

Gus Simmons Receives Doctorate at UNM



Gus Simmons of Systems Planning Staff 100 was recently awarded his PhD degree in mathematics from the University of New Mexico.

His doctoral dissertation was entitled, "A Combinatorial Analysis of Finite Minimal Uniform Covers." One year of the work on this degree was completed under Sandia's Doctoral Study Program.

He received his BS degree in math from Highlands University in 1955, and his MS in physics (with a minor in math) from the University of Oklahoma in 1958.

Gus has been with Sandia 15 years.

Sandia, UNM Sponsor ASME Applied Mechanics Western Conference

Some 400 engineers and technicians are expected to attend the 1969 ASME Applied Mechanics Western Conference to be held Aug. 25-27 at the University of New Mexico.

Co-chairmen representing the sponsors are Orval Jones (5130) for Sandia Laboratories and Prof. Frederick Ju for the UNM Department of Mechanical Engineering.

Program for the opening day includes three technical sessions, a general lecture, and a symposium on shell dynamics.

Tuesday morning, three Sandia-authored papers will be presented during the session on waves in bounded solids. They are: "Exact Transient Response of an Elastic Half-Space Loaded Over a Rectangular Region of Its Surface" by Fred Norwood (1721), "Longitudinal Wave Propagation in a Circular Bar Loaded Suddenly by a Radially Disturbed End Stress" by Lynn Kennedy (1224) and Orval Jones (5130), and "Axisymmetric Elastic-Plastic Wave Propagation in 6061-T6 Aluminum Bars of Finite Length" by Larry Bertholf (5162) and Charles Karnes (5165).

The balance of Tuesday's program will be two afternoon sessions, a general lecture, and a symposium on characterization of the dynamic behavior of materials. The latter will include a paper on "Dynamic Fracture by Spallation" co-authored by Floyd Tuler (5133) and J. J. Gilman of Allied Chemical Corp.

Keynote speaker for the Tuesday evening banquet at Sandia Base Officers Club will be Eldred Harrington of Albuquerque Academy (and a Sandia consultant).

Two concurrent sessions on Wednesday will conclude the conference.



SANDIA LAB NEWS

VOL. 21, NO. 17, AUGUST 15, 1969

Computer Lists

Pertinent Books, Easy to Locate Are Goals of Revamped Technical Library

There is probably nothing more useless than outdated information. When that information is in the form of books and reports on a subject no longer pertinent to a company's mission, it's sort of like the housewife with a dresser drawer full of sewing patterns — only the wife has gained 30 lbs. and the styles have changed drastically.

At the library, the barrels and cardboard boxes piled high with books in recent weeks represent hard work by the staff to weed out unneeded volumes.

The number of books will be cut from 67,000 to around 30,000 and the quarter million reports currently on hand will be decreased to 100-150,000. With a more manageable size collection, all of the retained publications can be placed on the integrated Livermore-Albuquerque Libraries computer system. It will mean the end to card catalogs for books and reports. Instead, computer-prepared book catalogs will be maintained; their content will be broken down into three categories—author, permuted title and subject—to provide a quick, accurate key to desired information.

Arlin Pepmueller, acting manager of Technical Libraries Department 3420, explains, "We want to retain only publications of real relevance to Sandia's programs — those that are both current and useful. Then, we want to make the books and reports part of this more sophisticated and integrated computer-based system and thereby use the data to the very best advantage."

Many of the books have been outdated by recent developments or scientific knowledge and it would be impractical to make them a part of a new computer system. In other cases, there are too many copies of a particular title. John Gardner, supervisor of Library Operations Division 3421, notes, "There are 'best sellers' in technical books as well as in fiction. When a book is first listed in SCAN and is placed on the 'new book' shelf, we may have 50 reservations for it and have to order additional copies. But frequently interest



WHEN THE LIBRARY'S COLLECTION is trimmed down, all titles will be on a computer system. No more card catalogs. Margaret Hansen (seated) compares a listing with Claire Bensinger. Walter Roose is in charge of the revamping.

wanes after a year or so and we're left with all those extra copies."

In addition to the computer system, other changes in procedure have been made to shorten the time between requests and delivery of books to individuals.

What is being done with the unwanted books? The best of the lot—classics, or items in excellent condition and not more than 10 years old—are sent to the U.S. Book Exchange, a clearing house which supplies books and periodicals to libraries throughout the world, especially to new university libraries in underdeveloped countries. In return, Sandia receives "credit" which can be used through the Exchange to obtain out of print books, missing issues of periodicals and other hard to get items.

Most of the rest are sent to the salvage yard through Redistribution and Marketing Division 4622 for screening by various federal agencies. The books that are left are sent to the Department of Health, Education and Welfare for distribution to public schools and colleges.

The technical library hopes and intends to maintain a dynamic information source to meet Sandia's needs—but line organizations are always invited to make suggestions for improvement of the collection.

National Chemical Society Honors Robert Lefever

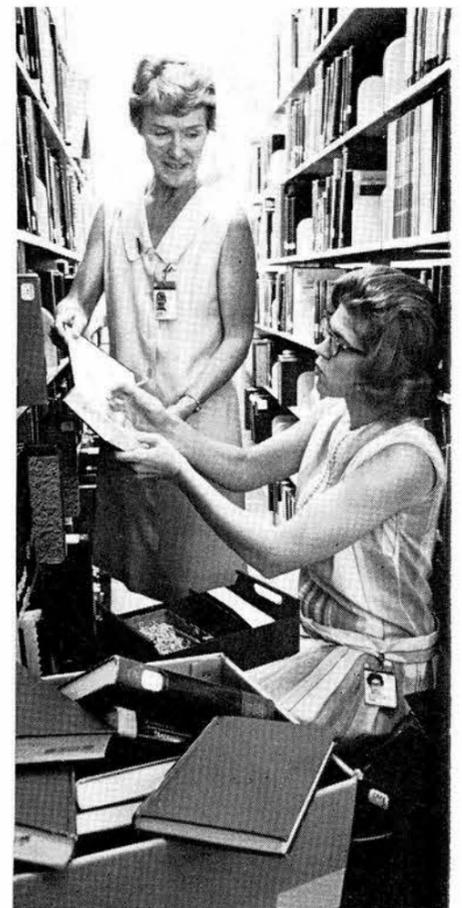


Robert Lefever, supervisor of Materials Research Division 5154, was recently elected a Fellow of the American Institute of Chemists in recognition of his contributions to the chemical field.

