



JOHN GALT—VP 5000

Labs Reorganized; Galt New VP-5000

As LAB NEWS goes to press, an extensive reorganization of the Labs has been announced by President Sparks. The reorganization includes the naming of a new vice president and three new directors.

Promoted to vice president is John Galt, who has been Director of Solid State Sciences (5100). Mr. Galt becomes VP-5000 with four directorates reporting to him: Director of Solid State Sciences 5100 (Fred Vook); Director of Engineering Sciences 5500 (Orval Jones); Director of Systems Sciences 5600 (Don Shuster); and Director of Materials and Process Sciences 5800 (Dick Claassen). The new VP came to Sandia in 1974 from Bell Labs, which he

joined in 1948.

Fred Vook is the new Director of Solid State Sciences 5100. Previously he had been manager of Radiation & Surface Physics Research Dept. 5110. Fred has been at the Labs for 20 years.

Gerry Yonas will head a new organization, the Directorate of Pulsed Power Programs 4200 under VP-4000 Al Narath. Gerry had been manager of Fusion Research Department 5240. Others in the 4000 organization include Director of Weapon Systems Development 4300 (Bob Peurifoy); Director of Nuclear Fuel Cycle Programs 4400 (Bill Snyder); Director of Nuclear Waste and Environmental Programs 4500 (Everet Beckner); and Director of Energy Programs 4700 (Jim Scott).

At Sandia Livermore, Arlyn Blackwell succeeds Hilt DeSelm who has retired. He will be Director of Operations 8200. Arlyn has been manager of the 8010 Planning Staff and came to Sandia in September 1959.

A number of other changes take place under the reorganization, which becomes effective today, Sept. 1. The reorganization is fully detailed in Organization Change Notice 78-22.



FRED VOOK—5100



GERRY YONAS—4200



ARLYN BLACKWELL—8200

LAB NEWS

VOL. 30, NO. 16

SEPTEMBER 1, 1978

Rising to the Occasion

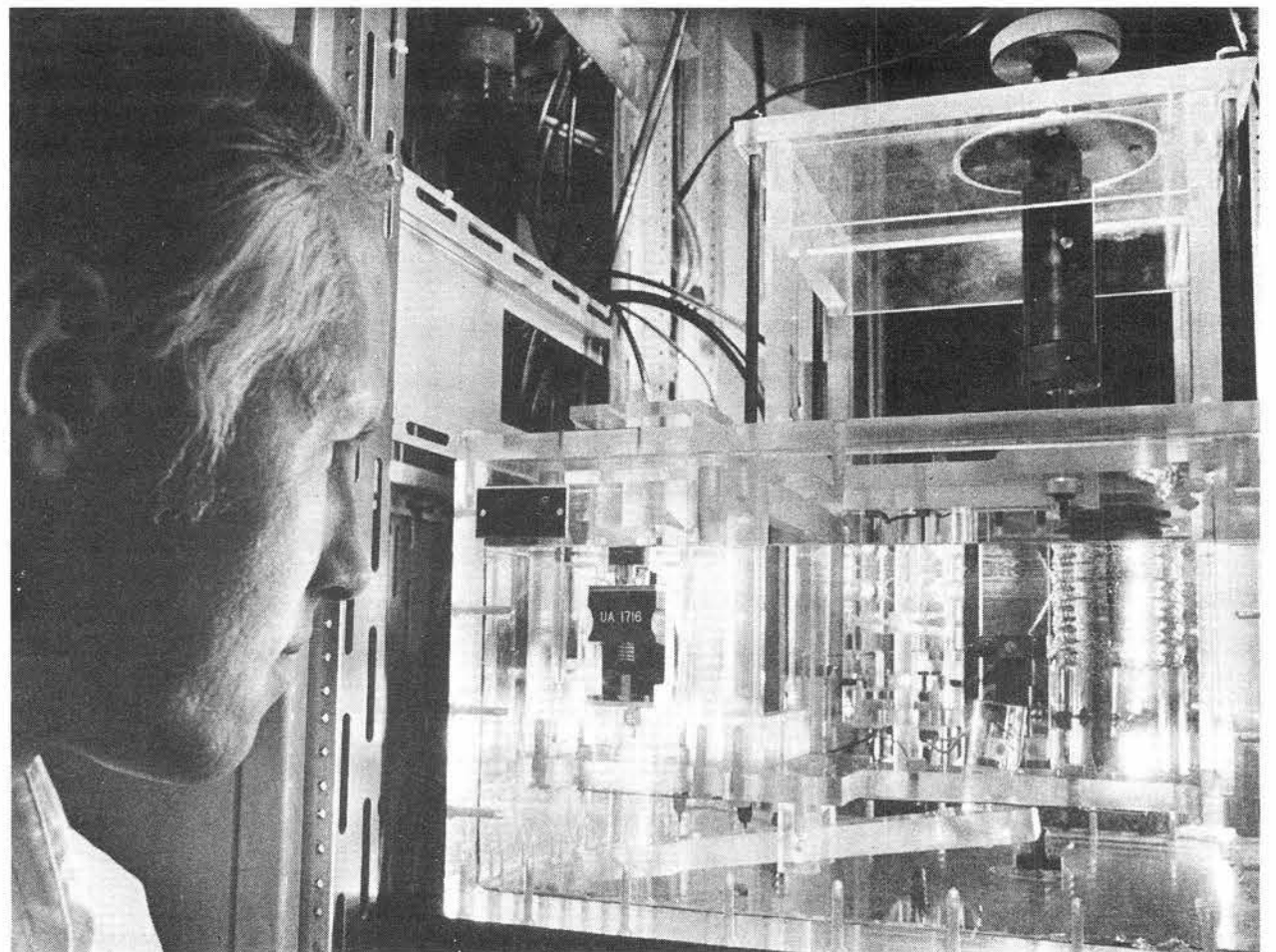
A Unique Form of Resistance

You might say that a varistor rises to the occasion—its conductance increasing as the applied voltage is increased. Some Sandia applications require that the voltage across a load be almost constant, although the source voltage varies considerably. On these occasions a varistor may be placed in parallel with the voltage source and the load.

Unlike resistors (which provide a single, constant resistance to the passage of electrical current) the resistance of the varistor decreases (conductance increases) significantly if the source voltage tends to exceed the design value. The net result is a constant controlled voltage across the load. This characteristic makes varistors useful for both voltage regulation and transient voltage suppression.

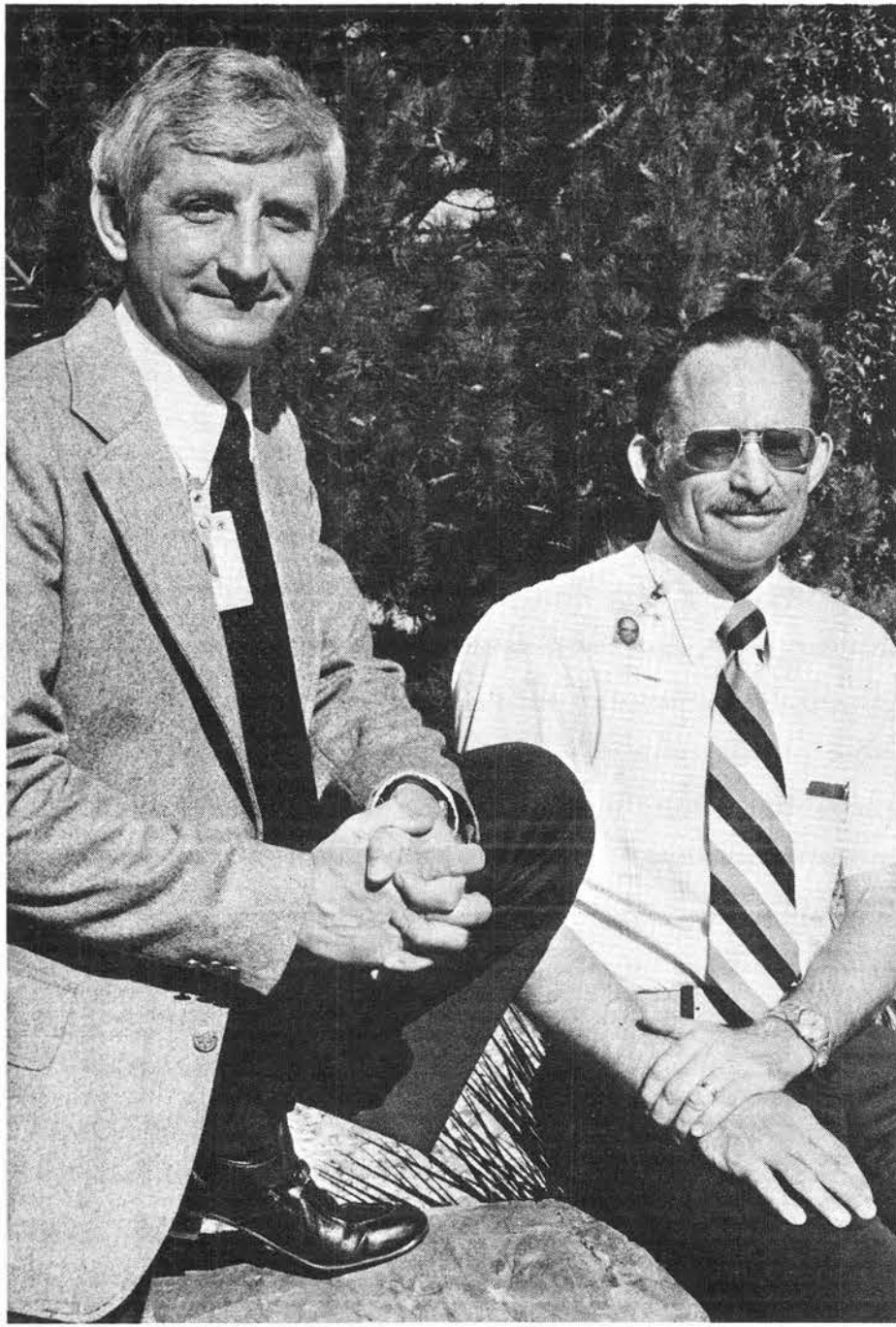
Low field varistors (on the order of 1 kV/cm) were developed in the late 1960's by the Japanese, and such zinc oxide varistors have been on the market for several years. Because of their ability to

[Continued on Page Five]



WEAPON COMPONENT DESIGNER Keith Treece (2164) checks placement of high field varistor in freon-filled test tank prior to voltage check—a check make on each varistor before it is used. Low field varistors, available commercially since the 1960's, caught Keith's attention because they maintain stable voltage and are insensitive to temperature and radiation. Sandia has pioneered high field varistors, developing new ceramic compositions and production techniques. (See other photos on pg. 5.)

GEORGE URISH (9564) and SKIP McGEE (2629).



New Photovoltaic Facility Being Built

Construction is now underway of a Photovoltaic Advanced Systems Test Facility (PASTF) for simultaneously testing and evaluating photovoltaic (solar cell) concentrator arrays and associated components developed by various industrial firms.

The seven-acre facility, having a combined capacity of 100 kilowatts, will be used for testing individual concentrator arrays producing from 100 watts to 10 kilowatts each. Its capabilities will include evaluation of equipment used to convert direct current from the arrays to alter-

nating current for utility grids, testing integrated electrical-thermal photovoltaic systems, and storing electricity in batteries.

Along with the test beds, the PASTF will have a passive solar heated, high-bay assembly building, a control building with three interconnected computer-controlled data acquisition and processing centers, and a small office building. The assembly building's passive solar system will feature a south-facing wall of 55-gallon drums of water to retain thermal energy from the sun.

The facility, expected to cost about \$500,000, is scheduled for completion in October. It is located northeast of the Exhibit Center between G and F streets.

Sandia is directing the Systems Definition Project of DOE's National Photovoltaic Conversion Program. The project, centered in Division 5719, is aimed at development of reliable, low-cost photovoltaic systems, and the creation of technical and industrial capabilities to produce and distribute the systems for residential and commercial applications.

To stimulate private industrial participation in the development of photovoltaic systems, Sandia awarded \$7.1 million to sub-contractors for a variety of photovoltaic system studies and hardware development projects last year, and expects to award about \$11 million this year.

