

# SANDIA LAB NEWS



VOL. 18, NO. 21, OCTOBER 21, 1966

SANDIA LABORATORIES

ALBUQUERQUE, NEW MEXICO  
LIVERMORE, CALIFORNIA

OPERATED BY SANDIA CORPORATION FOR  
THE U. S. ATOMIC ENERGY COMMISSION



HOSTESSES inside bright blue booths with orange signs will welcome Family Day visitors as they enter the Tech Areas tomorrow to visit Sandia Laboratory. Marilyn Taylor (2423), left, and Sue Williams (2570), along with 30 other hostesses, will distribute Family Day folders, answer questions, and help make the day's activities progress smoothly.

## Family Day Program Will Attract 16,000 Tomorrow

More than 16,000 persons are expected to stream through Sandia Laboratory gates tomorrow for Family Day.

For the second time in Sandia's history, families of employees will be allowed to see work areas and laboratory facilities within the Tech Areas. The first Family Day was held April 18, 1959.

There will be plenty to see tomorrow. The entire laboratory has been readied for the occasion since individual work areas will be of personal interest. In addition, 18 special exhibits and demonstrations will be shown, and facilities in Areas III and V will be open. All classified material and facilities have been secured.

Employees will serve as official hosts and be responsible for their guests. It is suggested that employees park in their regular spaces, visit their work areas, and then proceed to the special exhibits. (For the description of these, see page four.)

There will be hosts and hostesses manning special booths at the entrances to the Tech Areas. They will distribute Family Day folders which contain maps and tour information. Other hosts and hostesses will be on duty at the special demonstration and exhibit areas. Free refreshments will be served in the Bldg. 839 cafeteria, in Bldg. 6584 in Area III, and in Bldg. 6580 air lock in Area V.

Sandia security personnel will be on duty during Family Day. They will check badges at Tech Area entrances, man emergency vehicles, provide communications, and assist visitors. Sandia medical personnel will also be on duty.

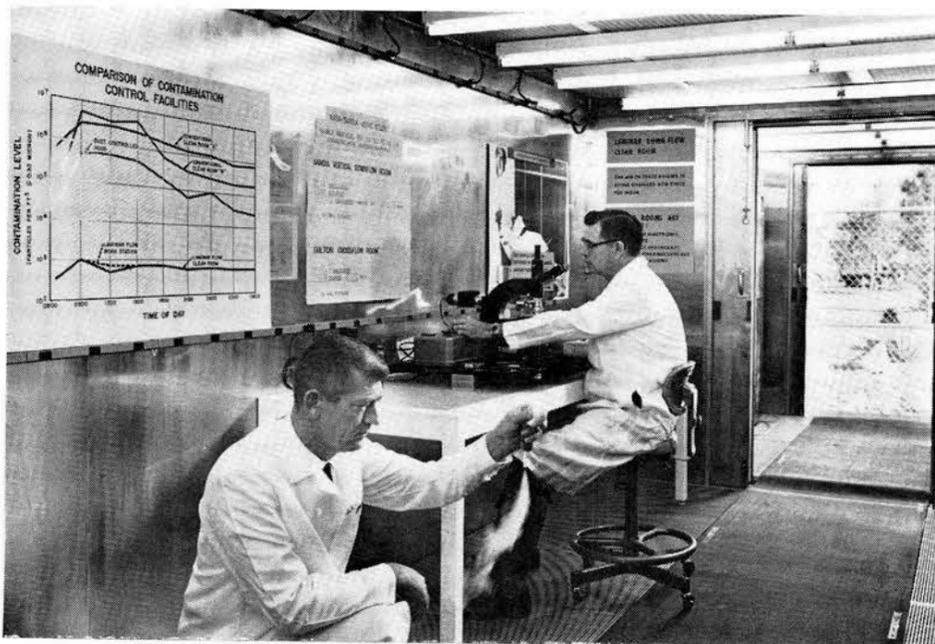
Environmental test facilities in Area III and reactor facilities in Area V will be open to all employees and visitors after 10 a.m. (The first two hours, 8-10 a.m., are reserved for employees who work in the Areas.) No private vehicles will be allowed in Area III. Busses will be provided for visitors. They will leave from the Area III parking area every five minutes to tour the facilities. No demonstrations or lectures are scheduled at the facilities, but

visitors may leave the busses at any point of the tour, visit a facility, and continue the tour on a later bus.

Visitors will walk through the reactor facilities in Area V. A map will be provided and employees will be on duty to answer questions and explain operation of the facilities.

The Sphere of Science, northeast of Area I, will also be open to all visitors.

Tour periods do not apply to Areas III and V (open after 10 a.m.) or to the Sphere (open all day).



SANDIA CLEAN ROOM, forerunner of many dust-free and germ-free rooms now used across the country for precision electronic fabrication or as hospital surgical rooms, will be on display tomorrow during Family Day. Demonstrations of the room's uses will be performed by Bill Neitzel (smoke is quickly drawn from the room) and Jim Mashburn (at microscope). The exhibit will be located on the east side of Bldg. 892.

## S. P. Schwartz Honored

S. P. Schwartz will receive a citation and symbolic medallion from the U. S. Atomic Energy Commission during ceremonies at AEC Headquarters, Germantown, Md., on Thursday, Oct. 27.

The AEC announcement of the award noted, "During a vital period of research and development in the U. S. nuclear weapons program, Mr. Schwartz has brought Sandia Laboratory and its related facilities to a new level of excellence and achievement. Under his capable direction, the Laboratory has met its commitments and delivery schedules for increasingly complex and sophisticated weapon systems. He also has made outstanding contributions to the knowledge which comprises modern nuclear weapons technology.

"While shaping and directing the course of the technical program at Sandia, Mr. Schwartz also has given careful attention to the management of the business affairs of the Corporation. Under his guidance a model of laboratory management has emerged."

The citation reads:

Siegmund P. Schwartz

"For his outstanding leadership in directing the Sandia Corporation during a very demanding period in the history of the Atomic Energy Commission; for his significant contributions to the national defense in his superior guidance of an important segment of the Commission's nuclear weapons program; and for his use of imaginative and creative techniques in the management of a laboratory which has become a model of excellence and achievement."

## Art Cordova, Printed Circuits Shop Save Sandia \$3840 in Two Years

An innovation by Art Cordova, supervisor of Sandia's Printed Circuit Shop 4233-3, has resulted in a cost improvement for the Laboratory. The new system, which eliminates some hand work in the production of printed circuits, will save the Company \$3840 in the next two years.

One of the most time-consuming steps in the production of printed circuit cards is connecting the circuits on both sides of the card. This is usually done by drilling holes through the card and electroplating the sides of the holes with a conducting metal such as copper or tin-lead.

Before the card can be plated, it is necessary to connect all conducting elements. With the old method, this was done by using a brush and silver paint to paint lines between the elements. This was called the "tie in" process and, in addition to being time consuming and tedious, it demanded a careful examination to determine if all the elements were tied in.

With Art's new method, tedious handwork is eliminated. A number of quick machine processes are substituted as follows:

The card is sprayed on both sides with a clear acrylic. One side is thinner than the other and this thinly coated side is sanded to bare the circuit elements. A layer of silver conducting paint is then applied followed by another layer of acrylic. The card is then drilled. Copper is chemically deposited on the walls of the holes. The card is then electroplated with copper. The circuit paths are again bared and electroplated with tin-lead or gold. The card is then cleaned by subjecting it to a hot vapor bath which melts the



ART CORDOVA (left), supervisor of Sandia's Printed Circuit Shop, displays a circuit board covered with silver paint to tie in conducting elements prior to electroplating and cleaning. Art's spray method, combined with preparatory processes, saves time and money over former method of hand painting the connections, demonstrated by Richard Chavez (4233-3).

acrylic. All unwanted coatings simply wash off.

All of these processes require skill, but the operations are performed on large sheets of cards. The direct labor and time saved is significant. The cost improvement was figured on the basis of Sandia's production of 400 cards per month.

All Sandians are encouraged to report new processes or ways of performing the job which save the Company money. The reports are accepted by Sandia's Cost Improvement Committee, combined with similar cost savings actions, and reported to the Atomic Energy Commission.

## Incomplete ECP Drive Results Show \$13,972 Increase over 1965

Laboratory employees have pledged a total of \$257,242 through payroll deduction cards for the current Employees Contribution Plan campaign which will end next week.

Current contributions have already passed last year's total of \$243,270 by \$13,972.

The average individual contribution has also increased from \$39.61 last year to \$42.76.

Some 2767 employees are making Fair Share contributions (one hour's pay each month).

Final tabulation of the current ECP results should be complete by Nov. 1, according to Fred F. Eichert (2210), ECP committee chairman.

ECP funds help support 37 agencies—29 local UCF agencies plus eight national health agencies.

## Editorial Comment

Family Day is our day. It's the opportunity to bring our families to see the place we work, to learn of the skills involved in all areas of our Laboratory, and to develop a better understanding of the magnitude of our mission.

Each of us is a host—personally to our family group and generally to all visitors. Each of us is charged with the responsibility of making this day meaningful and pleasant for our visitors.

Various groups of employees have worked on the "big" things to make Family Day a success — the exhibits, demonstrations, scheduling, refreshments, signs, tickets, protection of classified materials — these sorts of things are taken care of.

