

Senator Visits Labs

Senator Joseph Montoya, the state's senior senator, visited the Labs Aug. 22 for briefings on several programs relating to energy and for a talk with employees in the auditorium (Bldg. 815). Because seating there is limited, tickets were allocated on the basis of a lottery, and the talk was videotaped for showings later.

In the briefings, President Sparks, Bob Stromberg (5712), and others described the Labs' principal areas of investigation in the field of energy. The presentation covered the solar community concept in which solar energy is collected and stored to satisfy electrical, heating and cooling needs of a community of homes or industrial buildings. Also discussed were Sandia's capabilities in the AEC's reactor safety program and our program for the application of lasers and electron beams to thermonuclear power generation.

In his talk, Senator Montoya noted "... that the honeymoon is over for Congress and the AEC in the easy funding of AEC programs. The mood is increasingly upon the resolution of environmental, energy, health, and food problems." The Senator foresaw the Labs' continued role in defense projects, perhaps at a lower level of funding, but added, "I also see exciting opportunities for Sandia to apply its tremendous reservoir of experience and capabilities to the peaceful problems facing our country, and especially in the energy crisis." In this regard, he emphasized to the group "... the need to tell your own story to the American people, not just to a congressional committee or to other scientists." Concluding, he stated, "In short, in order to continue to attract the support of the public and the best and brightest of the students of the 1970s, make sure that you are communicating with them about all the great and stimulating ideas you generate here at Sandia."

The Senator complimented Sandia management on their efforts in the energy and power reactor fields and added, "I will do all that I can to assist you in the pursuit of those goals."

The question and answer session that followed the Senator's talk ranged widely, from model cities housing to Watergate to an inquiry concerning two recently cancelled weapons programs. The question concerning the cancelled weapon programs was not clear to Senator Montoya at the time. It was cleared up later, however, as soon as the programs were identified as the W74 and W75. Senator Montoya recalled that subsequent to a JCAE (Joint Committee on Atomic Energy) move to make a budget cut on the artillery shells programs, he had succeeded after considerable effort in softening the effects of the cutback on Sandia.

Another subject featured in the question period was the importance of continued recognition of the weapons R&D responsibilities of Sandia. New activities in the energy field represent a broadening but not a substitution for the Labs' mission.

Senator Montoya is returning to Washington early this month when the Congress reconvenes.

SENATOR MONTOYA visited Sandia in late August for briefings and then delivered a talk to Sandians in theatre Bldg. 815 on congressional attitudes toward AEC programs. The Senator expressed particular interest in the Labs' role in energy programs.



LAB NEWS

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SEPTEMBER 7, 1973

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

Beckner, Peurifoy Named Directors



Everet Beckner

Two new directors were named last week at the Labs. They are Everet Beckner, promoted to Director of Physical Research (5200), and Bob Peurifoy, promoted to Director of Systems Development (1500).

Everet, a native New Mexican (Clayton), came to Sandia in 1961 after gaining MA and PhD degrees in physics from Rice University. He has most recently been manager of Laser Physics Research Department (5210). A Fellow in the American Physical Society, Everet has published extensively, chiefly in the field of plasma physics. Evert and his wife Claudia have three children and reside in Four Hills.



Bob Peurifoy

Bob is a 21-year veteran of the Labs and has worked at both Albuquerque and Livermore. His first promotion took place in 1956. An electrical engineer, Bob has been chiefly involved in systems engineering at the Labs. His most recent assignment, since April 1973, has been as manager of Exploratory Programs Department (4760). Bob is a graduate of Texas A&M, is a member of the Institute of Electrical and Electronic Engineers, and is a registered professional engineer in New Mexico. Bob and his wife Barbara have three children. They also reside in Four Hills.

Afterthoughts

Dark Days For The Republic--First it was Watergate, now it's the Soap Box Derby and Little League baseball. Shenanigans in high places, well, saintly politicians are sort of boring. But now we learn that that kid's racer was something more than an orange crate with cast off wheels; and that the Little League championship team from Taiwan that demolished their Tucson opponents carried a few tots on its roster who aren't exactly tots (it's not true that the catcher was observed taking a chew of tobacco). What's happening to our bedrock verities? Next thing we'll learn that KFC's Colonel Sanders isn't a real colonel.

* * * *

It is dawn. Around the city grim-faced men glance at watches, buckle on equipment, smile wanly at families and loved ones and prepare to move out. The assault will be a rough one, and none but the resolute will breach the perimeter. Their opponent has vaunted his impregnability, and the festung's defenses are formidable: barbed wire, high barriers, roving patrols, a garrison utterly dedicated to closing any breach, at all costs. And the pathetically few avenues of approach available to the assault force are a thicket of peril. But try they will, they must . . .

"Hey man, how'd it go this morning?"

"Well not too bad. I came in Wyoming and the guard gave me a little flak because he didn't see the decal and I had to walk the bike for a little bit. And the traffic was fierce. Sometimes I think they don't like bikes on KAFB." *js



HOW ABOUT some Instant Spanish? In conjunction with radio station KDAZ, the New Mexico Heart Association has published this booklet — cost, one buck — containing commonly used Spanish words and phrases. You listen to KDAZ, you pick up the pronunciation, and you too can argue with a taxi driver in Juarez. Karen Smith (9521) holds. Booklets are available in LAB NEWS office (802/100); portion of proceeds goes to South 10 Village Project.

Events Calendar

Congratulations

- Sept. 7-9, 11-16, 18-20 — Albuquerque Little Theater, "Butterflies are Free," 8 p.m.
- Sept. 8 — Harvest and social dances, Laguna Pueblo; Sept. 9 — Harvest dance, San Juan Pueblo; Sept. 19 — San Jose Fiesta, Laguna Pueblo.
- Sept. 9 — N.M. Mt. Club, Juan Tabo waterfall, 4 miles, Eastdale, 9 a.m.
- Sept. 11 — ASUNM Lecture Series, Israel Horovitz, playwright, will discuss "The New American Theatre," and read from his award-winning collections of poetry, 8 p.m. SUB ballroom.
- Sept. 12-23 — New Mexico State Fair.
- Sept. 15 — Air Force Band and Singing Sergeants, 8 p.m., Convention Center.
- Sept. 15 — N.M. Mt. Club, San Pedro Parks, 12 miles, Gulf Mart, 7:30 a.m.
- Sept. 16 — N.M. Mt. Club, Embudito Canyon, 5 miles, Eastdale, 8 a.m.
- Sept. 20-22 — Classics Theatre Co., "Hamlet," 8:15 p.m., Sept. 23, 2:15 p.m., Popejoy Hall, 277-3121.

- Mr. and Mrs. Paul Holloway (2431), a daughter, Kimberly Lorraine, Aug. 20.
- Mr. and Mrs. Jim Sweet (2431), a daughter, Elizabeth, Aug. 23.
- Mr. and Mrs. Ivan Waddoups (5714), a son, Brent, Aug. 23.

Variable Annuity Unit Value

September	1.729
August	1.660
Average 1972	1.737

CU Bulletin Board

It's About Time — Of all the things you need to know about the gasoline that goes into your automobile, the octane number is probably the most significant because the engine is designed to operate most efficiently with gas whose octane number falls within a certain range. If you buy gas with a higher octane number than is needed, you're wasting money (the higher octane costs more) and if you use gas with too low an octane the engine performance suffers. Up to now most filling station operators would look at you blankly when asked about the octane numbers of their product because (a) they genuinely didn't know or (b) their suppliers had convinced them that such inquiries were really sort of presumptuous. There's been a change though. An IRS release states that, as part of Phase IV of the Economic Stabilization Program, ceilings have been placed on gas prices and, effective Sept. 7, the ceiling price and octane number must be posted on each pump. Failure to post the required stickers by Sept. 7 can result in a fine of \$2500.

