



SANDIA CORPORATION

PRIME CONTRACTOR TO THE ATOMIC ENERGY COMMISSION  
ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

# LAB NEWS

VOL. 17, NO. 14, JULY 2, 1965

## Sandia Represented At Regional Plan for Progress Meeting

S. P. Schwartz represented Sandia Corporation at the Northwest Regional Conference on Plans for Progress held recently in San Francisco.

Sponsored by the President's Committee on Equal Employment Opportunity, the one-day conference was attended by more than 800 representatives of equal opportunity employers from 12 Western states. Workshop sessions devoted to discussion of different aspects of the Plans for Progress program were held throughout the day.

U.S. Vice President Hubert H. Humphrey, chairman of the President's Committee on Equal Opportunity, was the featured speaker at the evening banquet. Mr. Schwartz was among honored guests seated at the head table with Vice President Humphrey.

Statistics were released at the conference which showed that the first 100 companies in the Plans for Progress program had increased their non-white employment from 5.1 per cent in 1962 to 6.5 per cent in 1965.

Sandia joined the program in September 1964 and is now one of 308 companies participating.

Other Sandia representatives at the conference were T. B. Sherwin of Sandia Laboratory, and E. W. Baldwin and P. D. Leiserson of Livermore Laboratory. Mr. Sherwin served as a member of the conference's Publicity Committee.

## K. S. Spoon to Observe 40th Anniversary With Western Electric Company

K. S. Spoon will observe his 40th anniversary with Western Electric Company July 6.

Mr. Spoon, Sandia Purchasing Agent, joined Sandia in 1951 as Contract and Traffic Department Manager and Assistant Purchasing Agent. He was promoted to his present position in 1954.



Mr. Spoon's career with WE began at the Hawthorne Works in Chicago, where he was assigned to Merchandising. Through the years he served in various capacities in purchasing organizations at several WE locations—San Francisco, New York, and Kearny. He served as the Assistant Purchasing Agent in Radio Division at Kearny from 1941 to 1945; during this period he was in charge of all purchasing for the 54th Street radar plant.

In 1946 he was transferred to Supplies Services Division, Pacific Coast, with headquarters in the zone office in San Francisco. He remained there until 1951.

### Part of National Program

## Sandia Supports Youth Opportunity Campaign; Hiring 80 for Summer

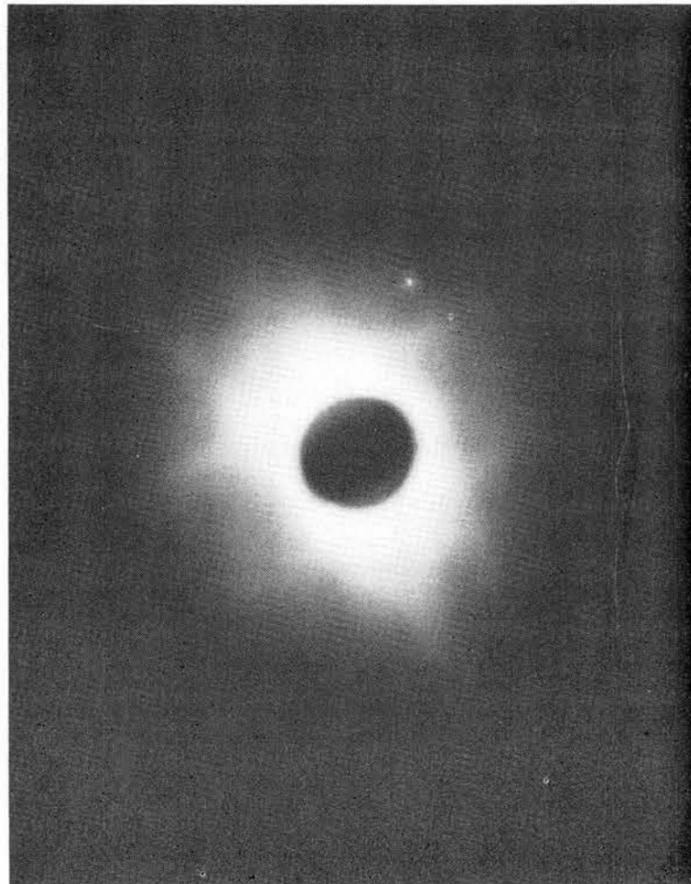
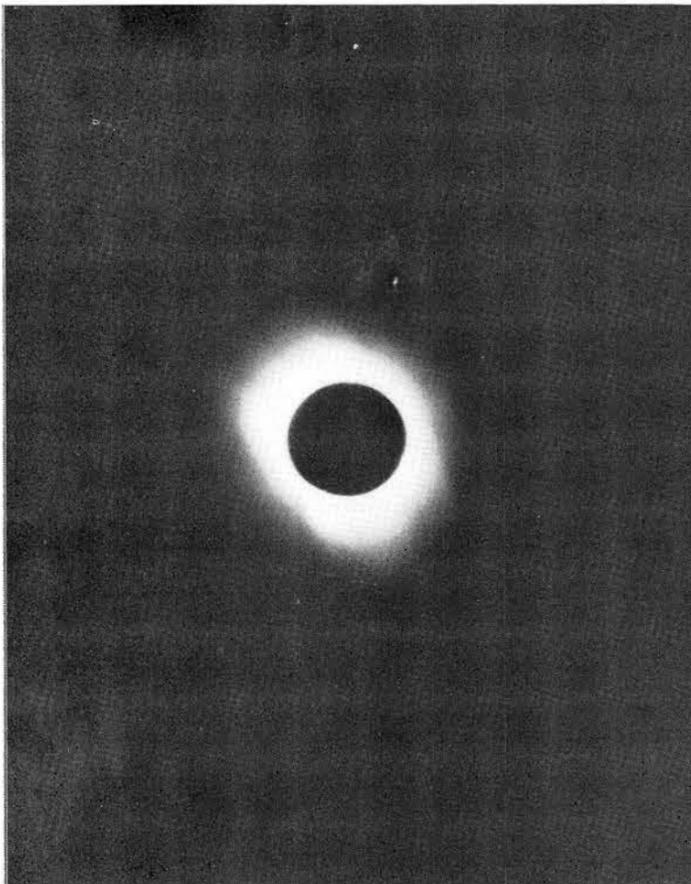
Sandia Corporation is hiring 80 youths for temporary summer jobs as part of President Johnson's recently announced Youth Opportunity Campaign. Availability of temporary summer work may mean the difference between going back to school or not going back. Therefore, Sandia is joining industry across the nation in this program to provide summer work for as many young people as possible.

S. P. Schwartz, Sandia Corporation President, said, "Sandia Corporation welcomes the opportunity of supporting President Johnson's Youth Opportunity Campaign. To assist America's young people to continue their education is indeed a worthwhile effort."

Many local employers are participating in the Youth Opportunity Campaign. The N. M. State Employment Service now has on file 4202 applications in the Albuquerque area, according to Mr. Flavio Martinez, District Superintendent for the New Mexico State Employment Service.

There are approximately 1500 applications from the Livermore area now on file at the California State Employment Service at Hayward, according to Mr. M. A. Pierce, Hire-a-Teen representative.

The Youth Opportunity Center of the



ECLIPSE DATA—Both of these photos were taken with a Sandia-designed 12-inch focal length ultra-violet lens in a special mount on board the "Flying Laboratory." View at left shows outward extension of the corona during totality. The picture at right shows same view with a longer exposure through a polarizing filter which delineates those portions of the corona which are emitting polarized

light. Bright speck slightly above the moon is the planet Jupiter. It was almost in superior conjunction with the sun at the time of the eclipse. Since the eclipse occurred during the International Year of the Quiet Sun, data such as these, when compared to eclipse data from other years, permit Sandia scientists to determine differences in energy distributions during the solar cycle.

### Preliminary Data Looks Good

## Eclipse Expedition Returns to Sandia

Sandia's "Flying Laboratory"—an NC-135A jet outfitted with an array of optical and electronic instrumentation—is back home now. So are the 27 Sandians who journeyed halfway around the world to make measurements and conduct experiments during the total eclipse of the sun over the South Pacific May 30.

After the eclipse operation, the plane flew on to Australia and then to within 700 miles of the magnetic South Pole for a study of cosmic rays, air glow measurements, atmospheric scintillation, and upper atmospheric physics.

Now the film shot during the operation is being processed, prints are being made, and data tapes are being examined and reduced.

"It will take several months of additional labor before the scientific results are reported in various journals and symposia," says Mission Director N. C. Anderholm of Electro-Optics Division. "After preliminary examination, the data looks extremely good. We should have significant information on the sun's corona (the upper atmosphere of the sun) and on the influence of the sun on the earth's atmosphere. This information should have important practical applications in the field of radio transmission and communications."

The expedition served two purposes—the first, primarily scientific observation of a solar eclipse. In the last 100 years, less than three hours of combined observation time of solar eclipses has been accumulated. The aircraft following the path of the eclipse at high altitudes above much of the earth's atmosphere was an ideal "platform" for the experiments.

Secondly, the mission will benefit several Sandia programs. Much of the instrumentation on the flying laboratory was developed by Range Optics Division for other programs such as Aerospace Nuclear Safety. Similar cameras and spectrographic equipment had been used in Bermuda to photograph RFD reentry vehicles. The de-

sign and operational experience from the eclipse mission will prove valuable for future operations.

"The equipment worked successfully," Mr. Anderholm says, "and the men operating it deserve credit for the success of the mission. We made two practice runs before the eclipse, and between these runs and the actual mission, the men worked as many as 12 hours at a stretch adjusting the equipment, reloading film, and double-checking everything. The temperature inside the plane on the runway at Samoa got up to 110 degrees."

For the eclipse flight, the flying laboratory was scheduled to fly at about 33,000 feet but high clouds forced the plane to go up to 42,000 feet for unobstructed viewing. At this altitude with the outside temperature at about -60°F., moisture began condensing on the inside of the windows and forming ice. This caused some difficulty, but it was overcome by quick wiping of the windows with after-shave lotion. The alcohol helped prevent freezing.

The eclipse phenomena were visible to the men in the plane for about 45 minutes. The instrumentation was activated for about 20 minutes of this time recording the event as the moon passed between the earth and sun. All phases of partial eclipse, totality, and separation were recorded. Totality lasted four minutes and 27 seconds.

"We were jubilant on the way back to Samoa," Mr. Anderholm said. "We knew that the experiments had gone well."

