



TEST SECTION of Sandia's new shock tunnel is checked by Manuel Vigil (9322), project engineer for the facility. The end of the 19-foot-diameter section is cut at a 75 degree angle to accommodate large test items which are

suspended in the tunnel. In photo above, a giant smoke ring swirls from muzzle of tunnel during a recent test.

New Shock Tunnel Installed in Coyote Test Field

First flow calibration tests were successfully conducted recently to check out Sandia's new 305-foot-long shock tunnel in Coyote Test Field.

The shock tunnel is the largest explosive-driven blast facility in this country capable of generating supersonic flow mach numbers at the muzzle end. It will be used to subject instrumented full-size test units suspended in the test section to shocks and overpressures created by the detonation of explosive charges in the driver section at the other end.

Driver section is six feet in diameter with a three-inch-thick steel wall for the first 50 feet. It flares out to a 19-foot-diameter test section of one-inch-thick steel that is 65 feet long.

The new tunnel is Sandia's fourth explosive-driven shock tube facility in Coyote Test Field. Diameter and length of the others are 2 by 200 feet, 6 by 50 feet and 6 by 200 feet. Data obtained from tests in these facilities is useful in predicting vehicle performance under shock loading conditions.

The new facility, shown in the accompanying photographs, will be operated by Coyote Test Field Division 9322 under Dave Bickel. It was designed by Manuel Vigil (9322), the project engineer.



LARGE DIAMETER of shock tunnel test section is graphically illustrated in this interior view. Full-scale test units will be suspended in this section of the tunnel.

LAB NEWS

VOL. 23, NO. 18

SEPTEMBER 10, 1971

SANDIA LABORATORIES • ALBUQUERQUE NM • LIVERMORE CALIF • TONOPAH NEV

Two Secretaries Earn CPS Rating

Two Sandia secretaries — Rae Hill and Bobby Voelker — have earned the rating of Certified Professional Secretary (CPS). Rae is secretary to Homer Pierce, manager of Budget and Management Information Department 4140. Bobby is secretary to Maynard Cowan, manager of Shock Simulation Department 9320.

They were awarded the CPS ratings after successful completion of a two-day examination administered by the Institute of Certifying Secretaries, a department of the National Secretaries Association (International). The six parts of the examination are based upon an analysis of secretarial work, with emphasis on judgment, understanding, and administrative ability. They are: environmental relationships, business and public policy, economics of

management, financial analysis and the mathematics of business, communications and decision making, and office procedures.

Rae has been at Sandia for ten years and Bobby for three. Sandia Labs, Albuquerque now has a total of nine Certified Professional Secretaries.



CERTIFIED PROFESSIONAL SECRETARIES — Rae Hill, left, (4140) and Bobby Voelker (9320).

Don Cotter Named ARPA Deputy Director

The former Director of Sandia's Systems Planning organization 100 has been appointed Deputy Director of the Advanced Research Projects Agency. He is Don Cotter, who left Sandia in 1970 to become the Director of the Overseas Defense Research Branch of ARPA.

In the mid-60's, Don also had a tour as Special Assistant for Counterinsurgency in the Office of Director of Defense Research and Engineering. Besides his work with the Systems Planning group, Don was active at Sandia Labs in work on advanced strategic and tactical nuclear weapon systems.

Vista New Mexico

Club Announces 16-Day Tour to Spain, Portugal

Culture Coming UP—High, Low & Other

One advantage of living in a university town is that the school provides continuing intellectual stimulation — incidentally and by design. Things like lectures, films, concerts, plays and so on are the customary offerings of a good school. UNM is outstanding in this respect, and while most of their activities are aimed at student and faculty, members of the community are usually welcomed as well.

For example, would you like to hear —

Julian Bond, Georgia State Legislator, the first black nominated for VP

Pierre Salinger, press secretary to President Kennedy

Jack Nicholson, actor and director (Five Easy Pieces, Easy Rider)

Senator John Tower, Republican from Texas

Cezar Chavez, farm labor union organizer and some 15 other well known speakers? They comprise the University Lecture Series which runs from September through next February. Cost: six dollars per season pass, which may be purchased at Popejoy Hall.

The Audobon Wildlife Film Series has scheduled a number of great nature films:

The Vanishing Sea — Nature on the Great Salt Lake

British Columbia — Mountain To The Sea
Filming in No-Mans Land — Microscopic Nature Subjects

Mule Deer Country — Montana and the Rockies

Treasure of East Africa — The Big Wildlife

Season pass for these is five dollars, three dollars for students, available at Popejoy Hall.

Music for young people doesn't have to be zillion decibel animal sounds. The "Young Peoples Series" offers four concerts by the Albuquerque Symphony on Saturday afternoons, with fairly low-key programs so that Junior won't be scared off. A Series ticket costs six dollars.

Popejoy Hall is also the locale of many noteworthy theatrical productions. Latest is the Classics Theatre Company's King Lear, Sept. 16 to 19.

We obviously haven't included all the

interesting activities offered by the University. The Community College alone, with a curriculum ranging from How to Build Your Own Adobe to Winning Bridge, offers many stimulating and fun courses.

Stop by the Student Union Building at UNM. Most activities and programs are included in the schedule on display there. • js

COSMAT Panel Meets at Sandia

COSMAT is the acronym for the Committee on the Survey of Materials Science and Engineering. Professor Morris Cohen of MIT is Chairman and Dr. W.O. Baker is the Vice Chairman. COSMAT is sponsored by the National Academy of Science and is funded by a grant from the National Science Foundation. Some of the work of the survey is accomplished through panels. Richard Claassen (1400) is chairman of Panel II which is addressing the question of the definition of materials science and engineering, its accomplishments and future opportunities.

