

# LAB NEWS

VOL. 22, NO. 8

APRIL 10, 1970

SANDIA LABORATORIES · ALBUQUERQUE NEW MEXICO & LIVERMORE CALIFORNIA

## Sandians Participate

### SNAP 27 Generator On Board Apollo 13 Mission to Moon

The third manned mission to the moon—Apollo 13—is scheduled for lift off tomorrow. On board will be another SNAP 27 radioisotopic generator which will power an array of scientific experiments to be left on the lunar surface.

The SNAP 27 is the same as that deployed on the moon by astronauts of Apollo 12 which has been providing in excess of 70 watts of electricity since Nov. 19, 1969. It has been operating in a temperature range from -291°F to 283°F. Sandia Laboratories has responsibility for technical direction, quality assurance and safety aspects of the SNAP 27 program.

Al Stephenson of Isotope Projects Division 9521 and his team of Sandians loaded the plutonium 238 fuel capsule for SNAP 27 on board the Apollo 12 lunar module (LM) and will also load it on Apollo 13.

This work is done by the Sandia team working with personnel from the AEC's Albuquerque Operations.

Some difficulty was experienced by the Apollo 12 astronauts in removing the fuel capsule from its graphite cask mounted outside the LM. "The differential thermal expansion of the materials in the capsule and the cask in the lunar environment caused the fuel capsule to fit inside the cask more tightly than expected," Al says. "At the request of the AEC, the General Electric Company has slightly modified the fuel capsule to allow for greater clearance."

Leo Dunn (7264) is a new member of the Sandia loading team. He recently attended hypergolic fuels and launch pad safety courses at Cape Kennedy. Other team members include Jim Leonard (9521), Carl Sisson (1543), and Bob Wemple (9512).

Supervision of the SNAP 27 program is under the AEC's Albuquerque Operations Office.

Apollo 13 astronauts will deploy four scientific instruments on the moon's surface which will be powered by the SNAP

## WE SPONSOR TV COVERAGE

WE is again sponsoring live television coverage of the nation's moon-landing missions when Apollo 13 is launched on April 11. Launch coverage begins on Saturday, April 11, at 11 a.m. MST, on the CBS network.

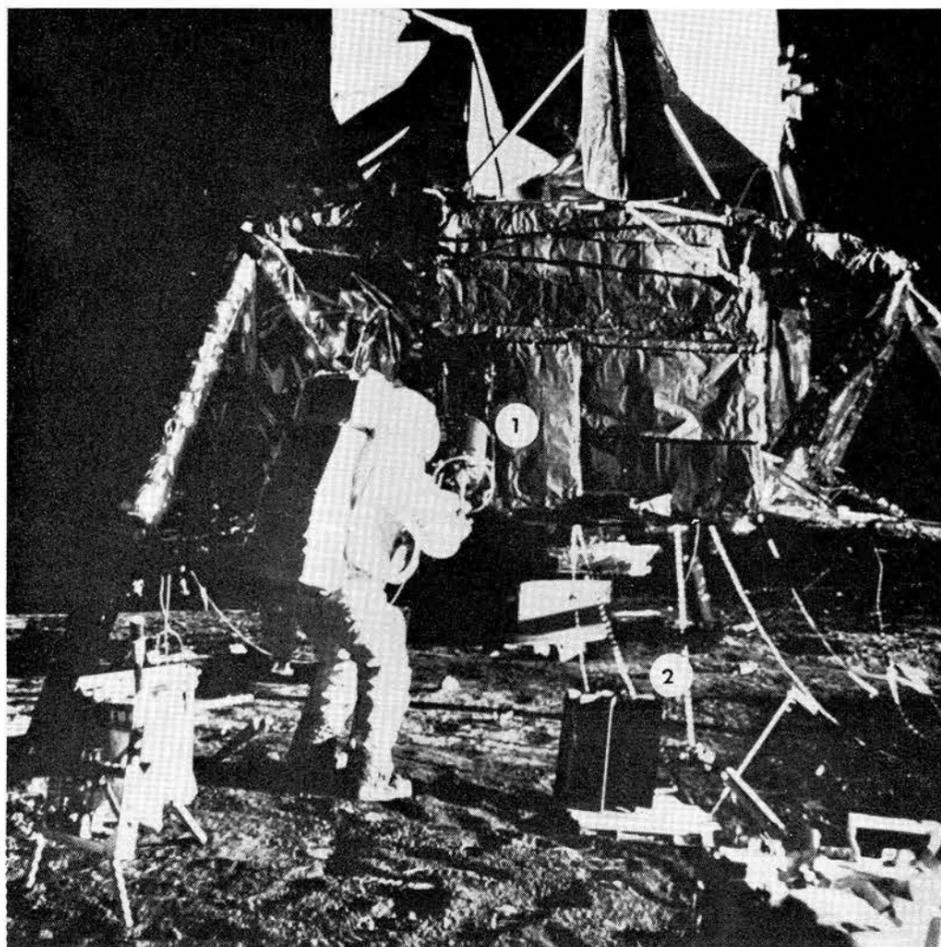
The Apollo 13 plan calls for spending 33 hours on the moon with two four-hour moon walks and live TV color coverage. The two lunar walks will be telecast on April 16, liftoff from the moon on April 17, and splashdown and recovery on Tuesday, April 21.

The landing craft Aquarius will touch down about 110 miles east of the last moon landing. The site, near a large crater called Fra Mauro, is in the lunar highlands.

