery as it celebrates its 25th anniversary with a panel



PEARL HARBOR Naval Shipyard Detachment A211, an Albuquerque Naval Reserve unit, held a unique two-day training session last month. Bob Baker (9331), at center, and Dick Shepardson (3245), right, discuss training plans with Capt. Thomas A. Marnane, commander of the Pearl Harbor Naval Shipyard. "In case of war," says Bob, "our job would be to help keep the Navy afloat and in service by supervising repairs and overhauls of the ships and their equipment." Bob holds the rank of Naval Reserve Captain, and Dick is a Commander.

discussion of the good old days. The conference, sponsored by the ACM Mountain Region and the Rio Grande chapter of same, runs Oct. 8-9 at the Hilton. The panel discussion is on Friday evening, technical presentations are on Saturday, and a banquet ends the conference that evening. For details and reservations, contact Chris Morgan (2614), Hank Lawson (1533), Patricia Allen (3416), or Lee Walton (2646).

* * *

A course, Basic Vacuum Technology, will be offered by the American Vacuum Society, New Mexico chapter, at the Marriott on Oct. 18-21. The course, designed for experienced technologists as well as novices, will cover pumps, measurements, materials, construction/assembly, operation, testing, and applications. Course fee is \$250. The class is limited to 50 on a first pay/first accepted basis. Contact Ray Berg (2564) for detailed information.

* * *

An applied mechanics colloquium on "High Subsonic Flowfield Measurement and Turbulent Flow Analysis around a Turret Protuberance" will be presented by Prof. David Chow of UNM's Dept. of Mechanical Engineering on Oct. 5 at 12:30 in Room ME214 of the ME Bldg. at UNM. The public is invited.

* * *

The date for the annual tour of the Trinity Site crept up on us. It's tomorrow. Vehicles (including, for the first time, geophagous motorcyclists) will meet at Stallion Range Camp 17 miles east of San Antonio on Highway 380 at 9 a.m. to form a caravan to the site. Once there, the group will be addressed by J. J. Wechsler, a design engineer division leader on the Manhattan Project. A snack truck and water will be available, but fill your gas tank before joining the caravan.

* * *

If you're feeling tanned, fit, and healthy from a summer of fun, it's time to consolidate your gains by becoming a non-smoker. Medical's next Quit Smoking class begins Oct. 11 and runs Mondays and Wednesdays from noon to 1 through Nov. 3 in the Bldg. T-13 conference room. Sign up with Arlene Price at 6-0021.

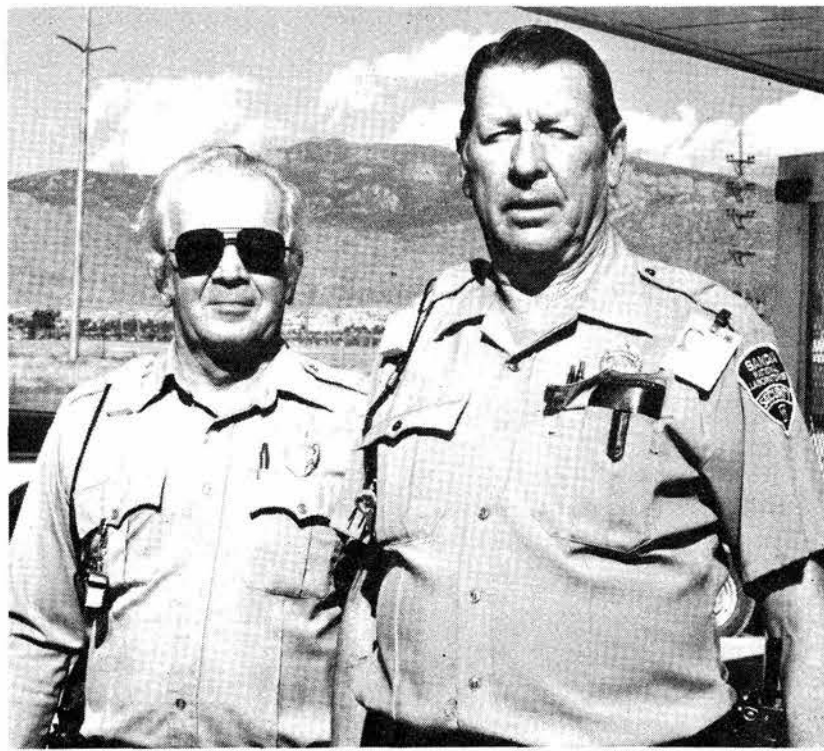
* * *

The Animal Humane Association needs volunteers willing to work three hours one day a week at helping homeless pets find happiness with nice people. Call Marilyn or Melanie on 255-5526 between 10 and 4 weekdays for information and inspiration.

Retiring



John Cowie (7556)



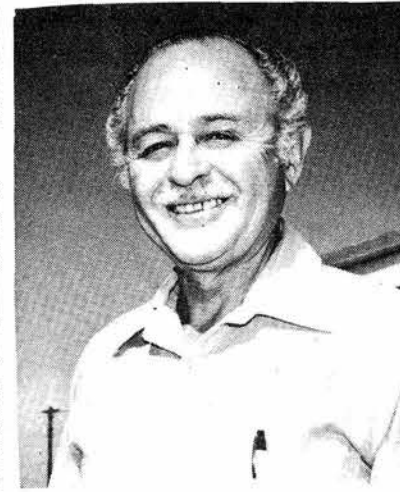
Ray Humes (3435) and Gene Romero (3435)



Pat Maurer (3744)



Bob Gall (3161)



R. J. Hart (9757)



THIS is the Fourth of July? It sure is, we are assured by Paul (9725) and Carlota Klimas (9727), if you're at Portage Glacier near Anchorage, Alaska.