Panel II met at Sandia Laboratories, Albuquerque, on Sept. 2 and 3. In attendance were Dr. Julius J. Harwood, Ford Scientific Laboratory; Professor Robert A. Huggins, Stanford University; Dr. Hans H. Landsberg, Resources for the Future, Inc.; Dr. Morton E. Jones, Texas Instruments, Inc.; Dr. Harold E. Goeller, Oak Ridge National Laboratory; Dr. Joseph D. Andrade, University of Utah; and Dr. Alan G. Chynoweth, Bell Telephone Laboratories, Inc. Members of the Panel not in attendance were Dr. Alan M. Lovelace, Air Force Materials Laboratory; Dr. Lawrence H. Van Vlack, University of Michigan; Dr. Morris Tannenbaum, Western Electric Company; and Professor Al Dietz, Massachusetts Institute of Technology.

The final report is scheduled for the spring of 1972.

The Coronado Club announces a 16-day travel package to Spain and Portugal Oct. 14-29, 1972. Cost will be approximately \$565 based on double room occupancy and sale of 170 spaces on the chartered 707 jet.

Cities included in the itinerary are Lisbon, Seville, Marbella, Granada, Madrid and Toledo. Provisions are made for a one-day side excursion via hydrofoil to Tangier in North Africa at extra cost.

Sightseeing bus trips, tours of museums and outstanding points of interest are included in the package. Hotels booked for the tour are all first class. Three days will be spent at the beautiful Costa Del Sol resort area at Marbella.

Only Coronado Club members and their immediate families are eligible for the trip and travelers must be a member of the Club six months before departure. A brochure with a complete itinerary will be available at the Club office shortly.

"We are making the announcement a year in advance," Chet Fornero (4337), Club president, says, "in order to let people make their plans now. A \$100 deposit should be made on the trip by the first of next month and complete payment is due July 1, 1972. We must sell 170 seats to make this trip feasible."

Events Calendar

Sept. 10-12, 14-16 — "Cactus Flower," Albuquerque Little Theater. For reservations call 242-4750.

Sept. 12 — UNM Music Faculty Recital, Keller Hall, 8:15 p.m.

Sept. 16-26 — New Mexico State Fair

Sept. 16-18 — "King Lear," Classic Theatre, Popejoy Hall, 8 p.m.

Sept. 18 — National Touring Company presents "Jesus Christ Superstar," a Rock Opera — original concert presentation with full orchestra and choral. University Arena, 8:15 p.m.

Sept. 19 — Allen Leinicheck Piano Recital, Keller Hall, UNM 3 p.m.

Sept. 19 and 25 — Feast Day and Harvest Dances, Laguna Pueblo.

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THEATRE AND DRAMA, tragedy and show biz are the mix in King Lear the Classic Theatre Company's offering at Popejoy Hall next week, Sept. 16 to 19. John Gardner (3142), upper left, directs the large cast shown in rehearsal at Popejoy. Bill Carstens (3150) is King Lear. Phil Mead (3152) and Nigel Hey (3211) are other Sandians in this Shakespearian play.

Touring Northern California

An exhibit featuring holograms is the latest addition to the Exploratorium at San Francisco's Palace of Fine Arts on the Marina. Over-simplified, a hologram is a photographic plate on which an image is impressed by means of laser light and from which that impression is reconstituted by the same means. The technique produces three-dimensional pictures of incredible accuracy and clarity. Lloyd Cross, one of the physicists who discovered holography at the University of Michigan in 1962, is now on the staff of Exploratorium and responsible for the exhibit.

Exploratorium is a museum about the science and technology of human perception. The exhibits show some of the natural processes which underlie the mechanisms of our senses, as well as technology and the arts. They demonstrate that we perceive the world through our senses, we amplify our senses with tools, and we can close the relationships between art and science. Most of the exhibits need to be manipulated in order to be more informative; therefore, visitors are free to touch and play with them. Nothing is roped off and there are no corridors to follow.

Located on the grounds of the Palace of Fine Arts Historical State Park, the building was erected for the Panama Pacific Exposition held in San Francisco in 1915 and restored in 1966. The spacious lawn area surrounding the Palace, with a well-stocked duck pond nearby, makes an ideal spot for a pre-exhibit picnic. Museum hours are Wednesday through Sunday from 1 to 5 p.m.

Talk Presented

Jack Wilson, supervisor of Standards and Calibration Section 8121-1, was guest speaker at a recent meeting of the Pleasanton Rotary Club. He discussed "Metrication."

Congratulations

Terry Heidelberg (8353) and Irene Schuessel, married in Nuremberg, Germany, July 29.

Mr. and Mrs. Ron Saltgaver (8321), a daughter, Susan Elaine, Aug. 16.

Mr. and Mrs. Ted Hebebrand (8256), a son, Jeffrey Dean, Aug. 1.

Diane Davy (8163) and Norm Taasevigen (8257) married in Livermore, Aug. 14.

Mr. and Mrs. Ike Davis (8272), a son, Brandon James, Aug. 12.

Death

Bill McWhorter, a member of the laboratory staff in Plant Engineering Design Division 8254, died Aug. 29. He was 59.

Bill joined Sandia/Albuquerque in June 1951, and in Aug. 1958 transferred to Livermore where he worked in Product Control, Product Evaluation, and Test Project organizations before assuming his Plant Engineering assignment.



LIVERMORE NEWS

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LIVERMORE LABORATORIES

SEPTEMBER 10, 1971



Livermore
Employees'
Assistance
Plan

"LIFT IT HIGHER," says Ralph Cozine (8131), chairman of the 1971 LEAP campaign, as he and vice chairman Bill McGuire (8273) take aim toward this year's goal of 100 percent employee participation. LEAP is a "once-for-all" way for Sandians to contribute to local and national health and service agencies.

'71 LEAP Campaign Announced

Plans for the forthcoming 1971 LEAP (Livermore Employees' Assistance Plan) campaign have been announced by the employee committee for this year. The week-long fund drive starts Sept. 27, and employee meetings describing the program are scheduled on Monday the 27th and Tuesday the 28th.

Ralph Cozine (8131), chairman of this year's campaign, states that 100 percent employee participation is the goal. "For a successful drive, total participation is the essential element. We will also be aiming our efforts toward another key factor — increasing the number of LEAP-share and one-percent-of-pay contributors."

