

VISITING SANDIA last week was U. S. Representative John F. Rhodes from Arizona (center). A member of the House Appropriations Committee, Congressman Rhodes met with L. P. Gise (left), manager of AEC/ALO, and C. W. Campbell, vice president 4000, before visiting some of the installations in Technical Area III.

Laboratory Receives Award for Employment of the Handicapped

Sandia was recognized as an employer of the year for the handicapped last week when the Governor's Committee on Employment of the Handicapped presented the Laboratory an area award for its outstanding record.

H. J. Hebbeln, chairman of the Committee, presented the certificate to W. G. Funk, manager of Employment and Personnel Department 3150, who represented the Laboratory at a special luncheon ceremony.

One hundred and eleven of the 7000 Laboratory employees are physically handicapped. Included in the job categories held by Sandia's handicapped employees are supervisors, engineers, scientists, technicians, draftsmen, and administrative staff members. Their disabilities include amputations, paraplegia, total blindness, total deafness, diabetes, and severe allergies.

Sandia also has about 900 other employees who have minor handicaps, such as impaired vision, back disorders, and allergies.

The only criterion for the Laboratory's employment of the handicapped with regard to physical requirements is whether the individual can effectively perform the job for which he is being considered. It also applies to promotions or transfers. This policy has been in effect since the formation of Sandia Corporation in 1949.

Should an employee become disabled, every effort is made to find him another job within the Laboratory so he will continue to be a productive employee. Should it be necessary to downgrade an employee to a job he can perform, he maintains the same rate of pay he had prior to becoming handicapped except in the usual cases.

Approximately 30 handicapped employees



CERTIFICATE OF COMMENDATION that was presented to the Laboratory for its record of employing handicapped persons is held by Vern Henning (3152) as W. G. Funk (3150) looks on.

are provided reserved parking spaces which enables them to park close to their work locations. In addition, the Laboratory provides a taxi service for seven employees from their parking areas to work locations within technical areas.

Dr. S. P. Bliss, Medical Director 3300, and Vern Henning, personnel representative (3152), are members of the Governor's Committee on Employment of the Handicapped.

A Philosophy of Service

Ray B. Powell Elected to C of C Board

A busy individual is faced with the problem of balancing his time and energy between four basic obligations—family, job, church, and community. One who successfully fulfills these responsibilities is Ray B. Powell, vice president 3000.

His participation and sincere interest in community affairs is recognized by other community leaders who recently elected him to the Board of Directors of the Greater Albuquerque Chamber of Commerce. He will begin a three-year term on Jan. 1, 1967.

Actually, Mr. Powell has been a booster of New Mexico since 1944 when he was transferred to Los Alamos by Union Carbide Research Laboratories. His long acquaintance with the state leads him to speak with feeling of the area's unique assets—the open spaces, the beauty, the culture. "Most of us have become attached



R. B. Powell

SANDIA LAB NEWS



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SANDIA LABORATORIES ALBUQUERQUE, NEW MEXICO OPERATED BY SANDIA CORPORATION FOR
LIVERMORE, CALIFORNIA THE U. S. ATOMIC ENERGY COMMISSION

Lab Experimenters Return After Highly Successful Eclipse Studies

Flying scientists, rocketeers, and members of Sandia's diagnostic aircraft team returned to the Laboratory last week after conducting solar eclipse studies off the coast of Brazil last month.

For Sandia experimenters aboard a NC-135A jet aircraft, the expedition was staged according to plans with prospects for highly successful data acquisition.

The crash of a cargo plane in Santa Maria, Brazil, caused the Sandia rocket group based at Rio Grande, Brazil, some frantic days of planning and rescheduling. Two of five rocket payload sections that were to carry Los Alamos Scientific Laboratory instruments to about 170 miles altitude during the Nov. 12 eclipse were destroyed in the crash. However, all of the anticipated data were acquired with three successful launches.

Diagnostic Aircraft

Sandia's airborne scientific group, flying aboard a diagnostic aircraft 34,100 feet over the South Atlantic, took a variety of solar measurements. The flying laboratory raced along the path of the moon's shadow at 600 mph to stretch the total eclipse time from less than two minutes on the ground to three minutes, one second.

"Operationally the expedition was perfect," states M. M. Robertson (1122), scientific commander of the Sandia aircraft. "The first look at some of the data is very encouraging, but it will take months to analyze the information and perhaps years to assess its importance."

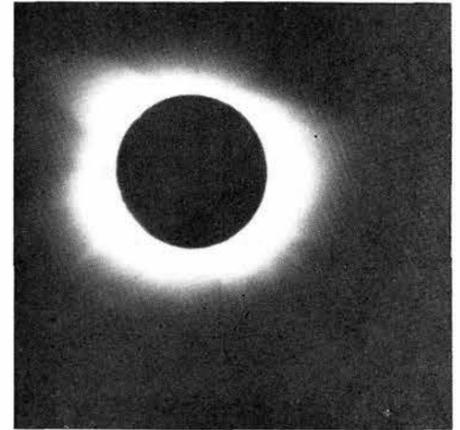
Experiments aboard the aircraft were designed to gather data on the sun's corona and on the interactions of solar emanations with the earth's upper atmosphere. On the return flight, studies of cosmic rays (sub-atomic bits of matter that bombard the earth's atmosphere from outer space) were conducted from south of Lima, Peru, to the Hudson Bay area.

Other experiments aboard the aircraft were from the Naval Ordnance Test Station and the Geophysical Corporation of America.

Two other specially instrumented NC-135A aircraft with Los Alamos Scientific Laboratory (LASL) and Lawrence Radiation Laboratory experimenters also participated in the eclipse expedition. The three planes were based at Buenos Aires.

Rocket Launches

The LASL-Sandia rocket group had planned to launch five Nitehawk-9 rockets with experiments designed to measure the solar x-ray source functions before the total eclipse, during totality, and during the partial eclipse following totality; and to correlate emission line intensities with



TARGET FOR TWO LABORATORY EXPEDITIONS was the total solar eclipse off the Brazilian coast on Nov. 12. The sun's south pole is shown at the top. The notches which appear to be features of the moon are the result of film halation caused by solar prominence at those points. The small dot in the lower right is the planet Venus.

visible active regions of the solar disk.

With the loss of the two payloads and checkout equipment, the Sandians pieced together makeshift checkout equipment and proceeded to launch the remaining three payloads. All three shots were successful.

A Sandia-developed attitude control system was used to keep the rocket payload pointed at the center of the sun during the 2300-mile-an-hour ascent. The system includes a flyball, or "yo-yo" despin system, a sun sensor, rate gyros, and eight dry nitrogen gas thrusters.

The flyballs, consisting of two metal weights each at the end of a wire rope, are mounted flush with the payload skin. At the desired time in flight, an explosive-operated guillotine cuts a wire cable which retains the flyballs. Centrifugal force of the spinning payload deploys the weights out in a "yo-yo" fashion. As they unwind from the payload, the rotational energy is converted to translational energy to stop the payload from spinning.

Subsequently, the electro-optical control system determines the magnitude and direction of pointing error and operates the appropriate nitrogen thrusters to point the payload toward the sun with better than 15 arc minutes of accuracy.

The attitude control system helped to provide the LASL scientists with more solar x-ray data than they have ever previously acquired from sounding rockets.

University of California established its facility at Sandia Base, Ray Powell headed the personnel organization.

Since then, he has seen the impact of research and development laboratories and their personnel on the state and the impact of the Southwestern way of life on those who came here to contribute to the nation's technology.

"We at Sandia work in an outstanding scientific and engineering laboratory engaged in projects of national importance. This, in itself, is a stimulating experience. To be able to do this work amid the natural beauty, climate, and other advantages offered by New Mexico is indeed a rare privilege," he says.

Leading the list of items that Mr. Powell considers vital to the state are excellence

(Continued on Page Two)

Editorial Comments . . .

Several years ago, a custom developed at Sandia and Livermore Laboratories.

It grew from a simple idea that was rich with Christmas spirit.

Instead of exchanging Christmas cards with friends seen almost daily, the money saved by not purchasing cards and postage was used to provide food, clothing, and toys for needy families in the community.

Each year more of us realized the good sense of this idea, and now it is an accepted custom.

Groups and organizations throughout the Laboratories obtain the names of needy families from churches and welfare agencies, and collected funds are spent to help bring the warmth of the Christmas season to many homes.

To give recognition and support, the SANDIA LAB NEWS will report these activities in forthcoming issues. In order to do this we ask that each group or organization report their project to our office, for, judging by previous years, the whole operation is carried out with a minimum of fuss and flurry and little concern for publicity.

Sending greeting cards or using that money to help others is entirely up to you—there's no policy or standard operating procedure. It's only a custom.