OLD Russian chapel being restored at Kenai.

Unusual Vacation

Unusual Honeymoon, For All In Tents, and Porpoises

While talking with Paul (9725) and Carlota Klimas (UNM contractor, 9727) about their recent vacation/honeymoon to Alaska, the LAB NEWS realized it has been somewhat remiss in previous vacation stories. The great majority have been related to us by the husbands who usually have assured us that "Oh, Martha had a great time harpooning hippopotamuses in Upper Volta."

But this time we're fortunate to have the trip described to us by both participants, and here in Paul's and Carlota's own words, is the unadulterated story of their Alaskan odyssey.

PAUL: We flew to Anchorage in July, arriving at 8:30 in the evening. It was still pretty bright. The temperature was in the 60s and 70s during the day—at night it dropped down to the 40s. It was also quite humid.

CARLOTA: Humid? It rained all the time. It was incredible.

P: We used the *Milepost*, a tourist book that logs every mile of major road in Alaska. It tells you everything that's there mile by mile—hotels, campgrounds, stores. The bus line we were to take to Kenai was out of business so we decided to hitchhike. This worked out very well, so we continued to hitchhike for the rest of the trip. Alaskans are very open and friendly—not a single tourist picked us up, only natives.

C: Hitchhiking is not what I care to do. I'm not a hitchhiker. I never was a hitchhiker.

P: Getting rides was a great way of learning about the local color and history. For instance, one young couple who picked us up were on their way to the University of Alaska in Fairbanks. They were originally from Seattle, but they'd worked in an Eskimo community called Bethel for two years. Often people would go out of their way to take us where we were going—like the three teenagers in an RV who took us to Kenai but insisted on first showing us Portage Glacier near Anchorage.

C: There were lots of nice people but occasionally we met up with some loons. I also kept busy holding up signs—SKGWY, KNAI, KCHKN, things like that.

P: We rode the ferry to Kodiak Island where it was raining. A Little League game

was being played in the rain—kids were running around the playground in the rain. At the campground we met a group of Swedish birdwatchers. One of them introduced himself—and I'm quoting—"Yah, ve are a gang of eight Svedish birdvatchers." They were on a 40-day birdwatching tour through Canada and Alaska.

C: One of them would stand on a hill looking for birds. When he saw one, he'd run down the hill to get the others and then they all ran up the hill with their cameras and telescopes. From my tent I watched them running up and down, up and down. It exhausted me.

P: Most Alaskans are spinners of tall tales . . .

C: They lie, too—no way they could have done all the things they said they did. But we did learn a good deal about Alaska from these people. From the museums, too. They have good museums all over the state, with a lot of information on the '64 earthquake—everybody's real proud of the earthquake.

When we got to Valdez it was raining—I know it's hard to believe. The girl who was driving us to a salmon bake warned us not to stay in Mineral Creek because six bears had been sighted there. Three were seen at our campsite. I was a nervous wreck—most nights I couldn't sleep because I was listening for bears. Everywhere they gave us rules, like never use a gun to frighten a bear—it antagonizes them. One girl told me the best thing to do is to roll yourself up on the ground—the bear will come up to you, roll you around with his paws for awhile, and then leave. Reassuring. Other people wore bells—jingle bells, cow bells, all kinds of bells. Actually, the only bear we saw was a grizzly and that was from a bus—but I lost a lot of sleep just the same.

P: At Skagway, we boarded one of the Alaska state ferries and stopped two days each at Juneau, Petersburg, Ketchikan, and finally Seattle. At Ketchikan we saw a guy carving a totem pole at the community college. When he learned where we came from, he said, "Hey, I know New Mexico—I went to the Indian Arts Institute in Santa Fe." The town was full of tourists from a cruise ship—during the summer an

average of nine ships dock there every week.

C: Juneau, the state capital, reminded me of San Francisco because of all the hills and the houses built into them—the town was really kind of cute.

The ferries from Skagway to Seattle are excellent, with staterooms and restaurants. But it's cheaper if you sleep on deck, like we did. No bears, but I still couldn't get any rest because the captain was always yelling "look to starboard" or "whales off the port bow"—things like that. Drove me crazy. Took me a day and a half to figure out what "thar she blows" meant. I'm kidding—I already knew what it meant. I read *Moby Dick*—well, I saw the movie.

P: The Forest Service had naturalists on board to describe the vegetation and animal life along the way. We saw porpoises, killer whales, seals, and humpback whales.

C: Alaska is different. The scenery is spectacular and everything is on a grand scale—the mountains, the glaciers, the bugs. Did I tell you about the mosquitoes? They're big and tough. They thrive on repellents.

P: The trip cost under \$2000 for 27 days including all transportation. Some food prices in Alaska were ridiculously high, but the salmon bakes were great. These are outdoor eateries where for \$13 you're served all the fresh salmon, halibut, and beef ribs you can eat.