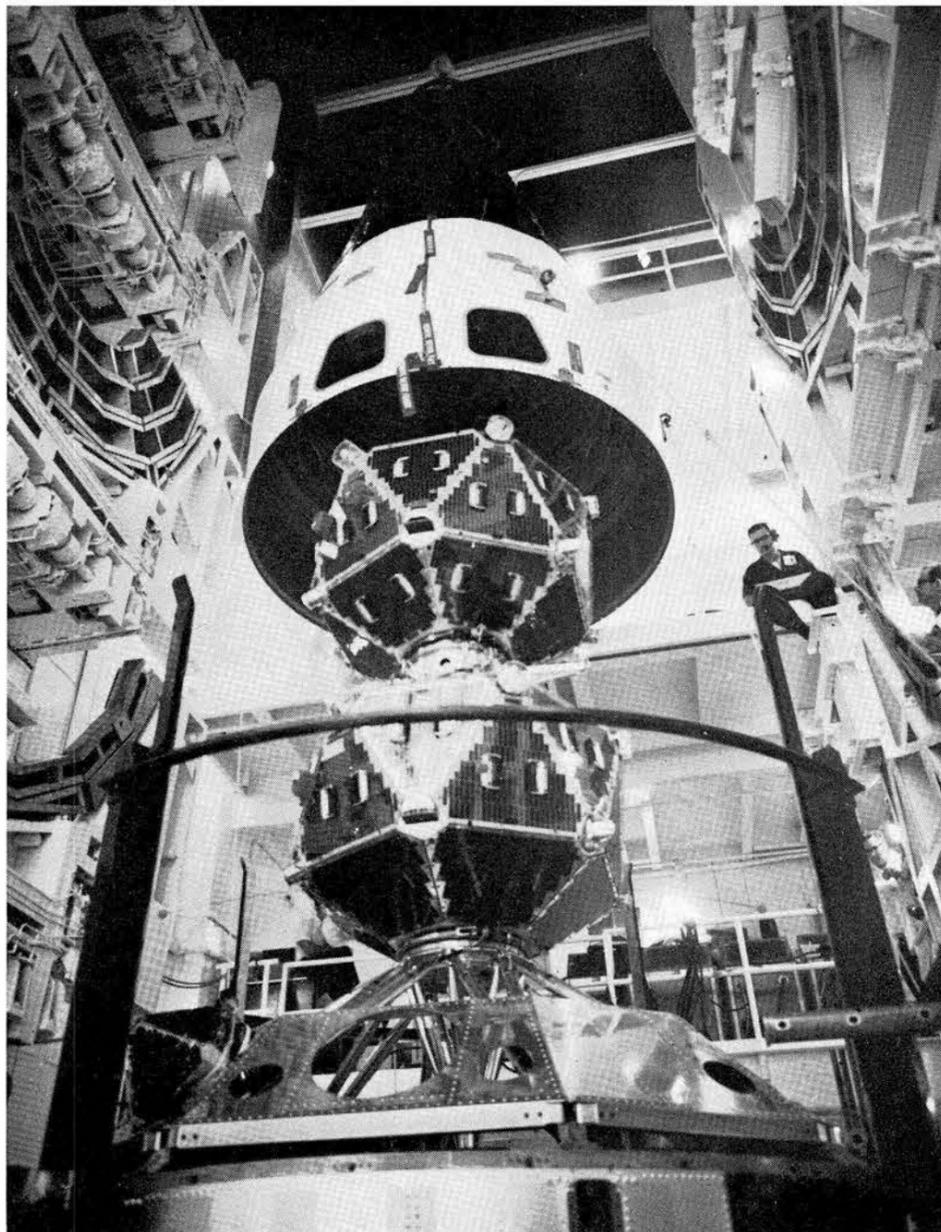
27. These include a passive seismic experiment to record meteor impacts or "moon-quakes"; a heat flow experiment with two probes to measure temperature changes in the moon's crust; a charged particle experiment in which the energy levels of particles in the moon environment will be measured with two sensor assemblies; and a cold cathode gauge experiment in which density variations in the lunar atmosphere will be sensed.

The AEC assigned Sandia the task of investigating and evaluating the safety aspects of SNAP systems in 1962. This task is carried out in cooperation with the work of the system designers and involves both ground and flight testing to ensure that the safety features of the devices will function as intended. Other aerospace nuclear systems investigated to date include SNAP 9A, SNAP 10A, SNAP 19, and the Apollo 11 heat source.

Since 1966 Sandia has also provided technical direction for the AEC's space isotope power program.



DURING LAST moon excursion, SNAP 27 fuel capsule (1) is removed from graphite cask outside the LM by Apollo 12 astronaut for insertion into the radioisotopic generator (2). Apollo 13 will carry another SNAP 27 generator to power an array of scientific experiments to be left on the lunar surface.



VELA V SATELLITE pair being installed atop a Titan III-C booster at Cape Kennedy. Nose fairing of Titan is visible above the two satellites.

## Sandia Providing Systems Aboard Vela V-B Satellites

Sandia Laboratories provided advanced logics systems and some of the sensors for Vela V-B, a pair of nuclear detonation detection satellites that were launched from Cape Kennedy on Wednesday, April 8.

The two satellites—lifted to orbit by a Titan III-C booster—are the 11th and 12th members of a series of highly successful Vela satellites. The first Vela pair was orbited in October 1963; the most recent, Vela V, on May 23, 1969.

The Vela V-B pair, almost identical to those on Vela V, are orbiting about 60,000 miles from earth. Each satellite is earth-oriented, so that one part of the spacecraft is always pointing toward the earth. The twins are located 180 degrees from each other—at opposite sides of their circular orbit—so that all parts of the earth's surface are under surveillance at all times.

Sandia has been responsible for design and fabrication of the logics systems and special pre-launch test equipment for all of the Vela satellites. The Labs also designed and built the optical and electromagnetic pulse (EMP) detectors for Velas II, IV, V and V-B.

Work on the Vela project is centered in Space Systems Department 9210 under Morgan Kramm, but many organizations throughout the Laboratories have made contributions. Sensor development is the responsibility of Satellite Sensors Divisions 9213 under Brick Dumas. Fabrication and component procurement are responsibilities of Vela Technology Division 9217 under Dave Denton. Responsibility for logic systems development and test operations is shared by Dick Spalding, supervisor of Division 9214, and Dave Henry, supervisor of Division 9211.

By use of integrated circuits, the capabilities of Velas V and V-B have been increased greatly. The five foot-diameter Vela satellites were developed to detect nuclear bursts deep in the earth's atmos-

phere and in space, but have also produced much valuable information on natural space radiation. Last July, for instance, Los Alamos Scientific Laboratory announced that instruments aboard the two Vela V satellites had located a new galactic x-ray source, SCO XR-1.

Data gathered by the satellites' array of sensors is processed by an onboard logics system and telemetered to Air Force Satellite Control Facility ground stations around the world.

About 24 hours after launch, the satellites reached their 60,000-mile apogee. One was then accelerated into a circular orbit by a command from Earth; the other was injected into the same circular orbit about 52 hours later. After second injection, the two spacecraft are about 180° apart in their orbit.

