Baughman And The Single Crystal

The sign on the laboratory door says Solid State Horticulture, R.J. Baughman, 5154. It's accurate. Dick Baughman can grow synthetic crystals — rubies, sapphires, garnets, and many lesser known varieties — in his Bldg. 807 lab.

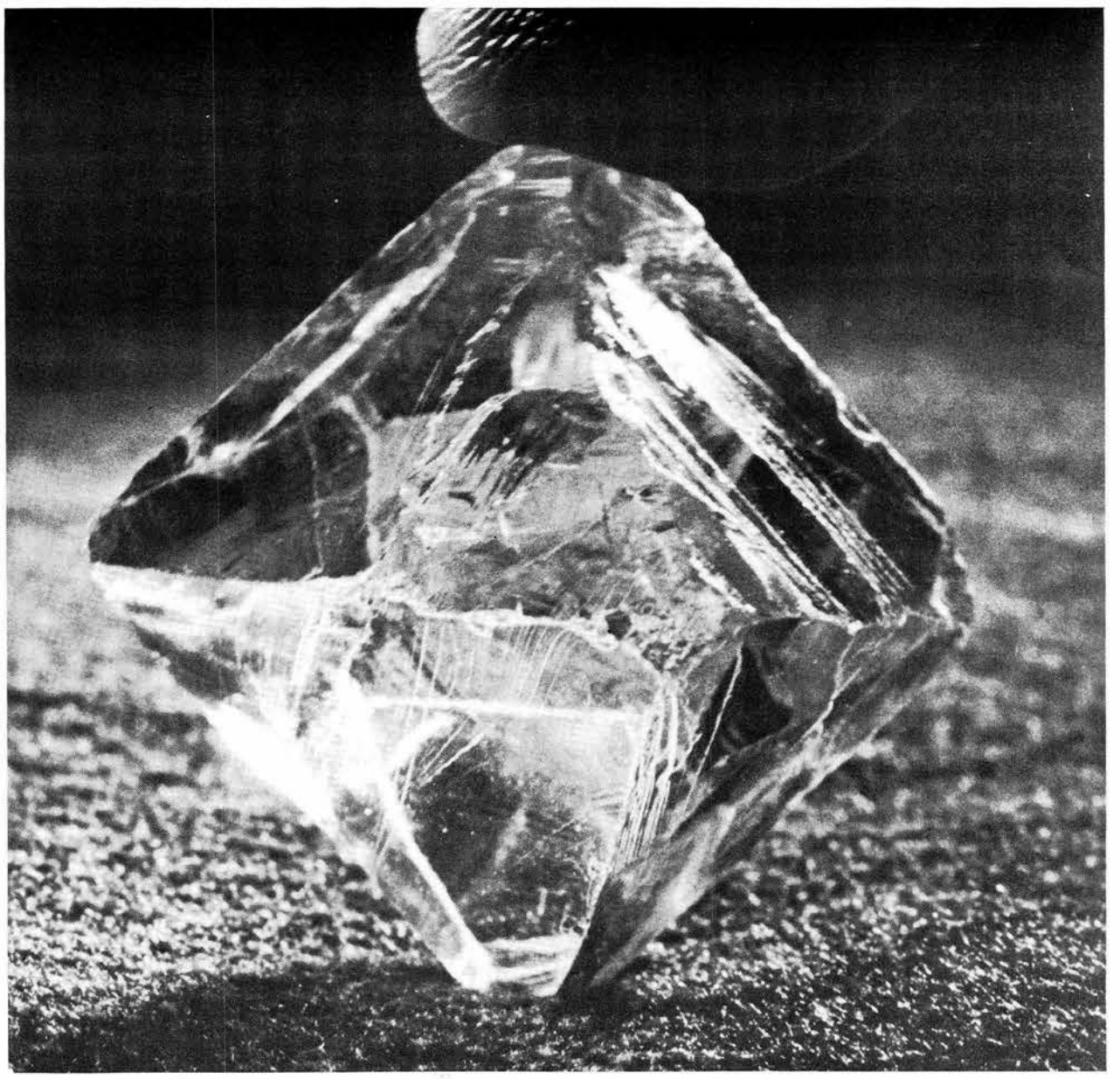
Most synthetic crystals end up in any of several industrial and military applications, not as precious gems (though the techniques for growing crystals for gems are similar). Most common is the wide use of silicon and germanium crystals for transistors and diodes. Other common applications include iron garnets for magnetic devices, quartz for oscillators, ruby for lasers, and quartz and sapphire for strain gages. Dick restricts himself to the kinds of crystals that can't be acquired commercially.

Whether purchased or fabricated, each crystal is generally used in its single crystal form. Single crystals have all of their atoms or molecules arranged in the same repeating three-dimensional pattern. It's not apparent to the eye, but it's this precise order of structural units that makes a single crystal a useful material in research. With a single crystal, for example, it is possible to measure its reaction under stress, or its response if used as a piezoelectric material; the random distribution of atoms in multigrained (non-single) crystals makes their response less predictable and the data are difficult to interpret.

Synthetic crystals, then, are a vital element in materials research. Growing them is a combination of art and science. Although crystal growing (as it is done today) is a relatively new field, the procedures are well defined. A seed (that is, a small piece of the desired crystal) and a nutrient (gas, liquid, or solid) are allowed to react with each other in one of three basic methods — melt, vapor phase, or solution. Dick uses whichever of the methods is best suited to the crystal and its eventual application.

His favorite is a version of the melt method known as the Czochralski technique. First a crucible is filled with a mixture of the material to be grown — the melt, or nutrient. Above it is a seed fixed to a seed holder which can be moved up and down and rotated. Both crucible and melt are heated. The seed is dipped into the melt, then raised slowly. The

(Continued on Page Three)



THIS CALCIUM FLUORIDE (CaF_2) crystal is a beauty. The crystal expert will note its octahedral cleavage.

SANDIA LABS NEWS

VOL. 24, NO. 22 OCTOBER 27, 1972

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

Test Range Employees Join Las Vegas United Way Effort

For the first time, employees of the Tonopah Test Range Department 9470 who commute to the Test Range from Las Vegas, Nev., have joined the Las Vegas United Way through the payroll deduction plan.

Participation in the United Way totaled 93 per cent of the 44 Test Range employees, according to Jim Deakin (9473) who was the United Way Key Man in the campaign. Average gift of the Sandians is an impressive $70 annually per contributor.

In addition, two employees who live in Tonopah, where no organized community campaign is conducted, joined the Las Vegas effort.

REPORTING Sandia's contribution of $344,837 to the Albuquerque United Community Fund at a meeting last week was the pleasant task of (l to r) Soila Candelaria (1543), Archie Pearlman (4331), Peggy Stevens (5310), Ken Sutton (3250) — ECP committee chairman — Sharon Mackel (5511), Jan Hawkins (5113) and Laura Garcia (1433). The figure includes 85 per cent of ECP funds and the Labs gift.

Afterthoughts

What Language Is That?--The LAB NEWS noontime book sale continues to flourish. We got a donation the other day whose title caught my eye: "Girls of Central High at Basketball," and I opened it half expecting some steamy passages about what really goes on when basketball teams are on the road. Well, it was printed in 1915, and the words look like English, but I'm not sure. A few selections:

"This was Eve Sitz's first important game, too; but the Swiss girl was of a cool and phlegmatic temperament and Laura Belding, as captain, had no fears for her."

"...so Chet Belding and Lance (sic) Darby, with a crowd of strong-lunged Central High boys at their backs, cheered their girl friends when they came on the field with the very effective school yell..."

"'Shoot it here, Laura! I'm loose!' shouted Bobby, whose slang was always typical of the game she was playing."

It's be interesting to work on a contemporary version of the Girls of Central High. Let's see--we'd make the gals women's libbers and the guys would be vandalizing the faculty lounge and the big issue would be whether the Gay Lib chapter should get a page in the high school annual...

* * *

A Certain Distinction--For most of work-a-day humanity, their place of business offers little that is beguiling. After all, one office or shop is pretty much the same as the next. So I read with considerable interest the item in the KAFB Bulletin: "...there have been numerous reports of wild dogs and coyotes being spotted... these animals are dangerous ...should not be approached." Now look, add the wild dogs and coyotes to the rattlesnakes and I submit that that's exciting. In New York, almost anyone can get hit over the head going to work. But how many workers do you know that can experience the exhilaration of the pack slowly closing the circle?

* * *

Stupefying Development Of The Week--From the Journal: "The National Union of Funeral Service Operatives has declared itself opposed to the use of plastic and cardboard caskets, which it said constitute a 'further lowering of funeral standards.'"

* * *

You Tell 'Em, Vic--"The pecularity of prudery is to multiply sentinels, in proportion as the fortress is less threatened." Victor Hugo *js

Events Calendar

Oct. 28-29 — Albuquerque Children's Theatre, "Canterville Ghost," 1:30 and 3:30 p.m., Popejoy Hall, 277-3121.

Oct. 30 — UNM Faculty Lecture Series, John Aragon, Cultural Awareness Center, 8 p.m., Kiva.

Nov. 1 — ASUNM Lecture Series, Flo Kennedy, Black attorney, active in civil rights, consumerism and women's liberation; 8 p.m., Student Union Ballroom.

Nov. 2-3 — Council of Albuquerque Garden Clubs presents "Holiday Idea Show," Holiday Inn, East.

Nov. 2-5 — "An Enemy of The People," Rodey Theatre at UNM, 277-4402 or 277-4522.

Nov. 6 — Broadway Musical, "Two By Two," with Shelley Berman, 8:15 p.m., Popejoy Hall, 277-3121.

Nov. 7 — Travel film, "Serenade to Spain," 7:30 p.m., Popejoy Hall.

Nov. 8. — ASUNM Lecture Series, Peter Marin, educator; topic, "Language, Culture, Education and Change," 8 p.m., Kiva.

Nov. 10 — National Players in "The Birds," adapted by Walter Kerr, 8:15 p.m., Popejoy Hall, 277-3121.

LAB NEWS

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An Equal Opportunity Employer

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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 lasker takes/makes pictures
&
in livermore lorena schneider does all

Toastmistress Club Seeking Members

Five Albuquerque Toastmistress clubs are currently observing Toastmistress Founders Month with a number of special activities and a membership drive. Ann McIntyre (5621), active in the Oku Pin Toastmistress Club, invites any Sandia women interested in the Toastmistress program to call her (ext. 2052) for additional details.

Ann is quick to point out that Toastmistress clubs are not auxiliary Toastmaster groups but are part of an independent international organization offering a broad program of communication skills and self improvement.

The local groups are currently involved with planning for the 1973 international convention of Toastmistress to be held in July in Albuquerque. Ann is assistant coordinator for the meeting. Some 900 delegates are expected.

"This is an exciting project for us," Ann says, "and we could use some help. Our programs stress learning leadership skills and community service. Besides that, we have a lot of fun."

Recreation Notes

FUN & GAMES

At the recent SGA(W) Annual Awards Banquet, officers for the 1973 season were elected: Alice Smith (3141), president; Joan Gillon (1200), vice president; Virginia Ramsey (4118), secretary; and Eileen Fitzmorris (7542), treasurer.

Special awards presented were: Molly Ellis (5643), 1972 Association Championship; Pat Anderson (9425), 1972 President's Cup Winner; and Alma Mischke (4152), 1972 Sportsmanship Award.

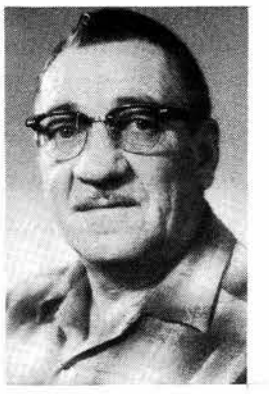
* * * *

Sandia Labs bowlers participated in the annual Scotch Doubles "fun" tournament at Fiesta Lanes. Taking top honors were Mary and Vladimir Berniklau (AEC/ALO) with a handicap score of 1271 for the six games. Second place went to Phyllis and Jim Dyer (1312) with 1237, and third place to Marie and John Nakayama (1514) with a 1228.

* * * *

The Sandia Labs 9th Annual Handicap Tournament will be held at Holiday Bowl on Nov. 11-12 and 18-19. This will be a singles, doubles, team event, and all event tournament. SLBA bowlers must bowl in this tournament to be eligible for an annual award. Entries close at 5 p.m. Nov. 3. Contact Bob James (5428) or Reba Garrison (1210) if you need a partner for the doubles or want to bowl on a team. •nt

Death



Powell (Arky) Henderson, a security inspector in Security Operations Department 3520, died Oct. 11 after a brief illness. He was 52.

He had worked at Sandia since February 1954.

Survivors include his widow Helen (4151) and a son.

Followup

Bates Kidney Fund

Couple of issues ago LAB NEWS carried an article about Louise Bates, wife of Gene Bates (3132), who had fallen victim to a serious kidney disease. The Bates family had exhausted the $20,000 health care plan limit and was hurting financially, so a group of friends decided to see if they couldn't raise a bundle to help out Gene and Louise.

Everett Westfahl (1415) was one of them, and he came to see me. I told Ev we could certainly provide some coverage in LAB NEWS, but my experience in promoting various causes made me less than optimistic about raising any significant amount of money.

I'm delighted to be able to report that I was totally wrong. These amateur promoters with their garage sale, their tennis tournament, and their arm twisting have accumulated some $5000 — fantastic! Ev reports that the garage sale turned into an extravaganza with more than a thousand donated items (including three used cars). About 80 gals turned out for the tennis tournament. And lots of people contributed hard cash.

Obviously, lots of people contributed lots of hard work too, and Gene and Louise are most grateful. You can still contribute to the fund if you wish — send your check (Louise Bates Kidney Fund) to Everett in Div. 1415. • js

To Bikeway Or Not

The City Wants To Know

Sharla Vandevender is a systems analyst in Division 1712, but she's also the foremost official proponent of bicycling in Bernalillo County. Sharla is chairwoman of the Bikeway Advisory Committee, a group chartered by the city and county to come up with well documented recommendations about what the local government should do in response to the bicycle boom.

"Bikeways are the obvious answer," states Sharla, "and we see three varieties: the simplest, the bike route which shares auto traffic lanes but is marked 'Bike Route' and uses caution signs such as 'Bike Crossing' or 'Watch For Bicycles' at danger points. Next is the bicycle lane, also on city streets, which is separated from auto lanes by painted stripes or by other physical means — a much safer arrangement for the cyclist. The third type of bikeway would be entirely removed from the street network and consists of a paved path about four feet wide. In Albuquerque, the obvious place for such bike paths is along the top of the banks of our many arroyos and drainage canals."