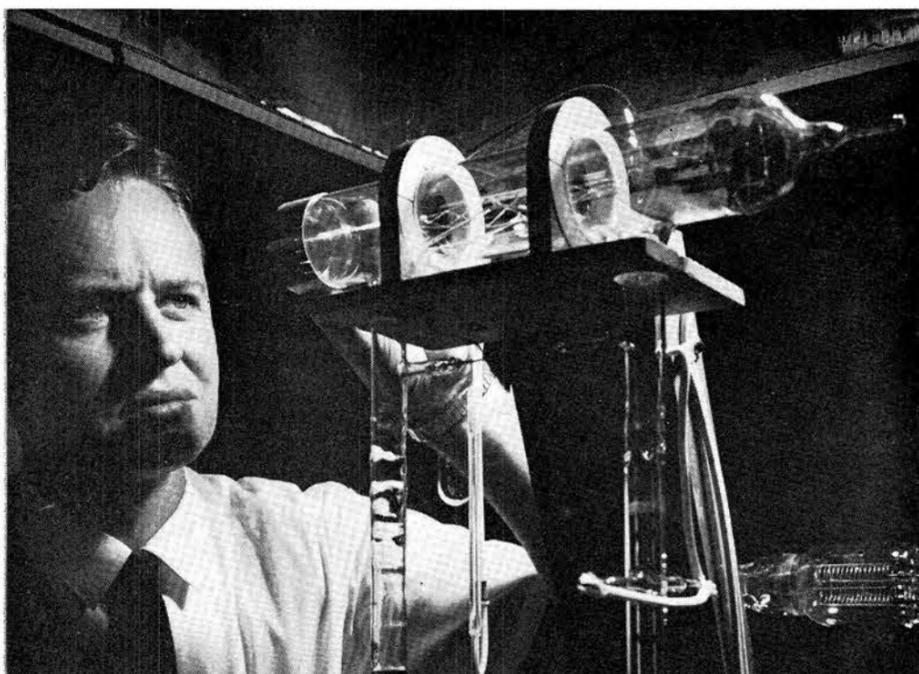
The Institute, which was organized in 1923, is concerned with the professional development of chemists and chemical engineers.

The Fellowship Nominations Committee includes Gibbs Medalist Dr. Joel H. Hildebrand and Nobel Laureate Dr. Glenn T. Seaborg.

Mr. Lefever joined Sandia Laboratories in 1963. He is author of over 30 scientific papers and several book chapters in the fields of inorganic chemistry and materials science, and holds 15 U.S. and foreign patents.



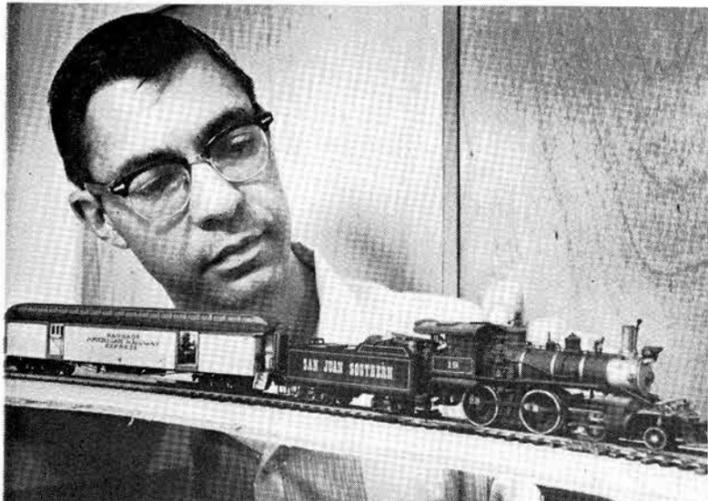
MODERNIZING THE TECHNICAL LIBRARY to meet the Laboratories' current needs is possible only after a general weeding out of books that are out of date or no longer relevant. Joann Mazzio (standing) consults with Kate Ruhl regarding retention of one volume.



IT DOESN'T TELL FORTUNES — But this "scale" is capable of detecting weight equivalent to one layer of oxygen atoms on a square centimeter surface. Designed and fabricated by Dick Schwoebel (5330), the quartz fiber microbalance can resolve weight changes of as little as 5×10^{-8} grams (.00000002 oz.). Encased in special high temperature pyrex, the system operates under ultra high vacuum— 10^{-9} torr. The design of similar systems is the subject of a chapter Dick has written for a book—*"Ultra Weight Determinations in Controlled Environments"*—which will be published this month by Interscience, a division of John Wiley & Sons. Dick's microbalance is used in studies of surface kinetics.

Blood Donations Needed

Dorothy Matlack (3412) is asking for volunteers to donate blood to offset medical expenses incurred by her eight-year-old grandson, Stephen Oldfield. The boy needs transfusions because of internal hemorrhaging. Donors should call Dorothy at 4-2136 or go directly to the Blood Service of New Mexico, 318 Elm SE, ph. 243-2427, and give the boy's name.



HARRY CHANEY builds and collects model trains. At top, part of his collection of 100 locomotives. Above, "Number 19," a prize winner which took more than two years to build from scratch. At right, Harry at his workbench puts finishing touches on another one.

Area Teenagers Give Medical Aid in Central America

Youth, love, and aspirin are the ingredients of a unique medical aid program for Central American countries offered by an organization called Amigos de las Americas.

Four Sandians are members of the board of directors of the local chapter, the children of two Sandians were in Central America this summer as part of the program, and a number of other Labs people and their families have assisted the group's efforts in a variety of ways.

Amigos de las Americas is a non-sectarian, non-denominational organization which each summer sends volunteer youths to remote villages in Central America. The youths, mostly of high school or post-high school age, inoculate natives in an effort to reduce the death toll from childhood diseases. The Amigos have inoculated more than three and a half million children during the past three years and are credited with wiping out a polio epidemic in Honduras. The young people, working under the supervision of a doctor, also dispense other minor medical aid.

Once in the field, the youths operate pretty much on their own. Permission for travel and other arrangements are handled at the diplomatic level by the organization's main office in Houston, and representatives of the Amigos make arrangements at the local level before the youths arrive. Once at the village, the youths work with local leaders in setting up inoculation clinics. An adult representative of the Amigos is usually stationed at some nearby city.

Sandians active in the Amigos effort are Frank Taylor (3454), Bob Graham (5132), Bob Utter (3132), and Frank Chavez (4233). Bob Graham's daughter, Stephanie, and Frank Chavez' daughter, Georgina, were among the eight Albuquerque youths who went to Honduras or Guatemala this summer.

Stephanie, whose experiences in Honduras were typical, was on a two-girl team that gave shots to residents of nine villages during the three week stay. The girls lived in one village and "commuted," via mules, to neighboring villages. "It was a wonderfully worthwhile experience," she says. "I want to go back next summer." Georgina Chavez spent her three weeks in Guatemala.

"All of us first became involved in this through our kids," says Taylor. "They heard about the program and got our support but they're the ones who really make it go. Teenagers today are very aware of the problems and needs of the world, but they also know there is not much they personally can do. In the Amigos they found something they could do."

"This gives our teenagers a chance to contribute something meaningful, something they can and want to do on their own," says Graham, who at first was reluctant to have his 16-year-old daughter go to primitive areas of Central America but who now is proud that she did. "We hope to expand the program to 25 or 30 kids next summer," he says.

The young people are required to have a conversational knowledge of Spanish and are given a brief medical training program during the winter and spring. An Albuquerque pediatrician, Dr. David Post, is largely responsible for both the medical training and bringing the Amigos chapter to the area. The Amigos now have chapters in Houston, Denver, Tucson, Santa Barbara and Albuquerque.

Other Sandians actively involved in the program are Frank Hudson (5233), who organized a fund raising drive, and members of the St. Jude Express, which provided air transportation to Houston.

Congratulations

Mr. and Mrs. Louis Sisneros (4152), a son, Robert Louis, July 28.

The Choo-Choo Man

Building Trains Is Harry Chaney's Thing

AIAA Elects Alan Pope to Board



The American Institute of Aeronautics and Astronautics (AIAA) has elected Alan Pope, Director of Aerothermodynamics, to its national board. He will fill the unexpired term of Roger Ringham, who has left the space industry, and will be nominated for a full term early next year.

