

LAB NEWS

VOL. 31, NO. 6

MARCH 23, 1979

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

Sandians Help Mentally Retarded

Mental retardation is a problem in our society more pervasive than most people realize, with approximately three in every hundred laboring under this handicap. (Generally, persons with IQ's of less than 65 are considered to be mentally retarded.) At Sandia, a number of people have concerned themselves with the problems of those who are mentally retarded, and one of them is Bob Neel (4731), who is a board member and past president of the Albuquerque Association for Retarded Citizens (AARC). Bob describes for us what the Association does.

"In its infancy, AARC was composed of a small group of people who came together to discuss a common problem — a family member who was mentally retarded. The group organized and set about to gain their goal: to improve the quality of living for Albuquerque's mentally retarded. Twenty-two years later, we continue working to get services for the mentally retarded."

The pursuit of these services has, in some instances, resulted in the formation of separate agencies which now provide service to the public; the Rehab Center and the Vocational Clinic are examples.

"Six years ago," Bob says, "we initiated our 'group home program.' This concept — removing people from an institution and into a more normal home atmosphere — has worked very well. Currently we're renting 27 houses and apartments throughout the city where groups of from three to eight adults live together with house managers. These people, living and working together, become virtually independent," Bob says.

Because the group home program is for
(Continued next page)



DR. PAUL MOSSMAN, 3300 MEDICAL DIRECTOR, studies chest x-ray with Dr. Judy Ewing, left, and RN Marie Vaughn. Chest x-rays are generally taken as part of voluntary periodic physical exam but sometimes are used to confirm diagnosis of diseases like pneumonia. Sandia's medical program deals with physical, mental and environmental health.

The Directorates

3300: Medical Director

Simply put, the concerns of Medical Directorate 3300 are the physical, mental and environmental health of all Sandians.

"We don't believe you can successfully separate the work environment from the home environment," explains Dr. Paul Mossman, Sandia's Medical Director. "You have to look at the totality of a person's life. A chronic disease, a heart attack, alcoholism, undue mental stress at home or work affects not just

the employee but the people he works for and with as well as the family and the quality of family life."

One major continuing area of medical concern is the work environment. Health physicists check radiation levels; industrial hygienists monitor lasers, chemical and toxic materials and noise levels. People in certain occupations — like those who work around mercury and beryllium — are routinely evaluated.

"The emphasis in all such programs is preventive," Dr. Mossman says. "Our mission is to identify and measure physical and chemical hazards in the work environment — and make absolutely certain they don't exceed permissible standards. We also have to assess the impact Sandia's programs might have on neighboring areas, including the city of Albuquerque."

Clinical medicine, the other major concern in Medical, concentrates on physical and mental health. Sandians are offered (as a voluntary program) periodic physical exams, the interval based on age. Medical also checks Sandians when they return to work after an illness of a week or more.

"Here again, our goal is preventive," Dr. Mossman explains "We want to make sure they can perform their normal job without being stressed beyond their limits. If they

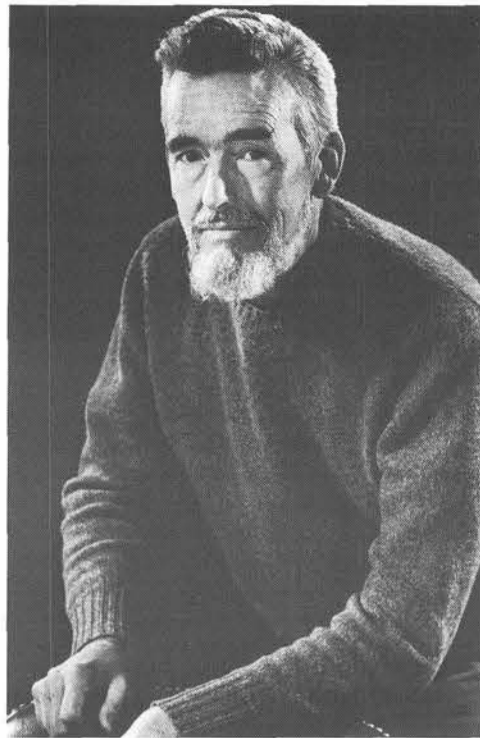
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BOB NEEL (4731) and HUGH LEENHOUTS (DOE), members of AARC's Building Corporation, survey building site for two "group homes" specifically designed for residents confined to wheelchairs. Construction will begin in June.



ALAN SPENCER (3611) and JIM CARUTHERS (2322)



GEORGE DALPHIN (3144)



KEN ECKELMEYER (5822)

Supervisory Appointments

ALAN SPENCER to supervisor of Plant Systems Division 3611, effective March 16.

Alan has been a member of the plant engineering staff since joining the Labs in 1969. As a design engineer for electrical systems, he's worked on various plant modification designs and done conceptual designs for new facilities. His new division is responsible for all Labs plant systems — primary power distribution, steam plant, and other exterior utilities.

Alan earned a BS in EE from Cal Poly and has done graduate work at UNM. He is a registered professional engineer in New Mexico. His leisure interests include basketball and running. Alan and his wife Trish live in Academy Acres.

* * *

JIM CARUTHERS to supervisor of Timers, Programmers and Security Applications Division 2322, effective March 16.

Following graduation from the University of Missouri with a BS in EE, Jim came to the Labs in 1969 as a member of the OYOC program. He attended Stanford University and obtained his MS in EE in 1970. Returning to the Labs, Jim worked in QA advanced planning until he transferred to his current division in October 1973. For the past three years, he has worked on the

development of a programmer for the B-61 weapon system.

Jim is a member of IEEE. He and his wife Joyce (5800) have a cabin in the Jemez country where they enjoy fishing and skiing. They live in the NE heights.

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GEORGE DALPHIN to supervisor of Technical Library Reference Division 3144, effective March 16.

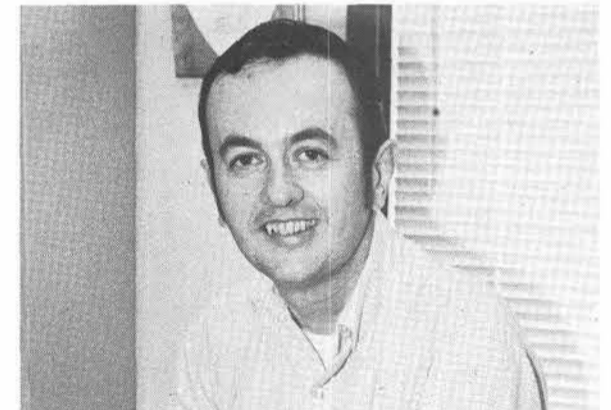
George has been a reference librarian in Sandia's Technical Library since coming to the Labs in December 1963. He earned an AB in English from Dartmouth and was a librarian there for a number of years. He also received a BFA from UNM. George is a member of the Special Libraries Association and the Western Association of Map Libraries. He enjoys camping and hiking, but his major hobby is map collecting, specializing in maps of the Southwest, both new and old ones.