But as is so often true, it's the little things that count. And the "little things" are up to each of us.

Such things as:

—being especially careful driving on the Base and when entering and leaving parking areas

—visiting during the tour period stated on your ticket

—observing normal safety and housekeeping practices (report any unsafe conditions to hospitality personnel, put trash in receptacles)

—advising the women in your family to wear comfortable, low-heeled shoes

—keeping your small children under control, not allowing them to wander away

—observing security practices, not discussing classified activities or areas

—being courteous and patient

We're proud of our Laboratory and of our fellow employees, let's make our families proud too.

## ARMU Faculty Members Will Attend Sandia-Lovelace Meet

Faculty members from 13 universities in the Rocky Mountain area will learn about research activities and facilities at Sandia Laboratory during an orientation conference Oct. 27-28.

The meeting is sponsored by the Associated Rocky Mountain Universities (ARMU) with both Sandia and Lovelace Foundation cooperating in arrangements. Sandia coordinator is R. S. Claassen, director of Physical Research 5100.

Prof. C. Quentin Ford, ARMU conference chairman states: "The purpose of this conference is to acquaint faculty members of the ARMU institutions with the benefits available to students, faculty members, and institutions through participation in the various ARMU-AEC programs. It will also acquaint ARMU faculty members with the extensive research activities and facilities of these laboratories, which lend themselves to cooperative endeavors in a wide variety of scientific and engineering disciplines, to the benefit of both university and laboratory personnel."

After a general meeting from 8:30-10 a.m. Thursday, the conference will be divided into 10 sessions, each discussing Sandia activities in a particular field. Half of these sessions will be in Bldg. 815, and the balance in Rm. 201 of Bldg. 806. Additional sessions on "Blast and Shock Biology" and "Fission Product Inhalation Program" will be held at Lovelace Foundation. Friday afternoon tours will be conducted at Sandia and Lovelace facilities.

The sessions and Sandia speakers to be heard follow:

Solid State Physics: D. C. Wallace (5155), chairman; "Study of Fermi Surfaces in the Kilobar Hydrostatic Pressure Range," J. E. Schirber (5151); "Identification of Primary Defects in Infrared Absorption," F. L. Vook (5211).

Aero- and Thermodynamics: R. C. Maydew (9320), chairman; "Re-entry Vehicle Aero-Thermodynamic Problems," K. J. Touryan (9326); "Aeroballistics of High-Speed Vehicles," H. R. Vaughn (9321); "Plasma Diagnostics in Arc Plasma Tunnels," M. M. Sluyter (9321).

Dynamic Response of Materials and Structures: Walter Herrmann (1116), chairman; "Transient Two-Dimensional Motion of a Short Rod," C. H. Karnes (1115); "Fracture and Spallation," B. M. Butcher (1115).

Chemistry: C. W. Jennings (1133), chairman; "Structural Determination of Magnetic Crystals at Helium Temperatures," Bruno Morosin (5151); "Improved Electrical Ceramics Fabricated by the Hot-Pressing Technique," G. H. Haertling (1132).

Microcircuits and Thin Films: E. G. Franzak (1430), chairman; "Microcircuits with Emphasis on Thin Film Resistors,"

K. D. Hardin (1433); "Ferroelectric Circuit Elements: Analysis and Devices," R. W. Holland (5142).

Atomic and Plasma Physics: J. R. Banister (5120), chairman; "Interaction of Hydrogen Species in the Energy Range of 1-100 kev," G. W. McClure (5121); "Precise Measurements of Plasmas by Rapid Scan Spectroscopy and Laser Beam Interferometry," R. A. Hill (5122).

Radiation Effects: J. C. King (5210), chairman; "Measurement of Electrical Properties of Irradiated Bulk Semiconductors," H. J. Stein (5211); "Interpretation of Transfer Performance in a Radiation Environment," J. L. Wirth (5212).

Antennas: G. W. Rodgers (1420), chairman; "Antenna Facilities," J. R. Ames (1424); "Transient Response of Antennas and Propagation of Electromagnetic Field Pulses into Closed Sheets of Finite Conductivity," C. W. Harrison (1425).

High-Pressure Physics: D. H. Anderson (5132), chairman; "Electrical Properties of Solids Under High Pressure; Emphasis on Ferroelectric and Ferromagnetic Materials," G. A. Samara (5132); "Mechanical and Electrical Response of Germanium Single Crystals Under Shock Loading," R. A. Graham (5133).

Surface Physics and Chemistry: J. G. Eberhart (1123), chairman; "Growth of Single Crystals from Monatomic Vapor," R. L. Schwoebel (5123); "Ion Plating; Film Deposition by Accelerated Ions," D. M. Mattox (1123).

## G. W. DeSato Marks 25 Years with BTL



G. W. DeSato observed his 25th anniversary with Bell Telephone Laboratories Oct. 20.

Mr. DeSato, supervisor of Design Definition Division A 2211, joined Sandia in 1952 as supervisor of an electromechanical drafting section. In 1957 he was promoted to division supervisor.

Mr. DeSato's career with BTL began at the West Street installation in New York City, where he was assigned to an electronics development group as a draftsman. From New York, he moved to BTL at Murray Hill, N.J., as a senior designer for an R&D group. He then transferred to BTL's Whippany (N.J.) Lab in the same capacity, and was there until 1952.



DR. EDWARD TELLER (center) chats with Dr. R. C. Fletcher (left), Vice President 5000, and Dr. J. A. Hornbeck, Sandia President, en route to a Sandia Laboratory Research Colloquium in the Sandia Base Theater. The capacity audience at the theater heard Dr. Teller discuss quasars, mysterious astronomical objects, and theories of the universe.

## Supervisory Appointments



TED B. SHERWIN to manager of Public Relations Department 3430, effective October 16.

Ted joined Sandia as a manuals writer in May 1949. One year later he helped organize Sandia's public relations program and was named supervisor of the Public Information Division. He organized the Sandia Employees Contribution Plan, which was launched in 1957.

Before coming to Albuquerque, Ted served as administrative assistant to Senator Robertson of Wyoming in Washington, D.C., for two years, after release from military service. He served four years in the Signal Corps, most of the time as public information officer. Before that he was employed as a reporter with various Wyoming daily newspapers.

Ted received his B.A. degree in journalism and English from the University of Wyoming.

He is a founder, past president, and currently a director of the New Mexico Chapter, Public Relations Society of America. He is one of five public relations people in New Mexico to be accredited by PRSA under the organization's recently adopted program to recognize professional competence. He is a member of the N. M. Business and Mfg. Assn., the Community Council of the Albuquerque Speech and Hearing Society.



ALAN D. BRIDGMAN to supervisor of Design Definition Section A V 2211-5, effective Oct. 1.

Al joined Sandia as a draftsman in July 1960. Two years later he was loaned to Employee Training and Education Division to write a textbook on new drafting standards entitled "True Position Dimensioning System." There he worked as a member of a team writing and editing the programmed text and then conducting pilot classes. When work on the text was completed in February 1964, he worked in Engineering Practices and Numerical System Development Division until November 1965 when he transferred to the division's numerical systems engineering group.

Al received his associate engineering degree from Pennsylvania State University in June 1960 and is currently studying mechanical engineering at the University of New Mexico. He has also taken the engineer-in-training examination for a professional engineering license.

He was in the U.S. Army, stationed at various missile sites throughout the country from 1956 to 1958. He is a member of both the national and New Mexico Society for Professional Engineers.



RALPH E. HENDRIX to supervisor of Packaging Section 4624-2, effective Oct. 1.

Ralph first joined Sandia in January 1948 and was named section supervisor of the Box Shop when it was established in 1949. He left Sandia in 1953 to try his hand at farming and construction/carpentry in Nebraska. In April 1962 he rejoined the Company and transferred to Packaging Section 4624-2 in April 1963.

Ralph served four years, 1941-45, with the Training Command of the U. S. Air Force. While with the air force, he spent two years as an aircraft mechanics instructor on the B-24 Liberator.

## Sympathy

To Howard L. Hodges (9311) for the death of his father in North Little Rock, Ark., Sept. 22.

To Alma Mischke (4135) for the death of her mother in Baroda, Mich., Oct. 6.

To Roland C. Hewitt (7255) for the death of his father in Toronto, Canada, Aug. 16.

To Frank Chavez (4575) for the death of his mother-in-law Oct. 9.

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RECENT VISITOR to Sandia's Livermore Laboratory was John A. Erlewine, Assistant General Manager for Operations, AEC Headquarters, Washington. Shown here are (l to r) Mr. Erlewine; Mr. Biggs, Vice President 8000; Paul Ager, AEC/SAO Livermore resident representative; and Ellison C. Shute, AEC/SAN manager, Berkeley.

## Mathematics Films Being Shown at Lab

A new series of motion pictures entitled "Mathematics Today" is being shown at Livermore Laboratory.

This series was prepared for the Mathematical Association of America with financial support from the National Science Foundation.

Films are being acquired on a weekly basis through next February. Specific announcements on the films will be posted each Wednesday on bulletin boards throughout the Laboratory. Next week's feature will be "Pits, Peaks, and Passes - Part I," a lecture on Critical Point Theory by Marston Morse.