There was one bad moment as the plane came into Samoa for a landing. The thunderclouds and rain that had forced the plane to higher altitudes were still plaguing the area. The decision was made to land at Samoa, however, rather than to fly on to the Fiji Islands. The field at Samoa was clear as the plane made a preliminary approach, so it headed out to sea and dumped the extra fuel on board. On the way back, the clouds had formed on one end of the runway and it was raining. There was a small hill at this end of the

# Supervisory Appointments

CHARLES G. SCOTT to supervisor of Vulnerability & Test Division, Special Devices Department, effective June 16.



Charlie has been at Sandia 13 years. His assignments have been mostly in the field test and aerospace organizations; he also spent two years in component development.

Before joining Sandia, Charlie was self-employed for three years. He received his Bachelor's degree in electrical engineering from UNM in 1949.

He is a member of Sigma Tau, engineering honorary; and is a registered professional engineer in New Mexico.

Charlie served two and a half years in the Navy.

DONALD E. GREGSON to manager of Engineering Evaluation Department, Livermore Laboratory, effective July 1.



Don joined Sandia in Albuquerque in June 1952 immediately following his graduation from Iowa State College, where he received a BS degree in electrical engineering.

In May 1957, he transferred to Livermore Laboratory where he worked in electrical development and preliminary design. He was promoted to supervisor of Preliminary Analysis Division in December 1959.

In college, Don was elected to Eta Kappa Nu, electrical engineering honor society, and Pi Mu Epsilon, mathematics honorary. Before attending college, he served three years in the U.S. Coast Guard. Don is a member of the IEEE.

HOMER C. MCILROY to supervisor of Reclamation Division, Receiving, Reclamation & Shipping Department, effective June 16.



Homer has been at Sandia since December 1954. He has worked the entire time in the Wage & Salary Administration Department. Previously, he was a fiscal and administrative officer with the AEC at Los Alamos.

He received both his Bachelor's and Master's degrees in business administration from the University of Colorado.

Homer served for three and a half years in the Air Force as an electronics officer in a special weapons group.

OLDEN L. BURCHETT to supervisor of Mechanical Properties Division, Materials & Process Department I, effective June 16.



Olden worked at Sandia during the summers of 1958 and 1961 before joining the Company permanently in June 1963. Previously, he taught engineering courses for four years at Oklahoma State University and three years at the University of Oklahoma while working on degrees at the two schools.

Olden received his Bachelor's and Master's degrees in mechanical engineering from Oklahoma State University, and has completed his course work toward a PhD at the University of Oklahoma.

He is a member of Pi Tau Sigma and Sigma Tau honoraries, the Society for Experimental Stress Analysis, and the National Society of Engineers. He is a registered professional engineer in Oklahoma.



HAROLD M. BARNETT to supervisor of Advanced Development Division, Special Devices Department, effective June 16.

Barney has been at Sandia since June 1951, except for the 1960-61 school year when he took a leave of absence to work toward a PhD degree at UNM. He has been in solid state physics work at Sandia for the past several years.

Before he joined Sandia, Barney was an electrical engineer for an engineering and construction firm in Denver.

He has a Bachelor's degree in electrical engineering from Texas A & M, and a Master's degree in electrical engineering from the University of New Mexico.

Barney is a member of Tau Beta Pi and Phi Kappa Phi honoraries, and the New Mexico Chapter of the American Ceramics Society.

He served in the Navy in 1945-46.

JOSEPH F. GENONI to supervisor of Document Control and Mail Section, Livermore Laboratory, effective July 1.



Joe has been at Livermore Laboratory since December 1958, working primarily as an order analyst until he became a staff assistant, administrative, in April 1963. Prior to this promotion, he coordinated the integrated contractor purchases in a project engineering division.

Before joining Sandia, Joe was self-employed as a public accountant in Livermore for over 12 years. He also owned a local business for several years.

He graduated from Edison Technical Correspondence School at Seattle, Wash., and is a licensed public accountant in the State of California.

During World War II, Joe served four years in the U.S. Army, including three years in the South Pacific.



NEW SUMMER EMPLOYEES—The first group of students to work at Sandia under the President's Youth Opportunity Campaign signed in last week. From left to right are Jeanne Burns, Mount St. Scholastica, Atchison, Kan.; Linda Baxter, University of New Mexico; personnel representatives Mary Yager and Jack Rex; Rose Lee Gonzales, Eastern New Mexico University; and Barbara Prejean, New Mexico State University.

## Presidential Honor To AEC Group

The Programming and Control Division of the Atomic Energy Commission's Albuquerque Operations Office has received a Presidential Unit Citation in special recognition of initiating economy measures that resulted in savings of more than \$5 million during 17 months in 1963 and 1964.

Lawrence P. Gise, Manager of the Commission's Albuquerque Operations complex, presented the citation to Harry A. Weber, Director of the Programming and Control Division, who accepted it on behalf of the 29 employees in the organization. The division is one of five organizations reporting to the ALO Assistant Manager for Weapons.

From July 1, 1963 through Nov. 30, 1964, the division, through efficient program planning and utilization of weapons material, initiated and carried out economy measures that resulted in savings totaling \$5,739,569. The economy procedures are being continued.

The unit commendation, signed by President Johnson and Commission Chairman Glenn T. Seaborg, reads: "Presidential Citation is awarded to Programming and Control Division, Albuquerque Operations Office, in special recognition of an outstanding contribution to greater economy and improvement in Government operations during the tenth anniversary year of the Federal incentive awards program."

## National Engineering Society Hears Sandia Lab Physicist

L. J. Vortman of Underground Physics Division delivered the opening address today at the 31st annual meeting of the National Society of Professional Engineers.

The meeting is being held at Western Skies Motor Hotel and will continue through Sunday. More than 600 members are attending.

Mr. Vortman has been conducting a study in the feasibility of using nuclear explosives for excavation of a canal linking the Atlantic and Pacific Oceans. His talk was entitled "Nuclear Explosives—A New Tool for the Engineer."

Conference host is the New Mexico Society of Professional Engineers, an organization having considerable Sandia representation. J. T. Black of Structural Analysis Division is president of the state organization.

Sandians on the convention planning committee are W. F. Scott, Ancillary Equipment and Design Division, and P. R. Owens, Specifications Division.

## Informal Russian Class Starts

An informal noon hour class in conversational Russian began last week in the conference room of Technical Library Bldg. 804. Instructors are M. I. Weinrich of Technical Libraries Division and E. P. Quigley, supervisor of Advanced Manufacturing Process Development Division. Any Sandian who has taken Russian courses in the past is invited to attend the class for review in pronunciation and vocabulary. The group meets Tuesdays and Thursdays.

## Guitar-Twanging, Foot-Thumping Folk Music Enlivens Lunch Hours

Noontime activities are a very individual thing. Some employees like to read, others like to pitch horseshoes. There are also bridge players, knitters, Ping-Pong devotees, and the sleeping beauties.

Then there are those musical souls who can be seen toting their guitars in and out of the tech area mornings and evenings. During the lunch hour they congregate in a Bldg. 634 conference room that has the bare wall acoustics of a shower. The majority of the hootenany participants work in Technical Art Division.

Some chew their sandwiches in rhythm as they plunk the guitar strings. Others

sing the folk songs that have become increasingly popular the past few years.

Duke Pawley, one of the technical illustrators, might be considered the "dean" of the group. Some 20 years ago he played the guitar professionally. The playing ability of the others ranges from those who have had as few as two lessons (and know only a few chords) to those like Don Hosterman of Military Manuals Division, who is in the advanced-advanced class. Jack Suttman, who makes his own guitars, is the only one taking classical guitar lessons.

As in many things, enthusiasm is what counts!

NOONTIME HOOTENANY is a popular diversion for this group of guitar strummers. As Lorraine Miller (right) starts singing, the others invariably join in—(l to r) Duke Pawley, Don Hosterman, Ray Chavez, Keith Weir, Jim Hayes, and Jack Suttman.



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### SANDIA CORPORATION LAB NEWS



ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

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# Fellowship Awarded K. D. Marx For Continued Scientific Study

A fellowship from the Fannie and John Hertz Foundation has been awarded Kenneth D. Marx for continued graduate study at the University of California's Department of Applied Science at Davis/Livermore.



Mr. Marx is presently completing requirements for his MS degree under the SCLL Technical Development Program. He is an electrical engineer in Test Department.

The fellowship pays \$5000 for the first year and is renewable for two additional years. This year, the foundation that administers the fund granted 15 new graduate fellowships, renewed another 15, provided for eight new undergraduate scholarships, and renewed 29 existing undergraduate awards.

The choice of Mr. Marx as a recipient was based upon his academic record and a recommendation from Dr. Edward Tell-

er, chairman of the Applied Science Department.

The Sandian received his BS degree in electrical engineering from Oregon State University. He joined Livermore Laboratory in July 1961 and began his graduate study in the Fall of 1963 when SCLL's TDP program was established by Sandia Corporation to sponsor a limited number of employees for part-time education leading to a Master of Engineering Science degree. He plans to specialize in plasma physics while working on his doctorate.

## Math Review Course Attracts Large Number Of Employee-Students

A review course in mathematical methods attracted 22 employee-students for the first class on June 15.

This out-of-hours course is not otherwise available in the Livermore area.

The course is being taught by Abraham Goldberg, theoretical physicist from Lawrence Radiation Laboratory who previously taught at the University of Washington. The class meets for two hours, two evenings a week in Bldg. 912. The course will require three months to complete. Prerequisite for taking the course is a Bachelor's degree in a technical subject.

According to Wil Miller, SCLL training specialist, the course is of particular interest to employees planning to start graduate study at the University of California, Davis Department of Applied Science.

## Livermore Notes . . .

The 8252 team is leading midway in season's play in the SCLL intramural softball league. The top place team has a record of six wins and a single loss (to the 8220 team).

Today is the last day to purchase discount tickets from Employee Benefits for reserved seats for the July performance of the Shipstads and Johnson "Ice Follies of 1965" at Winterland, San Francisco.