C: Did I tell you we ate a lot of peanut butter—until a bunch of squirrels stole it?

P: The Skagway-Seattle ferry is \$155 a person.

C: Not for a stateroom—that's for sleeping on the deck where you can hear the captain real good.

P: Alaska is a fascinating place and we'd like to go back some day, right Carlota?

C: Definitely, but *after* we go to Paris.



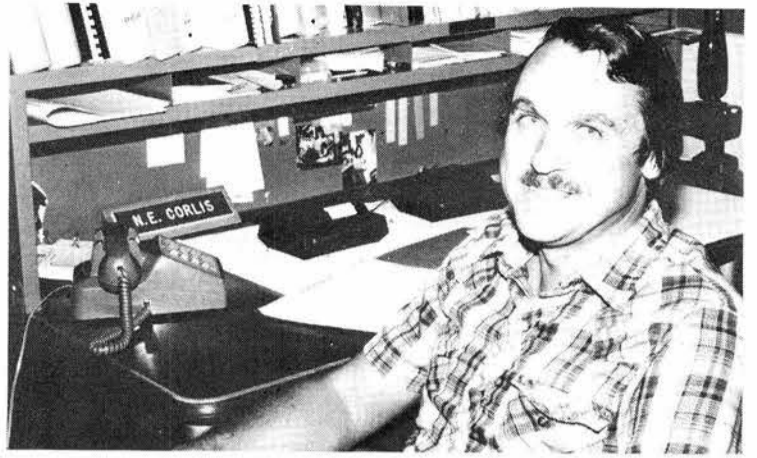
China published 4300 popular science books between 1978 and 1980. Since 1976, China has published 30,000 science fiction books . . . About 100 popular-science magazines are being published at the national and provincial levels. Some of them are in minority languages including Uygur, Mongolian, Korean and Tibetan. Their circulation totals 17 million . . . *Renmin Ribao*, the Party's newspaper, with a circulation of 5 million, and the nation's 29 major newspapers feature popular-science columns . . . The nation's three scientific film studios make about 300 films a year.

—Beijing Review

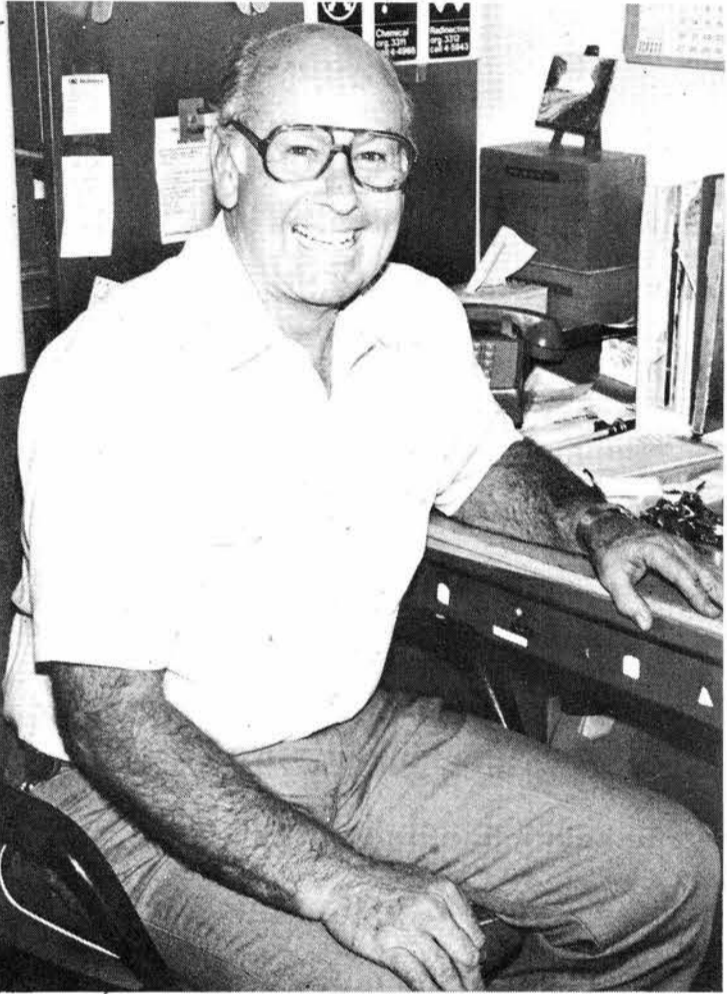
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LAB NEWS
OCTOBER 1982