Through LEAP, Sandians contribute to local and national health and service agencies in addition to those in the United Bay Area Crusade (UBAC), thus giving "once for all."

After studying employee recommendations, Ralph says the Committee changed percentages of employee funds allocated to agencies in last year's program. The immediate and basic needs of the agencies and their helpfulness to the community were carefully considered in making the selections and setting the new percentages.

A major addition to the program is CHAD (Bay Area Combined Health Agencies Drive) which encompasses 12 national health agencies: American Cancer Society, American Heart Association, Arthritis Foundation, Easter Seal Society, Kidney Foundation, March of Dimes, Muscular Dystrophy Associations, National Association for Retarded Children, National

Cystic Fibrosis Research Foundation, Society for Prevention of Blindness, Tuberculosis and Respiratory Disease Association, and United Cerebral Palsy. Other beneficiaries of 1971 funds are five local agencies as well as UBAC with 189 members.

The 1971 allocations are:

	Allocation %
LOCAL AGENCIES	10
1. Nursery School Scholarship Funds	3.0
2. Livermore-Amador Valley Emergency Fund Center	3.0
3. Cerebral Palsy Center for the Bay Area (Lincoln Center)	2.0
4. Calif. Assn. for Neurologically Handicapped Children (Livermore-Amador Chapter)	1.0
5. Interfaith Housing	1.0
NATIONAL AGENCIES	
*Bay Area Combined Health Agencies Drive	
CHAD	15
UNITED BAY AREA CRUSADE AGENCIES	75
Total	100%

Interfaith Housing is included on a one-time basis. Consisting of a group of 54 apartments, plus a community building, at 550 Hillcrest Avenue in Livermore, the project provides low-income housing for the elderly. The funds will help complete the furnishings and recreation equipment in the community building.

"The LEAP program has a fine record since its inauguration in 1969," Ralph says. "In the first year Sandians increased their contributions 16 percent over those of the previous year, and last year contributions increased another 10 percent. We hope this upward trend will continue."

Recreation Notes

FUN & GAMES

Sandia Lab's Tennis Association Fall Tournament is coming up! Singles will be played Sept. 25-26 and doubles on Oct. 9-10. Any Sandia or AEC employee may enter this double elimination tournament.

If you'd rather do it yourself call Singles Chairman Herman Smith (AEC-ALO) on 4-8058; if you have a partner call Doubles Chairman Fayne Shead, 4-1356. But do it now because today is the entry deadline.

* * * *

The Tijeras Arroyo Golf Course, which opened Sept. 1, may be played by Sandia Labs employees. Head toward Area III and look for the turnoff to the east after crossing the bridge. Greens fees are \$3, weekdays and weekends. Better bring your Sandia ID if you decide to play the course.

* * * *

The recently organized Central New Mexico Audubon Society will hold regular meetings on the third Thursday each month at 7:30 p.m. at the UNM Physics and Astronomy building, corner of Yale and Lomas.

John Spinks, Jr., of Austin, Texas, will be guest speaker for the Sept. 16 meeting. Mr. Spinks is Southwest regional representative of the National Audubon Society.

The following field trips to observe birds have been scheduled: Sept. 12 to Cienega Canyon; Sept. 25 to Dixon Apple Farm; and a weekend trip, Oct. 9-10, to Bosque del Apache.

For additional information call Nick DeLollis (5332), 299-5384.

* * * *

Joe Silva (1431), president of the Tome Roping Club, took top prizes in calf roping events at recent rodeos. He placed second at Canyoncito and first at Mountainair.

Sympathy

To Richard Stratton (1751) on the death of his father in Orem, Utah, Aug. 29.



THEY'RE SMILING because it's over — the La Luz Trail race, 7-1/2 miles with a 3700 foot gain in elevation up to Sandia Crest. Run takes from little more than an hour to up to two hours. From left, John Kelly (5223), Burt Edwards (5421), Jim Tollison (AEC), Bob Jeffrey (9231), Bob Lowrey (AEC), and Bob Gregory (1933). Larry Posey (5226) also completed race.

Everyone's A Winner In Race To Sandia Crest

Five Sandians and two AEC types were in the field of 65 in the recent La Luz Trail race to the top of the Sandias. All acquitted themselves with honor — which means they didn't win but so what because anyone who finishes seven-and-a-half miles, uphill to a 10,600-foot altitude, has got to be a winner. And they all finished.

The picture above shows them after the race. Fastest was Burt Edwards (5421) who came in 21st with the very respectable time of 1 hour, 28 minutes. (Race winner Steve Gapuchin from the Jemez Pueblo took 1 hour, 6 minutes.) Mild-mannered John Kelly (5223), Sandia's answer to Clark Kent —

decathlon, skiing, tennis, etc. — was this year's race organizer. He raced up the mountain too, not so fast as Burt, but John was probably insuring that no stragglers were left behind.

All you joggers out there, in case you missed this race there'll be another one next year. In fact, the second annual "Tour De Albuquerque" marathon comes off this Sunday the 12th. This is a 26-mile Olympic style jaunt through our city, fully sanctioned by the AAU. Interested? Call Vivian Harris, 299-3316. We have other marathon information in the LAB NEWS office.



THE GENERALS visited Sandia Labs recently. Above, Lt. Gen. Carroll Dunn, new head of the Defense Nuclear Agency, listens as Maj. Gen. Nye, Commander, Field Command talks to him and President Hornbeck. At right,

Lt. Gen. Samuel Phillips, Commander, SAMSO, examines research vehicle with President Hornbeck and Executive VP Kraay.



DAVE FREIWALD (5245), chairman of Citizens Coalition for Land Use Planning, gazes at land in the "before" state — i.e., before it's subdivided. CCLUP aim is more intelligent, less exploitative land development throughout State.