(But we think the custom is fine!)

★ ★ ★

Twenty-five years ago a peaceful Sunday afternoon was shattered with the news of the Japanese attack on Pearl Harbor.

Less than four years later, World War II ended with Japan's surrender on Aug. 14, 1945.

But America was not to return to a pre-war policy of isolation. We found ourselves thrust into a position of world leadership and became increasingly involved in world affairs.

Our nation's role is not an easy one. We are currently engaged in helping to defend a small nation against outside aggression. And the threat of aggression against America still exists.

Despite the threat of all-out nuclear war and its resulting holocaust, America's policy of developing nuclear weapons as a deterrent to world conflict has been successful. The existence of our nuclear arsenal has precluded a second "Pearl Harbor."

We, at Sandia, are justifiably proud of our solid technical reputation, our capabilities, and our accomplishments. We may be equally proud of the vital contribution we have made to world peace.

Supervisory Appointments



L. HERBERT PITTS to supervisor of the newly created Hourly Job Evaluation Division 3114, effective Nov. 1.

Herb joined the Laboratory as a placement representative for drafting and comptroller organizations in August 1961.

Two and one-half years later he transferred to Budget Division and Coordination 4137 where he has been budget representative for the 4000 organization.

He received a BBA degree from the University of Oklahoma in June 1961 and has completed his work for an MBA at the University of New Mexico.

Herb is an administrative medical officer in the New Mexico Air National Guard. He enlisted in August 1962 and was commissioned a second lieutenant the first of this year.



SANDRA BORG-RINK to supervisor of Travel Reservations Section 4363 - 1, effective Nov. 16.

After serving as a graduate assistant at the University of New Mexico for two years, Sandy joined the Laboratory in

June 1916 as a clerk typist in secretarial services. In September of that year she transferred to a personnel division as a personnel clerk. From August 1962 to June 1964 she was an employment clerk. She was promoted to staff assistant and named tour coordinator in the Community Relations Division in June 1964.

Sandy received a BA degree in history in June 1958 and an MA in personnel and vocational guidance in June 1960, both from the University of New Mexico.



Susan Hopkins (3126)

Take A Memo, Please

With the advent of Fall, be aware of weather-oriented hazards, such as poorly-vented furnaces, faulty mufflers in vehicles, unscreened fireplaces, and leaf-slick sidewalks and streets.

'Dialogues on Democracy'

New Record Album 'The Congress' Will Be Available to Employees on Monday

"The Congress," an album of three LP records, will be available on Monday to Sandia employees.

The album is the second in a "Dialogues on Democracy" series produced by Western Electric's Public Affairs organization. The first album, "The Presidency," was offered to Sandians in 1964 and was well received.

The album's three records and "read-along" text feature:

—"The Voices of Congress"—Senators and Representatives, past and present, re-live Congressional history;

—"Congress Passes A Law"—A typical piece of legislation is followed through the complete legislative process;

—"The Congress of the United States"—A dialogue between David A. Truman, Dean of Columbia College, Columbia University, and Richard D. Heffner, producer of the Dialogues series.

Volume I of the series, "The Presidency," which was so successful two years ago, has been revised and is also being offered.

The albums may be purchased during the noon hour at Employee Services Division in Bldg. 610 (at Livermore, Public Relations 8235, Rm. 138, Bldg. 912). Each album is priced at cost—\$1.50.



THE CONGRESS, Vol. II of the LP album series of "Dialogues on Democracy" is displayed by Gloria Sais (4332). The album is available to Sandians at cost—\$1.50.

Continued from Page One . . .

R. B. Powell Elected to C of C Board

in education, selective industrial development, and good government.

"Most children have considerable inherent talent, but many of them need specialized educational opportunities," he says. "We must match their needs with the kinds of education required by the culture and economy of the state and nation. We need an educational system second to none in the nation, starting with the first grade and extending through technical institute or college level. I think that great progress has been made in New Mexico in recent years toward this goal."

Once trained, these people need a place to work and, as an industrial executive, Mr. Powell admits that the state still has a good way to go to provide adequate employment opportunities for its people.

"Selective industrial development is the important thing," he stresses. "We must develop the state, but in a way to preserve its tri-cultural heritage and natural beauties. Progress has been made, but this effort needs to be continued and intensified."

Mr. Powell recognizes that the heart of an effective organization is the capable people who comprise it. "I see this every day," he says, "in the great laboratory we are developing at Sandia. I saw it in religious and social organizations during my tenure as senior warden of St. John's Episcopal Cathedral and as president of the Albuquerque YMCA. And I find it to be equally true in government."

In recent years Mr. Powell served on the City Personnel Board which introduced a merit system to attract and hold qualified employees in city offices. He considers this "an important step toward good, efficient government."

In 1961, the New Mexico State Legislature passed a Personnel Act establishing a system of personnel administration based solely on qualification and ability, thereby providing economy and efficiency in managing state affairs. Provisions of the Act are carried out under the guidance of the State Personnel Board.

Mr. Powell was appointed a member of this Board in January 1963. He was named Chairman in July 1965, succeeding John Hallahan, Industrial Relations Director of U. S. Borax, who transferred to his firm's Los Angeles office.

"The State Personnel Board and the Personnel Director with his staff are all working hard to carry out the basic purposes of the Act. They have had real success in implementing a sound system of personnel administration," Mr. Powell says. "Again, this means that qualified people are selected solely for their ability to contribute to the state government. Their capability and performance on the job is rewarded through promotion to greater responsibility and permanent employment. And, of course, the real beneficiaries of the system are the people of the state whose tax dollars are buying better government at less cost."

"I have gained real personal satisfaction from contributing to more effective and efficient government at both the city and state level," he concludes. "More than an obligation, it is a pleasure and privilege."

Mr. Powell lives with his wife and three children on several acres in the North Valley. His oldest son, Tom, age 24, after three years of military service primarily in Korea, has returned to complete his college education. He is a senior at UNM majoring in political science and languages.

Sixteen-year-old Ray is a junior at Valley High School. Like his dad, Ray faces the problem of balancing his energy and efforts. His busy schedule involves school work, tennis and basketball, raising prize-winning pigeons, and the demanding social activities of an American teenager.

Daughter Pamela is a ninth grade student and secretary of the student council at Taft Junior High School. She spends her spare time training her jumping horse, "The Flying Dutchman."

His wife, Penny, apportions her many busy hours between the family and church, but still finds time for open-air exercise. However, she's discovered that tennis is a much less hazardous pastime than pursuing her daughter's athletic endeavors. (Penny recently suffered a broken leg during a horseback "offing.")

The activities of Mr. Powell and his family are not unique, nor should they be. The fulfillment of the responsibilities of these four basic aspects of living—job, community, church, and family—are their way of life. It results from a personal philosophy which is lived, not simply believed.

SANDIA LAB NEWS



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LIVERMORE NEWS

Building, Sailing Tri-Hulled Boats Is Popular Livermore Spare-Time Hobby

Livermore Laboratory sailing enthusiasts, Ken Byrne (8156), M. O. (Mo) Jones (8123), and Dan Pegan (8154) have completed the construction of their own trimarans, and now spend many enjoyable hours sailing with their families and friends.

The trimaran is a triple-hulled craft, a descendent of the old Pacific outrigger canoes. The design has been modified by adding a cabin, mast, sails, and rigging.

The three began the project on a cooperative basis by investing in one set of plans. They each spent 18 to 20 months of spare time, including many consultations and discussions, building their boats. The plans covered only the hulls, so they decided to design the cabins to suit their personal tastes. All of the rigging is substantially the same.

"By building our own trimarans, we saved more than half the cost of comparable, commercially built versions—and we have what we really wanted!" Mo says.

All three trimarans are 24 feet long, 14 feet wide, and draw about 1½ feet. The aluminum masts are about 30 feet high and support dacron sails. Basic construction materials for the hulls is plywood, coated overall with fiber glass. Each boat can accommodate 10 to 12 people, and the cabin sleeps four comfortably.

According to Mo, there is growing interest in trimarans, primarily because they perform well and are safer and faster than conventional boats. "The conventional sailboat needs a heavy keel to keep it from heeling or tipping over, but the design of these multi-hull boats reduces the weight by eliminating the keel and making them extra wide. Since they are lighter, they are also faster."

Dan feels the trimaran has an additional advantage in that they can be trailered. "A conventional sailboat of a similar cruising capability could not reasonably be trailered, but the trimaran can be used any place and it is not necessary to leave her in the water," Dan explains. Both Mo and Dan have trailers for their boats.

The trimaran is an ocean-going craft and



ENJOYING their trimaran are Dan Pegan, his wife Janet, and Greg, one of the five Pegan children.

has even been sailed to the Hawaiian Islands. Ken says that one of the most memorable experiences was off the Pacific coast when he raced his trimaran, with Dan as his navigator, in the Midget Ocean Racing Association's 400-mile event from San Francisco to Newport Beach.