George and his wife Peg live in the SE heights.

KEN ECKELMEYER to supervisor of Electron Optics and X-Ray Analysis Division 5822, effective March 16.

Since coming to Sandia in 1971, Ken has worked in the Physical Metallurgy Division 5832, primarily on the development of high-strength uranium alloys for a variety of weapon systems. He has also done failure analysis studies. Ken earned his BS in metallurgy from Lafayette College and his MS and PhD, also in metallurgy, from Lehigh University. He is a member of the American Society for Metals and the International Metallographic Society.

Ken's leisure time interests include wood-working, softball and activities of his church. He and his wife Barbara have two children and live in the NE heights.



BOB GALLAGHER (8124)

BOB GALLAGHER to supervisor of Thermal Sciences Division 8124, effective March 16.

Since joining Sandia Livermore in 1972, Bob has done R&D on fluid mechanics problems associated with weapon components, experimental and numerical work on aerodynamic processes for enriching uranium, and systems studies on NRC transportation safeguards. Most recently, he worked on the solar central receiver program. Previously, he served two years in the Army as an aeronautical engineer with NASA's Flight Test Center at Edwards AFB.

Bob has a BS in ME from Northeastern University, an MS in ME from USC, an MSE in aerospace and mechanical sciences from Princeton and a PhD in engineering and applied science from Yale. Off the job his favorite activities are skiing and wood-working. He and his wife Rita live on Mallard Drive in Pleasanton.

Continued from Page One

Help Retarded

people 18 or older, AARC developed the "companion home program" for teenagers. This program is similar to the Foster Parent plan except that qualified families in the community are paid to care for a mentally retarded child. Currently, 12 children have been placed with families and AARC hopes to increase that number to 30 or more this year.

"My first interest now," Bob says, "is to develop realistic, meaningful employment for the mentally retarded. Some of the best news we've had in this area concerns the Vocational Clinic. Mountain Bell has awarded it a \$180,000 contract to strip insulation from copper wire, and to recover precious metals from switching components. The work begins April 1, and the Clinic will employ some 50 mentally retarded and physically handicapped people."

Other Sandians actively involved with AARC are Jim Kennedy (2513), Bob Stromberg (4714), Larry Billmaier (4733), Paula Stronach (1542) and Don Wright (1222).

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Retiring



Joyce Willford (8272)



Charlie Romano (8423)

Congratulations

Mr. and Mrs. Will Bolton (8116), a son, Ran Leslie, March 5.

Christine Yang (8124) and Howard Hirano (8441), married in Oakland, Jan. 6.

Mr. and Mrs. Dave Anderson (8265), a daughter, Lisa Christine, March 5.

FRAMED BY A HELIO-STAT, John Vitko and Jim Shelby discuss the effects of weathering on heliostat glass. Both are conducting experiments, John's on subsurface effects, Jim's on surface, to acquire data to predict long-term performance of heliostat mirrors.



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Purple Heliostats?

Sandians Study Glass Weathering

Most of us have seen old purple bottles, changed from clear by decades of sunlight. So we're aware that solarization can affect glass. Two Sandians, Jim Shelby and John Vitko, assisted by Bill Smith and Rich Gay (all 8342), are currently working at understanding and quantifying the effects not only of solarization but of weathering in general on the types of glass likely to be used to reflect or transmit the sun's rays in solar energy systems.

First of all, modern glass doesn't turn purple ever; old glass purpling was caused by manganese, which has not been added to glass since WWI or so. So we won't ever see purple heliostats. But the weather certainly can affect glass's optical properties in other ways. Jim and John began their studies at the behest of Solar Department 8450 and have since had their findings used by SERI's Solar Optical Materials Planning Committee and its subcommittees, of which both are members.

Jim's study involved exposing several kinds of glass to high humidities (98 to 100 percent) and temperatures (40° to 80°C, 100° to 175°F) to learn the effects of leaching on surface reflectivity. In leaching, mineral deposits form on the surface and reduce reflectivity.

One of his findings concerns float glass, the kind DOE has selected for the heliostats for the central receiver pilot plant at Barstow. Float glass, manufactured by floating molten glass on liquid tin, has a tin-poor and a tin-rich side. Exposing the tin-rich side (that is, silvering and then protecting the tin-poor side with a mirror backing) means significantly greater resistance to leaching under high humidity conditions.

"Interestingly enough," says Jim, "some manufacturers coat the tin-poor side, others the tin-rich side — without any particular reason other than tradition. We're recom-

mending that DOE purchase only glass coated on the tin-poor side for solar installations."

The villain in float glass corrosion appears to be sodium, an essential constituent of glass. When water stands on float glass, especially on the tin-poor side, it leaches sodium which reacts with the water to form a film of sodium hydroxide. The sodium hydroxide then attacks the basic structure of the glass. In a high temperature/high humidity environment such as that in Jim's test chamber, glass reflectivity deteriorates enough to be detected by instrument in two days, or with the naked eye in a few weeks. Film formation would certainly take longer in a natural setting, but heliostats must last for 20 to 30 years.

That shouldn't be impossible. "At this point," says Jim, "the answer seems to lie in washing the heliostats regularly with high pressure water."

* * *

While Jim's studies focus on surface degradation, John Vitko is concerned with absorption losses in the subsurface portions of glass. These absorption losses are generally due to the presence of iron impurities, which may occur in two valence states, Fe²⁺ or Fe³⁺. Fe³⁺ absorbs in the ultraviolet portion of the spectrum and is not a serious concern — sunlight contains comparatively little ultraviolet. However, Fe²⁺ absorbs in the infrared, and sunlight contains a lot of infrared.

One solution to the iron absorption problem is to go to an "iron-free" glass, but that's an expensive solution. Another approach is to use a highly oxidized glass, that is, one in which nearly all the iron is present as Fe³⁺ and not as Fe²⁺. This approach has its own risks, however — prolonged exposure to sunlight could convert Fe³⁺ to Fe²⁺ and vice versa. While the latter reaction would improve solar transmittance, the former would decrease it. Unfortunately, little information is available about such changes.

"So," says John, "we examined glasses from the heliostats at the solar furnace at Odeillo, France. In nine years of exposure, these glasses have shown a two to three percent improvement in transmissivity — that's a four to six percent improvement in reflectivity of a heliostat using this glass — thanks to a decrease in Fe²⁺. Nevertheless, other data suggest that with a slightly different glass composition, solarization could have resulted in a decrease of the solar transmittance." Future studies will attempt to study solarization of the Odeillo and other heliostat glasses by use of a solar simulator which permits an accelerated solarization process.

Up to a three percent loss of transmissivity (and a six percent loss in reflectivity) is at stake. In the case of a commercial 100MWe central receiver plant, since a one percent loss means a half to one million extra dollars to keep output constant, Vitko's and Shelby's work is not ended yet.



