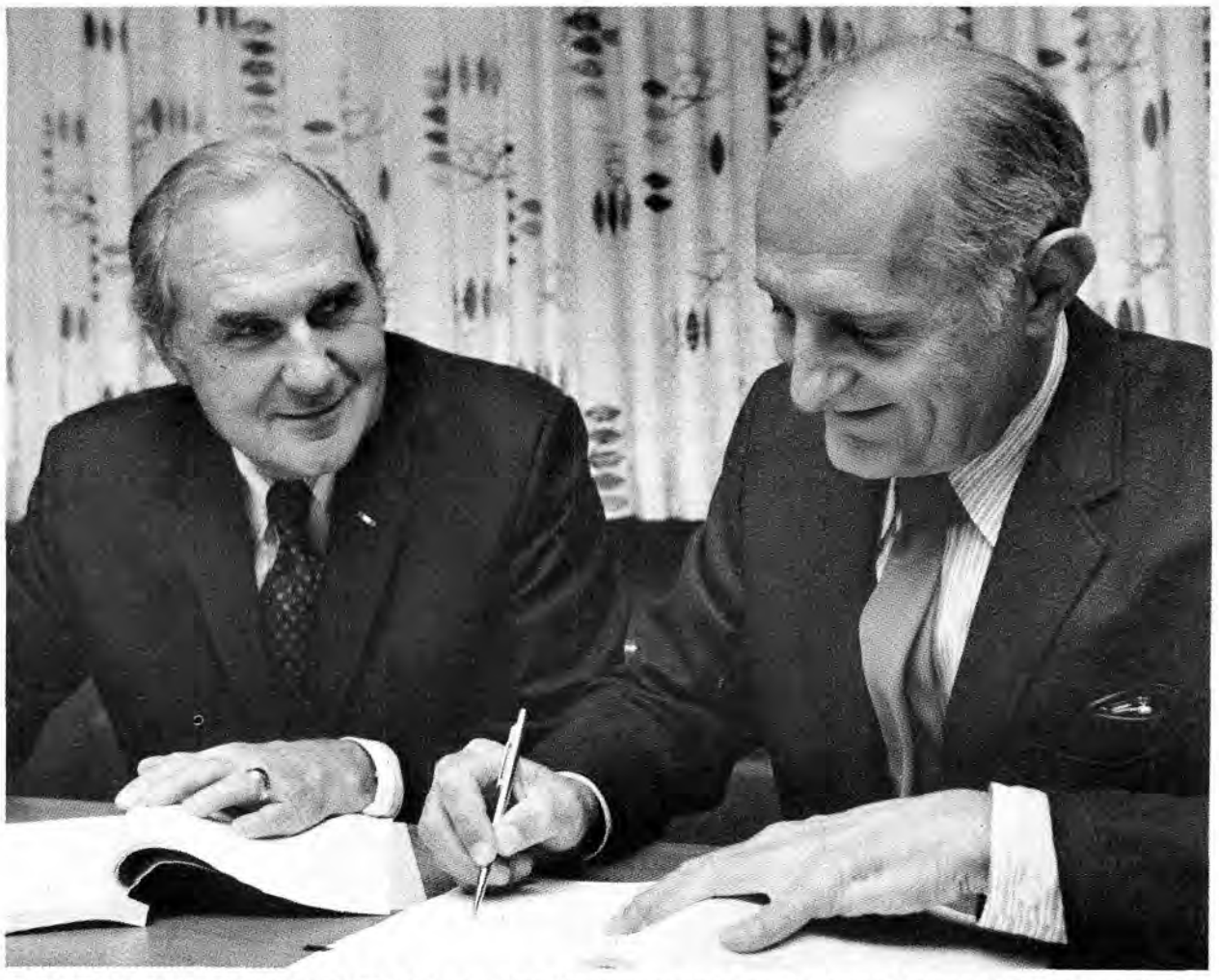
Bob Henderson to Take Early Retirement

IMPRESSIVE BEGINNING to a 36-year career in engineering is this coach that a young Bob Henderson hand-crafted to win a Fisher Body/General Motors scholarship to Berkeley. Bob, currently VP-7000, is taking early retirement this month.

LAB NEWS

VOL. 26 NO. 2 JANUARY 18, 1974

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



SAM DONNELLY, Manager of AEC's Albuquerque Operations complex, observes Morgan Sparks as he signs a five-year extension of the AEC contract with Sandia and the Western Electric Company. Contract provides for operation by Sandia of laboratories in Albuquerque and Livermore, and of the Tonopah Test Range.

The custom is no longer observed, but if it were we think a leading candidate for the title of "Mr. Sandia" would have to be VP Bob Henderson, who this month takes early retirement. It's a matter of quality and quantity: Bob has held positions of key responsibility just about longer than anyone else at the Labs. He's seen it all — from the early days in '42 when the metallurgical isolation of a few micrograms of uranium-235 was a laboratory task of staggering proportions, to the present, more than 30 years later, when weapons technology over the three decades has advanced by quantum measures.

From Fat Man to Sandia's latest microminiature components is a long road. We discussed elements of his engineering career with Bob, found that he still becomes animated when the subject relates to an engineering problem. One challenge of 1944: How do you completely contain the explosive force of 5300 pounds of HE within a pressure vessel? The answer was the Henderson creation, Jumbo, a 200-ton behemoth which, despite its grossness, represented much fine-grained design and development work by him and his group at Los Alamos. For youngsters, Jumbo was the insurance device in which the Trinity nuclear assembly would have been detonated had the physicists, says Bob, "felt there was a less than 50-50 chance that the gadget would go nuclear." Point of Jumbo was to salvage the plutonium, then in rather short supply, in case of a nuclear dud.

Though he states an interest in medicine — surgery — if he were to start over again, Bob Henderson is clearly constituted of engineering material. Note the elaborate coach (photo above) which the 18-year-old Henderson built entirely from raw material to win a Fisher Body/General Motors scholarship to Berkeley. "Took over 2000 hours to build, a full year of work eight hours a day," Bob comments. "It's built to micrometer tolerances — even had to allow for the thickness of the lacquer." That diligent regard for the niceties of precision work was a quality that would later be useful in the exacting technology of nuclear weapons.

His introduction to the weapons business developed from acquaintance with Ernest O. Lawrence, the Nobel Laureate of the Berkeley faculty and an early giant among the physicists in the Manhattan Project. It was October 1942 and Lawrence was recruiting technical staff in Hollywood where Bob was Paramount's Assistant to the Chief Engineer. "Can't tell you the nature of the job, Bob, but I guarantee it will change your life," Lawrence promised. He joined the Berkeley

(Continued on Page Four)

Two at Labs Complete Tech Program Early

Congratulations are due Robert Martinez (7122) and John Arnold (7121) on their early graduation from the Development Shops on-the-job-training program. Students in this program spend the first two years taking core courses in six development shop areas, and the last year and a half specializing in their field of interest.

During their training Robert and John maintained excellent grades. In addition, both enrolled in and are now nearing completion of Sandia's TI program. Because of their fine records, Robert and John were graduated one semester early. Robert will be working in the plastics labs and John in the physical electronics lab.

Credit Union Reporter

By Earl Simonson (4122), Credit Union President

Year End Report

Copies of the annual report are now available at the Credit Union, and we urge your study of the report. Your Credit Union has accumulated over $19,000,000 in assets, an increase of $2,500,000 during 1973 — our largest yearly increase since the Credit Union was organized in 1948. The Board of Directors at their December meeting declared a quarterly dividend at the annual percentage rate of 6%.

Fourth Quarter Statements

Fourth quarter '73 statements were mailed this week. For this quarter only, members (except accounts opened after 11/12/73) will receive two statements, a consequence of our conversion to an on-line computer service. Under revised IRS and National Credit Union Administration rulings, dividends for the fourth quarter of '73 and the liquidation of single payment loans were posted on Jan. 1, 1974, and will thus not appear in the body of the fourth quarter statements. Fourth quarter dividends, paid on Jan. 1, are included on the lower portion of the statement for information purposes only. Also, the statements do not show Dec. 31 monthly payroll transactions because the December payroll was not received until Jan. 2, and was posted on that date.

Income Tax Information

Although credit union regulations require all income to members to be reported as "dividends," IRS regulations stipulate that such "dividends" be reported as "interest income" on your tax form. Your statement gives you your "Year to Date Dividend" and this is the amount reported to IRS. However, to determine interest expense for '73 *add* the amounts shown on your statements labeled "quarter interest/finance charge." The interest for each of your loans are shown but not totaled. If you have questions, call the Credit Union

Annual Meeting

The 26th Annual Meeting will be held Jan. 24 at the Coronado Club. Door prizes and beverages are offered and there will be drawings for two color TV's. Principal business is to fill three Board openings and two openings on the Credit Committee. The meeting starts at 5:15 p.m. Because of a change in balloting, be sure to sign in upon arrival. Many members have dependent accounts for their spouses and children, but dependents are not qualified voting members nor are they eligible for the drawings.

Livermore Annual Meeting

The Livermore Annual Meeting is set for Thursday, Jan. 31, at 7:30 p.m. at the Sunol Country Club. Door prizes and beverages are offered, and each member is eligible for the drawing for a color TV.

Building Plans

An addition to our present building, now approved, will double the size of our present vault so that safe deposit boxes will be available to all members who desire them. Three hundred fifty members are now on the waiting list. If you want a box, or want a larger one than you now have, call the Credit Union. Plans are progressing for a more suitable facility at Livermore.