Mr. Pope became a member of the Institute of Aero Sciences in 1934 (that group later merged with another to form AIAA). He was faculty advisor to the IAS student branch at Georgia Institute of Technology from 1940-51, was a member of the national board of directors from 1961-63, and helped to establish the New Mexico chapter of IAS in 1961.

Deaths



Santiago Chavez, Jr. Bob Lynes

Santiago Chavez, Jr., an electronic fabrication technician in Electronics Division 4231, died July 27 after a long illness. He was 49.

He had worked at Sandia Laboratories since February 1952.

Survivors include his widow, one daughter, two sons and a granddaughter.

Bob Lynes, supervisor of Data Center Division 9413, died suddenly Aug. 11. He was 51.

He had been at Sandia Laboratories since February 1951. In recent years he was the chairman of Sandia's Savings Bond committee.

Survivors include his widow, two sons and a daughter.

SEGA Wins Interbase Tourney

The Sandia Employees Golf Association (SEGA), led by Dave Klein (AEC/ALO), won the recent 36-hole Interbase Golf Tournament played at Arroyo del Oso. SEGA's six-man team scored 894 for the 36 holes while Sandia Base had 908, KAFB shot 934 and Manzano totaled 1104.

SEGA team members were Klein, whose 140 was the best individual score in the tournament, Jerry Smith (9252), Wendell Nelson (4137), Larry Smith (5235), Larry Woodard (7653) and Jerry Shinkle (2322).

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MS Degree Recipients Under OYOC Plan Return to SLL



ENGINEERS Henry Witek (8182), left, and Gene Neau (8343) return to Sandia Laboratories Livermore after earning Master of Science degrees in electrical engineering under the One-Year-on-Campus (OYOC) Plan of Sandia's Graduate Education Program. Dan Tichenor, who also received an MS degree recently under OYOC, is now on military leave of absence.

Three of the first group of 10 engineers who left Sandia Laboratories Livermore last September to participate in the One-Year-on-Campus (OYOC) Plan of Sandia's Graduate Education Program returned recently after earning Master of Science degrees. Under the OYOC Plan, bachelor-level technical people study full time while in residence for one academic year at an approved university.

Henry Witek was awarded an MS degree in electrical engineering from the University of California at Davis. His master's thesis was titled, "Demagnetizing Field Distribution in Non-ellipsoid Shapes." Hank is an engineer in Telemetry Development Division 8182 and works on the design of testers for various telemetry programs. He joined Sandia Laboratories Livermore in June 1968 following graduation from Illinois Institute of Technology.

Gene Neau received his MS degree in electrical engineering from Stanford University. An engineer in Simulation Division 8343, Gene's work centers on simulation studies related to environmental testing. He joined Sandia Laboratories Albuquerque in December 1962 and did research studies in plasma physics for almost six years until transferring to Livermore in June 1968. While employed in Albuquerque, he attended the University of New Mexico under Sandia's Educational Aids Program and received a BS degree in electrical engineering.

The third Sandian, Dan Tichenor, also received an MS degree from Stanford University in electrical engineering and is now on military leave of absence from Data Processing Division 8121. Dan came to Sandia in June 1968 after graduating from the University of Missouri with a BS in electrical engineering.

California-Based Foundation Handles Transplant Organs

Medical advances have made possible the transplanting of human organs, and many persons have become interested in learning how they may donate their bodies to this purpose in the event of death.

The Medic Alert Foundation International at Turlock, Calif., is the first nationwide agency to establish a transplant information pool. This non-profit foundation has contact with medical centers and medical schools where organ transplants and bodies are needed.

Founded in 1956, the foundation is dedicated to educating and encouraging individuals to wear on their person identification of any medical problems that should be known in an emergency.

Now persons who wish to donate organs after death to save the lives of others or for use in medical research are being included in the services of Medic Alert. The emblem worn by these people states "Organ Donor" and gives other information.

A 24-hour answering service is maintained by Medic Alert to act upon the death of any person wearing an emblem. Further details may be obtained from Medic Alert, Turlock, Calif. 95380.

Take Note

The first trophies awarded to members of the newly formed Sandia Handball Club went to singles champion Bob Klinger (8131) and second place winner Larry Dorety (8174). The ranking was determined by challenge play on a competition ladder. Klinger's name will also appear on the "traveling trophy" to be displayed in the Sandia trophy case located in the lobby of Bldg. 911.

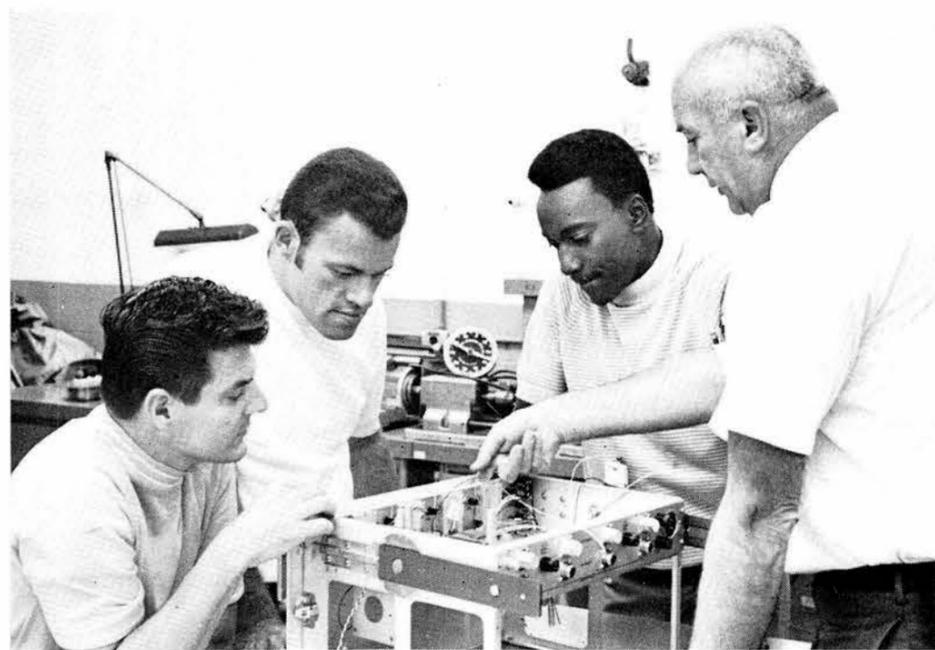
Organized a few months ago, the club now has nearly 40 Sandians actively participating in the sport. Although practice sessions and competition are suspended during summer months, it is expected that play will be resumed in September at Chabot College in Hayward. Plans are underway to reserve six courts at the college on Monday evenings from 6:30 to 9:30. Employees interested in playing handball can get further details by contacting Bob Klinger.

LIVERMORE NEWS

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AUGUST 15, 1969



NEW CAREERS — Rus Richards, supervisor of Electronic Fabrication Section 8223-3, explains a fabrication method and the quality requirements to (l to r) James Reitz, James Nickerson, and Everitt Davis (all 8223), apprentices selected for the first class in Sandia Laboratories Livermore electronic technician apprenticeship program. The four-year program consists of on-the-job training and out-of-hours classroom instruction.