NOISE CAN BE A CONTAMINANT, TOO, and Joanne Pigg (3311) checks out a meter used to measure sound levels. This is one of dozens of special instruments used to measure concentrations and types of contaminants — one of many methods used to assure that Sandians have a safe work environment.



MEASURING RADIATION. Billy O'Neal, left, and Grover Edwards (3311) load samples into equipment which measures levels of radiation. Dry samples come from chem labs at Sandia, from swipes and smears taken by health physicists at various lab locations, and from soil samples. Liquids, tested in scintillation counter at right, are analyzed to make sure chemistry experiments stay within safe radiation limits. The equipment can also be used to identify unknown isotopes and their concentrations.

Take Note

For a dollar, you can partake of something called a "Chuck Wagon Sampler" on Wednesday, April 4, between 11 a.m. and 7 p.m. at 5201 Rio Grande NW. The Sampler consists of favorite food dishes prepared out of the new All Faiths Receiving Home Auxiliary Cook Book, which is being introduced on this occasion. The premise is you like the food, maybe you'll buy the cookbook (@ \$4) and, since you get a glass of wine as well, you can hardly go wrong because you can't eat at home (or anywhere else) that cheaply. Besides the Sampler, the Auxiliary is offering door prizes, an auction, even a chile cooking contest.

Bob Summers (1426) dropped by to talk about the Friendship Force — a kind of exchange program on an adult level with people from other countries. Along with several hundred other Americans, Bob is going to Korea later this year under Friendship Force auspices. In the meantime, a number of Koreans will be coming here to Albuquerque for a week in late June as part of the program, and Bob is looking for Albuquerque families that would be willing to accommodate the visitors. Hosts are asked to provide lodging and meals, and to insure that their guests see and experience America, Albuquerque style. If you're interested, call Friendship Force HQ at 243-6916.

A number of Sandians have roles in tomorrow's and Sunday's Gem and Mineral Show at the State Fair Grounds. Loyd Keller (4336) is show chairman; Tom Massis (2516) and Bob Ault (1531) will be demonstrating gold panning, and visitors will be able to try their hand at panning; and Norm Brown (5822) and Pete Modreski (5831) will have a show of minerals that fluoresce under ultraviolet light. Many other demonstrations and programs are scheduled. The Gem & Mineral Show opens at 10 a.m. in the Agriculture Bldg.

The 3rd Annual Book Sale of the Friends of the Library is scheduled for next week, March 28 through 31, at the Main Library, downtown. Books of all descriptions (and some that aren't describable) will be on the block at prices approaching absolute zero. It's a good time to fill those openings in your collection of rare works.

Continued from Page One

3300: Medical Director

can't, we establish whatever temporary restrictions are required."

On a day by day basis, the clinical side of the house provides a limited range of services. Dr. Mossman puts it this way: "We'll provide medical service commensurate with what we find. If we suspect pneumonia, we'll do a chest x-ray. If that confirms our diagnosis, we refer the patient to his own doctor for further care."

Put another way, Sandia Medical treats minor medical problems and handles health and accident emergencies. But major or longterm medical or mental problems are outside their purview. They will, however, assist patients in the consideration of proper medical options.

In the past three years, Medical has increased its capabilities to deal with emergencies like heart attacks. They've

increased and improved other programs and now offer psychological counseling as well as treatment and rehabilitation for alcoholic employees or employees with alcoholic family members. They've given CPR training to over a thousand people, taught women employees breast self examination and added a number of new tests to routine physical exams, including one for the very early detection of cancer. They've also assembled a library of health films that Sandians can view on request.

And for the future?

"More preventive programs," says Dr. Mossman. "There's a clearly established link between smoking, lung cancer and heart disease. So we feel we've got to get involved. We're sponsoring a series of colloquia on smoking — programs aimed at helping people quit."

Regardez la plume de ma tante! Don't you long to know the meaning of that? And don't you long to introduce a little style into your life? Gain both ends, *messieurs et mesdames*, by taking "French for Travelers," a 7-week, 14-hour program designed (as the release states) "... to enable the traveler to cope with finding a hotel, taking the Metro, ordering in restaurants, getting around, and communicating IN FRENCH!" It's offered by UNM's L'Alliance Francaise D'Albuquerque and begins the week of March 26. Cost is \$35, and the contact is Jerry Roensch, 242-1880. (Loosely translated, our opening sally declaims never to argue with the fellow who packs your parachute.)

You got worries? Then put a fine edge on them by showing up for "The Third Annual Worry Clinic" (sic) sponsored by the Altrusa Club, an organization of professional and business women whose purpose is service to the community. The Worry Clinic is a one-day affair and it's led by doctors, attorneys and psychologists who deal with topics ranging from "Coping With Aging Parents" to "Loneliness through Changing Lifestyle." It's scheduled for March 31 at the YWCA, costs \$10 (which includes lunch and parking), and

you can get more information on 299-8214 or 268-8235.

Sasebo, Japan, is Albuquerque's sister city, and this year the two cities are exchanging a high school girl student for the coming school year. Both girls would live with a Japanese or American family, learning the way of living, the food, language, culture and customs of her host. Applications are now being accepted on this end from high school girls in Albuquerque who would be interested in participating. Also, a host family for the Japanese student is being sought — a family which includes a high school student is preferred. Call Ina Miller, 883-6872 (weekdays) or 881-8379 (evenings & weekends), for more information.

Exec. VP Jack Howard (2) has received notification from the National Academy of Engineering of his election to membership in the Academy "for contributions to nuclear ordnance engineering." The Academy is a private organization that shares in the responsibility given the National Academy of Sciences by the Congress to examine questions of science and technology at the request of the Federal Government.

New Plutonium Safeguards System Developed and Tested

The Plutonium Protection System, a new safeguards system developed by Sandia for DOE's Office of Safeguards and Security, has been successfully tested. Two prototype systems were tested — one at Sandia and the other at a plutonium facility in Hanford, Wash., where the system underwent a "hot" operational demonstration.

The new system provides improved protection against theft, diversion and sabotage attempts. To achieve these improvements, hardware and software elements are integrated into an operating system which provides more positive control and accountability of packaged plutonium items and more rigorous control of personnel access. One of its unique features is that each plutonium item in the inventory is continuously monitored, using a computer in the vault storage area. This computer interfaces with three separate computer control centers — for material accountability, material operations, and security operations. Further, access to and movement of any plutonium require the independent approval of each control center.

To be stored within the system, a canister of plutonium is sealed into a container with electronic features that provide unit identification, temperature and pressure data to the system. In addition, the electronics indicate any tampering attempts.

Once sealed in the container, the plutonium is moved to the vault storage area by mobile transporter, basically a minivault on wheels. Physical and electronic features protect and control the material while in the transporter. Movement of the transporter is timed and monitored with TV cameras to provide additional security.