Supervisory Appointments

SKIP McGEE to supervisor of Procurement Systems Division 2629, effective Aug. 16. Since joining the Labs in September 1966, Skip has worked with systems analyses and programming organizations. His work has been associated with accounting and purchasing systems; he was one of the original group implementing the integrated procurement system.

Skip has a BS from Brigham Young University and an MS from Arizona State University in accounting. About two years ago, he completed construction of a new home and now has time for fishing, tennis and activities of his church. Skip and his wife Brenda have four children and live in Sandia Heights.

* * *

GEORGE URISH to supervisor of Project Design Definition Division III, 9654, effective Aug. 16. Since joining the Labs in July 1963 as a draftsman, George has worked in engineering specifications, computer-aided design and, most recently, in the mechanical design organization.

Before coming to Sandia, George earned an Associate in Engineering degree from Penn State. Under Sandia's Educational Aids and University-Part Time programs, he received a BS in mathematics and an MS in EE/computer science from UNM. George is a member of IEEE.

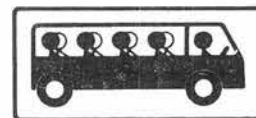
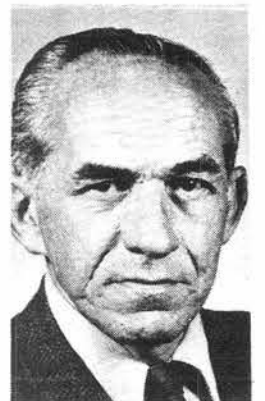
Off the job, George enjoys camping and woodworking; he also does volunteer work for the American Diabetes Association. He and his wife Donna have two children and live in northeast Albuquerque.

Death

Bob Hedberg of Project Engineering Division 1733 died suddenly Aug. 22. He was 51.

He had worked at the Labs since May 1956.

Survivors include his widow Hildegard (1126), a daughter, two sons and six stepchildren.



Bus Notes

A new time for after work departure has been announced for the Wyoming/Sandia bus. It will now leave the first pickup point at Gate 10 at 4:40, five minutes earlier than previously announced.



Two investigators from the California Highway Patrol discovered a stolen motorcycle in Harry Dewitt's backyard one recent Tuesday afternoon. They arrested and handcuffed him, and left him alone inside their patrol car while they went back for the evidence. Harry promptly drove off. The officers, with a little help from some late-arriving patrolmen, impounded the cycle and parked it at a garage in downtown Burbank. During the night somebody (maybe even Harry) stole it again. They found the patrol car next day in a parking lot. But Harry and the handcuffs were gone, of course. So were the keys to the patrol car. Those are most of the facts. Except for one: Wednesday was a dismal day in Burbank.

LAB NEWS

Published every other Friday
SANDIA LABORATORIES
An Equal Opportunity Employer

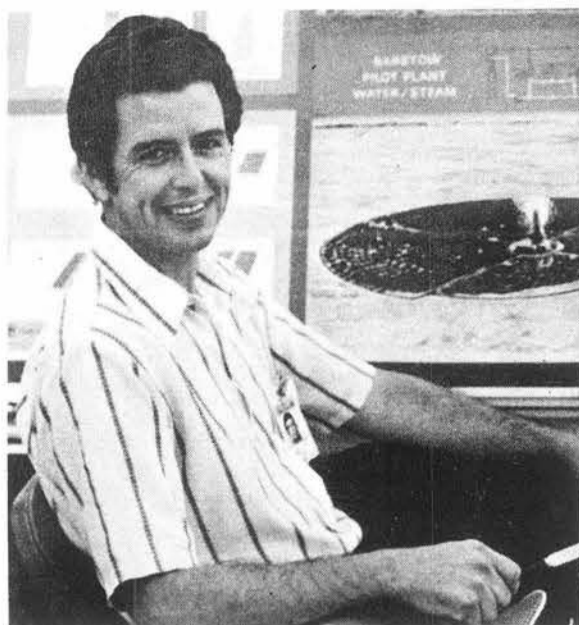
ALBUQUERQUE, NEW MEXICO
LIVERMORE, CALIFORNIA
TONOPAH, NEVADA
Editorial offices in Albuquerque, N.M.
Area 505 264-1053
FTS 475-1053
ZIP 87185
In Livermore Area 415 422-2447
FTS 532-2447

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

chuck cockelreas & norma taylor write
bill laskar does picture work
so does russell smith

bruce hawkinson & lorena schneider report livermore

Supervisory Appointments



JOHN DANIEL to supervisor of Technical Art Section 8265-2, effective Aug. 16.

John joined Sandia/Livermore in 1958 after earning an AA degree in civil engineering from San Joaquin Delta College. During his entire 20 years at Sandia, John has worked in Tech Art, first as a technical illustrator, then as a graphic designer performing conceptual art work. In 1974 he received a BA in graphic design from the California College of Arts and Crafts in Oakland under Sandia's EAP program. He has also served eight years in the California National Guard.

Off hours, John enjoys sailing, playing classical guitar and auto mechanics. He and his wife Barbara live on Irene Way in Livermore with their two sons.



JAN VANDERMOLEN to supervisor of Drawing Reproduction and Micrographics Section 8273-2, effective Aug. 16.

Jan has been a secretary at division, department and directorate levels since joining Sandia/Livermore in 1970. Since last November she has been administrative coordinator for the SLL Planning Staff. Previously, she was office manager at the Livermore Herald and News.

This past spring, Jan received a BS degree in business administration from the University of San Francisco under Sandia's EAP program. A member of the American Business Women's Association, she has held various offices in the local charter chapter.

Her hobbies include reading, knitting and sewing, but she especially enjoys motorhome travel with her husband Wil (8123). They live on Fourth Street in Livermore and have three grown children and two grandchildren.

LIVERMORE NEWS

VOL. 30, NO. 16

LIVERMORE LABORATORIES

SEPTEMBER 1, 1978

Return of Don Morrison

A Special Summer-Hire

Once again, Don Morrison's career is intertwined with Sandia's mission. This summer, he's working in Computer Applications Division 8327, living in Hayward, preparing to take some courses at Stanford, getting set to teach a course at Livermore, and vastly enjoying the whole scene.

For those asking "Who is Don Morrison anyhow?" he came to Sandia Albuquerque in 1955 and joined the systems analysis *cum* math department. He became a supervisor in 1957, a department manager in 1969. Then he went off to head a computer science group at UNM and is currently chairman of the Department of Computing Science there, from which post he's on sabbatical and to which post he'll not return—he's asked to be a professor rather than administrator when he returns.

At Sandia he's working on three projects this summer. One involves a relationship with PATRICIA that began in 1967 when he originated her. PATRICIA (Practical Algorithm to Retrieve Information Coded in Alphanumeric) is a computer program used by Sandia designers and engineers to retrieve information about weapon parts and specifications. Don's task is to update and upgrade the program.

A second project is to design a course to be offered at Sandia this fall in structured programming. The principle underlying



Don Morrison

structured programming is to construct a program as a series of modules, each small enough that a programmer can concentrate on one at a time and yet be able to prove the correctness of the whole by proving the correctness of its parts.

In the third project, Don is studying the Labs' use of image-processing and computer graphics with the aim of assisting the Labs in the use of these systems and of improving UNM's course offerings in the field.

Don works fulltime until this fall when he goes on part-time status to become a student again at Stanford. Living in Hayward makes the commute to Stanford this fall feasible. And it makes busing to SLL convenient—Don's a believer in mass transit; in fact, he's father to the original Sandia Special buses at Sandia Albuquerque.

Welcome back, Don.

Sandian Does Not Save Undertow Victim

But he helped. And she lived. And he came out of the experience with some advice worth sharing: 1) Even if you've taken courses in mouth-to-mouth resuscitation and CPR, take a brush-up course every year, and 2) Carry a card that reminds you of the proper procedures—in an emergency even the professionals can falter.

The Sandian is Ted Mamaros (8123). He was relaxing with friends on a beach near Pacifica a couple of Saturdays ago when they noticed half a dozen people holding hands and wading into the surf. The beach has a reputation for an undertow that's well deserved. Two of the six got caught in it and lost hand contact with the others and foot contact with the bottom at about the same time.

Their shouts for help came from the woman first—she was attempting to keep her exhausted companion afloat. But she took in some water and ended up in serious trouble. Ted and two other people made it out to her and, fighting the undertow, got her back to shore.

"She was blue, her eyes were rolled back, she had no pulse. Obviously she had to have help immediately," said Ted. "A Doctor showed up and began mouth-to-mouth resuscitation, but it wasn't working. Then my friend, a former nurse, pulled a card from her purse and realized that the woman's airway had to be cleared first.

"Once her head was tilted back and her tongue was pulled up, the water in her lungs could escape and the doctor's resuscitation had some effect. My friend applied CPR to get her heart pumping again.

"They kept it up for half an hour or so, and by the time a Coast Guard helicopter arrived, she was breathing.

"Two days later, the hospital reported her condition as stable with every chance of recovery. She was lucky—cold, sandy brine is, after all, rather an insult to lungs.

"It was a sobering experience for all of us. Thank God for the card that told us what to do first—in a real emergency, your mind can just go blank."



Don Thomas Retiring

A long-time member of Sandia's Board of Directors, Don Thomas is retiring this month from Bell Labs where he holds the position of Executive Vice President.

Mr. Thomas began his Bell system career with WE in the Hawthorne (Chicago) works. His WE career includes tours at the Buffalo Works, at WE Headquarters in New York City, and at the Kearney (New Jersey) Works. Before his transfer to Bell Labs, he was VP of WE in charge of Personnel and Labor Relations. He assumed his present position with Bell Labs in 1969.

Besides the Sandia Board, Mr. Thomas is on the Board of Bell Labs, United Aircraft Products, C.R. Bard Inc., and the New Jersey College Fund Association. He is a former member of the American Society for Quality Control, the inspection and quality control task committee of the National Security Industrial Association, and also served on the quality acceptance procedures task committee of the Radio-Electronics-Television Manufacturers Association.

Retiring



Bill Barth (2551)

Weingarten Says 'Winterize'

With summer rapidly drawing to a close, now might be a good time to start thinking about "winterizing" your home. The experience of Dave Weingarten (2153), who added insulation and storm windows to his 2000-sq.-ft. house in the NE heights, might be helpful. Dave has recorded his gas bills for many years and is thus able to make accurate computations of savings.

From 1972 through 1976, Dave would have paid an average of \$207 per year for gas at the current price. Before the winter of 1976-'77, Dave installed another six inches of insulation in the attic above the house ceiling to bring the total insulation up to 12 inches. The insulation was mineral wool fiber bats which he laid on top of the original insulation. That winter, Dave's computed gas cost was \$139.

The next year, he had aluminum-frame storm windows made, and he installed them on all 17 windows of the house. The attractive storm windows match the original windows and seal tightly into the frames. Dave also installed double pane thermal glass sliding patio doors.

That year, his gas for the winter cost \$125—even though the unit cost of gas had increased.

"My records show that additional insulation is the most cost effective way to save energy," Dave says. "The savings from the fuel bill will allow payoff of the insulation in 4.9 years. It will take 33 years for the savings from the storm windows only to cover their cost. However, with both insulation and storm windows, the savings will pay for the entire package in 10 years. The patio doors are the expensive items here."

Dave's computations take into consideration the variation in temperature from year to year. He used the "degree day" figure provided by the U.S. Weather Bureau to calculate actual savings in fuel consumption.

"There is one more point," Dave says. "The storm windows do provide more of a feeling of comfort than previously. And, since there's less heat loss, we now open the drapes more in the wintertime and enjoy the sunshine."



DAVE WEINGARTEN (2153) added six inches of insulation in his attic to bring the total to 12 inches. He realized significant savings in his fuel bill.

Feed Back

Q. What's the history of MTS vs MAS announcements in the Weekly Bulletin? There doesn't appear to be as much lateral or advancement opportunity for MAS's.