Leo Gutierrez - 8400 35



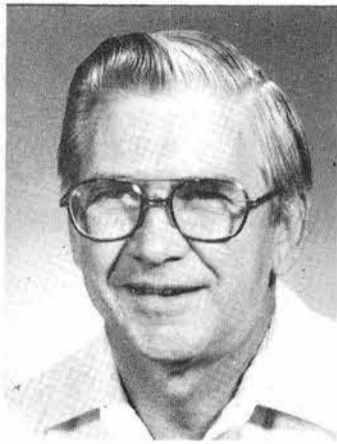
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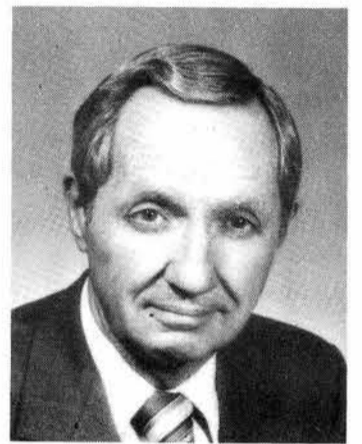
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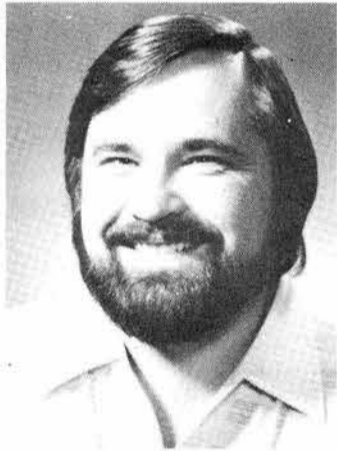
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Ed Machin - 2154 30



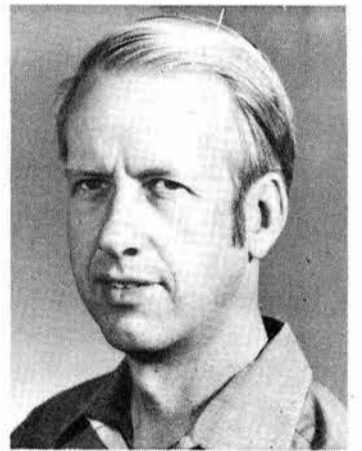
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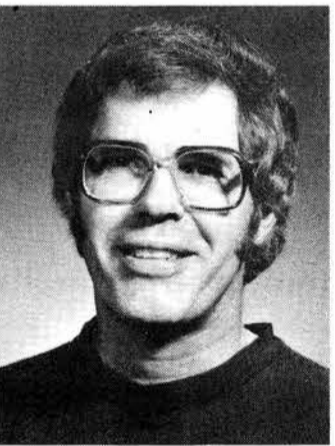
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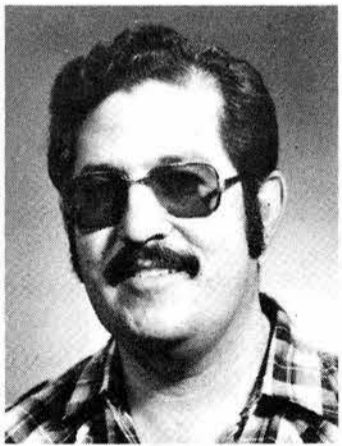
Donald Greene - 7473 10



Milt Clauser - 9424 15



Herman Watts - 2646 15



Dan Sanchez - 2514 10



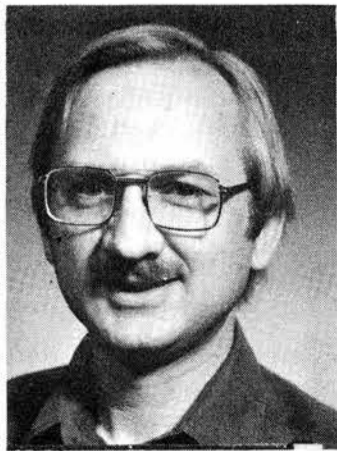
Bob Leighninger - 2343 25



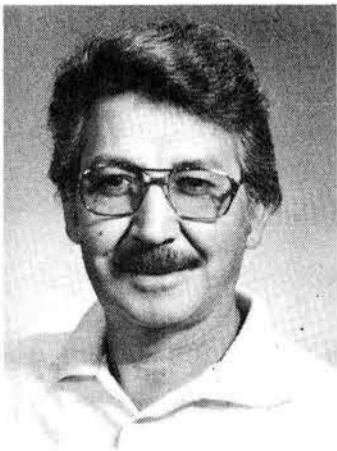
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Jim Harrison - 2452 35