Supervisory Appointment



JOHN MATSKO to supervisor of Ceramics Section 7122-1, effective July 16.

John joined the Labs in October 1962 and has worked in the materials science area, primarily in crystal growth studies and, more recently, in ceramics development. Before joining Sandia, he worked in the chemical laboratories of Harshaw Corporation in Cleveland.

He earned his BS in chemistry from John Carroll University in Cleveland in 1960 and has taken advanced courses at UNM. He was in the US Navy from 1952-54, serving as an electrician on board an aircraft carrier.

He is a member of the American Ceramic Society.

John likes camping and fishing and was an active leader in Boy Scout work before his son, now 20, entered college. He and his wife Carmella also have three daughters, ages 19, 16, and 10, and live at 6016 Woodford Place NE.

Sympathy

To C.R. Barncord (7600) on the death of his father in Emporia, Kans., Aug. 15.

To Ray Pino (7631) on the death of his mother in Socorro.

To Lamberto Baca (7222-1) on the death of his mother-in-law, Aug. 23.

To G.T. Holman (5131) on the death of his father in Kansas City, Mo., Aug. 16.

To John Duncan (2114) on the death of his son in Albuquerque, Aug. 22.

LAB NEWS

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&
don graham ass't. editor

bruce hawkinson writes
as does norma taylor while
bill laskar takes/makes pictures
&

in livermore lorena schneider does all

LEAP Committee Announces Drive

Planning is underway for the 1973 LEAP (Livermore Employees' Assistance Plan) campaign. According to the LEAP committee, the week-long fund drive begins Sept. 24, and employee meetings on the program are scheduled for Tuesday the 25th and Wednesday the 26th.

Chairman Arnie Rivenes (8363), says that a 10 percent increase in individual giving has been set by the committee as the campaign goal.

"If each employee commits an extra 10 percent, we should have a very successful drive. Of course, participation is also an essential element, and we expect the new graduated contribution scale — based upon income — to increase the number of 'Fair Share' givers."

Arnie notes that through LEAP Sandians contribute to local service agencies in addition to the United Bay Area Crusade (UBAC) and national health agencies through the Bay Area Combined Health Agencies Drive (CHAD). Thus, employees give "once for all."

After studying employee recommendations involving 11 agencies, the committee voted to retain the same agencies included last year, but changed their allocations. Basic needs of the agencies and their current helpfulness to the community were carefully considered in setting the new allocations.

Beneficiaries, therefore, of 1973 funds will be five local agencies, plus CHAD with 12 member agencies, and UBAC with 184 member agencies. The present allocations are:

	Allocation %
LOCAL AGENCIES	12
1. Nursery School Scholarship Fund	5.0
2. Livermore-Amador Valley Emergency Fund Center	5.0
3. Cerebral Palsy Center for the Bay Area (Lincoln Center)	1.0
4. Twin Valley Counseling Service	.5
5. Connection	.5
NATIONAL AGENCIES	
Bay Area Combined Health Agencies Drive CHAD15	
UNITED BAY AREA CRUSADE AGENCIES 72	
RESERVE (for emergency use or to be distributed at year end according to specific participating agency needs)	1
TOTAL	100%

"Each year since the LEAP program was inaugurated in 1969, Sandians have increased their individual contributions," comments Arnie. "Hopefully this upward trend will continue."



DURING SILL'S UPCOMING LEAP CAMPAIGN, Jim Reitz (8421), left, Carolyn Kersey (8212), Lynn Shackelfoot (8266), and Bill Peila (8183) join in urging you to keep in mind this year's United Bay Area Crusade slogan "People Helping People." LEAP offers Sandians a "once-for-all" way to contribute to local and national health and service agencies.

LIVERMORE NEWS

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LIVERMORE LABORATORIES

SEPTEMBER 7, 1973



CONGRESSMAN MANUAL LUJAN of New Mexico (second from right), recently appointed to the Joint Committee on Atomic Energy, visits Sandia/Livermore for technical briefings and a tour of the Labs. He is shown with (from left) Vice President Tom Cook (8000), Duane Sewell (Associate Director, LLL), Leo Gutierrez (8100), W.C. "Scriv" Scrivner (8400), Bob Thorne (Manager AEC/SAN), and Byron Murphey (8300). Composed of nine members of the Senate and nine members of the House of Representatives, the Joint Committee makes continuing studies of the activities of the AEC and of problems relating to the development, use, and control of atomic energy. Later, on Aug. 31, the Congressman visited Sandia/Albuquerque for additional briefings.

Speakers

Ray Smith (8333), "Transient Flow Field Temperature Distribution Using Rotational Raman Spectroscopy," and Dan Hartley (8364), "Ramanography," Laser Raman Workshop on the Measurement of Gas Properties sponsored by the Office of Naval Research, Wash., D.C., May 10, Schnectady, N.Y.

John Kryvoruka (8363), "Roll Control Test Program," and Ray Rychnovsky (8362), "Effects of Exoatmospheric Intercept and Thermal Distortion on Roll Resonance Lock-In," Roll Control Symposium, Aerospace Corp., El Segundo, Calif., May 9-10.

Tony Thompson (8313), "The Sensitization of Stainless Steel," Northern and Southern California Electron Microscopy Societies joint meeting, Monterey, Calif., May 25.

Take Note

Sandia's slo-pitch baseball league, 15 years old, attracted over 60 Sandians this summer. Each of the four teams played a game a week over the three month period. "Reese's Rippers," winners of the first half of the season, took the overall championship by defeating the second-half champions, "Tabo's Teamsters," with the final playoff-game score a close 9-8. Members of the championship team are captain Bob Reese (8113), Jerry Giovachinni (8314), Les Hill (8314), Fred Johnson (8421), Ken Marx (8341), Ben Odegard (8312), Al Reichmuth (8434), Mike Rogers (8344), Pete Royval (8432), Mike Stephenson (8151), Cook Story (8332), Jerry Wackerly (8213), and Stan Zehr (8312).

Sympathy

To Vic Ham (8313) on the death of his father in Lebanon, Ind., Aug. 1.

To Al Elsea (8431) on the death of his father in Walla Walla, Wash., Aug. 15.

To Mike Nicholson (8154) on the death of his father in San Bernardino, Calif., Aug. 12.

To Jack Hubner (8364) on the death of his father-in-law in El Cerrito, Aug. 8.

Congratulations

Mr. and Mrs. Tim Marino (8421), a daughter, Kimberly Eve, July 23.

Speakers

R.M. Jefferson (5222), "Nuclear Power," July 27, Downtown Optimist Club.

J.R. Garcia (4230) and K.E. Sutton (4250), "Job Opportunities at Sandia Laboratories," July 28, Governors, All-Indian Pueblo Council.

G.S. Snow (2521), "Development of Transparent Electrooptic PLZT Ceramics by Controlled Atmosphere Sintering," Gordon Research Center, Kimball Union Academy, Aug. 8, Meriden, N.H.

J.E. Houston and R.L. Park (both 5114), "Analysis by Appearance Potential Techniques," invited paper; W.F. Chambers (5522), "The Sandia Approach to Electron Probe Automation," invited paper, National Meeting of the Electron Probe Analysis Society, Aug. 13-17, New Orleans, La.

D.O. Lee and W.H. McCulloch (both 1543), "A New Parameter for Evaluating Energy Systems"; R.B. Pope, W.P. Schimmel, Jr., D.O. Lee, W.H. McCulloch and B.E. Bader (all 1543), "A Combination of Solar Energy and the Total Energy Concept — the Solar Community"; R.B. Pope and W.P. Schimmel, Jr., "An Analysis of Linear Focused Collectors for Solar Power," Intersociety Energy Conversion Engineering Conference, Aug. 13-17, Philadelphia, Pa.