According to SCLL training specialist Wil Miller (8212), "The films vary considerably in academic level. Some will interest only mathematicians, while several may be of interest to engineers and other employees."

Those films which have general appeal are being shown during the lunch period on Thursdays in the Blue Room, Bldg. 911, beginning at 12:05 p.m. Arrangements for special showings can be made by contacting Division 8212, ext. 2251.

## Congratulations

Mr. and Mrs. Ron Hagen (8123), a daughter, Jacklyn Rae, Sept. 29.

Mr. and Mrs. Bill Hawkins (8253), a daughter, Kristen Janene, Sept. 30.

Mr. and Mrs. Alec Willis (8146), a son, Jeffrey Conrad, Oct. 6.

## Sympathy

To Chuck Seaborg (8168) for the death of his mother in Ishpeming, Mich., Sept. 26.

## Livermore Employees Support The United Bay Area Crusade

Livermore Laboratory employees continued to recognize the need to support over 170 health, welfare, and youth agencies which make up the United Bay Area Crusade.

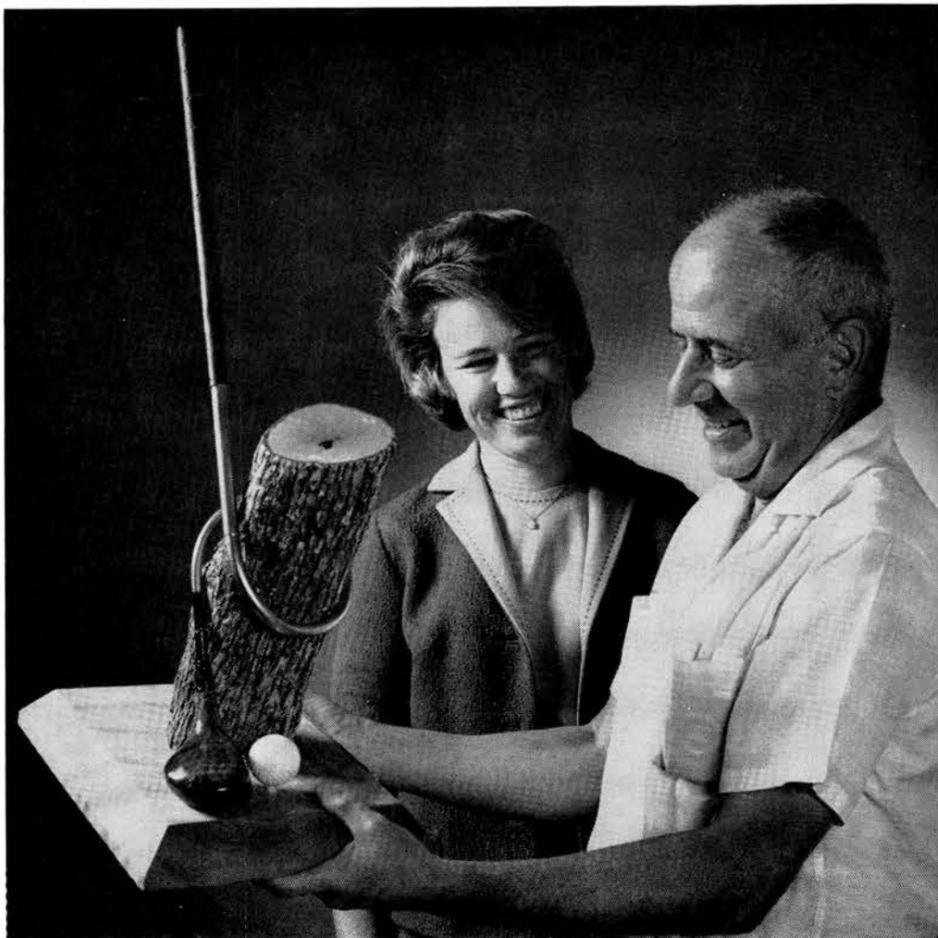
All of the employees have been contacted during the drive, and the Crusade will receive \$19,490. The average individual gift was \$28.

Jerry Maloney (8112), chairman of this year's Crusade comments, "Sandia employees, in supporting the United Crusade and earlier this year subscribing to the Valley Memorial Hospital drive, have shown their willingness to help those less fortunate."

## Welcome Newcomers

Sept. 1 - Oct. 7

California		
*James M. Alviso, Livermore	8235	
Grace G. Campbell, Livermore	8244	
Barbara A. Carter, Livermore	8253	
*Charles C. Comito, Livermore	8252	
Orlo I. Currice, Hayward	8222	
Mary J. Daniel, Livermore	8244	
John M. Flavin, Hayward	8223	
C. William Moore, Pomona	8153	
Yvonne R. Mullock, San Lorenzo	8235	
Froilan L. Paler, San Lorenzo	8235	
Jon J. Pallito, Livermore	8235	
James K. Ray, San Leandro	8245	
Sarah A. Rupp, Livermore	8235	
Edward A. Serna, Livermore	8222	
Homer B. Sidlow, Orinda	8132	
Dwight E. Sorja, Livermore	8222	
Nicholas G. Wittmayer, Castro Valley	8233	
Louisiana		
Alfred D. Lasaine, New Orleans	8144	
Glen R. Orey, New Orleans	8132	
Donald J. Veca, Shreveport	8155	
Nebraska		
*Dennis B. Nelson, Lincoln	8113	
Virginia		
Robert Lee Rinne, Charlottesville	5510	
Washington		
Terrance W. Mattson, Seattle	8146	
<b>Returned from Leave</b>		
Sydell P. Gold	5510	
*Denotes rehired		



ORGANIZATION 8200, with an average of 77.9 strokes, won the seventh annual 8100 vs. 8200 straight handicap golf tournament at Tracy Golf Course Sept. 10 and took the Sandia Golf Challenge Trophy from 8100 for the first time since the yearly event began in 1960. John Barnhouse (8226, right), who shot the low gross score for 8200, accepted the unique trophy from Jackie Garrett (8121), secretary of the Sandia Employees Golf Club and a representative for 8100.

# LIVERMORE NEWS



LIBRARY ASSISTANT Ramona Anderson (8232) disposes of book checkout cards which have become obsolete as the result of a new automated book circulation system in effect in the Livermore Laboratory technical library. The cards have been replaced by computer-generated circulation cards and printout listings, a page of which is shown in the background.

## New Circulation System Improves Service in SCLL Technical Library

A new circulation system is in effect which will make it easier to keep tab on the 10,000 books in the Livermore Laboratory technical library. The new system is part of a continuing effort to automate operations wherever possible in SCLL's library.

According to Beryl F. Hefley, supervisor of Library Division 8232, the new system will provide complete and accurate records of books in circulation. It will also eliminate the manual preparation and handling of cards to identify the borrower, and date due, thus freeing the circulation clerks for other duties in the library.

When programming and computer time was allocated for library applications, the development of a program for cataloging was given priority. In 1962, Earle A. Paxton, Jr. and Elizabeth K. Bodie (both 8232) initiated an input system capable of inputting and retrieving cataloged information.

The next step was to write a computer program which would extract the information needed for an automated circulation system. Since this information was already in the cataloging system, no additional input was necessary. Mary Ellen Jacob (8232) and Robert M. Jacob (8143) completed this program several months ago.

Computer-generated punched cards are provided by the system. A book has three cards — two white and one (orange) master. When book is checked out, one white card is pulled, name of the borrower is added, and the card is sent to keypunch. All the information ends up on the tabulated sheet. When the book is returned, the second white card is pulled, sent through the computer where the cards are matched, and the transaction is cancelled. Book then goes to processing where master card is pulled and used to duplicate two new white cards. All three cards are then inserted in the book, and it goes back on the shelf.

The new system prints two listings weekly using less than four minutes of computer time. One list is by call number and serves as an easy guide to locate a book. The second listing is by the borrower's name and shows what books an individual is charged with.

Computer-printed overdue notices are now being mailed regularly. The normal loan period for books is four weeks, and they may be renewed for a similar period when not "on reserve." If the book is

needed for a longer period of time, borrowers are asked to contact the library which, in turn will send the proper request for "extended loan" to the employee's department manager.

"We expect the automated system to allow us to give better and faster service in fulfilling specific requests and to give the library employees more time to assist the library user in locating information," Mr. Hefley concluded.

## Livermore Notes

On Nov. 8, G. R. (Gib) Marguth (8127) will be the guest speaker at a dinner meeting of the faculty of Oregon State University which is hosted semi-annually by the Bell System recruiting team. His presentation will consist of a technical speech entitled "Advances in Digital Data Acquisition" and a brief discussion of the role of Livermore and Sandia Laboratories.

A standard first-aid course is being offered at Livermore Laboratory for supervisors and employees who missed the previous class in February. Instruction covers the basic essentials for handling injuries or sudden illness, artificial respiration, shock, and poisoning.

The course which will begin on Nov. 1 consists of 10 sessions, from 12 noon to 1 p.m. on Tuesdays and Thursdays. Employees completing the five-week basic course will receive an American Red Cross card.

Instructors will be L. R. Myers (8112), W. T. Schmedding (8223), W. R. Wall (8111), and J. L. Wilson (8122), four of the 18 employees who completed the Instructor's Course in first aid conducted at SCLL last November.