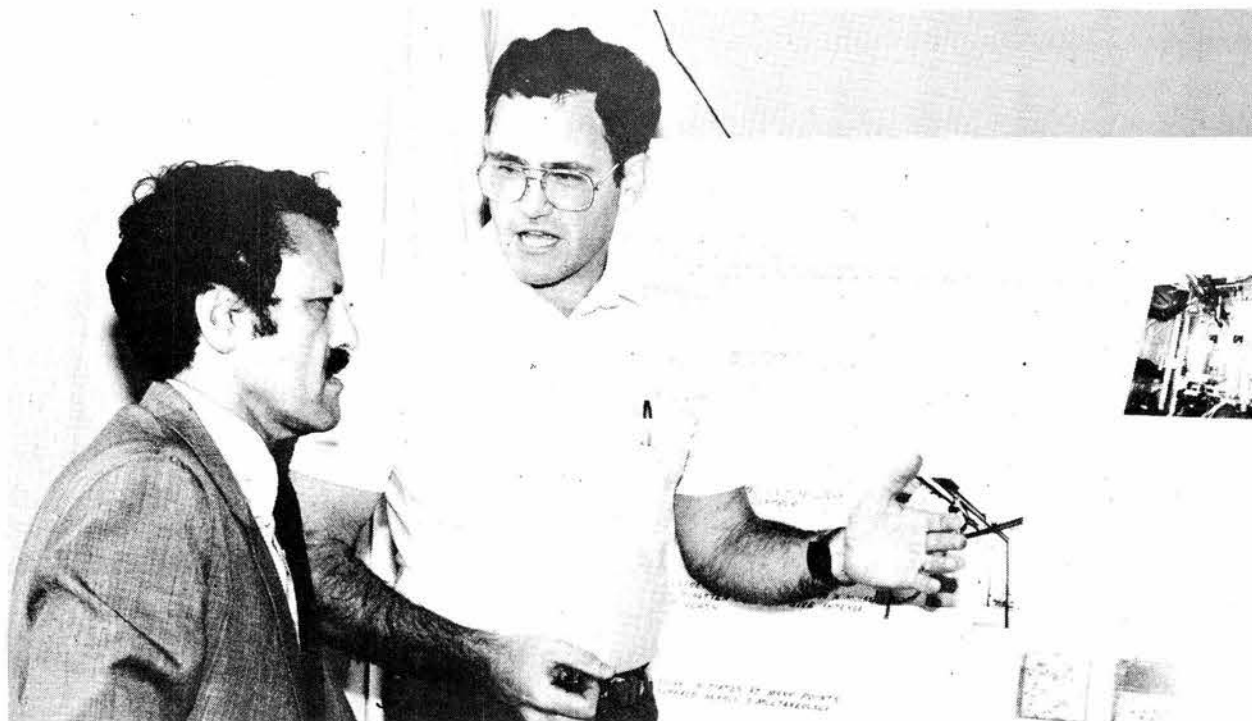
Thomas Sullivan - 0315 20



Hilario Garcia - 7473 30



Reba Garrison - 2100 25



DEPUTY DIRECTOR Maurice Katz of the Office of Military Applications, DOE Washington, visited several Sandia facilities last month. Bob Benham (7533, right) introduced him to the light-initiated high explosive impulse testing facility in Area III.



Galaxies, it seems, are not isolated islands in the sky, but often visit and mingle with each other. There is also a lot more to them than meets the telescope; most of their mass lies hidden in an invisible halo . . . Scientists have had a heyday guessing what might be in the halo. They have proposed everything from black holes to neutrinos, ghostly subatomic particles that weigh close to nothing. The latest theory involves another particle from the subatomic zoo: the gravitino. So far these particles exist only on theoreticians' paper, but they are believed to be much heavier than neutrinos. If the theory is right, the halos would weigh enough literally to change the course of the universe. The universe has been expanding ever since the big bang; it will stop and contract back on itself only if there is enough matter, and hence gravity, to pull it together into a "big crunch." Gravitinos could supply that missing matter.

—Sharon Begley in *Newsweek*

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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

- SKI BOOTS, 1980 Nordica Cosmos, size 10-10½, \$65. Sopp, 293-1723.
- CABOVER camper, sleeps 4, incl. gas refrigerator, stove/oven, heater. Rodacy, 293-2668.
- 3-WAY console TV/radio/stereo, \$150; 12" b/w TV, \$25; Unifit Reiker ski boots, size 6, \$25. Rodriguez, 296-3277 or 344-4584.
- NEW bass amp acoustic, 200 W; Gibson "Grabber" bass w/sliding pickup; microphone & stand, hi & low impedance. Marquez, 877-4928.
- TRAILER jack set, \$100; girl's 3-speed bike, \$35. Lee, 242-8692.
- CARPET, rust shag, 40 sq. yds. w/padding, \$75. Kinney, 298-5281.
- LADY'S solitaire setting diamond ring w/bill of sale & appraisal, .33 carats, cc color, vs clarity, 18K gold setting, \$1350 selling price, asking \$850 or best offer. Newman, 299-2729.
- COLOR printing filters, CP2B, CPO5M to CP40M, CP05Y to CP40Y, size 5½ by 5½, \$12. Henry, 266-6467.
- PALOMINO mare, 6 yrs. old, 15 hands. Baker, 294-3334.
- SIMMONS twin innerspring mattress, \$20. Azouz, 266-3512.
- YAMAHA studio console piano, ebony. Dale, 255-3611.
- OUTBOARD motor, 4 hp max. Stoker, 821-3354.
- WOOD HEATER, custom built, used one winter season, cost \$600, sell for \$400 or best offer. Casaus, 867-5585.
- TV, b/w, 2-yr.-old tube, \$20; Bell open face helmets, size 7 & 7½, \$50 ea. Prio, 296-2930 after 6.
- AIRLINE kennel for medium-large dog, used once, \$35. Lieberman, 299-7739.
- PIT BULL terrier puppies, AKC registered, \$150 ea. Martinez, 281-3269.
- LHASA APSO, 8 mos., golden red, AKC reg., full shots. Alvarez, 821-6817 after 4 weekdays.
- FURNITURE, sofa, love seat, chair, plaid fabric, brown & rust; matching coffee and end tables, \$250. Martin, 294-8010.
- PIANO, Wurlitzer concert console, walnut finish, \$1900. Emmett, 292-4885.