LAB NEWS

Published every other Friday

SANDIA LABORATORIES

An Equal Opportunity Employer

ALBUQUERQUE, NEW MEXICO
LIVERMORE, CALIFORNIA
TONOPAH, NEVADA

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john shunny is editor
&
don graham ass't. editor

bruce hawkinson writes
as does norma taylor while
bill laskar takes/makes pictures
&
in livermore lorena schneider does all

CU Bulletin Board

Good News for Bond Buyers — The Treasury Department has announced that Series E Bonds purchased Dec. 1, 1973, and thereafter will be earning 6% interest when held to maturity instead of the previously established 5-1/2%. Maturity of bonds sold after Dec. 1 will be shortened from 5 years 10 months to five years. Purchase prices and maturity values remain unchanged. Also, 23 million Americans now holding more than $60 billion in Savings Bonds and Notes will receive an addition 1/2% return on these items.

NM Academy of Science Honors Three Sandians

Charles Hines (3141), Cecil Land (5113) and Warren Taylor (9531) have been elected Fellows of the Academy by the New Mexico Academy of Science. The honor is in recognition of their support and active participation in the activities of the Academy for the past five years. A Fellows certificate will be awarded to each Sandian.

No Noon Gym Time? How About Yoga?

With the half hour lunch period, many Sandians are now missing out on the noon hour physical fitness activity done at the gym. Gary Peterson (5112), a yoga devotee for seven years, suggests an alternative. He'll be giving an introductory course in the yoga physical system starting Tuesday, Jan. 22, from 5 to 5:45 p.m., at the yoga center on 6317 Linn Ave. NE. His classes will run every Tuesday and will stress breathing, exercise, relaxation, diet and mental attitude. For interested students, yoga philosophy will also be covered. If you're interested, call Gary on 877-6398 for more details.

Jon Reuscher (5221), seated, and Jim Ney (5714).

Supervisory Appointments

JON REUSCHER to supervisor of Reactor Source Applications Division 5221, effective Jan. 1.

Since joining the Labs in January 1965, Jon has been with this organization, working on fast burst reactor design and studying effects of rapid heating on fissile materials.

He graduated from Texas A & M University with a BS in mechanical engineering, and MS and PhD degrees in nuclear engineering. Jon is a member of the American Nuclear Society. His leisure time activities include gardening and woodworking.

Jon and his wife Betty have two daughters and a son. They live at 7508 La Madera NE.

* * * *

JIM NEY, to supervisor of Exploratory Projects Division 5714, effective Jan. 1.

Following graduation from Iowa State in 1963, BS EE, Jim came to work at the Labs in the systems development organization (1500). Before college, he had spent two years in the Army, chiefly at the White Sands Proving Grounds. Studying under the Technical Development Program, Jim gained his master's, again in EE, in 1965 from UNM.

He continued in systems development work until 1970 and, at that time, transferred to advanced and exploratory projects, where he has since remained.

Jim is a woodworker by avocation and, during the season, is active in Little League baseball. His wife Pauline and he have four children, three girls and a boy, and reside at 3104 Utah NE.

Unique Balance Weighs Hydrogen

A vacuum microbalance of unique design has been developed by Paul Coronado of Physical Research Division 8334 for use in studying the hydriding characteristics of various metals. Hydriding results when large amounts of hydrogen are absorbed in such metals as uranium, titanium and erbium.

Special design of the microbalance produced an instrument with few of the disadvantages of conventional vacuum balances. The new balance can be used to perform hydriding measurements in the -160° to 600°C temperature range and can operate at pressures from high vacuum to 200 psi. In addition, the balance volume has been minimized and the balance itself is fabricated solely from hydrogen-compatible materials.

In actual operation there is only one moving part — the quartz cantilever from which a metal sample is suspended. When hydrogen is leaked into the sample chamber, the sample gains weight and the quartz rod begins to deflect. This deflection is sensed by an electronic probe in a fixed position above the quartz rod and positioned almost vertically above the suspended sample. The tip of the quartz rod is metalized so that the probe detects any deflection. The probe, a commercially available sensor, senses deflection by means of eddy currents and thus does not touch the rod tip.

PAUL CORONADO (8334) calibrates vacuum balance with weights as he sets up sample for hydriding experiment.

Attention: All SLL Bridge Players!

A Sandia bridge tournament will be held Wednesday, Jan. 23, at the Sunol Valley Golf Club beginning at 7:30 p.m. The admission-free event is part of the 11th annual Postal Duplicate Contract Bridge Tournament sponsored by the National Industrial Recreation Association. Active or retired Sandians and their immediate relatives are eligible to participate.

The tourney will be played as duplicate bridge but there will be no computerized, pre-dealt hands. A certified NIRA game director will be present to oversee the tourney play.

Sandia trophies will be awarded to the winning pairs playing north/south and east/west positions. In addition, the results of play will be forwarded to the NIRA, with national winners to be announced on Feb. 15, 1974.

Tourney coordinator Pat Leary (8441) encourages all bridge players to enter. "We especially want all the noon-time bridge players. Don't let the fact you'll be competing in a national contest deter you. After all, you could win a trip for two to the Caribbean or one of the other prizes."

If you plan on participating or want additional information, contact Pat at ext. 2049. She says a partnership desk will be set up the evening of the tournament, so singles shouldn't hesitate to sign up.

LIVERMORE NEWS

VOL. 26, NO. 2 LIVERMORE LABORATORIES JANUARY 18, 1974

Sympathy

To Dave Bray (8182) on the death of his father in Coos Bay, Ore., Dec. 16.

To Mearle Hicks (8361) on the death of his father-in-law in Kentucky, Dec. 26.

To Roger Page (8312) on the death of his father in St. Petersburg, Fla., Dec. 4.

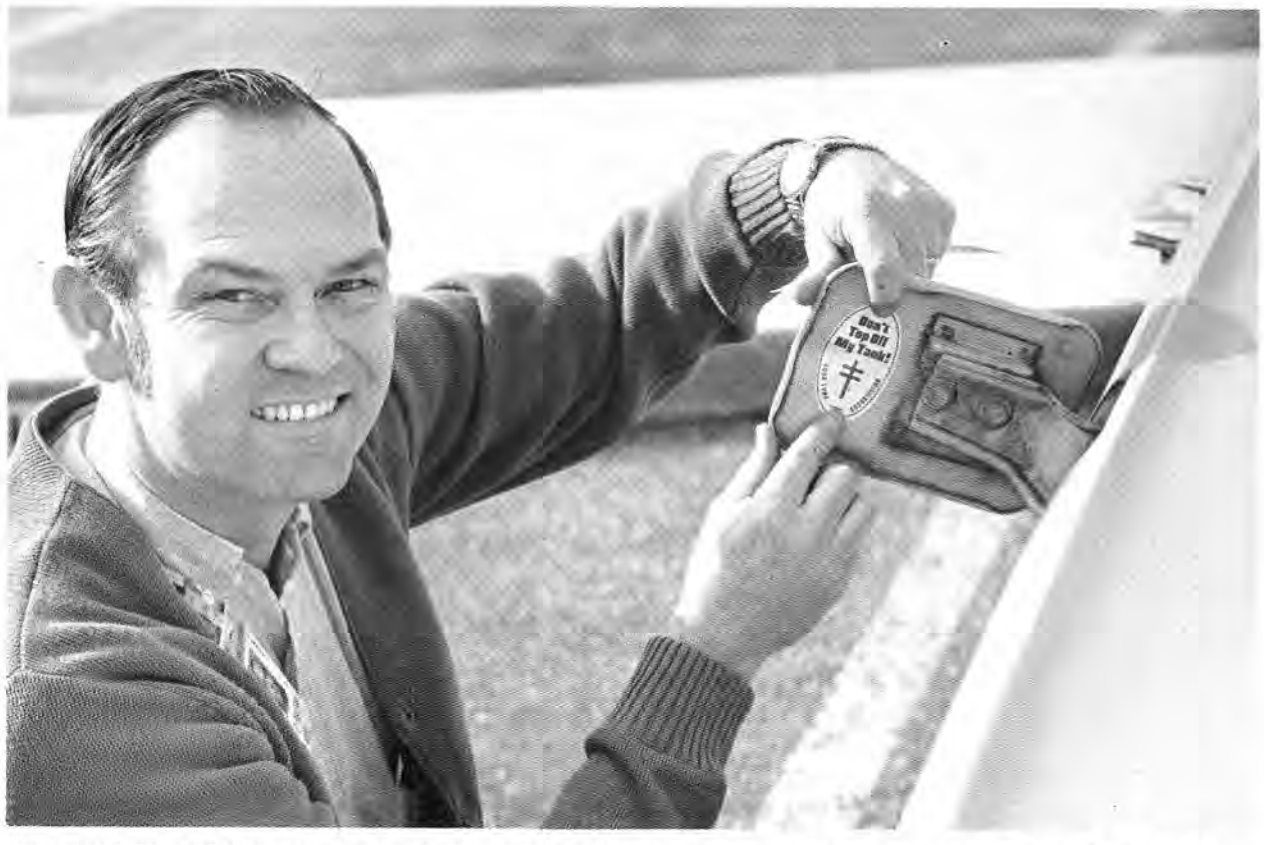
To Ralph Thompson (8114) on the death of his father-in-law in Monroe, Wash., Dec. 14.

To Bob Piper (8261) on the death of his brother in Battle Creek, Mich., Dec. 31.

Congratulations

Mr. and Mrs. Gerry Giovacchini (8314), a daughter, Erin Star, Dec. 12.

Gail Voelker (8442) and John Bryan, married in Livermore, Dec. 28.



BILL MOORE (8363) displays a "Don't Top Off My Tank" sticker inside his auto's gas tank door. Brim-filled gas tanks are a source of spillage, aggravate air pollution and the shortage of fuel. Stickers are available on bulletin board, NW corner Bldg. 912. Bill works with air conservation groups in Northern California.

Speakers

Roger Everett (8364), "Terradynamics," Lion's Club, Danville, Calif., Oct. 24; "Perspectives on Space," Livermore Rotary Club, Dec. 12.

Wes Estill (8312), Don Benthusen (8342), and Hilary Jones (8314), "Pictorial Display of Elemental Distribition in Materials Created from Computer Processed Microprobe Data," Eighth National Electron Probe Analysis Society of America meeting, New Orleans, La., Sept. 17.