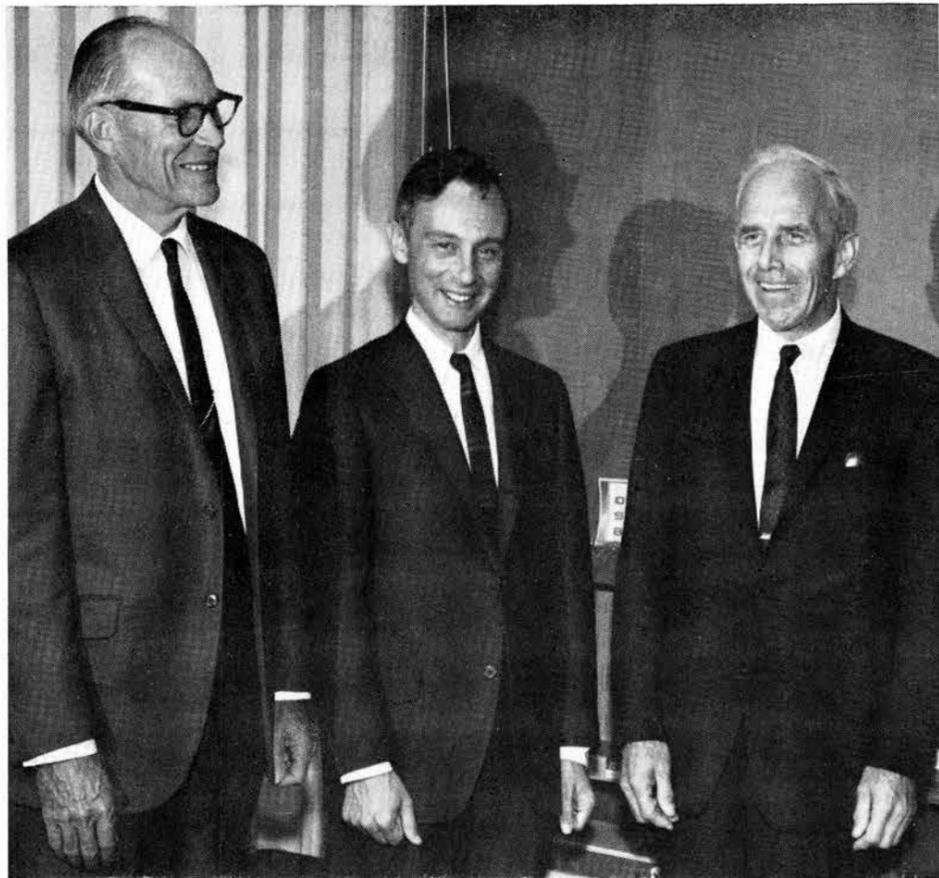
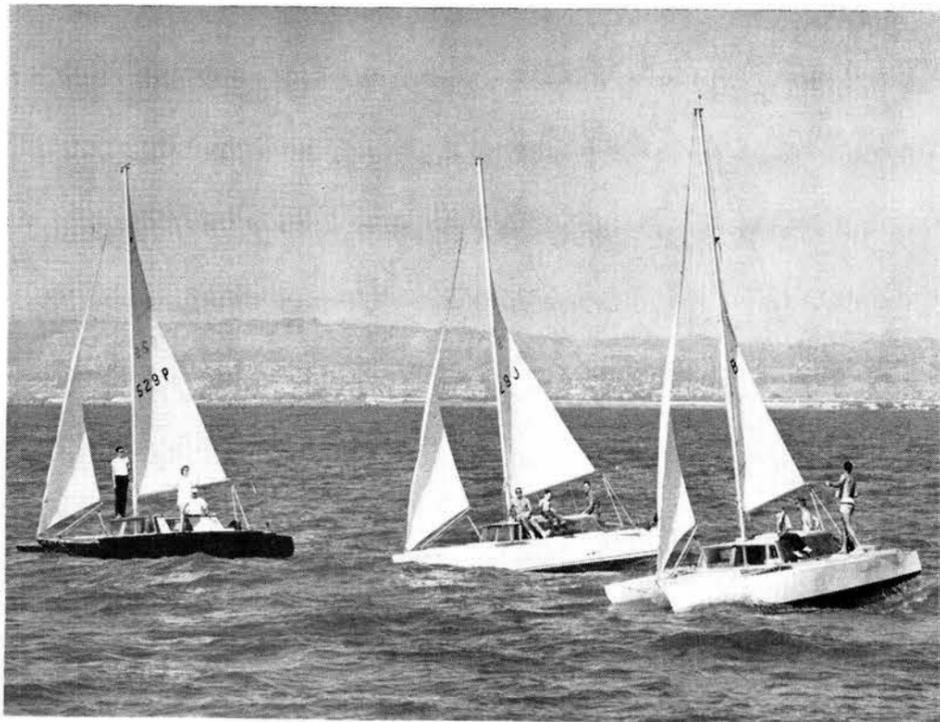
"It was our first race, and we just planned to have some fun and get some practice in competition. We were both surprised and pleased when we finished 16th out of 23 starters.

"The first five days the weather was foggy with very light wind. Using a radio direction finder to plot our position, we ventured up to 80 miles off the coast looking for a favorable wind. At this distance from shore, we saw an abundance of ocean life—whales spouted and sounded; seals, sea lions, and porpoises played around and under the boat; and thousands of jelly fish floated in the water.

"During the final day and a half," Dan continues, "there were high winds and waves under a clear, warm sky. Going down the Santa Barbara channel, we surfed on the face of the waves—just like a surfboard—hitting speeds up to 18 knots. After the race, we trailered the boat back, thus saving about a week's time."

Building and sailing trimarans on San Francisco Bay and nearby waters is a favorite recreation for many SCLL employees. Others include Pete Dean (8231) who built his craft and Al Ford (8168) who purchased a commercial version. Bobbie Balanda (8232) and Jim Rego (8134) have boats under construction.

SANDIANS Ken Byrne (8156), Mo Jones (8123), and Dan Pegan (8154) spend an afternoon in their trimarans with a number of their families and friends, catching the breezes on San Francisco Bay. Each spent from 18-20 months of spare time building his own craft. Shown on board are (l to r) Greg, Janet, and Dan Pegan; John Liebenberg (8156); Steve and Mo Jones; Joe and Ken Byrne; and Bud Herzog (8154).



NEW AEC COMMISSIONER, Wilfrid E. Johnson (right), visited Lawrence Radiation Laboratory, Livermore, recently for a briefing on Laboratory programs. Participating in the Sandia portion of the briefing was Dr. B. S. Biggs (left), Vice President 8000. Dr. Michael May, Director, LRL-Livermore, is shown in the center.

Dr. Norris Nahman To Speak at Dec. 13 Livermore Colloquium

Dr. Norris S. Nahman, scientific consultant to the Radio Standards Laboratory of the National Bureau of Standards and an Adjoint Professor at the University of Colorado, will speak at the Livermore Laboratory Colloquium on Dec. 13. The subject of his presentation is "Transmission Lines and Superconductivity."

Dr. Nahman holds the first patent granted on a superconducting transmission line and also published the first paper on the subject. According to Dr. Nahman, he became interested in superconducting transmission lines through research on the behavior of transmission lines at room temperature. He is the author of several articles published in the Proceedings of the IEEE.

He received his BS degree in electronics from California State Polytechnic College, his MS degree in electrical engineering from Stanford University, and his PhD degree in electrical engineering from the University of Kansas.

During his career, he has been a professor of electrical engineering at the University of Kansas, a director of the University of Kansas Electronics Research Laboratory, and has engaged in research on nanosecond pulse techniques in the capacity of principal investigator on Project Jayhawk.

Further information concerning the colloquium will be posted on bulletin boards the week of Dec. 11. Tickets are required for admission. Dennis K. Rathbun (8118) is serving as host for the colloquium.

One Week Remains To Purchase Advance Dec. 9 Dance Tickets

Just one week remains to get your tickets to the 1966 Sandia Christmas Dance.

The dance, open to Sandia and LRL employees and their guests, will be held Friday, Dec. 9, at the Castlewood Country Club in Pleasanton. The club's Florentine and Garden rooms have been reserved, and Maury Wolohan and his orchestra will provide music for dancing starting at 9 p.m.

A ticket in advance, price \$4 (\$4.50 at the door), covers the dance, a chance to win several valuable door prizes, and breakfast served at 1 a.m., following the dance.