None of these is likely to become a reality unless the Bikeway Advisory Committee is able to convince the city and county that the public wants bikeways. The survey below (which recently appeared in the *Journal*) is aimed at both biker and non-biker, and Sharla hopes that enough people will respond to enable her committee to develop intelligent recommendations. So if you missed the survey in the *Journal*, we suggest you complete this copy and return it to LAB NEWS.

Bicycle Interest Survey
Bikers & Non-Bikers

Please complete this form, whether you ride a bicycle or not. Your answers will influence the formulation of a bikeway program for the city and county.

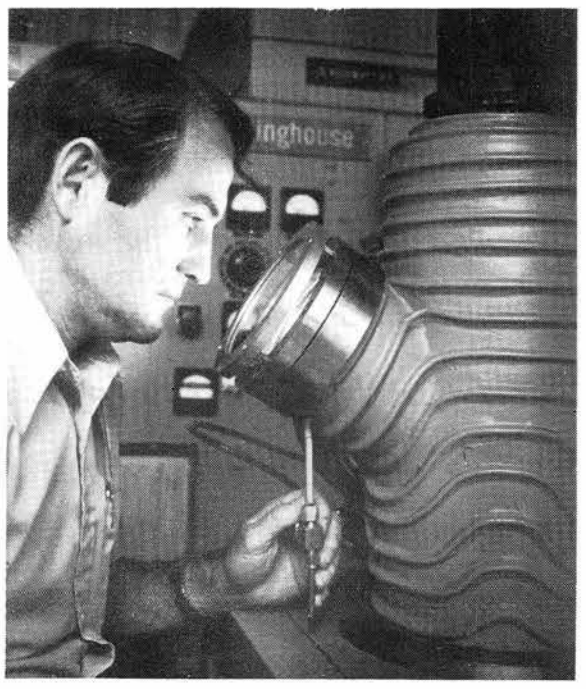
(1) Home ZIP code: 87-_____
(2) In general how do you feel about bikeways?
a. strongly in favor
b. somewhat in favor
c. neutral or unsure
d. somewhat opposed
e. strongly opposed
(3) Your age: ____ & sex: ___
(4) Occupation: _____
(5) Do you have a bicycle? ___
(6) Is it registered? _____
(7) Home address to nearest 100 (as, 2300 Yale SE): _____
(8) Rank cycling problems (1 = most serious)
__ dogs
__ weather
__ intersections
__ heavy traffic
__ danger of theft
__ blocked by freeways
__ discourteous driver
__ _____
(9) What is your general impression of bicyclists?
1. very favorable
2. somewhat favorable
3. neutral or unsure
4. somewhat unfavorable
5. very unfavorable
(10) If you don't ride a bicycle, would you if there were safe bikeways? Yes Unsure No
(11) About how many days a month do you bicycle just for recreation or health? ____ Days
(12) About how many miles, average round trip? ____ Miles
(13) Commuters, about how many days a month do you bicycle to work or school, in: Spring ____ Summer ____ Fall ____ Winter ____
(14) Time you leave? ____ Return? ____ Total miles? ____
(15) Your commuting destination (name or nearest interesection) _____
(16) About what percent of your commute trip is
on major thoroughfares (as Lomas or 4th St)? ___%
on thoroughfares (as Girard, Moon, or 12th St)? ___%
on residential side streets or off the street? ___%
100
(17) Comments: _____

Continued from Page One

Growing Single Crystals

new crystal grows at the same rate as the seed in withdrawn.

Growth depends on removing the heat of fusion from the point where the solid, growing crystal touches the hotter molten nutrient. And here's where the art comes in. The shape of the crucible, the amount of melt it holds (the amount is of course diminishing all the time), the type of heating device (and its ability to heat uniformly), the rate at which the seed holder cools, the speed of rotation (necessary to grow a symmetrical crystal) — all of these determine whether the crystal grows in the proper direction, whether it becomes a single crystal (therefore valuable) or whether it becomes a multi-grained crystal. The growing process may take eight hours or even longer.



INSIDE THE FURNACE grows a single crystal. Dick Baughman (5154) waits and watches.

Single crystals that Dick has grown include: gold aluminum, platinum silicide, arsenic, magnesium mercury, gadolinium gallium garnet, and lanthanum oxysulfide. He has grown crystals as large as a fist and as small as 0.0003" diameter spheres.

One of Dick's most difficult challenges thus far has been to grow germanium telluride, tin telluride, and lead telluride single crystals. These are difficult to grow because these materials, when melted, vaporize and change composition. Crystals that have compositional gradients also have inconsistent physical and electrical characteristics.

Baughman and Bob Lefever (5154 supervisor) solved the problem by using the Czochralski technique with a liquid encapsulating layer of boron oxide (B_2O_3) in combination with a neutral gas overpressure. This novel combination has proved to be a significant contribution to the field of crystal growth.

In the furnace the B_2O_3 softened and formed a 5mm transparent liquid layer over the melting compound components, thus sealing the materials inside the growth crucible.

The neutral gas overpressure (50 p.s.i.g.) reduced, in fact essentially prevented, vapor losses during the entire melting and growth period. And several large single crystals of each of the three compounds were the result.

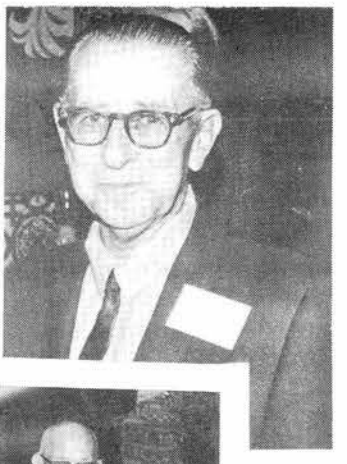
Each completed crystal, whether exotic or common, is in its own way a work of art — a nice blend of science and esthetics. Dick relishes the challenges, looks forward to the greater difficulties in his work that will result from future research in exotic materials.

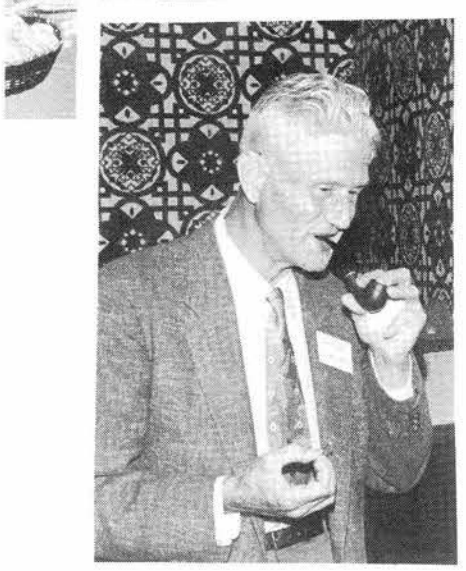
He has a lot of things growing for him. • bh

Retiring

Louis Jamme (7611)

Ruth Way (3152)





Livermore Retiree Reunion

"Retirement is fine. I'm enjoying it — definitely." — **Hellmuth Woidtke**

"Busy working in my yard — already lost 12 pounds, and really feeling good now." — **Dan Dewhirst**

"Retirement is getting better all the time." — **Stan Krell**

"Am really enjoying life." — **Tony Luna**

"Everything is still wonderful. I don't know how anyone can work for a living." — **Emily Burkhalder**

"Having the time of my life. We're celebrating our 50th wedding anniversary this month." — **Glen Thornburgh**

"Nothing like retirement — should have done it years ago." — **Gus Brockmoller**

"I'm really retired — not doing much of anything." — **Frank Moore**

"Retirement is delightful, wonderful!" — **Doris Ward**

"It's the only way to go!" — **Beth Reece**

"Am starting the fourth year of retirement — it's just dandy." — **Roy Adams**

"Am doing a little of everything, never idle." — **Murr Graham**

"Cant beat retirement!" — **Jake Ludington**

"Retirement is fine. Have been traveling a lot — just hooking up the trailer and taking off for a month or so." — **Wil Miller**

"Working every day." — **Jim Culver**

"We're having a ball!" — **Irv Ellicott**

LIVERMORE NEWS

VOL. 24, NO. 22 LIVERMORE LABORATORIES OCTOBER 27, 1972

Robert Livermore, First Local Pioneer

This is the fourth in a series of articles by Herbert Hagemann, an eighth-generation Californian, on the early history of the Livermore/Amador Valley. 1972 marks the bicentennial year commemorating the discovery and exploration of the Valley.

Foremost both in name and as a pioneer in the Livermore area is Robert Livermore, a Mexican citizen of Alta California who held the easternmost settlement of Spanish/Mexican colonization in the north.

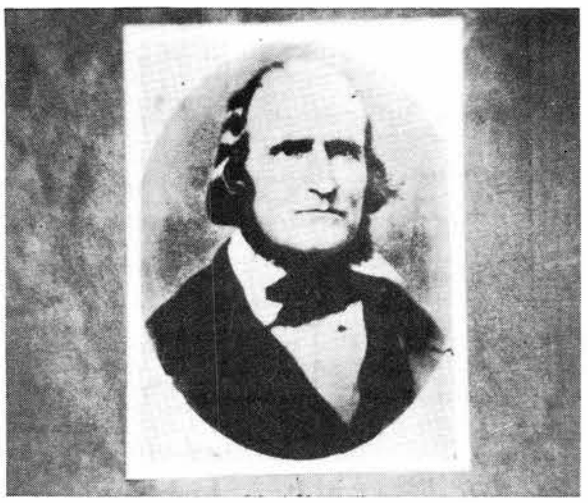
Livermore was born in 1799 in Springfield, County Essex, England. His father, a leatherworker, moved the family a short time later to a suburb of London where Robert was an apprenticed mason, working at this trade until 1816 when he went to sea on board an English ship. Serving a short time in the American Navy, he was again in British service to experience the battle off the west coast of South America when the Spanish ship *Esmeralda* was defeated and captured.

In late 1822, Livermore arrived on the California coast aboard an English trading ship, which he presumably left in Monterey harbor to take up residence. Working his way to Pueblo de San Jose, he became acquainted with many of the pioneer families in that area. While serving as majordomo of Rancho Agua Cliente, just south of Mission San Jose, he met Josefa Higuerra, who later became his wife.

Livermore took an early interest in the land of Valle de San Jose, now the Livermore/Amador Valley. Knowing the missions were soon to be secularized, he began a cattle herd on mission land in the Sunol Valley. In 1835, the mission was formally turned over to a civil magistrate and the vast pasture lands were opened to civilian settlement. The area Livermore called Rancho Las Positas del Valle de San Jose, located east of a line following South Livermore Avenue across the entire Valley, was purchased shortly thereafter by him and his partner, Noriega.

In addition to cattle herds, Livermore planted a sizeable vineyard and cultivated some of his acreage in grains, the first planting of this type in the Valley. In 1837, with the help of Jose Amador, he constructed a large adobe and brought his family to Rancho Las Positas to live. With his location at the entrance to the main pass into the interior, Livermore was host to many travelers, some of importance, others who were seeking rest and shelter as they left civilization on the west coast. During the "gold rush," Livermore's Rancho Las Positas served as a hostel and regular stage stop for miners traveling to and from the gold fields.

Rancho Las Positas, containing about 11 leagues of land, was enlarged by the addition of the grant of Rancho Canada de Los Vaqueros. Shortly after title was secured from the Mexican government, Livermore exchanged his interest in Rancho Canada de Los Vaqueros for Noriega's interest in Las Positas. In 1851, Livermore completed a frame house, the first of its kind in the Valley, next to the original adobe. The adobe was leased to Nathanial Greene Patterson, who converted it into a hotel.



Robert Livermore, 1799-1858.

Seeing a need for more water for the increasing number of people and for irrigation, Livermore began drilling an artesian well to the east of his home. The cost of drilling, the first to be attempted in the area, was $5000, and at the time of his death in 1858, a depth of 800 feet had been reached.

Livermore left a family of 10 children, two of them adopted. After his death, many difficulties arose for the family. His adopted son Jose Livermore, as executor of his estate, was required by law to post bond for $15,000. To secure the cash, it was necessary to sell most of the cattle and mortgage much of the land. To add to this financial burden, the U.S. District Court reviewed the title to Rancho Las Positas, found the Mexican title in order, but reduced the claim from 11 leagues to two leagues of land.

As a result, some 40,000 acres of land was opened up to American settlers, each of whom was granted 160 acres. Much excitement was caused by this free land, and squatters were found occupying land improved and developed by the Livermores, but the Livermores were not allowed to harvest the crops they had grown. The Las Positas title was not settled until 1873 when a patent to the two leagues of land was finally given to Robert Livermore's heirs. Many of his descendants still reside in the Valley, some occupying parts of the original Rancho Las Positas.

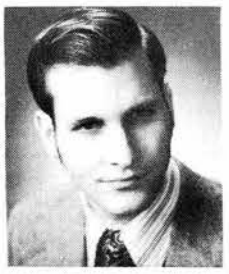
Congratulations

John Neuberger (8412) and Dorothy Erickson married in Carson City, Nev., Oct. 7.

Sympathy

To Karl Livingston (8412) for the death of his father in Yorktown, Pa., Sept. 27.

Mike Soderstrand Awarded PhD Degree



Mike Soderstrand has returned to Sandia's Telemetry Development Division 8182 after receiving his PhD degree in electrical engineering from the University of California at Davis. His thesis was "New Contributions to the Analysis and Design of Active RC Filters."

Joining Sandia/Livermore in June 1968, Mike worked primarily in the design of active and digital filters for product testers and in computer aided design.

He received his BS and MS degrees in EE from UC/Davis in 1968 and 1969 respectively. His master's was completed under Sandia's One-Year-On-Campus (OYOC) program.