Certified by State

Electronic Technician Apprenticeship Program Added at Livermore

With the recent approval by the Alameda/Contra Costa Counties' Joint Apprenticeship Committee, the electronic technician apprenticeship program at Sandia Laboratories Livermore has become officially certified by the state of California.

Employees selected for the first class under this program are Everitt Davis, James Nickerson, and James Reitz (all 8223).

The program provides training for young men who wish to become journeymen electronic technicians. It will be administered on the two-county area basis by the Joint Apprenticeship Committee, with members of the California State Division of Apprenticeship Standards acting as consultants and local state education institutions coordinating the program.

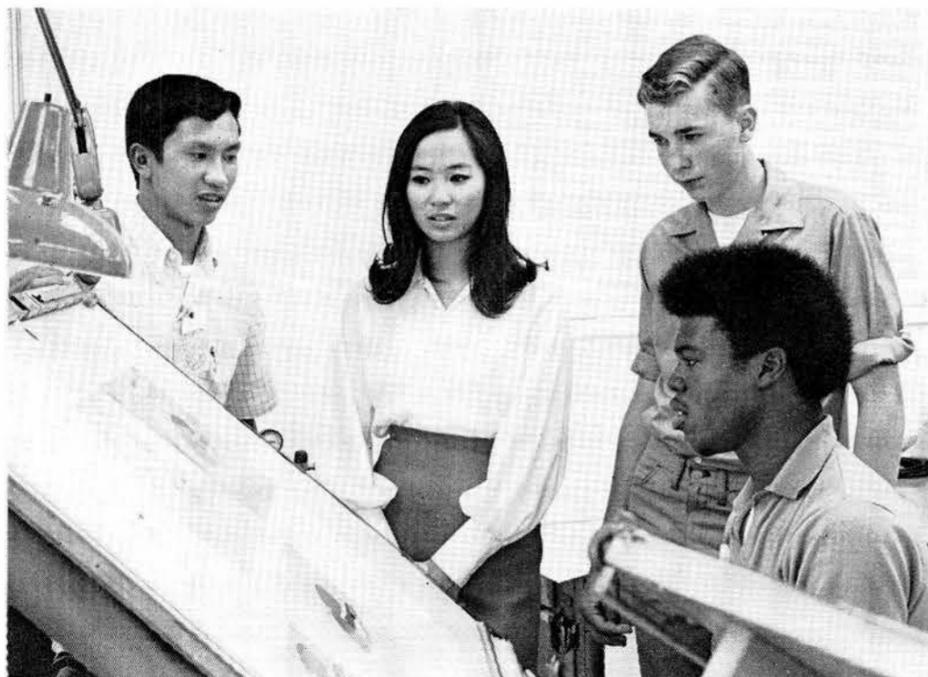
"We welcome this program because the need for electronic technicians is becoming critical," says John Bryson, supervisor of Model Shop, Manufacturing and Shop Liaison Division 8223.

The four-year program consists of 8000 hours of on-the-job training and some 575 hours of classroom instruction at Chabot College.

Les Rowe, manager of Plant Services Department, comments that the program is not an easy one. "A young man gives up two evenings each week during the four years to attend classes plus the additional time necessary to complete homework assignments."

The novice electronic technicians will be trained on the job in all phases of electronics fabrication, packaging, welding and joining, and printed wiring techniques, including the use of microminiaturized parts, components, and circuits. "Emphasis during this training will be on quality," Les adds. "Our graduate electronic technicians will be fortunate in that their training will have given them a high degree of theoretical and manipulative electronic skills."

Training specialist Jim Smith of Training and Benefits Division 8214 is coordinator for the program at SLL.



YOUTH OPPORTUNITY CAMPAIGN AT SLL—Triss Edwards (8233), lower right, explains a technical illustration project he is working on to three other Youth Opportunity Campaign (YOC) trainees (l to r) Cesar Ramil (8222), Marilyn Gee (8322), and Jeff Sheline (8216). Twenty-two students are working at Sandia Laboratories Livermore this summer in the program which helps continue their education.



VISITING SANDIA LABORATORIES LIVERMORE recently for briefings was Sandia's new Comptroller Warren Corgan (4100), center. He succeeds Robert Luckey who is on special assignment during August and will retire Sept. 2. During a tour of the Laboratories, Arnold Schuknecht, supervisor of Computing Division 8322 (left), explains operation of the CDC 6600 in the computer facility. Computer operator at right is Bob Moitoso (8322-1).

Are You Plagued By Poison Ivy?

By S. P. Bliss, M.D.

Sandia Laboratories Medical Director
Many people who are unwise enough to deck their summer halls with glossy boughs of (poison) ivy will quickly learn that their festiveness leads to itchiness. The most common cause of "allergic contact dermatitis" in the United States today is exposure, in sensitive persons, to the toxic products of three plants: poison ivy, poison oak or poison sumac.

Note the phrase "in sensitive persons" used above, for there is still some medical controversy about just who is susceptible to poison ivy and who is not. (The term poison ivy here includes both poison oak and sumac, for there is no way of distinguishing among the rashes caused by any of the three.) There are some people who claim they just can't get poison ivy. That statement is still open to debate. What is certainly true is that there are some people who have never had poison ivy. But whether they would not get it after deliberate exposure has never been definitely proved. And there aren't too many volunteers for such a project.

What is certainly established is that there are an awful lot of people who can get very sick from poison ivy. There does seem to be some evidence that a person's reaction to the weed tends to diminish as he gets older, perhaps from having experienced exposure over the years.

Briefly, the poison ivy rash is a cluster

of small, fluid-filled blisters with some surrounding redness. This is the typical case. A mild case might, however, be manifested just by redness without the blisters and, in a very severe case, the blisters can become quite large.

That's the way it looks. It usually heals in two to three weeks unless some bacterial infection of the scratched blisters sets in or unless one is re-exposed to the offending plant. Unfortunately, there is no cure.

In mild to moderate poison ivy dermatitis, the main problem is the itching. The blisters themselves do not bother the patient too much. The itchiness is best relieved by cool soaks, using substances such as dilute Burow's solution which can be purchased at a pharmacy. Tepid cornstarch and baking soda baths are also quite effective. Various shake lotions, such as calamine lotion, are also good for application directly over the rash to relieve itching.

Overdrying and cracking of the skin should be avoided during the acute phase. The application of antihistamines in various forms over the rash has proved to be of no use at all; however, some people have experienced relief by the use of antihistamines in doses large enough to cause sedation. Others have found that two aspirin every three to four hours has also produced relief. This is a lot of aspirin, though, and may lead to gastric irritation.

If you have poison ivy, you cannot give

the rash to your family by contact with them. Also, the rash does not spread from the blister fluid.

In a severe case, poison ivy is a much more difficult problem because the patient is in great discomfort. It is best for such a person to rest at home and to use cool compresses for 10 to 15 minutes every two to three hours. Aspirin and sedatives are useful to relieve the symptoms and to provide some rest. Cortisone compounds, taken internally, are very helpful in speeding relief. Cortisone, however, must be taken only under a doctor's careful supervision; it is a powerful medicine which can have serious side effects.

To avoid re-exposure to the irritant causing the rash, see to it that all possibly contaminated items such as clothing, ed or cleaned. Poison ivy oils have been found on such items as rocks, tools and even automobiles.