A. There have been relatively few MAS job announcements, as compared to MTS, in the last six months. Quarterly statistics show the MTS population at 2158 and MAS at 396 at the end of March 1978. This is a ratio of 5.4 to 1. A comparison of the job announcements is shown below:

| | Job Announcements | | Ratio MTS to MAS |
|----------------------|-------------------|-----|------------------|
| | MTS | MAS | |
| 10/1/77 thru 3/30/78 | 125 | 8 | 15.6 |
| 4/1/77 thru 3/30/78 | 181 | 18 | 10.1 |
| 10/1/76 thru 3/30/78 | 305 | 29 | 10.5 |

These figures reflect the nature of our business at Sandia. As technical projects and organizations change, so does the mix of MTS jobs. Administrative jobs and organizations tend to be more stable and less affected by the change in technical projects.

Per the policies initially established for the Job Announcements, it was not the intent to announce all jobs. Those filled by recruiting, functional transfers, reorganizations, surplus employees, rotation, placements resolving problems, etc., are not announced in the Weekly Bulletin. Movement within a directorate is not a part of the announcement system, either.

It is quite possible that an MAS assigned to a technical organization does not have the movement opportunities of an MAS in an administrative organization. However, the MAS who informs the Personnel Representative of the desire to move to another assignment, who nominates himself/herself for available openings, and who has a reputation as a good performer should be able to move to another job over a period of time. Compared to our previous system of filling jobs, the opportunity is certainly greater now.



Neal Vinson (1213)

Take Note

The Albuquerque Museum presents "Albuquerque Artists II" Sept. 17 through Oct. 29. The second in a series of exhibitions featuring artists who live and work here, the display by 28 artists includes photographs, graphics, drawings, paintings, sculptures and combinations of media. Located at the old Sunport on Yale SE, the Museum is open Tuesday through Friday from 10 to 5 and from 1 to 5 on weekends. There is no admission charge.

* * *

A class for children in conversational German is being offered by UNM starting in the next couple of weeks. The Modern Language Department is sponsoring the 16-week course for young people 7 to 14. It will meet at Heights Christian Church, 6935 Comanche NE. Registration is at 4 p.m., Sept. 11, at the Church's Chapel 3. Call 294-1369 for more information.

* * *

The autumn equinox, when the hours of daylight equal the hours of darkness, will happen Sept. 21. The sun will rise from behind the Sandia Mountains at about 7:15 a.m., just in time to hit you in the eyes if you drive east in mornings about the end of October. Pitted or dirty windshields on your vehicle will create a visibility problem. Think about it; the traffic is tough enough out there.

* * *

The APS Community School Program—alternative education for high school juniors and seniors—is offering a photography course this semester and is in need of any type, any condition, darkroom equipment. The school is located at 2611 Eubank NE. For more information, call Irvin Hoffman, 296-5433.

* * *

Bob Martinez of the Kirtland AFB EEO office called to let us know that Sandians are "more than welcome" at all the special events planned on base during National Hispanic Heritage Week (Sept. 10-16). He mentioned a *Feria* (a Fair) the afternoon of opening day at Bi-Centennial Park with food, drinks, displays of Hispanic and American Indian arts and crafts plus continuous entertainment by the Mariachi Tenampa, Los Jovencitos Ballet, Dueto Alegre, San Francisco Dancers, Ballet Folklorico, Regina Studio Dancers and Heraclio Perez. The Jr. Officers Council is sponsoring a luncheon Sept. 14 at the West Officers Club (Edward Diaz, AF Hispanic Employment Coordinator, guest speaker) and Friday is set aside for an all-day cultural awareness sessions at Breakaway Recreational Center. Special displays all week at the Base Library and the Breakaway.

Congratulations

Mr. and Mrs. Jim Kannolt (2533), a son, John William, Aug. 11.

Sympathy

To Antonio Garcia (9582) on the death of his mother in Santa Fe, Aug. 17.



ONCE REMOVED FROM THE MOLD, metal electrodes are sprayed on (lower right) and the high field varistor slug is tested for homogeneity. Then the slug is sliced into individual varistors (upper right) which are tested in the setup shown on page one before they are used. Varistors will be used in the B61 and W80 electrical systems and probably in most future weapons.

Continued from Page One

Unique Form of Resistance

maintain a stable voltage, their insensitivity to temperature and radiation, these varistors caught the attention of weapon component designer Keith Treece (2163) for possible use in weapon electrical systems. The problem was how to increase varistor voltage capability while maintaining a small physical size.

Early work by the GE Research Laboratory had resulted in a proprietary material suitable for the first requirement and, three years ago, Keith Treece, Gary Snow and Sharon White (both 2521) tackled the problem of increasing the voltage capability, Keith as design engineer and Gary and Sherry as ceramists. Their efforts into high field varistors have been successful and such varistors are now being produced at Sandia on a laboratory scale. The high field varistors are made using a new composition (zinc, cobalt, bismuth and lead oxides) and a hot pressing technique developed by Gary and Sherry.

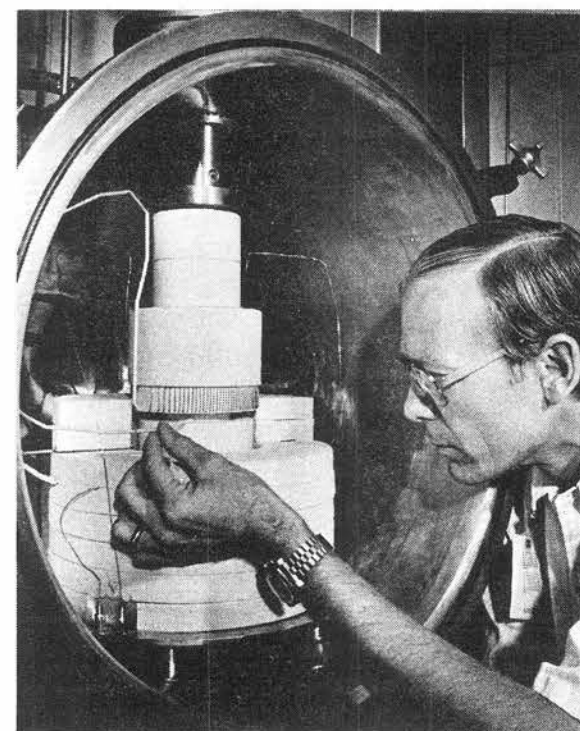
"Right now," says Gary, "we're working on uniformity and reproducibility. Merton Brooks in 9572 is developing a process for producing uniform batch lots of high field varistor material, and Sherry and I are still experimenting with various compositions and processing techniques—and Gordon Pike (5815) and Carleton Seager (5132) are investigating the conduction physics of varistors."

What will the varistors be used for? Keith Treece listed several uses: "We'll use them in the B61 and W80 electrical systems and probably in most future weapons. We can see uses, too, for high field varistors in lightning arrestor connectors, voltage protectors in firesets and in other applications where you need to limit high voltage. In a typical weapon



SHERRY WHITE (2521) was one of two ceramists at Sandia who helped formulate composition and develop production techniques for high field varistors. Low field varistors had ideal electrical properties but were too big to be used in most weapon applications. High field varistor in Sherry's left hand will do the same job as the low field varistor she holds in her right.

program the use of the varistors will result in simpler designs and reduced costs."



CERAMIST GARY SNOW (2521) inserts one of six thermocouples used to measure furnace temperature during production of high field varistor slug. Gary developed specifications for the hot press and designed and built the furnace. This equipment is being used to produce high field varistor slugs on a laboratory scale. Work is underway in Div. 9572 on a process for producing large, uniform batch lots.



There may yet be some hope that Johnny will learn to read and write—at least when he gets to college. A recent Univ. of Iowa proposal to establish an institute for the professional development of directors of freshman English was based on the following premise: "To reduce the study of writing to helpful composition hints and usage rules is comparable to reducing the study of politics to lobbying, the study of ethics to the ten commandments, or the study of social behavior to a course in how to win friends and influence people. A course in writing must teach students how to write, but it must also go beyond rules and hints to a professional understanding of writing itself. Without this kind of knowledge, the study of writing remains what Socrates accused Gorgias' rhetoric of being—a 'knack akin of cookery or cosmetology.'"

FUN & GAMES



LA LUZERS—If any doubt exists that Sandians aren't into the fitness scene, then consider this group of 30 from the Labs who made the trail run two Sundays ago. We checked the LAB NEWS of '73 and found that only eleven Sandians made the run then, and total entries were 80. More than 300 showed up this year. A few stats about La Luz: it's 7.6 miles with an elevation gain of some 4000 feet up to Sandia Crest's 10,600 foot elevation. Henry Dodd (5716)

led the Sandia pack with his time of 1:13. Four Sandia women completed the race, with Kathe Korak (5833), at 1:35, leading the other three. There's a report that the race will be extended in the future by an additional two miles to reduce the crowd problem at the trail entrance. (Photo by Gerse Martinez, 9632.)

Biking—A fun tour is coming up next weekend—"The Enchanted Circle Wheeler Peak Century." The tour starts Saturday morning, Sept. 9, at 8:30 a.m. in Red River and proceeds southward past Eagle Nest, over Palo Flechado Pass into Taos, thence north to Questa and on into Red River. Sag wagons will follow, so you can always bail out. LAB NEWS has registration and other information.

Ron Malpas (1761), Sandia Bikers Association president, passes along a couple of messages from Base and Sandia traffic control people: bikers exiting the Base from the east side of Wyoming and using the bike path adjoining 11th Loop and Club Road are urged to stay on the right side of 11th Loop until it's time to turn onto the bike path. Auto traffic is one way there, and the right lane is better for bikers. A couple of near misses have occurred at this point. Also Sandia Security reminds bikers to stop at all stop signs inside the tech areas and to give pedestrians the right of way.

* * * *

Bowling—The Sandia Bowling Association is organizing for the coming season and invites anyone interested to join the fun. In addition to league play, tournaments for teams, doubles, singles and scotch doubles are scheduled plus monthly awards for the top four bowlers in league play. Call Kay Duval (9658), secretary, 4-1836, for more details.

Jerry Long (1111) is helping organize a mixed bowling league for non-smokers to roll Thursdays at 6:30 p.m. at Sandia Bowling Lanes. If interested, call Jerry on 4-8149.

* * *

Volleyball—With 10 teams organized, there's still openings for more players. If interested, call Bob Giersberg, C-Club

recreation honcho, 4-8486. A classification tournament will be played Sept. 11 through 14.

* * *

Softball—Teams interested in playing in a fall league are urged to contact Bob Giersberg.

* * *

Tennis—You can still sign up (singles, doubles, mixed doubles) for the C-Club's tournament scheduled tomorrow, Sunday and Monday at the Club courts. You don't have to be a member to compete. Again, call Giersberg.