Chabot College Film Series Extended to Livermore Valley

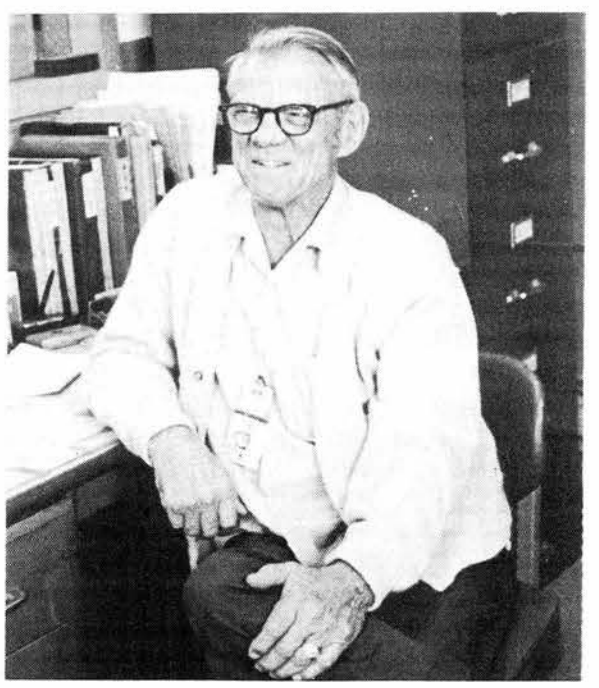
Chabot College is extending its 1972-73 Film Series to Livermore Valley with the showing of about half of the internationally acclaimed films at the Amador High School auditorium in Pleasanton.

Offered as part of the College's Office of Community Services Program, the Film Series is admission free to the public. Showings begin at 7:30 p.m. Adding variety to this year's Series are musical classics, travel documentaries, and award-winning examples of film as an art form.

At Amador High School Auditorium
Nov. 8, "Epic Voyages of the Ra's"
Nov. 10, "Stars and Stripes Forever"
Dec. 13, "Mark Twain in Switzerland"
Jan. 17, "China — The Awakening Giant"
Feb. 21, "John Muir's High Sierra"
Mar. 7, "Pathways Through Literary England"
Mar. 23, "The Red Shoes"

At Chabot College auditorium
Nov. 1, "Lola Montez"
Nov. 22, "Hunters are the Hunted"
Jan. 5, "Romeo and Juliet"
Jan. 10, "Fireman's Ball"
Feb. 7, "Marat/Sade"
Feb. 9, "The Mikado"
Feb. 28, "Jules and Jim"
Apr. 18, "Ikiru"
May 2, "Children of Paradise"
May 16, "The Entertainer"
May 30, "Death in Venice"

Retiring



Jim Hay (8256)

Donated furniture is reupholstered and sold in the East Central store.

Little bit of everything in the U-Fix-It Corral.

Our Town

Goodwill Is A Good Thing

The woods are full of worthy causes, and they range from the down-and-outer who panhandles you for a dime (make that two bits), to the megabureaucratic charitable enterprises that send you a computerized acknowledgement whose message, while invariably gracious, rings perhaps a little flat.

But suppose one day you decide you want to help people, say people with physical and mental problems, and you want to do this on some significant scale and you aren't a millionaire. What scheme can you come up with that avoids the obvious and overworked frontal approach, i.e., "give me money so that I can help these poor people"? Goodwill Industries has a solution that's rather elegant: they say "give us your discards."

Consider our affluent, possession-oriented society. The term "garage sale" has entered the language, and it reflects the glut of things we possess but no longer (maybe never did) need. So along comes Goodwill for those who don't care for the trauma of their own garage sale, and they cannily place mail-box-like receptacles all over town so that you can conveniently rid yourself of that heavy winter coat that takes up space in the closet and feel virtuous at the same time. Or old golf clubs. Or that ugly set of dishes from your in-laws. Or the two snow tires. You don't want the stuff, it's too good to junk, and Goodwill is happy to get it because, incredibly but most assuredly, someone out there does want it (if the price is right).

This sort of transaction is good for some $650,000 per year for Goodwill of Albuquerque. We talked with Arnold Pittman, one of the staff of a dozen people who run the organization, about the Goodwill program. We talked at their textile plant on South Edith, and the air smelled of dry cleaning fluid. In the background, piles and racks of clothing and many pairs of shoes. And people: the lame, the halt and the blind — literally. And those with mental difficulties — retardation, anxiety, depression, and other cruel afflictions.

"We usually have about 125 clients," Arnold stated. As he went on I realized that "client" was a rather nice euphemism Goodwill uses for the people with problems who work there. "A client is referred to us by an agency, say the Division of Vocational Rehabilitation, when that person has progressed to a point where he or she can do work, but not in a competitive situation." (Competitive=outside world, where you and I work.) "We study the client's history and, depending upon his capabilities, assign him to one of a variety of jobs. He (or she) might work here, for example, as a presser in our dry cleaning plant. Or the client might be assigned to the upholstery shop on E. Central where he would learn how to reupholster furniture."

Clients are paid for their work, normally put in an eight-hour day, and remain with Goodwill for a month or more. The sale of garments to the public turns out to be a money-losing operation because their renovation — all are cleaned — costs more than the sale price. But the point of the operation is to provide useful work for the client — not necessarily to turn a profit.

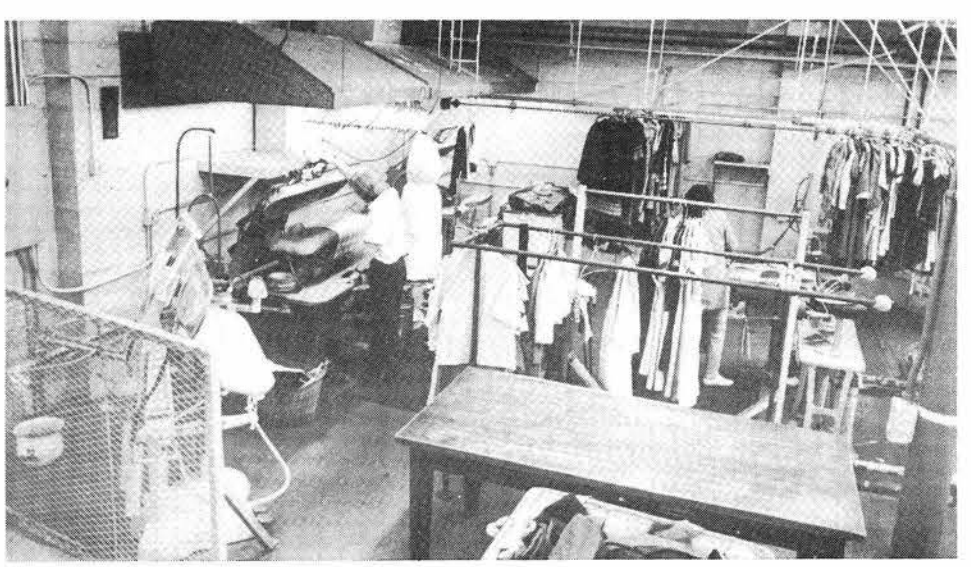
While we talked, I watched Joe, a 27-year-old mentally retarded person whom Arnold described as a Goodwill success story. Joe works as a presser, has been with Goodwill a couple of years, and lives by himself in his own apartment. He's self-sufficient. As I watched, Joe smiled toward us, seeming no more or no less content with his lot than the rest of humanity. Arnold noted that "Joe likes his wine," but then so do lots of people.

At 10 o'clock, the people have a break period and I witnessed a touching procession to their snack bar. An old blind man was led by a mentally retarded young person through the aisles, and others more physically able were helping those who needed help. You might say that good will was the prevailing sentiment. . .

* * * *

Data, specifications. Goodwill has seven retail outlets in the city, look in the white pages. If you have large items to donate or if it's not convenient to use one of their drops, call them and a truck will come by. Although Goodwill is a national organization, each state organization is largely autonomous. Inexplicably, they are not associated with UCF. Do bargains turn you on? Visit something called the U-Fix-It Corral at the E. Central store — the sheer multitude of items you can't possibly use will blow your mind. But they'll make you an offer you can't refuse. • js

Eyeball those prices — Goodwill is the original bargain basement.



All garments donated are cleaned and pressed before sale.

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R.S. Claassen (1400), "Materials Science and Engineering: A New Mode of Interaction," Univ. of Wis., Dept. of Nuclear Engineering, Sept. 7.

H.I. Dawson (5522), "Thermoluminescence Radiation Dosimetry," Nuclear Engineering Seminar, UNM, Sept. 8.

C.W. Peterson and J.F. Reed (both 5645), "The Addition of a Combined Mach 11/14 Nozzle to Sandia's Hypersonic Wind Tunnel," 38th Semi-Annual Meeting of the Supersonic Tunnel Assoc., General Dynamics/Convair Division, Sept. 11-12, San Diego.

L.J. Klamerus (1435), "Electrical Characteristics of Flat Conductor Cable," Flat Cable Electrical Characteristics Committee of the Institute of Printed Circuits, Sept. 11-14, San Francisco.

C.B. Norris (5112), "Study of Low Energy Electron Irradiation Effects in Si," IEEE Electron Devices Group Workshop on Electron Beam Semiconductor Devices, Sept. 12-13, New York City.

J.K. Cole (5644), "Erosion Ablation Analysis of SAMS Tests with Carbon Phenolic," 11th Meeting of the Advance Reentry Systems Technical Planning Group, Sept. 20, El Segundo, Calif.

L.W. Davison (5131), "Spall Fracture," State Univ. of NY, Sept. 22, Stony Brook.

P.H. Holloway (1433), "Kinetics of the Reaction of Oxygen with a Clean (111) Nickel Single Crystal Surface"; R.L. Park (5331) and J.E. Houston (5332), "Electronic Structure of Solid Surfaces: Core Level Excitation Techniques"; R.L. Gerlach (5332), "A Retarding Field Cylindrical Mirror Analyzer"; A.R. DuCharme (5331) and R.L. Gerlach (5332), "Consideration of L Shell Ionization Cross Sections in Auger Electron Spectroscopy"; W.G. Perkins (1413), "Permeation and Outgassing of Vacuum Materials"; D.M. Mattox (5332), "Fundamentals of Ion Plating"; J.A. Panitz (5331), "Preflashover Anode Ion Species in an Ultrahigh Vacuum Diode"; G.E. Laramore (5151), J.E. Houston (5332), and R.L. Park (5331), "The Effect of Steps on Low-Energy Electron Diffraction Intensity Profiles"; J.A. Panitz (5331), "Preflashover Spectrometry"; R.I. Ewing (9112), "Guidelines for Pump Selection"; and L.C. Beavis (1413), "Partial Pressure Analyzers and Analysis," 19th Annual Symposium and Vacuum Equipment Exhibits, AVS, Oct. 2-5, Chicago.

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L.W. Brewer (3311), "Oil Mist-Generation, Sampling and Analysis," Rocky Mt. Section of the American Industrial Hygiene Assoc., Oct. 5-6, Denver.

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S.B. Gasser (5425), "Program Optimization," Assoc. for Computing Machinery 3rd Annual Symposium on Computer Systems Installation Management, Oct. 17, Gaithersburg, Md.

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The Mexican War — Who Were The Good Guys?

Remember the war with Mexico? About 20 minutes in the high school history class and then teacher rushed into the Civil War and spent the next six weeks on the battles of Bull Run.

As far as wars go, the war with Mexico was a shoestring affair with a big payoff. It didn't take long — from May 1846 to May 1848 and victory gave the United States New Mexico, Arizona, California, Colorado, and much of what is now Utah and Nevada.

Santa Anna was the official villain and Texas started it. The not unreasonable Mexican position was that Texas was still a territory of Mexico in spite of Sam Houston and his defeat of Santa Anna. For 10 years Texas had been making like an independent nation, repeatedly petitioning the US for annexation. Mexico insisted that the act of annexation meant automatic war.

But James Polk had campaigned for the presidency on a platform of annexation of Texas, with California his ultimate goal. "Manifest Destiny," a thin euphemism for might-makes-right, was the slogan of the day.

Polk, after being elected, did try to buy California as Louisiana had been purchased but it was too late. General Zachary Taylor and his 1400 troops were on the Rio Grande south of Corpus Christi facing Mexican cannon.

The US was ill-prepared for the war with a standing army of less than 7000 men. Smart money in Europe was betting on the Mexicans — they had more troops under arms, their uniforms were prettier, and they had an elite officers corps that looked very dashing on horseback with their sabres flashing. The British (still smarting from the defeat of 1812) offered to negotiate, to provide military advisors, supply arms, etc. They also had very strong claims on Oregon.

The US finally got organized. Old Zach headed toward Monterrey. The Navy blockaded Mexican ports on the Atlantic and occupied San Francisco Bay. General Winfield Scott was ordered to organize a landing of American troops at Veracruz and march to Mexico City. Col. Stephen Kearny was to recruit a force of irregulars and occupy New Mexico and then move on to California. Very little thought was given to the vast distances involved, the condition of roads, the availability of water, or supplies or transportation.

Kearny's men really celebrated in Santa Fe after the town was taken.

At Ft. Leavenworth, Kansas, Col. Kearny built the "Army of the West" from his 300 regular First Dragoons augmented with 850 volunteers from Missouri plus two batallions of other volunteers and a company of artillery with 16 cannon — a total of 1650 men. With this force he marched to Las Vegas, New Mexico. All that stood between Kearny and his first objective was Apache Pass and Governor Armijo, not a popular man with New Mexicans, but still fortified (at the Pass) in a strong position with 4000 men.

Col. Kearny sent a dozen handpicked men, including a Santa Fe trail trader named James McGoffin to negotiate with Armijo. Historians can't prove that Armijo was bribed but after meeting with the Americans, he returned to his men and ordered a retreat. He hustled to Santa Fe, loaded up household belongings, and hit the road to Chihuahua. Later Congress reimbursed McGoffin $25,000 for "expenses" incurred in the occupation of New Mexico.

Kearny moved into Santa Fe and set up a territorial government for the newly-claimed extension of the Union. A fiesta followed whose effects were memorable — a letter home at the time said, "Among the volunteers of both regiments, there was much sickness, caused to a considerable extent by indulgency in the various dissipations of the New Mexican metropolis." Some 300 of the Missourians are said to have been buried at Santa Fe.

Kearny appointed Charles Bent, a civilian fur trader, as governor of the territory and charged Col. Alexander Doniphan with the responsibility for setting up a US-style legal system. Then, with a portion of his army, he moved on to California. Doniphan, a 38-year-old former lawyer and the elected commander of the Missouri volunteers, solved the legal problem by declaring the constitution of Missouri valid in New Mexico with special consideration for land grants and other matters peculiar to New Mexico.

With legal matters out of the way, Doniphan took time out to solve "the Navajo problem." US policy makers had decided to put a stop to Navajo raiding of villages along the Rio Grande.

The Missouri volunteers under Doniphan set out on far-flung expeditions into the desert and mountains. They rode into the heart of the Indian country and rounded up chiefs and talked sternly with them. The sheer audacity of it impressed the Navajos to the point that they actually stopped raiding for a few months.