W.E. Wilson (2113), "The Effects of Gamma Irradiation on LSA Oscillator Performance"; E.D. Graham, Jr. (2113), R.J. Chaffin (2122) and C.W. Gwyn (2114), "Large Signal S-Parameter Modeling and Radiation Effects in Microwave Power Transistors," Microwave Semiconductor Devices, Circuits and Applications Meeting, Aug. 14-16, Ithaca, N.Y.

G.J. Thomas (5522), "Helium Re-Emission Measurements and Electron Microscopy on High Dose Implanted b.c.c. Metals," Conference on Defects & Defect Clusters in b.c.c. Metals and Their Alloys, Aug. 14-16, Gaithersburg, Md.

G.J. Kominiak and R.D. Bland (both 5526), "The Effect of Substrate Bias on the Properties of Thick Sputter Deposited Films," Annual Symposium of the Rocky Mountain Section AVS, Aug. 15-16, Boulder, Colo.

M.R. Scott (2642), "An Initial Value Method for Integral Operators — Kernels Depending on a Parameter," AMS Summer Meeting, Aug. 20-24, Missoula, Mo.

K.E. Lawson (5522), "Selected Area Analysis of a Commercial Energy Dispersive X-ray Spectrometer"; J.J. Hohlfelder (1112), "Measurement of the X-Ray Sensitivity of Silicon Diodes in the Energy Region 1.8 to 5.0 keV," Conference on Applications of X-Ray Analysis, Aug. 22-24, Denver, Colo.

R.E. Jones (2642), "A Self Organizing Mesh Generation Program," ASME, June 24-28, Miami, Fla.

E.H. Beckner (5200), G. Yonas (5240), M.J. Clauser and J.R. Freeman (both 5241), J.B. Gerardo (5212), E.D. Jones (5214), and A.J. Toepfer (5241), "Pulsed Fusion of Pellets Using Electron Beams or Lasers," Sixth European Conference on Controlled Fusion and Plasma, July 30-Aug. 3, Moscow.

R.T. Meyer (5324), "Reaction of Excited Iodine Atoms with Methyl Iodide: Rate Constant Determinations," CNC-4 Summer Seminars in Kinetics, Aug. 22, LASL.

J.R. Freeman (5241), "Electron Beam Focusing and Application to Pulsed Fusion"; G. Yonas (5240), J.W. Poukey (5241), K.R. Prestwich (5245), J.R. Freeman, A.J. Toepfer and M.J. Clauser (all 5241), "Electron Beam Focusing and Application to Pulsed Fusion," Workshop on the Non-Linear Interaction of Lasers and Electron Beams with Plasmas, Aug. 13-31, Trieste, Italy.

G.E. Brandvold (5710), "Solar Energy Research at Sandia Laboratories," Society of American Military Engineers, Aug. 15, Albuquerque.

R.E. Cuthrell (5526), "Epoxy Polymers. VI. Solution Phenomena in the Cured Polymer," National Meeting of the American Chemical Society, Aug. 26, Chicago.

A.C. Zupero (4730), "Compact Super-Stable Lasers as Length Digitizers," SPIE Annual Technical Meeting, Aug. 27-29, San Diego.

L.S. Nelson and N.L. Richardson (5324), "Effects of Oxygen and Argon Atmospheres on Pendant Drops of Aluminum Oxide Melted with Carbon Dioxide Laser Radiation," Symposium on Physico-Chemical Techniques at High Temperatures, Sept. 3-7, Baden, Austria.

H.P. Stephens (5322) and L.S. Nelson (5324), "Determination of the Enthalpy of Liquid Metals with a Liquid Argon Calorimeter," 3rd International Conference on Chemical Thermodynamics, Sept. 3-7, Baden, Austria.

W.S. Saric (5643) and A.H. Nayfeh (V.P.I.), "Stability of Non-Parallel Flows," XIth Biennial Fluid Dynamics Symposium on Advanced Problems and Methods in Fluid Mechanics, Sept. 3-8, Kamienny Potok, Poland.



Bldg. 818 — note the gracefulness of line, the dramatic use of sunshine, shadow, and water.

Our Oldest Established Permanent Temporary Building May Come Down

"It was built by the CCC back in the mid-thirties and moved down here from Placitas during the war."

"You know, Clark Gable was once stationed here and worked in the building."

"There's a concrete slab in it where we did shake and vibration tests on the Mk 4."

"It was already here when the first people moved down from The Hill."

* * * *

Talk to old-timers about Bldg. 818 and you get a bushel full of historical notes, picturesque and otherwise, about the ramshackle wooden structure in the northwest corner of the Tech Area. In Sandia's early days, around the mid-forties, it

housed some of the principal figures in the atomic weapon business, from both the Sandia and AEC sides of the house. Here is an April '48 organization chart (Director Larsen occupied one of the two knotty pine paneled offices in 818):

Director (and Associate Director, LASL)	Paul Larsen
Technical Associate Director	Robert Henderson
SLE Engineering Dept.	Richard Bice
SLA Applied Physics Dept.	Harold Cooper
SLT Field Test Dept.	Glenn Fowler
SLR Road (Production) Dept.	Frank Longyear
SLS Surveillance Dept.	Louis Paddison
SLF Devel. Fabrication Dept.	Luther Yost
SLX Admin. Dept.	Charles Campbell
SLD Document Dept.	Sylvan Harris
SLP Procurement and Supply Dept.	David Miller

At the time, some 30 sentry dogs were patrolling the Base. 18 tanks were placed at critical security sites, and the Tech Area sported a few machine gun emplacements. Labs employment was 470 and, because city housing was tight, people were living on Base in "Hanford Houses" — tiny prefabs moved down from the AEC's installation in Hanford, Wash., and in newly constructed (by AEC) housing in the northwest corner of the Base.

And in the phone directory of the time, Bldg. 818 is listed as "T-818." Guess what the "T" stands for. . .

Building 800 was completed in 1949, the first of the new wave of permanent structures, and the hierarchy quickly abandoned 818 for 800's flossier quarters. Since that time, the building has housed many occupants, but the longevity record would seem to go to the technical publications people who, under one name or another, have been associated with 818 since 1960.

* * * *

You know, considering its long and honorable service, perhaps 818 should be spared the ignominy of the unfeeling bulldozer. Let's see — we burn old flags . . . anyone got a match? • js



Amen.



Floors were made of a curious structural material — wood.

Authors

H.E. Anderson (1643), "Machine Plotted Probability Charts," July issue, JOURNAL OF QUALITY TECHNOLOGY.

R.H. Dungan (7122), J.A. Gilbert (5316) and J.C. Smith (7122), "Preparation and Mechanical Properties of Composites of Fused SiO₂ and W Fibers," Vol. 56, No. 6, JOURNAL OF THE AMERICAN CERAMIC SOCIETY.

J.G. Gerardo and A.W. Johnson (both 5212), "High-Pressure Xenon Laser at 1730 Å," Vol. 9, No. 7, IEEE JOURNAL OF QUANTUM ELECTRONICS.

R.T. Meyer and A.W. Lynch (both 5324), "Reevaluation of Carbon Vapor Pressure and Third Law Heats of Formation: Triatomic Carbon," Vol. 5, No. 3, HIGH TEMPERATURE SCIENCE.

H.J. Stein (5112), "Localized Vibrational Modes for Implanted Oxygen in Germanium," Vol. 44, No. 6, JOURNAL OF APPLIED PHYSICS.

F.G. Blottner (5643), "Correlation of the Mass Flow Rate in the Laminar Boundary Layer on a Sphere-Cone," Vol. 11, No. 7, AIAA JOURNAL.

J.M. Freese, A.W. Lynch and R.T. Meyer (all 5324), "Optimization of Mass Spectrometer Ion Yields by Electron Energy Selection and Cryogenic Trapping of Contaminants for the Pulse-Heated Vaporization of Metal Atoms," Vol. 45, No. 8, ANALYTICAL CHEMISTRY.