How do you keep from getting this bothersome condition? Barrier creams have not proved too effective. Simple soaking of the exposed area in cool water is as good, if not better, than vigorous scrubbing with harsh soaps.

Finally, there is the possibility of receiving shots to diminish sensitivity to poison ivy. These must be done under a doctor's supervision, because severe reactions from the shots can, and do, occur. Also the treatment has to be continued from 6 to 12 months a year.

Authors

C. W. Harrison, Jr., and E. A. Aronson (both 2625), "On the Response of a Missile with Exhaust Trail of Tapered Conductivity to a Plane Wave Electromagnetic Field," IEEE Transactions on Electromagnetic Compatibility.

B. Morosin (5131), "The Crystal Structure of Alpha Particle- and Beta Ray-Tris (2,4-pentanedionato) vanadium - (III)," July issue, ACTA CRYSTALLOGRAPHICA.

G. W. Barr (5162), "Aeroelastic Stability Characteristics of Cylindrical Shells Considering Imperfections and Edge Constraint," Vol. 7, No. 5, AIAA JOURNAL.

J. A. Halbleib (9113) and M. R. Scott (9142), "Theoretical Neutron Production from Hydrogen Isotope Reactions," August issue, "NUCLEAR SCIENCE AND ENGINEERING."

R. A. Hill (5243), "Spectroscopic Study of an Expanding Hydrogen Plasma in an Electric Shock Tube," Vol. 12, No. 5, PHYSICS OF FLUIDS.

J. E. Houston (5442) and R. L. Park (5441), "Auger Excitation by Internal Secondary Electrons," June issue, APPLIED PHYSICS LETTERS.

A. C. Switendick (5151) and A. Narath (5100), "Band Structure of ¹⁹⁷Au Nuclear Magnetic Resonance Studies in AuAl₃ and AuGa₃ and AuIn₃," June 30 issue, PHYSICAL REVIEW LETTERS.

C. E. Land and P. D. Thacher (both 5153), "Ferroelectric Ceramic Electrooptic Materials and Devices," Vol. 57, No. 5, PROCEEDINGS OF THE IEEE.



HIGH SCHOOL COUNSELORS attending the Vocational Guidance Institute at UNM made extensive tours of Sandia Laboratories recently to see the various kinds of jobs students might prepare for. The group watches intently as Pat Farina shapes glass in the Scientific Glass Shop 4221-4.

Comptroller Bob Luckey to Retire After 41 Years in Bell System

After 41 years in the Bell System, 10 of them at Sandia Laboratories as Comptroller 4100, Bob Luckey will retire Sept. 2.

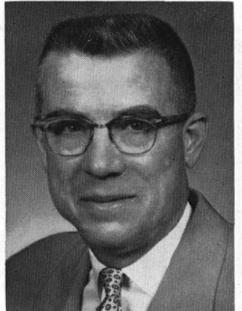
"I made the decision to retire early some time ago," he says, "and I've been planning my activities with that goal in mind ever since."

"Activities" means community service to Mr. Luckey. His retirement time will be filled with work with many organizations. He is president of the Zia Council of the Telephone Pioneers of America, whose 500 members in New Mexico perform among other services an extensive testing program in schools to identify amblyopia or "lazy eye," a serious vision deficiency. The Pioneers provide this service throughout the state, including an extensive program on the Navajo reservation.

Mr. Luckey is also a nominee for president of The Rehabilitation Center, Inc., board, a UCF agency providing physical and other therapies as well as vocational training for the handicapped.

Another activity will be rewriting and updating the national history of the Sons of the American Revolution. He recently completed a history of the organization in New Mexico. Publication is scheduled in six months. He serves as national SAR historian, as state secretary and is the New Mexico member of the National Board of Trustees.

Bob is also chairman of the Accounting Advisory Committee for the University of New Mexico's School of Business and Administrative Sciences and serves as a member of the Associates' Committee of the Accounting Faculty of the University of Texas.



He joined Western Electric Company in 1928 as a payroll clerk at the Kearny Works and subsequently spent many years in cost and accounting work. After a variety of assignments in payroll and cost work, he became a department chief in 1943 responsible for accounting results. In 1947 he was appointed an assistant superintendent and advanced to Superintendent of Accounting in 1952. In 1955 he went to New York City to become Comptroller of the Defense Projects Division then involved with the DEW (Distant Early Warning) system and the White Alice Communications system in Alaska. He came to Sandia March 1, 1959.

Mr. and Mrs. Luckey will continue to reside at 2929 Tennessee NE in Albuquerque. Their married daughter lives in Longview, Texas.

Statistician Teaches In Ireland; Gowns Part of College Garb

Two statisticians who worked together at Sandia Laboratories have proven that they could co-author technical papers even though one man was in Ireland and the other in New Zealand.

Bill Zimmer (1723) has just returned from a year at Trinity College, Dublin, under a Fulbright Lectureship. John Deely is still teaching at the University of Canterbury, Christchurch, New Zealand. The second technical paper they co-authored by long-distance correspondence was presented by Bill in Denver during the recent Eighth Reliability and Maintainability Conference.

Bill taught mathematical statistics in Trinity's new statistics department. He had about 20 undergraduate students in his classes and also was advisor for two graduate students. "Classes are normally very small and some of the professors still wear academic gowns. Even with only six students, there is usually not much dialogue between students and the professor," Bill says.

The semesters are short — only seven weeks — and the semester breaks are long. Finals are given only once a year. Bill, his wife and two small children spent the first semester break touring the Scandinavian countries by car. "There was snow all across Norway and, in the short winter days we didn't see a great deal of scenery. Once our car skidded off the highway into a snowbank. The second car to stop carried four big Norwegians who literally picked up my car and put it back on the roadway," Bill recalls. "After that experience we felt very safe among these dependable people." They spent Christmas in a picturesque Norwegian village.

Bill described Ireland as "a developing country — really only independent since 1924 — that is trying to industrialize. Foreign capital is being invested in the country but the Irish resent the accompanying foreign management. The main employment problem is among the educated classes who find it necessary to emigrate (mostly to England) to find jobs."

He continued, "The people have an abundance of meat and milk; the Irish

theatre is good; and I hardly met anyone under 25 I didn't like. The worst part about Dublin is the weather."

Bill's other objection to the country was purely personal — it certainly was hard to find chili there.

Before returning to Sandia, he gave lectures on statistics at the University of Wales, Imperial College (part of the University of London), and Essex University.

40 Year Anniversary For Frank Moon



Forty years ago a college recruit by the name of Frank Moon went to work for Western Electric in a clay plant in his hometown of Macomb, Ill. For the first 10 weeks of his lengthy career, Frank inspected clay conduit.

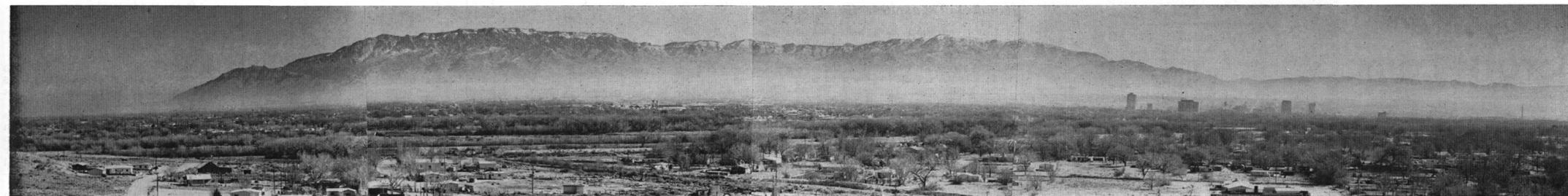
In looking back over the years, Frank says, "All of the moves have been great. I think I have an interesting existence."