The Vela Satellite Program is the responsibility of the Advanced Research Projects Agency (ARPA) of the Department of Defense. Air Force participation includes development of the spacecraft, launch operation, and control of the satellites in orbit. Management of this effort is under the Air Force Systems Command's Space & Missile Systems organization, headquartered in Los Angeles.



A FAMILIAR FACE to Sandians who date back to the late 40's is that of Paul Larsen, right, the Laboratories' last director while it was under the Univ. of California. Now with the Department of Transportation, Mr. Larsen is shown here with Bob Henderson (2000) during a recent visit to Sandia.

## Credit Union Moving Into New Building on April 17

The Sandia Laboratory Federal Credit Union will be closed Friday, April 17, while equipment is moved into the new building. Business will resume at 8 a.m. on Monday, April 20.

Grand opening ceremonies for the new building will be held Saturday, May 2, from 10:30 to 2 p.m. All employees are invited to attend. Refreshments will be served.

# Retiring



**JIM LENZ**  
Drafting 8252



**LES ROWE**  
Manager, Plant Services 8220



**CLARA HEWITT**  
Computing 8322



**EMILY BURKHALDER**  
Affirmative Action, Compliance & Personnel  
8217



**GRACE MATUSKA**  
Drafting 8252



**IRMA OLSON**  
Library 8232

# LIVERMORE NEWS

VOL. 22, NO. 8

SANDIA LABORATORIES

APRIL 10, 1970



**ED BALDWIN**  
Manager, Technical Information & Budgeting  
8230

## Noel Cooley Awarded Master's Degree in EE

Noel Cooley received a master of science degree in electrical engineering recently from San Jose State College.



Noel is an electrical engineer in Post Development Testing Division 8181. He has been involved in the design or instrumentation for telemetry systems since joining Sandia Laboratories Livermore in February 1967. Previously he worked as an engineer at Lockheed Missile and Space Company and from 1963-65 served with the U. S. Army Signal Corps as a maintenance officer assigned to Air Defense Command.

He received his BS degree in electrical engineering from Utah State University in 1963.

Most of his graduate work was completed under Sandia's Educational Aids Program.



**UBBIE HAMMER**  
Technical Publications, Art & Photography  
8231

## Computer Reservations at California State Parks

Who ever thought 10 years ago that we would be using the computer to get away from it all? But that's what its come to—and it may have its advantages.

Have you ever headed out for one of the state parks that California is blessed with? You envision the pounding surf near your campsite or sleeping in a grove of majestic redwoods that night. Finally you arrive at your destination only to find that the limited number of campsites available are filled up. That shoots your weekend.

Not so this year. You can go to the Southland Shopping Center in Hayward, or Westgate Mall in San Jose, or Sun Valley Mall near Walnut Creek and make your reservations by computer.

The operator inserts the necessary information into the computer and in a moment it flashes back on a screen so that you can confirm its accuracy. From the shopping centers the information is transmitted to a central computer which has complete information on the state's approximately 6600 campsites. If space is available in the park you selected, the computer immediately prints the ticket which you pay for at that time. Costs are \$1.00 to \$3.50 per night, depending on the campsite, plus \$1.00 reservation fee.

Reservations can be made as early as Tuesday for the following weekend. The only thing the computer doesn't guarantee is the number of ants that may have reservations at the same spot or whether the weather will wash out your wonderful weekend.



**PAUL STEWART**  
Physical Properties Acceptance & Evaluation  
8156

## Congratulations

Mr. and Mrs. Roger Everett (8351), a daughter, Jill Ann, March 26.

## Take Note

Rudy Johnson of Metallurgy Division 8312 was the author of three technical articles published in national magazines recently: "Fabricating Narrow Conductors on Large, Flexible Substrates," in the February issue of PHOTO/CHEMICAL FABRICATION; "A Reliable Test for Laminate-Electroplated Copper Adhesion," in February issue of ELECTRONIC PACKAGING AND PRODUCTION; and "Electroforming a Precision Punch and Die," in the March issue of PRODUCTS FINISHING.

Mickey Rindone, supervisor of Mechanical Design Drafting Section 8252-1, was the featured speaker at a recent technical meeting of the Northern California Circuits Association. The title of his talk was "True Position, Dimensioning and Tolerancing," and it described the application of true position principles to circuit board drawings.

Bill Landt (8139) shot a low net score of 69 to win the first place trophy in the Sandia Employees Golf Club tournament played at Las Positas Golf Club March 14. Dick Ballard (8212) and John Lindman

(9125-1) tied for second place with scores of 72. Dick also won the "fewest putts" feature of the tournament, and John Barnhouse (8226) was closest to the pin in the hole-in-one contest.

Bruce Held of Environmental Health and Medical Services Division 8263 will be one of three panelists discussing air pollution during a forum at the Washington High School Auditorium in Fremont at 8 p.m. Monday, April 13. Appearing as panelists with Bruce who is a member of the State Environmental Study Council are State Senator Nicholas Petris and Milton Feldstein, chairman of the Bay Area Air Pollution Control District. Panelists and speakers at the four remaining sessions of the forum—held weekly through May 11—include university professors and representatives of government and civic agencies. Tickets are \$1 per person.

Vern Bailey (8351) and J. Denavit of Northwestern University were co-authors of an article entitled "Nonlinear Oscillations in a Collisionless Plasma," which appeared in the February issue of PHYSICS OF FLUIDS.

## Travel Gem

As a late arrival at the motel in Knoxville, Tenn., that clear, bright January night, Tom Dadian's (8312) big interest was to find his room, park the car and get to bed.

Early the next morning, he discovered that several inches of snow had fallen during the night. After brushing the snow from the windows, roof, hood and trunk deck, Tom decided to warm up his rented car before heading for Oak Rridge. It was then he discovered his key wouldn't unlock the door. Lock frozen? What now?

Looking around, Tom realized that the snow-formed silhouettes of two other cars parked next to him were similar to his. Removing the snow from the license plate of the freshly cleaned car confirmed what he suspected. He'd cleaned the wrong car.

"I really did a snazzy cleaning job on it, too," bemoans Tom. "Bet the guy who owned the car thought the service at that motel was the greatest!"

(Do you have a Travel Gem? Call ext. 2522).