Jim Swisher (8313), "Effects of Hydrogen on the Mechanical and Thermochemical Properties of Materials," graduate seminar, Mechanical Engineering Department, University of California at Davis, Nov. 15.

Authors

Monte Nichols (8314) and Ray Mar (8313), "Erbium Hectoboride," INORGANIC CHEMISTRY, Vol. 12, p. 1710-11 (1973).

Mike Baskes (8314), former Sandian Tony Thompson, and Prof. W.F. Flannigan (Vanderbilt University), "The Dependence of Polycrystal Work Hardening on Grain Size," ACTA METALLURGICA, Vol. 21, p. 1017-28, July 1973.

Rudy Johnson, Jack Dini, John Helms, and Tommie Bryant (all 8312), "Laminations in Nickel Plating," METAL FINISHING, October 1973.

GLENN FOLKINS (1525) displays his contact fuze which was recently patented.

Glenn Folkins Invents Unique Crush Fuze

The AEC has received a patent for a contact fuze invented by Glenn Folkins of Stockpile Systems Division II 1525. The patent resulted from work done for the Air Force on a reimbursable contract.

The fuze is unique in that it functions upon contact with soft ground after a fall through jungle canopy. Both the design of the protectors and the circuitry of the fuze contribute to this capability. In addition, provision is made for initiation of the fuze on a hard target.

Located in the nose of a parachute-deployed device, the fuze has four contact elements. Circuits for these are in series, and two must be cushed for activation. The cone-shaped crush switches consist of a thin (.005") copper alloy outer cone which, deforming readily, makes electrical contact with the hard inner cone to complete the switching function. The fuzes are enclosed within the specially-designed structure for protection during the fall through the forest canopy.

On contact with hard targets, the fuze mounting plate section shears off and is driven backward, ultimately causing two rear-facing contact fuzes of the same conical design to be activated.

Glenn invented the device several years ago when he was in a weapons development group. He has been at Sandia since June 1953.

Sympathy

To Fidel Gonzales (7515) on tne death of his mother in Las Vegas, N.M., Dec. 30.

To Dave Watt (7121) on the death of his mother in Albuquerque, Dec. 26.

To Charles Miller (7515) on the death of his mother in Albuquerque, Jan. 8.

To Manuel Sanchez (7518) on the death of his father-in-law in Albuquerque, Jan. 4.

Congratulations

Mr. and Mrs. Kenyon Nowotny (2342), a son, Kenyon Elray, Dec. 31.

Continued from Page One

Bob Henderson to Retire

Laboratory the first of November, and work followed on the design of the plant to be built at Oak Ridge (Y-12) for the electromagnetic separation of U-235.

In early '44, while still at Berkeley, Lawrence one day warned him with a grin: "A couple of fast talkers are coming to see you." The talkers turned out to be Robert Oppenheimer and the explosives expert George Kistiakowsky. After a few hours of discussion Oppenheimer delivered the message: Come to Los Alamos. Not next month, this afternoon, and Oppenheimer took a plane ticket in Bob's name from his pocket. The three men arrived in Albuquerque late that night, continued by Army staff car to the "Hill."

Among the many great gathered at Los Alamos at that time, Bob's personal regard is highest for Lawrence. But the other scientists were impressive too: "Those personal associations are still a source of insight into all that has been written about the 'aristocracy of science'."

The LASL work, engineering of the Fat Man (the weapon used over Nagasaki), was Bob's first direct involvement with nuclear ordnance. Since that time he has directly or indirectly had a hand in each of the many weapons programs of the Labs. If it's got something to do with nuclear weapons design, Bob Henderson is a good man to see.

About retirement, he has a few convictions. "We're in a stage of technology evolution that is fast breaking. I believe people like myself should step aside so that the younger staff with up-to-date and in-depth academic backgrounds can take over. They should have their chance at the top jobs just as we did."

Only 58, the recent untimely death of a friend also motivates him to retirement before the customary 65. His health is good and he wants to keep it that way, devoting his energies to a number of activities. A sailor since the age of 10, Bob and Mrs. Henderson plan sailing trips with friends around the West Indies and in the Pacific. He may continue his association with the nuclear weapons program in his capacity as a Senior Reviewer for AEC, a classification policy type of job. And the Albuquerque Symphony, of which he is a former Board president, will undoubtedly continue as a favored project.

With much to look forward to, Bob Henderson is happy about early retirement, and we suspect he will be as productive in it as he has been in his first thirty-six years of engineering.

Tennis, Opera Buffs Holding Hands

Jim Harris (2521) and Joe Laval (3163) enjoy hardly anything more than a passage of Puccinni and thus, logically enough, are members of the Albuquerque Opera Guild. And a couple of hot shot tennis players, who may regard an aria as that Italian player who never made it to Wimbledon, are coming to town later this month to help raise money for the Santa Fe Opera and for other Guild projects.

The players are Ken (Doomsday Machine) Rosewall and Roy Emerson. Harris and Laval explain: "There are more tennis players than opera goers, so a tennis exhibition between two world-class pros should be both fun and profit." Principal match will be Rosewall vs Emerson, but that will be preceded by doubles with local players teaming up with the pros and a short junior match.

The event takes place Wednesday, Jan. 30, at 7:30 p.m. at the Civic Auditorium. You can get tickets (three to fifteen bucks) from Jim or Joe, or from Albuquerque National Bank, First National Bank, Kistler-Collister, the Tennis Complex, or the Indoor Tennis Center.

GARY DIAL displays sample of more than 50 styles of safety shoes in the mobile store now serving Sandia. The truck visits Sandia twice a week — from 8:30 to 12 noon on Mondays and Thursdays outside Gate 1; from 12:15 to 4 p.m. on Mondays outside Gate 10; and from 12:15 to 4 p.m. on Thursdays outside Gate 6. Employees may purchase the safety shoes with cash or by payroll deduction.

Gran Quivira - Monument to Changing Cultures

The wind was fiercely cold. Three days before Christmas I stood atop Chupadera Mesa a hundred miles southeast of Albuquerque and thought about survival. Until the recent past, survival has been a daily struggle in the southwest.

I gazed at the impressive stone ruins of the people who not only survived in this arid region, but prospered some 500 years ago.

The early Spaniards called the place Pueblo de las Humanas. Later, the ruins of the once-vigorous culture were misnamed Gran Quivira. Coronado added the name to the lexicon — it denoted the fabled seven cities of gold that he searched for and didn't find. And eventually the name picked up the connotation of a dream of a golden future.

There was no gold in Gran Quivira, only the dry farming of fields of corn, squash and beans with primitive tools. Water was scarce. The Humanas dammed arroyos to hold the summer rains, constructed cisterns and dug wells — ruins of some of these are still visible.

Gran Quivira never reached Chaco Canyon or Mesa Verde in terms of building achievement or population. No more than 2000 people ever lived on the hill overlooking Chupadera Mesa and the surrounding plain. Indians from the two great pueblos may have started the structures at Gran Quivira — certainly they influenced the Humanas. Pottery designs and the tell-tale Kiva were contributed by the Chaco and Mesa Verde people. Masonry is similar and the design of the community houses has most of the same features.

The great pueblos were abandoned in the late 1100's. Earliest community-house structure at Gran Quivira is dated around 1300. When the Spaniards arrived, it was the largest active pueblo in the southwest.

Coronado never visited Gran Quivira. The first Spaniard the Humanas saw was Don Juan de Oñate, colonizer of New Mexico, who visited the Humanas in October 1598.

Before the Spaniards came, Gran Quivira was a trading center, funneling the corn and other agricultural products of the Rio Grande pueblos to the plains Indians in exchange for buffalo meat and hides. There was a brisk trade in the fine fibrolite axe heads manufactured by a tribe living near Española.

Nothing much changed for the next half century except that a series of Spanish priests took up residence at Gran Quivira and two large mission churches were built, using the same limestone that was used in the pueblo. The ruins of the earlier church, San Isidro, built around 1629 have been excavated. A second church, larger and more imposing with 50-foot walls still standing, was built about 1665. It was called the Mission Church of San Buenaventura.

European technology contributed little to these structures. For the most part, the traditional stone and mud mortar of the Indians were used, along with vast amounts of Indian labor.

Looking at the ruins, I marveled at the persuasive genius of those solitary priests who added Catholicism to an elaborate native religion and accomplished this extraordinary construction. They overcame handicaps in language and technology, and encountered physical hardships and religious taboos. For the Indians did not give up their kivas nor their intricate structure of deities. They merely added the Catholic saints and built the churches as additional places of worship.

GRAN QUIVIRA National Monument, some 100 miles southeast of Albuquerque, contains the impressive stone ruins of a once-thriving pueblo and two ancient Spanish churches built in the 1600's.

Religion, salt and silver along with a four-year drouth brought about the eventual abandonment of Gran Quivira.

The civil authorities in colonial New Mexico were intent on profit, and most longed to get back to the cosmopolitan centers of Mexico and Spain. They pressed the Humanas into virtual slavery to carry sacks of salt from salt beds near Willard to silver mines at Parral, some 300 miles south of present day El Paso. At Parral the salt was mixed with silver ore, using the bare feet of the Indians as the mixing agent. Mercury was then added and the silver ultimately extracted. The process was tough on bare feet. Not only were the Humanas so engaged, the authorities also captured Apaches and tried to impress them as well.

The clergy objected to this practice and took steps to curb the civil authorities. Although one New Mexico Governor was excommunicated and expelled from the New World, the priests' measures were largely ineffective and, eventually, the Indians drove the Spaniards out during the pueblo revolt of 1680.

And the Apaches never forgave the pueblos for "cooperating" with the Spaniards. If a Spanish mission existed in a pueblo, it was an enemy of the Apaches. The old trade relationships with Gran Quivira went also. Burned timbers, skeletons and other damage found at Gran Quivira suggest the quality of the Apache revenge. It was too late to explain the difference between church and state.