J.E. Houston (5114) and R.D. Bland (5526), "Relationship Between Sputter Cleaning Parameters and Surface Contaminants," Vol. 44, No. 6, JOURNAL OF APPLIED PHYSICS.

R.C. Hughes (5514), "Charge-Carrier Transport Phenomena in Amorphous SiO₂: Direct Measurement of the Drift Mobility and Lifetime," Vol. 30, No. 26, PHYSICAL REVIEW LETTERS.

W. Bauer (8334) and G.J. Thomas (5522), "Helium Re-emission and Surface Deformation in 316 Stainless Steel During -170°C to 700°C Implantations," Vol. 47, No. 2, JOURNAL OF NUCLEAR MATERIALS.

J.L. Jellison (5533), "The Influence of Recovery Heat Treatments on the Low Temperature Ductility of Fe-V Alloys," Vol. 12, No. 1, MATERIALS SCIENCE AND ENGINEERING.

G.J. Thomas (5522) and W. Bauer (8334), "Helium Implantation Effects in Palladium at High Doses," Vol. 17, Nos. 3-4, RADIATION EFFECTS.

R.O. Woods (1255), "Miniaturizing the Cold Cathode Vacuum Gauge," Vol. 10, No. 3, THE JOURNAL OF VACUUM SCIENCE AND TECHNOLOGY.

M.J. Landry (2441), "A Pulsed Ruby Laser With Individual Q-Switched Multiple Cavities," Vol. QE-9, No. 6, IEEE Transactions of QUANTUM ELECTRONICS.

D.S. Drumheller (5163) and A. Bedford (U of Texas), "On a Continuum Theory for a Laminated Medium," Vol. 40 No. 2, JOURNAL OF APPLIED MECHANICS.

R.D. Krieg (1541), "Unconditional Stability in Numerical Time Integration Methods," Vol. 40, No. 2, JOURNAL OF APPLIED MECHANICS.

R.E. Cuthrell and D.W. Tipping (both 5526), "Plasma Creation From Thin Aluminum Targets by a TEA-CO₂ Laser," Vol. 44, No. 7, JOURNAL OF APPLIED PHYSICS.

C.B. Norris (5113), C.E. Barnes and W. Beezhold (both 5112), "Depth-Resolved Cathodoluminescence in Undamaged and Ion-Implanted GaAs, ZnS, and CdS," Vol. 44, No. 7, JOURNAL OF APPLIED PHYSICS.

F.R. Norwood (5166), "Remarks on the Paper by C.N.G. Dampney, 'The Relationship Between Two- and Three-Dimensional Elastic-Wave Propagation,'" Vol. 63, No. 3, BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA.

J.W. Nunziato (5131), "A Note on Uniqueness in the Linear Theory of Heat Conduction with Finite Wave Speeds," Vol. 25, No. 1, SIAM JOURNAL ON APPLIED MATHEMATICS.

H.C. Walling and M.J. Forrestal (both 9324), "Elastic-Plastic Expansion of 6061-T6 Aluminum Rings," Vol. 11, No. 8, AIAA JOURNAL.

R.B. Worrell (1652) and B.L. Hulme (5122), "Efficient Ordering of Set Expressions for Symbolic Expansion," Vol. 20, No. 3, JOURNAL OF THE ASSOCIATION FOR COMPUTING MACHINERY.

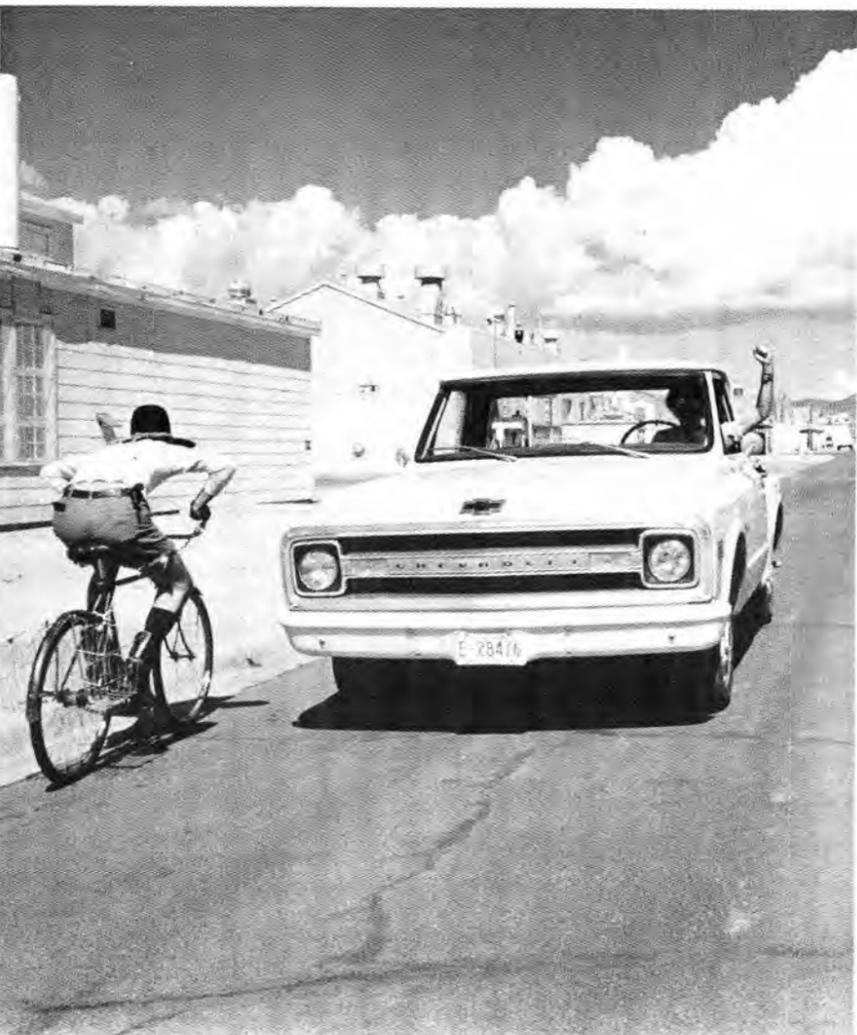
E.L. Patterson (5212), "Paramatic Study of Superradiant Laser Action in Molecular Nitrogen Excited by a High-Energy Electron Beam," Vol. 44, No. 7, JOURNAL OF APPLIED PHYSICS.



THE GHOST of Hamlet's father (Bill Carstens, 3151) eavesdrops as Ophelia (Mary Kay Dooner) and director John Gardner (3141) prepare for the Classic Theatre Company's current Shakespearean drama. Hamlet plays Sept. 20-22 (8:15 p.m.), Sept. 23 (2:15 p.m.), at Popejoy Hall. Opening night is a benefit for the Children's Zoo; call 277-3121 for reservations or information.



LOANED EXECUTIVES — Mel Mefford (4212), Jake Gonzales (7144) and Pat Murphy (4143) will be working with the Albuquerque United Community Fund in coming weeks helping to raise this year's goal of \$1,775,000. The Sandians will conduct meetings, present the UCF slide show, help businesses set up payroll deduction plans for their employees and solicit for UCF.



PSYCHO-CYCLIST — The pesky pedaler rides again, this time on the street. But on the wrong side! For bikers, the right side is the Right Side.