After his brief stint in the clay plant, Frank was transferred to Chicago, where he remained for 22 years. In 1932 he was officially transferred to the Teletype Corporation (part of the Bell System). "TWX service was new," he explains, "and it kept me in jobs through the depression."

His work was in inspection, personnel investigation, and employment before transfer to Sandia in 1952. "I was anxious to move to Albuquerque because our doctor had just said that dry climate would be beneficial for our son who had asthma," he says.

Most of his Sandia assignments have been in purchasing and expediting; however, in 1960 he was transferred to Security Standards Department, which is the same organization he returned to after an eight-year stint at Livermore Laboratories. "When we were in California, we planned to retire there near our four children," he says, "but now that we have returned to Albuquerque, it looks like we'll stay here."

Frank is still officially on special leave of absence from Teletype. "Every December I receive a rather formal letter stating that the Benefits Committee has extended my leave another year," he says. Frank has a rather impressive stack of these letters.



Technology and Pollution, Part 3

Smog--Here Today, More Tomorrow?

PITTSBURGH — A chemical engineer said here it's now possible to remove almost all pollutants coming from the smokestack of coal-burning power plants and at no extra cost . . . Dr. Joseph G. Stites said . . . the procedure, possible using commercially available equipment, has been removing 100 percent of the fly ash and about 90 percent of the sulfur dioxide from the smoke. The sulfur dioxide is used to make sulfuric acid, which finds application in a variety of major manufacturing industries . . . "The removal of sulfur dioxide has been a commercial operation and we sold all the sulfuric acid we made," he said.

FARMINGTON — The Four Corners Power Plant . . . recently completed a study on how to use fly ash to make bricks . . . For a \$375,000 initial investment, the study showed, a plant could be built which would turn out 100,000 bricks per week.

These two newspaper items represent significant steps in air pollution control. They indicate the potential for solution of some pollution problems through technology.

Yet, there is little cause for optimism. By no means is technology anywhere near the point where controls are equal to the volume of pollution.

There is little cause for optimism partly because it is not now economically feasible to remove most pollutants at the source and partly because there is not even much agreement as to what constitutes pollution.

Herein lies a fundamental problem: the need for more comprehensive standards and for more precise measurement techniques. In other words, much basic research into the nature of pollution must first be done.

Recent debate over locating a pulp mill in the Rio Grande Valley near Albuquerque

points up the lack of a standard to describe pollution. On the one side concerned citizens say "any pollution is undesirable," while others say "there will be some pollution but within acceptable limits." On both sides the arguments are more qualitative than quantitative: what constitutes "undesirable" or "acceptable"?

The federal government and some states have set up standards (with wide disparities between them) which attempt to define allowable emission rates of pollution. For the most part, however, these standards relate only to very high pollution levels, those which have obvious effects—when fish in a stream begin to die, or the eyes of motorists and city residents become noticeably irritated. But research has not yet given answers to questions such as "what are the cumulative effects of minute amounts of ozone, or lead or other pollutants?" or "to what extent is pollution a contributing cause to asthma, emphysema, cancer or other diseases?" Dangers from use of the pesticide DDT were not recognized until large amounts of residual DDT were found in the fatty tissues of fish, birds, and other game life.

Our lack of knowledge in this critical area points to the need for more research on the effects of microscopic quantities of pollutants upon human, animal, and plant life, and for development of techniques for detection and precise measurement of polluting agents. Although a few cities and some other public institutions have research programs, most municipal authorities administer rather than initiate anti-pollution measures. The cities have neither funds enough nor technology enough to enable scientists to analyze gases by parts per billion, to identify and

trace pollutants to sources which may be great distances away, and to study cumulative, long-time effects of pollutants on both organic and inorganic matter.

It remains, then, for this task to be taken up in other quarters: the federal government, private industry, university research laboratories. And, in fact, this has been done, but only in a limited, uncoordinated fashion.

On the bright side, much of the technology and instrumentation needed to study the chemistry of pollution already exists in laboratories throughout the country. For example, the sophisticated instrumentation and technology developed at Sandia in connection with clean room work could find direct application in pollution chemistry, particularly in the area of identification and analysis of gases and particulates.

The mass spectrometer is a versatile device capable of fast, precise sampling and analysis of chemicals in air. Mass spectrometers can be used either in the laboratory or mounted on a small aircraft or helicopter and flown through an air shed to obtain a detailed time-space picture of pollution composition.

Other devices in use at Sandia Laboratories having possible application in pollution technology include: infrared spectroscopes which can identify compounds through their characteristic spectra; atomic absorption spectrometers that can detect and analyze minute amounts of metallic elements such as lead; gas chromatographs, common in industrial laboratories; neutron activation analysis systems through which trace constituents can be identified; and a wide range of data and sample collection systems aboard aircraft.

One instrument developed at Sandia with considerable potential as an air pollution control tool is the High Volume, Real Time Aerosol Monitor. The monitor samples up to 10 cubic feet of air per minute and provides almost instantaneous response and highly accurate readout of contaminant levels. Doug Ballard, former supervisor of Contamination Control Division 5425, reports that since development of the monitor there have been more than 60 inquiries from agencies associated with air pollution control. The University of

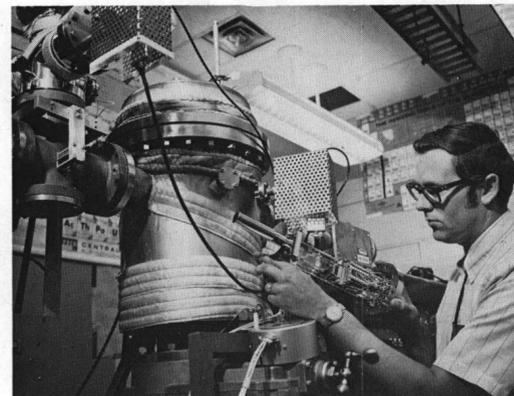
Washington is now adapting the device for airborne use in pollution studies.

Nor is Sandia alone among AEC agencies which have something to contribute to the task of protecting our environment. In a recent speech, AEC chairman Glenn Seaborg noted the development by AEC agencies of techniques for using radioisotopes to trace materials through water and atmospheric systems. He also cited earth-orbiting satellites with special sensors and methods of photography, ultra-high vacuum technology, and basic stud-

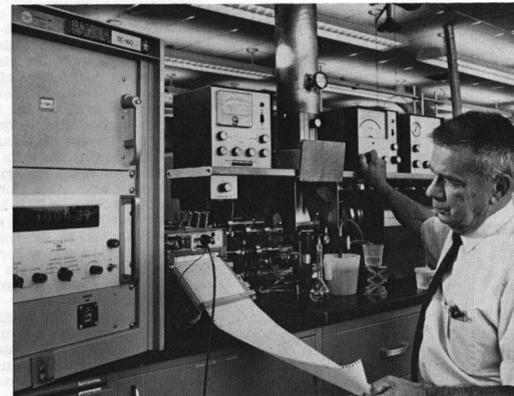
ies on oxidation catalysts as a way to reduce exhaust fumes from internal combustion engines.