Gran Quivira was abandoned between 1672 and 1675. The severe drouth of 1666-1670 brought famine and pestilence, and increasing Apache raids decimated the population. The survivors fled to a pueblo near Socorro in which the same language was spoken. Eventually they drifted south to El Paso along with the Spaniards who were fleeing from the pueblo revolt. Modern day Ysletas near El Paso, cousins to the Isletas south of Albuquerque, are descendants of people of Gran Quivira. • dg

Events Calendar

Last issue we stated that we planned an expanded Events Calendar in calendar format. We attempted to assemble such a calendar, but found that the format created problems — too many items on some days, while other days would be completely blank. So we'll continue with the existing format. Gerse Martinez, LAB NEWS, ext. 7841, continues as coordinator of the master calendar; be sure to call him with dates of professional society meetings and other significant events.

Jan. 18-20 — Second Annual Albuquerque Sports Vacation & Recreational Vehicle Show, Convention Center.

Jan. 18 — Hockey, 7:30 p.m.; **Jan. 23** — 7:30 p.m.; **Jan. 27** — 7 p.m.; **Jan. 30** — 7:30 p.m., Tingley Coliseum.

Jan. 19 — NM Mt. Club bike ride, 15-20 miles, north Tingley Dr., 10 a.m.

Jan. 20 — NM Trials Ass'n., Observed Trials, E end of Lomas in foothills, 9:30 a.m.

Jan. 25-27, 29-31 — Albuquerque Little Theatre, "Oh Daddy, Dear Daddy," 6 & 9 p.m. **Jan. 26;** 2 & 8 p.m. **Jan. 27;** all other performances 8 p.m.

Jan. 26 — NM Mt. Club, Jemez Dam, 2-4 miles, Gulf Mart, 9 a.m.

Jan. 27 — Albuquerque Avalanche, cross country ski race, Sandia Crest, 10 a.m.

Jan. 28 — Film, "Highlights of New England," 7:30 p.m., Popejoy Hall.

Jan. 30 — ASUNM Lecture: Warren Widender, Mayor, Berkeley, Calif., 8 p.m. SUB Ballroom.

Jan. 30 — Albuquerque Opera Guild: Pro Tennis Exhibition & Clinic, 7 p.m., Civic Auditorium.

Jan. 31, Feb. 3, 7-10 — UNM Experimental Theatre, "Play Strindberg," 8:15 p.m. UNM Fine Arts Center.

TIJERAS, recently incorporated as a village, has a new mayor. He's Pat Garcia (7221). Felix Garcia (7515), right, is one of five members of the village council.

Speakers

R.W. Mottern (9351), "Radiography at Sandia Laboratories," Albuquerque District of Radiological Technologists, Nov. 14, Albuquerque.

R.L. Fox (5643), "Multipoint Distribution Function of the Incompressible Turbulent Flow Over a Smooth Flat Plate," Fluid Dynamics Division Meeting, APS, Nov. 19-21.

D.K. Brice (5111), "Analytical Representations of Backscattering Spectra or Do Bernstein Polynomials Deserve the Neglect They've Received," California Institute of Technology, Nov. 20, Pasadena.

R.J. Chaffin (2122), "The Murine Radar"; R.L. O'Nan (2121), "The Lazo Radar"; C.S. Williams (2124), "Ground-Echo Characteristics for a Ground-Target Pulse-Doppler Radar Fuze of High Duty Ratio," Electronic Fuze Symposium, Nov. 26-27, Ft. McNair, Washington, D.C.

C.L. Olson (5241), "Collective Ion Accelerator," APS Plasma Physics Meeting, Oct. 31-Nov. 3, Philadelphia.

J.E. McDonald (5300), "Future Opportunities for the Chemist in the West and Problems of the Transition Period: Academic to Industrial," Operation Interface, American Chemical Society, Nov. 1-4, D.H. Lawrence Ranch, NM.

S.M. Myers (5111), "Ion Backscattering Study of LiH Surface Reactions," Annual Salt Meeting, LLL, Nov. 14-15.

R.J. Eagan (5316), "Sealing Glasses and Glass-Ceramics to Metal," Materials Science Graduate Student Seminar, Univ. of Florida, Nov. 19, Gainesville.

C.S. Williams (2124), "Ground-Echo Characteristics for a Ground-Target Pulse-Doppler Radar Fuze of High Duty Ratio," Tri-service Electronic Fuze Symposium, Nov. 26-27, Ft. McNair, Washington, D.C.

B.J. Petterson (5712), "Normal Incidence Pyrheliometer with Selective Fields of View," Solar Energy Data Workshop for NSF and NOAA, Nov. 29-30, Silver Springs, MD.

J.E. Brolley (Univ. of Calif.) and J.M. Peek (5211), "Lability of the Hydrogen Molecule via the Weak Interaction," 141st Meeting of the American Astronomical Society, Dec. 2-6, Tucson, Ariz.

J.V. Otts (9333), "Impact Testing with a 35-Foot Centrifuge"; D.O. Smallwood (9332) and A.R. Nord (1544), "The Use of Exponentially Decaying Sinusoids to Duplicate Shock Spectra on Shaker Systems" N.B. Gens (1543), "The Dynamic Environment of Landing Craft," Shock and Vibration Symposium, Naval Research Laboratory, Dec. 4-7, Houston.

J.M. Holovka (5513), "The Mechanism of the AC Glow Discharge Polymerization of 2-Vinylpyridine." Plasma Chemistry Symposia, SW Regional Meeting of the American Chemical Society, Dec. 5-7, El Paso.

A.C. Watts (1255), "Optimal Observers for Time Varying Linear Systems," 1973 IEEE Conference on Decision and Control, Dec. 5-7, San Diego.

W. Beezhold (5112), D.L. Weaver and W.D. Brown (both 2113), "Detection of Na and Cl Impurity Atoms in SiO_2 Thin Films Using Ion-Induced Characteristic X-Ray Analysis"; W.D. Brown (2113) and H.J. Stein (5112), "Modification of MOS Capacitor Characteristics by Ion Implantation"; R.A. Burghard (2113), C.W. Gwyn (2114), W.D. Brown, D.L. Weaver and B.L. Gregory (all 2113), "Process Dependence of MOS Radiation Sensitivity," Workshop on Radiation Effects in MOS Technology, Dec. 6-7, Washington, D.C.

W.D. Smith and C.E. Land (both 5113), "Self-Strain-Biased PLZT Ceramic Electrooptic Device," 1973 International Electron Devices Meeting, Dec. 1973, Washington, D.C.

B.L. Gregory (2113) and C.W. Gwyn (2114), "Variation in Radiation Hardness of MOS Devices with Processing Parameters," Semiconductor Interface Specialist Conference, Dec. 10-11, Univ. of Puerto Rica, San Juan, Puerto Rico.

J.M. Hoffman (5212), G.J. Lockwood and G.H. Miller (both 5226), "Projectile Radiation (3914A°) for N_2+ Ions Incident on N_2"; C.F. Melius (5211), "The Charge Transfer Mechanism In Metal Vapor Lasers," APS DEAP Meeting, Dec. 10-12, New Haven, Conn.

N.J. Magnani (5531), "The Kinetics of Stress Corrosion Crack Propagation in U-4-1/2 st.% Nb," Lecture at NMIMT, Dec. 4, Socorro.

B.L. Hulme (5122), "Collocation Methods for Stiff O.D.E.'s," Computation Colloquium, Dec. 4, Cambridge, Mass.

A.G. Beattie (9352), "Acoustic Emission Energy Analysis on Filament Wound Pressure Vessels," Acoustic Emission Working Group Meeting, Dec. 5-7, New York, NY.

M.R. Scott (2642), "A Review and a Preview of Several Methods for the Numerical Solution of Two-Point Boundary-Value Problems," Univ. of Nevada, Math Colloquium, Dec. 6, Las Vegas; and "New Trends in Applied Mathematics," Sigma XI Colloquium, Dec. 6, Las Vegas.

M. Moss (5844), "Composite Materials," NMIMT engineering seminar, Dec. 11, Socorro.

B.L. Butler (5843), "Fibers for Composites," NMIMT engineering seminar, Dec. 12, Socorro.

J.E. Kennedy and J.W. Nunziato (both 5131), "Shock Wave Evolution in PBX-9404"; D.E. Munson (5163), "Anisotrophy Effects in the Hugoniots of Cloth-Laminate Quartz Phenolics"; R.J. Lawrence (5166) and D.E. Munson (5163), "A Modified-Maxwell, p-a Model for Wave Propagation in Porous Composites"; K.W. Schuler (5163) and J.W. Nunziato (5131), "Loading Behavior of Precompressed PMMA"; D.B. Hayes (5162), "Wave Propagation Calculations in Transforming Multiphase Systems"; L.M. Barker (5163) and J.R. Asay (5133), "Time-Resolved Measurements of Spatial Velocity Distributions in Shock Experiments"; J.R. Asay (5133), "Experimental Evidence for Shock Melting in Bismuth"; D.S. Drumheller (5163), "On the Effect of Bond Strength on the Propagation of Stress Waves in Composite Materials," American Physical Society Winter Meeting, Dec. 27-29, UC, Berkeley, Calif.

C.B. Bailey (2642), "A Survey of Revisions and Extensions to American National Standard FORTRAN X3.9-1966 Initially Approved by ANSC X3J3," Applied Mathematics Division Seminar, Dec. 13, Argonne, Ill.

G.E. Laramore and W.J. Camp (both 5151), "Plasmon Model for Final State Relaxation Effects in Connection with Core-Level Excitations in Metals," Chemical Processes at Solid Surfaces Conference, Jan. 7-11, Newport Beach, Calif.