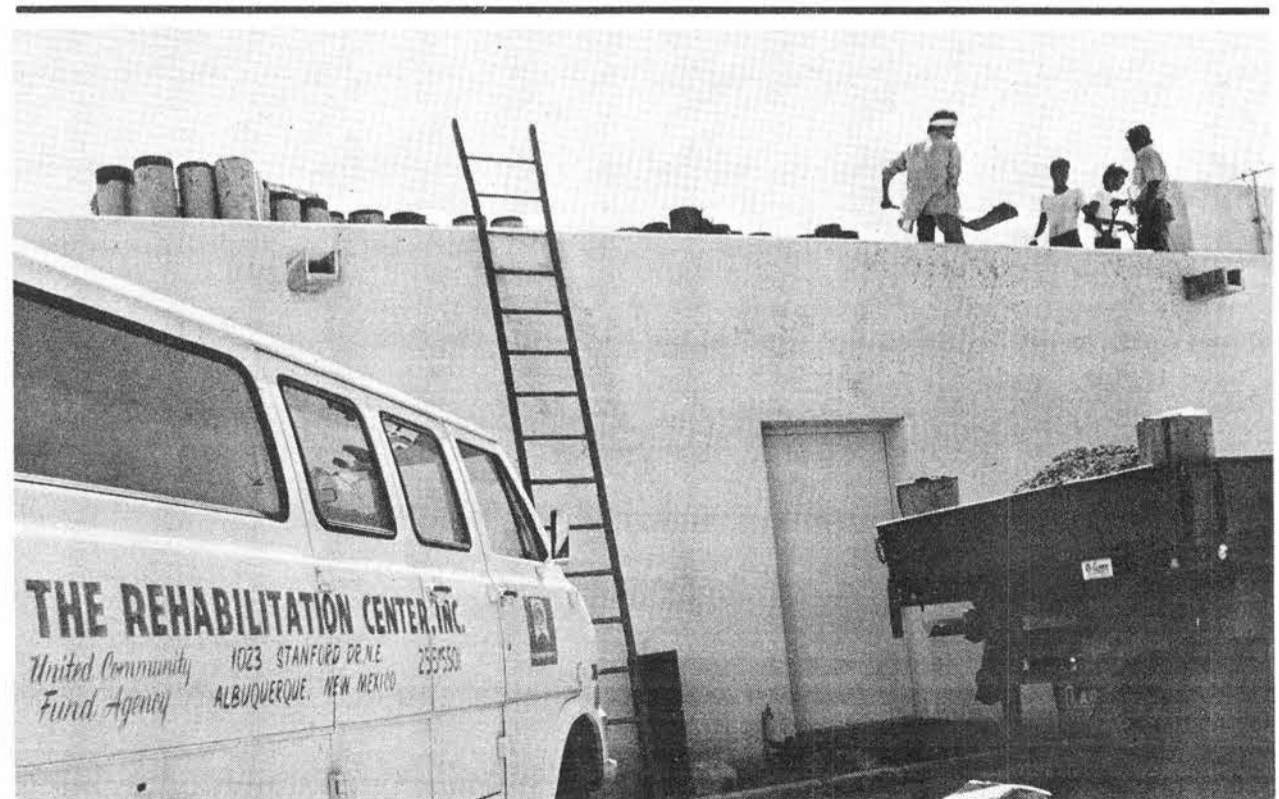
* * *

Exercise Classes for both men and

women will start next week. Women register Sept. 5 at 4:45 in Rm. B5A at the C-Club. The class will meet Tuesdays and Thursdays at 4:45 at the Club. Men interested in a physical fitness program should register Sept. 6 at 4:45, C-Club Rm. B5A. Call Giersberg, 4-8486, for more information.

* * *

In General—The C-Club's Bob Giersberg is a remarkable fellow full of energy and enthusiasm. If you have any kind of a suggestion for a recreation-type program or event, call Bob and he can probably put a C-Club sponsorship to it, help you organize and promote it. He's open to suggestions any time.



ECP AT WORK—The Rehabilitation Center gets a new roof. The Center, a United Way agency, needed to raise additional money above its budget for this emergency. Sandia's Employee Contribution Plan contributed \$500 from its Reserve Fund and, with other local contributions, the Rehab Center contracted for a new roof.

By Their Brands They Are Known

Thanks to Hollywood and TV's calvalcade of cathode cowboys, most of us have ridden in more roundups, roped and thrown more calves, and heated more branding irons than half the ranchers in the western world. Concerning the branding itself, though, we're blissfully naive. Just as the hot iron is about to hit the hide, the cameras always do a cutaway. That spares us the sizzle and the scent and the smoke. But it doesn't tell us much about brands or branding.

We checked with the New Mexico Livestock Board and discovered there are roughly 32,000 registered brands in the state—each unique, each designed to be difficult to alter. Since the idea behind branding is to show ownership, that explains the uniqueness. As for the attempt to prevent alteration—well, the bad guys are always with us.

The simple-minded symbolism of cowboy films long ago taught us that when the lean, tanned man in the white hat lifts a glowing iron, he's about to mark a downed dogie with an authentic brand. Conversely, we know that the guy in the black hat is about to alter a brand with a running iron. In the real world, that happened all the time, though the bad guys weren't (and aren't) so easily discerned. But it is a fact that a skilled rustler, using an iron shaped a little like a fireplace poker, could change a circle to a buckle or a lazy nine or add an x in the center faster than most cowboys could draw a gun. (See brand table.) The bad guys didn't always win, though.

Down in Texas they tell a story about a rancher who discovered that a rustler had rounded up a hundred or so of his steers

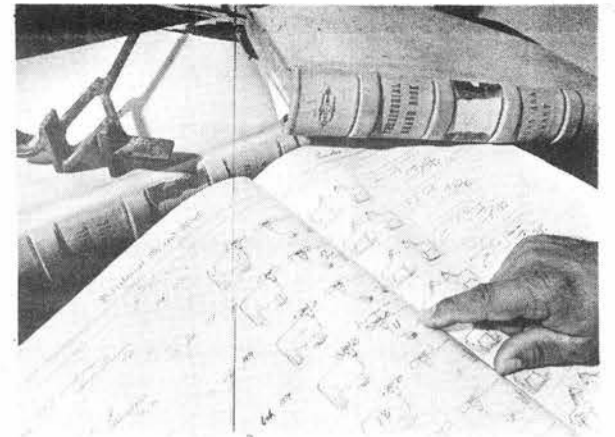
and neatly burned a box around his three bar D brand (3-D). There was no way to prove it, of course, so the rancher rode into town, searched the records in the county clerk's office. Nobody had registered the boxed three bar D so the rancher did, in his own name. Then he rode out with the sheriff and reclaimed his steers from a startled rustler.

That story has some tangential bearing, we feel, in the aphorism printed in the bottom righthand corner of the New Mexico Livestock Board's stationery. It reads: "By the recorded brands upon them, we shall know their owners."

* * *

Such is the power of movie mythology, one suspects that the branding iron must have been born in the heartland of the American West—which simply isn't so. Egyptian tomb paintings circa 2000 B.C. show farm workers burning hieroglyphics into cattle with irons remarkably similar to the ones in use today. History also records that Hernando Cortez had branding irons with him when he came ashore to conquer Mexico—and that Francisco Coronado brought branded cattle with him to feed the troops when he explored New Mexico. Branding probably started in the state shortly after Juan de Onate introduced cattle here in the late 1500's.

When New Mexico became a territory in 1850, brands were recorded by County

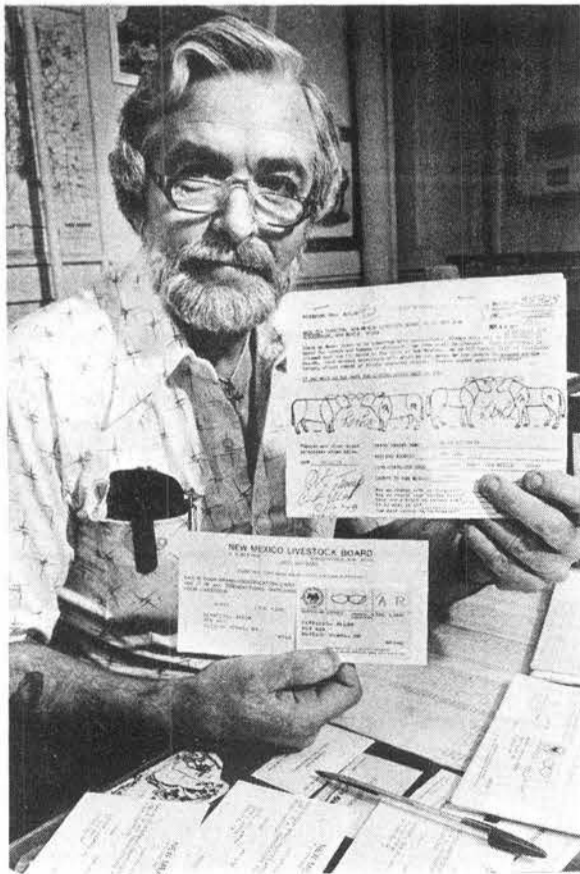


JINGLEBOB BRAND of John Chisum, one of the first major cattlemen in New Mexico (for whom the Chisum Trail was named), is pointed out in the Lincoln Country Territorial Brand book. Chisum cut ears of cattle so the middle section hung down and the rest of the ear stood up. The hanging flap bobbed like a bell clapper. Chisum's fence rail brand, a long narrow burn from neck to flank, is shown on the line above.

Clerks. Even though that established ownership, it didn't slow down rustling, so the Legislature (in 1887) created the Cattle Sanitary Board to enforce livestock laws. The county brandbooks were transferred to the cattle board in 1895 and, in 1967 the cattle and sheep boards were combined into a single Livestock Board (signaling, we take it, the official end of a war that tore apart the early west.)

They've got offices at 113 Third St. S.W. It's *the* place to go to register a brand—or just to take a pleasant rummage through history in their collection of brand books. You might even meet a real rancher. He'll be the guy in the white hat smoking a Marlboro...

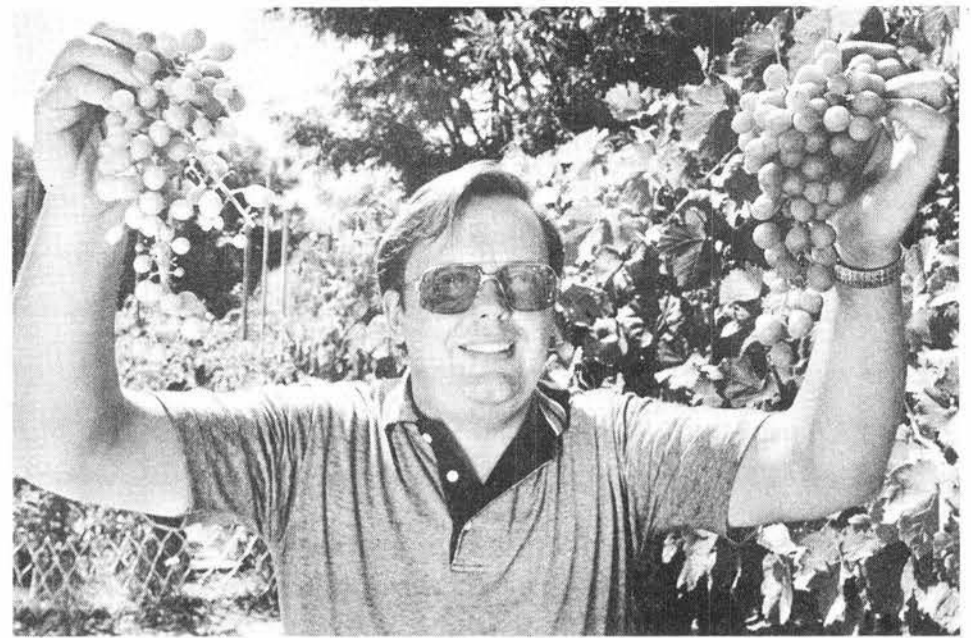
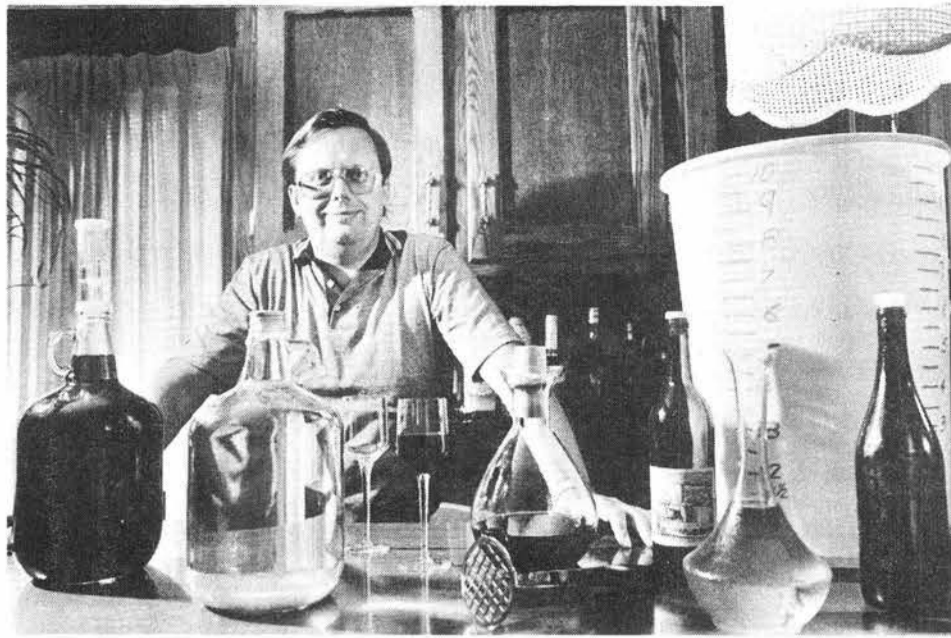
•cec