## LAB NEWS

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### SANDIA LABORATORIES

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LIVERMORE, CALIFORNIA

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Area 505-264-1053

ZIP 87115

In Livermore Area 415-447-2111

John Shunny is Editor, Don Graham Ass't. Editor

Cherry Lou Burns & Don Wolfe are Staff Writers

Matt Connors & Lorena Schneider

are Staff Writers in Livermore

Bill Laskar is Photographer

Norma Taylor / All The Rest

# Retiring



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**GUY PEARSON**  
Weapons Programming 1522



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Instrument Repair & Calibration 7513



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**RICHARD JACKSON**  
Project Design Definition 7614



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Special Test Equipment Design 2441



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Industrial Medicine 3321



**HOWARD WARDEN**  
Records Management 3428



**WILBUR CRONK**  
Product Design Definition 7612



**EDITH IRWIN**  
Inspection Calibration 4213



**ERNST KRAHLING**  
Inspection Calibration 4213



**MYRTLE DAVIS**  
Tester Fabrication 4233



**DORIS WELCH**  
Security Education 3512



**KAY WRIGHT**  
Executive Secretary 3500



**EINAR MORTERUD**  
Instrument Repair & Calibration 7513



**JAMES KIMBROUGH**  
Patrol Division 3522



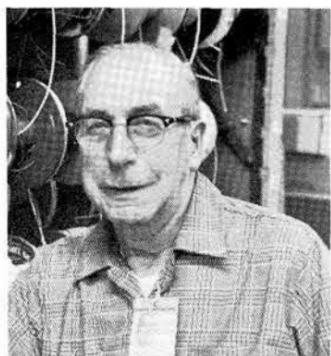
**JUAN JOJOLA**  
Machine Shop 4253



**ADELINE SCHARPING**  
Secretarial Services 3256



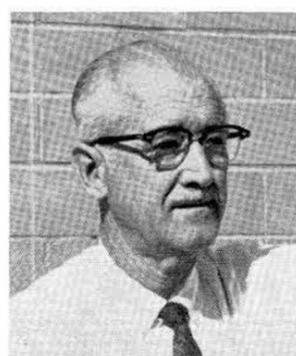
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Printing Services 3452



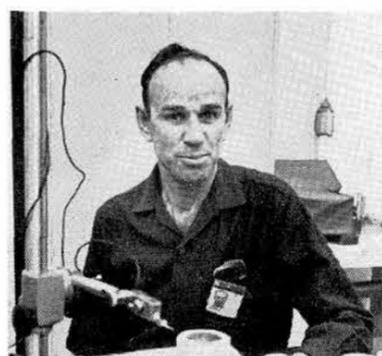
**CARLOS BACA**  
General Stores 4613



**JOSEPH PLACEK**  
Explosive Components 2342



**WENDELL DAVIS**  
Acceptance Equipment  
Design Definition 7615



**JOHN COOPER**  
Inspection Calibration 4213



**JOHN ROHRER**  
Spectroscopy 5525

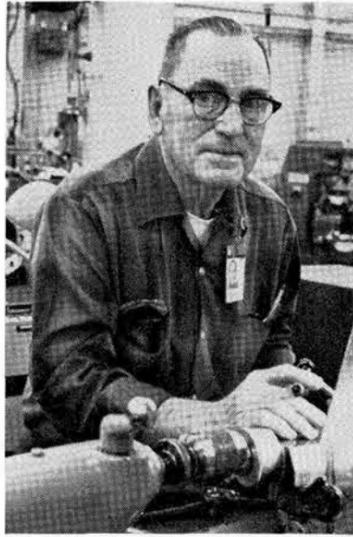
# Retiring



**CARL DAHL**  
Circuit Components 2632



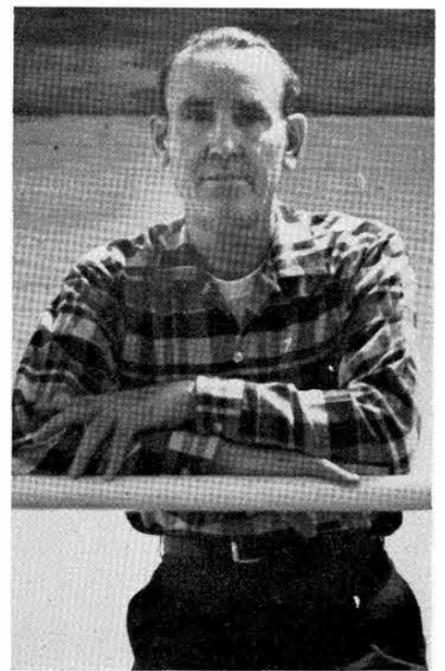
**LEONARD BEST**  
Vouchering 4135



**ALFRED LANEVILLE**  
Machine Shop 4252-3



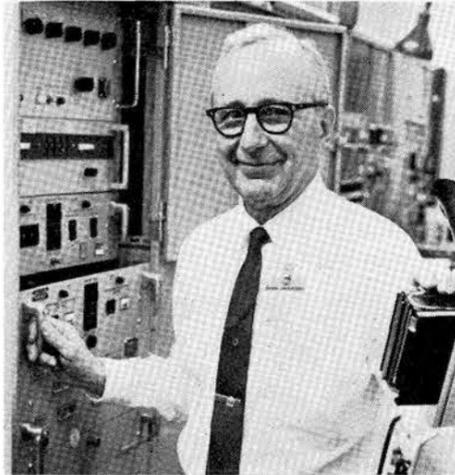
**MAURICE GRANT**  
Contractor Relations 4335