Community, State Project

Regulation of Land Development Sandia Physicist's Aim

Dave Freiwald is a youngish PhD-type physicist in Electron Beam Physics Division (5245) who recalls that the Cuyahoga River which flows through his home town of Cleveland, Ohio, once caught fire. In fact, a bridge over the stream was destroyed by the flames. The fire was the result of acute and chronic pollution — so much petroleum-based effluent from factories was floating on the surface that it was just a matter of time before the mess caught fire.

"And the river is still a mess," Dave adds.

That and other experiences with the ramifications of what Chambers of Commerce like to call "progress" have made Dave more wary than most concerning the development of New Mexico, his new home. In particular, Dave is concerned about the way land developers throughout the state split up large chunks of land into tiny plots with little thought to overall water and sewerage problems, highway maintenance, utilities, etc.

Upshot of Dave's brooding about this situation has been his organization of something called the "Citizens Coalition for Land Use Planning," which operates under the aegis of the New Mexico Conservation Coordinating Council. CCLUP's goal: the regulation of New Mexico land developers. In its few months of existence the Coalition has gained much — including the earnest suspicion of the six or seven major subdividers in the State. "We invited the subdividers to one of our meetings so that both sides could exchange views. They all accepted the invitation but when the meeting convened their only representative was a professional lobbyist they employ to work with the legislature. And he was reluctant to say a word," Dave says.

Regulation means legislation, which the

State does not have now and which was scuttled in one way or another at the last session of the State legislature. Powerful forces worked hard and effectively to see that no legislation was passed. Ordinarily no new legislation would be considered for two more years, that is until the next regular session of the legislature in 1973. But CCLUP has been able to gain the support of Governor King in introducing control legislation at the special session of the legislature this coming January. Gov. King wrote: "I appreciate your letter concerning the activities of your Coalition . . . I support the action you are taking. I will call for land use and subdivision control legislation in the next session."

Dave and his group have hit upon an ingenious — and inexpensive — way to influence legislators once they are in session and control bills are under consideration. "We have a mailing list of some 125 organizations in New Mexico whose members — about 10 thousand strong — have one thing in common: the desire that our State not go the route of California or the East Coast. At appropriate times during the session we will contact these groups, asking them to induce members to get in touch with their legislators about proposed bills. If only half the members took action this would be extremely effective."

Main strength of CCLUP is its reasoned, unemotional approach to the problem of land subdivision, an approach that gains it the respect of legislators and its antagonists as well. Dave sums up the CCLUP method: "We research the specifics of land use questions carefully and usually can present both sides of an argument. In these matters it's easy to holler and scream — but that's not the way you get the results you want." • js

Security Guards Ahead In Rattlesnake Tourney

Rattlesnakes are actually pretty good creatures. They help control the rodent population, mind their own business, and want nothing more than to avoid man. But every now and then there's a confrontation with man and the snake usually comes off second best. At least, that's been the story when Sandia's security inspectors encounter a snake in a location where one of the two parties — the inspector or the snake — has got to go.

Everett Breedon is a security inspector working the swing shift who is often assigned to patrol remote areas in Area III, V and Coyote Canyon Test Field. At any rate, he seems to be where the snakes are. He's killed six this year, wiped out 18 last year.

"In the old days," Breedon says, "we killed them with a stick, a rock or whatever was handy. Once I killed one with a hubcap off the patrol carryall. Nowadays, since we've been issued .38 caliber bullets containing bird shot, it's easier to shoot them. The shot spreads about a 12-inch pattern at six feet. Very effective."

Gene Romero, another security inspector, had the closest call with a rattler this year when he was inside the Carpentry Shop in Area III. It was coiled just inside the door, about three feet from where he was standing. Gene pulled a fire extinguisher off the wall



and froze it. Gene also killed a big one at the 155mm gun site in Coyote Canyon. He almost stepped on it getting out of the truck. This one was 57" long, about 3-1/2" across the back and its fangs were 3/4" long.

"Treat them with respect," Gene says. "They will usually stay out of your way. If you blunder into one it could be a bad scene, but you can survive a rattler bite. Get help as quickly as possible but the most important thing is to keep calm, don't panic. The effect of the bite is spread by increased circulation."

During these hot sunny summer days, snakes are usually found in cool spots — in the shade of or under bushes, buildings, motor vehicles or empty containers. But after the sun goes down, snakes will usually seek the warmth of a building, a concrete pad, a paved road, a big rock or other heat-holding surface.

The message is obvious: don't reach into anyplace you can't see into. Watch it in open country. If you work in remote areas, always be alert. Snakes in out-of-the-way places, away from humans, harm no one — so leave 'em alone. • dg



SPECTACULAR SCENERY in the high country of Wyoming was enjoyed by Sandians (l to r) Roger Eaton (5643), Larry Rollstin (5624), Jim Hunter (5622),

Bob Croll (5622), Ken Cole (5644), and Bill Millard (5624) during 85-mile hike through Jim Bridger Wilderness Area and Grand Teton National Park.

* * * *



WATER SURVIVAL TRAINING was the order of the day last week when men of Remote Ranges Division 9485 learned to use inflated trousers as life jackets. The 3-day sessions, arranged by Safety Standards Division 3513, were conducted by Lt. Tim Brady, right. Looks like that guy about to leave the water is working out his own anti-shark measures.

* * * *

Sandians Volunteer Hunter Safety Instructors

A Hunter Safety Class has been scheduled Sept. 21 through 30, from 7:30-9:30 p.m. in the basement Hospitality Room of the First National Bank, San Mateo and Central. Successful completion of the 10 hours of instruction and a test entitles the participant to a certificate and card presented by the New Mexico Department of Game and Fish. New state legislation goes into effect next April, making this course a requirement for all young people going into the field with firearms.

The course includes firearm and ammunition nomenclature and function, safe firearm handling in the home and field, different types of firearm actions, survival in the field under emergency conditions, state

and federal regulations, and other subjects of interest to sportsmen. One morning will be spent on the rifle range practicing safety rules taught in class. A slide series — "Shoot or Don't Shoot" — will be shown.