Within the vault, there is the secure storage module, a massive structure of reinforced concrete and steel (a vault within a vault concept) containing four storage carrouseles. These carrouseles, for secure storage of 35 plutonium containers, restrict access to one container at a time. Carrousel operation is computer controlled.

While in storage, the plutonium containers are continuously monitored and inventoried, thus providing real-time accountability. The automatic inventory capability makes it possible to avoid the radiation exposure hazards associated with current procedures under which people conduct the inventory.

Personnel access to the system is through remotely controlled doors. The appropriate door is opened only after a succession of security checks incorporating electronic security badges, closed circuit TV cameras, electronic scales, metal detectors, radiation detectors and motion sensors.

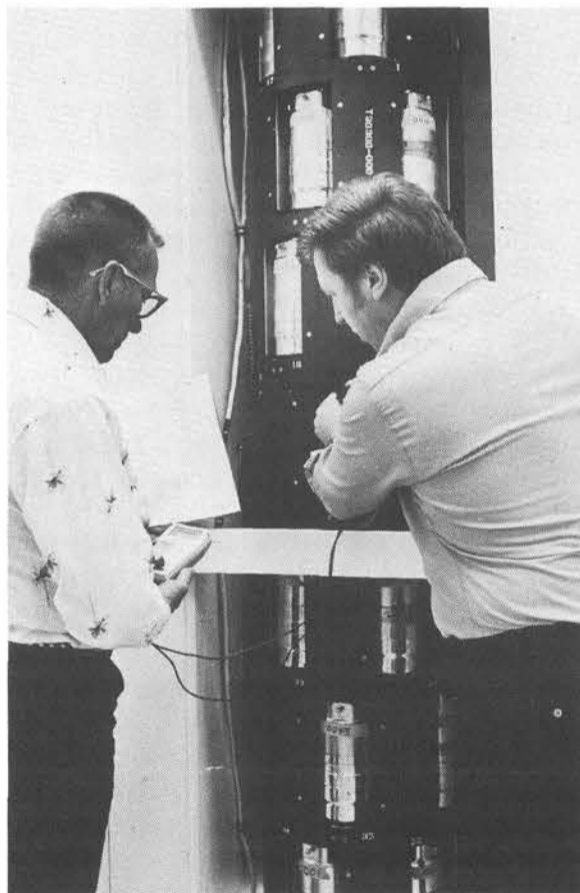
"Although it appears to be and is, in fact, a complex system," says project leader Emile Bernard (1762), "it has been designed so that the complexities are generally transparent to the operators."

Conceived in Tommy Sellers' Advanced Facilities Protection Division 1761 in 1974, the two prototype designs are the work of Dennis Miyoshi's Facility Systems Division 1765 and Fred Gutierrez's Test Data Programming Division 1524. Overall project management and system testing are the responsibility of Ed Hansen's Facility Systems Development Division 1762.

Everett Dow (1762) is project engineer for the Sandia System and Bill Mottern (1762) is project engineer for the Hanford System. Bill, Frank Raymond (1765) and Charles Ringler (1762) have just returned to Albuquerque after



AT SECURITY OPERATIONS CENTER in Bldg. 808, Everett Dow (1762) monitors console. TV screens cover critical areas within the Plutonium Protection System. Access by people to the system involves succession of security checks.



STORAGE CARROUSEL holds up to 35 plutonium containers. Ves Harker and Larry Predika (both 1765) check electronics which continuously monitor containers.

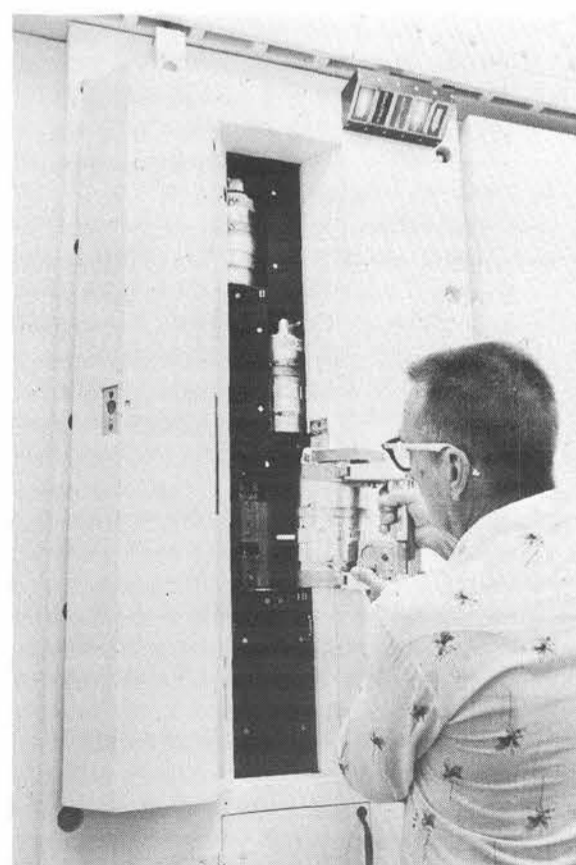
nearly a year in residence in support of Hanford activities.

Based on test results obtained here at Sandia in the Systems Integration Laboratory in Bldg. 808 and by Hanford Rockwell Operations in their "hot" demonstration, the system was found effective in meeting its design goal of improved safeguards. Furthermore, Rockwell found the Plutonium Protection System to be generally compatible with the Hanford operational environment.

Final reports are being prepared, and Emile says that several national and international agencies have expressed interest in the new design. In addition, Dennis Miyoshi reports that concepts and elements embodied in the system are being considered for potential application at DOE's Savannah River Plant (South Carolina) where a new plutonium storage and distribution facility is planned.



SOFTWARE — Bob Frazer (1523) and Mary Trowbridge (1763), two of the software developers, discuss a computer display in the Material Accountability Center.



VES HARKER (1765) uses special handler to insert plutonium container into storage carousel. Note slotted design of carousel which allows access to only one container at a time. Facility in Bldg. 808 simulates plutonium handling — no radioactive material is used.

Credit Union Operations Described

by Elsie Wilkins, Education Committee

Your Credit Union is a complex financial structure operating with assets in excess of 40 million dollars. Like a normal business, the Credit Union operates with its own employees who have their own retirement and vacation plan, sick leave and other benefits. Unlike other businesses, however, most of the policy decisions and much of the auditing, supervision and credit risk assessment is done by non-employees — volunteers — from Sandia Laboratories.

These Credit Union operations are the subject of a series of articles planned for inclusion in the LAB NEWS. The work of the various committees will be covered, and the background on policy matters discussed.

If you have a question you would like to see discussed, please contact a Credit Union board member. They are Marv Daniel (2113), Bill Bristol (Credit Union), Willie Garcia (3163), Joe Ruggles (2625), Joe Maldonado (3614), Bob Luna (4551), Ron Bodo (3242), Charles Barncord (3200), Clarence Sandy (2553), Elsie Wilkins (1000) and Leo Gutierrez (SLL-8400).