Discount tickets are available to SCLL employees for the Nov. 23 evening performance of the 1966 Ice Capades being presented at the San Francisco Civic Auditorium, Nov. 21-27. Tickets at a discount of \$1 per ticket can be obtained from Employee Benefits.

Gene Aas (8161) shot a net low score of 75 to win the first place trophy in the Sandia Employee Golf Club tournament on Oct. 1. The straight handicap tourney was played at the Pasatiempo Golf Club near Santa Cruz.

Mike Ferrario (8252) took the second place award. He tied with Gene for low net score honors, but lost the trophy on a hole-by-hole comparison of scores.

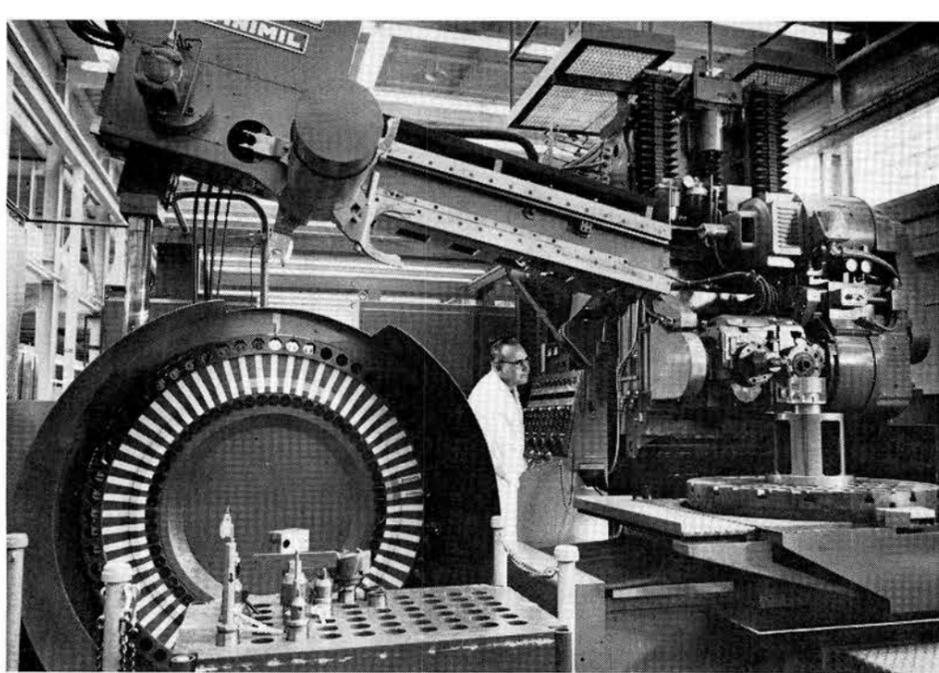
The third place award went to Bill Jamieson (8235) with a net score of 78.

A special award was also won by Mike for coming closest to the pin at the 18th hole.

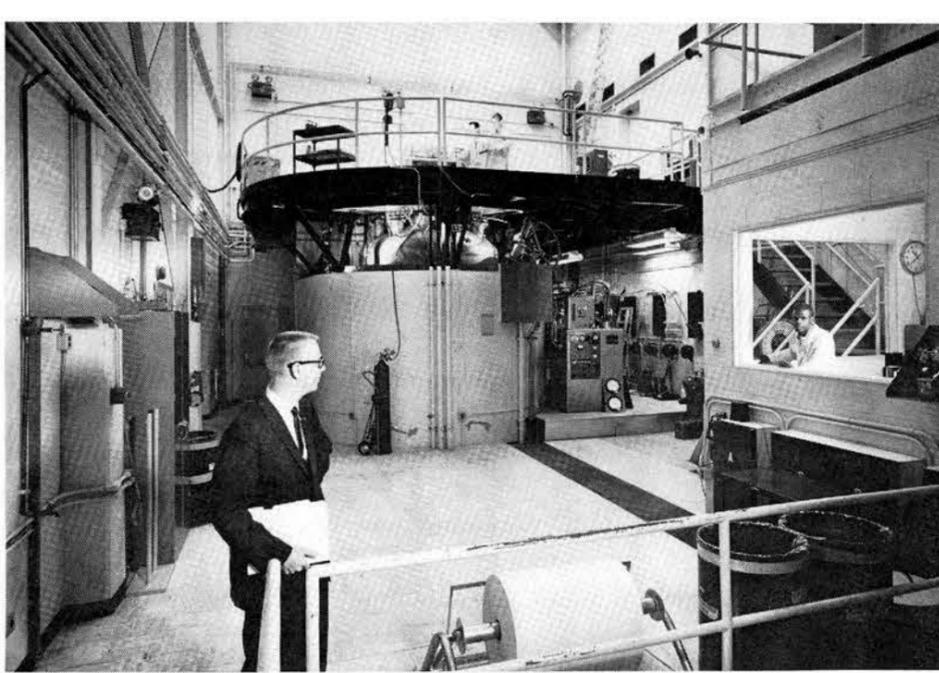
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OMNIMIL, a numerically-controlled milling machine, can produce intricate machined parts from a program tape. The machine will be on display during Family Day in the Development Shops, Bldg. 840.

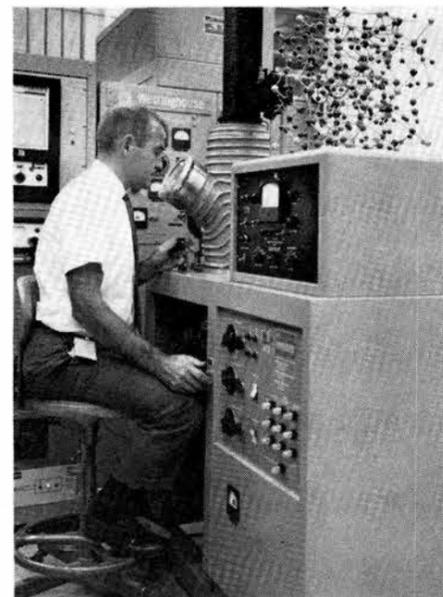


SERF (Sandia Engineering Reactor Facility) will be part of the Family Day tour of Area V tomorrow. The pulsed reactor, gamma irradiation facility, and various laboratories will also be on display to visitors after 10 a.m.

# Sandia Family Day Exhibits and Demonstrations

**Exploding Metal Droplets Exhibit, Bldg. 807, Rm. 2096**—Flash heating technique, invented at Sandia Laboratory, will ignite droplets of metal (zirconium or iron) and will show the burning droplets and their explosions induced by gases in the atmosphere. The application is part of re-entry studies of particles passing through the atmosphere. A do-it-yourself exhibit operated from the hallway will be integrated with the main exhibit in Rm. 2096.

**Vela Satellite Display, Bldg. 892, south high bay**—A full-sized Vela 4 satellite mock-up with simulated solar panels will be on exhibit. Two of the 20 side panels will be removed to allow visitors to see the Sandia logics systems inside and simulated detectors. Sandia contributed to the three pairs of nuclear detection satellites collecting data in space.



CRYSTAL GROWING: Czochralski method for growth of single crystal silicon and germanium used in the electronics industry will be displayed by R. J. Baughman (5154) in Bldg. 807, Rm. 3111.

**Crystal Growing Exhibit, Bldg. 807, Rms. 3096 and 3111**—Two techniques for the growth of single crystals will be demonstrated: the Czochralski method consists of pulling a crystal from a melt in a manner similar to that employed for preparation of single crystal silicon and germanium used in the electronics industry; the second method is the flame fusion method used to grow gem materials such as rubies and sapphires. Equipment modified to allow growth of large crystals of high-melting oxides will be demonstrated.

**SNAP Program, Bldg. 892, south high bay**—Visitors will see static displays of models of the SNAP 19, 27, and 29 radioisotope thermal-electric generators, which will provide power for the Nimbus Weather Satellite, Apollo Lunar Surface Experiment Package, and future space applications. The exhibit will also include thermo-electric panels which convert heat to electricity under proper environments, and a working model of a "heat-pipe," a device expected to be used in space-vehicle power systems to transfer energy from a heat source, such as a nuclear reactor or isotopic generator, to a thermionic converter for direct conversion into electricity.

**Technical Library, Bldg. 804**—Booklets and map of technical library's special features will be available; an entry hall display will be on Oceanography; and there will be a Special Libraries Association display on "Librarianship as a Career."

**Mass Balance Laboratory and Machine Shop Exhibit, Bldg. 892, south high bay**—Exhibits and displays will include a vertical balance machine in operation; horizontal balance machine; weight and center of gravity machine; demonstration of how moment of inertia is determined. With this equipment, lack of symmetry of components in rockets and other vehicles can be determined.

**Vibration Testing Demonstration, Bldg. 860, first floor, north wing**—Visitors will tour new data center in which signals are recorded of both sinusoidal and random vibrations, and will see a demonstration of how strobe light is used to observe laboratory motion. Severe and complex vibrations such as those produced by high thrust power sources or by atmospheric re-entry conditions can be simulated at this facility.

**Wind Tunnel Demonstration, Bldg. 865**—Scale models used in wind tunnels around the country will be on display; visitors will be able to see inside both the transonic and hypersonic wind tunnels, which are used to determine flight characteristics of various shapes at speeds up to Mach 11. An information sheet will be distributed.