This class is sponsored and taught by members of the New Mexico Wildlife and Conservation Association in the interest of safety in the field. Sandians serving as volunteer instructors for the class are: Ken Romine (5627), Tom Harrell (4364), Pat Walter (7511), Gene Farnum (5154), Larry Horner (7414), Fred Brown (9334) and Fred Cericola (9342).

Anyone interested in attending this class or in becoming a volunteer instructor should call Gerald Wilson (9343), 4-1375.

Six Sandians Hike 85 Miles

Six Sandians, now limping around with blisters on their feet, recently hiked 85 miles through the Jim Bridger Wilderness Area and Teton National Park in Wyoming. Most of the nine-day trip was spent in rugged glacier-formed high country above 10,000 feet — many lakes and peaks.

The men — Ken Cole (5644), Bob Croll (5622), Roger Eaton (5643), Jim Hunter (5622), Bill Millard (5624) and Larry Rollstin (5624) — pooled provisions and supplies and each carried a 40-lb.-plus back pack. One day they covered 21 miles. Except for rain the first two days and soaking in a river they had to wade across (a mile further on they found a bridge), everything was great.

"Spectacular scenery," Larry Rollstin says. "We've all hiked before in the southwest, but we agree that this area was something special. The trip was exhausting but exhilarating."

Speakers Abroad

J.M. Peek (5234), "On the Observation of Rotational-Vibrational States in the Ground Electronic State of HeH⁺ Metastable to Dissociation"; T.A. Green and M.E. Riley (both 5234), "Dissociation H₂⁺ During Collisions with He and Ar"; Riley and Green, "Euler-LaGrange Optimization of Plane Wave Factors"; and G.J. Lockwood (5235), "Total Cross Sections for Charge Exchange of Metal Ions in Nitrogen," International Conference on the Physics of Electronic and Atomic Collisions, July 26-30, Amsterdam, Netherlands.

F.L. Vook (5110), "Ion Implantation in GaAs," "Ion Implantation in Metals," and "Defects in Ion Implanted Si," U.S./Japan Symposium on Ion Implantation, Aug. 9-12, Kyoto, Japan.

W. Herrmann (5160), "A Complete Constitutive Relation for 6061-T6 Aluminum"; L.D. Bertholf (5162) and C.H. Karnes (5165), "Two Dimensional Analysis of the Split Hopkinson Pressure Bar Experiment," International Conference on Mechanical Behavior of Materials, Aug. 15-20, Kyoto, Japan.

R.P. Clark (1913), "A Comparison of Differential Thermal Analyses and Calorimetry Measurements for the System LiCl-KCl-CaCrO₄," International Conference on Thermal Analysis, Aug. 23-29, Davos, Switzerland.

W. F. Chambers (5522), "Self Excited Spectral Characterizations of Thin Films," and "A Library of Programs for Microprobe Operation," International Conference on X-Ray Optics and Microanalysis, Sept. 5-10, Osaka, Japan.

Service Awards

Sept. 10-Sept. 23

25 Years

Lou Hopkins (9400) and Jack Shoup (1330).

20 Years

Jim Marsh (3154), Harold Vaughn (5625), Alden Luhrs (7434), Leon Moritz (9231), Robert Tarbell (9484), Martin Serna (4511), Harry Doro (3311), Deforest Rushing (7113), Gordon Marney (4622), Ed Roth (1212), Albert Sensel (1523), Nasario Romero (4623), H.H. Brueggemann (7611), Abelio Garcia (4514), W.F. Gamberale (4551), Antonio Mata (4518), James Lang (1223) and Homer Messenger (7113).

15 Years

Spencer Schwarz (3511), Mary Winter (4362), Pat Gildea (8124), Pat Hinrichsen (8232), Lloyd Young (9473), Barbara Ruminski (3300), Lugarda Abeyta (3341), Kendall Gentry (7614), Warren Miller (9425), Miguel Griego (4623), Ramon Aguilar (3520), Bill Doyle (3512), Ernest Re (4541), Tom Martin (5245), Edmund Buss (7112), Robert Hendricks (7415), Rudolf Probst (7415), Americo Cianchetti (7651), Arthur Clark (8122), Jack Bolen (8332), Herbert Dumas (9213), Murray Silverman (9217), Freddie Millsap (9425), Nick Montoya (4154), Frank Sayner (4338), James Ayers (4372), Lloyd Sandgren (9124) and Norman Brisbin (7422).

10 Years

Ruth Lighthill (5231), Glenn Miller (5235), Keith Creveling (5411), Doris Mortensen (9425), Naomi Funk (4361), Charles Duvall (7613), Dorothy Scott (9425), Terry Herther (1752), Leo Doyal (1415), Reynaldo Gonzales (4518), Ponciano Barela (4614), Burnest Benjamin (7133), Jose Luna (7542) and Verner Gibbs (7615).

Call for Papers Issued

A Call for Papers is being issued for presentation at the Fall Meeting of the New Mexico Academy of Science to be held at the University of Albuquerque, Oct. 1-2. Any subject in the area of physical or biological sciences is acceptable. Deadline for the titles is Sept. 13. Send to: Dr. Morris Stubbs, Department of Chemistry, University of Albuquerque.

Cliff Pedroncelli Elected Corrales Councilman

Population growth, municipal services, education, crime, zoning, taxes — sounds like big city problems, right? Right. They are also the problems facing the newly-elected councilmen of the newly-incorporated Village of Corrales. Cliff Pedroncelli, a 29-year-old bachelor who is a laboratory assistant in Division 1315, is one of four members of the Corrales Council.