E.P. EerNisse (5112), "Light Ion Bombardment Sputtering, Stress Buildup, and Enhanced Surface Contamination"; J.W. Guthrie, L.C. Beavis, D.R. Begeal and W.G. Perkins (all 2413), "Properties of Hydride-Forming Metals and of Multilayer Hydrogen Permeation Barriers"; W. Beezhold (5112), "Surface Region Analysis of Light-Mass Impurities and of Ion-Induced Atomic Intermixing Effects Using Ion-Induced Characteristic X Rays"; R.S. Blewer (2413), "Proton Backscattering as a Technique for Light-Ion Surface Interaction Studies in CTR Materials Investigations"; R.A. Langley, S.T. Picraux (both 5111), and F.L. Vook (5110), "Depth Distribution Profiling of Hydrogen"; S.T. Picraux (5111) and F.L. Vook (5110), "Ion Beam Studies of H and He in Metals"; H.T. Weaver (5154) and W. Beezhold (5112), "Study of ^{3}He+-Bombarded Palladium Using Nuclear Magnetic Resonance Techniques"; D.K. Brice (5111), "Heavy Particle Range and Energy Deposition Distributions in Solids," Conference on Surface Effects in Controlled Thermonuclear Fusion Devices and Reactors, Jan. 10-12, Argonne National Laboratory, Argonne, Ill.

W.J. Camp (5151), "Modern Theory of Critical Phenomena," Seminars: Montana State University, Jan. 11, Bozeman; and Colorado State University, Jan. 18, Ft. Collins.

Recreation Notes

FUN & GAMES

Coronado Ski Club — Jan. 27 to 30 marks the Club trip to Vail/Keystone/Copper Mt. Breckinridge. Walt Westman (9512) is chaperon. A series of one-day bus trips to places such as Taos and Angel Fire is planned. Call Carl Peterson, ext. 6775, if you're interested in the Feb. 3 Angel Fire trip.

On the cross country scene, the Community College at UNM is offering a course on cross country skiing. It's aimed chiefly at novices and is being taught by Bill Beck. Bill states that the first session is Jan. 23 at the University and that he plans four weekend outings, more or less, depending on the wishes of the class. The Trail Haus on San Mateo SE will give a 10% discount on equipment to class enrollees.

Sam Beard (5628) reports that the second annual Albuquerque Avalanche — a three mile cross country ski race atop Sandia Crest — will be held Sunday, Jan. 27. This is a fun event for cross countriers of all ranges of skill. Pick up entry blanks at cross country ski shops; deadline is Jan. 21.

* * * *

Sandia Bicycle Association — Latest SBA newsletter contains special supplement, "Helmets for Bicycling," by Gordon Pike (5155). Gordon reports that more than 50 SBA'ers now wear the Mountain Safety Research helmet that he concluded is best. He gets the helmet for $16.15 (plus shipping) in quantity orders.

Of 350 members, 222 responded to the latest bike survey. Here are the returns on the question "How often do you ride?": 4-5 days/wk - 114, 2-3 days/wk - 44, 1 or less days/wk - 39. "How far do you ride (one way)?": 1 to 3.9 miles - 24, 4.0 to 5.9 miles - 71, 6.0 to 7.9 miles - 87, 8.0 to 9.9 miles - 13, 10 miles plus - 2.

With gasoline becoming a precious resource and buses becoming scarcer, that leaves car pools and bikes, and it seems safe to predict that more and more Sandians will take to the latter, especially as warmer weather approaches. Hopefully, the access problem at the Wyoming gate will be solved (twin bike paths have been promised) and a stop light will be installed at the SE corner of the Parade Grounds (also promised). If you are contemplating biking, we suggest you discuss bikes and commuting with an SBA member before you charge off and invest in what might be an unsuitable machine.

BOWLING BALLS they're not. They're 8" polyethylene spheres which will be criticality monitors near our nuclear reactors. Two kinds of dosimeters will fit into the small hole in each, with the sphere serving as neutron thermalizer. Dan Thompson (3313) has project responsibilities, but the precision machining was done by Keith Gawith (left) and his trainee, Jake Young (both 7146).

Take Note

Response to the recently distributed Health Plan Survey has been good, so states Tex Ritterbush of Benefits Planning Staff 4210. About two out of three questionnaires in the wholly volunteer survey were returned, and a number of respondents have included thoughtful comments concerning their approval — or opposition — to the concept of health plan coverage as a matter of national policy. The completed forms are being compiled by Bionetics Division of Litton Industries, and a summary of the results will be published this spring for the information of employees.

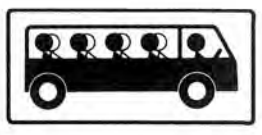
On the health scene, Tex reports that President Nixon has signed legislation that would provide funds for the development and early operation of Health Maintenance Organizations (HMO). One provision stipulates that employers of 25 or more people who are subject to the minimum wage requirements of the Fair Labor Standards Act must offer to these employees the opportunity to enroll in a qualified HMO if one is available locally

* * * *

A pair of British films on the metric system will be shown in Bldg. 815 on Jan. 25 at noontime; a second pair will be shown at the same time on Feb. 1. Corry McDonald (7623), redoubtable metricator, is host.

* * * *

Last issue we suggested you locate your local circuit breakers if you are not able to turn off lights and appliances by means of wall switches. A word of caution: be sure you're not shutting down appliances or experiments meant for continuous operation. We managed to turn off a refrigerator over the weekend that's used for film storage and came in Monday to one soggy mess. We've since color coded those circuit breakers that can be turned off without creating problems.



Bus Notes

If you're a regular on any of the Sandia Specials, check with your auto insurance company about reducing your rates. The best time is probably during the renewal period. The punched-out bus passes (or the checks you've written to pay for them) should be proof of the average number of days per week you've ridden — and thus haven't driven your car. (If you accrue any major savings, let us know at LAB NEWS.)

* * * *

Two new bus routes are now operating for Sandia commuters. One is a Far South Valley loop, operated by Sanchez Charter Coach; Dave Shank (1522) is honcho. The other is a second bus from the mountains as far east as Sedillo Hill; Bob Lucas (9322) is the honcho, and Helweg & Farmer is the carrier.

* * * *

Overheard on the No. 2 Special during one of those days when it was crammed with Sandians: "Okay everybody standing up, count off so we know how many we've got aboard — 1" "2" "3" . . . "38" "39" "40" and then a plaintive voice — "I don't want to get involved!"

* * * *

Last Monday six proposed bus routes serving three areas (Far East Albuquerque, Near South Valley, Corrales/Paradise Hills) were presented to three private carriers for their consideration. Acceptance or rejection is expected next week, and residents of those areas will be informed of the outcome as soon as possible.