**Component Testing Demonstration, Bldg. 880, Rms. 84 and 196**—Visitors will see the following displays and demonstrations: simulated explosive device under test automated test of components; telemetry demonstrations of simulated rocket flight; comparison of human reaction time to reaction time of explosive device to stimuli; ballistic pendulum; static free room to demonstrate handling of explosive devices in a safe manner; display of space age "workhorses."

**Contamination Control and Clean Room Exhibit, outside to the east of Bldg. 892**—Typical industrial or medical application of the laminar-flow clean room. Visitors will pass through a vertical down-flow room similar to that used for spacecraft sterilization studies. A demonstration with smoke will illustrate how the laminar air flow sweeps particles out of the clean room. Air in this clean room will be changed 600 times an hour.

**Manufacturing Development Exhibit, Bldg. 892, east high bay**—Visitors will see a display of new pieces of equipment, instruments, and manufacturing processes developed at Sandia.

**Value Engineering Display, Bldg. 892, west hall**—Six panels will be on display depicting the purpose of the value engineering program and its application. Factual examples of cost savings in effect at Sandia will be shown.

**Planetary Quarantine Exhibit, Bldg. 892, west hall**—Visitors will see an explanation of possible microbiological contamination of other planets and natural satellites, and will learn how sterilization of planetary lander vehicles will be evaluated.

**Plasma Laboratory Exhibit, Bldg. 865-East**—This one million watt plasma jet system can produce and maintain temperatures as high as 20,000°F. and can subject test items to supersonic conditions. It is used to simulate conditions similar to those encountered by a vehicle re-entering the earth's atmosphere. Visitors will see the remote TV camera set-up and the control console.



FILAMENT WINDING, part of a process which produces tough-as-steel parts from glass threads and coatings of plastic, will be demonstrated in Sandia's Plastic Shops, Bldg. 834, during Family Day tomorrow.

**Filament Winding Demonstration, Bldg. 834**—Filament winding is a highly automated method of reinforcing plastic parts with strands of glass held together by a resin binder. Fibrous glass strands are impregnated with thermosetting plastic and wound in continuous lengths on a suitable mold. Because tension on the glass can be accurately controlled during winding, a pre-stressed condition is achieved resulting in a finished part having a high tensile strength. Also, since reinforcement can be laid down in precise patterns through electronic controls, parts can be made to have strength-to-weight ratios greater than heat-treated steel.

**Machine Shop Demonstration, Bldg. 840**—Four types of large machines will be displayed: a vertical boring mill for contour machining operations; a contour lathe which will be working on a ballistic shape; a vertical milling machine doing slab or face milling; and the numerically controlled Omnimil five-axis milling machine. The latter will be programmed to show the capacity of the machine and its ability, from pre-punched tape, to identify and change as many as 40 different tools.

**Computer Displays, Bldg. 880, Rms. 36 and 100**—Computers are used widely at Sandia in support of the many technical programs. To display the capabilities of the computer facilities, visitors will first receive a card upon which their name is key punched. When the card is placed in the IBM 7090, several items of personal data will be added to each card. The CDC 3600 will be used in a similar way. A printer will type out thunderbird designs and welcome messages.

**Special Projects Display, Bldg. 892, south high bay**, will include an exhibit booth prepared for the upcoming 1966 Space Fair, a Strypi rocket nose cone, and a complete (except for fuel) Nitehawk 9 rocket system. The 20 by 20-foot booth will contain a group of selected photographs and an automated slide show on various Sandia activities; a recovered Nitehawk 9 payload with a deployed chute and inflated flotation package; and a plastic covered Nitehawk 9 nose cone showing the location of the payload, recovery, and telemetry packages.

**Instrumented Test Trailer, outside west side of Bldg. 880**—Visitors will walk through a 40- x 10-foot instrumented trailer used by Field Test personnel at Nevada Test Site. This trailer is instrumented to record 82 independent signals from underground nuclear tests. Other features are a self-contained air conditioning system, and complex lighting system. A recording in the trailer will detail capability of instrumented trailers.

**Digitizer and Plotter Display, Bldg. 892, Rm. 152**—Visitors will see static displays of graphical work; digitizer mathematically modeling an aerodynamic shape for computer analysis of weights, moment of inertia, and center of gravity; second digitizer system programming a printed circuit master; explanation of automatic drafting machine in operation.

**Unclassified Films, Bldg. 815 Auditorium**—Continuous showing of unclassified films on the laminar-flow clean room and on environmental testing.

The environmental testing film will also be continuously shown in Rm. 180 of Bldg. 892.

**Environmental Testing Facilities, Area III**—Sandia has some of the outstanding environmental testing facilities in the country. These are used to subject weapon systems and components to environments more severe than any they would encounter in storage, transportation, or delivery. Visitors will use special busses (to be boarded at the Area III entrance) that will stop at the following facilities during their route through Area III: acoustic, climatic, drop towers, 18-inch actuator, centrifuge, vibration, explosive test, guns, 3000- and 5000-foot rocket sled tracks, water jet, air gun, and radiant heat. In addition, unclassified films on environmental testing will be shown in Bldg. 6584 at the Area III entrance.

**Reactor Facilities, Area V**—Visitors may tour the Sandia Engineering Reactor, capable of irradiating very large test assemblies, and the nearby Sandia Pulsed Reactor, which produces short bursts of neutrons, gamma and x-rays, and is designed for the study of radiation damage effects produced by nuclear explosions.



ACOUSTIC FACILITY, which duplicates the environment of rocket launch for component testing purposes, will be among facilities open tomorrow in Area III.

# Service Awards

15 Years

# Take Note

20 Years



B. T. Alsop 4573  
V. E. Baker 7226



J. A. Allensworth 9422



D. J. Alvino 2212



Martha Andrews 4135



Gus Apodaca 4514



F. B. Baldonado 4573



A. S. Buchanan 3153



Thelma Carpenter 4500



J. A. Fackelman 4512



B. H. Finley 2152



Roman Garcia 3241



W. H. Everhart 9214  
R. D. Jones 7336



P. M. Heman, Jr. 8244



Mary R. Jansen 2213



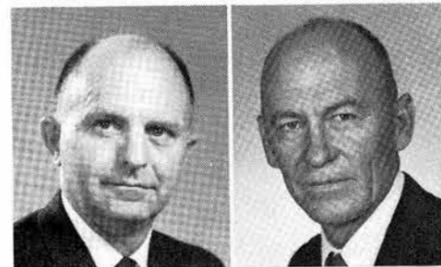
Alphonse Jiron 4511



J. G. Larreau 7262



W. B. Leslie 1311



F. A. Leckman 3153  
A. B. Machen 7500



A. M. Mares 4362



L. T. McKenzie 3242



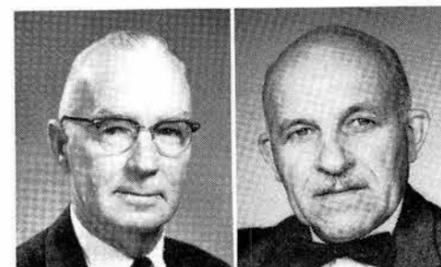
R. G. McKenzie 2552



I. D. McKinney 5142



G. E. Raybon, Jr. 1134



T. L. Regan 2552  
J. L. Rowe 8220



J. F. Reed 9322



Elfides Salazar 4333



D. R. Santillanes 3462



H. L. Sellers 4254



J. M. Stueber 7213



G. W. Van Gundy 2523



D. L. Vath 2131



C. W. Young, Jr. 7256

## 10 Years

Oct. 21 - Nov. 3

M. W. Causey 1542, Pauline Lamberson 2234, D. E. Sanchez, Jr. 3242, D. W. Shadel 7261, B. A. Goncher 8212, Lorraine R. George 8241, Irene R. McGrew 9414, M. B. Gens 1541, J. S. Reed 4221, J. W. Melvin 9212, Marie W. Blythe 3312, Ernesto Griego 4212, C. E. Wimmer 2211, J. D. Burt 2213, P. L. Spencer 2213, J. N. Volkman 2213, M. D. Weaver 2213, Dorothy Crosby 3126, R. M. Thimm 4253, Phyllis K. Munn 8232, M. E. Richards 2521, N. A. Mozley, III, 3113, R. A. Velasquez 4361, Beatrice V. Haines 4615, H. M. Miller 7242, M. M. Conrad 7245, Willard Koone 9221, W. D. Feldman 9426, L. S. Johnson 1544, E. G. Smith 4253, W. H. Thompson 4575, R. D. Grover 5634, M. C. Johnson 7335, D. R. MacKenzie 9322, and R. G. Hauff 8252.

If you have a passion for Pierogi (filled dumplings), Hruzcki and Ponchki (Polish style bismarks), stuffed cabbage rolls, and other Polish goodies, mark Oct. 29 on your calendar.

The Polonaise Society will observe its 10th anniversary with a dinner-dance from 6:30 p.m. to midnight at the FOP Hall, North San Mateo and 422 underpass. The Notables will play for dancing.

Polonaise Society members at Sandia include Nina Dziadulewicz (2523), S. A. Chemistruk (2132), T. J. Stetz (7247), and Tommy Sullivan (7246).