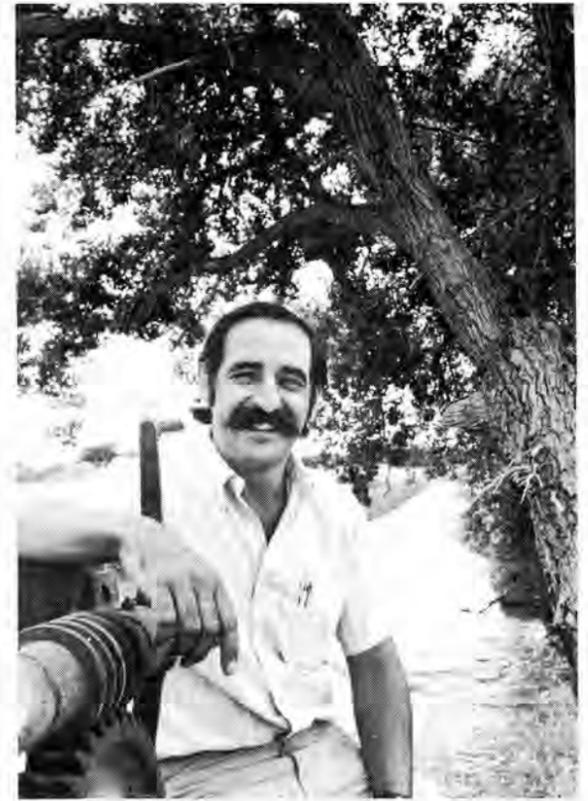
Cliff has lived in Corrales all his life. His father is a farmer. He has seen an agricultural area begin to take on urban ways. Fine homes, a business district and modern residences are now sprinkled throughout the village. The farms and orchards are becoming smaller.

Cliff is a man in the middle. He owns a farm but his career is at Sandia. In this sense he is a commuter. He likes the rural atmosphere, however, and would like to see it remain. He likes to ride up the irrigation ditch on his horse and camp by the Rio Grande south of Bernalillo. He likes the big cottonwoods, the alfalfa fields, the apple orchards and the chili gardens.

"But there is still room for development in Corrales," Cliff says. "The area could support more business. There is room for more homes. These will come because it is a desirable place to live and people are spilling out of Albuquerque. Change is inevitable."

Cliff would like to see the growth in the years to come provide needed services yet not erode the rural atmosphere.

"We need some professional planning," Cliff says, "to come up with a zoning ordinance that will work. Then comes annexation — only the 'core' Corrales area is now incorporated into a village. And we need



CLIFF PEDRONCELLI (1315)
—newly elected Corrales Councilman—

a constable. Burgularies are a problem. This means taxes. This list of priorities and problems goes on and on."

As a man in the middle — he identifies with the village oldtimers as well as the newcomers — Cliff will work with the new Council to find the middle road. • dg

• SHOPPING CENTER •

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.

MISCELLANEOUS

- CHIHUAHUA DOGS, 19 mo. old female, \$20; 10 mo. old male, \$25. Sanchez, 299-5658.
- TURNTABLE, Realistic Model 44, complete, best offer. Starks, 344-6032.
- SELMER PARIS trumpet w/radial valves, \$300. Schmierer, 299-2352.
- WELL DRILLING RIG, cable type, needs engine, \$350. Berglund, 255-3988.
- ELECTRIC LAWN EDGER/TRIMMER, 1/3 HP, used part of 1 season, \$40 value for \$20. Schofield, 268-0956.
- 2 LOTS, VAULTS & CRYPTS at Sandia Memory Gardens, paid \$795, will take best offer; 3 HP Tuc., 1/2" horizontal shaft, \$25 firm. Lewis, 266-4109.
- VIOLIN, full size Baum, music, w/stand, \$80; slot car track, 3-lane, 1/24 scale, \$40, approx. 32' track. Butler, 299-5626.
- BOOKCASES: 36 x 36 x 9, \$12; 36 x 30 x 9, \$10; buffet, 52 x 36 x 20, silverware dwr., lg. linen dwr., 2 shelves, \$15. Campbell, 256-1015.
- '71 SUZUKI TS185R, 1300 miles, \$595 or trade for Honda CB350; Sear's 8000 BTU window refrig.

- air conditioner; man's Sunbeam razor, Bouma, 265-9653.
- REG. CHIHUAHUA puppy; down-draft air conditioner; Frigidaire elec. range; dbl. roll-away bed. Stanfill, 255-6652.
- BUNK BEDS or twin, maple, w/ springs & mattresses, \$50. Peterson, 256-7514.
- GASOLINE ENGINE, 2-cyl. OHV, 10HP, \$50; gas furnace, 200,000 BTU, ceiling mount, thermostat included, \$70. Butler, 296-8095.
- DRAFTING TABLE, unpainted, 30 x 42 surface, \$25. Rowe, 296-6295.
- '65 CHRIS-CRAFT Cavalier w/trailer, 28', galley, head, sleeps 4 adults, 185 HP Chrysler Marine, 140 hrs. on motor. Dawson, 255-3994 after 6.
- TRUMPETS: 1 Ambassador, 1 Conn. Hanchey, 299-8723.
- SIX green wrought iron vinyl chairs, \$30; tree curbing, \$2; Pollenex facial sauna, \$7.50; new Clairol tru-to-light mirror, \$10. Gregory, 268-2022.
- '61 SHASTA TRAILER, 2 butane tanks, refrig., stove w/oven, com-mode, sleeps 6 people, \$750. Martinez, 256-7505 after 5.
- TRUMPET, stand & case, \$89. Arning, 256-9229.
- LOWREY ELECTRONIC ORGAN, spinet size w/bench, \$400. O'Neill, 255-6355.
- BATHINETTE, \$10; push lawn mower, \$10; port. air conditioner, \$10; plant cart, \$3. Hart, 256-2811.
- HAM GEAR — Heath single band transceiver, HW-22A for 40 meters, \$75; Heath Apache transmitter, TX-1, \$65. Drake, 299-1209.