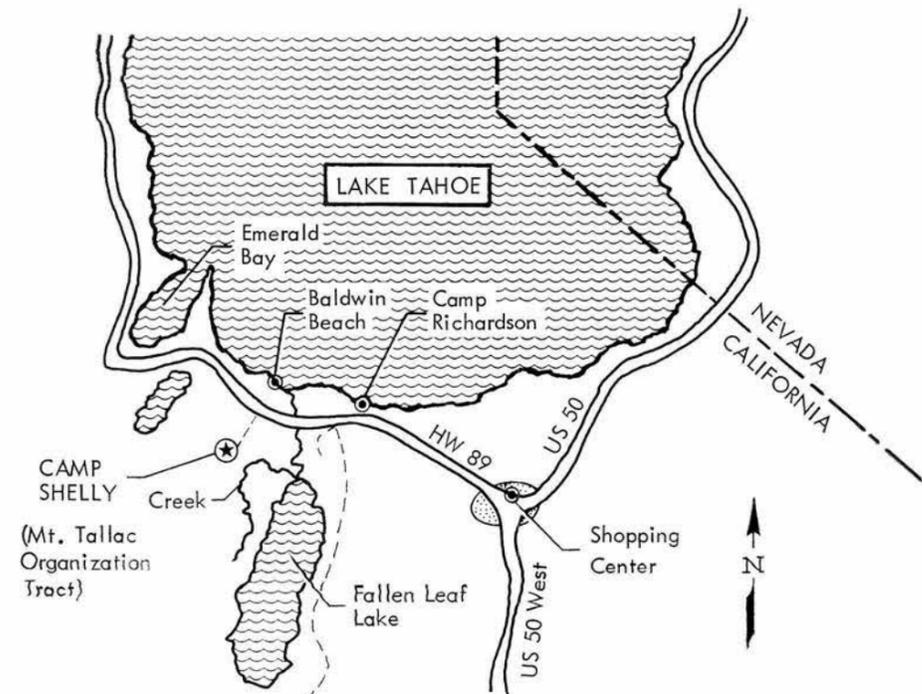
Ed Williams, Test Development Division, recently addressed a meeting of the Junior Engineering and Technological Society (JETS) at Livermore High School. Ed spoke on "Career Opportunities in Electrical Engineering and Related Fields." Following his talk, Ed showed the Sandia film "Environmental Testing."

JETS is a national organization established to familiarize high school students with work in engineering and science.

John Barnhouse, Model Shop and Inspection Division, shot a net low score of 65 to win the Pasatiempo Golf Tournament early this month. The tourney, sponsored by the Sandia Employees Golf Club, was held at the Pasatiempo Country Club in Santa Cruz, Calif.

Walt Dugan, Employment, Placement, Training, and Records Division, tied with John for low net score honors but lost the trophy on a hole-by-hole comparison of scores. Mike Lettrich, Purchasing Division, won a special prize for coming closest to to the pin during the tourney.

MAP OF CAMP SHELLY AREA—On arrival in the vicinity of South Tahoe, take Highway 89 west (left) at the junction of Highways 50 and 89. Approximately 1 1/2 miles past Camp Richardson, turn left onto a dirt road (this turn-off is at the Mount Tallac Organizational Tract sign, opposite the entrance to Baldwin Beach). The sign and entrance to Camp Shelly are about 1/2 mile down the dirt road.



# LIVERMORE NEWS



RECENTLY COMPLETED SHUFFLEBOARD COURTS at Livermore Laboratory provide new outdoor recreation for employees during their lunch hour. The courts are located in the patio of Bldg. 912.

## Programmed Self-Instruction Courses Completed by 84 at Livermore Lab

Eighty-four Livermore Laboratory employees have completed programmed self-instruction courses since last September, according to Wil Miller, SCLL training specialist.

This was the first year for the program at Livermore Laboratory. It was set up primarily for employees unable, because of travel or other reasons, to attend conventional courses in local schools.

Three study halls were set up last fall to enable small groups of students taking 11 different self-instruction courses to obtain assistance when required, and proceeded at their own pace of learning. The three groups, pursuing computer, math, and science studies, met from 4:10-6 p.m. twice a week.

Jim Rogers and Freddy Whitworth of Numerical Applications Division conducted the computer study hall and assisted employee-students taking courses in Fortran, APT, COBOL, and Introduction to Electronic Data Processing.

Jim Lathrop and Frank Cupps, also of Numerical Applications Division, assisted students in Algebra, Matrix Algebra, Calculus, and Descriptive Statistics in the math study hall.

The science study hall was led by Bill Peila and Ed McKelvey, both of Test De-

velopment Division. The students were studying Basic Electricity, Basic Electronics, and Basic Transistors.

"The programmed self-instruction courses provide a thorough foundation in theory of the various subject matters," Wil noted.

## Contributions Top \$2200 In Local Education Fund-Raising Campaign

This year's recently completed Student Education Loan Fund (SELF) Drive netted \$2217 in contributions, according to Jerry F. Jones of Project Engineering Division 8165, who is SELF president.

The membership drive and door-to-door canvass added nearly \$2000 to the fund. The balance was contributed during the second annual Golf-O-Rama tournament.

The tourney, at the Castlewood Country Club, was arranged by Joe Genoni, supervisor of Document Control and Mail Section. John Barnhouse of Inspection Section took top honors with a net score of 66. Other Sandians, Greg Young of Project Engineering Division 8156, and Glen Funk of Project Engineering Division 8165, tied for third with 71's. Fifty-one area golfers competed.

In addition to Mr. Genoni and Mr. Jones, other employees on SELF's board of directors are Leo Gutierrez, Director of Systems Development, and F. J. Maloney of Environmental Test II Division, publicity committee chairman.

There is now \$4200 available through the Livermore SELF organization for loan to local high school graduates requiring financial assistance to attend college or industrial arts schools. The loans are interest free during the student's attendance in college. Last year seven loans totaling \$2500 were made to such students.

## J. V. Almstad Receives BA Degree

Jack V. Almstad of Numerical Applications Division received his BA degree in mathematics during recent commencement exercises at San Jose State College. Part of his study was under Sandia's Educational Aids Program. Jack has been at Livermore Laboratory for nearly five years.

## New Federal Fee Required at Camps In National Forests

(See related story on page 8)

In California, 189 recreation facilities located in National Forests will fall under the new fee system provided for in the Land and Water Conservation Fund Act of 1965.

Lyle M. Klubben, public information officer for the California region, U.S. Forest Service, said that 43 per cent of National Forest land in the state requires the Recreation/Conservation fee at the present time. Other recreation sites operated by the U.S. Forest Service will remain free until such time as improvements are made or facilities are added.

California forests subject to the new entrance fee are Angeles, Cleveland, Eldorado, Inyo, Klamath, Lassen, Los Padres, Mendocino, Modoc, Plumas, San Bernardino, Sequoia, Shasta-Trinity, Sierra, Six Rivers, Stanislaus, and Tahoe.

The list of camp sites and picnic areas at which Recreation/Conservation stickers are required will be posted on bulletin boards in Livermore Laboratory.

An annual sticker may be purchased for \$7. One-day tickets are 50 cents per person. There is also a \$2.50 per person season ticket which is valid only in a specific forest. Children under 16 admitted free.

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JULY 2, 1965



NIKE-TOMAHAWK ROCKET on launcher at Rarotonga drew daily crowds of curious islanders. Sandians provided tours and explained the eclipse operation. The rocket is one of five launched May 30.

### Were Welcomed Guests on Rarotonga

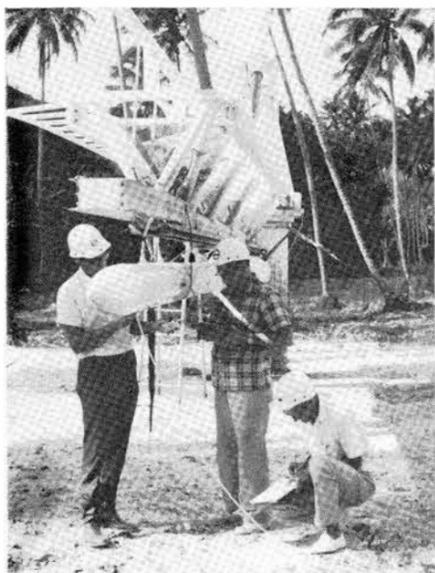
# Sandians Launch Five Rockets To Gather Data During Eclipse

During the eclipse in the South Pacific May 30, a group of 14 Sandians at a launch site on the Island of Rarotonga, fired five Nike-Tomahawk rockets some 200 miles into the atmosphere to take measurements of soft x-rays from the sun's corona.

The x-ray detectors were Los Alamos Scientific Laboratory instruments. Five LASL scientists were on Rarotonga for the firings.

The Sandia crew, headed by W. E. Walker of Carrier Development Division, had been on the island for a month setting up the launch site, installing the electronic control and telemetry gear, and assembling the rockets.

All five rockets were operationally successful. They were fired on time, every second stage ignited and separated, all nose cones separated, and all the gyro systems activated.



CHECKING the explosive separation cartridge in the nose of a Nike-Tomahawk rocket prior to launch are (from left) Jim Strascina, George Adkins, and Dulin Westfall of Carrier Development Division.

A newly-developed attitude control system, directed by the gyros and associated logics circuits, positioned the payload with its x-ray sensors to "see" the sun. Although the attitude control system did not provide the desired accuracy during all shots, much valuable information was obtained.

This attitude control system was developed by Controls and Guidance Division of Whittaker Corporation.

N. F. Sinnott of TM Engineering Division, assisted by Upper Atmosphere Projects Department, was development project engineer. The system will become a useful tool for future Sandia and LASL upper air research.

The Sandians on Rarotonga, field testing veterans, described the island as extremely colorful and interesting. The Polynesians and New Zealanders on the island were friendly and helpful. Housing (conventional homes leased from the islanders) was comfortable with minor irritations—no screens to keep the mosquitoes out and American electric shavers wouldn't work on New Zealand circuits.

During the first two weeks on the island, rain came every day, but for the next two weeks it cleared with only occasional rain. On the day of the eclipse, however, low clouds obscured the view.

Sandia's launch site, established on a 135-acre coconut farm leased from a retired sea captain, proved popular with the local people. The Sandians conducted many tours of the site and explained the eclipse operation.

The islanders responded by inviting the Sandians to a local celebration and a performance of native dance teams.

After the rocket firings, the Sandians remained until June 6 packing and crating the electronic gear for air shipment back to Sandia. Don Fife of Field Test E&C Group, and Art Verardo and Pete Seward, both of Logistics and Procurement Services Division, remained another week directing dismantling of the launchers and temporary buildings.

The COOK ISLAND NEWS, local Raro-

ISLAND DANCERS in native costumes performed for Sandians on Rarotonga.



Continued from Page One . . .

# Eclipse Expedition Returns

did a fine job for us all the way."

The plane landed at Samoa about noon. The afternoon was spent taking the experiments and data off the plane for shipment to Sandia. The cosmic ray and twinkling equipment were installed, and the plane took off for Australia May 31. On June 3, the flying laboratory took off for the long flight south. Some 3200 miles were covered in the non-stop flight. The cosmic ray experiment also continued on the way back to the States.

The flight to within 700 miles of the magnetic South Pole was along 147½° longitude. The return flight from Melbourne continued north along longitude 145° with detours for refueling at Darwin,

Australia, and Guam. From Guam the plane flew to Honolulu, remained overnight, and continued the journey non-stop to Albuquerque. The Sandians arrived here June 6.