For tickets or additional information, contact Barbara Netherton, Bldg. 911, Personnel; Helen Bond, Bldg. 912, Rm. 139; Dorothy Wiemken, Bldg. 912, Rm. 117; Vivian Lenz, Bldg. 913, Rm. 114; Pat Tarp, Bldg. 914, Rm. 138; and Jean Stuart, Bldg. 916, Rm. 105.

Livermore Sandians Continue Tradition of Helping Others In Lieu of Card Exchange

Many individuals and organizations at Livermore Laboratory are pooling money to assist the needy. As in the past, this Christmas activity is in lieu of exchanging greeting cards.

Division secretaries and others throughout the Laboratory are serving as collection points for contributions. Collection boxes are being gaily decorated so they may be easily spotted by employees who wish to participate in the project.

Jim Henderson of Employee Benefits reports that the deadline for contributions is Dec. 20.

Donations will be given to the Livermore Council for Social Planning for distribution. The money will be used to purchase groceries, clothing, and shoes for delivery to needy families cleared by the Council office. Verification of the need for this help is also the responsibility of the Council.

Those who wish to "adopt" a particular family at Christmas time can obtain the ages, needs, and number in the family from the Council of Social Planning office by calling 447-5075.

To avoid possible embarrassment, names of needy families will not be released. However, should individuals or organizations wish to make contributions directly to a family, the name will be provided on a confidential basis to the person making the delivery.

Livermore Notes

B. S. Biggs, vice president 8000, was guest speaker at the regular luncheon meeting of the Pleasanton Rotary Club on Nov. 17. His speech was entitled "Sandia's History and Role in the Atomic Weapons Program."

The American Society of Mechanical Engineers (ASME) annual dinner-dance, co-sponsored by the San Francisco and Santa Clara Valley Sections, will be held tonight at the Plateau 7 Restaurant in San Jose, starting at 7 p.m. Dinner will be served at 8, followed by dancing at 9. For reservations or further information, contact Joe Keller, LRL, ext. 8271.

Jim Rego (8252), a member of the board of directors of the Del Valley Skilaufers, reports that the club's ski lodge located at the north shore of Lake Tahoe is expected to open the weekend of Dec. 17.

Meetings of the club are scheduled the second and fourth Tuesdays of the month at the East Avenue School in Livermore at 7:45 p.m. and usually feature a movie on skiing. The next meeting will be Dec. 13. New members are welcome. For further information, contact Jim, ext. 2650.

Chemical Compound Melting Point Is Topic of Noteworthy Bibliography

Whenever possible Sandia contributes to the scientific community by sharing unclassified information, such as the recently-published Fused Salt Bibliography.

The bibliography went into second edition after requests from throughout the world depleted the 550 copies of the first edition.

The critical data compilation has resulted in Sandia Laboratory being registered as a "Fused Salt Information Center" with the Library of Congress Referral Center, the Atomic Energy Commission, the Air Force Power Information Center, and the Standard Reference Data System of the National Bureau of Standards.

Volume I is a compilation of data on the melting points of various chemical systems gathered from both American and foreign books and periodicals from 1907 through 1962. Volume II will include information from publications through June 30, 1965. It is scheduled to be published in December.

Sandia's interest in the subject originated in Power Supplies Division 1323 where R. D. Wehrle, H. M. Dumas (now 9233), and R. P. Clark were designing new fused salt electrolyte systems for thermal batteries. To evaluate materials for the systems, they needed to know melting point, decomposition temperature, vapor pressure, boiling point, chemical reactivity, electrical conductivity, etc.

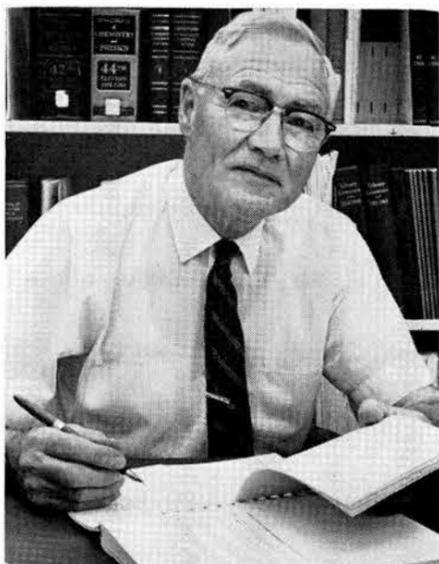
The project was so extensive that a contract was let to the Armour Research Foundation of Illinois Institute of Technology (now IIT Research Institute) to compile the data. The resulting four-volume final report provided the basis for the present work.

The massive amount of work in further compilation and refining of data and in preparing the material for subsequent publication was done by Crowell Dean, supervisor of Information Services Section 3421-4, and P. V. Clark, a retired chemistry professor who is a Sandia consultant. Statistical analyses were carried out by C. R. Clark (2153), programs for data reduction were written by H. E. Anderson (2153), and when there was a conflict in existing data, laboratory experiments were performed by M. M. Karnowsky (1131).

P. V. Clark's job is to scan indexes, evaluate, and compile the data. Many articles on this subject have appeared in Russian journals and it is difficult to interpret the information correctly. "It is not only a question of the language," Mr. Clark says, "it is also a matter of reducing data to common terms; the Russians sometimes write their formulas differently than we do. After laboratory experiments to verify the formulas, we have decided that most of the discrepancies can be attributed to impurities in the chemicals the Russians used."

While working on Volume II, Mr. Clark also has been collecting information on other physical properties of the chemical compounds (conductivity, vapor pressure, and thermodynamic properties) which will be compiled later.

Each notation or value listed in the tables refers to the source so that further



MELTING POINTS of various chemical systems have been compiled by consultant P. V. Clark and others for this "Fused Salt Bibliography" recently published by Sandia. A dual coordinate index is convenient for making cross references.

information may be obtained from the original paper if desired. Volumes I and II have a cumulative index; a special feature is the dual coordinate index for identification of fused salt systems.

In explaining the work of the Information Services Section, Supervisor Crowell Dean says, "We normally do not compile data unless it is for a specific project very important to research; however, we do have a file of information centers and can refer the requester to the facilities best qualified to fulfill the request. Reference librarians in the reading rooms assist employees in finding information or specific publications. Subject information searches are made on request. In addition, if an employee has a continuing interest in a particular field, we can add his name to our Field of Interest Register and scan all incoming reports and journals for information for him."

Sandia Speakers

J. B. Gerardo and R. A. Hill (both 5122), "Stark-Broadening of H_{α} : A Test of the Theory" and "Stark-Broadening of H_{α} and H_{β} in Hydrogen Plasmas," Division of Plasma Physics, American Physical Society meeting, Nov. 2-5, Boston.

E. H. Beckner (5142), "The Role of High-Z Ions in Electron-Ion Equilibration Processes in Kilovolt Plasmas," Division of Plasma Physics, American Physical Society meeting, Nov. 2-5, Boston.

G. J. Simmons (5612), "A Lumped Constant Model of CO_2 Exchange in Respiration," 19th Annual Conference on Engineering in Medicine and Biology, Nov. 14-17, San Francisco.

C. J. Fisk (9424), "Automated Circuit Card Etching Layout," American Institute for Design and Drafting, Nov. 5-8, Los Angeles.

L. B. Smith (5241), "Wave Motions from Vapor Trail Observations," Conference on Dynamic Structure of the Free Atmosphere, Nov. 8-10, El Paso.

J. H. Armstrong (7322), "Dynamic Radiography," Wichita Section of the Society for Nondestructive Testing, Nov. 8, Wichita, Kan.

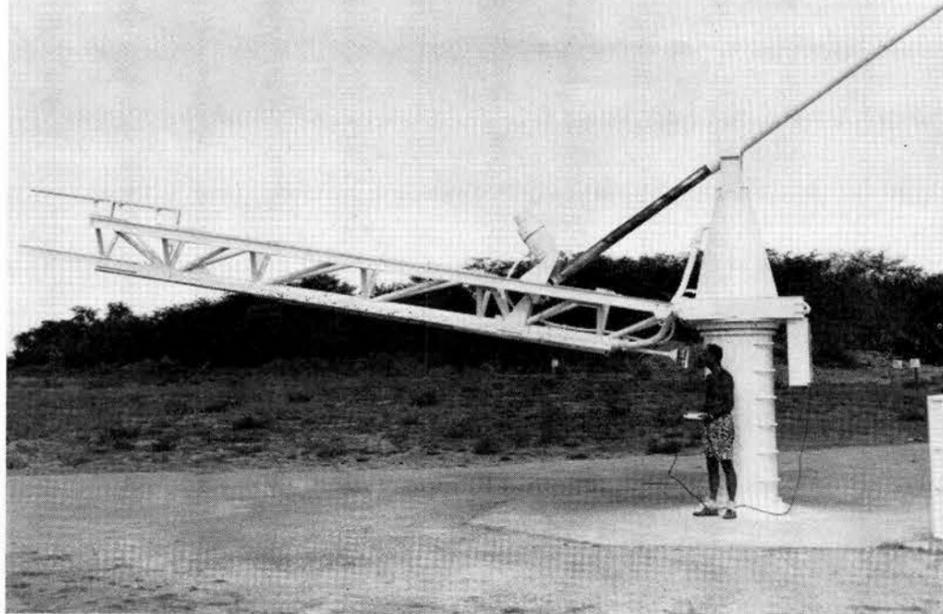
R. S. Heuer (4124), "A Contour Control for an Electron Beam Welder" and "Drilling Holes in Glass with the Electron Beam Welder," Ohio State University Symposium on Electron Beam Welding, Nov. 7-8, Columbus.