**JIM FRENCH**  
Stockkeeper 4614-5



**CECIL MEWHORTER**  
Machine Shop 4252-1



**MIKE DIBELLA**  
Acceptance Equipment Design Definition 7615



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Electronics 4231



**RALPH MARTIN**  
Adds Development 7625



**LESTER WICKE**  
Shop Services 4211



**JOHN DANKWORTH**  
Connectors & Cables 2634



**ROBERT PATTON**  
Microcircuit Technology 2633



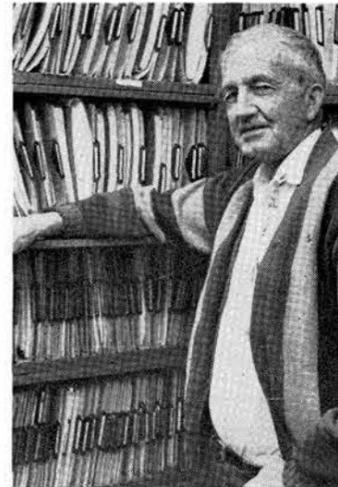
**GEORGE WRIGHT**  
Track & Guns 7325



**JOHN MITCHELL**  
Test Support Maintenance 4518-1



**D. C. DAVIS**  
Remote Areas Maintenance 4518



**HERMAN KIRBY**  
Instrument Service 5713



**JOHNNIE HARLOW**  
Patrol Division 3523



**CHARLES STEWART**  
Electromechanical Components 7433



**TOM HENDERSON**  
Machine Shop 4253



**HONORATO SANCHEZ**  
Tool Crib 4212-1



**BILL SEELBACH**  
Supervisor, Machine Shop 4252-2



**GEORGE KROSS**  
Explosive Applications 2346



**LILLIAN JACKSON**  
Data Center 9413



**REID ARRINGTON**  
Track & Guns 7325



**JOHN FRANKLIN**  
Plant Modification 4513

## Service Awards

### 20 YEARS



Evelyn Garman 9415  
Frederick Palkovic 4511  
Benton Jolliffe 7422

### 15 YEARS



Allen Church 9132  
James Hawley 7263



John Kay 4542  
Richard Koppel 7372  
Charles Mauck 8162



Louis Mecklenburg 1514  
Robert Onan 2623



Marian Schooley 3256  
Charles Simpson 7523

### 10 YEARS

John Gallagher 2331, Stanley Horn 4113, Jesse Allen 9217, Satoru Hirota 8252, James Langenhorst 7261, and Britt-Marie Manrow 8121.

## Events Calendar

- April 11-12, 16-19—Shakespeare's "Cymbeline." Old Town Studio, 1208 Rio Grande NW.
- April 11—Jemez stonehenge in Peralta Canyon. N.M. Mountain Club, leader Peter Harris, tel. 898-3600.
- April 11—YWCA chartered bus trip to Santo Domingo Pueblo, Rancho Encantado at Tesuque Pueblo, and Santa Fe museums. For information tel. 247-8841.
- April 15—Albuquerque Symphony Orchestra, Robert Gutter, guest conductor. Popejoy Hall.
- April 16-18, 23-25—The Music Theatre's production of "Pajama Game." Menaul High auditorium.
- April 17-18—Hike in San Mateo Mountains. N.M. Mountain Club, leader Ray Nethers, tel. 344-8437.
- April 20—"Paris—Rive Gauche" (Street Singers of Paris), Popejoy Hall.

## Supervisory Appointment

LLOYD NELSON to supervisor, Material Sciences Research Division I 5224, effective April 1.

After 10 years as a staff member in the chemical research department of Bell Laboratories, Lloyd came to Sandia in 1963 as a consultant. A year later he joined the staff of the division of which he is now supervisor. His activities have included research in high temperature science where he has dealt with problems of weapons simulation, the study of reentry phenomena, and the properties of materials.

Lloyd has PhB, SM, and PhD degrees (the latter two in physical chemistry) from the University of Chicago.

In WW II he served three years in the Pacific aboard a patrol craft and was discharged from the Navy as a Lieutenant (jg).

Lloyd, his wife Lorna, and their five children live at 3900 Andrew Dr. NE.



## Congratulations

Mr. and Mrs. Shawkeet Hindi (3452-1), a son, Dion Azeez, March 24.

Mr. and Mrs. John Murphy (3428-4), a daughter, Maureen Ann, March 30.

Mr. and Mrs. William Hale (7262), a son, Andrew Scott, March 26.



SANDIA LABORATORIES' Board of Directors met in Albuquerque last month for a briefing on current programs and future plans. Shown here (l to r) are H. G. Mehlhouse, president, Western Electric Company; A. P. Clow, executive vice president, WE; J. T. West, executive vice president, WE; President Hornbeck; D. W. Thomas, executive vice president, Bell Telephone Laboratories; P. E. Hogin, executive vice president, WE; and J. B. Fisk, president, BTL.

## Sandia and AVS Co-Sponsor Surface Science Symposium

The New Mexico Section of the American Vacuum Society and Sandia Laboratories will co-sponsor a symposium on Surface Science April 22-24 at Western Skies Motel.

According to Program Chairman Leonard Beavis (2613), discussions on surfaces and surface related phenomena by invited speakers will be followed by informal short talks and slide presentations on recent theoretical or experimental results.

The speakers and their subjects are: Professor F. M. Fowkes, Lehigh University, "Interfacial Adhesion"; Professor M. B. Webb, University of Wisconsin, "Interactions of Electrons with Surfaces"; Dr. A. B. Fowler, IBM Research, "Surface Conduction"; Professor J. B. Blakely, Cornell University (former Sandia summer faculty employee), "Surface Diffusion"; Professor Juergen Schroer, Illinois State University, "The Ion Microprobe—A Survey"; Dr. Thomas Buck, Bell Telephone Laboratories, "Surface Studies by Rutherford Scattering and Ion Channeling"; and David Smith, University of Minnesota, "Surface Analysis by Low-Energy Ion Scattering."

Contributed papers include one by Jerry Cuderman (5235) and another by Jim Eberhart, former Sandian now with Argonne National Laboratory.

In addition to the symposium and the annual meeting of the New Mexico AVS Section, the second in a series of courses

on vacuum technology will be offered. The course will survey the application of vacuum techniques to processes and to physical and chemical experiments.

## Death



Pat Homan, an electrician in Plant Maintenance Division 4512, died March 29 after an illness. He was 58.

He had worked at Sandia Laboratories since February 1951.

Survivors include his widow, a daughter and two sons.

## LAB NEWS

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## 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.