Purpose of flying the specific longitude course during the cosmic ray experiments was to measure the quantity of the high energy components of cosmic rays as they varied with latitude. This experiment was conducted by J. E. Keith of Aerospace Sciences Division in cooperation with Professor J. A. Simpson of the University of Chicago.

One of the interesting aspects of this experiment is the fact that data collected may be compared with that recorded by the Mariner IV spacecraft now approaching Mars. Professor Simpson has cosmic ray measuring equipment aboard the Mariner IV.

Plans are underway now to hold a symposium of all participants who conducted airborne experiments during the recent eclipse. The meeting will be held in December at Ames Research Center, a NASA facility at Moffat Field, Calif.

In addition to the Sandia aircraft, three other scientific expeditions flew into the area during the eclipse. These were aircraft carrying scientists of Los Alamos Scientific Laboratory, Air Force Cambridge Research Laboratories, and NASA.

tonga newspaper, published the following article on June 8:

"The people of Rutaki, of Kavera and part of Vaiokura, who were evacuated from their homes on Sunday May 30th, 1965, on account of the Rocket Shootings, wished to express their appreciation to the Leader of the American Scientist Party, Mr. Walker and to all members of the same rocket team, for their kindness in providing all the evacuated families with food for the day. It was a sure help as most families left their homes without carrying food with them for their families needs. They had expected the shootings to be complete by 10:00 a.m. However, it was an exciting day for every one, old and young. Also it was a new experience, to witness a real Rocket, rocketing towards the sky. The excitement of viewing the Eclipse, the rockets, plus the food handed out to the families at lunch time made evacuating a home a real pleasure and it turned out to be a big picnic.

"Again we thank the American party of Sandia Corporation.

"Aere ra, kia manuia kotou."

After the Sandians departed, the newspaper published this article:

"On Friday the last three men from Sandia Corporation will be boarding the Polynesian Airlines' plane to return to their homes and families. They have been away from the States for almost three months now, three months of working in Paradise, admittedly, but still without their wives and children. And when we see Art Verardo, Don Fife, and Pete Seward go, it will be like losing members of our island family. We think it is safe to say that these three men especially, have been the best possible ambassadors for their country—friendly, unobtrusive, helpful.

"Wherever they went they made friends who will miss them and who will look forward to the time—if they so decide—that they drop in and visit us for a holiday."



SIGHTSEEING on Tutuila, largest island in the American Samoa group, Sandians Dick McKnight (left) and Al Hutters, both of Diagnostic Aircraft Operations Division, pose with island boys. Tutuila, which is nearly bisected by Pago Pago, is ruggedly mountainous and about 18 miles long.

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SANDIA'S FLYING LABORATORY, outfitted with instrumentation to record eclipse events, stands framed by palm trees on Tafuna airport on Samoa. After the eclipse May 30, the plane flew to within 700 miles of the magnetic South Pole for a cosmic ray experiment.

## Rocket Sled Sets Rain Test Mark

A Sandia-designed rocket sled sped through a rain environment at the highest velocity ever reached for tests of this kind on the track at Holloman Air Force Base last week.

The 21-foot sled carried a five-inch-diameter nose cone into the mile-long artificial rain area at approximately 3175 miles an hour (slightly better than Mach 4.2) before coasting to a halt after a 31,000-foot run.

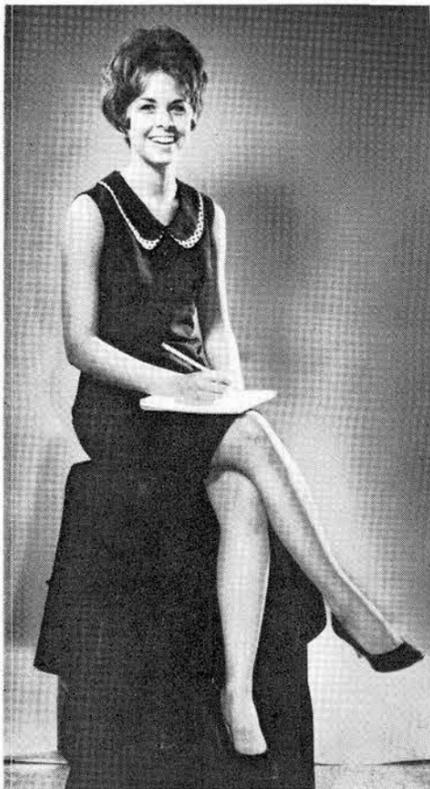
The test was designed to evaluate the effects of rain erosion on the plastic-resin nose cone at high velocities.

Three solid-propellant Zuni rockets, fired in separate stages, accelerated the 246-pound sled while high-speed cameras at various track positions photographed the erosion effects.

The rain was created with 1500 nozzles arranged along both sides of the track for a distance of more than a mile. A 500-horsepower diesel pump drew water from a nearby storage tank to operate the spray equipment.

E. D. Stout of Range Operations Division and Capt. E. T. Miller, Jr., of AFMDC's Test Directorate supervised the run.

The sled was designed by D. L. Preston of Area III Laboratory, and R. B. Hedberg of the same organization was in charge of the sled at the site. H. B. Austin and D. W. Borst, both of Photometrics Division, handled Sandia's test instrumentation.



Jeanne Burns (3341)

### Take A Memo, Please

Be on the safe side. Wear your protective glasses.

## L. E. Horner Takes Command Of Albuquerque Naval Unit



Command of the Albuquerque Naval Reserve Unit shifted last night from one Sandian to another.

In a full-dress ceremony at Surface Division 8-106M headquarters, Larry E. Horner (pictured) of Data Collection Systems Division took over the reins from H. M. Willis, manager of Systems Programming Department II. Both men hold the rank of commander.

Larry has served most recently as public information officer for the Naval Reserve program in Albuquerque. Hank, who commanded the unit for the past two years, will fill Larry's vacated PIO slot.

## Dinner Dances Set At Coronado Club July 10, July 24

Coronado Club activities for the month of July will include two Saturday night dinner dances featuring the music of the Jerry Lee Combo.

The first dinner dance will be held Saturday evening, July 10. The a la carte dinner will be served from 7-9 in the La Granada Room, and will feature tossed green salad, choice of top sirloin steak or round prime rib of beef, au gratin potatoes, and vegetables.

Following dinner, there will be dancing from 9 until midnight. Price of the evening per person is \$2.75.

The second dinner dance is scheduled for Saturday, July 24, with a similar menu.

## Mexican Buffet Served Tonight After Social Hour

A buffet featuring Mexican food will be served tonight following the Coronado Club's social hour. Prices are \$1.25 for adults and \$1 for children. The Jerry Lee Combo will play for dancing.

Seafood will be the fare next Friday evening—adults, \$1.25; children, \$1. The Lamplighters will provide entertainment.

## Sandians to Present Papers at IEEE Nuclear, Space Radiation Conference

Several Sandians will present papers at the IEEE Annual Conference on Nuclear and Space Radiation Effects, to be held July 12-15 in Ann Arbor, Mich.

Following is a list of conference attendees from Sandia and their presentations:

W. H. Buckalew, Applied Nuclear Science Division, "Calculated Single-Collision Dose in Several Materials for Neutrons."  
F. N. Coppage, Physics of Organic Solids Division, "Some Properties of Conductivity Induced in Insulating Solids by Pulsed Gamma Rays."

C. A. Goben, Division III—Advanced Systems Development Department, "A Study



IN THE BAG—Warming up for the sack race at the Fourth of July Picnic scheduled at the Coronado Club tomorrow are the children of E. E. Ives, supervisor of Division I in the Advanced Systems Development Department. They are (l to r) Jeff, Kathy, and Kenny.

of the Neutron-Induced Base Current Component in Silicon Transistors."

D. H. Habing, Radiation Effects in Electronics Division, "The Use of Lasers to Simulate Radiation-Induced Transients in Semiconductor Devices and Circuits."

H. J. Stein, Materials & Device Physics Division, "Introduction Rate of Electrically Active Defects in n-type Silicon by Nuclear Radiation."

W. H. Sullivan and J. L. Wirth, both of Radiation Effects in Electronics Division, "Storage Parameter Measurements in Diodes and Transistors." Mr. Sullivan will make the presentation.

## Slam-Bang Independence Day Party Tomorrow At Coronado Club

A real slam-bang 4th of July celebration will be held at the Coronado Club tomorrow beginning at 1:30 p.m.

The afternoon's activities will include swimming, sack races, pie-eating contests, a coin hunt, and many other games for kids of all ages. Prizes will be awarded to contest winners.

For those who think sack races are too strenuous, there will be dancing on the patio.

A picnic supper will be served from 5:30 to 7. Typical picnic fare will include hot dogs, macaroni salad, and baked beans.

Open to Coronado Club members only, the festivities are free.

## UNM'ers Work at Sandia Laboratory Under Summer Fellowship Program

Two educators and two graduate students from the University of New Mexico are using facilities at Sandia Laboratory this summer under grants provided by the Atomic Energy Commission - Associated Rocky Mountain Universities Program (AEC-ARMU) in Nuclear Education and Training.

Three of the AEC-ARMU fellows began work last month, participating in research employing company facilities. They are R. Douglas O'Dell and Harold Southward of the UNM faculty and graduate student Jerry J. Koelling.

The fourth, Gary B. Peeler, is expected to report this month.

Mr. O'Dell is an assistant professor of nuclear engineering and his work consists of evaluating proper use of Sandia's reactor facilities as a part of the UNM nuclear engineering curriculum. He holds a BS degree in aerospace engineering and a PhD degree in mechanical engineering, both from the University of Texas.

Mr. Koelling is working with Mr. O'Dell under the supervision of P. D. O'Brien in Reactor Division. He is studying the use of fissionable materials to measure fast neutron spectra. The study has specific applications to his studies for a ScD degree in reactor engineering.

He has Bachelor's and Master's degrees in physics from Missouri School of Mines and Metallurgy and a BS degree in aeronautical engineering from St. Louis University. Mr. Koelling last year was the first graduate student to undertake study at Sandia under the AEC-ARMU fellowship program.

Mr. Peeler, who has a BS degree in



R. D. O'Dell



Harold Southward



J. J. Koelling

physics from the Massachusetts Institute of Technology, also will work under Mr. O'Brien. He will measure characteristics of the SNARE reactor and use the analysis in his thesis for a Master's degree in nuclear engineering.

Mr. Southward is doing applied research directed principally as an orientation in the technology of solid state and thin film devices. His supervisor is N. J. Pollard of Solid State and Thin Film Devices Division.