E. D. Jones (5151), "NMR Measurements in Rare-Earth Intermetallic Compounds," IBM Thomas J. Watson Research Laboratories Physics Colloquium, Nov. 21, Yorktown Heights, N.Y.; "Temperature Dependence of the SM^{3+} Spin in Intermetallic Compounds," 12th Annual Conference on Magnetism and Magnetic Materials, Nov. 14-18, Washington, D.C.

D. C. Wallace (5155), "Renormalized Spin Waves in the Heisenberg Ferro-magnet," Ohio University Physics Department Seminar, Nov. 14, Athens.

Sympathy

To W. L. Paxton (4614-2) for the death of his father in Roanoke, Va., Nov. 6.



HIGH ALTITUDE DIAGNOSTIC LAUNCHER is checked out by George Neun (9224) after installation at Barking Sands launch complex on Kauai in the Hawaiian Islands. George designs the launchers for the research rockets that are fired from Kauai and other locations.

Launchers Designed to Provide Path to Space for Lab's Rockets

Research rockets must be accurately directed into flight trajectories to perform their missions in space. Sandia's research rockets accomplish this feat without the benefit of an internal guidance system. The launcher rail, like the rifle barrel, starts the rocket on its predetermined trajectory with just a few feet of guidance.

Sandia Laboratory has two types of launchers. The smaller type is the High Altitude Diagnostic (HAD) launcher which has the capability of handling up to 4000-pound rocket systems. This launcher is used primarily to launch the M-5 Nike-type vehicles such as the Nike-Tomahawk and the Nike-Cajun. The larger type launcher, with a 14,000-pound capacity, is called the Universal launcher. Any of the smaller vehicles can be launched from this launcher, but it was built primarily for the Talos, Honest-John, and Honest-John/Nike-Nike systems.

Both launchers use a tubular steel pedestal with a conical upper section that rotates on a ball-bearing turntable. Attached to the turntable is the boom which supports the guide rails. An electric-motor driven jackscrew raises and lowers the boom. The bonnet, or conical upper section with the attached boom, is rotated by a large ring gear and gear motor. Both ele-

vation and azimuth lock automatically when not power driven.

With the boom in the upright position, the HAD launcher is about three stories high, compared to the four-story height of the Universal. Guide rails come in sections to provide a selection for various rocket boosters. For example, a 14-foot rail is used for the Nike booster and a 12.8-foot rail for the Terrier booster on the HAD launcher.

Besides the normal structural integrity and functional requirements, there are several design considerations. The rocket's forward and aft support shoes must detach from the rail at the same time or the rocket may not be placed into the desired flight path. On Sandia launchers this is accomplished by close control of the equal-length inner and outer rails. This allows both shoes to reach the end of guidance simultaneously.

Another important design consideration is to be able to rapidly point the launcher. The azimuth and elevation angles must be easily adjusted and must be known very accurately. Both launchers may be adjusted at either the launcher or at a remote station. The horizontal and vertical positions of the rail may be read directly on a digital readout at the remote station. The position of the rail may also be read from angle-measuring instruments at the launcher site.

Sandia launchers are used at the Barking Sands launch complex on Kauai in the Hawaiian Islands and at Tonopah Test Range. They have also been used in such distant spots as Rio Grande, Brazil, and Rarotonga, in connection with solar eclipse studies.

George Neun, Carrier Development Division 9224, has the program responsibility for designing launchers to meet the Laboratory's specific needs. George, who has been designing launchers and ground support equipment here since 1958, is currently working on preliminary designs for a large launcher that will handle a four-stage rocket. Along with being larger than the Universal, the launcher would have an environmental cover for heating and air conditioning. George usually designs, tests, procures and directs the installation of the launcher; Larry Witt of Ground Systems Division 9222 designs and installs the electrical controls and associated electronics equipment.

Director of Air Force Museum to Discuss Historical Airplanes

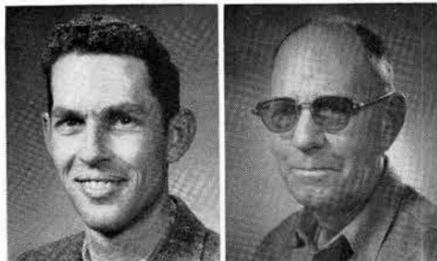
A discussion of historical airplanes with slide illustrations will be presented at a meeting of the Albuquerque Chapter of the American Institute of Aeronautics and Astronautics, Dec. 9.

Speaker will be Col. William F. Curry, director of the Air Force Museum, Wright Patterson Air Force Base, Ohio. The public is invited.

For reservations call either M. H. Sluyter (9321), tel. 264-2776, or Perry Wilkes (9327), tel. 264-4922. Cost is \$4, which includes social hour and dinner.

The meeting starts at 6:30 p.m. at the Downtowner Motel.

Deaths



J. R. Rozell

T. B. Harris

James R. Rozell died Nov. 17 after a short illness. He was 35.

He was an administrative staff assistant in Instrument Service Division 4615. He had been employed at Sandia since May 1958.

Survivors include his widow.

Theodore B. Harris, a retired Sandia employee, died Nov. 18 after a long illness. He was 64.

He retired in December 1964 after working 14 years at Sandia in service organizations. He was working in the Salvage Yard when he retired.

He is survived by his widow, two sons, and seven grandchildren.

Service Awards

Sandia Authors

Max Linn Appointed to Business Research Group

20 Years



H. G. Sweeney
7226

15 Years



D. R. Atkinson
4253



A. D. Bacon
4624



Andrew Blain
4614



Edith Blum
4200



E. T. Bureta
4213



G. T. Chapman
4545



A. B. Draper
2413



D. T. Easton
4512



C. J. Fisk
9424



J. W. Frizzell
2552



F. J. Lesperance
4513



E. L. Manning
4221



M. T. Matison
7222



R. W. Mottern
7322



D. N. O'Dell
2552



Daniel Parsons
7224



A. E. Randall, Jr.
4332



L. J. Reynolds
7523



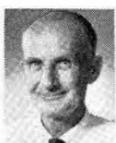
Herman Romero
4623



H. R. Sheppard
8122



K. A. Smith
3100



F. W. Stewart
4211



Arthur Troum
1124



R. R. Williams
5621



J. W. Windsor
2132



E. E. Wood
7213

10 Years

Benjamin Slesinger 2412, E. J. Haut, Jr. 2522, Lessie G. Lee 1114, H. C. Andrews 2431, J. T. Lindman 7246, J. B. Walston 3463, Ruth H. Batchelor 2232.

Lillian L. Balfour 3421, J. L. Landrum 3452, E. R. Wood 4233, A. A. Alford 8223, W. H. McConnell 2211, A. L. Saavedra 4254, C. B. Hughes 4254, H. G. Cole 1334, and D. D. Dollahan 4381.

G. A. Samara (5132), "Pressure and Temperature Dependences of the Dielectric Properties of the Perovskites: BaTiO₃ and SrTiO₃," November issue, PHYSICAL REVIEW.

C. L. Stoner (2452), "New Life for Old Machines," November issue, TOOL AND MANUFACTURING ENGINEER.

C. W. Harrison, Jr. and C. D. Taylor (both 1425), E. A. Aronson (5263), and E. E. O'Donnell, Kaman Nuclear, Colorado, Springs, Colo., "On the Driving Point Impedance of an Asymmetrical Dipole," November issue, IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION.

E. H. Beckner (5142), "Production and Diagnostic Measurements of Kilovolt, High Density Deuterium, Helium, and Neon Plasmas," December issue, JOURNAL OF APPLIED PHYSICS.

T. A. Green (5121), "Classical Heavy Particle Trajectories Associated with Electron Capture in Asymmetric Atomic Collisions" and "Impact Parameter Calculation of Electron Capture in Close H⁺-He Collisions," December issue, PHYSICAL REVIEW.

W. J. O'Sullivan and J. E. Schirber (5151), "The Fermi Surface of Pb under Hydrostatic Pressure," December issue, PHYSICAL REVIEW.