### FOR SALE

#### MISCELLANEOUS

- AQHA REG. 7-yr.-old sorrel mare, will foal June 1970. Eiffert, 898-0324.
- ANTIQUE GUNS: Colt, Stevens, Prescott & Flintlock pistols, trade for old knives or daggers or Japanese swords. Smitha, 299-1096.
- "S" BONANZA, 1/5 interest in 5-man partnership, low time, fully equipped aircraft, 3 axis autopilot, DME. Gillette, 298-2868.
- REFRIGERATOR, Wards, 12 1/2 cu. ft., \$50. Forsman, 299-5570.
- ELECTRIC GUITAR & amplifier, Victoria single P.U., Kalamazoo amplifier, 35w, mod. 2, \$55. Gallagher, 268-1988.
- RABBITS, senior doe, New Zealand white, others. Browning, 2616 Virginia NE, 299-0169.
- TOY FOX TERRIER puppies, George & Martha born Feb. 22, \$25 ea. Glass, 298-0842.
- 4x6' baby blue shag rug, \$5; 11x12' beige tweed carpet, \$15. Touryan, 265-2284.
- LEFT-HANDED golf clubs complete, Clubster cart; RCA portable 19" TV; Admiral stereo; projector, screen, misc. Johnson, 218 Tennessee NE.
- BOAT TRAILER WHEELS, 3, 2 new tires & tubes, size 4.80 x 4.8. Mead, 877-1795.
- 8" TABLE SAW; 4" joiner; 30" wood lathe; 4 motors, electric; other tools. Miller, 5308 Constitution NE, 255-8993.
- 16' 1968 CARDINAL deluxe camper trailer, sleeps 6, stove, oven, heater, ice box, 10-gal. water tank, equalizer hitch. Sullivan, 299-1348 or 255-9218.
- TEMPO GUITAR, hollow body, dual pickups, \$55; Heathkit guitar amplifier, 8" speaker, 18 watts, \$30. Swiss, 265-5346.
- MOTORCYCLE, 66 Greeves D model dirt bike, completely stock with no lights, no muffler, 225 lbs., 28 HP, \$400. Snelling, 268-5895.

- 45 AUTOMATIC, 1911 model, \$50, w/accessories & ammo, \$60. McDonald, 299-9269.
- '68 YAMAHA 350cc, 6500 miles, twin pipes, 15 speed trans., windshield. Eaves, 299-7728.
- 26" SCHWINN girl's bicycle, \$10; 24" Goodyear boy's bicycle, \$10. Vigil, 296-3590 after 5.
- SPARE TIRE RACK for tailgate of I-H Scout, \$6.95. Baxter, 344-7601.
- 12' ALUM. SKI BOAT, trailer, new 33 HP Johnson, ski equipment, \$400. Lewis, 268-3835.
- 12X60 CHICKASHA mobile home w/4x10 tipout, set up on lot w/fenced back yard & underpinning, completely furnished, \$4000. Liguori, 665-6559.
- ALEXANDER HAMILTON MODERN BUSINESS, 26 vols., make offer; Dynad MK III w/preamp, \$65 or offer. Anderson, 264-7762.
- SLIDE-IN CAMPER SHELL, fits long wheelbase pickup w/wide bed, lightweight. Causey, 299-0089.
- BRAIDED RUG w/mat, 9x12, \$30 or best offer. Justice, 299-3254.
- MINIATURE DACHSHUNDS, AKC reg. Hudson, 296-3484.
- AQHA MARE, 7 year; set Spanish records by Linaphone; Coronet, Cleveland, w/case. Berry, 898-1400.
- WOODEN BOAT w/trailer, 14' long, \$100. Trujillo, 864-4695.
- SCOTT 260 stereo preamp/amplifier, 70 watts, \$280 new, sell for \$75. Kjeldgaard, 296-2212.
- RECORD CHANGER, 4-spnd., Collora Continental, best offer. Carli, 298-9271.
- GIBSON SG solid body electric guitar, walnut finish, w/case, 2 pickups; 1 Humbucking & 1 Les Paul. Cordova, 344-3110.
- ENTRANCE DOOR, colonial style, std. size, \$20. Thompson, 298-8954.
- GARAGE SALE: April 11-12: teen & adult clothing, garden tools, small appliances, skates & toys, record player, auto accessories, more. Dadd, 9706 Morrow NE, 299-6330.
- CHIHUAHUA PUPPIES, 7 wks. old April 20, no papers, \$25; brass bed, \$65; garage sale: misc. items. Graves, 344-3008.
- FREE to good homes, mixed beagle puppies. McCutchan, 255-7215.
- BABY CRIB & mattress; high chair; bumper pad. Catch, 268-8095 after 5:30.
- 6 CU. FT. Kelvinator chest freezer, \$35. Herity, 299-3800.
- AIREDALE, 14 mos. old, spayed female, needs space, loves people. Smith, 344-9335.
- '70 35-SUZUKI, 1800-mm, 6-spnd. trans., 110 mph, \$650 or best offer. Romero, 255-4322.
- HORSES: 9-yr.-old quarterhorse mare, \$150; 11-yr.-old buckskin mare, \$85. Folkins, (1)-867-2825.

- DINETTE SET, table w/extra leaf, 6 chairs, newly recovered. Windle, 344-6958.
- ELIMINATOR SLICKS w/tubes, 900/950x14, 4-ply nylon, new, \$50. Harlow, 299-1495.
- BOY'S - GIRL'S convertible 20" bicycle; factory service manuals for '63 Buicks. Robertson, 298-2388.
- AKC BEAGLE puppies, champion bloodlines. Palkovic, 255-4084.
- ONE membership Albuquerque Athletic Club, save \$50 over new price, big savings on dues for second year. Schulze, 299-0152.
- TWO male Bassett hounds, AKC reg.; car top carrier. Loucks, 296-6001.
- AUTOMATIC wire baler; tractor w/mower, 2 550-gal. gas tanks w/stands & meters; pumice block plant. Perez, 898-3002.
- BUNK BEDS, mattresses, \$30; 2 air mattresses, heavy duty, both \$5; chemistry set, microscope, \$7; console radio, \$8. Boling, 282-3256.
- BABY BED & mattress; bassinets w/mattress, liner & skirt; bathnettle; car bed; training seat & other baby items; 3/4 roll-away bed. Hart, 256-2811.
- AMATEUR RADIO EQUIP. Davenport, 256-9315.
- REMINGTON 12 ga. pump w/rib, \$110; wood skis, \$20; Kastinger boots, \$18; Head GS (205), Lang standards, 9 1/2 M. Benson, 268-9727.
- TAPPAN auto. dishwasher; monaural hi-fi; Heath tuner, amp, & preamp, Weathers turntable, Viking tape & A-R enclosure. Erickson, 299-0880.
- 13 1/2' FIBERGLASS rowboat w/oars, \$150; MFG car top fisherman special. Fox, 299-9332.
- AKAI tape recorder, model 355, 10 mos. old, \$800 new, any offer considered; 40HP Mercury engine, best over \$200. Cook, 296-5271.
- JR. GOLF CLUBS: two exterior house doors. Dickason, 299-8125.
- OFFICE CHAIRS, steel, armless, upholstered, your choice, \$8. Gluwa, 299-8027.
- CARS AND TRUCKS
- 1968 JEEP COMMANDO, V6 engine, low mileage. Radio and tire rack. Siddens, 298-8923.
- '67 CHEVROLET Bel Aire wagon, 8-cyl., AC, PS, AT. Beller, 299-0205.
- '59 CHEV Kingswood 9-passenger wagon, AT, V8, PS, PB, AC, \$300 or best offer. Dunbar, 299-2686 after 5.
- 1929 MODEL A. Taylor, 299-5559 after 5:30.
- '67 VW Fastback, AC, radio, \$1600 fully serviced or \$1500 as is. Russell, 299-6921.
- '66 AUSTIN HEALEY, MK 3000. Kohl, 268-3754.
- '64 DKW Junior sedan, \$200. Rogers, 265-2336.