AFTER BRAND APPLICATION (top) is approved, Bob Fleming of the N.M. Livestock Board draws the brand and indicates ear markings on an identification card which the owner uses in transactions involving livestock. To keep brand current, owners must rerecord them every three years.

| A PRIMER | MISC. SW BRANDS | NEW MEXICO BRANDS |
|--------------------|--------------------|-----------------------------------|
| —X bar x | ⚡ forked lightning | ⤴ quarter circle slash |
| ̄BQ bar B Q | ⊙ buckle | ⚡ open A; H; connected K |
| ◇ diamond x | ♠ spade | —Y bar; turkey track; connected J |
| ⊠ boxed x | ⊥ pitch fork | ∇ bar; V; bar |
| ⊙ circle x | ♯ pigpen | ∇ slash; F; slash |
| ⤴ quarter circle x | ⤴ seven up | ◇ diamond E |
| ⤵ swinging x | 9 lazy 9 | LEE walking Lee |
| ⤶ rocking x | ⤶ rafter s | ⤵ hatchet |
| ⤷ tumbling x | ⤷ hat | ⤶ hash knife |
| ⤸ walking x | ⤸ frying pan | ⤷ pitch fork |
| ⤹ flying x | ⤹ broken arrow | |
| d crazy P | ◇ diamond tail | |
| P lazy P | | |

READING BRANDS isn't all that difficult, though the system does have a language all its own. Follow along on the primer section above and we'll teach you the fundamentals. Depending on the arrangement of the elements, brands are read from left to right (1), or from top to bottom (2), or from outside to inside (3, 4, 5). Curves not attached to letters are quarter circles (6) or half circles, depending on the arc. If the quarter circle is attached at the top (7) the letter is swinging; if attached at the bottom (8) the letter is rocking. A tilted letter (9) is tumbling. Short lines off the bottom of a letter (10) make it walk, and short lines off the top (11) make it fly. An upside down and backwards letter (12) is crazy, and one that's horizontal is lazy. Some brands, like those shown in the Miscellaneous SW brands section are symbolic of a total object. Two final notes and a close study of the charts above should do it for you: diagonal lines are called slashes and letters or symbols drawn together are said to be connected.



BOB LUNA and the tools of his hobby. He used the potato masher to crush the grapes and the plastic can for the first fermentation. The jug on the left contains cherry wine in the secondary fermentation stage. Next to it is a gallon of Chenin Blanc just prior to bottling. The decanters contain apple

wine and a Cabernet Sauvignon. Above, Bob holds two clusters of very green grapes. At this stage they are extremely acidic, but by October these muscats will be a deep gold and very sweet.

Bob Luna: Viticulturist & Vintner

"The vine and the wine, that's what it's all about," says Bob Luna (5432), as he talks about his hobby. "I can really relate to a grape! Why, do you know that a grape vine will grow as much as 6 to 12 inches in a day?" We were in the backyard of his NE Heights home as he pointed to a healthy looking grape vine which had grown up a block wall and branched out six to eight feet on either side of the main stem. "That plant froze down to the roots last winter and just look at it now."

Bob's interest in viticulture began a few years ago with six vines; he now has 24 and somewhere along the way he developed an interest in wine making. "I bought a couple of books and some basic supplies. My first effort was with the Concords, and I made a dry red wine that was quite good. But the Thompson Seedless wine was awful!"

As a member of the N.M. Wine and Vine Society, last year Bob was able to purchase a bulk quantity of wine grapes from California. He now has a case of Cabernet Sauvignon of which he is quite proud. American winemakers identify their best wines by the grape species—Cabernet Sauvignon, Zinfandel, Gamay Beaujolais, Pinot Chardonnay, Chenin Blanc. This class of wine is called a varietal. By law, 51 or more percent of the grapes used in a commercial varietal must come from the grape the wine is named for. "I made mine entirely from Cabernet Sauvignon grapes, and if you like a dry, red wine, I think you'll like this one." He smiles as he lifts a glass of the dark red wine up to catch the light, "Wouldn't that taste good with a nice thick steak?"

Bob's backyard vineyard (and front, too, since he ran out of room) now has six varieties of California wine grapes. He got the cuttings from the UC/Davis Plant Resource Center. "It takes three years from the cutting to the fruit," Bob explains, "and I'll harvest my first grapes from these vines this fall." The varieties are Barbera and Ruby Cabernet for red wines; Emerald Riesling and French Colombard for white

wines; and Tinta Madeira and Souzao for dessert wines.

"Making wine is easy," Bob says, "if you remember that cleanliness must be absolute. Washing and sterilizing all utensils is essential." Bob's basic equipment includes five- and 10-gallon plastic trash cans (used in the first fermentation), one-gallon glass jugs (for the second fermentation), a hydrometer (to determine sugar content), and hoses, funnels and strainers. "I use a stainless steel potato masher to crush the grapes," Bob says. He likes to work with about 100 pounds of grapes per batch, which makes five to six gallons of wine.

"It's a leisurely hobby," Bob continues, "except for the first month (September or October) when the grapes are ripe. The initial steps are simple: crush the grapes, check the juice for acidity and sugar content (adding sugar if necessary), add a preservative and a wine yeast and dump the whole mixture into one of the cans for the first fermentation. It froths and bubbles—fermentation is the action of enzymes changing sugar to alcohol, releasing carbon dioxide. I stir the mixture each day for three to four days and then siphon off the liquid into closed glass containers for the secondary fermentation. At this point the mixture has a 6-7 percent alcohol content.

"From this stage on, it's just a matter of weekly assessment," Bob says, "and not much work." The second stage lasts for about 10 days; the mixture is still fermenting but at a slower rate and sediments are beginning to settle on the bottom. "Vintners use the word 'racking' (siphoning) to describe what follows," Bob says. The liquid is racked into another closed container and left for about a month. It's still fermenting, it's getting clear, and it now has about a 12 percent alcohol content, which is about what the finished wine will have. For the next two to three months, the wine is racked monthly. Then, if necessary, the process called "fining" (adding a clay or other substance to settle remaining haze) is used to obtain a

clear wine. Absolute clarity is necessary both for appearance and to prevent disaster; because after bottling, if any yeast and sugar remain in the mixture the CO₂ produced will blow the cork (or bottle).

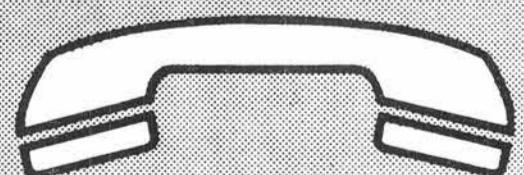
"So, six months after beginning, I have wine in the bottle," Bob says. "The white wines are ready to drink; the reds are palatable but get better if they're aged for at least a year."

Bob has also made fruit wines—apple and cherry and, currently, has apricot in the second fermentation stage. "It's a great hobby," Bob says, "and I've still lots to learn—white wines are particularly troublesome for me—and I need to fix up a place to store the wines where I can maintain a 60-65° constant temperature."

The federal government allows the head of a household to make up to 200 gallons of wine a year, after obtaining a license from the Bureau of Alcohol, Tobacco and Firearms. "I plan to enter a couple of bottles of wine in the State Fair this year," Bob concludes, "but I have to obtain permission from the government to move it from my house." •nt



If you're under 30, the next time you're caught napping at your desk after lunch, remember that you have a readymade defender in John Taub of the University of Virginia. In a recent issue of *Biological Psychology*, John reported: "The results of our study indicate that in the young adult accustomed periods of afternoon sleep produce an increase in behavioral efficiency, subjective arousal and physiological activation." (Sadly, for the rest of us, the nap probably only indicates overeating.)