Vess Harker (2213-1) is president of the New Mexico Appaloosa Horse Club which is sponsoring a Halloween benefit dance with proceeds going to the New Mexico Epilepsy Foundation.

The dance is slated for Oct. 28 from 8 p.m. to 1 a.m. at the FOP Hall, North San Mateo and 422 underpass. Tommy Collins, country and Western music recording artist, will be accompanied by Billy Glenn and his Midnight Playboys.

Librarian John Gardner (3421-1) is director of "The Marriage Go-Round," which will be presented Oct. 27-30 and Nov. 2-7 by the Old Town Studio. Cast of the sophisticated comedy will include another Sandian—Gaynor Atkinson (7331), who plays a philandering professor of Indo-European languages.

## Sandia Speakers

G. F. Wright (1134), "Ablative Properties of Filament-Wound Materials," Joint Working Group on Filament Winding Application, Sept. 28, Albuquerque.

R. U. Acton (1134), "Thermal Diffusivity by the Flash Technique," Fall meeting, American Ceramic Society, Sept. 26, Des Plaines, Ill.

A. D. Swain (2152), "Some Limitations in Using the Simple Multiplicative Model in Behavior Quantification," American Psychological Association convention, Sept. 5, New York City.

C. N. Giles (4615), "Central Instrument Control by Computer," Second Symposium on Test Instrumentation in Science and Industry, Sept. 19-23, Palo Alto, Calif.

E. D. Jones (5151), "Nuclear Magnetic Resonance Experiments in Intermetallic Compounds: Temperature Dependence of the Sm<sup>3+</sup> Spin in SmP," Physics Department Colloquium, University of New Mexico, Sept. 23.

## 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

- LAND, 5 acres in Los Lunas, east of El Cerro Loop, \$600 per acre. Jenkins, 299-2211 after 5.
- LOTUS 7A, recently rebuilt, uses readily available BMC parts, \$1500; '65 Corvair 500 2-dr., 6500 miles, \$1500. Johnson, 298-4553.
- CLARINET, Buffet B-flat, \$180 when new. Newman, 299-2729 after 6.
- EARLY AMERICAN wing-back chair, orange w/ reversible cushion and ottoman, \$35; Remington 30-06 hunting rifle, \$35. Campbell, 255-9234.
- 3-ROOM CABIN and utility rm., 3/4 acre, located in the old town of La Madeira about 27 miles from Albuquerque, \$1300. Vetter, 255-3959.
- ALFA ROMEO, '60 Sprint, radio AM-FM-Marine band, engine recently rebuilt, new interior, 4-spd. fully synch. trans. Ruff, 256-9425.
- WALNUT dining room table; 4 maple chairs; boy's bicycle. Jennings, 255-5950.
- SOUSAPHONE, E-flat base, 4-valve, special Holton Gold Bell, w/case. Johnson, 344-9369.
- SHOTGUN, Remington model 870, pump, 16 gauge, modified choke, \$50. Wessel, 296-2526.
- BOY'S 26" J. C. Higgins bicycle, \$12. Wilkins, 268-5971 after 5.
- '56 CHEV. or parts; '48 Ford pickup parts; gas heater floor furnace; 30-gal. hot water heater. West, 282-3460.
- '66 IMPALA, 325 HP Turbojet-hydraulic, PS, PB, AC, R&H, DE, tilt-teloscopic steering wheel, 6000 miles. Holloman, 344-3274.
- STRING BASS w/cover and bow, \$250. Ray, 299-1253 after 6.
- KING TRUMPET w/carrying case, 2 mutes, extra mouthpiece, oil and all the school band books. Taggart, 268-0963.
- CONN FLUTE, C-flute, \$70 or make offer; Olds sinatra French F-horn, \$125. McKnight, 282-3377.
- GIRL'S 26" bike, new thorn-proof tires and tubes, \$20. Taylor, 344-8176.
- YOUTH BED and chifferobe, w/springs and mattress in waxed birch finish, \$20. Garst, 299-5870.

## SHOPPING CENTER

- '65 PONTIAC Grand Prix, PS, PB, AT, factory air, 16,000 miles, make offer. Greenwood, 298-5268.
- BEER KEG refrigerator, complete w/tap and CO<sub>2</sub> bottle, \$60; boy's 26" bicycle, \$10. Clement, 298-0240.
- ELECTRIC STOVE; two cribs; two hi-chairs; stroller; playpen; bowling ball; two 7:00x14 tires; golf clubs. Shumway, 299-3951.
- UNUSUAL mountain side 5/8-acre lot in Glenwood Hills, access road at top of lot included in price. Neun, 299-9188.
- 110 SQUARE FEET terrazo tile, \$40; 250 feet No. 2 aluminum entrance cable, new, \$20. Romero, 344-0302.
- MINIATURE SILVER POODLES, AKC registered, 7 wks. old, \$75. Doyle, 299-7567.
- \$1950 or best offer, 2.06 acres in the Ponderosa Pines subdivision of the Manzano Mountains, terms available. Cotter, 265-8631.
- KENMORE portable sewing machine; ladies bowling ball, bag, and shoes size 6 1/2 AA. Vogt, 299-2551.
- 23" TV, RCA console. Shoemaker, 255-8820.
- KITCHEN TABLE and 4 chairs, \$10; small jig-saw, \$5. Everett, 298-3994.
- '62 CHEVROLET Biscayne station wagon, new paint job, two new tires, big engine, \$850. Benedict, 247-3572.
- GE AUTOMATIC washing machine. Gardner, 296-1314.
- WEDDING GOWN and veil: size 7-8, lace and nylon orpandy, best offer. Simmons, 898-2489 after 1:30 p.m.
- '55 CHEVROLET 6-cyl. 4-dr., standard trans., \$215. Beatty, 299-3429.
- FM TUNER, \$17.50. Baxter, 1610 Bayita Lane NW, 344-7601.
- SHOE DEPT. CHAIRS: 3-in-a-row, \$3, 5-in-a-row, \$7; hot tray server, \$4; 3/4" thick marble, 24"x42", 3 edges finished, 1 rough, \$15. Stromberg, 255-6131.
- VOLLEYBALL/BADMINTON set, \$3; patio bowling set, \$3; Lionel .027 freight train, trestle, switches, \$20; wheel type sled, \$5. Martin, 256-6785.
- DANISH MODERN living room or den furniture; 9x9' umbrella tent; Coleman stove and misc. camping equipment. Shinn, 299-6238.
- WEBSTER 3-spd. changer, w/2 GE cartridges, \$10; Caloric apt.-size gas range, \$20; Royal wood burning range, \$10. Martin, 255-8030 after 4.
- MOTORCYCLE, 250cc, w/windshield, spare parts and helmet, low mileage. Heidrich, 344-7669.
- ERCOUPE, 415-E, all metal, 90hp, 140 SMOH, oil filter, oil cooler LTRA-6, Piper omni, landing lights, licensed to Aug. '67, N94779, \$2750. Redmond, 256-9738.
- LARGE SACK of dried gourds suitable for decorating, \$1. Hill, 243-3493.
- SELL OR TRADE: 6 mo. old black female, small miniature poodle, AKC. Tilley, 299-9611.
- GENERAL ELECTRIC automatic washer. Windle, 344-6958.

## SHOPPING CENTER

- '65 G.T.O., \$2400. Rohrer, 299-4377.
- AKC registered adult, white male miniature poodle, excellent w/children, shots, housebroken, \$50. Bucheri, 255-8028.
- 3-BDR., walled backyard, draperies, carpeting, 1 1/2 baths, covered patio, pitched roof, built-ins, carpet, fruit trees, low down, assume payments. Orth, 296-3236.
- AUTOMATIC waterpump for trailer camper etc., 12v-DC. Johannsen, 898-2398.
- ANTIQUES: spool cabinet, 5-dwr., \$35; sectional bookcase, glass doors. Smitha, 299-1096.
- KENMORE washer and Westinghouse dryer, both electric. Glaze, 9707 Chapala Dr. NE.
- AKC West Highland white terrier, 5 mo. old female, champion sire, has all shots. Bushmire, 299-2559.
- BOY'S 26" 3-spd. bike, 3 mos. old, must sell, \$25. Shanfeldt, 296-3154.
- MOTOR SCOOTER, Ducatti, 125cc, 5000 miles, one owner, \$175; crash helmet, \$30. Houghton, 1413 Guaymas NE, 299-3386.
- MAPLE crib and mattress; girl's 26" bicycle. Tuthill, 298-0265.
- REGISTERED weanling fillies: 1, half Morgan-half saddlebred; 1, half Morgan-half standardbred, good riding or driving prospects. Ault, 282-3280.
- BASEMENT SALE: furniture, appliances, TVs, clothing, what-have-you from 2 houses, sale Sunday only, noon - 5 p.m., 1300 Las Lomas Rd. NE. Hueter, 242-1620.
- '59 VW SEDAN, \$495; panel ray heater, \$20; 20" bike. Naumann, 877-6640.
- LESLIE organ speaker, model 51C, 2-channel 50-watt amplifier and 4 speakers in walnut cabinet. Bircher, 268-0726.
- LARGE 3-bdr., 1 1/2 bath, den, DR, dbl. narane, pitched roof, corner lot, make offer, 11201 Prospect NE. Shields, 298-8028.
- '66 1/2-ton pickup, V8, 4-spd., heavy duty springs, 6-ply tires, helper springs for camper. Bradshaw, 268-8708.
- FREE KITTENS, plus one mother. Johnson, 298-7356.
- '61 FORD Galaxie convertible, white, PS, PB, \$100 below Book. Pollard, 268-1709.
- CHILD'S desk w/chair, \$5; divider bookcase, 3 shelf levels w/shelves ea. side, 39 1/2"x23 1/2"x51 1/2" long, \$7; child's record player w/records, \$7. Marsh, 243-2767.
- BRICK 3-bdr., 1 1/2 baths, carpeting, draperies, landscaping, AC, sprinklers, patio, below appraisal. Keen, 299-6541.
- CHAIN SAW. Wenz, 299-5488.
- SKIS, 7'3" w/Cubco safety bindings, \$23; ski boots, size 12 w/Cubco plates, \$14; skis, 6'6" w/safety bindings, \$10. Hart, 299-8832.
- READ END for home-built trailer, \$5. Zucuskie, 268-3105.
- OLD FASHIONED upright piano, one owner, needs some minor repairs and tuning, \$135. Reed, 299-7425.
- BUNK BEDS, maple finish, \$60. Walsh, 298-3173.