- '65 PONT. Tempest V8, AT, \$975. Cox, 256-1977.
- '69 RAMBLER 2-dr., 6-cyl., stick shift, R&H, less than 15,000 miles, below book value — \$1400, best offer. Gunn, 298-3178 evenings.
- '68 TRAVELALL, chrome hub caps & rear bumper, Kelsey Hayes brake control, Easy Lift frame hitch, underseat heater, windshield washer, etc. Loeppke, 299-7338.
- '63 CHEV Impala 4-dr. sedan, AC, AT, PB, PS, \$600. Burnett, 298-1078.
- '68 TOYOTA Corona Phase III, 4-dr., bucket seats, 4-spnd. trans., Bowerman, 243-3660.
- '63 PONTIAC Catalina, 2-dr. sedan, PS, AC, AT, radio, 50,000 miles. Browning, 299-6384.
- '50 MERC., R&H, std. trans. w/OD; new engine for sale or trade for 250cc or larger dirt bike. Poole, 298-6025.
- '57 CHEV Bel Air stationwagon, 6-pass., 283 CID V8, PS, PB, AT, \$495. Gray, 265-1883.
- '62 FORD tandem dump truck, T-850, best offer. Perez, 898-3002.
- '66 OPEL Kadette Super Sports, low mileage, below book, \$920 or best offer. Davis, 268-0724.
- '37 CADILLAC, one owner original, motor, body, interior, near perfect, needs paint. Levesque, 299-1215.
- '63 SCOUT, 4-wd, hubs, 44,000 miles. Eggert, 843-2994, M-F 8-4.
- REAL ESTATE
- CUSTOM 3-bdr., brick veneer, aluminum siding, family rm., 1 1/2 baths, hw/f, acrilan carpet, sprinklers, \$19,800 total, assume 5 3/4%. O'Neal, 298-2859.
- LAND south of Moriarity, 20, 40, 80-acre tracts. Ross, 265-4990.
- DUPLEX, 2-bdr., electric kitchens, cfa heat, AC, private landscaped yards, NE heights, near shopping, schools, buses. Stewart, 298-0439.
- 3-BDR., 1 1/2 baths, paneled den w/fp, lg. kitchen, LR, new carpet & drapes throughout. Walker, 298-2157.
- APPLE ORCHARD, 14 acres, approx. 275 trees, some equip., 7-rm. home, 4 miles south Los Lunas Hwy. 85. Skender, 865-7326.
- 5-BDR., 1 1/2 baths, lg. den, garage, AC, carpeted, 5 3/4% loan, \$20,900 total price. Hammons, 296-1142.
- 3-BDR., 2-car garage, acrilan over hdwd., 1 1/2 baths, huge rooms/storage; SE locale. Wilkins, 268-5971.
- DELLWOOD ADDITION, brick, 3-bdr., den, fp, 1900 sq. ft., 2-car garage, flexible financing, \$27,500, 2924 Avenida Nevada NE, 299-2175.
- FOR RENT
- LOVELY ROOM and excellent meals in private home, adjoining bath, private entrance. Patterson, 256-2925.

- UNFURNISHED apartment, 2-bdr., 2 baths, covered parking, NE, very private, \$180/mo. including utilities, available June 1. Gauster, 255-1983.
- WANTED
- CANOE, 10' -14', or Kayak. Tiefs, 299-2763.
- CAR POOL member from area of Comanche NE between Louisiana & Wyoming to gates 1, 10, or 11. Long, 296-5248.
- CHARGER for electric fence. Baxter, 344-7601.
- BABY sitting in my home, NE heights. Williams, 344-1000.
- FLEXOWRITER typewriter w/punched paper tape output. Sander, 299-5761.
- FOLD-AWAY ping pong table; M-1 carbine. Parsons, 299-4548.
- WESTERN SADDLE. West, 255-0456.
- UTILITY TRAILER, reasonable condition, reasonable price; also bumper hitch. Frauenglass, 265-7372.
- COVERED UTILITY TRAILER or horse trailer, any condition. Davenport, 256-9315.
- BASKETBALL steel pole & backboard in good condition; upright freezer, 11 or 14 cu. ft., in good condition. Garcia, 256-7606 after 5:30.
- WANT TO RENT 3-bdr. house, furnished, from May 15 to Aug. 30. Eaton, 299-7271.
- WANT TO RENT 3-bdr. house, July & Aug. for my parents & college-age brother & sister, or trade for house in Oaxaca, Mexico. Erdman, 298-3097.
- LOST & FOUND
- FOUND—Dark blue necktie w/blue & beige design; blue chiffon scarf, ladies white cloth glove, ladies black cloth glove, silver earring, gold button, pink & crystal earring, gold-colored oval drop earring, flowered chiffon scarf. LOST AND FOUND, tel. 264-2757, Bldg. 832.
- NEXT DEADLINE FOR SHOPPING CENTER ADS 12 NOON APRIL 17



FIELDS, W. C. is the kindly-old-gentleman in "Mississippi"—Coronado Club, April 16. Ann Dunsworth (3417) just called his bluff.

## Take Note

Two Sandians were recently elected to office in the League of United Latin American Citizens (LULAC). They are Manny Chavez (4151), who will serve as vice president, and Tony Chavez (7513), council publicity director. Areas of concern to the League include education, employment, civil rights, housing, and economic development.

Paul Adams, supervisor of Heat, Plasma, Climatic, Towers Division 7323, has been named director of the Test Measurement Division of the Instrument Society of America (ISA). The society is concerned with the application of instrumentation and automatic control in industrial, laboratory, biophysical, marine, and space environments. ISA has an international membership exceeding 20,000.