Hello America: The State Fair Parade

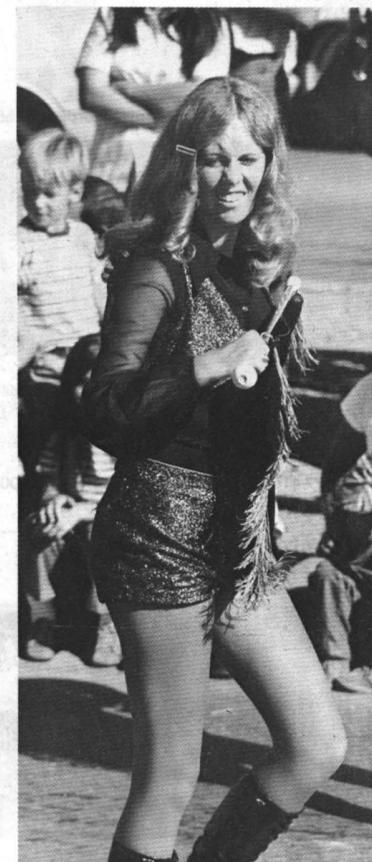
If there's a single event I'd want a visitor from another country to see in order to gain some insight into the American character (and to have fun as well), I'd select our State Fair Parade. He'd acquire a largely flattering insight because the parade reveals above all a quality of exuberance which — I would think — most observers would find engaging.

I can speak with authority only about *our* State Fair Parade, not Arkansas' or Arizona's or any others because I haven't seen their versions. But somehow I suspect the State Fair Parade for, say, California resembles those between-the-halves extravaganzas we see on TV where the performers march with such machine-like precision that one half expects to see the wind-up key emerging from their backs. That which beguiles in New Mexico's parade is its non-slick, warts and all aspect: high school band uniforms whose hats

are either too small or too large; the hand-lettered signs with mysterious exhortations — "Get the Rabbit Habit"; politicians uncertainly astride the obligatory horse, waving gamely; baton twirlers whose instruments soar much higher than their level of skill; the legions of cheer leaders whose costumes reflect a struggle between sexy and demure; and a seemingly infinite number of that icon of southwestern culture — a girl plus her horse.

They march confidently (if out of step), it's usually sunny and hot, you shout at paraders you know, and everybody has, well, a glorious time.

These photos were taken at last year's parade and, in case you don't already know it, this year's parade is a week from tomorrow — Saturday the 15th. •js