- FOLDING DOOR, accordion type, will extend 48", \$12; tricycle, almost new, \$6. Gendreau, 268-3436.
- BOY'S Hyde figure skates, recently sharpened, size 3, \$12.50. Moore, 299-3758.
- SIT-UP BOARD; Cub Scout uniform size 10; push type lawn mower; 10" tricycle, good for parts; child's jumping horse, spring mtd. on frame. Hole, 255-1444.
- TWIN BEDS, w/box springs, mattresses & frames, little used, \$70 both. Class, 296-7425.
- CHAIR, leather recliner; striped area rug, 7 x 12; hedge trimmer, 1/2-HP, 30" double edge, heavy duty. Meyer, 296-9066.
- HI FI, Motorola, w/3spd. record changer & Herald AM/FM tuner, blond mahogany cabinet, needs tubes, \$25. Harley, 898-0594.
- 1-WHEEL utility trailer, \$35; 5-gal. butane bottle, \$10; 55-gal. oil or gas drum w/filter on steel stand, \$12.50. Arnold, 898-1467 after 6.
- PROF. MUSIC INSTRUMENTS for school band: Super Olds trumpet, Conn alto saxophone. Hoagland, 282-3825.
- '71 HONDA CL 350, 2000 miles, \$700, 11201 Elvin NE. Adkins, 298-4715.
- DINETTE TABLE, 48 x 36, w/12" leaf, black & grey wood grain formica top, black & gold legs, \$20. Grimes, 299-2548.
- '71 HONDA, 450cc, 2 mos. old. Martinez, 299-3017.

- '70 HONDA SL-350, low mileage, 2 helmets, luggage rack, \$750. Harper, 265-3243.
- CARS & TRUCKS**
- '66 EL CAMINO, all power, radio, bucket seats, \$1550. Pritchard, 268-9618.
- '60 AUSTIN HEALEY w/327 Chevrolet Corvette engine & 4-spd. trans. Shannon, 256-1712 or 243-3741.
- '53 FORD 1/2-ton, 6-cyl., OD, fully insulated camper sleeps 3, propane stove, new brakes-clutch & tires, \$375. Roth, 877-4997.
- '66 OLDS Starfire, 2-dr. HT, full power & air, elec. seat & windows, \$1395. Kefauver, 296-3547.
- '59 MGA roadster w/1963 1600 engine, new paint. Fox, 256-2606.
- '67 MUSTANG GT 390, new engine, HD clutch, & tires, consider trade, asking \$1500. Harrison, 296-3235.
- '67 SPORT FURY conv. 383 cu. engine, bucket seats, AT, 45,000 miles, \$1489. Ray, 298-0408.
- '64 FORD GALAXY XL, T-Bird engine, AT, AC (factory), loaded, orig. owner; \$700; '65 Mustang, floor stick, 6-cyl., \$800 cash. Runyan, 255-6719.
- '63 VW CAMPER, new paint & rubber, \$525. Benson, 268-9727.
- '67 SAAB 2-dr. sedan, blue, new battery, many body & mechanical spare parts; Jeep Warn front hubs. Illing, 1-867-2837.
- '69 3/4-ton FORD, 11' Riveria camper, fully self-contained, both loaded w/extras, 13,000 miles on truck. Cochrell, 296-4623.

REAL ESTATE

- 2-BDR. HOME, carpet, AC, new hot water heater, new roof, 4 blks. out Wyoming Gate, trees shrubs, lg. patio, \$1500 & assume 7% loan, \$103/mo. Ortega, 299-5846 after 5.
- MOUNTAIN HOME, Sandia Park, 2 acres, 2-bdrs., 1 1/2 baths, sun room, heated 2-car garage, \$23,500, 7 1/2% contract. Paige, 265-1620 or 282-5465.

WANTED

- PART-TIME COMPANION for mature woman, must have car, prefer bridge player. Graham, 265-1363.
- MAN'S 5- or 10-speed bicycle. Postenrieder, 299-8388.
- OLD USED upright piano. Falacy, 344-9548.
- TOP QUALITY tape recorder, pay cash. LaPoint, 268-2290.
- GIRL'S bicycle, 26", good condition. Sektnan, 296-5396.
- OLD hunting knives & daggers; Japanese swords & daggers, trade hunting rifle, or cash. Smitha, 299-1096.
- RETIRED SANDIAN near Grant-Los Altos to provide occasional transportation after school for 9th grader & possible place to study. Miller, 282-3189.
- USED TUMBLER for rock polishing, need accessories also. Valk, 299-1702.
- OXYGEN acetylene welding & cutting equip.; backpack frames & bags; no imports unless top quality. MacDougall, 299-8496.
- RELOADING EQUIP. for 30.06 Wilson, 282-3225.

Coronado Club Activities

"Beauty and the Beast," a classic old movie thriller, will be combined tomorrow night with a live production of the Albuquerque Melodrama Theatre called "Not Fit for Man nor Beast." Herb Filusch (9213), Club entertainment director, says that the play holds lots of laughs for kids and adults alike. In addition to the play and movie, a Pete Smith short subject and a cartoon will be shown. Obviously, this event is planned as a family affair. Admission is free to members. A Happy Hour bar goes into operation at 6 p.m. and super sandwiches will be available starting at 6:30. The play begins about 7.

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HAPPY HOURS end the week or start the weekend, depending on where you draw the line. Tonight Frank Chewiwie will be making the happy music and the Club will present Mexican food on the buffet. Special prices will be in effect from 5 until 9 p.m. The buffet is spread from 6 to 8 p.m. and the band plays for dancing from 6 to 9 p.m. Then Yolanda Adent takes over the main lounge with a sing-along until midnight.

Next Friday, Sept. 17, Happy Hour will feature the big rock sound of Freeman Lacey and Italian food will be spread for the buffet. On Friday, Sept. 24, the Four Trends will be wired into the bandstand and southern fried chicken will be the buffet feature.