G. W. McClure (5121), "Dissociation of H₂⁺ Ions in Collision with H Atoms: 3 to 115 keV," December issue, PHYSICAL REVIEW.

Winners Emerge From Team-of-Four Bridge Play; Officers Elected

Two teams tied for first place in the annual Team-of-Four competition of the Sandia Employees Bridge Association. The tie was broken on the basis of overall total points and the championship was awarded to Walt Howerton (7215), Paul O'Brien (5223), Jim Bushnell (5214), and Dorothy Capes (5220).

Members of the second team are Joe Newton (1413), Marrian Salomon (1413), Chuck McKeever (1414), and Dick Volk (1411). There were 19 teams competing.

Trophies will be presented at a meeting Thursday, Dec. 8, at 7 p.m. at the Coronado Club.

New officers of the Association, elected at a recent meeting, are G. A. Arnot (1422), president; Eugene Rios (4211), vice president; Barbara Shaw (1100), secretary-treasurer; and H. E. Walker (2151) and V. E. Pajunen (2432), board members.

University President Tom L. Popejoy has appointed Max K. Linn, director of Information 3400, to serve on a new advisory committee for the University of New Mexico's Bureau of Business Research.

Members of the committee will review policy and suggest new ideas for research. Mr. Linn's appointment is for two years.

The Advisory Committee held its first meeting last month at which time Everett G. Dillman, the acting director, described the bureau's functions and outlined the committee's duties. The committee's first activity will be to review a proposed five-year plan under the State Technical Services Act.

The bureau's main purpose is to promote the state's economy. Activities supporting this purpose include gathering, analyzing, and interpreting economic data on New Mexico which is released in NEW MEXICO BUSINESS and several other publications. Other divisions of the bureau are the Technology-Application Center, whose director is William Shinnick, former Sandian, the Center of Community-Action Services, the State Technical-Services Center, and the Program for Coordination of the Higher Education Act of 1965.

Events Calendar

- Dec. 2-4, 9-11—Old Town Studio presents "O, Dad, Poor Dad, Mama's Hung You in the Closet and I'm Feeling So Sad." For reservations, tel. 242-4602.
- Dec. 2-10—Albuquerque Little Theatre production of "A Thousand Clowns," 224 San Pasquale SW.
- Dec. 2-3—Albuquerque Performing Arts Opera Company production of Gounod's "Faust," UNM Concert Hall.
- Dec. 4—Karate Tournament, Highland High, 7:30 p.m. For information, D. E. Fjelseth, tel. 299-8642.
- Dec. 9-16—"The Birthday Party," UNM Rodey Hall.
- Dec. 10—Christmas tree cutting in the nearby mountains. N. M. Mountain Club, leader Don Peterson, tel. 299-4714.
- Dec. 15-16—Shalako ceremony at Zuni Pueblo.

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DECEMBER 2, 1966

SANDIA LAB NEWS

SHOPPING CENTER • SHOPPING CENTER • SHOPPING CENTER • SHOPPING CENTER • 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

COSCO portable playpen, nylon net, tubular steel frame, 40" square, \$12. Longfellow, 299-7062.

PORTABLE AC generator, 60 cps, 110v, gasoline powered, \$75 or trade for chain saw. Hillman, 299-8438.

ONE PAIR orange occasional chairs, \$50. Blalock, 255-3950.

'63 CHEVY 328 V8, must sell for \$1000 cash, new tires, see at 154 Chama NE. Gallegos, 268-0271.

BICYCLE, boy's Schwinn racer, \$35; girl's bike, \$7.50. Hollowwa, 255-6938.

'61 VOLKSWAGEN, \$650; Polaroid 100 camera and flash, \$95; Super Dollina II, \$49.50; DX-40, VFO, SX-24, ass't. hardware, \$95. Bachand, 299-5167.

AKC German shepherd puppies, best bloodlines. Shaudt, 877-6400.

LINDERMAN BABY-GRAND paino, new strings, pins, and dampers; dark wood finish, retail value \$1,000, sell for \$800. Foster, 282-3220 or 296-1162.

REGISTERED 3-yr.-old 1/2 Arabian gelding, 2 mos. professional training, good disposition. Sandusky, Los Lunas 865-7593.

'55 BUICK 4-dr. HT, R&H, cash or trade for what have you — building material or hay. Cooper, 877-4674 after 5:30.

DYED MUSKRAT brown fur, finger tip length coat, size 13-14. Nael, 298-2142 after 5:30.

'62 CORVAIR Spyder, 150hp turbo-charged engine, 4 spd., bucket seats, R&H, \$800. Peterson, 299-9106.

'63 CHEVROLET station wagon, V8. Powerglide, PS, factory air, \$1395 or make offer. Sublett, 298-1004.

TENT HEATER, new, 5000 BTU, \$19; floor furnace, complete, 44,100 BTU, \$30; generator, 28.5v-DC, inoperable, \$20; other items. Aaron, 282-3803.

'62 CHEVROLET pickup, 1/2-ton w/shell camper, built-in beds, storage. Dick, 299-4878.

AKC registered German Shepherd puppies, champion bloodlines, will hold for Christmas. Riley, 256-9722.

'56 CHEVROLET Bel Air 4-dr. V8, automatic, needs trans. repair, 79,000 miles; '51 Chevrolet station wagon. Kupper, 298-7720.

FOAM DOUBLE MATTRESS and box springs, \$20; double dresser, \$25; maple baby bed, \$20. Barth, 299-2668.

BABY CARRIAGE, collapsible, English style, \$10; "Wonder Mare" spring horse, \$7; high chair, \$2. Jones, 344-9393.

20-LOT subdivision in Sandias, surveyed and staked, \$7500 or 20 acres for \$6500. Clement, 298-4994.

PARADE snare drum; 2 bird cages. Roepke, 298-0198.

REFRIGERATOR, large Frigidaire w/freezer chest, \$65. Ferguson, 299-1097 after 5.

RESIDENCE, 2 acres (more available), service buildings, highway frontage at Cedarcrest, kennel building w/runs, facilities for horses. Barth, 345-0172.

AKC BASSET puppies, born Nov. 1, choose now, will be ready for Christmas. Reark, 298-9800.

'58 CHEVROLET Impala V8 Sport coupe, 2-dr., 70,000 miles, turbo-glide drive, silver blue, white top. Makal, 298-0912.

NEW FUR STOLE; apartment range; Ward's 12 cu. ft. refrigerator; cabin 12'x28'—will deliver. Villella, 298-7955.

SIDEBOARDS for 1/2-ton short-bed pickup truck, \$15. Calek, 282-3285.

'62 BUICK Electra 225 convertible, air, power, R&H, \$1295. Austin, 268-7977 after 5:30.

WILSON "Billy Casper" registered clubs: irons 2 through 9; 1, 2, 3, 4 woods; putter; bag, "Turfrider" MK3 cart, umbrella, head covers, \$195. Prohaska, 298-8497.

WALNUT furniture wood, sanded and clean, various sizes. Kochmann, 299-5133.

TWO female purebred registered Chihuahua pups. Granfield, 268-1942.

BOOKCASE headboard and metal bed frame, \$25. Harlow, 299-1495.

10" RADIAL SAW w/stand, \$125. Cole, 296-4265.

SOLID OAK bunk beds, complete; 16" bicycle w/coaster brake; clarinet, used 3 mos. Duimstra, 299-9278.

ADMIRAL TV, \$25. Potter, 268-5451 after 5.

120 BASS ACCORDION, Castiglione, \$200. Randolph, 255-1452 after 5.

SKILLSAW, sell or trade. Halliday, 256-6685 after 5:30.

20" GIRL'S bicycle, \$10. thorn-proof tubes. Martin, 299-2649.

'61 RENAULT Caravelle convertible, 9011 Mathew NE. Brannon, 296-4443.

'65 VOLVO Model 544, 90hp, metallic blue w/whitewalls, radio, \$1750. 1009 Alvarado SE, Armiijo, 242-9816.

'66 AMPEX tape recorder model 860 w/set of Ampex 815 speakers, used 4 mos., sell for \$350; pre-recorded tape at half-price. Paul, 242-9816.

24" SCHWINN girl's bicycle, thorn resisting tubes, basket, \$25. Hof, 255-5915.

KENMORE room heater, 15,000 BTU natural gas, vent-type, \$10. Roberts, 255-9527.

23" ADMIRAL television, console, walnut cabinet, \$100. Drake, 296-3548.

16" 6-hole wheels, one pr., good spare wheels for snow tires, will throw in existing tires and tubes. Baxter, 344-7601.

'58 FORD Country sedan station wagon, V8 engine, OD, \$250. Kavet, 299-1793.