An article on "Cowboy Artists of America" in the April issue of AMERICAN ARTIST includes a photograph of an oil painting "The Weighing Gate" by Gordon Snidow (3417-3).

The author, Joe Beeler, writes about how the group was organized in 1965 and now includes painters and sculptors who "capture the drama and beauty of the American West."

Don Lundergan (5163) will present "Stress Waves in an Elementary Composite" at the 5100 Staff Seminar April 14. The seminar meets at 8:30 a.m. in Rm. 201, Bldg. 806.

## ECP Funds Aid Rubella Clinic

The Sandia ECP committee has granted \$750 from the reserve fund to assist in the community effort to wipe out Rubella (three-day or German measles) at an immunization clinic planned for Bernalillo County the weeks of April 13 and 20.

During the 1964-65 Rubella epidemic, some 20,000 to 30,000 babies were born with birth defects in the United States. It is estimated that from 75 to 90 percent of the children in New Mexico schools for the deaf are Rubella children. Another Rubella epidemic is predicted for 1970-71. Yet the newly-discovered vaccine—if administered to all children ages one to puberty—can wipe out the disease as surely as polio was conquered only a few years ago.

The clinic is being sponsored by the National Foundation and other volunteer agencies and the Department of Health and Social Services. Some \$50,000 will be needed to make the effort a success.

Jack Merillat (3120) is chairman of the ECP committee.



FLY ME TO THE MOON—But let's settle for a short cut. Moon rocks engage attention of pretty Sandian in lobby of Bldg. 802 last week. Display, set up by Ron Day (3131) through UNM, proved to be real crowd pleaser.

## Coronado Club Activities

# Taxpayers Bawl Tomorrow; W. C. Fields Comedy, April 10

Tomorrow night the citizen gets a break at the Taxpayers Bawl. The bash at the Coronado Club starts with cocktails at 6:30, a tremendous Chinese food buffet at 7, and dancing to Phil Graham's orchestra from 9 to midnight. It's designed to make you forget Form 1040 and the surtax.

## Classic Comedy Night

"Mississippi" with W. C. Fields, Bing Crosby and Joan Bennett is the classic film booked for showing at the Club on Thursday, April 16, at 8 p.m. A happy hour will start at 7 p.m. Admission is free to members and families.

## Social Hours

Tonight Frank Chewiwie will make the happy music while the southern fried chicken buffet is spread. Social hours start right after work on Friday evenings and continue with special prices until 9 p.m. The buffet line is open from 6 to 8 p.m. while the band plays for dancing from 6 to 9 p.m. Then the TGIF crowd moves to the main lounge where Pat Reich and piano entertain with a sing-along until midnight.

On Friday, April 17, the Mexican food buffet is scheduled with Tommy Kelly and the smiling Irishmen booked for the bandstand.

The Club's famous chuckwagon roast beef will be served on Friday, April 24, while Gappy Maestas' big band plays for dancing.

In the meantime, the midweek happy hour continues on Tuesday evenings from 5 to 8 p.m.

## Soul Session

Rod King and the Soul Knights return to the Club Saturday, April 25, for a repeat of the "Soul Session" formula that has been so successful for the past few months. Admission is free to members (guests 50 cents) and happy hour prices are in effect all evening. The bash runs from 8:30 to 12:30 and the dancing is something else.

## Sanado Club

Spring styles will be modeled at the Sanado Woman's Club sherry luncheon Tuesday, April 14. The fashion show chairman is Mrs. George Dennis. Reservations should be made today with Mrs. Keith Smith, 1508 Valencia NE.

## Junior Bowlers

The Coronado Club junior bowling team swept 14 of 20 trophies awarded in the recent city tournament, reports coach Joe Woodley (7614). Winners included Karen Gabaldon who took first place in singles class C and also in the class C all events category. In the Jr./Sr. division, the Coronado Club Jr. Pros tied for first place. Team members are Greg Fitch, Roger Canard, Mark Keller and Bob Mason. The Coronado Club junior bowlers will be competing in the state tournament in Santa Fe in May.

## Bridge

Coronado ladies bridge meets Thursday, April 16, at 1 p.m. Newcomers are welcome. Call 299-1025 or 299-9168 for information.

Duplicate bridge meets Tuesdays at 7 p.m.

# Secretaries Plan Special Workshop To Mark Start of 'Their' Week

Sandia Laboratories in Albuquerque will join with others across the nation in observing Secretaries Week.

Governor Cargo has proclaimed April 19-25 Secretaries Week and April 22 Secretaries Day.

The Albuquerque Chapter of the National Secretaries Association will sponsor a workshop April 18 at the Hilton Hotel. Keynote speaker, N. Bernie Hart, senior vice president and trust officer, U.S. National Bank, Denver, will set the theme "Change and Challenge of the '70s." He will be followed by a panel discussion on "New Vistas" by Dr. Daniel Slate, UNM professor of Business Administration; Dr. Carlton Allen, First Presbyterian Church; W. G. Anding, TWA district sales manager; and Mrs. Robbin Bishop, Bernalillo County treasurer.

During the luncheon, the annual scholar-

ship award will be presented. One of the former recipients of this award is Linda Gurule (3522), who used the scholarship to take night school courses at Browning Business College to keep up her secretarial skills.

The afternoon session will include a talk by John Hueter (3134) on "Creative Attitudes and Motivation" and will conclude with a fashion show.

Sandia secretaries who have been helping with arrangements are Ann Michele (4500), Helen Davidson (1700), and Jean Langston (5200).

## Sympathy

To Moses Loretto (4573-1) for the death of his father in Jemez, N. M., March 21.

To Samuel Salazar (4574-4) for the death of his mother at Placitas, N. M., March 27.

To Mary Ellen England (7513) for the death of her grandfather in Washington, March 26.

To Dan Grim (1518) for the death of his mother on March 26 and his mother-in-law on March 29.

## Variable Annuity Unit Value

April 1970	1.526
March 1970	1.445
Average 1969	1.697



THE PLAY'S THEIR THING, and "Cymbeline" by a W. Shakespeare is the play at Old Town Studio April 10-12 and 16-19. Phil Mead (3412), far right, directs while (from left) Gene Ives (1551), Crawford McCallum (5231), Elliot Harris (3454) and Bruce Hawkinson (4135) enliven the stage. Call 242-4602 for reservations.