An associate professor in the UNM Electrical Engineering Department, he earned a Bachelor's degree in physics from West Texas State and MA and PhD degrees in physics from the University of Texas.

Mr. O'Dell and Mr. Southward are at Sandia under faculty orientation grants, which permit faculty members to acquire competence in using facilities at AEC sites. Another purpose of the three-month grants is to acquaint them with the range of research activities available at Sandia.

Mr. Koelling and Mr. Peeler are studying under a summer student program designed to acquaint them with AEC equipment and research facilities in preparation for the planning of thesis projects. Under the plan, they will spend two or three months working in Sandia laboratories.

## Spend 'Evening in Rome' At Coronado Club July 17

If you're longing for a Roman holiday, but can't swing it this year, the Coronado Club's Evening in Rome on July 17 is your next best bet.

The Club will take on an Italian look for the evening, and the cuisine will include a salad, spaghetti with Romano sauce, veal scallopini, golden gerbanza, zucchini, bread sticks, etc.

Dinner will be served from 7-9, and will be followed by dancing to the music of the Lamplighters until 1 a.m. Price for Club members is \$3; for guests, \$3.50—fairly inexpensive transportation to Rome for an evening in anybody's book!

Early reservations are requested. Tickets should be picked up at the Club office by July 14.

## Coronado Club Models

Sandia women modeling dresses and sports apparel at the Coronado Club during Wednesday noon hours for the next two weeks are:

July 7—Jean Shaffer of Component Development Division

July 14—Carmel Sanchez of Personnel Processing & Reports Division

If you would like to model, or wish to suggest a possible model, please contact Tom Morgan, Employee Services Division.

## Congratulations

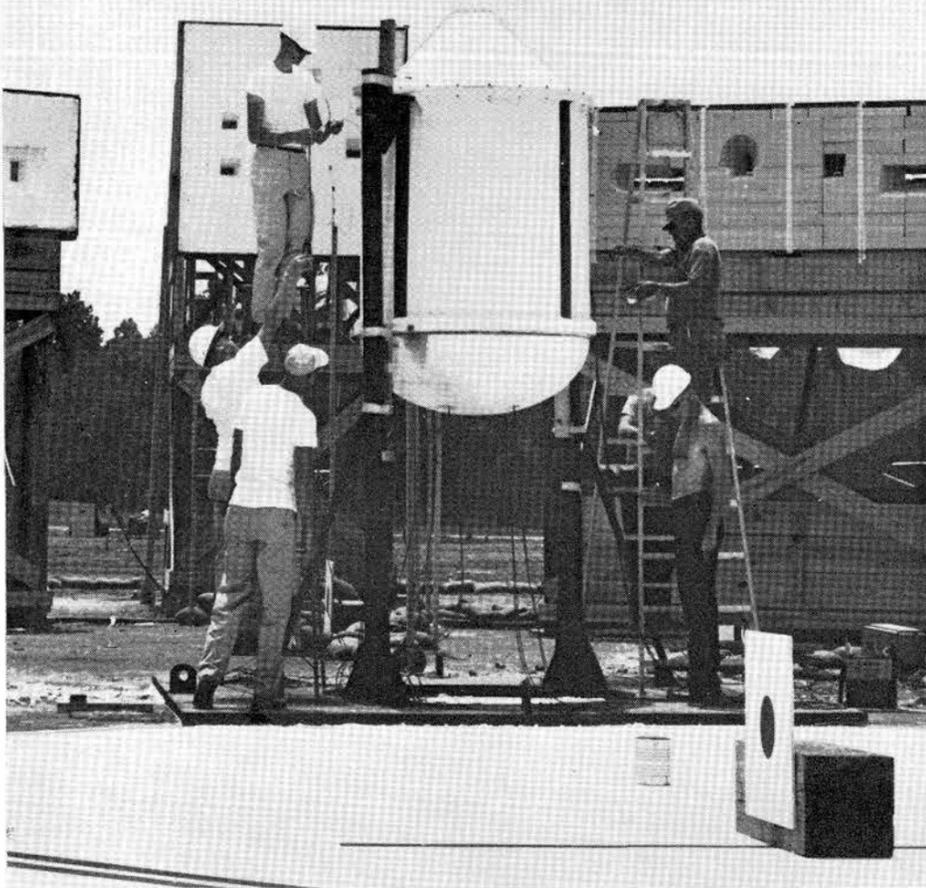
Mr. and Mrs. J. W. Ninmer (2452) a daughter, Sandra Lee, May 22.

Mr. and Mrs. Robert P. Kelly (2554), a son, Daniel John, June 21.

## Sympathy

To Marion Brown (4517) for the death of his sister in San Diego, Calif., June 17.

To Barbara Mitchell (3415) for the death of her brother in Oklahoma City, June 2.



INTENTIONALLY DESTROYED—This is the simulated model of the NERVA rocket reactor at Aberdeen, Md., Proving Ground. The non-radioactive model was deliberately destroyed so Sandia and APG could obtain data on dispersal of radioactive debris.

## Reactor Destroyed; Sandia Engineers Study Blast Effects

Sandia Corporation took part in a successful test involving the deliberate destruction of a full-size non-radioactive model of the NERVA rocket reactor at the Aberdeen, Md., Proving Ground last week.

The nuclear propulsion reactor, developed for space applications by Westinghouse and Aerojet General Corporations, was suspended on a framework with its base five feet off the ground. Four specially designed 105mm projectiles positioned within the reactor then were detonated. The reactor design was based on Los Alamos Scientific Laboratory's Kiwi reactor.

The test was designed to provide data on the dispersal of radioactive debris during reentry.

Sandia and the Aberdeen Proving Ground are conducting independent evaluations of the blast effects and will file separate reports of their findings to the Space Nuclear Propulsion Office, an agency jointly administered by the AEC and NASA.

A. J. Clark, supervisor of Aerospace Nuclear Safety Division II, said Sandia instrumentation collected all the desired data which will take about a month to analyze.

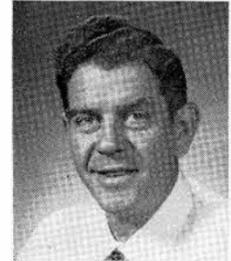
The experiment was described as another step in the overall Rover Flight Safety Program which has the specific objective of reducing radiological hazard to an acceptable level in the event of a launch pad failure, launch abort, short-lived orbit, or reentry.

## Service Awards

15 Years



Robert J. Blount  
4130  
July 3, 1950



Robert J. Scussel  
7256  
July 3, 1950



Francis X. Daut  
1432  
July 10, 1950



Melvin L. Merritt  
5232  
July 12, 1950



Lester G. Baumann  
3242  
July 13, 1950

10 Years

July 3 - July 16

Frances R. Aaron 4213, Roland A. Lincoln 1312, Donald N. Munro 8148, Ruth G. Peterson 3126, E. Genese Shieler 7334, Victor Sirwinski 2444, Gladys G. Olguin 9411, Carmel Mares 2531, Eugene L. Emerson 1521, and Benjamin E. Bader 1541.

## Natural Talent Makes Possible Realistic Paintings of Many Subjects

People, animals, or scenery, Scottye Wallace can faithfully reproduce the image in pastels or oils.

During the day, Scottye is a Teletype operator in Purchasing Administration and Services Department. In the evening, much of her time is spent in front of an artist's easel.

"I've been painting since I was in the second grade," she says, "and I completed my first portrait when I was in the eighth grade."

Scottye has never received formal instruction in art; she has a natural talent. While in high school in Silver City, she did the art work for the school yearbook for four years. Her paintings have been hung in exhibits twice at Bataan Memorial Hospital and three times at the New Mexico State Fair.

Scottye works from photographs and considers paintings of children her specialty.

DRAWING WITH PASTELS is a hobby with Scottye Wallace of the Office Service Division. As her pictures show, this hobby well suits her natural drawing talent.



## Take Note . . .

K. E. Sutton, supervisor of Labor Relations Division, was recently elected president of the New Mexico Society of the Sons of the American Revolution for 1965-66. R. G. Luckey, Sandia's comptroller, was elected secretary of the organization for the coming year.

\* \* \*

Pat Anderson, Test Data Division, captured the seventh flight championship in the Albuquerque Women's Golf Association Tournament at Four Hills Country Club recently. Pat, who played out of Los Altos, downed Mary Broullire of Four Hills, one up, in the finals to remain unbeaten in her three matches. She was awarded an engraved silver centerpiece.

\* \* \*

George H. Bradley, Jr., of Program Development and Data Division recently was elected president of the MIT Club of New Mexico for 1965-66. Sandians serving with him include Thomas J. Raftery, vice president; David L. Caskey, secretary-treasurer; and William R. Perret, regional representative. Mr. Raftery retired May 31. Mr. Caskey is in Instrumentation Design Division and Mr. Perret in Underground Physics Division.

\* \* \*

Bruno Morosin of Electron Structure of Solids Division presented "The Crystal Structure of A Green Form of Chromium Trichloride Hexahydrate,  $[\text{Cr}(\text{H}_2\text{O})_4\text{Cl}_2] \cdot \text{C}_1 \cdot 2\text{H}_2\text{O}$ ," at a meeting of the American Crystallographic Association June 27-July 2 at Gatlinburg, Tenn.

\* \* \*

George Lamb of Position Evaluation and Classification Division recently was notified that he has been granted a commission by the Navy Officer Procurement Office here. The commission of Lt. (j.g.) USNR, was effective Apr. 14. George has been assigned to a naval security group, and will be involved in electronics work associated with cryptology studies.

\* \* \*

Marv Sektan of Position Evaluation and Classification Division attended a special national training course at Philmont Scout Ranch near Cimarron from June 16-22. The conference participants were instructed in various aspects of Boy Scout district administration. Marv is a member of the Manzano District Committee, Kit Carson Council.

\* \* \*

Newly elected officers of Local 1988, International Brotherhood of Electrical Workers, are Homer Messenger, president; Thomas Kirtley, vice president; Virginia Miller, recording secretary; Elden VanVickle, financial secretary; and Charles Thomson, treasurer. Members of the executive board include Granville Dourte, Gilbert Lovato, DeForest Rushing, Adolfo Sanchez, and Willie Smith.

## Retiring . . .

Dorothy C. Willis will retire July 9 after almost 18 years at Sandia.

During the time she has been with the Company she has worked in the Personnel, Payroll, and Budget organizations. At the present time she is an accounting clerk in Budget Division.

Mrs. Willis is taking early retirement, she said, so that she will be able to do things for which she has never had time.

Mrs. Willis lives at 1105 Dartmouth NE. Two of her sons are also Sandia employees—H. M. Willis is manager of Systems Programming Department, and J. M. Willis is in Electronic Development Division. A third son, Guy, was formerly employed at Sandia Livermore, but is now in private industry. He resides in Livermore.