The elimination of contamination at its source is the second and equally important part of the air pollution problem. But without a complete understanding of the chemistry of pollution, neither appropriate legislation nor adequate smog elimination techniques is likely.

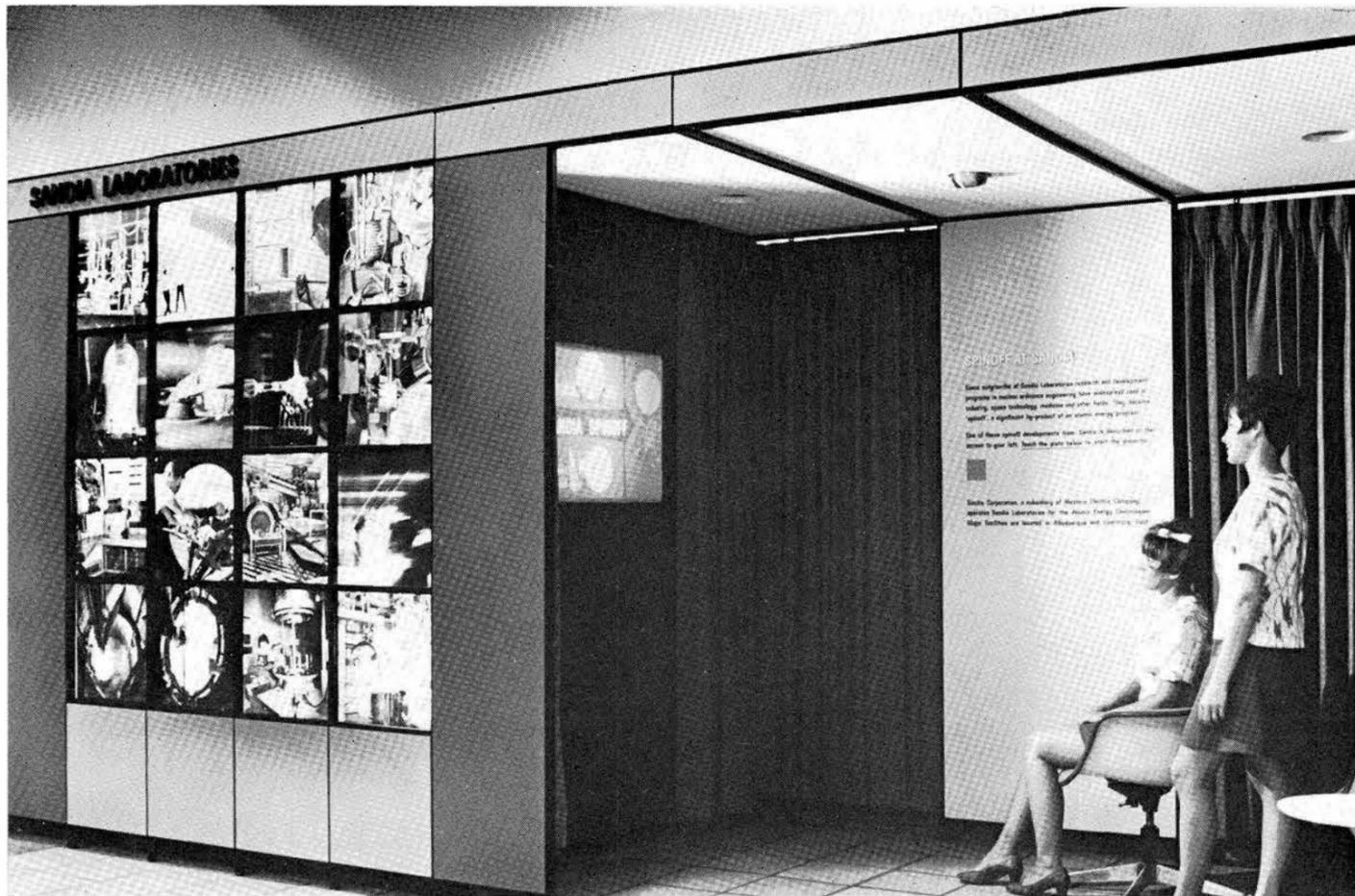
Hopefully, enough people will get enough concerned that the problems of pollution will be met and overcome.



CLEAN AIR TOOLS? — Among instruments and technologies in use at Sandia that could have application in air pollution detection are the mass spectrometer (left) and the atomic absorption spectrometer. At Left, Dick Meyer (5224) prepares to install an electron multiplier detector in the mass spectrometer. Similar but smaller instruments



CLEAN AIR TOOLS — Among instruments and technologies in use Ben Seeley (5521) tends the atomic absorption spectrometer, an extremely sensitive device capable of detecting and analyzing minute amounts of metallic elements in an air sample.



SUNPORT EXHIBIT of Sandia Laboratories, recently redone, is viewed by these visitors to airport. Display consists of film "Sandia Spinoff"; projector is activated by visitor's pressing

panel on wall. Large, illuminated color transparencies to left of picture show various Labs activities.

Speakers

G. C. Smith (5224), "Strong Phonon Interactions in Photo-Hall Mobility," Third International Conference on Photoconductivity, Aug. 12-15, Stanford University.

E. J. Graeber (5422), "Crystal Structures of Potassium Ferric Sulfate Minerals, Yavapaiite, $KFe(SO_4)_2$ and Goldichite, $KFe(SO_4)_2 \cdot 4H_2O$," International Congress of Crystallography, Aug. 13-24, Stony Brook, N.Y.

R. C. Powell (5113), "Energy Transfer in Organic Crystals," Boston College, Aug. 29; with R. G. Kepler (5113), "On the Question of the Singlet Exciton Diffusion in Anthracene" International Conference on Luminescence, Aug. 25-29, Newark, Del.

W. A. Stark (5263), "Helium Release Data for $^{238}PuO_2$ Microspheres," AEC-SNS Helium Release Information Meeting, Aug. 6, Germantown, Pa.

H.D. Sivinski (1740), "Planetary Quarantine," Society of American Military Engineers, July 23, Albuquerque.

C. J. Northrup (9511), "Helium Retention and Release Properties of $^{238}PuO_2$ Microspheres," AEC-SNS Helium Release Information Meeting, Aug. 6-7, Washington, D.C.

R. F. Utter (3132), "How Not to Carry Your Troubles Home from the Office," Credit Women's International Group, Aug. 7, Albuquerque.

M. J. Landry (7261), "Holography — Its Uses," Third Annual Summer Physics Training Program (for outstanding 11th year high school students), July 11, New Mexico State University.

Supervisory Appointments



CHARLES TAPP to manager, Nucleonic Devices Department 2610, effective Aug. 1.

He joined Sandia in 1964 as a staff member in Radiation Physics Division studying radiation effects on semiconductor devices.

In 1966, Charles was promoted to supervisor of Physics and Technology Division where he was concerned with applied research and advanced development in support of neutron generators.

Prior to joining Sandia, he had worked for two summers in radiation physics at the National Bureau of Standards in Washington, D.C.