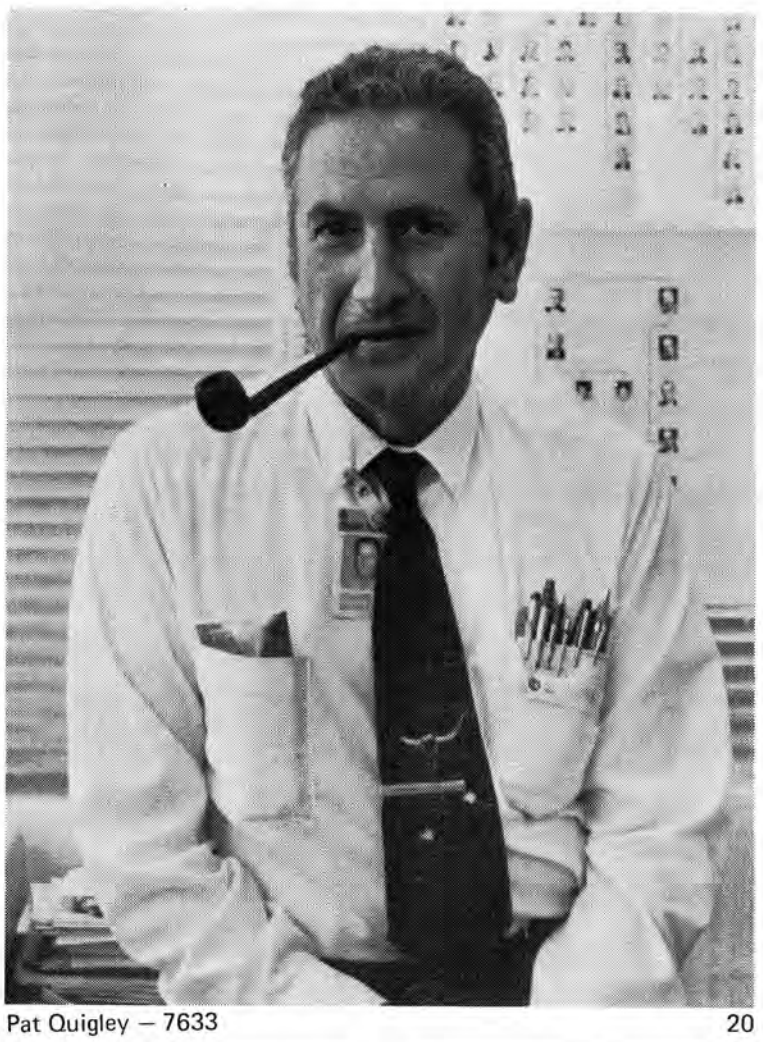
MILEPOSTS

LAB NEWS January 1974

Donald Peterson – 7624 15

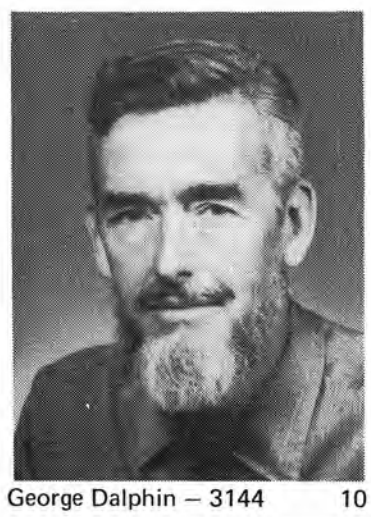
Maria Chacon – 7632 10

Henry Schoeppe – 8166 15



Pat Quigley – 7633 20

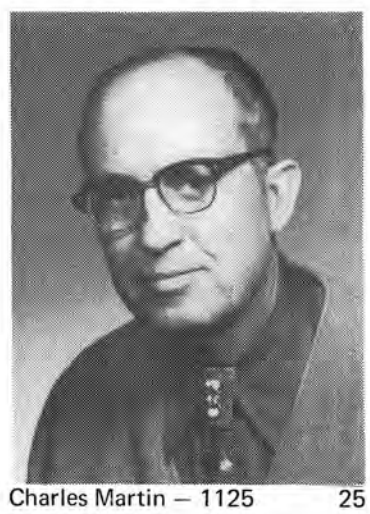
Sylvester Grisby – 8114 15



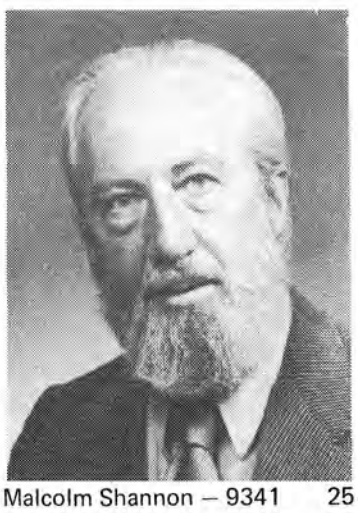
George Dalphin – 3144 10

Rosalie Gallegos – 7221 25

Al Bastion – 8421 15

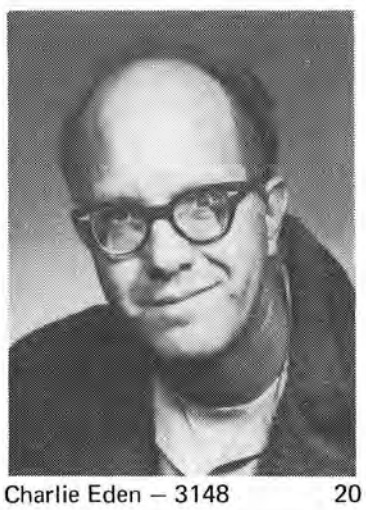


Charles Martin – 1125 25

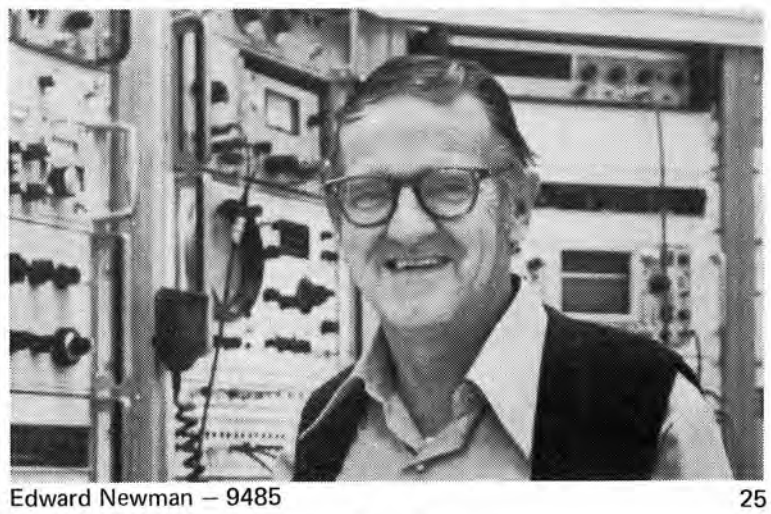


Malcolm Shannon – 9341 25

Francis Cunningham – 8213 15

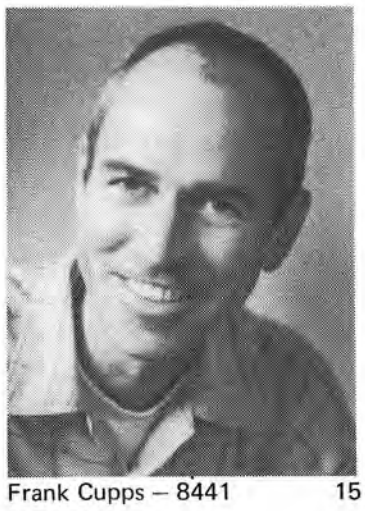


Charlie Eden – 3148 20



Edward Newman – 9485 25

Keith Gawith – 7146 10



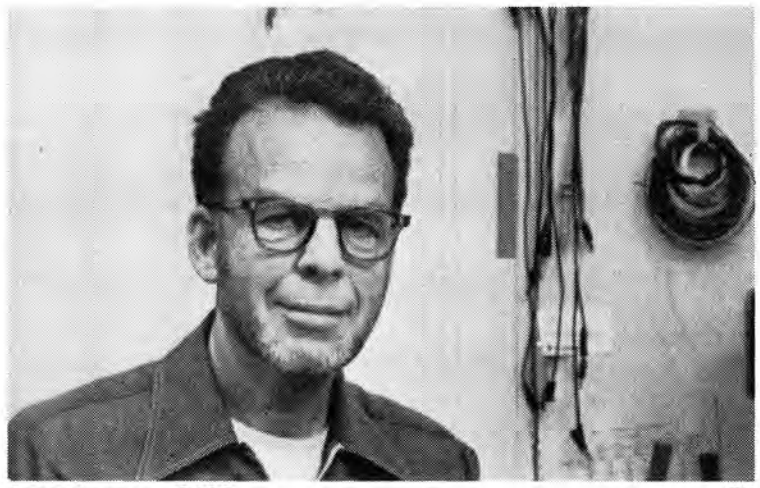
Frank Cupps – 8441 15

Robert Scipes – 4123 10

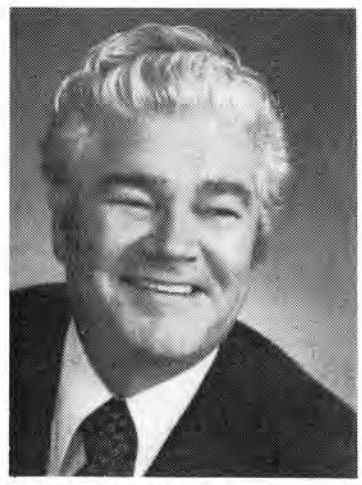
Maxine Stephenson – 7631 15

Carl Beckham – 8166 15

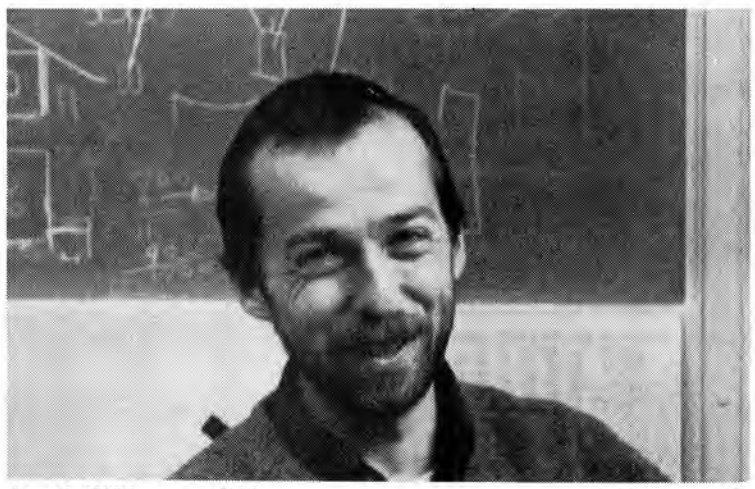
Orlando Torres – 2632 15



Gene Hansen – 9483 25



Glen Funk – 8168 15

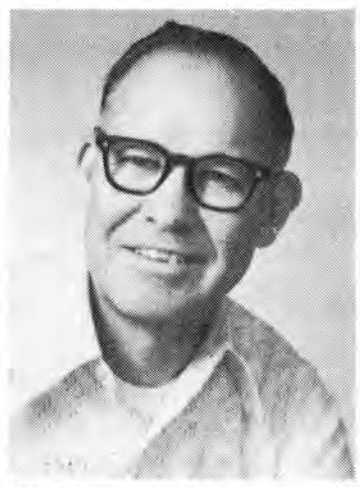


Joseph Williams – 1511 10

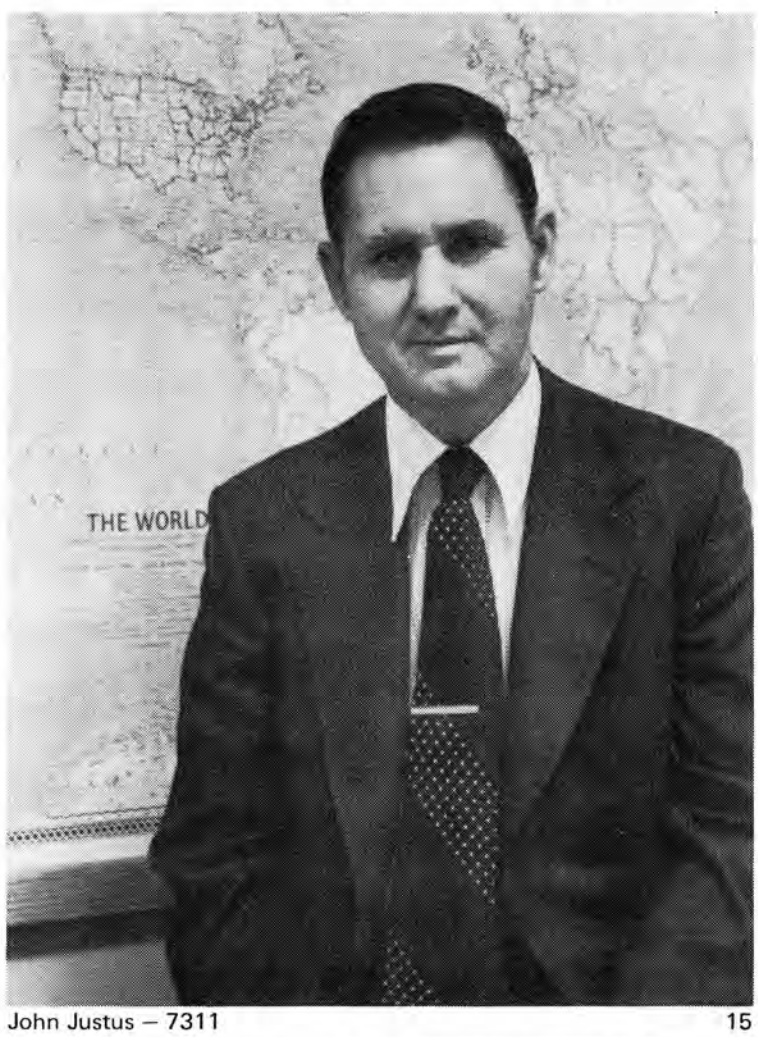
Marie Dillon – 3151 20

Jim Rego – 8423 15

Tom Bozone – 9522 20

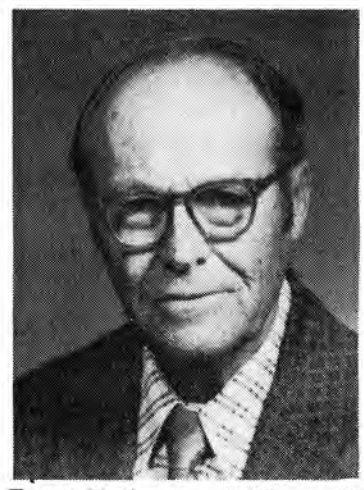


Dez Brown – 8312 15



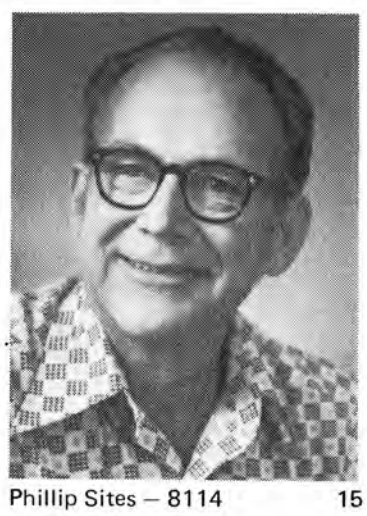
John Justus – 7311 15

Jim Brock – 8433 25



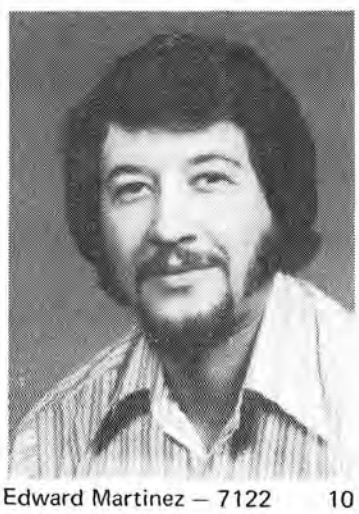
Truett Blackman – 1246 15

Margaret Smith – 9425 20



Phillip Sites – 8114 15

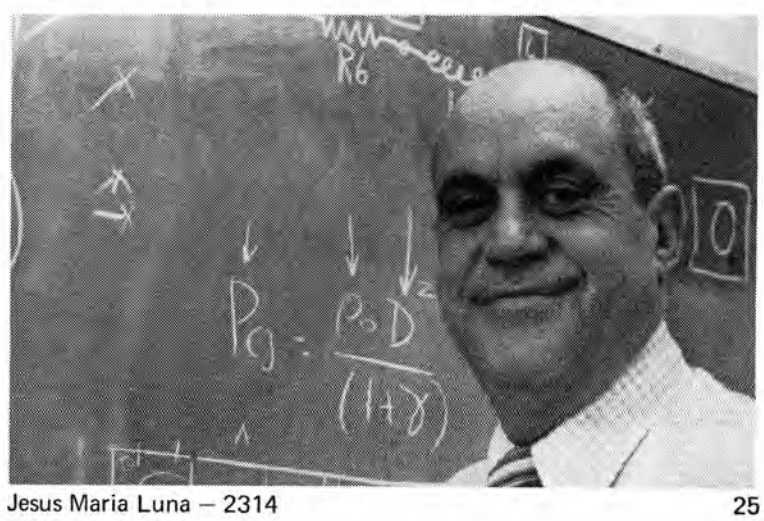
Jose Dominguez – 7222 15



Edward Martinez – 7122 10

Walt Maupin – 8254 25

Ferne Graves – 8433 20



Jesus Maria Luna – 2314 25

feedback

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

Q. Could you tell me why Sandia places so much priority on education and educational aids, but has no logical or well defined process of promotion for those who choose to advance their education? Many persons who complete a degree while at Sandia find it necessary to leave in order to realize any benefit from their education.

A. Your question suggests that Sandia's educational policy should provide for promotional action for those who choose to advance their education, especially upon acquiring a degree. Such is not the intent of Sandia's education program; additional education, with or without a degree, does not assure automatic promotion.

Sandia places a high priority on education because education, whether it be self-study, colloquia, or disciplined formal study, is essential to the vitality of the Laboratories staff.

For example, the In-Hours Technical Courses Program conducted on premises each semester contains only courses that are highly relevant to the participant's present work or known expected assignment. The main intent is to increase technical competence. These courses are not degree oriented. There is no automatic advancement upon completion.

Courses taken under the Educational Aids Program should improve an employee's capability to perform the present Laboratories assignment or one to which the employee may logically aspire. Courses may or may not lead to a degree depending upon the individual's education objective. If a degree is acquired, as stated in Sandia Laboratories Instruction 4555, there is no assurance that an employee will advance to a higher job level.

I hope that I have satisfactorily conveyed to you what the primary purpose of Sandia's educational policy is, and that it is not to provide a process of automatic promotion. I expect that you are well aware that education successfully completed is one of several important factors that go into making up an employee's performance and capability which help foretell the ability to take on increased responsibility.

— K. A. Smith - 3100

* * * *

Q. A number of FEEDBACK questions and comments have related to the assurance of anonymity for the person submitting the question and steps taken to bring about that anonymity. A few have wondered how they can remain anonymous when the Feedback form calls for the person's name and address. Others question the expense of using the US mail (as opposed to the company mail) to mail a Feedback response. George Thorne, Feedback administrator, has prepared the following response on this subject.

A. All Feedback envelopes are delivered to the administrator unopened, and his first act after opening the envelope is to remove the stub with the questioner's name and address. The inquiry is given a number, and the administrator alone has access to the information associating name and number. *Someone* must have this information in order to get the answer to the person who asked the question.