Doniphan regrouped and, following Kearny's orders, headed south along the river to meet a force of General Taylor's at Chihuahua. Doniphan had about 500 whiskered, bedraggled men. They had never been issued uniforms nor had they been paid for their services. The force straggled down the Rio Grande, and on Christmas Day, 1846, was attacked by a strong force of 1400 Mexican regulars commanded by General Ponce de Leon, about 25 miles north of El Paso.

General de Leon offered the ragged Missourians a chance to surrender but was met with the reply, "Go to hell." Under a black flag proclaiming "no quarter" the Mexicans charged.

According to letters written at the time, it was quite a battle. At one point a Mexican cannon was firing harmlessly over the heads of some dug-in US volunteers.

"What the hell do you reckon that is?" one man asked.

"A cannon, I believe," said another.

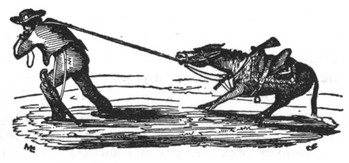
"Let's go get it," someone yelled.

They did, charging into the Mexican lines, capturing the cannon, and turning it upon the men from Chihuahua.

Later on, the Mexicans, in approved by-the-number-drill, marched into what looked like empty chaparral. The squirrel shooters and marksmen from Missouri, waiting behind cover until the last minute, wiped them out. The Mexicans retreated. The men from Missouri dined splendidly that night on captured provisions and partied on fine El Paso wine.

It was the only battle of that war fought on New Mexican soil. Doniphan went on to capture El Paso — General de Leon kept retreating to Chihuahua where he was court martialed for cowardice. Doniphan advanced to Chihuahua and, reinforced with a battery of six artillery pieces, rather improbably defeated the 4200 men defending the city.

In the meantime Zachary Taylor had won the battles of Resaca de la Palma, Monterrey and the bloodiest of them all — the Battle of Buena Vista where 20,000 troops under Santa Anna almost destroyed the US force. The fierce battle lasted four days with large losses on both sides. Americans lost about 800 men, the Mexicans close to 2000. Most of the casualties were the result of grape shot from the cannons and fierce hand-to-hand combat with knives and bayonets. It was a bloodbath.



Doniphan's Missouri volunteers were informal in dress and mounts.

With incredible luck, General Winfield Scott managed to land more than 10,000 troops on the beach at Veracruz without losing a man. They laid seige to the walled city and, after a week, the Mexicans surrendered.

Sixty-eight days after Scott's landing the city of Puebla fell and the Americans were within 100 miles of Mexico City.

Santa Anna, an organizational and inspirational genius but no great shakes on the battlefield, reorganized the Mexicans and recruited another army of 25,000 men plus 90 cannons to face Scott's 10,000 troops. After a brilliant victory at Chapultepec Hill, Scott was in a position to attack the capitol. Mexico City is admirably suited to the defense but, again, incredible good luck rode with the Americans. A weary, sick-with-dysentery American army fought from street to street and rooftop to rooftop to take the city.

Large numbers of his army deserted Santa Anna and his officers refused to obey orders. In disgust he took his remaining 9000 troops and deserted the city where fierce guerrilla fighting continued for several days. Santa Anna was overthrown by his officers and exiled to Jamaica. The new government of Mexico was more fiction than fact. With whom do you sign a peace treaty when nobody is available?

Scott occupied Mexico for almost nine months trying to help organize a responsible Mexican government which could negotiate the treaty. In the meantime, politics caught up with the American troops in Mexico.

Throughout the 18-month campaign and in spite of their brilliant military victories, President Polk harped at his generals. He neither trusted nor liked Scott or Taylor. Taylor was openly critical of Polk and finally left Mexico to campaign for the presidency. Taylor was also jealous of Scott and critical of other officers. Charges, countercharges, and scandals began cropping up.

The California campaign — with Kearny, Fremont and the Navy sometimes working at cross purposes — was a military fiasco. Victory was gained only as a result of the courage and initiative of junior officers and individual soldiers.

On the home front, although supported by the majority, the war effort was marked by dissention. It was labeled "Mr. Polk's war" and its numerous congressional critics included Abraham Lincoln, Henry Clay, and John Quincy Adams. Also powerful New Englanders saw the war and expansion of the union as a plot by southerners to expand the slave system. The anti-slavery people, whose numbers were great, never fully supported the Mexican War.

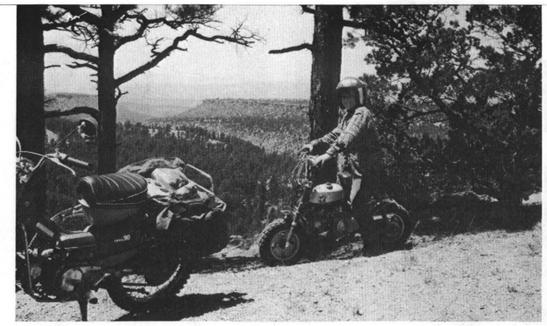
Peace, when finally negotiated, was made by a man — Nicholas Trist — whose official credentials were recalled by Polk just as negotiations were finally getting underway. Trist proceeded anyway and submitted his bootleg treaty to Polk who passed it on to the Senate without recommendations. It was passed virtually unchanged, and the US paid Mexico $15 million for the captured territory, the sum Polk had offered Mexico for the purchase of California prior to hostilities.

After the war, the California gold rush of '49 opened up the west and here in New Mexico the natives were overwhelmed by the onrush of gringo settlers. The Indians fought a bitter delaying war of their own, but they too were eventually overwhelmed. The Gadsden Purchase and the settlement of the Oregon border with Canada finally completed Manifest Destiny.

Even today Mexicans are bitter about the occupation of their capitol by American troops. In the aftermath of the war, Mexico endured political turmoil and unstable governments for a half-century.

Who were the good guys in the Mexican War? You be the judge. • dg

Kearny's troops cross New Mexico mountains on the way to California.



DIRT BIKERS come in lots of shapes and sizes, and they ride in lots of places. This is Tina Allen, daughter of Travis (7123), on a pack trip in Jemez country. Note absence of tire tracks.

Toward a Rebuttal

Dirt Biking≠Land Raping

The recent LAB NEWS reprint of a Focus article on dirt biking generated several phone calls and two letters — one from Jim Holmes, and one, representing the views of several Sandians, from Wayne Ebaugh (9213). They do not agree with the article.

Both letters make valid points. One is that dirt bikers do not spend all their time on virgin soil:

Actually, most all dirt riding is done on existing trails and roads which constitute only a very small percentage of the total land area. Furthermore, most of these trails and roads were not made by motorcycles. One has only to fly over the mesa areas surrounding Albuquerque to see the ratio of land torn up by bulldozers to that possibly torn up by motorcycles and all other forms of off-road vehicles.

The figures quoted in the article apparently assume that most riding is "cross-country," that is, on virgin soil. If there are 20,000 riders in New Mexico,

the simple math is: 1.2 (acres of seriously ripped up land per week per rider) X 52 (weeks in year) X 20,000 ÷ 640 (acres in square mile); this yields 1950 square miles of seriously ripped up land per year. Over the last five years of this kind of destruction 1/12 of the entire state of New Mexico would have been destroyed. And that's simply not true.

A second point is that definitive studies of the effects of dirt biking on mesa land are hard to come by. A presidential study committee report on this subject is not yet available. And until then it's one expert against another. Some (for example the biologist quoted in the reprinted article) emphasize the fragile nature of mesa topsoil. Others would agree with Ebaugh's experience:

Adjacent to my home on the East Mesa is one of the fields that quite a few dirt-riders, mostly neighborhood children, have used for several years. Last evening, I examined this field. Several varieties of grasses, a type of wild oat, and a profusion of wild flowers greeted me. The grass was two feet tall in places. I carefully checked the root depth. In no case was it less than four inches, and in most cases the roots were eight to twelve inches deep. The general appearance of the field was good.

Friends have made the following observations in riding over the full spectrum of range growth in soils ranging from "soft" to "very hard." After one pass by a cycle having four-inch tires with a combined cycle/rider weight of 400 pounds, there is virtually no effect other than slight bending of the finer range grass. After ten passes over the exact same spot, the lighter grasses begin to mat down. But, in general, damage appeared to be nil.

A table constructed by Ebaugh and other cyclists provides some more provocative statistics. these on the soil-loading factor:

Conveyance	Weight	Soil-Loading	Contact Material
Horse w/rider	1400 lb.	24 lb/sq. in.	Steel
4WD vehicle	3600 lb.	18 lb/sq. in.	Rubber
Hiker w/pack	180 lb.	16 lb/sq. in.	Rubber
Cycle w/rider	390 lb.	9 lb./sq. in.	Rubber

A third point is that cycling in general and dirt-biking in particular are legitimate sports enjoyed by all kinds of people, old and young, male and female, amateurs and pros. They feel that they have as much right to "ride on established trails, paths, jeep roads, fire roads, or arroyos" as any other group. The U.S. Government has some sympathy for that view. Executive Order No. 11644, "Off-Road Vehicles on Public Lands," has the following purpose:

. . . to establish policies and provide for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

Further,

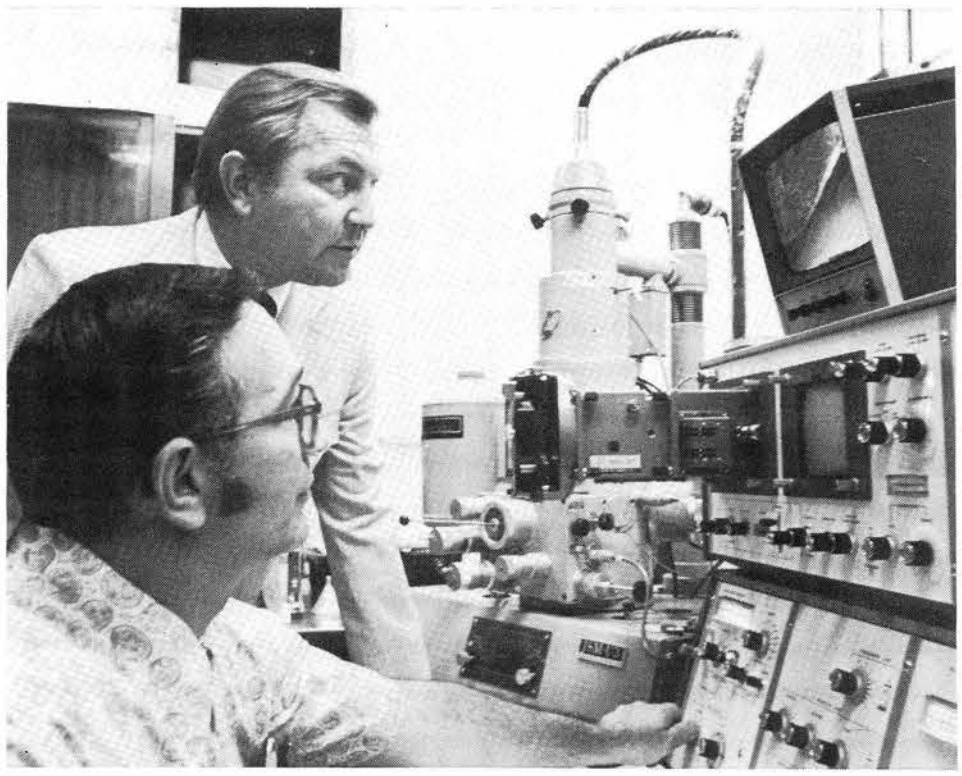
—Areas and trails shall be located to minimize damage to soil, watershed, vegetation, or other resources of the public lands

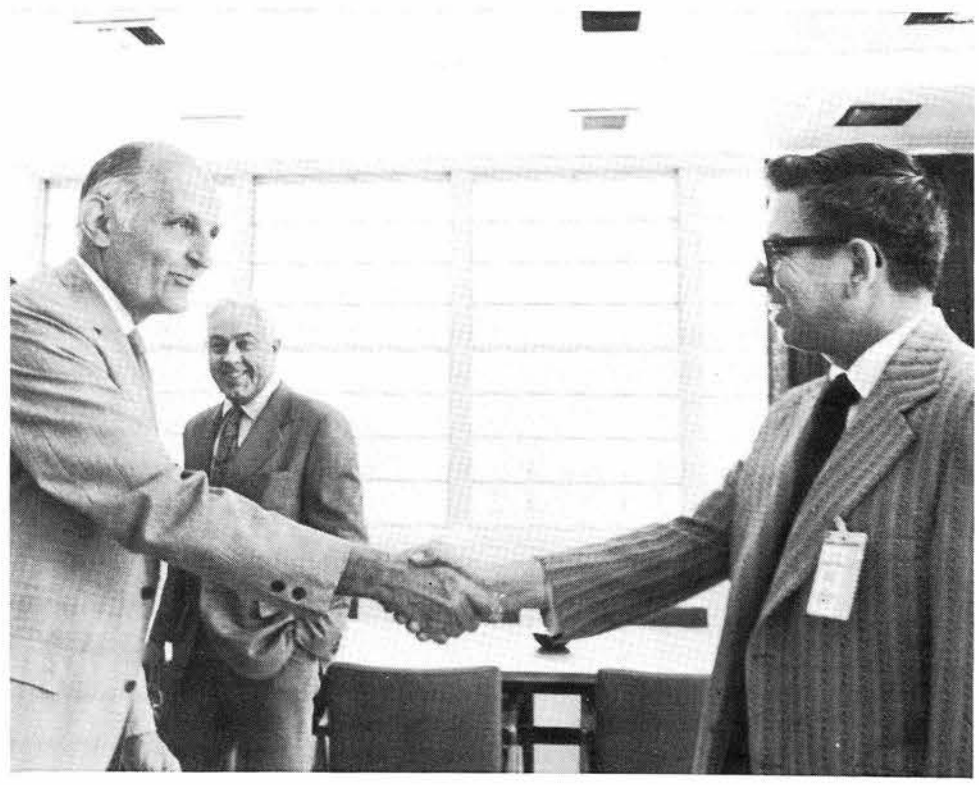
—Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats

—Areas and trails shall not be located in officially designated Wilderness Areas or Primitive Areas. Areas and trails shall be located in areas of the National Park system, Natural Areas, or National Wildlife Refuges and Game Ranges only if the respective agency head determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, or scenic values

—The respective agency head shall develop and publish, within one year of the date of this order, regulations prescribing operating conditions for off-road vehicles on the public lands. These regulations shall be directed at protecting resource values, preserving public health, safety, and welfare, and minimizing use conflicts.