commuting
information
DIAL 4-RIDE



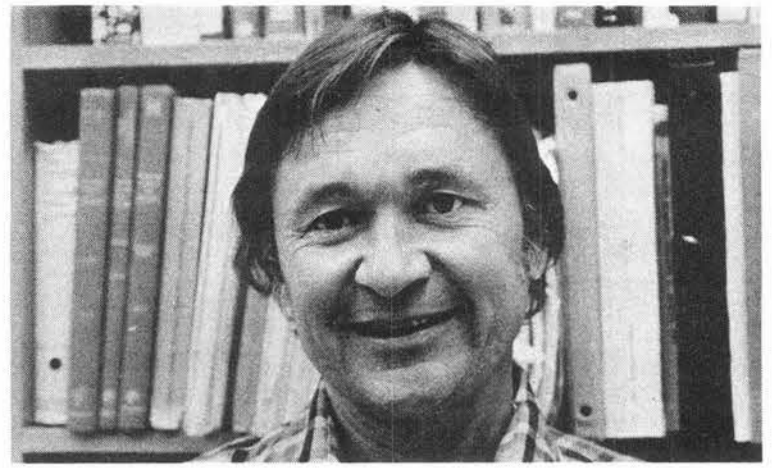
MILEPOSTS

LAB NEWS

SEPTEMBER 1978



Alfredo Fernandez - 3421 30



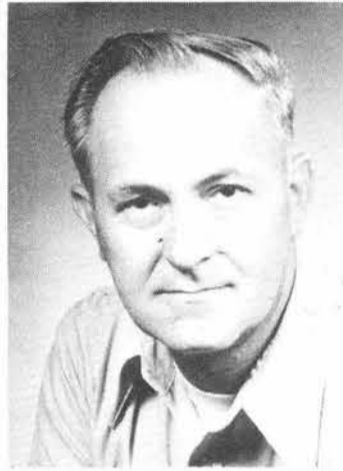
David Brice - 5111

15



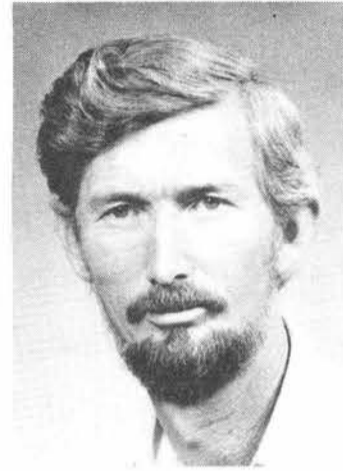
Eva Silva - 2113

15



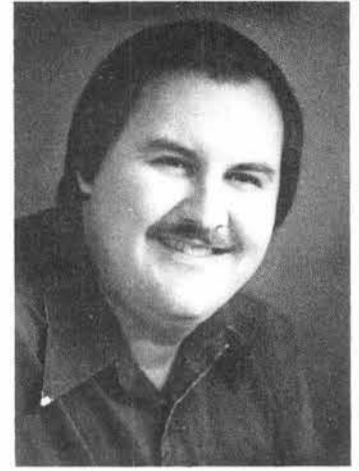
Glen Knauss - 2151

20



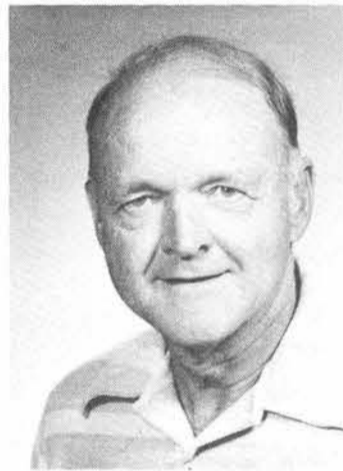
Edward Ratliff - 5233

10



Al James - 8424

10



Jim Cocke - 4314

30



Robert Parks - 9621

10



Judy Hafner - 8212

15



Harold Anderson - 2164

20



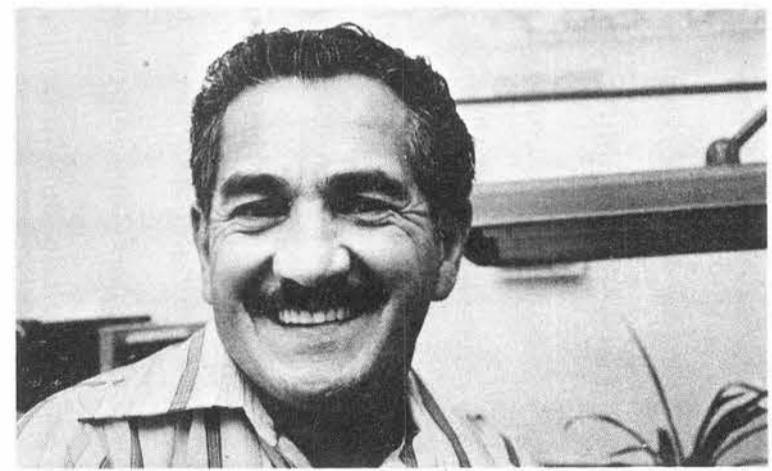
John Erni - 3425

10



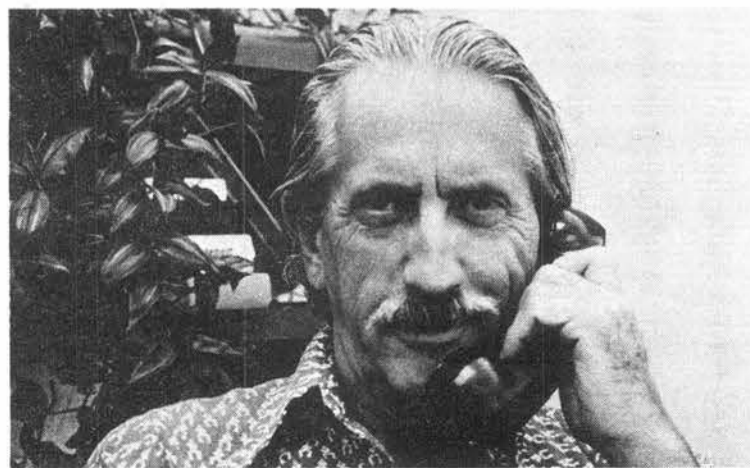
Emma Quintana - 9571

10



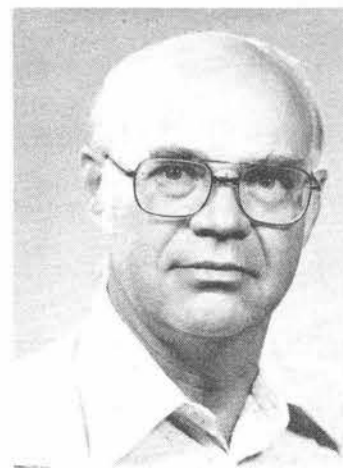
Joe Lucero - 4314

15



Louis Frenkel - 9512

30



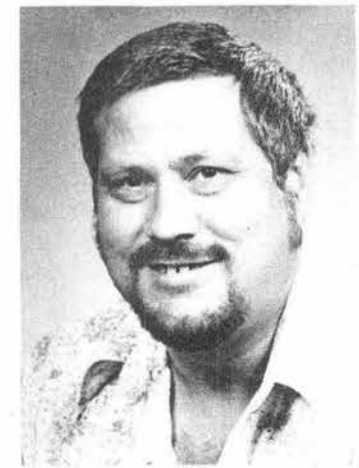
Robert Baker - 2155

25



Al Harrison - 8257

20



Herb Abbott - 3312

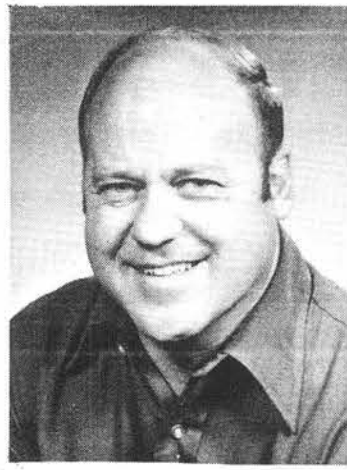
10



Paul Percy - 5112 10



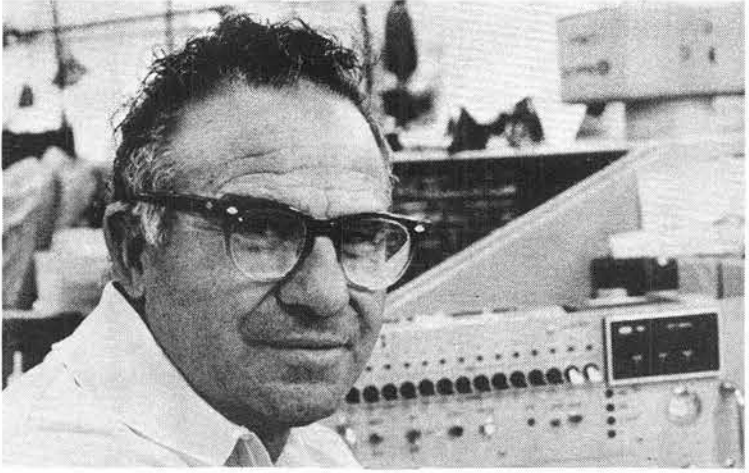
Bob Martin - 8413 20



John Middleton - 4323 20



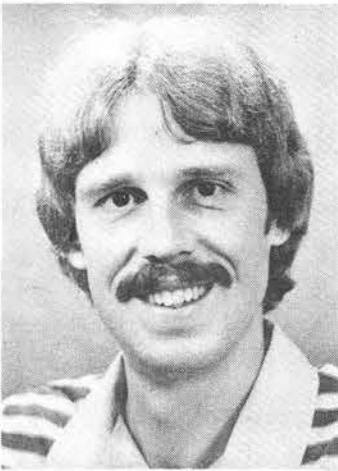
Ken Foster - 8256 30



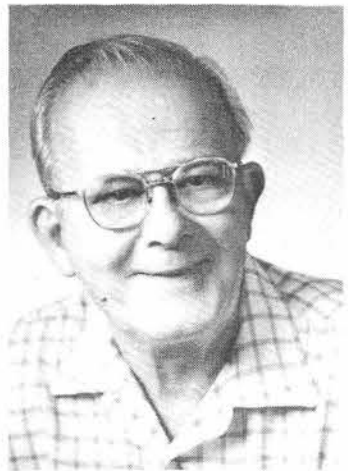
Frank Chavez - 9574 30



Bert Folks - 8412 30



Terry Bisbee - 2635 10



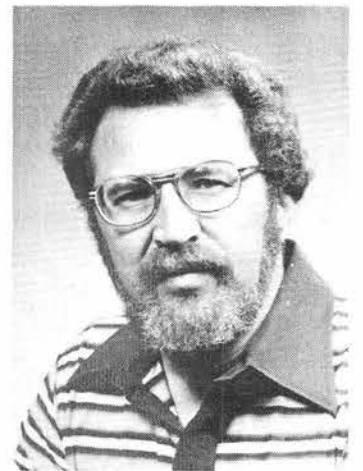
Paul Mutschler - 8423 20



Robert Baron - 2153 15



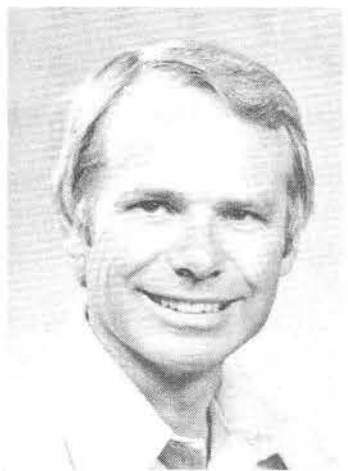
Charles McKeever - 2355 25



T. C. Bryant - 2351 20



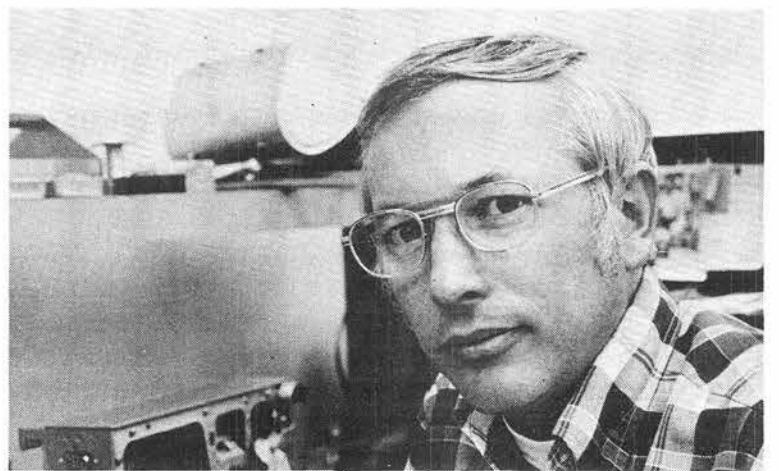
Gene Simpson - 8413 20



Ron Syler - 1732 20



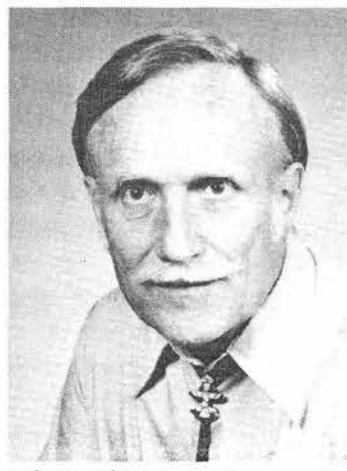
Charles Grassham - 9342 30



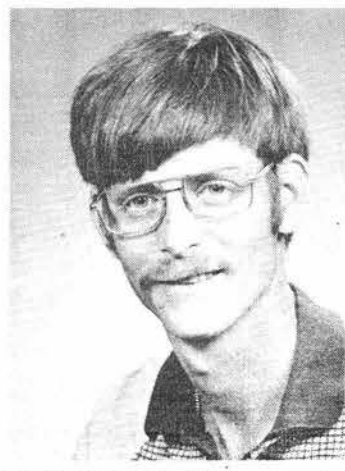
Clifford Condit - 3425 15



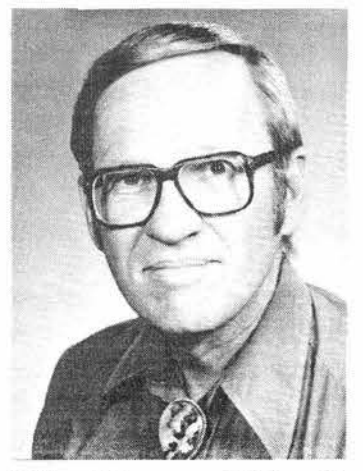
Martin Vigil - 9655 25



Luke Heilman - 9500 30



Richard Blose - 5835 10



Richard Knutson - 2145 20

R. M. Jefferson (5430), "Full Scale Vehicle Test Program," Downtown Optimist Club, June 2, Albuquerque.

R. P. Stromberg (5714), "Solar Passive Buildings in New Mexico," West Mesa Civitan Club, June 15, Albuquerque.

H. C. Monteith (5411), "The Influence of Ethics on Human Success," Sandia Kiwanis Club, June 20.

T. F. Marker (6010), "The Oil Industry—Fact and Fiction," Albuquerque Exchange Club, June 21.

L. P. Robertson (1758), "Brasil—A Sleeping Giant," June 22, Los Altos Kiwanis Club, and "The Holy Shroud of Turin," Old Town Optimist Club, June 28, Albuquerque.

P. J. Feibelman (5151) and M. L. Knotek (5152), "Electron Stimulated Desorption from Ionically Bonded Surfaces," Gordon Conference on Electron Spectroscopy, July 17-21, Wolfeboro, N.H.

D. K. Gartling (1261) and P. J. Roache (consultant to Dept. 1260), "Efficiency Trade-offs of Steady-State Methods Using FEM and FDM"; D. K. Gartling, "Finite Element Analysis of Convective Heat Transfer Problems with Change of Pulse," International Conference on Numerical Methods in Laminar and Turbulent Flow, July 18-21, University of Wales, Swansea, United Kingdom.

K. W. Mitchell (5133), "Optimizing Photodetectors for Digital Communication in Radiation Environments"; L. M. Choate (5423) and T. R. Schmidt (5451), "New

Neutron Simulation Capabilities Provided by the Sandia Pulse Reactor-III (SPR-III) and the Upgraded Annular Core Pulse Reactor (ACPR)"; G. Lockwood (5332), "Electron Transport in Reactor Materials"; R. E. Anderson (2141), "Post-Gate Plasma and Sputter Process Effects on the Radiation Hardness of Metal Gate CMOS Integrated Circuits"; W. R. Dawes (2144), "A Transient Hardened Junction Isolated Bipolar Technology," IEEE Annual Conference on Nuclear and Space Radiation Effects, July 18-21, Albuquerque.