- STUDENT DESK, antique brown w/matching chest of drawers; sewing machine w/cabinet, 30 stitches, buttonholer. Shortencarier, 292-3575.
- RECORD CHANGER, BSR-4800, diamond stylus, \$15; Electrovoice speaker, SP-12, T-35, walnut cabinet, \$25. Von Riesenmann, 884-7954.
- DRAFTING TABLE, top measures 2'x3' w/adjustable height and board angle, parallel rule included, \$45. DeReu, 243-7021.
- CAMPER SHELL, overhead, 48" Streaker w/jacks, sleeps 5, table luggage rack, brown & white tinted glass, \$1200. Molina, 299-8718.
- PICCOLO, Gemeinhardt, silver. Evans, 299-7105.
- PUPPIES, AKC Golden Retriever, available 10/82, \$175 each. Claussen, 1-864-6144 (Belen).
- FIREPLACE GRATE, heavy duty, never used, \$25; Bell bicycle helmet, \$12; child's bicycle seat, \$5; Sears 19" B&W TV, \$25. Benton, 877-2473.
- WOOD STOVE, Earth Stove, model 101 w/fireplace converter screen, chimney, pipe, liner, \$300; women's boots, Herman Survivor, size 9½, worn twice, \$20. Romine, 281-5682.
- .44 MAGNUM, S&W 29, 6"; AMF hunting bow/quiver; T/C barrels, 30-30, 357 Magnum; Bushnell binoculars, 6-18 zoom. Ma, 883-4438.
- AQUARIUM, 20-gal., stand, accessories, \$75/offer; oak dinette, 4 chairs, \$25; 10x12 carpet, sand color, \$50/offer. Hellman, 821-0357.
- KENMORE WASHER, Norge dryer, both for \$75; Heathkit organ, 44 keys, \$50. Perkins, 299-8941.
- APPLIANCES, 30" electric range, \$70; Kenmore portable washer, \$60; dinette table, 4 chairs, \$50; stuffed swivel chair, \$75. Sons, 294-3953.
- WATERBED, waveless, queen, \$250; couch, \$75; backpack, \$75; stereo receiver, speakers, \$300; machine tools, R100s parts. Kovacic, 281-1754.
- LAWN MOWER, Sears Craftsman, electric, twin blades, bag; Black & Decker hand trimmer, rechargeable. Buss, 298-1589.
- TELEPHONE, Trimline; movie/slide screen; enclosed cartop luggage rack; vibrator heating pad. Burger, 884-5270.
- TWO BENCH SEATS for van or camper, convert to double bed/dinette, steel construction, fabric covered (Sears). Pollard, 1-864-2795 (Belen).
- FLUTE, Bunde. Kent, 256-1221.
- DRYER, Kenmore, avocado green, \$125; trumpet, Bundy, \$125. Padilla, 296-7471 after 6.
- FREE to good home, spayed Labrador X, well-trained, calm. Walker, 281-5640, 8 to 4.
- KINGSIZE HEADBOARD, walnut grain, \$200; gold couch \$100; book case, \$50. Mitchell, 292-4683.
- CAMERA, 35mm Miranda SLR, 50mm, 135mm lenses; Gossen light meter; electronic flash; filters; all for \$65. Linnerooth, 884-8615.
- SCREEN DOOR, aluminum, 36"x80", all hardware, \$100. Hole, 255-1444.
- PILLOW FURNITURE, brown foam-filled couch and chair, both for \$100. Norman, 898-5072.
- WASHING MACHINE; reg. and queen-size headboards; two bicycles—single speed and 3-speed. McGuckin, 299-1342.

- RIFLE, .30-06 cal. w/4x scope, case; reloading press & supplies for .30-06, .243, and .38 sp. Womelsduff, 281-1693.
- YARD SALE, Oct. 2-3, 9 a.m. to 4 p.m., 1017 Florida SE. Baczek, 255-3429.
- 55-GAL. DRUMS, \$6.50 ea.; steel casement window, 29" x 56", \$17. Geck, 299-5095.
- COMPUTER, ZX81 w/16k memory, 6 mos. old, \$175. Prior, 296-2930 after 6.
- CONDUIT, galvanized steel, ¾-in., four 10-ft. lengths, 75% of store price. Hughes, 299-6674.
- SKI EQUIPMENT, 2 pair 135 cm K2 skis, Salomon 44 bindings, poles; Nordica size 7 boots. Oberkamp, 292-4366.
- STEREO Amp/changer compact system w/headphones, 2 speakers, Paul, 299-6387.
- FREEZER, Admiral, 15.8 cu. ft., energy saver self-defrost, 2 yrs. old, \$300. Sanchez, 821-6391.
- RABBIT, medium size, male, small hutch, \$5. Hueter, 299-7263.
- COMPACT STEREO turntable, AM-FM receiver, 8-track player/recorder, 2 speakers, \$80. Morrison, 299-4757.
- VIOLIN, full size, bow, case, made in Mittelstadt, Germany, \$450. Moss, 298-2643.
- BLACK ANGUS BULL, \$1200; cows, \$550 each; wood burning stove, \$150; need air tight wood stove w/rear vent or vent less than 30". Lackey, 898-6638.
- HOUSE PLANTS, hanging dish gardens in attractive containers, \$1-5. Saturday, 11 a.m. to 5 p.m. Chorley, 12508 Charla Ct. SE (east of 4-Hills trailer park).
- CHILD'S SKI EQUIPMENT, Hanson boots, Rossignol World Cup 130's, Tyrolia 50 bindings, \$100. Campbell, 294-6000.
- MEDICINE CABINET w/attached 24"x24" mirror, \$15; lined one-way draw drapes, 60"x54", earth tones, \$25; Head 360 skis, 200 cm, \$45. Keeling, 296-9729.
- 6800 MICROPROCESSOR course/microprocessor, complete documentation, cassette tapes, interfacing components, \$80. Madrid, 294-5780.
- STAMP SET, 50 birds & flowers, used, off paper, \$4.50 each. Caskey, 294-3218.
- BEDROOM FURNITURE, king size bed, headboard, \$250; Sears white French Prov. dresser w/mirror, night stand, desk, bench, \$250. Chavez, 298-7969.
- CAMPER TRAILER, propane stove w/tank, ice box, sleeps two, AC, \$500. Barnaby, 265-4353.