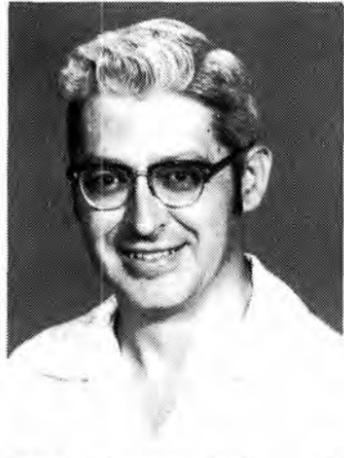
Raul Sanchez - 7517



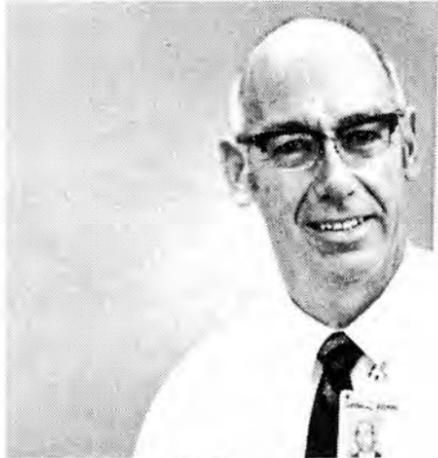
Bob Carrell - 8183

MILEPOSTS

LAB NEWS September 1973



Donald Schreiner - 5114



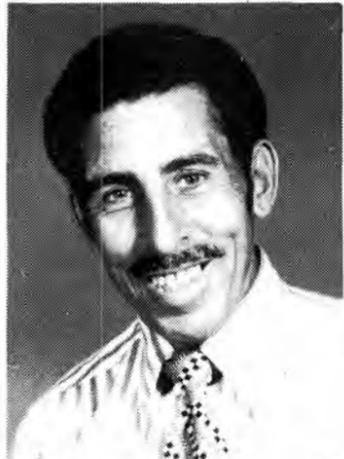
Gerald Villane - 1532



John James - 2315



Barbara Farshler - 8442



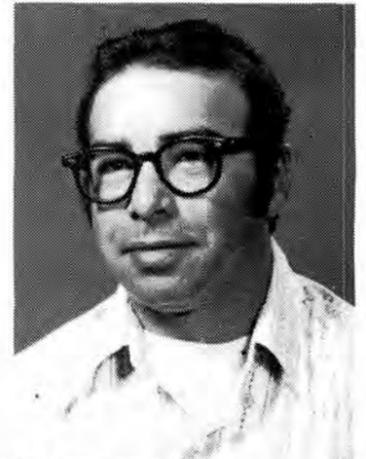
Dave Tafoya - 3148



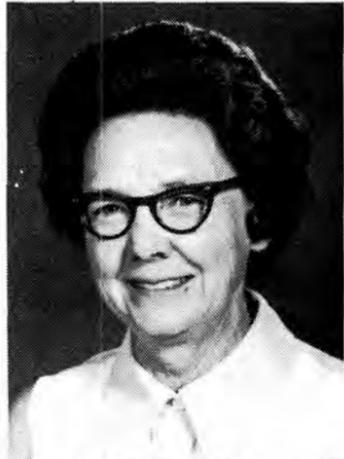
Bruce Worden - 8155



Alice Vancil - 4152



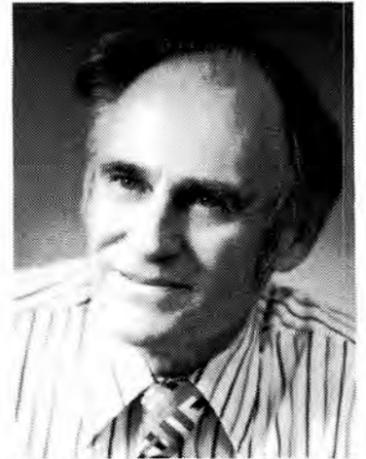
Pat Sanchez - 2632



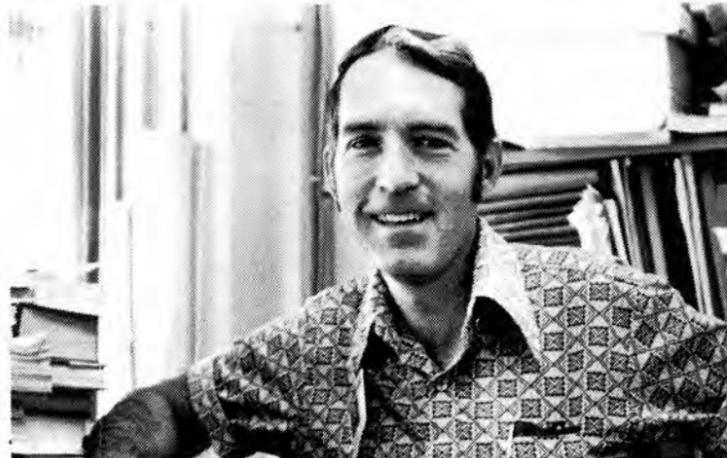
Helen Temperly - 4154



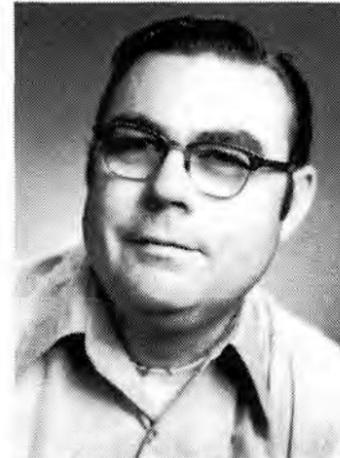
George Beller - 1500



Howard Schmale - 8346



Harry Hardee - 1543



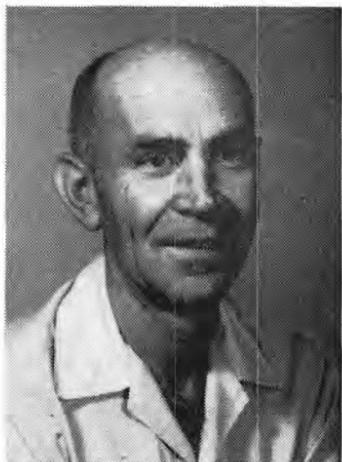
Don Gallagher - 8161



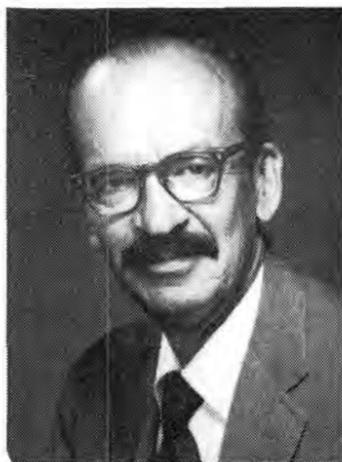
Robert Morris - 1116



Robert Wilde - 1514



Lester Sandlin - 1255 15



Gordon Bachand - 2342 25



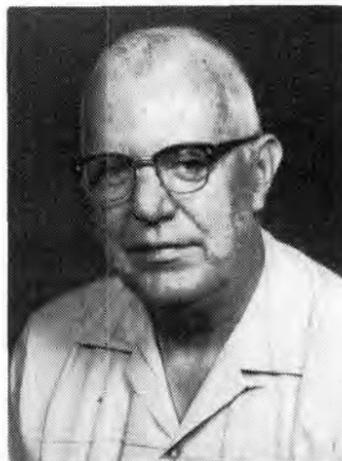
Russell Foster - 7312 20



John Erni - 7134 10



Alfred Riedel - 2411 15



John Miller - 1251 25



Gene Simpson - 8413 15



Ruth Kresge - 4152 20



Glen Knauss - 2432 15



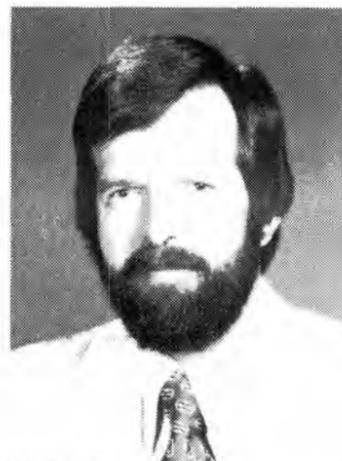
Carl Hoffman - 1246 15



Hermond Lacey - 2122 15



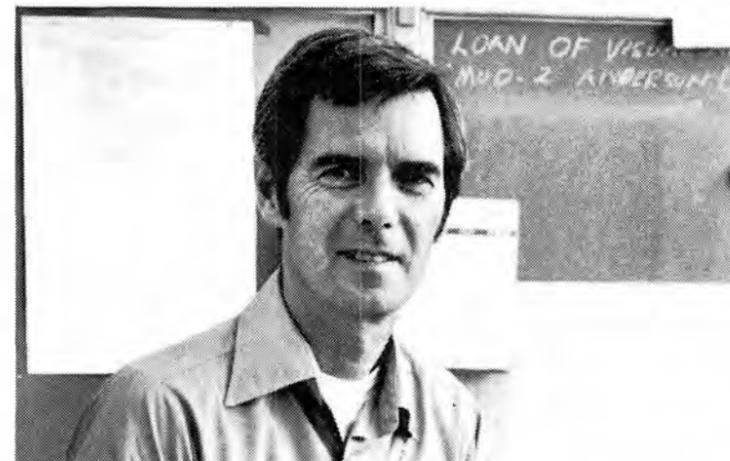
Dave McVey - 5626 15



William Paulus - 9420 15



John Mitchell - 1241 15



Charles Spencer - 2411 15



Bob Martin - 8413 15



Bill Gardner - 1500 25



Edna Harper - 3155 20



Robert Lefever - 5154 10

Out-of-Hours Courses — A New Approach

Maintaining technical vitality at the Labs — that's the goal of the nine in-hours courses to be offered this fall. The goal isn't a new one — in one way or another it's been a part of the traditional Sandia in-hours program. But, thanks to an innovative and highly successful pilot course in Materials Technology (taught by Dave Nokes, 2344, and supervised by Ted Church, 2340), Sandia is changing the traditional approach.

New, for example, is each course's origin. Each one is planned either by the Technical Courses Committee under Klaus Bowers (2000) or by the Organization 2000 Education Committee under Jerry Hood (2110). Each committee determines, by surveying technical management and staff, that Sandia has a need for a given course and that the need goes beyond a single directorate.

So the in-hours offerings are advanced level courses tailored specifically to Sandia's technical mission. The list includes: Weapon Physics, Shock Wave Phenomena, MOS Circuits, Integrated Circuits, Materials Technology, two complementary courses on the Physical Design of Electronic Systems, Statistics, and Math Refresher.

The new approach goes beyond conception and design. Each course is aimed specifically at the technical staff member at Sandia. And each is directly job relevant. The Statistics course, for example, is based on experiences with real weapon components, not on a textbook.

Job relevance in terms of the students is assured by the selection process — each student is named by his director for the course. "It's the first time we've had people clamoring to get into tough courses like these," says Howard Shelton (3132) whose Engineering Education and Technical Training Division furnishes advice on improving the teaching-learning process. "It's something of an honor to be chosen. The 'graduate' has some assurance not only that he knows more about a subject but also that the knowledge will help him directly on the job."

Another difference is that the instructors chosen are not necessarily trained educators. "We look for people with skill at utilizing course content on the job — and who can pass it on to others — not just for ex-educators, though we do have some of these in the bunch," says Jerry Hood, manager of the Semiconductor Device department 2110. "Each one is chosen by the course supervisor who personally okays the course content and assures its job relevance. The course becomes the instructor's primary job responsibility, not something he has to sandwich in between his other assignments."

Many of the courses follow a traditional academic format — they may well meet three hours a week for 16 weeks, for example. But sometimes the goals of the course can better be met with a different format — the Weapon Physics seminar is a case in point; it meets one and a half hours a day for two weeks.

The new approach carries over into the classroom itself. Each course is built on a series of specific instructional objectives. For example, after the eighth week in Materials Technology, each student is able to choose a



commercial alloy for a specific design application. Instructional objectives were checked with the customer organizations to make sure again that the course is tailored to Sandia's tasks.

Another difference within the classroom is that the instructor is less a lecturer than a discussion leader, facilitator, explicator. The lectures are handled by Sandia specialists in the discipline (many of them are on videotape).

Finally, the new approach is seen in the matter of grades — there aren't any. Assignments are carefully checked (and assignments are not light; some seven hours of homework per week is the norm). But the real measure of success is what shows up back on the job, not what appears on a report card.

The pilot course gets the credit for demonstrating the feasibility of the new approach. The departures from tradition all assist in meeting the general goal — maintaining technical vitality at the Labs. • bh

Recreation Notes

FUN & GAMES

No Shoo-Ins in Horseshoe Tournament —

Singles

Class A

First — Don Hurt (1613), second — Leo Bressan (9532)

Class B

First — Ernie Mares (7145), second — Jim Reed (7147)

Class C

First — Joe Baldonado (7145), second — Jim Fisher (7623)

Doubles

Class A

First — team of Lyle Kruse (5323) and Dan Padilla (1247)

Second — team of Don Hurt (1613) and Joe Baldonado (7145)

Lyle Kruse, president of the Sandia Labs Horseshoe Association, called the tournament a success. "Competition was tough and most of the final standings were determined through playoff games," Lyle said.