One final point. Both letters agree that cycling does not have to be associated with "clattering roar," "billowing plumes of dirt," and "seriously ripped up" land. But they also agree that "some damage *is* caused by the thoughtless few . . . who ride loud, unmuffled bikes roughshod over the land." If the original article causes this thoughtless few to cease and desist, it's performed a valuable service for the many considerate and careful dirt bikers.





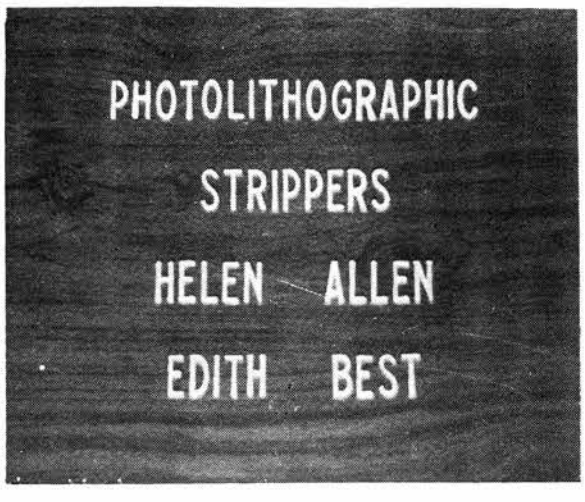
That's Jack Daniels looking at the scanning electron microscope with Charles Miglionico of Materials Analysis Division 5522. In the office of President Sparks, Congressman Lujan shakes hands with Mr. Sparks while VP Albert Clogston looks on. Both candidates were given briefings on Sandia's mission.

Take Note

Jack Hueter (3134) was recently installed as president of the Kiwanis Club of Albuquerque. He has been a member of the group for 21 years and has served previously in a number of positions. The club has 215 members, was organized locally in 1917.

* * * *

Gary Shepherd (5428) wants your old Willy Wonka Super Scrunch candy wrappers because UNICEF, the United Nation's children's fund, receives money to provide BCG vaccine for children throughout the world from the manufacturer. Other manufacturers of Kool-Aid, Welch's jams and jellies, Royal deserts, Swift's premium franks, Captain Crunch cereal and Clark and Smile gum are also cooperating in the UNICEF program. The Willy Wonka candy bars are sold in Sandia vending machines. Gary says send him the labels, wrappers, etc., and he'll count, stuff and mail the whole lot. Deadline is Dec. 4. He's in Bldg 880, rm. 113.



IF THIS were a folksy publication, we would call this "Life In These Here Sandia Labs." When you pass the doorway where this sign is displayed (basement, 802), you half expect to hear the boys in the band and maybe a few raucous shouts. But you don't. Too bad.

A chili con carne dinner, a band concert and a Halloween carnival at Manzano High School Monday, Oct. 30, starting at 5:30 p.m. will benefit the Manzano band fund. The concert will start at 7:30 p.m. Tickets are on sale at the door or from Dallas Sasser (1734).

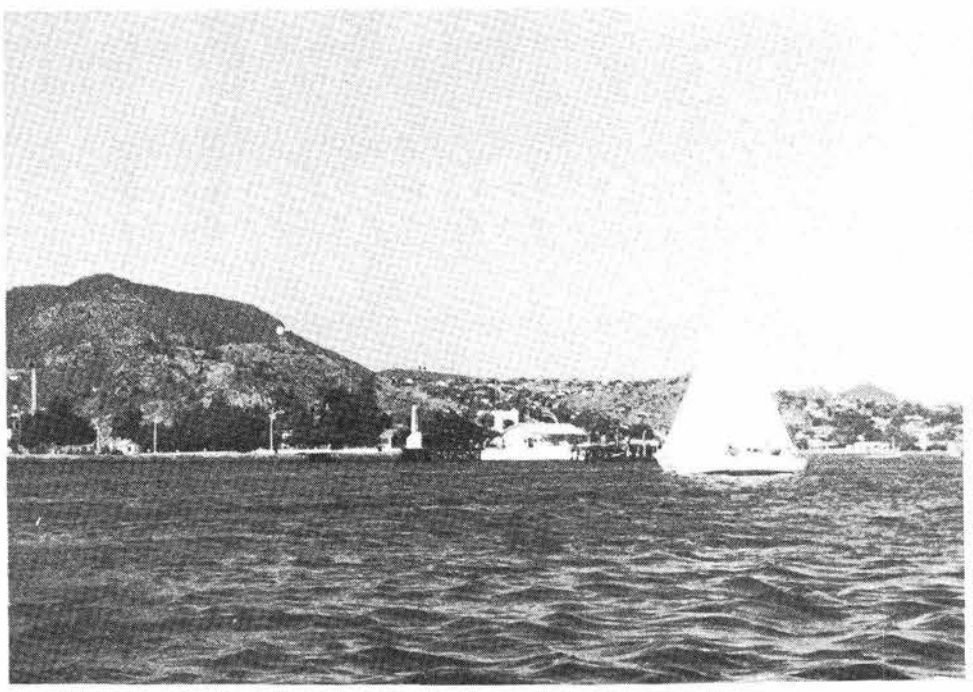
* * * *

Some say there's no accounting for management. The eighth annual attempt to prove them wrong, also known as the Eighth Annual New Mexico Accounting and Management Seminar, gets underway at 8 a.m. on Nov. 17 at Ramada Inn East.

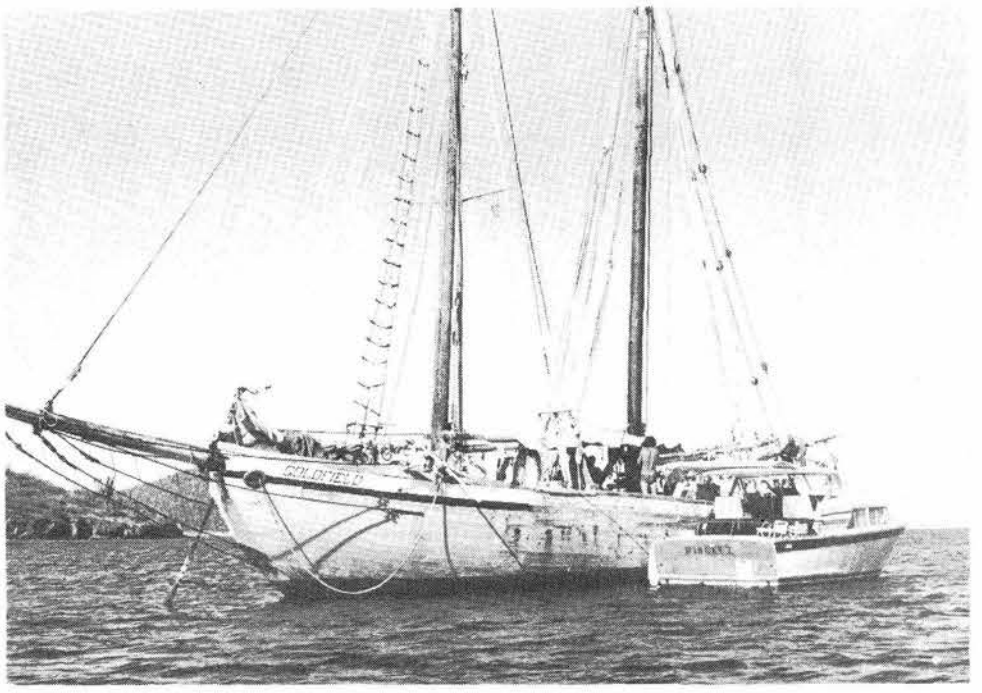
Professional people from New Mexico's business and financial worlds will discuss their social responsibilities to the public. Some of the meetings sound fascinating — "Body Language," "Banking's Social Responsibilities vs. Business Goals," etc. And then there's "New Audit Standards Prepared by the General Accounting Office." A pair of Jacks from Sandia are on the program — Jack Hueter (3134) is the MC; Jack Tischhauser (5420) will discuss "Social Responsibilities of the Computer Professional."

For more information, contact Mike Coleman (4154) or Fred Mitchell (4152); both are members of the National Association of Accountants, one of the event's co-sponsors.

IN RECOGNITION of Albuquerque's outstanding support of the U.S. Savings Bond campaign, Glenn A. Fowler (left), Sandia vice president and state chairman of the Savings Bond program, presented the Department of the Treasury's Take Stock in America award to James E. Killorin, vice president and general manager of N.M. Mountain Bell and chairman of the Albuquerque Bond drive, during a luncheon meeting recently. Jesse L. Adams, national director of the Treasury's Savings Bond Division, addressed the meeting attended by bankers, employers and other volunteers. This year's goal of 3200 new participants and increased savers was exceeded with 3702 enrollments at the end of September.



AT THE FINISH LINE, the yacht with Al Quant is ahead by a nose (a prow?). The boat is almost hidden by the third-place finisher.



THE GOLDFIELD served as hospitality suite for the race. The ancient schooner was dismasted in a storm off Guaymas a year ago, but is soon ready to resume its journey from Colombia to California.

Says Al Quant

Lewis Carroll was Wrong

There are certain things — as,
a spider, a ghost,
The income-tax, gout, an umbrella
for three —
That I hate, but the thing I hate
the most
Is a thing they call the Sea.

—Lewis Carroll

Many Albuquerqueans would agree — that's one of the reasons they like it here. But not all. Al Quant (5513) for one. He and four other Albuquerqueans not only own a yacht, they sail it. They not only sail it, they race it. And they not only race it, they place.

The five entered it in the 25-mile Second Annual Salt Water International Yacht Sailing Race from San Carlos to Guaymas Harbor on the Sea of Cortez on Columbus Day, and they came in second in a photo finish over 19 other yachts. Their boat, a 25-foot Coronado sloop ignominiously yclept *Toad*, is capable of sailing the bounding main; it has a four-foot keel (see glossary) and with its ballast (see it again) weighs 6000 pounds.

But the crew and captain (they take turns) made two decisions which proved wise. First, they used their spinnaker (glossary again), a move which by race rules carried a five percent time penalty but which increased their speed considerably. Second, they hugged the shore — trickier sailing but fewer miles to cover compared with the open sea where most of the big (up to 70 foot) boats were sailing.

Though a hurricane had swept the area just a few days before the race, the winds were good — 15 knots (glossary again) or so. And the race itself went without mishap — no one walked any planks, said "avast there, me hearties," or got seasick.

After the race there was a victory celebration aboard an ancient 110-foot South American schooner, the *Goldfield*. And from the schooner was hurled the *Toad's* captain pro tem. It wasn't a mutiny, just one of those quaint customs.

Al awaits, albeit with apprehension, his turn to be skipper. Captain Quant has a vague Caine mutinish quality about it. But he's ready. He learned sailing as a lad in Chicago, then polished his technique (and a few fittings) when in the Sailing Club at Massachusetts Institute of Technology. He's been sailing at Elephant Butte for 15 years — except of course for his 40 hours a week at Sandia. He'll command a tight ship.

Glossary:

keel — a timber extending from stem to stern (that's front to back) along the center of, and projecting below, the boat's bottom; often named Howard.

ballast — a heavy substance used to maintain proper draft or trim and to increase stability; retired galley slaves are no longer considered good form for this purpose.

spinnaker — the word probably comes from Sphinx, a yacht of the 1860's; it's a large triangular sail set on a long light pole (not a lightpole) on the side opposite the mainsail and used when running before the wind (while working before the mast.)

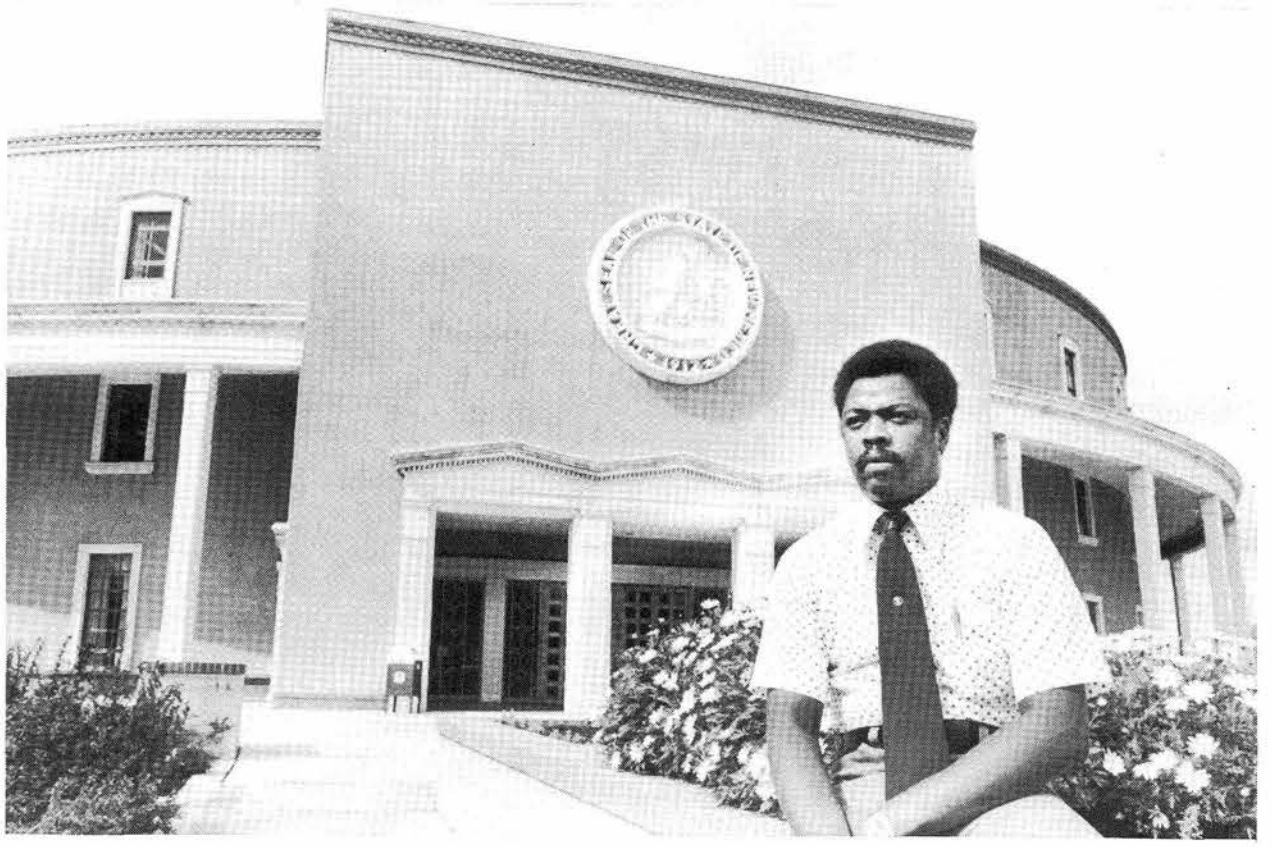
knots — one knot is one nautical (knotical?) mile per hour; a nautical mile is 6076.11549 feet, roughly. • bh

YOUNG WOMEN from the Job Corps who are studying electronic fabrication methods toured various shops within the Labs recently. Here Mel Smith of Electronics Division 7131 holds aloft art work for a printed circuit board.