TRANSPORTATION

- 76 HONDA CIVIC, low mileage, \$1800 or best offer. Shull, 881-2726.
- '81 VW VANAGON camper, biege, AC, AM/FM, stereo cassette, low mileage, price negotiable. Alvarez, 821-6817 after 4, weekdays.
- 79 HONDA CB750K, 4500 miles, case guards, luggage rack, \$1700. Schmale, 266-2855.
- 75 DATSUN pickup, fully insulated & paneled camper shell, \$2600. Snelling, 881-1884.
- DUNE BUGGY, without engine. Padilla, 296-5048 after 5.

REAL ESTATE

- RIO RANCHO, \$44,500, \$6000 down, 11½% loan, non-escalating, ¼ acre, 2 bdr., energy efficient. Dubai, 892-5787.
- FIVE ACRES, Indian Hills, Edgewood, water, partially fenced, paved road, utilities on property line, \$22,500. Gordon, 298-6575.
- 78 SCHULT Mobile Home, 14x66, 2 bdr., 2 bath, fenced yard, carport, in adult park, one mile from Gate 1. Galloway, 268-0463.

- MOBILE HOME, 2 bdr., Detroit Expander, 10x50, carpet, drapes, AC, stereo, refrigerator, washer, carport, in Terrace Park. Maxwell, 299-2027.
- 3-BDR., 1½ bath, garage, pitched roof, in Valley Gardens, \$39,900. Dolan, 294-0451.
- 3-BDR., 8% assumable VA, 1¼ bath, single garage, wood fence back yard, chain link front yard, \$39,000. Draper, 877-2802.
- ELEPHANT BUTTE mobile home, 2 bdr., 1 bath, 12x60, on lot and a half, 14x26 garage, covered patio, landscaped. Lassiter, 255-7991.
- PARK-TRAILER HOME, 1977 Aljo, 8x35, LR extends to 11 ft., A/C, new drapes, carpets, furniture, \$8700. Owens, 256-0606.

WANTED

- VIKING PORTABLES, will pay \$4 each for hardbound copies: Veblen, Hawthorne, Greek Reader, Plato, Sherwood Anderson, Lamb, Chaucer, Thoreau. Cockerleas, 256-7570 after 5.
- HOME for black cat, 1 yr., neutered, all shots, people-oriented. Colgan, 344-3776.
- CHILDWARE by experienced mother in my home, close to Base, all ages, \$30 week. Wrobel, 255-3062.
- WEIGHT TRAINING set and bench, inexpensive, suitable for teenager. Heuter, 299-7263.
- GAMING TABLE. Esch, 292-0754.
- SNOW TIRES, rims for '69 VW Bug, Daisy mags for Porsche. Benavides, 281-2507.
- MAGAZINES for home economics classroom use: Consumer Reports, McCalls, Ladies Home Journal, Good Housekeeping, Family Circle, Vogue, Bazaar, etc. Sanchez, 255-7384.
- BABYSITTER for infant during work hours; 2-bedroom house in SE or NE location, close to Base. Elliott, 873-1434.
- USED SWAMP COOLER motors, any condition. Silverman, 298-1308.
- SURVEYOR'S TRANSIT or builder's transit. Caffey, 296-3320.
- INFORMATION regarding eyeglasses lost in Bldg. 892 in Aug., displayed on bulletin board, disposition unknown, black pocket case, white metal frame, clear Rx lenses. Fisher, 844-3689, 881-8072.
- TOM LEHRER RECORDS. Guidotti, 298-8818.
- BAND SAW, cement mixer. Pollard, 1-864-2795 (Belen).
- GARAGE DOORS, 8 ft. Harstad, 298-6551.
- CAMERA, top of line Instamatic or small SLR. Baxter, 344-7601.

LOST & FOUND

- FOUND—Spayed Labrador X, was hit by car, fine now, well-trained, can't keep her, free to good home. Walker, 281-5640.
- LOST—8/24 in or near Bldg. 880: diamond & emerald ring. Adams, 4-8556.

Lunch Service Begins Oct. 18

With the approval of Sandia Labs management, lunch service starts at the Coronado Club on Monday, Oct. 18. Mondays through Fridays, a "Triple S" lunch will be offered featuring a variety of sandwiches, soups, and salad bar.

A steamship round of beef sandwich will top the sandwich offerings which also include ham, chicken, and turkey (with a selection of cheeses and breads) for \$1.75.

Soups (including red and green chili) will be available for 75 cents and a build-your-own, all-you-can-eat salad bar for \$1.95.