* * * *

Look out, deer. First time in state level competition saw archer Howard Tessler (9234) bring home the first place award in Class B free style from a Silver City meet. A member of the Albuquerque Field Archers for a year, he practices at their Tijeras Canyon range and in the wilds during bowhunting season. The club welcomes new members.

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LA LUZ TRAIL in the Sandias, a 7½ mile climb from 6500 to 10600 feet, is the site of an annual assault by people who get their kicks running uphill. This year the event attracted 80 entrants, including a number from the Sandia Runners Association who are shown here following the run. In front, from left, Jim Tollison (AEC), Jim Harrison (4311), Pete Richards (5132) and Bill Kass (5521). Rear, John Kelly (5242), Tom Kirchner (4731), Larry Posey (5226), Stewart Kohler (2326), Dennis Mottern (5533), Bob Fox (2325) and John Shunny (3162). Chris Olson (4731) finished but missed the photo. Pete Richards with a time of 1:24 led the pack of SRA'ers.



FROM MOUNTAIN TO MESA — that's the route of Sandia's newest commuter bus. John Southwick (9532), who did the legwork on this end, discusses the route with Tom Helwig of Helwig and Farmer Transportation Co. The bus will begin running the Sandia Knolls, Sandia Park, Cedar Crest, and Highways 66 and 10/14 area route next Monday. More info from John or from Bruce Hawkinson on Lab News.

Coast Guard Organizes

A number of Sandians are charter members of the Albuquerque Flotilla of the U.S. Coast Guard Auxiliary, Eighth District, Division II. James Phinney (IBM rep who works in Sandia's Computing Center) is the newly elected commander. Bill Prekker (4154) is vice commander.

Coast Guard officers from New Orleans, Mobile, and Dallas attended the charter inauguration ceremony held last month at the Elks Club. Members had prepared for several months to qualify the organization, taking lengthy boating safety and Coast Guard operations courses.

With more than 7000 boats registered in Bernalillo County, the new unit sees its job as one of promoting boating safety. The group will conduct a number of classes for the public starting next January. Members will also inspect boats and issue a decal if everything is in order. Passing inspection qualifies the boat owner for lower insurance rates.

To arrange for either a boat inspection or to attend the boating safety classes (which will include boat trailer operations and safety), call Earl Simonson (4122).

Other members of the unit are Carl Boxx (7133), Bill Colborne (4110), Ben Gardiner (7121), J.B. Hamlet (4113), Harlan Lenander (1600), A.L. McKay (7322), Ray Mueller (9525), Bill Norwood (4122), Howard Shelton (3132) and Dick Malone (AEC/SAO).

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

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

RULES

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

MISCELLANEOUS

COUCH, 96" armless, lime, makes 3/4 bed, \$40. Barth, 299-2668.

SNARE DRUM, Slingerland, Pearl, new case, head; stand, music, \$90; clarinet, B-flat Buffet Evette, \$100. Schellenbaum, 299-1005.

B&O TAPE RECORDER, unused, teak finish, plastic cover, 60% new price. Beezhold, 268-2843.

4 CHROME WHEELS, 14", Chevy, \$65. Velasquez, 877-6810.

CANDIDO ACCORDION, red & white, full size. Tucker, 255-5335.

IBM std. typewriter, elite type, 14" carriage, \$125 or best offer. C DeBaca, 344-3369 after 6.

SEARS window air conditioner, 11,000 BTU, 110V, \$75. Johnstone, 296-3408.

CAMP TRAILS CRUISER alum. frame, Skyline nylon backpack, frame extender, padded hip belt, extra lg. size, \$30. Shurtleff, 266-3718.

RABBITS, Medium Dutch, black & white, weaned, \$2.50 ea. Esther, 298-3295.

CAMPER for El Camino, Siesta telescopic, full cab-over, \$1000. Flesner, 265-2136.

GOLD damask draperies & valance, 84 1/2" x 15', washable, \$25. Brown, 296-5772.

ELEC. Underwood typewriter w/fg. 15" carriage. Anderson, 296-0892.

FREE KITTENS: 2 black, 1

tricolor, 2 gray & black, 3 females, 2 males. Moss, 296-3877.

BRASS decorative shelves, 18"x21", \$3; 2 Samsonite suitcases, \$5 ea.; nylon hanger suitcase, \$5; backpack, \$5; 6 piece set heavy duty alum. pots & pans, \$15. May, 299-2624.

CARPET & PAD, champagne colored, approx. 9x10, \$35. Gatto, 298-8493 after 5:30.

HEAVY DUTY 2-wheel trailer, 4x8 pickup bed, special trailer axle, springs, \$200. Stuart, 299-9190.

MAYTAG port. dryer, \$75; covered BBQ w/temp gauge, \$15; older Royal port. typewriter, \$15. Gillis, 898-4045.

FOUR-WAY WELDER, solder/braze/cut/weld, cost \$50, sell for \$25; girl's short leather coat, size 14-16, cost \$60, sell for \$30. Stathis, 268-4037.

6' SLIDING GLASS PATIO doors w/frame & hardware; glass bathtub enclosure, std. size. Stacey, 298-2655.

BEDROOM SUITE: lg. dbl. dresser w/6 lg. drawers, full-size bed w/bookcase headboard, Early American, \$50. Brown, 296-1121.

ZENITH stereophonic high fidelity walnut console record player w/AM-FM radio & matching speaker. \$50. Hann, 299-4216.

CHILD'S wardrobe, 37wx16dx-40h, 4drawers, closet, \$20; radios: clock, \$10, AM, \$5; lawn trimmers, 2 ea., \$5 ea.; tape recorder, \$5. Watt, 298-8289

GARAGE SALE: poker table, weights, AM-FM radio, furniture, French records w/text, elec. roaster, etc. York, 7400 Mountain Rd. NE.

SPINET PIANO, mahogany finish, \$425. Hayes, 296-3909.

ONE PAIR Michelin X radial tires, 205-14, \$30. Shirey, 298-6362.

GARAGE DOORS, metal, 8'x7' w/hardware, \$35 ea. Ayotte, 268-1864 after 6.

SWING SET; HO model train. Spray, 299-0412.

SNOW TIRES for 8.25-14, 205-14, F70-14, G70-14 tires, \$10; water temp. gauge, \$5. Stirbis, 299-5363.

STREAMLINE TRAVEL TRAILER, 21', self-contained, needs work, \$1500. Platt, 255-1973.

24" HOMELITE commercial chain saw, \$85; double bit axe, \$4; model 66 Remington .22 rifle, \$37. Klett, 298-7892.

IMPORTED classical guitar, w/case, \$175. Campbell, 298-9265.

LONG WEDDING DRESS, lace empire sheath, Chantilly chapel length veil, size 12, make offer. Rigby, 298-1767.

TYPEWRITER, Smith-Corona port. w/case, \$15. Laval, 898-0518.

16 GA. SHOTGUN, single shot, 2 bx shells, \$25; 8x57mm Model 98 Mauser military rifle, \$65. MacDougall, 299-8496.

IRRIGATION PUMP, 1 1/4" input, 1" output, Peerless 1/2 HP, \$40. Martin, 869-2049.

SUPER 8 PROJECTOR, new Bell & Howell, 356 Autoload, \$35. Pearlman, 299-8032 after 5:30.

TRANSPORTATION

'66 PONTIAC Tempest, new tires & battery, 2-dr. HT, \$400 firm. Aragon, 266-8597.

'69 OLDS 442, fully equipped, cloth seats, \$1600. Roth, 877-4997.

BICYCLE, boy's 20", \$15. Fitzgerald, 298-4143.

'70 HONDA CL 350cc, \$450. Hall, 296-0013.

'44 JEEP, 4-wd. Barboa, 877-8978.

'67 CHEVY Nova 2-dr. HT. Thompson, 299-6616.

'64 CADILLAC 4-dr. sedan, white, air, full power, radio.