Speakers Abroad

The following papers, prepared by members of Division 5131, were presented by Lee Davison, supervisor of Explosive Physics Division 5131, at the JOWOG-9 17th Meeting, AWRE, Sept. 25-29, Aldermaston, England:

J.E. Kennedy and J.W. Nunziato, "Pressure Field in a Shock Compressed High Explosive"; J.E. Kennedy and J.W. Nunziato, "Exploding Wire Behavior — A Comparison of Theory with Experiments"; T.J. Tucker, "Damage in Bridgewires Subjected to Sub-Threshold Current Pulses"; D.L. Allensworth and T.J. Tucker, "Design of Pulse Transformer Firing Sets for Spark Detonators"; and T.J. Tucker, J.E. Kennedy and D.L. Allensworth, "Secondary Explosive Spark Detonators."



GEORGE WILLIAMS (5413), a member of the State Manpower Council, on the steps of the capitol in Santa Fe.

George Williams Serves on State Comprehensive Manpower Council

George Williams, a programmer in Product Data Systems Division 5413, is a member of the Comprehensive Manpower Council for the State of New Mexico. Created a year ago by Governor Bruce King, the Council is charged with the responsibility of coordinating federal job training programs in the state. Some $40 million in federal funds are spent in the state annually on job training programs.

As the only Black on the Council, George is most concerned with the Black unemployment rate. He represents the NAACP.

George is currently involved in the Black unemployment problem in the southern part of the state, Deming in particular. He recently completed a study of the Deming problem and presented the results of his investigation to the Council.

"Black unemployment in Deming is officially 50 percent," George says, "but if part-time and odd jobs are considered as unemployment, the rate ascends to 67 percent." Through his position in the Council, George is working to help the situation.

Time & Time Again

Daylight Saving Time ends 2 a.m. Sunday, Oct. 29. Turn your clock back one hour.

Promotions

John J. Aragon (1214) to Staff Assistant Technical
Hermenes J. Baca (4514) to Laborer (Leadman)
Ronald G. Cheek (7135) to Technician (Component Quality Testing)
Gardner B. Green (4515) to Janitor (Cleaning & Polishing)
Wallace A. Hunt (4611) to Staff Assistant Technical
Estrella M. Lopez (8217) to Secretary (Trainee)
William M. Rego (8256) to Administrative Clerk
John W. Romero (4515) to Janitor (Cleaning & Polishing)
Rosendo Saavedra (1824) to Staff Assistant Technical
Vinita H. Sankey (8320) to Secretary
Elmer G. Smith (4515) to Janitor (Cleaning & Polishing)
Russell F. Smith (7122) to Electroplater
Theresa M. Smith (8217) to Secretary
Linda J. Stobie (8217) to Secretary
Shirley Y. Young (8217) to Secretary (Trainee)
Susan M. Davenport (1722) to Member of Technical Staff
Paul C. Kind (4518) to Laborer (Leadman)

Sympathy

To Martin Gonzales (4518) on the death of his mother-in-law, Oct. 10.

To Loyd Kelley (4152) on the death of his mother in Locust Grove, Okla., Oct. 14.

Medical Reporter

Catching a Cold? Maybe It Was a Draft, Maybe Not

Some people believe that wet hair, cold feet and exposure to drafts bring on a cold. Others object to this as myth or folklore. A few studies into the causes of colds have sided with the scoffers, especially since no study has shown that exposure to inclement weather will result in a cold.

However, the studies have not been that numerous: the common cold isn't exactly an area of overwhelming interest to medical researchers.

Becoming ill with an infectious disease like a cold involves two factors:

1. Exposure to the infectious agent; and,
2. The level of internal resistance to that infectious agent. Because the second factor is highly variable, generalizations regarding infections are suspect.

The first factor is obvious. You must be exposed to the infecting organism before you can get an infection. Even the "draft-cold feet" people admit that. If there are no significant viruses or bacteria in the nose or throat and no exposure to anyone having such infectious organisms then all the drafts in the world will not cause an infection. Infections always result from the union of the bug and you.

Now we come to the more complex second factor mentioned above: the level of internal resistance. It is well-known that under normal circumstances one cannot get second attacks of measles, mumps or chickenpox. Therefore, intimate contact with people infected with one of these viruses usually will not result in a second infection.

These conditions are virus illnesses — as is the common cold. Although there is no certitude, there is some medical evidence that once a person has been exposed to a virus illness he will have a lifelong immunity to it. The reasons people keep getting influenza (which is a virus infection) is because the virus itself keeps changing and there are many "cold" viruses which produce the same symptoms of sneezing, coughing and runny nose. It may be true that even in the area of colds one doesn't catch the same virus twice.

There is more to the problem of resistance than specific protection from previous exposure. It is fairly well accepted medically that once a person has fully recovered from a cold, a period of weeks, or even months, may go by during which his resistance to other colds is high. This is true even though some of the viruses he is exposed to are new and, theoretically, ones to which he should be susceptible. The reasons for this may have to do with certain blood constituents (such as interferon and others), an area about which little is known.

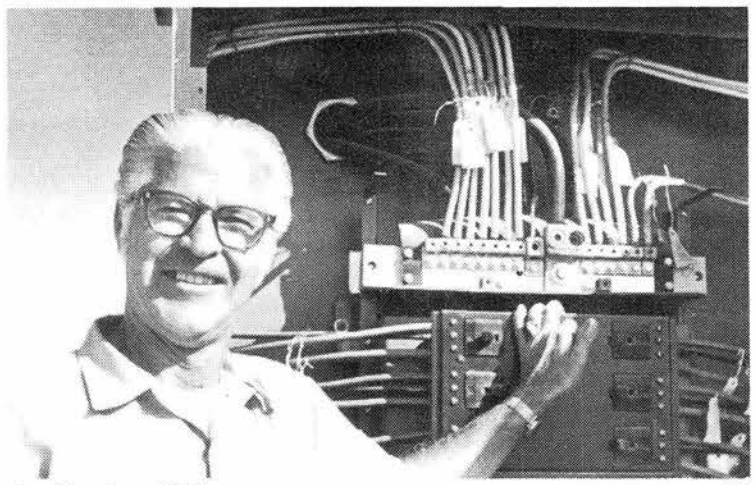
At least one other important factor in resistance, a non-specific one, is the various levels of hormones, especially cortisone-like hormones, in our bodies. It is well known that when a patient is given cortisone for prolonged periods of time his resistance to infections decreases. The human body constantly produces cortisone-like hormones. The delicate balance of hormones is a non-specific but probably significant factor in determining resistance.

We know the body makes extra cortisone in response to stress, and it may be here that folklore and medicine meet. Thus, for those persons whose bodies react to cold wet feet or drafts as stressful situations, there may be an increase in cortisone output which could lower resistance to infection. But this is pure speculation.

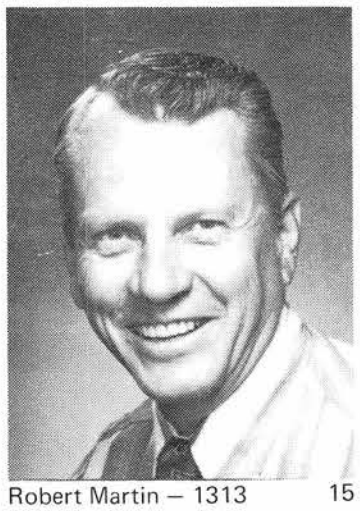
All we do know is that the patient must be "ready" for infection before it develops. There might even be psychological factors involved but this also is speculation. Who knows? Some future study may reveal that if you believe a draft will hurt you, it will and if you don't, it won't. •WE-MED

MILEPOSTS

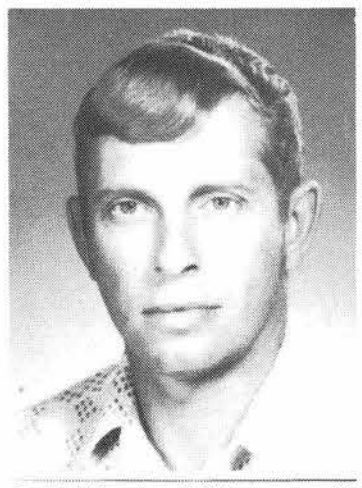
LAB NEWS October 1972



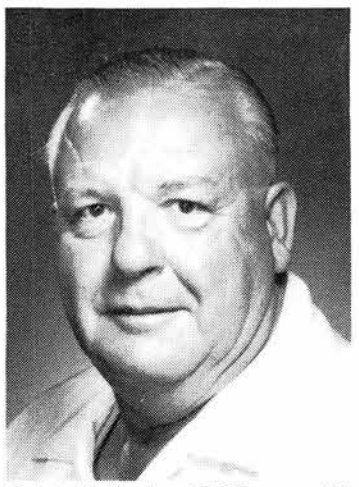
Joe Garcia – 4512 10



Robert Martin – 1313 15

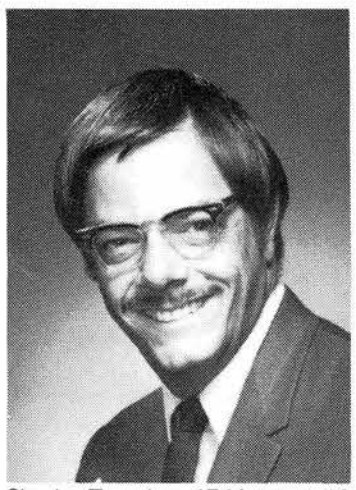


Gerald Kroth – 9321 10

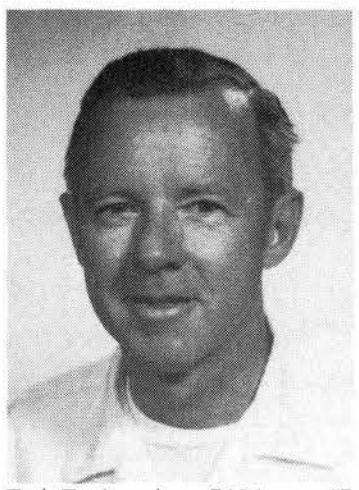


Ralph Holland – 4518 25

Arthur Andazola – 1913 10



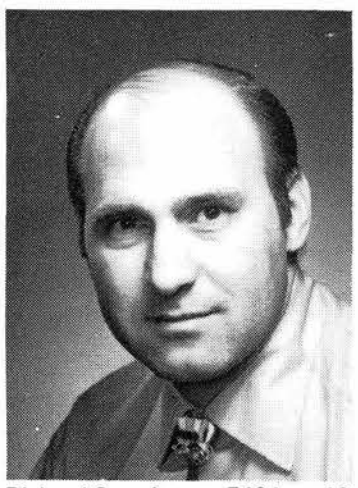
Charles Trauth – 1741 10



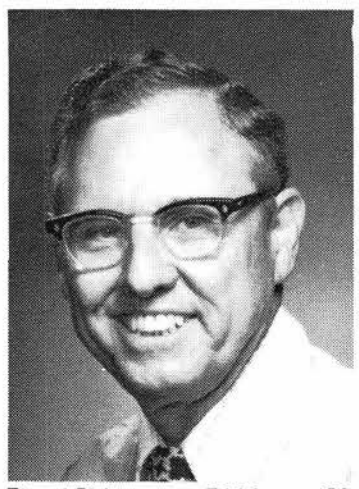
T. J. Tucker, Jr. – 5131 15

Ken Sarason – 1651 20

Aubrey Butts – 4511 15



Richard Swanigan – 7434 10



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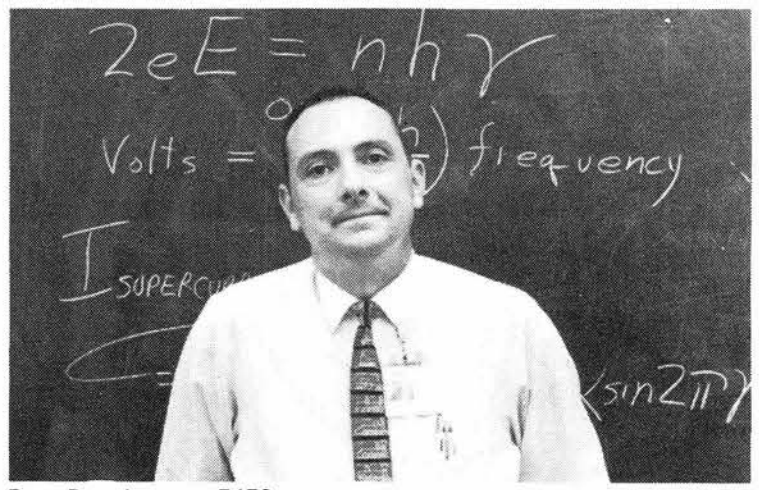
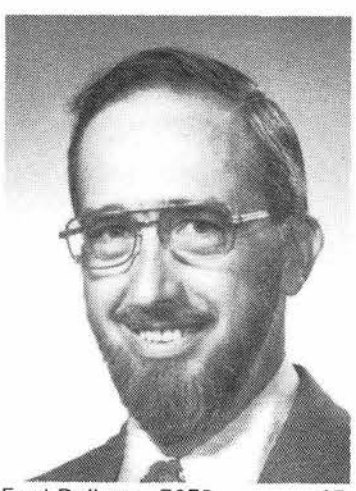
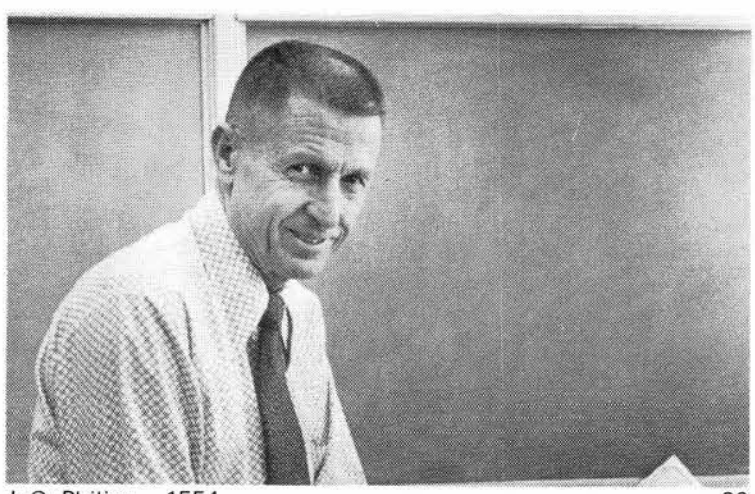
Gilbert Wallace – 7114 20