\* \* \*

C. A. Leemhuis retired June 30 after more than 16 years at Sandia.

He was in the Quality Assurance organization most of the time. At the time of his retirement, however, he was a technician in Aerospace Sciences Division and was working on x-ray equipment.

Mr. Leemhuis is a licensed professional dog handler, and has shown dogs all over the country for the past 15 years. He now plans to make this a full-time activity. He is a member of the Professional Handlers' Association.

Mr. Leemhuis and his wife live at 1012 Quincy NE.





LINKS CHAMP—Jim Leonard of Aerospace Nuclear Safety Division IV looks over some new clubs shortly after winning the sixth annual Fred J. Given Memorial Golf Tournament. Jim fired a 73 over the University of New Mexico course to become one of the tourney's two double winners.

## Perennial Runnerup Jim Leonard Wins Given Golf Trophy

Jim Leonard, Aerospace Nuclear Safety Division IV, ended years of frustration recently by capturing the sixth annual Fred J. Given Memorial Golf Tournament.

He fired a one-over-par 73 over the 6591-yard University of New Mexico course to gain a one-stroke edge over Dave Brown and Dave Klein, who finished in a deadlock for second. Dick Kidd, the 1961 winner, was third.

Jim, who has won many other tournaments in the Sandia Laboratory Employees Golf Association, broke a long-standing jinx with the victory. It was his first win in Given Memorial play after "four or five" second place finishes.

The veteran links star came close last year, tying with Tom Kelly after the regulation 18 holes. Then he lost the "sudden death" playoff.

Jim's fine round this time also gave him first place in the championship flight, where his four-stroke handicap was good for a 69.

The only other double winner was Vic Sirwinski of QEST Design Division, whose handicapped 63 made him winner of the first flight and the low net championship.

Winners of the four lower flights were Dave Winner, Cliff Hiner, Dale Jones, and William Sodja.

## Sandians Help Boost Ice Hockey for Boys

The Sandia Mountain Hockey League will hold practice sessions for boys, up to age 12, interested in playing ice hockey.

Rol Hewitt of Diagnostic Aircraft Operations Division, league president, announces that the initial meeting will be held July 10 at 10 a.m. at Iceland (Copper and Truman NE). Boys and their parents are invited to attend to discuss the proposed program which will include instruction in skating fundamentals and hockey rules. Times and dates for the practice sessions will be announced at that time.

## Welcome Newcomers

June 14 - June 25

<b>Albuquerque</b>	
*Elven W. Kieffer	4542
Sylvia L. Schafer	3126
*Bertha V. Williams	4373
*K. Janet Willis	3126
*Maxine Lucas	3126
<b>Indiana</b>	
Errol P. Eer Nisse, W. Lafayette	5142
<b>Texas</b>	
Marvin S. Morris, Odessa	2564
Arthur L. Hardeman, San Antonio	9423
David M. Darsey, Austin	7334
<b>Iowa</b>	
David E. Ryerson, Ames	7252
Wayne D. Sundberg, Ames	9323
<b>Oregon</b>	
Richard R. Berlin, Corvallis	9422
<b>Arkansas</b>	
Bennie F. Blackwell, Fayetteville	1422
<b>District of Columbia</b>	
Archer S. Mitchell	7332
<b>Kansas</b>	
Christopher E. Olson, Lawrence	9422
<b>Utah</b>	
Stephen A. Sheffield, Salt Lake City	1311
<b>Colorado</b>	
John L. Fallon, Denver	1333
Gary H. Mauth, Boulder	1511
<b>Georgia</b>	
Alton W. Luckey, Atlanta	9324
<b>Maryland</b>	
Noel R. Mohberg, Hyattsville	1442
Daniel M. Talbert, Churchton	5621
<b>Mississippi</b>	
John K. Owens, Starkville	9226
James M. Parvin, Corinth	9231
<b>Montana</b>	
Albert A. Lemieux, Rexford	7334
<b>North Carolina</b>	
Stephen W. Sherman, Jacksonville	9421
<b>Nebraska</b>	
Donald H. Schroeder, Elwood	2543
<b>Returned from Leave</b>	
Donald C. Wunsch	2412
John M. Holovka	1111
Helen D. Aragon	2523
<b>Summer Employees</b>	
Derlinis O. Donnelly, Cedar Grove, N. J.	7334
William H. Drysdale, Champaign, Ill.	9325
James A. Ellison, Madison, Wis.	7324
*Douglas S. Kerr, W. Lafayette, Ind.	5256
Edward J. Shipsey, Columbus, Ohio	5121
*H. Dale Stout, Albuquerque	1121
*Lewis Thigpen, Chicago, Ill.	9312

## Transit System Interested In 'Bus Pool' Expansion

The Albuquerque Bus Company has expressed interest in expanding its daily "bus pool" routes for Sandia Laboratory employees.

Questionnaires seeking information to be used in planning additional routes were distributed recently at Sandia Laboratory. J. N. Johnson, supervisor of Community Relations Division, said a good response may make it possible to shorten existing routes in addition to adding others.

By midweek, more than 700 replies had been received in Community Relations Division, and Mr. Johnson reported each mail delivery brought more.

Both routes pass through Northeast Heights areas, stopping at each corner en route to pick up Sandians and take them directly to work. A daily average of more than 40 persons has been using the service since it was placed in operation June 1 on a one-month trial basis.

One-way fare is 25 cents or a bus token and five cents.



CERAMICS THROUGH THE AGES is a display in Bldg. 804 arranged by John Gardner of Technical Libraries Division.

## Library Display Traces Use of Ceramics From Ancient to Modern Times

"Ceramics Through the Ages" is the subject of a display currently in the entryway of the Technical Library, Bldg. 804.

Arranged by reference librarian John Gardner, the exhibit follows the use of ceramic materials from early Indian cooking vessels, through fine European tableware, to present technological applications.

A Pueblo pot from the 1325-1490 AD period was loaned by George Dalphin. Earlene Brinegar and John provided china from their own collections (all three are in Technical Libraries Division). Gene Haertling of Ceramics Division furnished descriptions and examples of technical uses.

## Death . . .

J. B. McCullar, Jr., a staff associate in Project Division, Weapon Development Department II, died Saturday, June 19. He was 42. He had undergone surgery on Friday, June 11.

Burial was at Ardmore, Okla., June 22.

Surviving are his widow, Lillian, and 11-year-old daughter, Deborah.

Mr. McCullar had been employed at Sandia since November 1950.

John D. White, Jr., Princeton, N. J.	5151
Robert E. Johnson, Madison, Wis.	5121
Ronald J. Kuhler, Stanford, Calif.	5142
Jeffrey E. McClintock, Cambridge, Mass.	5241
*Oliver D. Neece, Albuquerque	2411
Francis P. Gerstle, Jr., Boston, Mass.	7311
Donald W. Alderman, Ithaca, N. Y.	5151
*Richard C. Dove, Albuquerque	7325
John F. Hirschmann, Chicago, Ill.	4113
James K. Linn, Lincoln, Neb.	9233
*James P. Quint, Albuquerque	7211
Richard O. Ryan, Chicago, Ill.	4121
Barbara A. Prejean, Albuquerque	3151
Rose L. Gonzales, Albuquerque	3153
Jeanne Burns, Albuquerque	3341
Linda G. Baxter, Albuquerque	3153

\*Denotes rehire

## 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 Corporation 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

- '49 JEEP WAGON, 12,000 miles, rebuilt engine, newly painted, radio, OD, \$325. Harrison, 256-0216.
- AKC REGISTERED, champion sired, Pembroke Welsh Corgi, 4 mos. old, male, red w/white, Cote de Neige linebred, all permanent shots. Dauphinee, 255-6367.
- AIR CONDITIONER, portable, 3-speed, 2 blowers w/directional, 3-gal. capacity, leatherette exterior, cost \$60, sell \$20. Cano, 255-0211.
- NEAT 3-bdr. house, landscaped, carpeted, walled yard, newly painted interior and exterior, patio, built-in range. Cranfill, 298-2518.
- BROWN HIDE-A-BED couch w/matching end and coffee tables, all for \$15. Lang, 265-0250 evenings.
- KWIK KAMP camping trailer, 1960 model, \$235. Holpp, 299-4809.
- KITCHEN TABLE and 4 chairs, \$12; one red tub chair, \$5. Paul, 256-6228.
- '55 FORD Custom Line, AT, V8, R&H. Kurowski, 256-7295.
- TWO HIVES of good bees, sell or trade. Randle, Placitas.
- LUMBER, 1 by 10's four feet long, brand new, never used, 5c/foot. Corll, 255-5683.
- 3-BDR. AND DEN HOUSE, near school and shopping centers, access to back yard, 2729 Valencia NE, \$17,600. Durham, 256-6284.
- '54 FORD COUPE, 6-cylinder, standard shift, \$75. Henneke, 298-4232.
- SET OF FOUR 8.00x14 Premium tires, white sidewalls, \$29.50. Arave, 268-7772, 2813 LaVeta NE.
- GASOLINE ENGINE, 2 1/2 HP, 4-cycle, \$15. Martin, 256-6785.
- TWO-WHEEL LUGGAGE TRAILER, 7 1/2 x 4 1/2 bed. Hudgens, 247-8296.
- '64 MGB red roadster, 15,000 miles, \$2200. Kurtz, 265-6243.
- '59 PONTIAC 4-dr. Catalina, standard transmission. McGarr, 243-4324.
- FREE KITTENS, weaned, housebroken, free delivery. Tatum, 877-0997.
- '54 MORRIS OXFORD, large compact, recent overhaul including new clutch, \$250. Singleton, 299-1613.