'66 KAWASAKI motorcycle, 175cc. Lopez, 268-0870 after 5.

AMERICAN FLYER S gage, 3 engine diesel, 8 car freight, 4'x8' layout, uncoupler, cow on track, beacon, large transformer, extras, \$75. Steever, 256-2439.

AKC white poodles, smallest puppy in litter from 8" sire, \$70, miniature female, \$50; standard male, excellent qualities, \$50. Bucheri, 255-8028.

'61 CHEVY Greenbrier, equipped w/stove, running water, ice box, bed, spare snow tires on rims, \$795. Snelling, 298-5589 Mon-Sat.

HOUSE PLANTS: 1 Dieffenbachia, 1 split-leaf philodendron, 7-8" tall, decorator pots, \$25 ea. or make offer. Hamlet, 299-5124.

DINING ROOM SET, Italian Provincial, pedestal table w/leaf, 5 side chairs, one hostess chair, full china cabinet. Bagg, 898-2539.

RANGE HOOD, 48" w/light and blower, copper-tone color, complete w/splash boards. Smith, 268-2141.

3/4 SIZE VIOLIN; girl's 26" 3-spd. bicycle; 2 train sets; toy Singer sewing machine; doll buggy; car top carrier; thing maker set. Taggart, 268-0963.

16" BOAT w/60hp Evinrude motor and a trailer; girl's 26" English racer bike. Wheeler, 256-6230.

'65 1/2-ton pickup, long wheel base, positraction. Pohl, 298-4494.

10 1/2" insulated hiking boots, \$8; '62 Austin-Healey Sprite Mk. II; end tables; table lamps. Suiter, 256-9662.

MAPLE BUNK BEDS, \$40. Rehberg, 255-6705.

QUADRANGLE MAPS showing public and private property, book of 127 maps covering entire state, cost \$70, sell for \$25. Green, 299-0094.

MACHINIST TOOLS: miles - depth - inside - outside, gages - planer and shaper, thickness, radius, acme and V-thread, small hole. Larsen, 255-6407.

PHILCO automatic timer, white full size electric stove. Ricker, 296-2191.

GIRL'S bicycle, 26", \$15; gas stove, full size, \$15. Stixrud, 298-0478.

BICYCLE, boy's 26" Schwinn 3-spd. deluxe racer, chrome fenders, thorn-proof tires, hand brakes, \$50. Baars, 255-9051.

'62 CHEVROLET Impala 4-dr. HT, V8 engine. Powerglide, PG, PS, radio, low mileage. Ard, 299-0863.

'58 FORD country sedan, 4-dr., V8, R&H, PS. AT, \$225. Dauphinee, 255-6367.

TWO EACH, solid birch chests and twin or bunk beds w/mattress and springs. Lewis, 299-2322.

HEATH Apache transmitter, \$95. Lathrop, 255-1901.

CUSTOM BUILT 3-bdr., paneled den w/fp, all electric kitchen, large dbl. garage, 1 1/4 baths, AC, corner lot, landscaped. Vandenberg, 344-4783.

10" TABLE SAW, tilting arbor, 2 table extensions, blade guard, 1hp 3450 RPM motor and metal saw stand, \$95; 2hp 220V single phase 3450 RPM sealed motor, \$35. Hutton, 255-7455.

BICYCLE, boy's 26", just overhauled, \$25; women's black leather figure ice skates, size 5D, \$10. Maglidt, 268-7601.

'53 OLDS 4-dr., new battery and two new tires, evap. cooler included, \$185. Horn, 265-4568.

BABY CRIB mattress, \$5.00. Buck, 265-4863.

'54 OLDS 98, power everything but AC, sell or trade, make offer; 2 metal cots, \$5. Schowers, 255-9279.

AQUARIUM, 10-gal., heater, pump, filter, light, \$15; racing go-cart, MAC 45, clutch; violin, full size, \$60. Adams, 268-5943.

'64 1/2-TON Ford pickup, AT, red interior, bucket seats, carpet, trailer hitch, one-year tires, custom, \$1400. Wallace, 877-4428.

MOBILE - A54 Elmec transmitter (80-10) Morron converter (80, 10.C.B.) plus TNS, PS, relays, \$50; SX71 Hallicrafter general coverage receiver, \$75. Eagan, 298-0196.

WOOD BURNING camp stove; table lamps; 8mm film editor; sofa and two chairs; briefcase; baby stroller. Spray, 299-0412.

'62 IMPALA sport coupe, 283 eng., PS, PB, white w/red interior, going for loan value \$925. Browne, 344-9675.

TRIUMPH Tiger Cub, geared for mountains, \$295. Barton, 298-1240.

SEWING MACHINE, attachments, Montgomery Ward, walnut cabinet, \$50; man's tan suede jacket, fleecelined, size 38, \$9. Roberts, 344-3780.

APT. SIZE electric stove, \$25; automatic washing machine, \$15; Kenmore hair dryer, \$5; sweeper-vack, \$10. Eaton, 299-7271 after 5:30.

BLOWER UNIT for Coleman wall heater, \$24; venetian blinds for window 6' wide x 2' high, \$5; room ventilator, \$8. Toya, 125 El Pueblo Rd. NW, 898-0491.

TRAMPOLINE, professional in-the-ground model, \$50; swing set, 2 swings, chinning bar, glider, slide, \$15. Olson, 898-0585.

CHILD'S white chifferobe, \$20. Clark, 299-6410.

EICO FM stereo receiver, never used, \$50; portable Singer sewing machine, \$50; Wen electric plane, \$15; Wen all saw, \$15. Gamel, 268-1263.

CONN organ, "Rhapsody" w/2 61-note manuals and 25-note pedal, separate Leslie tone cabinet. Bircher, 268-0726.

SAVE \$3000 on 3-bdr. Ashcraft home near Winrock, will sacrifice 50% of equity; misc. furniture, tools, appliances also. Barbour, 255-5949.

'55 PONTIAC, \$150, 4-dr., radio, new tires and seat covers, 6 seat belts. Cuthrell, 247-9263.

'60 STUDEBAKER LARK station wagon, 6-cyl., one owner, 47,000 miles, \$250. Harwood, 299-1326.

'60 CHEVY conv., stick, V8, 10,000 miles on engine, new top, \$850. Spickler, 298-8367.

'58 CHEV. station wagon, one owner, complete engine-transmission overhaul about 8000 miles ago, \$450. Gutierrez, 255-9520.

FIRE BOX for fireplace Heat-a-lator type, 36" wide, sell for wholesale, \$70. Newcomer, 298-8217.

'65 PLY. FURY III, HT, AC, PS, 18,000 miles left on warranty. Anderson, 265-6529.

AKC registered black miniature poodle puppies, will hold for Christmas, \$50. Workman, 298-8201.

LOT, 1121 Glorietta NE, 2 blocks from Los Altos Grant School, 75' frontage, Cordova, 299-1652.

SAVAGE 24-DL over & under, 20 ga. Mag. - .22, \$40. Klett, 344-9021.

'53 JEEP station wagon, 4wd w/hubs, R&H, \$425. Leighninger, 299-6815.

SIX ROOM ADOBE house, 1/2 acres land, 4th NW, terms, Club, 344-6554 after 6.

FLYING CLUB membership, Rainbow Flyers, Inc., 1959 Skylane. Risse, 299-5002.

FOR RENT

2 BDR. unfurnished home, w/range, refrig., built-in bar, carport, storage, walled back corner lot on Cul-de-sac, park across street, Claremont NE. Eastdale Shopping, school 2 blocks, \$85. Bascom, 299-1662.

INSIDE AND OUTSIDE storage and hobby work space available for: boats, trailers, campers and hobby work projects. Villella, 298-7955.

2-BDR. HOUSE near Carlisle and Menaul, stove and refrig., washer and dryer rough-in, AC walled back yard. Silva, 255-8881.

UNFURNISHED 2-bdr., family rm., fireplace, patio, electric stove and garbage disposal, 200 Grove NE, Apt. A. Scott, 255-3308 after 4:30.

2-BDR. HOUSE, near Base, schools and shopping center, 7517 Sky Cr. Cir. NE, available Dec. 5, water and garbage paid. Mora, 299-9084.

WANTED

AN old motorcycle suitable for converting into a trail bike. Netz, 282-3607.

BARBELLS w/weights up to 125 lbs. Duran, 344-8054.

INFORMATION leading to reliable cleaning lady w/own transportation, 2 or 3 days a week, Four Hills area. Hornbeck, 298-0233.

DRILL PRESS w/motor, either bench or floor model. Laskar, 299-1024.

TO RENT: self-contained Travel Trailer that sleeps 5 for 5-week vacation next July, will pay \$200. Martin, 299-2649.