* * *

Truth-In-Lending

In spite of the truth-in-lending laws, interest rates are still confusing to many consumers. People who will shop two or three grocery stores to take advantage of specials and who shop for days to save money on a car or other large purchase sometimes end up with an installment contract that wipes out any savings. Here are some basics on various installment plans.

Revolving Charge Accounts (Open End) — Typical examples include bank cards, gasoline credit cards and major department store cards. Most states permit a charge up to an annual percentage rate of 18% (1½% per month) on the unpaid balance. Minimum payments are usually 1/20th of the balance. A minimum payment spreads out your payments, but the longer you take to settle up, the more interest you pay. But note: paying off the total before the due date makes it possible for you to avoid any interest charges.

Installment Loans (Consumer Loans) — Typical examples are monthly payment contracts signed with stores or banks for the purchase of an item. State laws vary as to the maximum "add-on rate" they may charge. Under truth-in-lending laws, the contract must state the "annual percentage rate," the "total finance charge," and if charges are assessed for late payment. If you deviate from the contract, you're likely to encounter one of the following.

Late payment: You are usually charged a penalty, and you may be required to pay the remainder of the loan.

Early payment: you receive no benefit for making your payment early — interest is charged as if payment were made on the due date.

Prepayment penalty: If you pay off the balance of your loan in advance, you might expect the remaining finance charges (including credit life insurance costs) would be reduced. Not so. Under nearly all installment contracts, a penalty is applied in the event of prepayment.

Remaining Balance — This method is sometimes referred to as "simple" interest. At the time of payment, or prepayment, it is a

calculation of your interest expense, at annual percentage rates, broken down by months and days since your last payment. This is the method we use, with annual percentage rates ranging from 8.0% to 12.0%. Each loan payment is credited first to the interest due on the date payment is received, while the remainder of the payment is credited against the principal. Interest on the unpaid balance is computed on a daily basis. The finance charge is not precomputed; instead, interest is charged when due. The Credit Union does not assess fines on late payments; however, interest is charged for the extra time. Any delay in payment, since it delays the reduction of your loan balance, will increase your total interest cost. When you make extra payments or pay off a loan early, you decrease your total interest cost. There are no prepayment penalties at the Credit Union.

And, because you can use payroll deduction, you have the added convenience of

Fun & Games

Rec director leaving — The C-Club's Bob Giersberg, who has been handling the recreation program with considerable skill, has resigned to take other employment. A replacement is being sought, but it is anticipated that getting a new person on board will take a month or two.

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Triathlon — With the departure of Bob Giersberg (note above), it has become necessary to postpone the Triathlon (which is sponsored by the C-Club) until Bob's replacement arrives and gets up to speed. Early fall seems the most probable time because summer temperatures preclude the event's running then.

* * *

Exercise class for women — Guru Deep will stage a second exercise class for women next month. If you're interested, sign up at the C-Club on March 29 between 4:30 and 6 p.m.

* * *

Skiing — This time of year most skiers hang 'em up, which is a pity of sorts because spring skiing — whether downhill or cross country — is one of life's rare delights. But it's oatmeal out there! you exclaim. True, but it's skiable oatmeal, and when our lovely New Mexico sun turns it into slush, then break out some silver wax (for downhill) or red wax (for X-C). And don't forget the sun tan oil. In the balmy temperatures you'll see a few aberrants doing the hill in shorts but we don't recommend that, unless the sensation of snow on bare skin really gets you excited . . .

* * *

Biking — Now is the time to prepare for next month's 7th Annual Tour of the Rio Grande Valley — otherwise known as TORGV or The Century (it's 100 miles). The Tour is scheduled for April 22, starts at 6:30 a.m. from the UNM campus, meanders south to Belen and back, offers many rest stops, and even provides sag wagons to pick up those whose spirit says "go" but whose legs and/or backside say "no." Last year there were 420 participants, including a 9-year old and a 65-year old. An alternate 50-mile course is provided. Entry forms are available in LAB NEWS office, Bldg. 814.

not having to remember to send in your payments (or pay for postage). Prudential Insurance Company will also send retirement checks directly to the Credit Union if you wish.

Borrowers' (Credit Life) Insurance

The Board of Directors of the Credit Union has voted to change the amount of credit life insurance available to each member borrower at no direct cost to the member. In the event of a member's death, amounts owing to the Credit Union up to a maximum of \$15,000 are paid by the insurance company (provided no problems exist with the loan(s) that would cause exclusion by the policy). Under this new policy, members are provided borrowers' insurance until age 70 (previously age 65). In addition, no waiting period is stipulated for pre-existing conditions such as cancer, heart or kidney problems.

Events Calendar

March 24-25 — Pueblo Dances, Indian Pueblo Cultural Center, 12, 2 & 4 p.m.

March 24-25 — Gem & Mineral Show, Agricultural Bldg. State Fairgrounds, 10 a.m.

March 24-April 1 — "Aladdin & The Wonderful Lamp," children's show, UNM Rodey Theatre, 1:30 p.m. & April 1 at 12:30 and 2 p.m.

March 25 — Audubon Society tour of Isleta Parks marsh. Meet 7:30 a.m. at Plaza Princessa in parking lot behind bank.

March 28 — Maxwell Museum of Anthropology Lecture Series: "Basketry: The Versatile Art," Carol Condie, 7:30 p.m.; **April 4** — "In Shining Color, American Indian Beadwork," Andrew Whiteford, Presbyterian Professional Center, 201 Cedar SE, 7:30 p.m.

March 28-31 — Friends of Albuquerque Public Library Third Annual Book Sale, Albuquerque Main Library.

March 29-April 1, April 5-8 — Civic Light Opera production, "Li'l Abner," Popejoy, 277-3121.

March 30 — "Music & Black Arts in America," cosponsored by N.M. Jazz Workshop, 8 p.m., Downtown Center for the Arts, 216 Central Ave. SW.

March 30-April 2 — U of A drama dept., "Elizabeth I," 8 p.m. at U of A Theater, 831-1111, ext. 242.

April 1 — Audubon Wildlife Film Series, "Land That I Love," Popejoy, 277-3121.

Sympathy

To Charles W. DeMoss (1471) on the death of his father in Madisonville, KY, March 12.

Congratulations

Mr. and Mrs. Felix Garcia (3618), a daughter, March 1.

Mr. and Mrs. John Wray (4453) a son, Michael James, Feb. 9.



Here's a surprise. Recent research has found a correlation between homework and academic achievement. Based on a survey of 10,000 students, the National Assessment of Educational Progress concluded that "the more homework teenagers do and the less TV they watch, the better they do on nationwide math tests."

STRAIGHT-A APPRENTICE GRADS — Luke Heilman (1400) presents certificates of completion for the Materials Processing Technology Apprenticeship program to Johnson Morgan and Jerry Gonzales (both 1472). Paul McKey (1485), right, represented the Joint Apprenticeship Committee. Johnson and Jerry completed the 10,000-hour course (normally five years) of on-the-job training and out-of-hours course work in four and one-half years with straight A records.