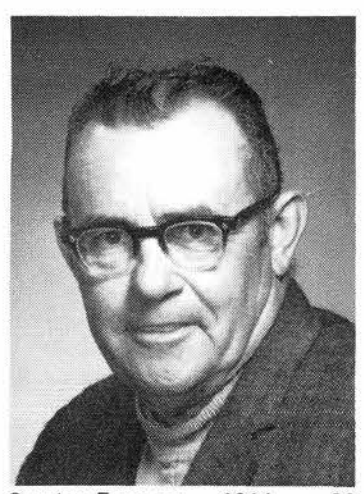
Dave Braudaway – 7452 15



Fred Deiber – 7652 25



J. O. Philips – 1554 20



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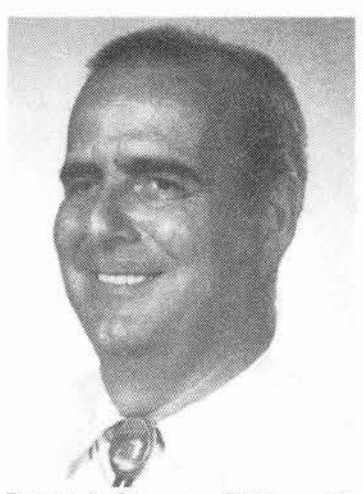
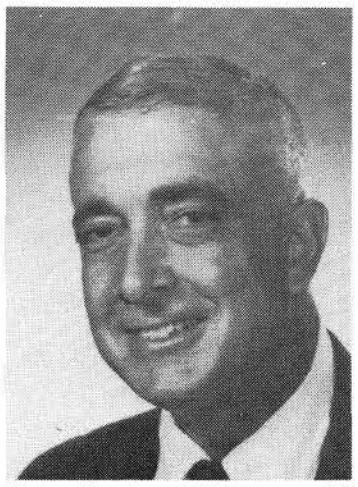
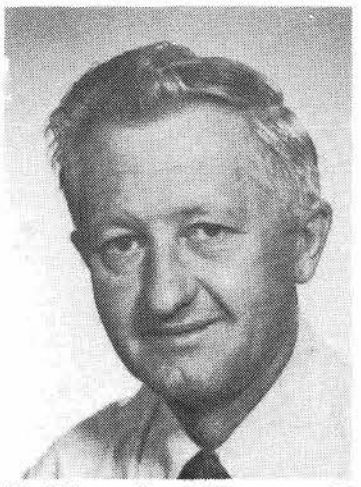


Robert LaChance – 5315 15



Walter Halpin – 1641 20



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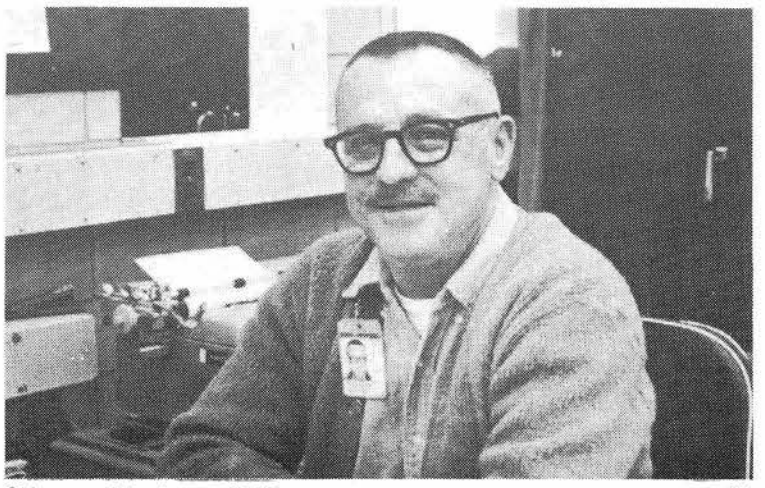
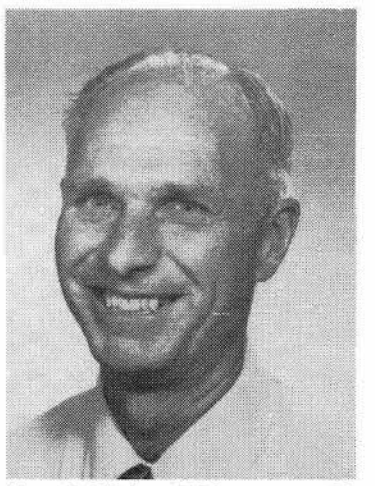
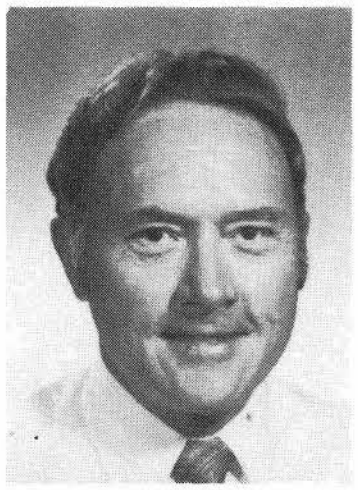


Salvatore Mattina – 1813 15



Harold Wild – 4338 20

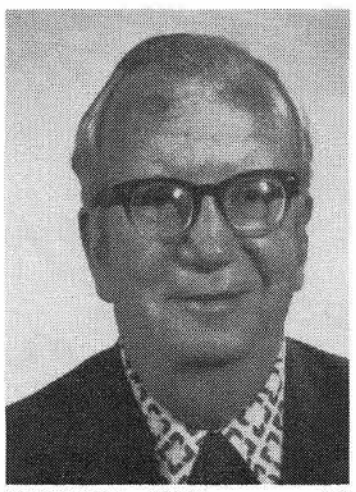


Hugh MacDougall – 1314 15

Jan Willis – 3203 10

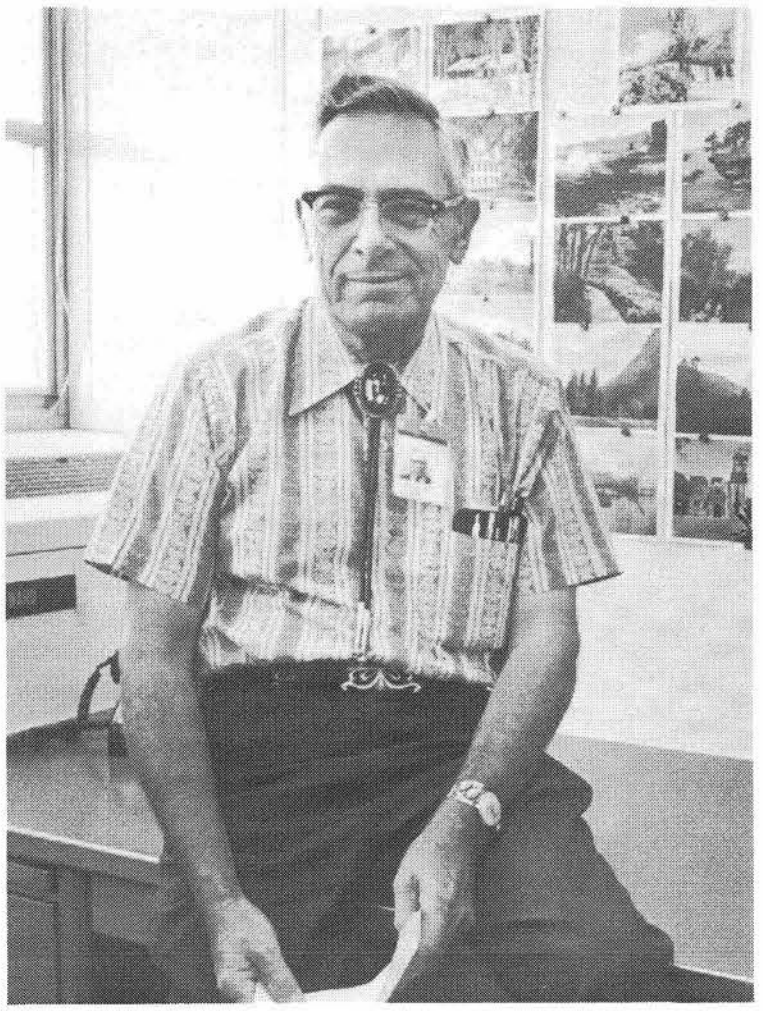
James Beaudet – 9241 20

Arthur York – 1642 15



Ed Herrity – 4330 20

Ronald Bentz – 1423 15

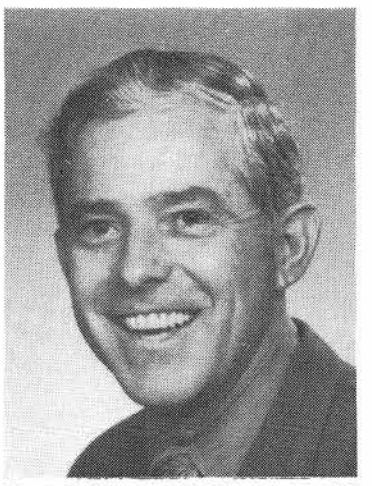


Harold Howard – 1313 20

Lee Toliver – 7624 25

Cliff Rudy – 4542 20

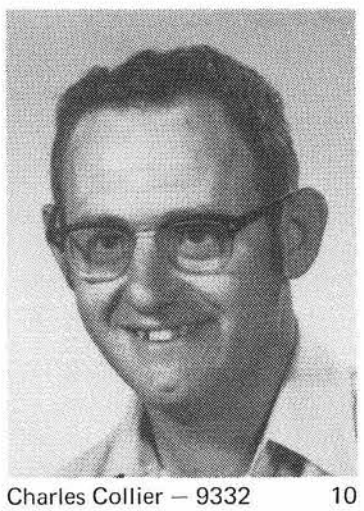
Bryan Cason – 9334 15



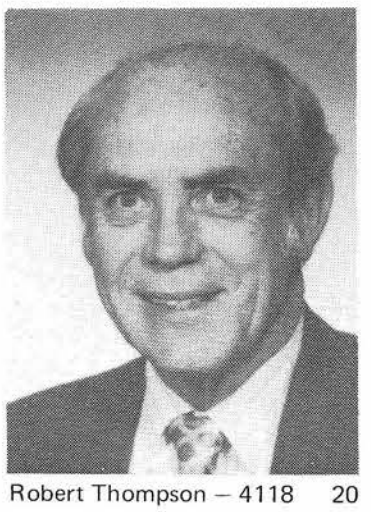
Paul Gaither – 1522 20

Les Dye – 4141 15

Emil Komarek – 1433 20



Charles Collier – 9332 10



Robert Thompson – 4118 20

A FUNGUS SUPPLIER? Or maybe a gigantic mobile gooey dessert? Whatever, it was parked in Visitor's lot.

Tech Society Meetings

The November meeting of the American Society of Mechanical Engineers will feature a panel evaluation of Energy-Environment problems which engineers are attempting to solve. Panelists include Robert Christiansen, Stearn-Rogers Environmental Sciences Department; Bob Harley, EIA; Corry McDonald (7623), environmentalist; Dusty Rhodes, Public Service Company; and Marv Becktell (1551), moderator. The meeting will be held at "Reddy's Rendezvous" in the Public Service Building on Wednesday, November 8, with coffee at 7 p.m. and the meeting at 7:30 p.m. Members, guests, and interested enginers are invited.

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.

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.

FOR SALE MISCELLANEOUS

SKIS, 10 pair, some short, most long, several bindings, — Cubco, Nevada, Marker, boot carriers, VW ski rack. Shunny, 265-1620.

EUREKA upright sweeper w/attachments, $15. McClure, 294-1912.

PHILIPPINE MAHOGANY dining room suite, table, chairs, buffet; upright piano; rabbit hutch; multi-color 9x12 braided rug. Detorie, 299-1868 after 5.

ELEC. GUITAR, Del-Ray, $45; Fender deluxe amplifier, $75, or both for $100. Adam, 256-7565.

SPRINGFIELD 1903-A3 rifle, new sling, vinyl case, orig. cleaning kit, $45 or trade handgun or camera. Merritt, 299-1482.

TV, Admiral B&W 19", port., includes stand & antenna, $40. Grear, 282-3166.

MINIATURE Schnauzer, purebred, spayed female w/all shots, 15 mos. old. Dodrill, 296-2250.

SKIS, Head standard, 185cm, $40. Garst, 299-5870.

SUPERIOR Trius trap thrower, throws singles & doubles, includes can thrower & high angle clip, new, will sell ½ price. Weems, 268-1702.

2 SNOW TIRES, mounted on Chevrolet 6.70x15 rims, $5 ea. Caskey, 294-3218.

EARLY AMERICAN high back 9' couch, $100; Eico stereo components, $5 ea.; infant car seat, $8; chest waders, never used, $20. Estes, 299-3881.

VIOLA, Roth intermediate, 1 yr. old, $125. Clark, 296-4541.

SKIS, ski poles, binders & size 10 boots, $65. Houghton, 299-3386.

AKC Airdale Terriers, born 9-10-72, choice of sex, tails docked, dew claws removed, hunting, guardians, or pets. Shaykin, 294-2208 after 5.

WESTINGHOUSE elec. stove; kitchenette set: table w/extra leaf & 6 chairs. Callahan, 299-3273.

BATHROOM SINK, green, $20. Berman, 296-5640.

GARAGE SALE: crib, high chair, furniture, misc. items, Oct. 27-28, 9 a.m. - 6 p.m. Lewis, 3213 Alcazar NE.

SINGER touch & sew, model 648. Gray, 265-1883.

DEER RIFLE, .243 (6mm) Saico Mauser w/4X scope, extras. Roth, 877-4997.

GE PORT. dishwasher; Pomeranian male, 11 mos. old, silver, good pet. Meekins, 298-6681.

TOY POODLE, silver male, 7 wks. old, AKC reg. Shipley, 298-2433.