RISE, evenings only to 4600 Douglas MacArthur NE or vicinity. Neiswander, 344-4745 after 6.

THREE members for car pool, live in vicinity bounded by Juan Tabo, Constitution, Eubank and Freeway, park in vicinity of Gate 6. Adkins, 296-1284 or Dumbar, 299-2686.

RELIABLE woman, infant care, my SE Heights home, salary open depending on qualifications and duties, own transportation preferred, start Jan. Elder, 265-1322.



PAPIER-MACHE figures made by Bertie Dye (right) will be focal point of "Navidad de Oro" decorations at Coronado Club through the holidays. Pat Goettsche (left) is one of the many Sanado Club women working on the decorations project, a Christmas tradition at the Club.

Holiday Season Underway at Club; Debutante Ball Scheduled Dec. 17

From Thanksgiving through New Year's Eve is organizational party time at the Coronado Club. As many as three groups per evening will be using the Club facilities through the holiday season.

Festive decorations throughout the Club will be provided by women of the Sanado Club. Theme for the decorations is "Navidad de Oro" or golden Christmas. A Nativity scene featuring large papier-mache figures will be the focal point of the decorations near the fireplace. These are being prepared by Mrs. R. J. Dye.

General chairman for the Christmas decorations is Mrs. A. F. Cone. Heading subcommittees for the effort are Mmes. E. K. Baker, R. L. Eno, G. W. Treadwell, H. L. Crumley, K. J. Deller, and J. T. Black.

The decorations will also provide a backdrop for the presentation of a dozen young ladies during the Debutante Ball Saturday, Dec. 17. Social hour is scheduled from 6 until 7 p.m., roast beef buffet from 7:30 to 8:30 p.m., and dancing to the Lamplighters from 9 to 1 a.m.

Cost to members and guests is \$7 per couple. Tickets are available at the Club office.

Social Hours

No regular social hours are scheduled through December, but special prices will prevail at the main bar each Friday from 5:15 to 7 p.m.

Sandia's Safety Scoreboard

Sandia Laboratory:

26 DAYS
910,000 MAN HOURS
WITHOUT A
DISABLING INJURY

Livermore Laboratory:

36 DAYS
178,700 MAN HOURS
WITHOUT A
DISABLING INJURY

Ski Club

The Coronado Ski Club will meet at 7:30 p.m. in the ballroom Tuesday, Dec. 13. The manager of the Purgatory Ski Area near Durango, Colo., will present a talk and movies of the Purgatory slopes. A second movie, "Squaw Valley Winter Olympics," will also be shown.

Bridge

On Monday, Dec. 5, the duplicate bridge group will wind up the season with a party in the El Dorado Room at 6 p.m. Dinner starts at 6, bridge play at 7 p.m. For reservations, call Barbara Gossett, tel. 298-0750.

ACF Bridge meets at 7 p.m. Wednesday, Dec. 7. Ladies Bridge meets at 1:15 Thursday, Dec. 15.

Alaska is a bit far from Albuquerque to ever be tremendously popular as a vacation spot, but several Sandians have found ways to make the state a little more accessible.

Zelma Beisinger (5253) and a teacher friend, Lucia Wilcox, outfitted a used VW camper making it into a motel-on-wheels for the long trip. John Kelly (5222) and his wife Sissy drove the Alcan Highway in their station wagon, but did part of their sightseeing by air.

Zelma and her companion drove a total of 8500 miles (including 2200 miles of unpaved road). Some of the towns along the way were merely gas stations, and rather far apart at that. Their only relief at the wheel was the 500-600 mile ferry trip from Prince Rupert to Haines.

By map, Fairbanks was their northernmost point, but their camp site at Mount McKinley seemed more "northern." They parked their camper at a 2000-foot elevation, and even that was several hundred feet above the timberline (timberline is 10,000 feet or higher in New Mexico). In that area they also encountered the highest priced gasoline on their trip — 56.9 cents a gallon.

Although the mountain scenery was gorgeous, Zelma was most impressed by the tremendous fishing. "We caught Dolly Varden trout, salmon, and Arctic greyling. The latter really go for flies and put up a terrific fight," Zelma said. They saw moose, caribou, red fox kits, and grizzly bears along the way, but it was while fishing that Zelma had her closest encounter with Alaskan wildlife.

"I was fishing in a small stream, about 15 feet wide, and had just hooked a salmon when I glanced up and saw a black bear directly across from me. As he started to cross the water, he saw me, stood up, stared, ran behind a tree, and stared again. The bear was more frightened than I was," she said. The girls, both avid mountain climbers, had planned to do some backpacking, but after this encounter, they were afraid to try it.

The Kellys flew from Anchorage to Nome and Kotzebue, which is 26 miles above the Arctic Circle. "As we neared Kotzebue," John recalled, "the wings

Sandian Joins Other Pearl Harbor Survivors on 25th Anniversary

During an early Sunday morning stroll on the USS Dobbin's deck, a third class gunners mate casually glanced at a group of planes flying close to the water beyond the destroyer tender's bow.

"Even after I saw the 'meatballs' painted on their sides, it didn't dawn on me that we were under attack," comments Howard Massey (2122), who was that gunners mate aboard the Dobbin as she rested at anchor in Pearl Harbor on Sunday, Dec. 7, 1941.

"Then the chief, who saw the blazing air stations on shore, issued a 'fire and rescue' call. This was shortly changed to a call to general quarters," Howard relates.

"General disbelief persisted aboard the ship as she lay at anchor in Pearl. It was about 8 a.m. As the ship's crew scurried for their battle stations, a few non-believing diehards continued getting dressed for their shore leave."

Howard's battle station was a group of five-inch guns mounted aft, but they were not anti-aircraft guns. He immediately started removing a protective coating of stubborn cosmoline grease from some 50-caliber machine guns which were then hastily welded to the deck before the second wave of planes passed over.

This experience and many others will be recalled next week in Hawaii when Howard joins some 2000 other Pearl Harbor survivors for a 25th anniversary reunion.

Sponsored by the Pearl Harbor Survivors Association, the reunion program will include memorial services at the National Memorial Cemetery of the Pacific, a boat tour of Pearl Harbor and the USS Arizona, and a banquet. Vice President Humphrey is scheduled to be the memorial speaker.

The Association is dedicated to the memory of Pearl Harbor and to those gallant Americans who gave their lives for their country on Dec. 7, 1941.

Howard enlisted in the U. S. Navy in August 1937. Although his hitch had expired some five months before the attack, he was being held in Hawaii until his return to the states could be arranged. About ten days after the attack on Pearl, Howard re-enlisted and served a total of 20 years.



ANTICIPATING STRESSES AND STRAINS, Howard Massey (2122) exhales to button up his last Navy uniform (Chief Electronics Technician). He will attend a reunion of Pearl Harbor survivors in Hawaii Dec. 4-10.

TDP Wives Club Will Meet Monday, Dec. 5

Members of the TDP Wives Club will meet Monday, Dec. 5, in the Gondolier Room of Wyatt's Cafeteria for a Christmas program, and installation of 1967 officers.

Heading the group as president is Pat Belden. Jan Abbin is vice president. Treasurer is Gail Mason and Barbara Guth is secretary. General interest group chairman is Kathie Linn.

Travelers Find Way to Conquer Alaska

dipped sharply first to one side and then the other, and there was a decided lurch. It was the pilot's way of letting us know that we had passed over the Arctic Circle."

At Nome they saw people panning for gold. It's estimated that ore deposits in the vicinity still contain \$10-billion worth of gold, but it is not economical to mine.

At Kotzebue they saw one of the DEW Line stations, and watched Eskimo children fishing. "They had a yard-long line on the end of a yard-long pole. There was no bait on the three-pronged hook, but they had a box of whiting they had caught. They threw back any flounder they hooked," he said.

Returning to Anchorage, they found the salmon were running and here again the fishermen used unbaited hooks and merely snagged the salmon.

The Kellys then traveled by train to Mount McKinley and were fortunate to be there during one of the few completely clear days when the highest peak in North America (20,320 feet) can be seen to best advantage.

Another flight was by small float plane low over the Mendenhall Glacier near Juneau. "The glacier is 4000-5000 feet thick at the top and the ice fields, which are very blue, spread over a large area. Sometimes we were only 50 feet above ice falls," John said.

One other interesting feature of the Kellys' trip was driving in the Yukon for 100 miles alongside a forest which had been destroyed by fire and was now covered with "fireweed," a wild flower.

Both Zelma and the Kellys recommend Alaska as a fascinating place to visit despite the long hours on the road.



A HIGHPOINT of every trip to Alaska is a view of Mt. McKinley, highest peak in North America. John Kelly (5222) and his wife Sissy were fortunate to be there on one of the few clear days.