K. C. Bauhs (1521), "Laser Tracker Computer System," Interagency Mechanical Operations Environmental Test Subgroup Meeting, May 23-25, Miamisburg, Ohio.

Speakers

J. A. Panitz (5114) and I. Giaever (GE), "Low-Field Desorption Imaging of Proteins"; J. A. Panitz, "Field Induced Desorption of Benzene from Tungsten," 25th International Field Emission Symposium, July 17-21, SLA.

D. A. Northrup (5732) and P. J. Hommert (5737), "Sandia Laboratories Project Review: Instrumentation and Process Control Development for in situ Coal Gasification"; L. C. Bartel (5737), "Analysis of the Electrical Potential Data for the Hanna IV Underground Coal Gasification Test," 4th Annual Underground Coal Conversion Symposium, July 17-30, Steamboat Springs, Colo.

R. K. Quinn (2516), "Passivation of Pyrotechnic Fuels Ti and TiH_x in Oxidative Environments"; M. L. Lieberman (2515), "Load Cell Testing of TiH_x/KC10₄ Pyrotechnic Actuators"; M. L. Lieberman and S. E. Benzley (1282), "Modelling of TiH_x/KC10₄ Actuator Output"; J. T. Healey (5822) and M. L. Lieberman, "Effects of Fuel Structure on Spark Sensitivity of 33/67 TiH_x/KC10₄ Pyrotechnic Blends"; M. L. Lieberman and K. N. Haskell (2613), "Pyrotechnic Output of TiH_x/KC10₄ Actuators from Velocity Measurements"; A. B. Donaldson (2513), "Header Utilization in No-Fire Design"; O. L. Burchett (1281), "Compaction Studies of Palladium/Aluminum Powders"; A. A. Heckes (2515), "Through-Bulkhead-Initiator Developments"; B. R. Steele (2515), "Development of a Small, Safe Pyrotechnic Valve Actuator"; C. P. Ballard (5845) and B. R. Steele, "A Glass Ceramic Seal for High Pressure Pyrotechnic Devices"; T. M. Massis, P. K. Morenus (both 2516), and B. R. Steele, "The Simulation of Powder Decoupling Phenomena in Electro-Explosive Devices by TMA"; T. M. Massis, R. K. Quinn and R. E. Whan (all 2516), "Corrosion Studies in Pyrotechnic Actuators"; E. A. Kjeldgaard (2515), "Advanced Valve Actuator Concepts"; P. W. Cooper (1132), "A Small Fast Response Light Fiducial," Sixth International Pyrotechnics Seminar, July 17-21, Estes Park, Colo.

A. Owyong (5214), "High Resolution CW Stimulated Raman Spectroscopy," invited talk, Bell Laboratories, July 23, Holmdel, N.J.

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

CLASSIFIED ADVERTISING

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

RULES

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

MISCELLANEOUS

TRASH BAGS, city approved, \$4/box, \$20/case of 6. South Hwy. 14 Project. LAB NEWS office, Bldg. 814.

FOUR 14"x8" 5-hole Mag wheels, fit all small & intermediate GM cars, set for \$90. Kramm, 281-5379.

SUPERSCOPE 8-track player deck for home stereo system, demagnetizer included, \$40. Peters, 293-6356.

WASHER & DRYER, Wards Signature 20-lb. capacity, 12 cycle, \$50 ea. Baca, 296-0369 after 4.

WINCHESTER Model 94 lever action 30-30 rifle, antique style, \$95. Elliott, 294-1785.

FOOSBALL TABLE. Porter, 881-4733 after 5.

COMBINATION pool table/ping pong table, both with complete set of balls & paddles, reg. size ping pong table. Villarreal, 298-7124.

DAVENPORT, 86" French Provincial fruitwood finish, lt. gold cover; student desk. Bowers, 298-1992.

CLARINET, 1st & 2nd year band books, \$95; Stella guitar, \$30; Netherland dwarf rabbits, 5 wks. old, \$5 ea. Carter, 296-8709.

POODLE-MIX puppies, small house dogs, ready Sept. 5. Munson, 299-1400.

DRAPES, Sears Lyric, thermal backed, Aztec gold, 10 mos. old, 1 96x84 draw; 1 pr. 96x45, \$45. Moulton, 293-0373.

SHOP MANUALS: '73-'74 Honda Civic, '68-'74 Volkswagen 411 and 412. Rody, 1-832-4767, Moriarty.

CHILD'S TABLE w/chrome chairs; Easy-Bake oven; port. 3-sp. record player. Vigil, 298-6518.

MEXICAN LIGHT FIXTURES, circular wood & wrought iron, 4 yellow chimney lamp, \$25; 6-chimney, \$35, both \$50. Thalhammer, 298-8521.

ROPER built-in gas range & counter top, \$50. Hay, 836-4173.

WHEELS for truck, 8.25x16.5 Chevy 6-lug; for 10x16.5 or 12x16.5 tires, \$76/set of 4. Erickson, 296-0126.

GARAGE SALE: Saturday, bed frames; headboards; bookshelves; washer; dryer; tires; toys; tent; tables; TV. 11404 Snowheights NE. Bailey, 296-2097.

4 AMERICAN Vecktor alum. wheels, 14x6, lug nuts & wheel locks, used 4 mos., \$175. Conrad, 299-5316.

WHITE GERMAN SHEPHERD puppies, purebred, whelped 8/11, reserve now, UKC reg., \$125. Pullen, 821-3589.

SLIDE STORAGE BOXES, 18 all metal boxes, hold 300 cardboard mounted 35mm slides, \$2.50 ea. Casper, 268-4464.

ELECTRIC STOVE, white, \$75. Johnson, 268-0389.

DINETTE SET, 4 chairs & table, \$40. Fasano, 298-2954.

76 CAMPER SHELL, slide-in, short bed Idle Time, w/insulation, paneling & 12v DC lighting, \$350. Allen, 293-3043.

CROSMAN CO₂ semi-auto. pistol, .22 cal., 10-shot, pellets, CO₂ cartridges, \$20. Parks, 293-9598.

FOUR 250-ft. rolls Romex wire, 12/2 w/ground, \$16 ea.; old white pedestal sink w/fixtures, \$20. VanDen-Avyle, 898-6474.

BABY ITEMS: snowsuit, 12 mos., \$10; Gerry baby carrier, \$5; F-P musical crib mobile, \$5; infant seat, \$2. Anderson, 294-8451.

NEW BROWNING B-S/S Sporter Shotgun, 20 ga., 26" barrels, IC&M chokes, single selective trigger, selective ejectors, \$310. Klett, 298-7892.

PRO-LINE golf clubs, complete set, 3 woods, 9 irons, putter, best offer. Branscombe, 881-4589.

CAMERA STROBE, Honeywell, model 770, \$50. Kohut, 296-8537.

SQUARE DANCE dresses, 1 black w/silver trim, 1 grey w/red trim; size 16, \$5 ea. Matlack, 256-7371.

B-FLAT CLARINET, \$130; elec. grill, \$25; English riding saddle, \$100. McKay, 256-3911.

BUILT-IN oven, hood & 4-burner surface unit, copper tone, \$75; trumpet w/case & stand, \$50. Prestwich, 298-2867.

CORONET, Reynolds, \$150; VW left rear fender, \$10. Stirbis, 299-5363.

HOTPOINT elec. range, \$75; gold area rung, 9x12, \$25; refrig., \$25; dbl. bed mattress & springs, \$30. Orear, 256-1941.

DINING ROOM SUITE, solid oak, 6 chairs, buffet, dropleaf table, \$450; 2-piece 8' sectional davenport, \$60. House, 255-2646.

SKATEBOARD, knee guards, helmet, elbow guards. Laskar, 299-1024.

PORCELAIN bathroom sink w/wall bracket, \$5. Peterson, 256-7514.

CHAINS, 7:50x16, \$20; gas stove top & hood, \$100; dog house, \$20; washing machine, \$20. Davis, 881-7068.

COLEMAN HEATER, \$25; B&D drill, \$5; complete Brownie uniform, \$10; Bing & Grondahl Christmas plates: 1970, 71, & 72. Benson, 296-4282.

FREE to good home, reg. Springer Spaniel, female, placid disposition. Graham, 293-8823.

HEATHKIT 25" color TV, 1 yr. old, touch tune, time channel on screen, manuals incl., \$850. Baldwin, 821-5924.

ELEC. BASS GUITAR, \$100; trombone, \$100; snare drum w/case & stand, \$40; coronet, \$50. Postenrieder, 299-8388.

2 EA. SEARS mud-snow tires, steel belted G78-15LT, 6 ply, \$100; Homelite XL12 chain saw, 16" bar. Wilkinson, 299-8327.

CHEVY ENGINE, 283 CID, complete, rebuildable, \$60; Powerglide auto. trans., \$30; both \$75. Simpson, 1-864-6062 (Belen).

STEEL WHEELS 13x4.5, suitable for Audi Fox, Dasher, etc., \$10 ea. Lipkin, 881-6038.

CONCERTO CONSOLE AM-FM turntable, \$100. Yaniv, 256-7722.

TIRES & WHEELS for Sears garden tractor, size 22.5x7.5, semi-lug style, \$50 for both. Morrison, 877-7425.

PORTACRIB; 3-shelf maple bookcase; traverse drapery rods: 2-way Kirsh, 30-50", 66-120", 1-way rh, 50-90"; misc. curtain rods. Kipp, 296-6530.

RADIAL ARM SAW, 8", \$165. Sparks, 898-1252.

FLUTE, Armstrong, w/music stand, used 2 yrs., \$90. Still, 299-8825.

MERCEDES BENZ front end kit and back for '68-'73 Super Beetle, \$100. Saavedra, 877-7216 after 5.

10-SPD. Vista bike, \$50; U.S. stamp collection, \$100; Ruger Security Six .357 magnum w/holster, \$150. Barnette, 821-6247.

MARQUETTE engine scope & analyzer; air wrenches; 2 tape recorders, reel-to-reel. Riley, 869-2119.

19' ROADRUNNER trailer, 1972, self-contained, 42" dinette, 40" bunk, 48" wide, extra long gaucho beds. Barnette, 298-9227.

CAMERA, Kodak Retina Ila, Flash, range finder, f.2, case, \$50. Tufts, 255-9663.

SERVICE MANUAL, \$8; frame mount receiver for Reese hitch, \$50; 4 wheels/tires, 5-hole 15", all for Travelall, \$40. Kinoshita, 299-6491.

GAS clothes dryer, \$80; yellow bathroom fixtures. Whitham, 266-9313.

COMPLETE 4-piece drum set. Erne, 299-0565.

VIOLINS, 1/2 size and 3/4 size, Mag-nuson, 321-5330.

TRANSPORTATION

72 MAZDA RX2 rotary, needs body work, \$400. Lubin, 877-8388 after 5:30.

WRECKED Raleigh 10-spd. for parts, front wheel is bent, best offer. Peet, 294-1250.

74 Chev. stn. wag., AT, PB, PS, 9-pass., new tires, \$2700. Hadley, 863-0185.

'67 CHRYSLER Newport, \$500. Sutton, 298-0001.

73 DATSUN pickup, 50,000 miles, new battery & seat covers, AC, chrome wheels. Jarrell, 266-7444.

71 FORD 1/2-ton pickup, motor recently overhauled, needs some body work, \$1300. Minor, 865-5117.

75 MARK IV, AM-FM stereo, full power, low mileage, \$7500. Perryman, 294-6113.

'69 FORD motorcoach, self-contained, AC, AM-FM & 8-track, sleeps 4 adults, 1 child, 68,000 miles on V8 390, new trans., 19', \$5000. Olmon, 867-5577.

75 GRANADA Ghia, 4-dr. loaded, low miles. Hopper, 292-3059.

71 VW camper, fully equipped, new paint, 8000 miles on rebuilt engine, oil cooler, much more, Schallert, 298-8942.

77 DODGE Ramcharger, 4-wd., SE pkg., fully loaded, extended warranties, many extras, 6500 miles. Villarreal, 298-7124.

GO KART, "Bug Sprint," w/2 McCulloch engines, Bell helmet, elec. engine starter, spare parts. Haus-halter, 881-7721.