B&H 312DF, zoom, E.E., 8mm camera, case, light bar; 245BA auto. projector; film editor, $115; DuKane sound filmstrip projector, $50. Conklin, 298-8217.

PENTAX Honeywell H-1 w/f2 lens. $75. Harris. 299-6664.

40" ELEC. RANGE, $75. Anderson, 268-4415.

ZEISS contaflex 35mm SLR camera, $99; 35mm lens, $80; 115mm lens, $95; 8x30 monocular $90; above plus extras, $295. Vivian, 299-1785.

STEREO, port. phonograph, 4-spd., auto., Realistic, BSR turntable, 2 speakers w/smoked dust cover, $60. Chavez, 256-1087.

MENS ski shoes, size 9D, Henke, 4-buckle, leather, $12.50. Bruce, 299-2542.

DESK, wood construction, 30x-44" top, 4 locking drawers, $40. Novotny, 296-7167.

TWO matched cabinets, 29H x 25W x 19 deep, one has 12" Goodman speaker, other has shelf. Hawley, 299-2516.

OLD kitchen cabinet w/roll top, wood rocking chair, string chair w/stool, lg. mirror w/gold ornate frame, 2 tents. Campbell, 268-8445.

44 MAGNUM Winchester model 94 w/2X Redfield scope, Redfield mounts, 2 boxes shells (100), $100. Gonzales, 242-6264.

3-YR.-OLD stereo console, AM-FM radio, $90. Scott, 298-0712.

SEARS EXERCYCLE, Hawkinson, 282-5239.

SOFA, wingback, 90", $50; hall runner, multi-color braided cotton, 2'x13', $20; 14 cu. ft. Frigidaire refrigerator, $55; 8 cu. ft. GE refrigerator, $30. Hughes, 299-6674.

POWDER (warm-up) ski pants by Obermeyer, men's medium or women's large, reg. length, groovy floral pattern, $15. Keeling, 268-2275.

METAL ICE CHEST, 30½x-13x16¼", $10; 2-burner Coleman lantern, $10; chem. toilet, $35; Coleman oven, $5; exercycle, $30. Dornik, 255-0225.

LHASA APSO puppies (small Tibetian dogs), AKC reg., champion background. White, 299-6411.

CABIN TENT, 7x9, $25; 2 sleeping bags, $12.50; 2 alum. cots, $7.50; 30-06 sport mauser rifle, $65. Irwin, 898-4575.

REMINGTON 700, 30-06 rifle, Redfield mounts, scope, recoil pad, $120. Klett, 298-7892.

FORMICA TOP kitchen table w/4 chairs, 36x36 w/12" leaf. Rogers, 268-8682.

3-BDR., 1½ baths, mobile home, 1968 American, metal skirting, awning, many extras, Roberts, 298-7047.

NAVAJO AND ZUNI squash blossom necklace, sell or trade for old guns or Indian items, baskets, rugs, etc. Zaluga, 344-1564.

KITCHEN TABLE, 3x5' & 4 chairs, $15. Curry, 298-5028.

DRUM SET, red, $85. Beall, 869-2939 after 6.

SEARS port. dishwasher, $50; rollaway bed, $5; grey kittens, will spay. Patton, 282-5209.

WEDDING GOWN w/matching veil, size 7. Arterburn, 299-3620.

FREE small pets, gerbils, various ages. Souder, 282-3121.

FREE KITTENS, need good homes. Janes, 265-8153.

COPPERTONE refrig., 6 year old GE frostfree, $150 or best offer. Bertholf, 299-8549.

FOR SALE TRANSPORTATION

'61 CHEVY convert., good top, needs engine replaced, make offer. Hueter, 242-1620, 1300 Las Lomas.

'71 JEEP CJ-5, $2750. Rodriguez, 265-5192.

'65 MUSTANG & '63 Ford 4-dr. Galaxie, can be 100% financed. Craven, 268-7915.

'69 VW BUS Kombi, $1600. Johnson, 266-1119.

'59 AUSTIN HEALEY, strong 3000 engine, fresh paint, chrome roll bar, extra parts & manual, $1150. Willingham, 298-7043.

SEARS 20" sport bike, knobby tires. Roth, 877-4997.

BICYCLE, Phillips lt. wt. w/drop style handlebars, Schwinn racing saddle & Sturmey Archer 3-spd. rear hub, $35. Snelling, 268-5895.

11' COACHMAN ¾ Ford, self-contained, 12" tires, camper campers, 2 extra gas tanks. Blakely, 298-2820.

'68 INTERNATIONAL Travellal, AT, PB, PS, AC, trailer-towing rear end, low mileage, $2400; '66 Mustang GT, $825. Shepherd, 299-9066.

BOYS 24" bike, stingray w/banana seat, $33; combination, boy or girl, 24", 3-spd., $26. Johnson, 298-1011.

'71 OLDSMOBILE Custom Cruiser (stn. wgn.), low mileage, 8-cyl., AT, AC, pwr. window in rear, Vleck, 298-5397 after 5:30.

'62 RAMBLER, $175 or best offer. Benjamin, 247-8217.

'60 RAMBLER wagon, best offer over $200. Lewis, 294-1692.

'66 CHEVY, white, 4-dr., PS, AC, AT, sell or trade for tractor. Bunt, 247-8528.

BIKE, boys 20", new, $25. McClure, 294-1912.

CLASSIC Dune Buggy, Indy tires, 1600 engine, heater, top. Stromberg, 255-6131.

'58 CHEV. 2-ton w/Challenge concrete mixer, 4½ yards, $1500. Sanchez, 865-7031.

'64 CHEV. Biscayne, AC, PS, R&H, 4-dr., 6 pass., V8, runs, $200 or will trade. Clark, 268-4843.

'64 IMPALA, new radial tires, new paint, AC, PB, PS, tilt steering, 4-dr., HD top, 327, 250 HP. White, 298-3683.

'56 FORD pickup, V-8, 3-spd., $160; '72 Yamaha 650, extras. Gelder, 865-9714.

SEARS motor scooter, '69 model. Palmer, 298-6671 after 6.

'70 CHEVROLET Impala 4-dr. HT, all power equip., factory air, new battery, near new tires, below book. Martin, 299-6768.

22' Lake Cruiser, 225HP V8 inboard outdrive, 4 bunks, head, completely equipped, 4-wheel trailer w/brakes, $2500 or trade for 16-18' runabout. Meikle, 299-4640.

QUARTER HORSE, bay mare, 8 yrs. old, approx. 15 hands, white socks, black mane and tail, pleasure or trail. Mautino, 877-4346.

TRACTOR, IHC, F-12 row crop type, running condition, good rubber. Devlin, 282-3112.

FOR SALE REAL ESTATE

20 ACRES 4 miles south of Los Lunas. Sanchez, 865-7031.

WANTED

TRADE: girls 24" Schwinn & 20" Huffy for 5 or 10 speed. Jones, 299-9480.

BABYSITTING DAILY at 10216 De Trevis SW, West Gate Heights. Ortiz, 242-7989 after 5.

HIGH QUALITY packframe & knapsack, backpack stove, down backpack sleeping bag. Maak, 282-5402.

PORT., FM stereo, phonograph comb. w/speakers. Milton, 299-4586.

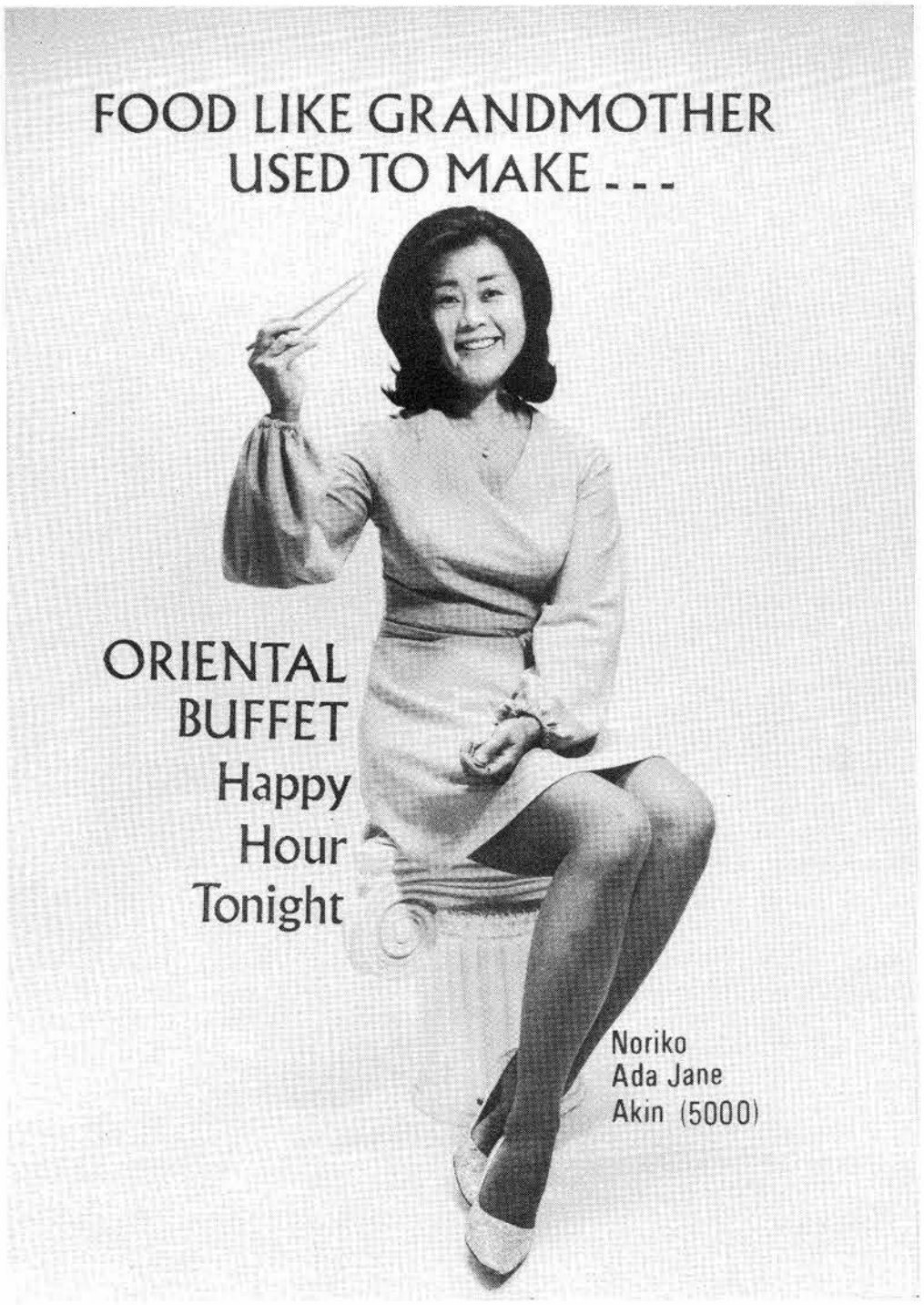
INEXPENSIVE guitar for jr. high student. Shepherd, 299-1507 after 6.

CAR POOL: Candelaria-Louisiana vicinity to Bldg. 800 vicinity. Cosden. 256-0547.

LOST & FOUND

LOST — Woman's white gold wedding band w/3 chip diamonds, green leather billfold w/ID & credit cards and large amount of cash; gold clip-on earring w/brown ornament, $30. Woman's wide Zuni wedding band. LOST AND FOUND, tel. 264-2757, B.dg. 832.

FOUND — Lock-cap to gasoline tank, gold tie tac, narrow silver band ring. LOST AND FOUND, tel. 264-2757, Bldg. 832.



Coronado Club Activities

Beware the House of Horrors

TONIGHT at Happy Hour the Club's kitchen staff will wheel out a fantastic oriental buffet while Sol Chavez and the mighty Duke City Brass make the happy music. Adults pay $1.75 for the buffet, kids $1.50. Special bar prices (cheap) will be in effect until 10 p.m. Denny Gallegos will entertain in the main lounge from 9 until midnight. Next Friday, Nov. 3, the Club's famous chuckwagon roast beef will top the buffet menu while Frank Chewiwie will play for dancing. Yolanda Adent will hold the main lounge. On Nov. 10 the Prisoners will be loose on the bandstand and barbequed chicken will be the buffet spread.

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HALLOWEEN at the Coronado Club will be spectacular. Designed for kids, the party will feature a house of horrors with a cast of characters out of a nightmare. In addition to assorted witches, spooks, goblins and ordinary devils, Frankenstein and Igor will have their special lab, the Mummy will emerge from his tomb, the Phantom will creep, Dracula will seek soft necks, the Wolf Man will watch out for a full moon, and King Kong Jr. will be loose. There will be bobbing for apples, tricks for everybody and lots of treats. Prizes will be awarded for the best costumes in several categories — age 4 and under, 5 to 7, 8 to 10 and 11 to 12. In addition, the original "Wolf Man" movie starring Lon Chaney will be shown. The screams start at 6:30 p.m. next Tuesday evening and the party's free to members, but members only please.

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FAMILY VAUDEVILLE NIGHT

Nov. 18
Movie & Magic

ANOTHER BIG EVENT this month is the lobster dinner set Saturday, Nov. 11. Live Maine lobsters are flown in special for the party and you get the works — king crab cocktail, baked potato, salad and hot apple pie. Before the dinner, the Mateus people will provide a wine taste and after dinner the Ken Anderson quartet will play for dancing. Tickets ($7 members, $8 guests) should be picked up by Nov. 3.

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TEENAGERS can dance or whatever to a group called Ghost Rose on Saturday, Nov. 4 from 7:30 to 10:30 p.m. Member parents should pick up tickets for their youngsters.

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THE FOOTBALL BUS will leave the Club at 1 p.m. on Saturday, Nov. 4, and go directly to the stadium where the Lobos will face San Jose State. Members can ride the bus free, leave their cars in the Club parking lot and return to the Club after the game.

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HERB PITTS (100), Club publicity director, has a $5 bill for the person who can come up with a fancy name for the Club's basement room 5, next to the Eldorado room. Winner will be announced in mid-November.

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THE CLUB LOUNGE will be closed until 7 p.m. on Tuesday, Nov. 7, while you go to the polls and vote.

WITCHES, SPOOKS, GOBLINS, DEVILS, etc. will be part of the Coronado Club's Family Halloween Party next Tuesday starting at 6:30 p.m. Trick and treats for everybody. Yvonne Sandoval (4364), above, is a treat.