## SHOPPING CENTER

- 200 CC Triumph Tiger Cub motorcycle, needs minor tune up, \$75. Shock, 877-3728.
- '61 PORSCHE Super Coupe, \$1680. Manweller, 298-5673.
- CHAMBERS 4-burner gas stove, oven and exhaust hood for custom installation; baby bed and mattress. Jackson, 247-2844.
- GIRL'S 24" bike, \$20; women's size 5 rink skates, \$9. Nielsen, 255-2045.
- FLYING CLUB membership, Rainbow Flyers, '59 Cessna Skylane, total membership limited to five. Risse, 299-5002.
- MEDICINE CABINET; electric wall heater; window car cooler; 2 ea. 6:50x16 6-ply tires; 21" reel power mower; make offer. Piner, 256-1907.
- '46 HARLEY DAVISON motorcycle, rebuilt motor; Pacific ammunition loader w/dies; Kraftman rotary power mower. McKenzie, 299-3260 after 5.
- PORTABLE DISHWASHER, used 6 mos., \$95; 6' wide metal folding closet door. McCoach, 298-5960.
- CRAFTSMAN radial saw and accessories, \$140; misc. Eico test equipment. Buska, 898-1073.
- CONDENSER ENLARGERS, 4"x5", \$50; 35mm, \$15; new 5:25x13 chains, \$5; baby bed, \$10; 1/6hp motor & pump, \$5; 1/2hp motor & saw, \$10. Drake, 296-3548.
- '62 RAMBLER stn. wgn., ST, 38,000 miles, \$700; 6mm Remington, Enfield action Douglas barrel, 4x scope, \$70. Gunderson, 298-2133.
- PIANO, Baldwin Ebony Acrosonic, \$700; piano-accordion, Camerano, 120 bass, \$125. Rand, 299-1048.
- RAMBLER, '58, 4-dr., AT, 6-cyl., \$250. McGuckin, 298-8091.
- MOTORCYCLE, '61 Triumph T205L Scrambler, 200cc, 20 hp, rebuilt engine, new paint, new wiring. Campbell, 1114 Princeton NE, 256-3214.
- 1 DOZ. duck decoys, plastic; 1 pr. lined paratrooper boots; 1 Cajun duck call; all for \$25 or best offer. Comiskey, 268-5120.
- CAMPER, '63 Ford Econoline, 4-spd., large enr., 14-7:00 tires, dbl. bed, bunk, utilities, under 20,000 miles, \$1695. Carlson, 898-0133.
- OLDS trumpet, misc. boy's clothing, size 12-14; electric trains: Super O, HO; electric motors; children's games; golf clubs and bag. Brooks, 299-0923.
- AKC registered black miniature poodle puppies, 9 wks. old, terms can be arranged or trades considered. Workman, 298-8201.
- ORIENTAL RUG, 9x12, \$35; 21" TV console, \$35. Fossum, 255-0535.
- 4-BDR., 1 1/2 baths, hw/floors, nylon carpet, semi-finished basement, qualify, negotiate equity or trade for livestock or ? Null, 344-8549.
- WESTINGHOUSE apt.-size refrigerator; relaxizer and accessories. Iverson, 298-1936.
- 3-BDR., 1 1/2 bath, paneled family rm., hw/floors, AC, floor heat, 53/4% loan, low equity, behind Mitchell Elem. School. Bell, 299-8068.
- ROLLAWAY BED, \$10; occasional table, \$9; 10" tricycle, \$3.50; misc. toys and items. Lowe, 11404 Bellamah NE.

## SHOPPING CENTER

- '63 FORD 1/2-ton pickup, 6-cyl., 4-spd., Posi-traction, 16" tires, \$330 off NADA retail price. Andrews, 256-7328.
- DUMONT TV SET, 24-inch, B&W, mahogany cabinet, \$50 or best offer. Hansen, 298-0308.
- '65 CORVETTE, coupe, 300 hp, 4-spd., \$3100. Weldon, 296-4677 after 6.
- ### FOR RENT
- 3-BDR., fireplace, Frost Road. Patterson, 282-3456.
- READY FOR LEASE, newly redecorated 3-bdr. home in NE Heights. Akin, 299-4242 evenings and weekends.
- 2-BDR. apartment, stove and refrigerator furnished, water and garbage paid, 528 Cardenas SE. Tillman, 255-6292.
- ### WANTED
- BABYSITTING by the week, near Jackson Jr. High, references. Mathes, 299-1420.
- RIDE from vicinity of Menaul and Quincy NE to Bldg. 806 parking lot. Bucheri, 255-8028.
- BROWNIE UNIFORM, size 8. Wickham, 3501 Ross SE, 255-4410.
- RIDE from vicinity of San Pedro and Comanche, NE to Bldg. 894. Downey, 268-9993.
- UNFURNISHED doll's house, not metal. Wackerly, 264-2869.
- MINIATURE tape recorder (such as Soni Tape-mate). Hill, 268-1420.
- PAIR of snow shoes in good condition. Stromberg, 255-6131.
- 2 RIDERS to make 5-man car pool, near Morris St. between Candelaria-Comanche, park near Gate 6. Machin, 298-4451.
- WILL TAKE late model pickup or pickup and camper as payment on nood 5-rm. house now rented. Shaffer, 242-6507.
- USED Gravelly tractor. Roth, 877-4997.
- PAINT SPRAYER and contractor's wheelbarrow. York, 255-3097.
- REAL NICE used crib and mattress; large chest of drawers or chest w/deep drawers. Gals, 256-3601.
- '55, '56 or '57 CHEVY, V8, stick shift, prefer 2-dr. or HT. Reed, 299-7425.
- RIDE wanted, 2 people from Comanche and San Pedro area to vicinity of 892. Vetter, 255-3959.
- .348 WIN. brass, will trade .308 Win. brass or buy. Shoemaker, 636-2775 Los Lunas.
- SKIS, size 6-7 ft., men's ice skates, size 9. Fossum, 255-0535.
- ### LOST AND FOUND
- LOST—Safety glasses w/pearl frames, pocket protector w/6" rule and ballpoint pen w/flashlight and red-blue auto-point pencil, mother-of-pearl pin. LOST AND FOUND, tel. 264-2757, Bldg. 610.
- FOUND—Silver hoop earring, beige nubby knit sweater-jacket, gold leaf earring w/bittersweet berry, pipe, tobacco. LOST AND FOUND, tel. 264-2757, Bldg. 610.



AWARD FOR OUTSTANDING PAPER presented at the 1966 IEEE Conference on Nuclear and Space Radiation Effects has been presented to H. H. Sander (left) and B. L. Gregory, both of Transient Effects Division 5212.

## H. H. Sander, B. L. Gregory Earn IEEE Award for Outstanding Paper

Awards for the outstanding paper of the 1966 IEEE Conference on Nuclear and Space Radiation Effects have been given to H. H. Sander and B. L. Gregory, both of Transient Effects Division 5212.

Their winning technical paper was entitled "Transient Annealing in Semiconductor Devices Following Pulsed Neutron Irradiation" and was one of 42 papers presented by engineers from throughout the country during the annual conference held July 18-22 in Palo Alto, Calif. The paper will be printed in the December issue of the IEEE TRANSACTIONS.

They reported on a study made of radiation damage to silicon transistors and solar cells, usually the most radiation vulnerable parts of circuits used in missiles and space vehicles. There is a decrease in device output after irradiation which can be measured, and engineers customarily design their circuits around this expected decrease.

In 1964 Mr. Sander suspected that existing data might not be valid due to the time lag after irradiation before the transistors were tested. He believed that the output immediately after irradiation was

much lower than the steady state value. Mr. Sander reported this theory at an IEEE conference in Seattle in July 1964 and there were many disbelievers among the other engineers carrying out hardening studies. The following year, Mr. Sander and Mr. Gregory presented more facts and figures, and this past summer the third paper on the subject was supported by considerable data.

In the interim, interest in this basic research activity was expressed by the Transient Radiation Effects on Electronics (TREE) panel, which is sponsored by Defense Atomic Support Agency and includes other government agencies and laboratories.