T-VI Pre-registration

Pre-registration for T-VI's summer trimester runs from March 26 to April 6, while registration itself takes place April 25 and 26 for those accepted into classes.

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

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



March 5-11 was National Procastination Week. We should have noted that in our last issue, but we never got around to it.

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

CLASSIFIED ADVERTISING

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

RULES

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

MISCELLANEOUS

HAMMOND ORGAN, B-3 model, used, sell for \$3500; inputs for 2 Leslies & 1 input for bass amp., tube type, not transistorized. Baca, 298-0448, evenings.

WALNUT TABLE; metal shelves; chair; garbage cans; throw rugs; pillows; coffee pot. Schooley, 266-6706.

'69 COMET sport trailer, 15', sleeps 4, \$750 or best offer; butane light, stove, ice box, best offer. Sheaffer, 255-9473.

EARLY AMERICAN couch, blue/green print upholstery, wood trim, \$125. Clarkson, 296-4664.

TEAC 220 tape deck; Camp 7 down, rectangular sleeping bag. Downs, 293-9320.

SPAIN TRIP for Middle School students, July 3-11, sponsored by American Institute for Foreign Study. Plein, 293-5041.

AM/FM tuner; amplifier; garbage disposal, \$15 each. Robertson, 298-1048.

WINCHESTER 75 target rifle, 22 long, bolt action, w/Redfield sights, spare clip, cleaning kit, in field case. Norcott, 865-7789.

CAMPER SHELL, fits El Camino, fiberglass, windows, dome light, \$200 or make offer, \$400 new. Ingram, 293-6274.

1938 PHILCO upright radio, AM, FM, shortwave & police bands, best offer. Palmer, 268-7721.

FREE female Bassett Hound w/dog house. Huston, 842-1831.

ZENITH TV, B&W, 19" screen, plus stand. Rowe, 883-3845.

HIDE-A-BED, full-size mattress, blue upholstery, \$150. Ruvalo, 296-1316.

CUSTOM VAN captain chair, naugahyde-Herculon, swivels, reclines, can mount on track, new \$200, sell for \$100. Reyelt, 299-0932 after 5.

CUSTOM MADE BAR, about 6' long, solid oak frame, black plastic top, \$350. Winter, 294-1369.

ANTIQUE upright piano; clarinet; port. typewriter; bathroom scale; boy's small bicycle; girl's Spyder bike. Snow, 296-5148.

EQUALIZER trailer hitch, draw bar, head w/ball-torsion bars & trailer clamp, complete system ready for installation on car. Hill, 256-3507.

GITAR, Konrad elec., \$39; Remington counter-top calculator, elec., prints on tape, \$25. Marquez, 344-6654.

LAWN MOWER, Jacobsen rotary w/grass catcher, uses reg. gas, \$50. Smith, 299-2462 after 5.

WASHER/DRYER, 220V, Frigidaire, \$250. Damrau, 881-4576.

GARAGE SALE MARCH 29, 30, 31: books, tools, clothes, some household goods, set of *Encyclopedia Americana*. 12249 Cordova NE. Scranton.

2 DODGE wheels, 13", 5-hole; 2 Chev. truck wheels, 16", 6-hole; 4 Chev. wheels & tires, 14", 5-hole. Kennedy, 293-9455.

HEATHKIT color TV, 23", GR295, remote control, \$100. Spray, 884-8453.

CHARMGLow port. L-P gas barbeque grill, used 1 yr., \$20. Campbell, 299-4830.

L78x15 TIRE & WHEEL, 5-hole, tire nearly new, \$25; bird cage, \$7. Harrington, 292-2034.

CIRCULAR SAW, \$20; floor model table w/rip fence, miter gauge, \$30; radial accessory, \$18; all for \$60. Allen, 296-6453.

SKI BOOTS, Nordica-Astral Slalom, yellow, men's size 11, \$40. Bober-schmidt, 266-4579.

PIMENTEL guitar, \$135; wrought iron etagere, 4 glass shelves, \$60; stereo cabinet w/record storage, solid maple, 29", \$55. Dalphin, 265-4029.

FREE Bermuda grass sod, already dug, pick it up; 2 Colorado spruce trees, 3 1/2' & 5' tall, \$25 ea. (you dig), \$50 ea. (I dig). Anderson, 265-0403.

MICHELIN RADIALS, 1.55x15 with Mag wheels, fit 4-hole VW, \$150. Martinez, 293-2301.

13' TRAVEL TRAILER w/stove, ice box, porta-potty, \$975. Mares, 299-6958.

BABY CRIB; couches; mirrors; dog house; lg. fan. Falacy, 293-2517.

TWO DOORS, hollow core, sliding type, 24"x80" w/hardware, \$10 ea. Young, 869-2162.

BOLT-ON alum. boat rack, fits wide bed pickup shell, \$20. Lisotto, 884-7331.

HEATHKIT SB101 transceiver, \$250. Anderson, 898-7894.

AT&T STOCK, 88 shares. Thompson, 298-8954.

RIFLE, 300 Savage; boat, 14' car topper, 9.9 hp., Sears reversible water cooled motor. Singleton, 299-1613 after 5.

17 1/2' TRAVEL TRAILER, compact, self contained, '78 Cavalier, trade-ins considered, \$4195, look & make offer. Ludwick, 296-6447.

REFRIGERATOR, Sears best, 17 cu. ft., 2 yrs. old. \$275. LeRoy, 897-0920.

'73 JAYCO tent trailer, sleeps 8, refrig., new canvas, loaded; '76 25hp Johnson outboard w/14' alum. boat. Workman, 294-6210.

COUCH, \$40; reupholstered LR chair, \$50. Larson, 299-2384.

TRAILER, 1964 Montgomery Ward Riverside utility, 4' wide x 5' long, 1-wheel style, all metal w/top, \$95. Cover, 881-3860.

CANON G11-1.7 camera, auto. 35mm, range finder, w/case, \$95. Van Deusen, 299-4328.

TRANSPORTATION

'72 YAMAHA 175 dirt cycle, OK before overhaul in APS class, now basket case, make offer. Shunny, 265-1620.

10 SPD. BIKE, Men's, Sears, 27" wheels, puncture-proof tubes, \$85. Gendreau, 268-3436.

'73 CHEV Impala stn. wgn., AC, PB, PS, AT, 400 C.I. engine, 2-bl. carb., will consider trade for pickup. Arana, 299-1214.

'75 CHEV pickup, 1/2 ton, Scottsdale, LWB, HD suspension, 4-spd., 350 V8, 42,000 miles, \$3150. King, 299-9184.

'76 GLASTRON GT-150, 15', 85 hp Johnson, power trim & tilt, full cover, 2 6-gal. tanks, 2 stainless steel teflon props, trailer w/bearing buddies. Wilson, 296-5965.