Principal reason for the home address feature on Feedback is to provide and to protect employee anonymity when that is important to the individual. A few employees prefer to use the US mail even to send in their question, so we provide that capability also.

Many Sandians are not concerned about anonymity as it relates to their work area and have been inserting their organization number rather than their home address. This is perfectly acceptable to us, of course, and we will send responses to these people at their company location.

—George O. Thorne, FEEDBACK Administrator

* * * *

Q. As a department secretary shouldn't my performance evaluation be discussed with me by my department manager? Are raises determined according to performance ratings? Who besides my immediate supervisor is involved in my performance evaluation? If someone else is, who and why?

A. Sandia does not have a standard policy of supervision talking with each employee concerning his or her performance on an annual or periodic basis. However, it is inherent in each supervisor's responsibility to explain how the performance ratings are determined and to discuss the employee's performance when asked to do so. Increase treatment is dependent upon performance ratings and job grade. You are performance ranked against others in the same organization and, although your immediate supervisor's judgment carries the most weight in your performance evaluation, his supervisor's judgment, along with the compliance with the Performance Review General Rules, also play a part.

—D. S. Tarbox (4200)

* * * *

Q. Three improvements could be made in the benefits package at little cost to Sandia. These would use the leverage of a large group's purchasing power. They are (1) group auto insurance (2) group dental insurance and (3) group legal insurance. Why not?

A. Group auto, dental, and legal insurance are new developments in employee benefits that have received considerable publicity because they appear to offer economy as well as convenience in providing these coverages to an employee.

Our benefits program is based on the policy that our total compensation, including benefits, should be competitive both with industry in general and with other scientific laboratories in particular. An important element of that policy is that the Labs benefits program is not intended to cover those areas which are readily available on an individual basis nor to compete with private enterprise.

We will, however, continue to examine the results other companies experience with these and other innovative benefits in the light of their possible introduction at the Laboratories.

—D. S. Tarbox (4200)

BETTE GRAHAM (4230) — "What to do and how to go about doing it."

Dept. 4230 Offers Career Counseling Service to Sandia

A new career counseling service is being offered by Employee Relations Department 4230. Bette Graham, on loan from Medical 3300, will be available a couple of afternoons each week to discuss career aspirations with any interested employee.

"We want to help people who are seriously thinking about changing careers," Bette says, "those who are undecided what career path might best suit their particular interest and abilities, as well as those thinking about a second career after retirement."

The service will augment counseling available from supervisors whom the employee should consult first since the supervisor is most knowledgeable about the employee's demonstrated abilities. However, there are many other aspects of counseling requiring broader and more specific knowledge which Bette can provide.

Bette was setting up shop in Bldg. 832 last week enthusiastically talking about books, reference material and pamphlets needed on various occupations and the counseling program itself. She feels the program will benefit many people desiring to make changes in their occupations but just do not know what it is they want to do or how to go about doing it.

"Any advancement in career or change of job requires preparation and motivation," she says. "We can help employees evaluate their strengths and skills and provide information about preparation for particular jobs."

She also talked about the many opportunities for further training that Sandia offers but pointed out that people often lack motivation to take advantage of them or else they are not familiar with what is available.

One of the best ways to provide motivation, she says, is to have someone desiring a new career field talk with someone who is successful in that field. She will be asking help from Sandians throughout the Labs and will also work closely with Sandia's supervisors, educational counselors, personnel specialists, and retirement counselor.