## SHOPPING CENTER

- '62 TR4, R&H, w/w OD, \$1695; 3-bdr. brick home, 1 1/2 baths, drapes, carpeted, water softener, patio, walled, \$14,500. Wilson, 298-0049.
- VACUUM PUMP, \$10; VW Renault chains, \$4; camp cot, \$3.50; Coleman cooler, \$3; Rambler trailer hitch, \$4. Schiess, 255-3252.
- RATAN CHAISE LOUNGE, 3 arm chairs, 4 tables, \$100; blonde oak corner china cabinet, \$50. Yodea, 255-8290.
- MAGNAVOX TV, console, mahogany cabinet, tubes needed, \$20. Besser, 268-5194 after 5.
- '55 FORD, 6-cylinder sedan, make offer. Moyer, 345-0567.
- 3-BDR., 1 3/4 bath, built-in range and disposal, carpeting, SE Heights near schools and bases. MacDowell, 268-2184.
- TV COMBINATION, 21" screen, AM-FM radio, record player, make offer. Mancuso, 299-4279.
- '57 CHEV. 1/2-ton pickup. Geilenfeldt, 265-0294.
- 3-BDR. HOME, attached garage, landscaped, garbage disposal, pitched roof, walled yard, for FHA appraisal of \$11,750. Trujillo, 299-4911.
- ROBERSON 3-bdr., den, fireplace, electric kitchen, dishwasher, new Herculon carpet, double garage, \$18,500 GI Loan. Taylor, 298-0426.
- 35MM SLIDE PROJECTOR, LaBelle '55" w/5" f/2.8 lens; carrying case for projector, carrying case for 12 magazines, \$40. Cundiff, 256-0043.
- 6000 BTU Fedders room air conditioner, casement window type, cost \$240, sell \$125. Raisen, 265-0227 after 5.
- MARLIN 30-30, brand new. Myers, 877-9714.
- BABY BED, \$5; youth bed, \$5; 2 canaries w/cages, \$5/ea.; floor lamp, \$2. Womelsdoff, 299-6269 after holiday.
- '62 CORVETTE, white w/red interior, 327 cu. in., 4-speed. Arnold, 298-4522.
- WALNUT DESK and chair. Warnke, 1200 Madera SE, 268-1877.
- HOTPOINT AUTOMATIC WASHER and Hotpoint Electric dryer, both for \$65; Sear's combination washer-dryer, \$125; need welder. Shuster, 268-8491.
- MANKIN 3-bdr., 5 minutes from Base, 1 1/2 bath, DR, vacant, immediate possession, low down payment, terms available. Miller, 242-6066.
- '63 VOLKSWAGEN sedan, deluxe, \$1250. Baca, 344-8170.
- ALL-WEATHER CAR COVER, fits TR-4's, used twice, cost \$30, sell for \$20. Dowd, 255-1482.
- '57 RAMBLER V8, AT, R&H, \$275. Demmel, 9700 Robin NE, 299-5639.
- '52 OLDSMOBILE convertible, new top, R&H, new seat covers. Corn, 299-0601.
- ELECTRIC HEATER, Chromoflox 120v, 60cy, \$8; apt. size gas range, Hardwick 4-burner, \$15. Ussery, 298-6425.
- ELECTROLUX VACUUM CLEANER w/cord reel; platform rocker, arm chair, and matching oak end table; cypress-knee lamp. Ricard, 256-1483 after 5.
- GUITAR AND CASE, \$15. Halsey, 299-6418.
- HIGGINS camping trailer, 70 sq. ft. of off-the-ground sleeping area, 16" wheels, new tires, \$250. Schmierer, 299-2352.
- PLAYPEN and bed rails. Bowen, 255-8195.

## SHOPPING CENTER

- FREE BEAGLE PUP, 1 yr. old, house broken. Martin, 298-6644.
- GARDEN TRACTOR, 7 1/4 HP., 2 yrs. old, w/attachments, \$300; 2 riding horses w/saddles; tomato boxes. Bodenhamer, 877-1225 after 5.
- GOLF CLUBS, ladies Patty Berg autograph registered woods No. 1, No. 3; irons 3, 5, 7, 8, 9; bag. Cavanaugh, 255-7912.
- SIMMONS hide-a-bed couch, \$85; all metal utility trailer, \$35; gasoline tanks and stand, \$15; Speed Queen washer, \$15 or trade. Myers, 877-9714.
- '60 CHEVY BELAIR, 2-dr., 6-cyl., AT, R&H, about 35,000 miles, new seat covers, \$700. Sheppard, 268-6000.
- '65 PLYMOUTH Valiant, take over balance of payments, 2-dr. sedan, 4-speed, 4-barrel carb., 273 V8 engine, R&H, 8000 miles. Dahl, 256-1067.
- '62 RAMBLER American station wagon, OD, R&H, \$700. Selph, 298-7633, evenings 299-6833.
- SCHWINN 10-speed bicycle, \$40. Nogle, 299-3863.
- '63 FIAT 1100, 4-dr. sedan, \$750. Barnes, 344-6630.
- HAY, Haskell, 257-0211.
- BICYCLE, racing, new 10-speed, options quick release wheels, Schwinn, \$75. Stesinger, 299-4626.
- FAIRCHILD professional turntable, arm and cartidge, \$58; Jansen 4-speaker system, \$35; speaker enclosures 32" long x 25" high x 18" depth, \$50. Browning, 299-6384.
- 3-BDR., study or 4th bdr., den, hw/floors, enclosed patio, sprinklers, landscaped, corner lot, brick, \$28,800. Makal, 7201 Claremont NE, 299-9013.
- ROBERSON 3-bdr., family rm., fireplace, 1 3/4 bath, heated double garage, 12x24 patio, AC, carpeted, many extras. Kimball 2104 Gretha NE, 299-2015.
- NIAGARA Cyclo-massage hand unit, \$30; white quilted headboards for twin beds, \$10. Mueller, 298-3406.
- BABY BED; chest-of-drawers; highchair; potty chair; double bed; carpeting; radio; power mower; toaster; iron; want aquarium, fish, supplies. Chandler, 298-1114 after 5.
- FORMAL WEDDING DRESS w/detachable train, bouffant veil; formal, ballerina length, light blue; semi-formal, chiffon, green, all size 14. Wilson, 299-1721 after 5.
- 1850 sq. ft., corner lot, completely walled yard, 3-bdr., 2 den, 1 3/4 bath, sprinklers, fireplace, dishwasher, near Winrock. Greenwood, 298-5268.
- '56 CHEVY, 4-dr., HT, original owner, Conant, 256-0012.
- 3-BDR. HOME, garage, walled back yard, 4017 Simms SE, move in now, \$13,800. Machota, 247-8000 or 242-1118.
- 4-BDR., NE, near schools, 1700 ft., draped, carpeting, AC, SW landscaping, FHA appraisal \$16,000 or 4 1/2% GI. Shunmy, 299-2787.
- HOT POINT refrigerated air conditioner, 1-ton, 220 volt, \$115. Roberts, 265-4264.
- 7-PIECE KITCHEN-DINETTE set, \$10; pair table lamps, \$5/ea.; 1/4 HP electric motor, \$7; twin bed, \$12. Binder, 299-2937.
- FOUR HILLS tri-level, 4-bdr. and den, storage rm., oversized double garage, landscaped, 2200 sq. ft. Law, 298-0287 after 5:30.

## SHOPPING CENTER

- 3-BDR., 1 3/4 baths, stucco-frame, garage, utility rm., sprinklers, chain link fence, carpeted, drapes, AC, near schools, shopping, SW valley. Cooper, 877-2896.
- 3-BDR., den, carpet, electric kitchen, AC, landscaped, near schools, NE Heights. Tilley, 299-0762.
- BOOKCASE, large, 3-shelf, \$5; sturdy hinge-roofed doghouse, easy to clean, \$6. Campbell, 256-1015.
- CUSTOM BUILT on 1/2 acre, 3 large bdrs., 2 1/2 baths, 2 fireplaces, 2 wells, landscaped, carpeted, drapes. Eiffert, 898-0324.
- TWO WINDOWS, 40x53 1/2, double hung, Trucon steel, glazed, screen and venetian blinds, cost \$90, sell for \$25. Officer, 256-0337.
- JACOBSEN LAWN MOWER, rotary, gas, 2 yrs. old, 1/2 price \$70, will consider trade for electric cement mixer. Sharp, 298-1011.
- STEEL CASEMENT WINDOWS, one 3'x7', one 2'x3', frosted w/screens, \$25 or best offer. Crawford, 344-7890.
- BICYCLE, Schwinn, girl's 24" w/basket, standard thorn-proof tires and tubes, \$30. Baars, 255-9051.
- '63 CHEVROLET IMPALA 2-dr. HT, \$1600 NADA wholesale price. Steele, 299-9117.
- SOFA, blue, Danish Modern, imported frame, cane ends; brown barkcloth lined drapes, 110x84. Cassidy, 268-1106.
- 21" TV, Admiral table model w/stand, needs minor repair, \$15. Smaller, 299-8413.
- BICYCLE, Schwinn, boy's 20", \$20. Russell, 299-0159.
- BOAT MOTOR, 14' Cartop SeaKing, 12hp SeaKing, w/life jackets, cartop rack, \$280. Oliver, 299-8853.
- 3-BDR. and den, 1 3/4 bath, utility rm., AC, carpets, drapes, corner lot, walled yard, 2 1/2 yrs. old, \$15,600 total, \$1000 for equity. Hughen, 298-2900.
- MAPLE BEDROOM FURNITURE, suitable for child's rm., \$25; motor bike, spare parts, needs repairs, \$22.50; hand lawn mower, \$5. Fuller, 299-4785.
- '61 CHEV. BISCAYNE, 8-cyl., stick shift, turquoise and white, 48,000 miles, new tires, R&H, \$850. Foster, 5115 Aspen NE, 265-0069.
- RABBITS—Dutch, English, Belgian, Russian, \$1 and \$1.25/ea. Burgess, 243-3350 after 5:15.
- '62 F85 Olds station wagon, one owner, 23,000 miles, R&H, w/w, AT, Ives, 299-7003.
- USED STENOGRAPH shorthand machine, beige w/carrying case, \$95; used Bundy clarinet w/case, \$40. McGinnis, 296-1713.
- '63 TRIUMPH TR4, roadster w/OD, R&H, luggage rack, tonneau cover, \$1750. Magnuson, 628C Alcazar SE, 255-3921.
- SIMMONS HIDE-A-BED w/arm rests and Beauty Rest mattress; lamps; limed oak dressing table. Nichols, 247-2564.
- DISHWASHER, Frigidaire Custom Imperial, portable, copper-tone w/chopping block, used 18 mos., \$160 cash. Kenna, 298-6059 after 5.
- WESTINGHOUSE portable TV and stand, bronze green slimline, half price at \$80. Mitcham, 299-8425.
- 3-BDR. and den home, \$800 worth of new carpeting, pitched roof and all improvements, FHA appraisal \$17,500. Everett, 299-6057.