CJ-2A JEEP, rebuilt engine, winch, tow bar, 3-spd. trans needs adjustment, body needs work & paint, \$1000. Schalles, 281-3035 after 5.

BICYCLE, Ladies, Sturmey Archer 3-spd., 19 1/2" frame, 26" wheels, fenders, rear baskets, kickstand, sidepull caliper brakes, chainguard, \$50. Joseph, 299-6989.

70 OLDS Cutlass S, 350 cid, reg. gas, V8, PS, AT, AC, 85,000 miles, \$700 or best offer. Kobs, 298-9133 after 5.

MOTORCYCLE, dirt bike, '78 YZ 125E, never raced. McDonald, 296-8073.

'69 ROADRUNNER, ready to race but street legal, over \$8000 invested, need \$3000. Schumpert, 821-0225.

'67 COUGAR, 289 cid, V8, 4-spd. w/approx. 86K miles. Allen, 293-3043.

73 VW Beetle, ski racks, \$1800. Navratil, 293-5527.

77 HONDA 90 trail bike, 190 miles. Laskar, 299-1024.

73 PONTIAC GTO, low miles, rebuilt engine, \$2000. Prevender, 299-5253.

'73 FORD Ranchero & cab-over-camper, 400 cid V8, AC PB, PS, stove, sink, ice box, heater, \$2600. Fimple, 293-3911.

72 PINTO Runabout, AT, 2000 cc engine, \$850 or make offer. Geck, 299-5095.

'65 FORD Galaxie, 6-cyl., 3-spd., best offer. Wilson, 296-5965.

'68 OLDS 88, 4-dr., 455 V8, PS, PB, PW, AC, \$500. Barraclough, 296-4575.

'69 FORD Galaxie stn. wgn., AC, PS, PB, \$750. Peterson, 256-7514.

71 VW SUPER BEETLE, \$950. Sparks, 898-1252.

'58 TRIUMPH TR-3, lots of new parts, needs paint, \$1000 or best offer. Kepler, 298-5652.

'69 PONTIAC LeMans, HT, new trans., AC, PS, PB, 2 new radials. White, 299-6411 after 5.

'69 CHEV. Impala convertible, restorable. Johnson, 821-9564.

71 VW 411 Station wagon, AT, radio, steel belted radials, \$1295. Mogford, 898-1416.

72 MUSTANG hardtop, V8, standard shift, AM/FM tape deck, new tires & battery, \$1750. Newsom, 299-2074.

REAL ESTATE

5 ACRES at Heron Lake, private access, creek nearby, power available, terms. Wetherholt, 345-0818.

3-BDR., 1 1/2 baths, LR, lg. DR w/fp, single garage, brick front, landscaped, Westgate Heights. Silva, 836-0307 or 255-3723.

5-BDR., 3 baths, LR, paneled office/den, lg. rec. room, wet bar, basement, attach. garage, mature trees, sprinklers, \$54,950. Asprey, 296-6673.

NE HEIGHTS brick, 2310 sq. ft., 3-bdr., 1 1/2 baths, lg. den w/fp, lg. lot, RV parking, \$73,500. Ray, 299-1253 evenings.

MOUNTAIN LAND, owner seeks partners for ownership, development,

use 52 wooded acres NE Sandia Ski area, panoramic view. Clement, 298-4994.

36 ACRES near Heron Lake, view overlooking the Chama River, \$1500/acre or trade for income property. Baack, 296-2312.

FOR RENT

TAOS CABIN, near Ski Valley on Hondo River, deluxe accommodations, sleeps 6. Peet, 294-1250.

BEACH HOUSE at Sea Ranch, 1500 sq. ft., swimming, golf, tennis, sauna, hiking, beach, tide pools, \$150/weekend, \$450/week. Battleson (8442), 462-1840.

2-BDR. APT. in new 4-plex, carpet, refrig., DW, disposal, AC, near base. Klimas, 293-6892.

3-BDR. HOUSE, unfurnished, stove & drapes, NE location, \$350/mo. water paid. Vigil, 294-2558.

3-BDR. HOUSE, unfurnished, 1 1/2 baths, near KAFB & Lenkurt, \$300 mo. + D.D. White, 264-2564.

LAKE FRONT CABIN, Vallecito Lake, near Durango, modern, furnished, fp, fishing, mountains, scenic train ride, nearby attractions. Croll, 881-7235.

NEW 1-bdr. home at Kihei or studio unit at Napili Shores, Maui; beaches, shopping, dining, golfing, introductory rates, reservations: 415/447-5182 or write Pomaai, 2234 Chateau Way, Livermore CA 94550.

WANTED

BOWLERS, non-smokers, 6:30 Thurs., mixed league, teams or individuals. Long, 296-2590.

WILL babysit one small child in my home, vicinity Clancy & Hannett NE. Reed, 296-0293.

SURVEYORS transit & tripod. Harnar, 299-3400.

SHOP MANUAL for '66 Comet. Horton, 298-4449.

GERMAN LANGUAGE course, Berlitz or similar. Holt, 299-5943.

TWO 3-spd. 26" bikes, good condition, reasonable. Silva, 869-2102.

MOBILE HOME already set up, must be priced in accordance with NADA or Kelley Blue Book. Johnson, 268-0389.

CANOPY BED & cement mixer. Zanner, 281-5594.

KODAK Pocket Instamatic camera, 50 or 60 series. Baxter, 344-7601.

VW BUG, '67 to '72, 4-spd., must be clean. Bush, 281-3773.

SMALL off-road motorcycle & Go Kart with or without engine. Prevender, 299-5253.

CANARY CAGE. Spray, 299-0412.

LOST AND FOUND

LOST—Gold '74 Eldorado HS class ring, black Paris bag w/yarn, silver ring, black & white crisscross design Parker pen, black/grey frame Rx glasses.

FOUND—Temporary bridgework, 3/4" pipe die. LOST AND FOUND, Bldg. 832, 264-1657.

How About A \$1,000,000 Duck?

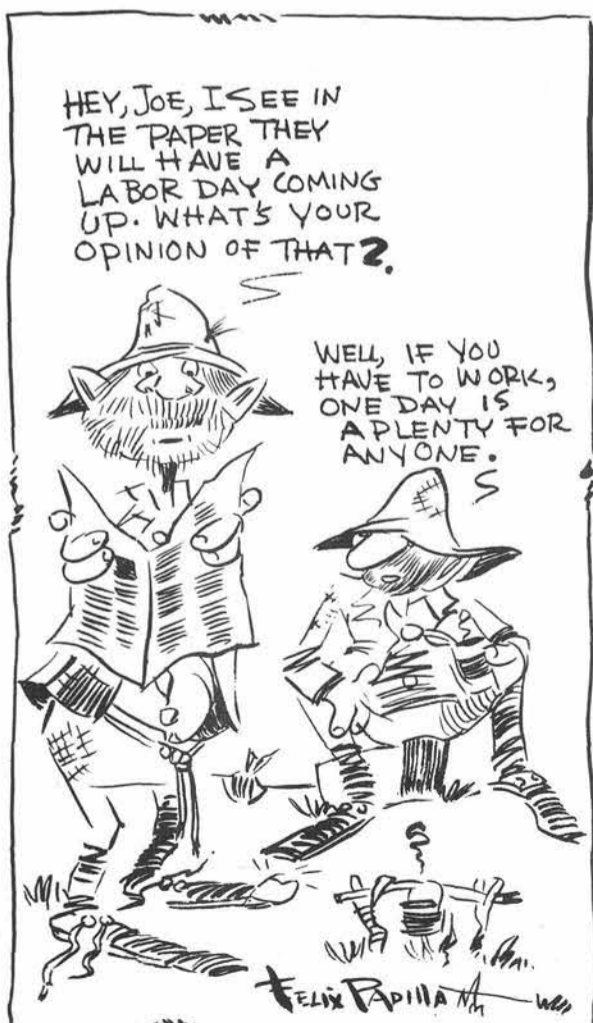
TONIGHT'S HAPPY HOUR features roast turkey on the buffet menu, a group called 3 of Us & Jeremiah on the bandstand. Next Friday's buffet sees King crab on the buffet, Steamboat Willie wired into the bandstand. Call 265-6791 during the week to make reservations for Friday Happy Hour buffets.

TOMORROW at Variety Night a folklorico dance group called Los Tapatios will perform at 7 followed by a movie about a duck that lays golden eggs. Would you believe a "\$1,000,000 Duck"? Bring the kids, admission is free, and super sandwiches are available starting at 6.

SINGLES MINGLE downstairs in the El Dorado Room next Friday, Sept. 8, starting right after work. Honcho Hazlet Edmonds (3511) says the food will be great and the dancing, too, particularly a disco dance demonstration. Also, door prizes will be awarded. Mark your calendar now. Do it.

SINGLES also plan to travel to Las Vegas for a long weekend Nov. 10-12. Stay two nights at the Castaways, see a dinner show there, eat prime rib, try a couple of cocktails, make the last show at the Frontier, Silver Slipper or Tropicana, try another cocktail in the Kon Tiki lounge and do all that for only \$164 (dbl) or \$192 (single). Leave Friday noon, return Sunday evening. Don't tip anybody. It's all in the package. Deposit \$50 by Oct. 3. Call Jeanne Ayers, 294-3488, for more info.

SATURDAY, Sept. 9, is the deadline for picking up tickets to the big T-Bone and the Jug (Watermelon Mountain Jug Band)



LAST SPLASH of swim season happens Labor Day at the Club's pool and patio closing party. Paul Klimas (1332) and Marca Boles (1584) invite you to join the fun starting at 11 a.m. Happy Hour prices are in effect until 6 p.m. Swim tickets are not required; members admitted free.

event set Sept. 16. Members pay \$6.50, guests \$7.50. It's the biggie bash this month.

ANNUAL MEETING of the Coronado Club membership is set Monday, Sept. 18, at 7:30 p.m. Candidates for the board of directors are Robert Dougherty (2351), Preston Herrington (1758), Bernard Kenna (5824), Frank Loomis (ret.), Max Newsom (1320), Nancy Sanchez (3725), Lewis Sisneros (3731), and Luke Stravanski (1713). Nominations may be made from the floor. Free refreshments after the meeting.

C-CLUB JUNIOR BOWLERS start league play Saturday, Sept. 9, at 8:45 a.m. at San Mateo Lanes. The league still has openings for youngsters through high school age. Call Cis Kelly (3542), 255-8011, for more info.

CORONADO GRAND SQUARES will party and square dance on the patio Sept. 11 at 7 p.m. Guests are invited. Call Mel Olman (1233), 4-7701, for info.

SANADO WOMEN will do their annual show and tell about the Club's various interest groups—crafts, art, gourmet cooking, etc.—on Tuesday, Sept. 12, from 10 a.m. until noon. This is the time to join the group. Anyone interested is invited to call Ruth Frye, 255-8364, today for more information.

TRAVEL—Mazatlan, the pearl of the Pacific and a fantastic travel package, is still calling. Sign up for seven nights at the Playa Mazatlan and a bundle of goodies starting Oct. 28 for \$275. Call the Club office, 265-6791, right away.

Also open are the Disneyland package Oct. 25-28, the Oct. 14 excursion on the Cumbres and Toltec scenic railway, and air fare only journeys to Hawaii. Call the office for the full scoop.

Events Calendar

Through Oct. 8—"The Owl and the Pussycat," Barn Dinner Theater, 281-3338.

Sept. 1, 2—"How to Succeed in Business Without Really Trying," Albuquerque Civic Light Opera, Popejoy Hall, 8:15 p.m., 277-3121.

Sept. 1-3, 7-10—"Tobacco Road," Corrales Adobe Theater, 898-3323.

Sept. 3, 4—San Augustino Feast Day, Isleta Pueblo.

Sept. 7—"Annie Get Your Gun," Westgate Dinner Theater, special Sandia Labs discount night, 293-5060.

Sept. 8-10—Valencia County Fair, Belen.

Sept. 9-24—Horse Racing, State Fairgrounds.

Sept. 10—Max Roybal lecture on "The Rediscovery of an Old Art: The Santero Today," Museum of Albuquerque, Old Sunport, 2 p.m.

Sept. 13-24—State Fair.