'76 OLDS Omega, 38,000 miles, one owner, 304 V8, 23 mpg, new tires, 4-dr. sedan, \$3000 firm. Leeman, 299-9149.

'76 OLDSMOBILE Cutlass Supreme stn. wgn., AC, PS, PB, V8, \$3500. Kubas, 292-3682.

'78 MONTESSA COTA 348, 38 miles, spark arrestor & skid plate. Webb, 294-8341 after 5.

'69 PLYMOUTH Fury 3, \$300. Norcott, 865-7789.

'73 PONTIAC Catalina, 4-dr., 28,000 miles, \$2200. Hole, 268-7692.

'78 FORD Chateau Club wagon, deluxe van, 460 V8, trailer package, Cruise Control, \$12,000 new, \$9950. Hall, 821-3376.

'78 OLDS Cutlass Supreme, velour seats, loaded w/extras, 11,000 miles, below book at \$5495. Baca, 298-8586.

BICYCLES: 10-spd. ladies, Wards, \$50; 5-spd. men's, Sears, \$30; single speed, \$15. Bartlett, 299-4861.

BICYCLE, 10-spd. ladies, used 2 months, \$75. Joseph, 299-6989.

'66 PLYMOUTH Barracuda, white, slant 6 engine, AC, new front end, 2 new radials, Diehard battery, 87,500 miles, \$300. Bunker, 821-1890.

'71 CAMERO, 3-spd., floor shift, 250 cu. in. 6-cyl. engine, new paint job, \$1600 or best offer. Wright, 281-5828.

'76 VOLARE stn. wgn., V8, AT, AC, PB, PS, new steel radials, 19,000 miles, \$3600. Kerr, 299-7527.

'78 GMC 1/2-ton, long wide bed, bubble camper shell, AC, 4-spd., economical six. Floyd, 292-2160.

'71 CHEV Impala 2-dr., AC, PS, PB, AT, radial tires, low mileage. Hanson, 298-2120.

'67 PONTIAC, white, 4-dr., 63,000 miles, R&H, 2 extra snow tires, \$975. Johnson, 265-4932.

DUNE BUGGY, street legal, fiberglass body, convertible top, mag wheels, chrome trim & roll bar, \$2800. Perryman, 294-6113.

'69 CHEV Impala, 4-dr., PS, PB, AC, AT, AM radio, \$400. Hayner, 242-4834.

'78 MOTORHOME, 23', Renaissance Broughm, Dodge 440 engine, AT, PS, PB, AC, Cruise Control, AM-FM

8-track stereo, CB (extra), sleeps 6, \$17,500. Roelle, 298-4058.

'73 BUICK LeSabre, new radial tires, uses reg. gas, \$1300. Johnson, 821-8262.

BOAT, '77 Fiberform "Special Edition-25", galley, head, sleeps 8, 60 hrs., \$17,000; '72 Jeep Wagoneer 4x4, loaded, new tires & brakes, \$2750. Hill, 256-3507.

MARK TWAIN BOAT, open-bow, 17', new 150 hp Merc. outboard w/guarantee, power tilt. Morenus, 293-0339.

'69 HONDA TRAIL 90, motor recently overhauled, w/helmet, \$335. Wilkinson, 299-8327.

'66 MUSTANG 289, AT, radiator-trans.-upper joints-steering reworked, \$1050 or best offer. Harrington, 292-2034.

'74 PORSCHE 911 coupe, sun roof, Daiseys, AM/FM stereo/CB, Koni shocks, Michelin XWX's, other extras, \$12,000. Fox, 299-4007.

'70 CHEVELLE Super Sport, PB, PS, AC, AT, 2-dr., V8, 454, new radial tires, bucket seats. Rael, 299-1063 after 2.

'57 FORD Ranchero, original 312 T-bird engine, factory rebuilt 18,000 miles ago, \$1500. Orear, 266-8944.

'77 MERCURY Monarch, 4-dr., AT, PS, PB, AC, AM-FM radio, 15,500 miles, below book. Swanson, 256-3693.

'73 MOTOR HOME, Explorer, low mileage, sleeps 6, many extras, roof rack. Singleton, 299-1613 after 5.

'63 VW, new tires, \$450. Bradley, 293-9586.

'70 PLYMOUTH Fury, runs, needs work, \$175 or offer. Weber, 243-7650.

REAL ESTATE

2 ACRES one mile, south of Bosque Farms, underground utilities, restricted. Klein, 821-8768.

3-BDR., 1 1/4 bath, completely renovated, detached 24'x24' gas heated garage, grease pit, 220 wiring & alley access, Princess Jeanne. Parks, 296-2181 after 5.

CORRALES ADOBE, 2800 sq. ft., 3 acres, 4-bdr., 2 baths, 3 fp's, vigas, brick floors, atrium, workshop, guest home, 2 wells, fruit trees. Quadri, 898-3919 after 6.

MOBILE HOME, 12'x64', 1971 United, 3-bdr., 1 1/2 baths, refrigerator, stove, set up in NE park, \$6000. Griego, 821-8447.

MOUNTAIN HOMESITE, private lakes, golfing, Country Club, Wolf Creek skiing, \$9000. Hamilton, Box 1133, Pagosa Springs, CO., 303-264-2364, 255-4027.

ON CUL-DE-SAC: backyard access, landscaped, 4-bdr., 2 baths, w/marble vanities, kitchen built-ins, bay window, c/patio, Montgomery & Tramway, \$64,000. Byers, 298-8326.

WANTED

TOYOTA or DATSUN (economy car) stn. wgn., std. shift, AC, no newer than '73 unless the price is right, good condition. Silva, 898-4440.

FOUR-DRAWER file cabinet. Strome, 821-2567.

GIRL'S 24" bicycle, used, in good condition. Yrene, 883-7632 after 9 p.m.

TRUCK COVER for short, wide bed. Tessler, 296-1025.

JOIN OR START car pool from Loma Del Norte subdivision; prefer parking east of Gate 6, north of Bldg. 880, but will consider other areas. Murphy, 821-7785.

15x7 RALLY WHEELS off of 1976-79 Chevy or GMC pickup or Suburban. Aragon, 294-0225.

RADIO for 1970 Ford pickup. Hall, 298-8617.

3500 WATT or larger belt-driven AC generator or light plant. Zamora, 292-2319.

SUMMER faculty member & wife seek apartment or house to rent or sublease for June & July. Curro, 867-2471.

USED EE book on TV design. Larson, 294-2384.

VERTICAL ice box for camper. Van Deusen, 299-4328.

FOR RENT

LG. 4-bdr. home, near Eldorado HS & Hoover school, \$425/mo. w/option to buy. Smith, 299-1981.

3-BDR., NE, brick, 1 1/4 baths, patio, garage, carpet, drapes, 1400 sq. ft., damage deposit, \$355 (discounts), references required. Holmes, 292-0898.