A combination of any sandwich, soup and salad will sell for \$3.95, while a combination of any two of the "Triple S" (for instance, sandwich and soup) will sell for \$2.95.

Reservation seating will be available (with partitioned-off privacy) for organizations and groups. Call the Club office, 265-6791, to make arrangements.

TONIGHT at Happy Hour, the Montoya Trio plays for dancing while singles mingle. The Trio is new to the club, but the group comes highly recommended from Four Hills—easy listening, easy dancing. Single members may bring one guest free, others pay \$1. The buffet is an all-you-can-eat spread of fish and chips for \$4.

VARIETY NIGHT tomorrow features the Walt Disney comedy *Herbie Rides Again* about a weird but wonderful VW with a mind of its own. Starting at 5, hot dogs, hamburgers, French dip sandwiches, and pizza are available. The movie starts at 6. Admission is 25 cents per person.

NEXT FRIDAY, Oct. 8, Frankie and the Corvettes are on the bandstand playing "oldies but goodies." The buffet is a special two-for-one spread of king crab. You buy about two pounds of king crab for two for \$10.95 with, of course, salad bar, dessert, and the works. Happy Hour prices are in effect all evening. Members may use their discount coupons from the October calendar.

SEVERAL BIGGIES are coming up this month—a Saturday night special on Oct. 16 featuring the now-famous Watermelon Mountain Jug Band, a show group that's hilarious to watch, fun to dance to. An old-fashioned beef buffet will be spread with all the goodies. Members pay \$7, guests \$8. Better make reservations for this one to assure yourself seating. Call the Club office, 265-6791.

Another big one is the adult Halloween party on Friday, Oct. 29, featuring another show group, Spinning Wheel. Again, reservations are a good idea. There'll be prizes for best costumes, and a super buffet spread. Members pay \$6, guests \$7.

Then, on Saturday, Oct. 30, all the little spooks and goblins have their night at the Club with the annual Kids Halloween Party. Prizes for best costumes, bags of treats, games, movies, and the traditional House of Horrors are all part of the fun. Plan on being there with the family.

C-CLUB JR. BOWLERS are seeking new members, kids ages 8 to 18. Bowl Saturday mornings at San Mateo Lanes. Call Cis Kelly (3542), 255-8011, or Charlie Kaspar (ret.), 821-5521.

CORONADO SKI CLUB holds its annual Sandia Peak Walk Down on Sunday, Oct. 3, to police the ski area. The lift opens at 10:30, the "feast" starts at noon. There'll be chili and hamburgers, refreshments (courtesy of Sandia Peak Ski Area), and lots of fun. Members bring membership cards for a free lunch, guests pay \$3.50.

The dry land ski school for beginners is set for the Club patio on Sunday, Oct. 10, from 1 to 4 p.m. Gwen Gorman (3332) and Louise Bland (2330) assisted by Tom Long, Sandia Peak Ski Area, will conduct an introductory class of ski techniques and equipments. Adults and children are welcome. Call Gwen, 4-5545, for details.

Regular monthly meeting of the Ski Club is set for Tuesday, Oct. 19, at 7 p.m. in the Club ballroom. Reps from Ski Utah are guest speakers. Freebies and films follow.

TRAVEL—A new price for both Mazatlan trips (Nov. 1-8 or Nov. 8-15) is announced: \$332, a \$27 savings as a result of the recent peso devaluation. The package includes seven nights at the luxurious Playa Mazatlan, air fare, transfers, taxes, and a cocktail party.

Go to Las Vegas over the Thanksgiving holidays or during Christmas vacation and stay at the luxurious Maxim Hotel—Nov. 25-28 by bus, \$127; Nov. 26-28 by air, \$162; Dec. 26-29 by bus, \$105; and Dec. 26-28 by air, \$138.

Other Club travel packages include *Mexican Pacific Coast Cruise*, Oct. 23-30, from \$789; *Canyon de Chelly*, Oct. 30-31, \$82; and *Dallas Cowboys* (if the strike is settled), Nov. 25-27, \$225.

Celebrating 25th Anniversary

Sanado Woman's Luncheon Oct. 12

Sanado Woman's Club is celebrating its 25th anniversary with a gala luncheon and fashion show at the Convention Center Picuris Room on Tuesday, Oct. 12, starting at 11:30.

Fashions popular during the past quarter-century will be shown as well as current styles. Roberta Landrith is coordinating the past fashions; Betty Reuscher, the new styles. Sanado members will model. All past Sanado members are invited along with newcomers interested in joining the organization.

Organized as a social club with civic interests and charitable projects, Sanado reached a membership of 500 in the late '60s.

Other events will also honor the anniversary—a membership tea at the home of Mrs. Tommie Gustafson, 7200 Dellwood NE, on Friday, Oct. 15, from 2 to 5 p.m., and a 25th birthday celebration scheduled Tuesday, Feb. 8, at 11:30 a.m. at the KAFB Officers Club West.

For reservations or information, call Joan Cilke, 296-3665.



MINISKIRTS? To celebrate its 25th anniversary, Sanado Woman's Club plans a luncheon and fashion show Tuesday, Oct. 12, at the Convention Center Picuris Room. A fashion review of the past 25 years is planned as well as a showing of current styles. Planning the event are Joan Peterson, Sanado president, Bobbie Volk, and Betty Reuscher, fashion coordinator.