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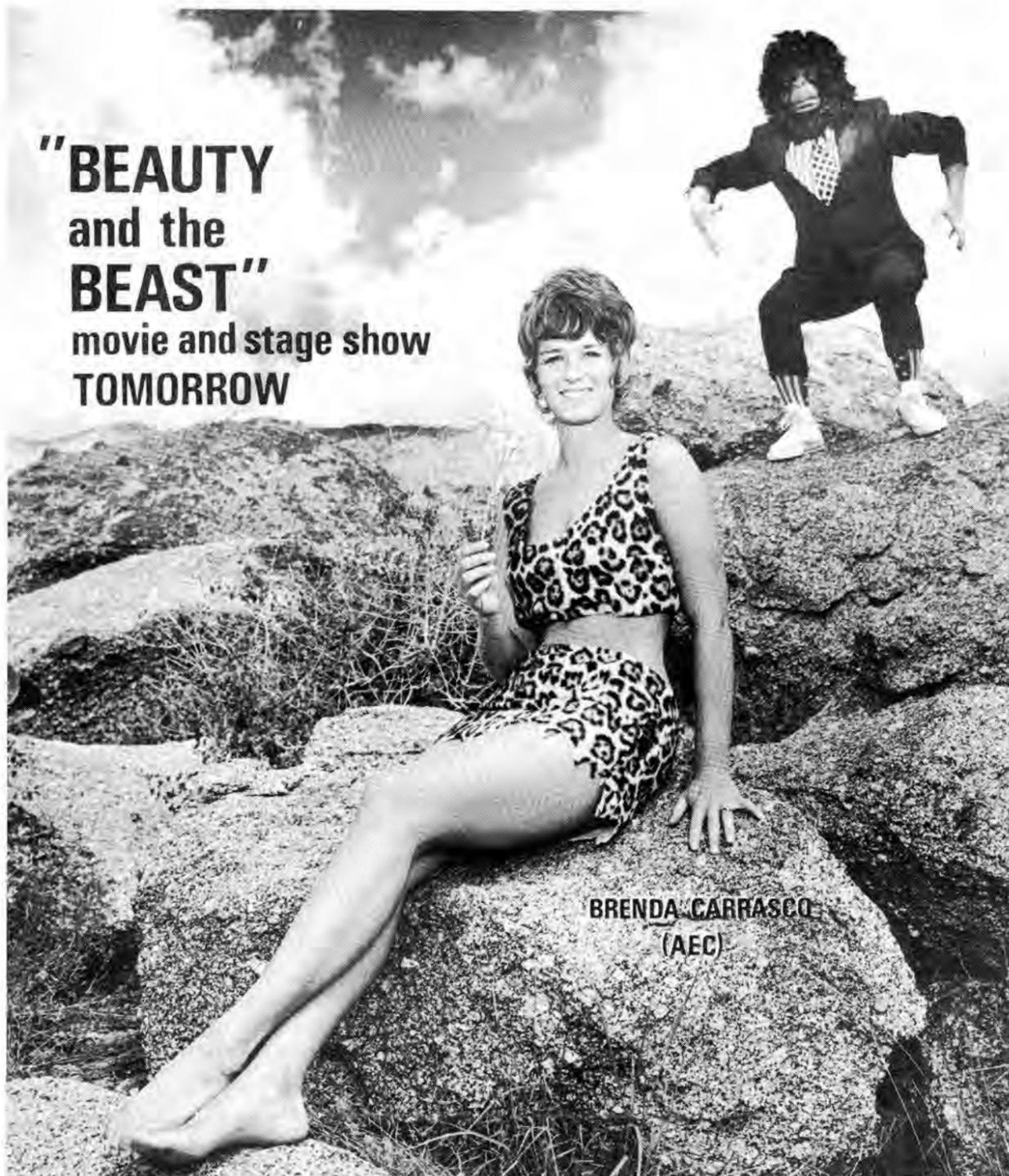
THE FILM SOCIETY sponsored by the Club will present "Carry On Nurse" at 7:30 p.m. on Thursday, Sept. 16. Tony Veneruso (1213), chairman of the Film Society, says that this is a great classic English comedy from a few years back. In addition, Tony has a special short subject booked for the occasion. Memberships in the Society go on sale that night for \$5 for the year. Individual admission (without a Society membership card) will be \$1. The group will present a movie at least once a month.

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DRIVE SAFELY



"BEAUTY and the BEAST" movie and stage show TOMORROW



BRENDA CARRASCO (AEC)

SANADO WOMANS CLUB will hold its annual membership tea at 2 p.m. Tuesday, Sept. 14. All wives of Sandia or AEC employees are eligible for membership and are cordially invited to attend the tea. Sanado will explain its program which, in addition to monthly luncheon meetings with outstanding speakers, includes a number of sub-groups with independent activities. The interest groups include art, gourmet cooking, horseback riding, bowling, bridge, golf, skiing, tennis, fashion and self-improvement. Mrs. Mel Perkins is chairman of the membership tea and interest groups. Membership chairman is Mrs. John Anderson and may be contacted for additional information. Call 299-7782.

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TEENAGERS can do their thing at a dance Saturday, Sept. 18 from 7:30 to 10:30. Something called "PSA" will be wired into the bandstand. Member parents should pick up tickets for their youngsters at the Club office.

* * * *

THE MAZATLAN TOUR GROUP will meet Tuesday, Sept. 14, at 7:30 p.m. in the Club dining room to get the word on details of the trip. Chet Fornero (4337), Club president, will conduct the meeting. A few seats remain on the plane, Chet reports, so that if anyone wants to make the trip, there's still room. The eight-day package costs \$198.50 and includes the works — everything but lunches. "It's a great vacation buy," Chet says, "at one of the world's finest resort areas."



SANADO VICE PRESIDENTS Mary Ann Perkins left, and Joan Anderson invite wives of Sandia and AEC employees to a "Time for Sanado" get-acquainted tea Tuesday, Sept. 14, at 2 p.m. at the Coronado Club. Sanado activities will be discussed.

* * * *

DANCE LESSONS for both beginners and advanced students start Monday, Sept. 13. Fee is \$20 per couple. The beginners meet at 7:30 p.m., advanced at 8:30. Register at the Club office prior to the first session. The groups will meet Mondays for 10 weeks.

* * * *

THE FOOTBALL BUS idea, successful for the past two years, will start again Saturday, Sept. 25. The bus will leave the Club at 7 p.m. and take the troops directly to University Stadium and return to the Club after the game. No parking problems. In addition, Happy Hour prices will be in effect for those who want to dawdle in the main lounge and discuss the game. No fee for the bus.