Mr. Sander has been with Sandia since 1951 originally in Nuclear Effects Research Department where he was engaged in phases of nuclear and radiation effect studies. A number of patents have been issued to Mr. Sander as a result of his work in these fields. He received a BS degree in electrical engineering from the University of Wyoming in 1951.

Mr. Gregory has been with Sandia since 1963. As a member of the Radiation Physics Department he is currently investigating the electrical properties of defects introduced in silicon by fast neutron, electron, and gamma-ray bombardment. He received a PhD degree in electrical engineering from Carnegie Institute of Technology in 1963.

### Congratulations

Mr. and Mrs. D. E. Alberts (3132), a son, Clinton D., Sept. 17.

Mr. and Mrs. Howard Seltzer (2211-1), a son, Aaron Jay, Oct. 7.

## K. F. Krug to Retire From WE October 31



Karl F. Krug will retire Oct. 31 with more than 45 years service with the Western Electric Co. He has been manager of Price & Cost Analysis Department 4350 in the Purchasing Organization since 1961 when he transferred to Sandia Laboratory.

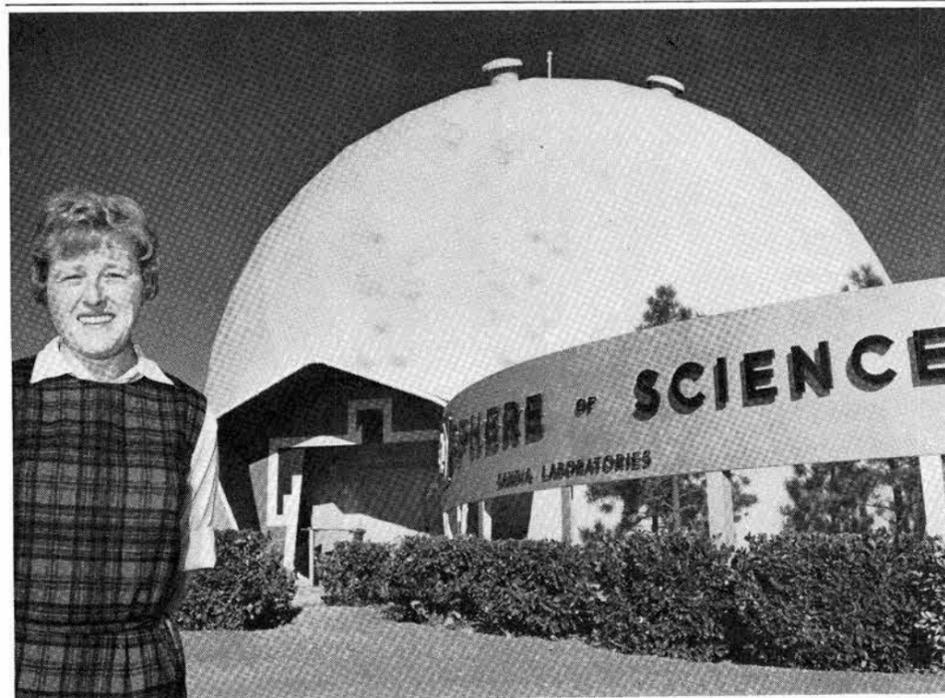
Mr. Krug joined Western Electric in 1921 at the Hawthorne Works. At that time, Hawthorne was the only plant operated by Western Electric. Later he transferred to the Kearny Works and from 1930 until he joined Sandia, he was stationed at Western Electric Headquarters in New York City. His principal assignments were Office Service Manager for Headquarters Organizations in Supply Service and Program Planning, and Government contracting.

"I am very pleased to have had the opportunity to work for Sandia," Mr. Krug says. "It's a fine company and I have made many friends."

Mr. and Mrs. Krug like the Southwest and will make Albuquerque their home following retirement. They live at 6204 Woodford Place NE.

"I have no definite plans for my retirement," Mr. Krug says. "I'm sure that I will find many things to devote my spare time to. Perhaps we'll spend some time in a warmer climate during the winter, and I do plan to take up fishing again." He is also interested in gardening, golf, and traveling.

Mr. Krug says that life seems to be more leisurely in this part of the country, and that is what he hopes to enjoy—a leisurely retirement.



SANDY BORGRINK (3433), Family Day Coordinator, is shown at the Sphere of Science exhibit hall. The Sphere will be open during all Family Day tour periods with members of Community Relations Division 3433 on hand to welcome visitors. The Sphere is located northeast of Tech Area I.

## Halloween Costume Party Set at Coronado Club Saturday Oct. 29

Witches, spooks, and goblins have been reduced to mere frivolous fun in this age of Batman and superheroes. Still, the Coronado Club plans a devil of a good time Saturday, Oct. 29, at the annual Halloween Costume Party. Prizes will be awarded to the best costumes.

The evening begins with beef shish kebab with all the trimmings served from 7 to 8:30 p.m. Dancing to McCoskey's Dixieland All Stars is scheduled from 9 until 1 a.m. Cost to members is \$2; guests \$2.50. Tickets must be picked up by 9 p.m. Friday, Oct. 28.

Teenagers will go-go tomorrow night from 7:30 until 10:30 p.m. On the bandstand will be the Jeremy Bentham Four and Don Lincoln of KQEO radio will be on hand to emcee the action. Admission is 25 cents each.

### Social Hours

Tonight, Don Lesman will provide the happy music. The seafood buffet will be served. Admission is \$1.25 for adults, \$1 for children.

On Friday, Oct. 28, Sol Chavez and the Bernalillo Brass will be on the bandstand. The Coronado Club's popular chuckwagon beef and shrimp buffet will be served. Cost goes to \$1.75 for adults, \$1.50 for kids.

On Friday, Nov. 4, Bud Fischer will play for dancing and the Mexican buffet will be served.

### Bowling

Coronado Club bowlers will organize for the coming season at a meeting Tuesday, Oct. 25, at 7:30 p.m. in the Club dining room. Tournament, league plans, and social activities will be discussed. Refreshments will be served.

### What's In a Name?

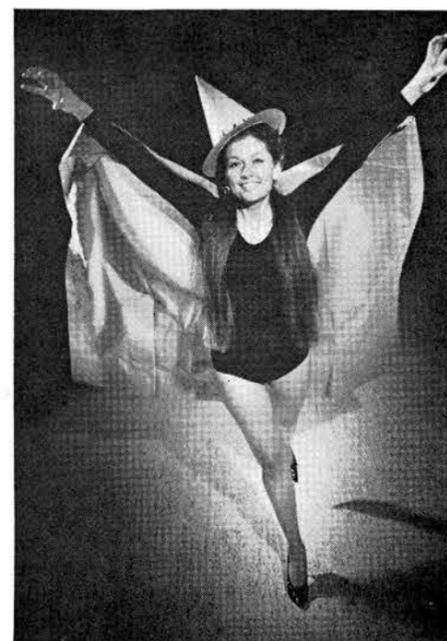
Be sure to read the November Coronado Club announcements. Somewhere semi-hidden in the bulletins will be the names of prize winners who can collect free tickets to a coming social event.

### Tech Papers Presented At Shock-Vibration Meet

A number of Sandians participated in the 36th Shock and Vibration Symposium held Oct. 18-20 in Los Angeles.

The following technical papers were presented: W. B. Murfin (1541), "Automated Digital Shock Data Reduction System"; L. O. Seamons (7344), "Shock Testing with Solid Propellant Powered Guns"; W. W. Shurtleff (7344), "Vibration Feedback Averaging"; M. W. Sterk (7324) and James Ellison (Sandia summer employee), "The Development of a Low Cost Force Transducer"; and N. F. Hunter and J. V. Otts (7324), "Reproduction of Complex and Random Waveforms at Various Points on a Test Item."

R. T. Othmer (1541) appeared on a Specification of Shock Tests panel.



LEAP into a phone booth, change into your Batman costume or something, and celebrate Halloween at the Coronado Club Saturday, Oct. 29, with Betty Jo Rivera (3241) and other assorted spooks, goblins, and blithe spirits. The party starts with beef shish kebab at 7 p.m. Dancing begins at 9 p.m. with McCoskey's Dixieland All Stars.

## Two Livermore Employees Injured in Traffic Accident

On Oct. 3, two employees were injured in an automobile accident while en route to a business meeting in Sacramento. Driving in a heavy fog, the driver of the vehicle struck the rear of a truck that had been involved in an accident a few minutes earlier. One employee returned to work Oct. 10, but the other employee is still in a Livermore hospital receiving further treatment.

Preliminary investigation of the accident indicated that seat belts were installed in the auto the employees were using, but the more seriously injured employee was not using his at the time of the accident.

The employees involved in the accident are in Dept. 8120. It was the first disabling injury this department has incurred since Aug. 30, 1962, after accumulating 1494 days or 858,144 man-hours without a disabling injury.

At the time of the accident, Livermore Laboratory had worked 112 days or 526,674 man-hours without a disabling injury.

## Sandia's Safety Scoreboard

### Sandia Laboratory:

32 DAYS  
1,120,000 MAN HOURS  
WITHOUT A  
DISABLING INJURY

### Livermore Laboratory:

15 DAYS  
82,030 MAN HOURS  
WITHOUT A  
DISABLING INJURY