## SHOPPING CENTER

- 21" DUMONT TV, blond wood table model, needs picture tube, \$10. Duvall, 299-8744.
- '55 FORD VICTORIA, automatic, Grey, 299-7349.
- '58 ZUNDAPP motorcycle, 250cc, \$200 cash. Tassia, 511 Utah SE.
- .177 CALIBER Benjamin Franklin pellet pistol. Gladis, 299-7729 after 5.
- SIGNATURE room air conditioner, evaporative type, 1 yr. old, \$20. Barton, 298-1240.
- '60 TRIUMPH HERALD 2-dr. sedan, \$400. Galbreath, 898-0644.
- '55 FORD station wagon, ST, OD, \$200. Venti, 299-8595.
- HOME NEAR BASE, schools, 3-bdr., den, utility rm., hw/floors, AC, fireplace, perimeter heating, 8311 Roma Ave., NE, \$15,900. Bemis, 296-1305.
- '53 CHEVROLET 2-dr. sedan, AT, original owner. Rufsold, 268-5970.
- GAS RADIANT HEATER, \$20; kerosene stove, \$10; portable grill, \$3; camera enlarger bench; baby gate, \$2.50; metal breadbox, \$3. Quigley, 256-6622.
- GAS RANGE, 4 burners w/griddle and interchangeable 5th burner, large oven, broiler, pan storage. Moore, 298-8909.
- AIR CONDITIONER, 3 1/2-ton; refrigerator; washing machine, needs repair. Fisher, 299-9235.

## FOR RENT

- SMALL 2-bdr. AC apt., near Sandia, unfurnished, \$70; furnished, \$80; no pets. Villella, 256-9729 after 5.
- 2-BDR., walled yard, trees, near schools and shopping on bus line, reasonable rent. Morgan, 256-7994.
- 3-BDR., DR, 1 1/4 bath, garage, unfurnished, stove only, \$125/mo., vacant after July, 941 Kentucky SE. Griego, 299-0627.
- 3-BDR. w/b fireplace, near Indian School and Morris, near schools through grade 12. Brooks, 282-3753.
- 3-BDR. HOME, stove and refrigerator, unfurnished, landscaped—shade and fruit trees—water paid, 10 mins. to Base, 8000 San Joaquin SE. O'Boyle, 268-1436.

## WANTED

- DOUBLE KITCHEN SINK for cabin, also set of barbells. Baxter, 344-7601.
- HOME for Persian kitten, just one left. Lyles, 268-0144.
- CARPPOOL, want to join a pool around the Monterey Manor area to the 802 side of Tech. Area. Kotowski, 12156 Sierra Grande NE, 298-1732.
- HOME for two purebred Boxer dogs, female, 1 yr. old. Dawson, 344-0760 after 6.
- RIDE from Los Arboles Place NE, Hoffmantown to Blud. 806. Brint, 299-1644.
- RIDE or swap rides, Bldg. 802 to 15th near Central SW. Creveling, 242-3790.
- LOST AND FOUND**
- LOST—Silver earring, 2 keys on ring. LOST AND FOUND, tel. 264-2757.
- FOUND—Cuff link, Thunderbird emblem, safety glasses, keys in zipper case. LOST AND FOUND, tel. 264-2757.



ADMIRING THE "CINDY" AWARD presented to Sandia Corporation for the "Wherever You Go" security film are (left) Bob Colgan, supervisor of Employee Publications, and Bill Mahaffey of Industrial Photographics Division. Bob was writer/director of the film and Bill was cameraman/editor. The award was presented during a recent national conference of the Industry Film Producers Association.

## Fee System Now in Effect At N.M. Camping and Picnic Areas

An entrance fee is now required at 121 camp and picnic grounds on National Forest land in New Mexico, according to Southwestern Regional Forester Fred H. Kennedy of Albuquerque.

The fee system was provided for in the Land and Water Conservation Fund Act of 1965 and went into effect in New Mexico Thursday.

Mr. Kennedy said the fee program would be enforced at entry stations to the forest areas and with periodic random checks in the field. During early stages of the program, violators will be asked merely to pay the required entrance fee, he added.

Visitors to designated areas can purchase a \$7 annual Recreation/Conservation sticker for their automobiles, a 50-cent per person one-day camping ticket, a 25-cent per person one-day picnicking ticket, or a \$2.50 per person season ticket which is good only in the forest for which it is purchased. Fees do not apply to children under 16 years old.

The one-day permits are good only in the individual forests for which they were purchased.

Mr. Kennedy said the Recreation/Conservation sticker is available at the Forest Service Regional Office in downtown Albuquerque and at all field offices. This sticker charge includes all fees for all occupants of the car.

Mail orders will be accepted and must be accompanied by a money order made out to the Treasurer of the United States.

Seasonal and one-day tickets are available at all Forest Service offices and from any forest ranger.

The bumper sticker entitles the holder to enter certain designated National Park Service areas, National Forest areas, National Wildlife Refuges, and other Federal recreation areas where entrance fees are required. Mr. Kennedy also pointed out that the \$7 annual permit is good nationwide until Mar. 31, 1966.

Single-forest season tickets expire Dec. 31, 1965.

Failure to pay the entrance fees is punishable by a fine of up to \$100, Mr. Kennedy said.

New Mexico lands subject to entrance fees include 27 picnic grounds and 94 camping areas in the Carson, Cibola, Gila, Lincoln, and Santa Fe National Forests. Mr. Kennedy explained that the designated areas were selected on the basis of cost, quantity, and quality of facilities provided at government expense.

Those not designated remain free along with use of trails, roads, lakes, and streams. There is no fee for hunting and fishing, and facilities operated by concessionaires are not covered by the annual permit or tickets.

In the Albuquerque area, fees will be collected for entrance to 26 spots. Among

them are seven picnic grounds in the Sandia Recreation Area — Sulphur Canyon, Doc Long, Tree Springs, Dry Camp, Balsam Glade, Capulin Springs, and Las Huertas.

Elsewhere in the Cibola National Forest, fees will be necessary at 13 campgrounds and six picnic areas. Campgrounds include Quaking Aspen, Ojo Redondo, Canyon Lobo, Coal Mine, Water Canyon, Tajique, Fourth of July, New Canyon, Red Canyon, Red Cloud, John F. Kennedy, Springtime, and McGaffey. Picnic spots are Pine Flat, Oak Flat, Juan Tabo, La Cueva, Cienega Canyon, and Cole Springs.

Citing the ever-growing use of public outdoor recreational areas, Mr. Kennedy lauded the new act as a way of making it possible for Federal and State governments to cooperate in providing urgently needed facilities. He explained that the act creates a revenue source to help provide new public recreation opportunities.

Subject to Congressional approval, 60 per cent of the income will be available on a matching basis to states, counties, and municipalities for planning, acquiring, and developing out-of-doors recreation lands. The remainder would be allocated to Federal agencies for acquiring key recreation areas.

## First 1965 Lost-Time Accident Occurs At Livermore Lab

On Monday, June 14, a Livermore Laboratory electrician was injured while attempting to move a heavy steel plate which covers a utility trench in Bldg. 914. The injury resulted in the first lost-time accident of 1965.

The accident occurred because the employee was not properly positioned to move the plate. The cover plate is designed to slide freely and glides. However, in this case, the employee was pulling the plate at an awkward angle which caused it to bind. When the employee tried to jerk the plate free, he experienced severe pain in his arm and chest.

At the time of the accident, the Laboratory had worked 296 calendar days or 1,528,922 man hours without a disabling injury.

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Take 12 Paper Clips . . .

## Creative Design Problem Brings Novel Solutions, New Approaches

Creativity is difficult to define but it can be demonstrated.

Creativity can't be taught, Jerry D. Ramsey believes, but the techniques of creativity can be learned. Jerry, Value Engineering, Cost Reduction and Supplier Evaluation Division, instructed an advanced class in methods engineering this past semester at the University of New Mexico. One of the final assignments was an exercise in creative design.

Four-man teams of students were handed a kit of everyday items. The assignment was to "make something useful" with the kit. Included were 12 paper clips, six thumbtacks, four pencils, nine rubber bands, one piece of aluminum foil, four brass fasteners, one metal binder, one eraser, one razor blade, two safety pins, two pieces of poster board, and the envelope container.

Some of the solutions to the problem were relatively simple and straight-forward, Jerry said, while others were highly imaginative and creative.

The students produced items ranging from a photographer's light reflector to an adjustable four-second cycle metronome. A sturdy flip-top lid ash tray was one of the solutions as well as a decorative birdcage-planter-mobile.

"The assignment served one purpose," Jerry said. "To fulfill it, students had to shake the barrier of 'functional fixedness'—not being able to see beyond the function normally ascribed to a particular item. They had to use rubber bands as tension motors, pencils as structural members, and paper clips as springs."

Creativity, Jerry believes, is envisioning new approaches, new arrangements, and new uses of materials to solve problems. As the accompanying picture shows, Jerry's students learned well.



CREATIVE DESIGN PROBLEM using paper clips, foil, etc., was solved with some of these "useful" items produced by students in Jerry Ramsey's Methods Engineering class at UNM. Jerry is holding a birdcage-planter-mobile. On the table are (from bottom, clockwise) a banjo, ash tray, light reflector, grooving tool, animated drawing viewer, ball and paddle board, and metronome.

## Six Children Saved From Serious Injury By Using Seat Belts

With six children in his car, Robert P. Kelly, supervisor of Programming and Logistics Division was involved in an automobile accident June 18. His nine-passenger station wagon collided with a sport compact while crossing the intersection of Moon and Candelaria. It was at night after a rain and the headlights of the second car were not on.

There was a tremendous impact as the cars collided, but luckily there were no serious injuries. Six of the seven persons in Bob's station wagon were wearing seat belts and so was the driver of the compact. One of Bob's sons—seven-year-old Pat—suffered a cut lip, a minor injury.

Bob's eyeglasses, and the glasses of one of the boys in the front seat, flew into the windshield on impact.

"That could have been us," Bob says. "Without seat belts, I imagine we all would have bounced around inside the car. Seat belts saved us from what could have been a very bad situation. As it was, we were shaken up but thankful to be all right."



BOB KELLY inspects damage to his station wagon after a recent collision. Seat belts prevented serious injury to Bob and the six children riding in the vehicle.

## Accident June 25 Injures Employee

Sandia Laboratory's current safety record was broken Friday, June 25, when an accident occurred in the trailer area east of Tech Area I.

An employee, working on a radar antenna, fell from the roof of the trailer. He landed on his left side causing compound fractures of his left wrist and injuries to his left hip and left side of his face.

A co-worker, inside the trailer, called the Laboratory ambulance, and the injured man was taken to a local hospital.

At the time of the accident, Sandia Laboratory employees had worked 133 days or 5,000,000 man hours without a disabling injury.

## Sandia's Safety Scoreboard

**Sandia Laboratory:**  
4 DAYS  
140,000 MAN HOURS  
WITHOUT A  
DISABLING INJURY

**Livermore Laboratory:**  
15 DAYS  
82,000 MAN HOURS  
WITHOUT A  
DISABLING INJURY