Lundergan, 255-2974.

'67 PLYMOUTH Sports Fury, all power options, red w/black upholstery, \$100 below book. Ballard, 299-4530.

'68 OLDSMOBILE 4-dr. HT 88, sell or trade for small car in similar excellent condition. Hudson, 296-3484.

'67 PONTIAC GTO, AT, PS, tach, stereo, new shocks, lifetime battery; American wheels, \$1200, negotiable. White, 877-6084 or 877-4149.

'72 YAMAHA 360 Enduro w/extras, \$650 firm. Trujillo, 256-3840.

'66 PLYMOUTH Belvedere II std., AC, 4-dr., 318 cu. in. V8, \$525. Patterson, 877-3158.

'66 PONTIAC Bonneville, 2-dr., 2-tone, running condition, \$99. Silva, 877-2423.

'72 TOYOTA Landcruiser stn. wgn., 4-wd, 12,000 street miles, 15mpg, radio. Barton, 281-3349.

BOY'S BIKE, 20", auto. 2-spd., \$20. Barnaby, 265-4353.

'72 VW fastback, AC, AT, fire orange, still waranted. Norris, 299-4717.

MAN'S 26" 5-spd. bike w/ accessories, \$45. Poulsen, 268-7437.

'71 DATSUN 240Z, 11,740 miles, \$3700. Richardson, 268-7843.

'71 KAWASAKI 500 road bike, totally rebuilt engine, new brakes, chain, padded back rest, custom paint, must sell. Mason, 299-2836.

'64 CHEV. Stn. wgn., AT, AC, Sears steel radial tires, \$425. Coalson, 298-0061.

GIRL'S BIKE, 26" Schwinn Varsity, 10-spd. w/thorn resistant tubes, 1 yr. old, \$75 or best offer. Thatcher, 294-2731.

'68 HONDA CL350, 13,000 miles, new rear tire, \$375. Bartberger, 296-2184 after 6.

'69 CADILLAC, yellow w/black top, Sedan DeVille, new tires,

below book. Hoge, 298-5378.

BIKE, girl's 26" 3-spd., light, thorn-res. tubes, \$30; child's portable record player, 4-spd., \$5. Gray, 265-1883.

REAL ESTATE

MOUNTAIN HOME on 2 tree-covered acres in Sandia Park; 2 bdrm, large screened porch; corral. Chuck, 243-7863.

WANTED

BOY'S 20" 3-spd. bicycle. Riney, 299-1457.

USED MOBILE HOME, 2-bdr., not over 10 yrs. old, \$3000 or less. Leeman, 299-9149 after 6.

INTERESTED IN JOINING party in P-2 elk hunt; want once-used .270 cal. brass. Jellison, 296-9155.

'69 FORD TRUCK SHOP manual & wiring diagrams. Johnstone, 296-3408.

MILITARY TYPE foot locker & pre-1940 Boy Scout handbook. Arning, 256-9229.

DRILL PRESS. Coalson, 298-0061.

A GOOD watch, preferably electric, that I can see in the dark. Shunny, 265-1620.

FOR RENT

3-BDR., Hoffman brick, NE Heights, sprinklers, screened porch, hw/floors, built-ins, \$225/mo. Smoll, 299-0023.

LOST AND FOUND

LOST — Bifocal glasses, pocketknife w/brown bone handle, small green flag w/picture of bicycle rider, gold "Cross" pencil. LOST AND FOUND, Bldg. 832, tel. 264-3441.

Movie and Stage Show Manana



FALL FASHIONS will be presented at the Club during the noon hour on Tuesday, Sept. 18, by a group of Flair models including Holly Tyree and Don Lommori. Ladies fashions will be by the new Lillyan's shop, men's clothes by Charles Williams. Rosario Ayres will moderate.

HAPPY HOURS — Tonight, German food is the buffet feature, Ernie and the Saints are on the bandstand, and Denny Gallegos and guitar entertain in the main lounge. In addition, a special door prize drawing will be held with two tickets to the State Fair rodeo show to be given away. Next week, Sept. 14, another pair of tickets will be given away. Italian food will top the buffet menu, Wildman Bob Banks will be on the bandstand and newcomers Don and Jeff will entertain in the main lounge. On Sept. 21, Rio Grande style Mexican food will be spread, Sol Chavez and the mighty Duke City Brass will make the happy music, and Denny returns to the main lounge.

* * * *

TOMORROW NIGHT is family vaudeville night at the Club with a great movie from a couple of years back scheduled. "Born Free" is the movie, it's about raising a lioness in Africa, and the stage show will be "Peter and the Wolf" presented by the Neighborhood Drama Project from South Broadway directed by Gary Shepherd (2634). Super sandwiches will be available. Admission is free to members and families. The show starts around 7 p.m.

* * * *

ANOTHER GREAT MOVIE, a cinema classic called "Zeppelin" starring the Three Stooges, will be shown Wednesday, Sept. 12, at 7:30 p.m. A couple of Betty Boop cartoons

are also scheduled. Admission is free to members.

* * * *

FREE FOOTBALL BUS on Saturday, Sept. 15, from the Coronado Club to UNM stadium will leave a half hour before game time and return to the Club afterwards. This way members beat the parking hassle. The Lobos are playing New Mexico State.

* * * *

TRAVEL NEWS — Signup is brisk for the Caribbean Cruise, open to members and guests, set Jan. 4-11. The package includes jet to San Juan, Puerto Rico, then board the RHMS Amerikanis for a cruise to Caracas, Grenada, Barbados, Guadeloupe, St. Thomas and back to San Juan. Prices start at \$503 (depending on cabin choice). The trip is limited to 150 persons.

HONG KONG is the destination of Coronado Club travelers April 7-18. The package costs \$671. All the scoop is available at the Club office.

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MEDITERRANEAN AIR/SEA cruise arrangements have been finalized. The group will meet for their pre-trip meeting at the Coronado Club on Tuesday, Sept. 11. A film — *Palma Majorca* — will be shown followed by a question and answer period.

LAB NEWS Cartoonist

Felix Paints New Mexico

The artist who creates those curvy dolls and limber-limbed guys with the look of wonder on their faces for the safety cartoons on the LAB NEWS back page is Felix Padilla (7554).

The reason we run the cartoons in the same place every issue is that this is where we put the address on those copies which are mailed. And the reason we like Felix to draw them is because his drawings are better than most of the cartoons available nationally to house organs like the LAB NEWS.

Felix has been drawing cartoons for the paper since 1949. His "Sandia Seeds" used to be a regular feature before he took over the illustration for the safety program of the Plant Engineering organization. He works on his drawings between jobs as an office machine repairman.

"I like cartooning," Felix says, "because the idea is everything. The drawing must be simplified to the point where the idea is dominant. If you can make it humorous, then you've succeeded a little more."

The idea is also important in the landscape painting that Felix pursues after hours. His large acrylic and oil paintings reflect his feeling for the northern part of the State. He spends hours thinking of landscape details, working out the color combinations and making sketches before he starts one of his large canvasses. His landscapes are not literal representations of actual places. He searches his memory and combines features from the sketches he makes on hiking, camping and hunting trips. He strives for mood and drama in his painting.

As a painter, Felix is commercially successful. He's never had enough paintings on hand for a gallery show although he's had many invitations. Felix has entered the State Fair art show every year since 1940 and, except for the year they went ape for nonobjective art, his work has been accepted and exhibited.

As a painter Felix is mostly self-taught, although he did spend a couple of years in Los Angeles in art school before he entered the service. "That's where I really learned," Felix says. "I was stationed in England and France and spent most of my time in museums." • dg



FELIX PADILLA (7554) — artist and LAB NEWS cartoonist.

LET'S NOT STOP THEM,
FROM STARTING SCHOOL.
DRIVE CAREFULLY...