NEW 2-bdr. unfurnished townhouse apt, near Central & Tramway, city view, \$235/mo. plus electric & \$100 deposit. Berg, 296-2695.

3-BDR. HOUSE, NE NEAR Chelwood & Lomas, appliances furnished, 1 1/4 bath, AC, \$350/mo., water paid, damage deposit required. Weinmaster, 298-1620.

HOUSE in NE heights (Eastridge area), avail. between 8/1/79 & 9/1/80, will consider renting the house partly furnished. Reif, 299-2665.

UNFURNISHED APT., 5 blocks from Sandia bus route. O'Bryan, 293-4621.

LAKE FRONT CABIN, Vallecito Lake near Durango, modern, 3-bdr., fp, fishing, horseback riding, Silverton trail, Mesa Verde, reservations. Croff, 881-7235.

LOST AND FOUND

FOUND: Lavalier, opal centerpiece, filigree setting, vicinity Base Post Office. Hansen, 869-2716.

LOST — Inlaid turquoise earring, blue tool case, men's lt. brown leather jacket, gold woven chain, necklace watch, black record book, aquamarine pendant on gold chain.

FOUND — Silver hoop earring, brass key "SC10," Ford key, "Duke City" E41 key, black Micropoint ballpoint pen. LOST AND FOUND, Bldg. 832, 264-1657.

Coronado Club Activities

Las Vegas Trip Set

HAPPY HOUR TONIGHT sees a new group on the bandstand — Press and the 66 Trio. Press is the last of the old time tenor sax men. He plays a fine horn in a mellow style. The buffet features fancy stuffed shrimps. Next Friday's Happy Hour features the "Three of Us & Jeremiah" with the Club's famous steamship round of beef on the buffet. Call 265-6791 by mid-week to reserve your buffet tickets. Coming soon: Bob Banks and the Trio April 6.

TOMORROW is adult disco time at the Club with the Carter Express playing the tapes. Time is 8:30 to 12:30. Disco dance contest winners will receive prizes. Members admitted free, guests \$1.

DOUG BALLARD (1551) will show some spectacular slides of Mexico's Copper Canyon at travelogue night Wednesday, March 28 at 7:30. There's no admission charge.

THE WOLFPACK holds its annual meeting with the election of officers and board members on Tuesday, April 3. There will be free beer, cokes, popcorn and door prizes. Stop by about 7:30 p.m.

DISCO LESSONS are offered by the Club starting April 11. The class will meet for five Wednesday evenings. Cost is \$15 for members. Sign up at the Club office.

SEASON SWIM TICKETS go on sale at the Club office April 13. Registration for swimming lessons is scheduled Saturday, April 21. Parents must register their youngsters.



GERRY HEYER (3145) and LILLIAN BALFOUR (3141) were recently honored by the Safety, Health and Recognition Committee of the Albuquerque Chamber of Commerce. On separate occasions, each of the women successfully applied the Heimlich maneuver to save a choking victim. Both Lillian and Gerry learned the technique while serving on the Library Safety Committee.

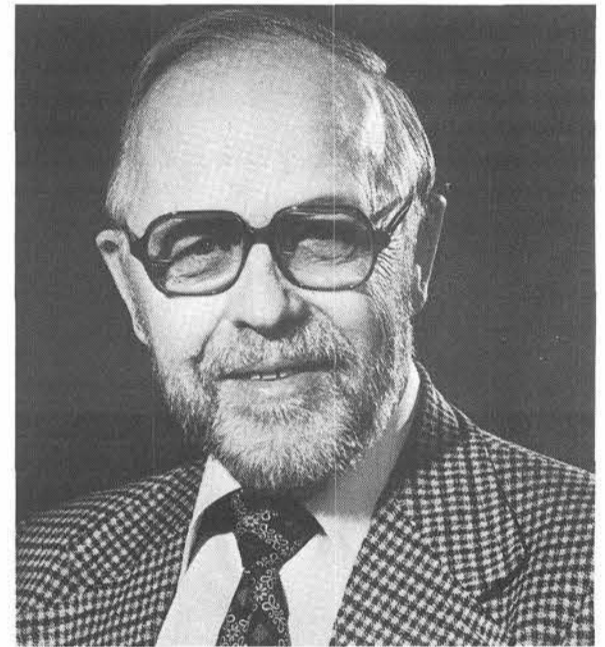
TRAVEL DIRECTOR Ed Neidel announces a new package deal for three days, two nights at the Castaways in Las Vegas June 15-17. The works costs \$174 (dbl).

Ed also has set March 31 as the deadline for signing up for the Cancun trip. This package includes seven nights at the Cancun Caribe or a condominium, air fare and breakfasts. Cost is \$416 or \$356 depending on the accommodations you choose. See Ed in the lobby tonight between 6 and 7 for the full scoop.

Also available are trips to Hawaii or Europe with many options, many savings.

CORONADO GRANDSQUARES celebrate the first anniversary of their club with a potluck supper and dancing Monday, April 2, in the main ballroom starting at 6:45. All squaredancers belonging to other groups are cordially invited to join the festivities. Grandmarch starts at 8 p.m.

New officers of the group are Chuck and Betty Clendennin, president couple; Marv and Nadyne Plugge, VP; Bud and Vicky Clark, sec'y-treas.; and Sil and Claudia Chacon, Central District reps.

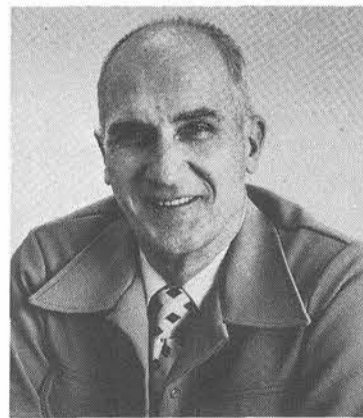


HEADS COMMITTEE — Paul Robertson of Safeguards Evaluation Division 1758 has been named by the New Mexico Dept. of Education to head the Trade, Industrial and Technical Education Advisory Committee. The Committee advises the Department of Education on current industrial practices. Paul's term continues until 1980.

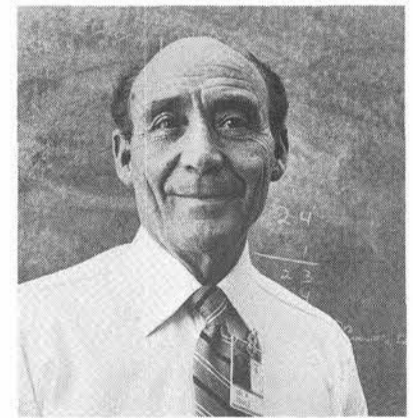
Retiring



Eloy Sedillo (3426)



Frank Koletar (2553)



Lee Schulz (2324)



Bonnie Montano (3421)



John Kirby (1411)



Joe Sanchez (3741)