Bette invites employees interested in discussing their career aspirations to call ext. 8640 for an appointment. She will be in her office in Bldg. 832 on Monday and Thursday afternoons.

Our Town

A Bunch of Sharp Blades

They get up at five in the morning. By 5:45 they're on the ice. They put in two hours of "patching" before school starts. These are the 90-or-so kids who are members of the Chaparral Figure Skating Club. Don Hosterman (3132) is president of the organization.

"These kids are competitive," Don says. "They all want to be Olympic skaters."

"Patching" is the word for working out — practicing the figure 8's and other intricate exercises that are part of the figure skater's stock in trade. Competition is always in two parts: compulsory figures and free style.

In addition to the early morning sessions, the kids work out after school and come back to the ice in the evenings for lessons and training from the eight professional instructors employed by the club.

"Function of the adults in the club, mostly parents," Don says, "is to provide the organization and structure required for any continuous competitive program. We arrange meets with other clubs in other cities. And, of course, we finance the operation of the ice machine at Tingley Coliseum."

The Club runs a year 'round program, presents a couple of shows each year, participates in several competitive meets including the recent Southwestern Regional contest held in Denver.

"Two of our members took firsts in a four-state contest with more than 200 skaters competing," Don says. "We're proud of that. Ours is a relatively young organization. We started in 1968."

In addition to the daily sessions for the youngsters, family sessions for recreational skating are held each Monday.

The organization is seeking new members.

"We have a program for all ages — five years to adults — and for any stage of skating development," Don says. "It's sharp competition and great fun."

Anyone interested is invited to discuss it with Don, Tel. 256-9560. •dg

CHAPARRAL FIGURE SKATERS enjoy "family night" every Monday on the ice at Tingley Coliseum. Don Hosterman (3132), president of the Club, skates with daughter Tara and Mark Hammond. The Club is seeking new members.

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

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Deadline: Friday noon prior to week of publication unless changed by holiday.
A maximum of 125 ads will be accepted for each issue.

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

MISCELLANEOUS

US ARMY sword; antique solid brass floor lamp, $20; old doll buggy, $10; Sunbeam Mixmaster, $6. Smitha, 266-9977.

SIMMONS box-springs & mattress, clean, no rips or tears, full size, $35. Fry, 298-1613.

BOOTS, English, lace top, black, size 5D. Ann, 898-2357.

NEW GE 14.7 cu. ft. refrig./freezer, avocado w/wood trim, make offer. Waddoups, 865-7952.

KODAK CAROUSEL 80 & 140 slide trays, $1.50 & $2.50. Edenburn, 265-5184.

BABY GERBIL, aquarium & equip.; B&W TV; stereo; boy's 24" Schwinn bike; Hot Wheels track & equip. Porter, 298-3623.

SKIS, boots, size 6, poles, $45; elec. stove, dbl. oven, harvest gold, 15 mos. old, $150. Navratil, 293-5527.

BUNNIES, assorted colors, 8 wks. old; 4 ea. F78x14 used nylon tires, $25 or $8 ea. Bassett, 898-1840.

COLOR TV 25" Zenith Chromacolor 100, port. w/stand & color antenna, $250. Laval, 898-0518.

STEEL window w/hardware, 55-1/2" wide, 52" high. Denish, 256-1559.

REG. miniature Schnauzers, 3 mos. old, salt & pepper color, 1 male, 1 female, w/puppy shots, $100. Metcalf, 296-2897.

DOUBLE bed, box springs, steel frame, $25. Shane, 296-4430.

STUDENT GUITAR, Stella, w/steel strings & hard case. Boyer, 298-3893.

BARITONE HORN, Reynold Emperor model, gold lacquer, case. Rose, 298-4849.

SKI RACK, fits Porsche 356 series,$15; contemporary sofa, $60. Laskar, 299-1024.

LUGGAGE CARRIER that fits VW bug, $7; bathroom sink, cast iron w/fixtures, $10. Parker, 299-1485 after 4.

TIRE: 155SR-13 Goodyear radial, new, orig. price $50; sell for $30. Vigil, 255-9076.

9x12 AREA RUG w/pad, $40; VM phonograph, $25; stereo components: amplifier, $15; changer, $10; FM tuner, $40. Miyoshi, 298-0666.

AIREDALE AKC reg., 2-yrs. old, male, top blood lines, $100. Aubuchon, 865-7790.

MINIATURE Schnauzer puppies, black, AKC reg. Phillips, 299-7074.

YELLOW Labrador Retriever puppies, male & female, 10 wks. old, AKC reg. Mackel, 296-3167 after 5.

'70 HODAKA 100 motorcycle, $95; size 8 buckle ski boots, w/boot tree, $20; Nevada ski bindings, $10. Barton, 265-8607.

SKI BOOTS, San Marco, lady's size 7 narrow, used once, $45. Curry, 298-5028.

TRANSPORTATION

'73 MALIBU, PS, PB, AC, $500 & take over payments or $3400. Taylor, 821-0792 after 4.

'68 CHEV. stn. wgn., AC, AT, new tires, $895; raise-up camper for pickup, $395, will trade for low mileage pickup. Lackey, 898-5175.

'72 OPEL 1900; '60 Ford 1/2-ton pickup; '65 Plymouth Valiant, under book. West, 281-3460.

'61 STUDEBAKER Lark, 83,000 miles. Kent, 256-1221.

'69 BUICK Skylark, AC, AT, PS, best offer. Wallace, 296-6556.

'65 PLY. 4-dr. wagon, 6-cyl., 3-spd., new tires & shocks recently, $500. Scranton, 299-4902.

'69 PLYMOUTH Roadrunner, 383 V8, 4-spd., bucket seats, console, Positraction, 43,000 miles, $1250. Nielsen, 299-6740.

'72 MALIBU, 4-dr. HT, AC, AT, PS, 350 V8, $2275. LaChance, 299-8993.

'69 CHEV. Custom Impala 2-dr. HT, 350 V8, PS, AC, AT, radial tires, new brakes, new starter, $1100 or best offer. Duvall, 299-8744.

'64 CHEVY II, AT, 2-dr. sedan, 58,000 miles, under $800. Brewster, 898-0144.

'70 MUSTANG, 6-cyl., $1450 or best offer. Davis, 345-1143.

'73 DATSUN 1200 2-dr., below book value, 8 track tape deck (no radio). Sanchez, 298-9619.

FOR RENT

UNFURNISHED 3-bdrm house, 3 mins. from Base. Herrera, 266-8211 or 247-9094.

UNFURNISHED 3-bdr. house, 3 blks. to KAFB Wyoming Gate, $185/mo., 1st & last month rent plus damage & cleaning deposit, no pets. Martinez, 293-2301.

WANTED

SHOP MANUALS, Ford truck, circa 1963. Devlin, 281-3112.

GERBIL CAGE or 5-gal. aquarium. Sektnan, 293-7961.

PAIR OF 6.50-16 pickup truck chains. Causey, 299-0089.

JOIN OR FORM carpool w/interested person(s) in Jade Park to Labs. Glenn, 821-1168.

TAILGATE for long wide bed Chev. or GMC pickup, 1967 or later. Zanner, 294-7613.

REAL ESTATE

SMALL, expensive, but very expandable adobe. Smith, 344-9335.

5-BDR., 2 bath, den, formal DR, luxury home in low 40's, near Chelwood & Indian School. Montoya, 293-3611.

LOST AND FOUND

LOST — Silver & turquoise earring, blue stocking cap, sunglasses in brown case, piece of blue luggage, man's black leather glove, gold tie clip w/3 stones. LOST AND FOUND, tel. 264-3441, Bldg. 832.

FOUND — Silver key marked "gas", '74 Chev. owner's manual, floral cosmetic bag, key on chain. LOST AND FOUND, tel. 264-3441, Bldg. 832.

MORNING STAR • TALENT SHOW • LONDON BROIL • HONG KONG • TEEN GO-GO

FRIDAY	SATURDAY
18 HAPPY HOUR BUFFET Roast Beef (Adults ..... $2.95 Under 12 .... 1.85) Program: Wagon Wheel Square Dancers @7 Dancing: Country Swingers LOUNGE Barbara	19 SHRIMP PEEL & CARVED LONDON BROIL BANQUET (Members ... $4.75 Guests ..... 5.75) Cocktails @ 6 Hector Pimentel, Classical Guitarist, @ 6:30 Dancing: Bobby Banks @ 8
25 HAPPY HOUR BUFFET German Food (Adults ..... $2.45 Under 12 .... 1.50) Program: Talent Night (see below) Dancing: Frank Chewiwie	26 TEEN GO-GO Band: Morning Star DJ: KQEO type 7:30 - 10:30 Members 25¢ Guests 50¢

Hey -

Start planning for the Talent Show on the 25th. There'll be one every month hereafter. Any amateur adult (one who's not an adult for profit?) can enter. First prize: a case of Michelob; second: a half case; third: a six-pack. Run-off every third month between first and second placers of preceding two months. Denny will accompany contestants who need/want it. Entry regulations: show up at the Club on the 25th.

And Travel -

Jet fuel costs what they are, Creative World Travel has combined two of its Hong Kong tours so the C-Club tour (members only) will now depart March 29 and return April 9. The complete package will cost $704.50 (including Albuquerque to Los Angeles and back). Sign-up date is Jan. 25 with a party on Jan. 22 at 7:30 in the Club ballroom. An agency rep will show slides and answer questions about Hong Kong and the trip.

MORE INFO — 265-6791.

THAT'S A SKI. Oscar "Oz" Oren (4732) is having some trouble focusing on the subject as Jacqui Binford of Sandia Peak Ski School begins a lesson. But tear yourself away from the slopes for an evening or two at the C-Club soon.

SQUARE DANCERS • MICHELOB • SHRIMP PEEL • CLASSICAL GUITAR • DENNY

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