Charles has a BA in philosophy from Union University, a BS in physics from Memphis State, and MS and PhD degrees in physics from the University of Virginia.

He is a member of the American Physical Society, the American Association of Physics Teachers, and Sigma Xi.

Charles, his wife Elizabeth Ann, and their one child live at 9404 Las Calabazillas NE.



JAMES WILLIAMS to supervisor, Semiconductor Division 2631, effective Aug. 1.

A staff member in Microelectronics Division since he joined Sandia in 1963, Jim worked in development of thin-film processes

and their application to thin film components and hybrid microcircuits. In 1968, the division was reorganized to become the Semiconductor Division and Jim has since been responsible for development of discrete semiconductor components and monolithic integrated circuits.

While pursuing graduate work, Jim was an instructor in the Electrical Engineering Department at Purdue University.

He has a BS and MS in EE from the Massachusetts Institute of Technology, and a PhD, also in EE, from Purdue University where he was a Ford Fellow.

In 1951-53, Jim was in the U.S. Navy and served in a naval communications unit in Hawaii.

He is a member of IEEE and chairman of the local chapter's professional group on electron devices, the American Physical Society, and the American Vacuum Society of which he is a senior member and past chairman of the local unit.

In 1967-68, he held a joint Sandia-UNM appointment as associate professor of electrical engineering.

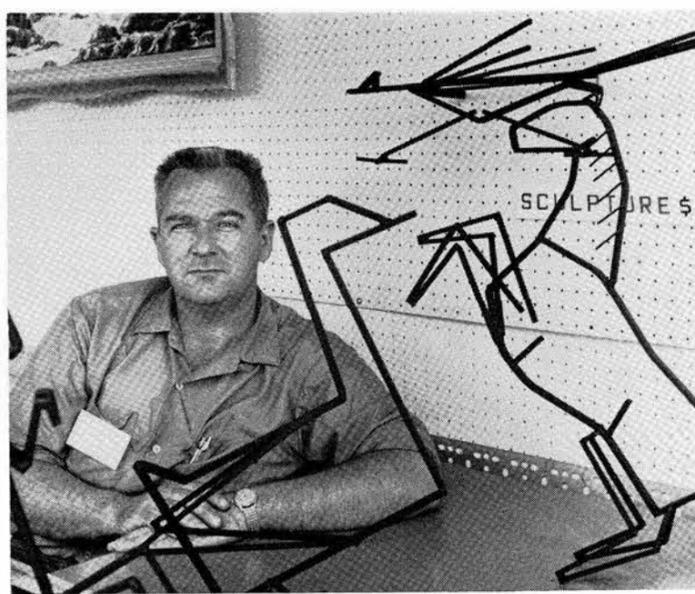
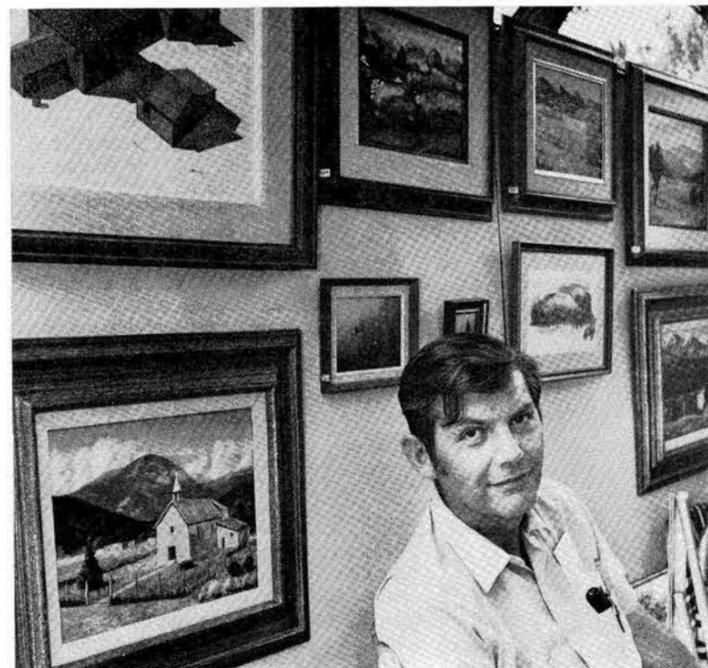
Jim, his wife Wilma, and their three children live at 9191 Aspen NE.

60,000 Visitors Attend

Sandians Exhibit at Arts and Crafts Fair



LEFT: Joe Rivard (5222) with self portrait. ABOVE: Charlie De Moss (4221) presents glass blowing exhibition. BELOW: Dick Strome (3463) with oil landscapes. Granville Mullin (7612) with metal sculpture. Other Sandians who presented work at the Fair included Bob Burgess (2313), Jim Walston and Judy Elder (both 3463).



Service Awards

20 Years



Efrén Apodaca
4512



Ramon Bernal
4575



Frank Chavez
3521



Marian Dixon
1600



Antonio Garcia
4252



Gerrit Hof
2626



Harold Miller
4511



Denn's Murphy
7424



James Forter
9415



O. Ulivari
4615



Kenneth Williams
2324

15 Years



James Appel
9514



Robert Bass
9111



Everett Breeden
3520



Elinor Coberly
3135



Robert Durkee
9132



Joe Hankins
8325



Gloria Geibel
4100



A. R. Iacoletti
9422



Marian Jacot
3251



Donald McFall
9126



Horace Moore
1611



Rexford Rozelle
4254

10 Years

Aug. 15-28
Wendell Weart 9111, Doris Guntrum 8234, Roy Hunter 4113,
Frank Biggs 5231, James Schaeffer 7233, and Eva Kerns 8233.

Sympathy

To Bert Lindsay (1724) for the death of his son, Philip, Aug. 3 in Leadville, Colo.
To Ralph Calvert (1711) for the death of his father in Howard, Kans., Aug. 7.



Wentzel Wagoner
1515



T. Vincent White
7651

Security Management Course Offered

A National Security Management course, offered by the Industrial College of the Armed Forces, will be conducted at the Coronado Club beginning Sept. 8.

The course is open to civilian executives, educators, military officers, civil service employees of GS-11 rank or higher, and other professional people. The two-hour classes, scheduled over a two-year period, will be held on Monday and Tuesday at 7:30 p.m. Conducted at the graduate level of study, the course is sponsored by the Chamber of Commerce and is free. Course objectives are to support the national interest by increasing knowledge and understanding of the economic and industrial aspects of national security, and the management of resources in the context of national and world affairs.

Interested persons may obtain additional information by attending an orientation meeting at the Coronado Club at 7:30 p.m., Aug. 18, or by calling Dean Irvin (3121), 264-2739.

Take Note

Four Sandians recently were elected to positions in the Sandia Toastmasters. Elected for six-month terms were: Albino Bustamante (9314), president; Norman Sinnott (7263), educational vice president; Leonard Flesner (7422), secretary, and Jerald Long (9111), historian.

Sandia Day School Nursery has openings in the 4- and 5-year-old kindergarten. Sandia Laboratories parents may register their children at the Nursery, Bldg. 1851. Registration fee is \$5 and monthly tuition is \$20. For more information call 264-1297 or 264-1785.

Japanese professional ballroom dancing champions will be featured at a Heart Association benefit dance to be held Thursday, Aug. 21, at 1702 San Pedro NE from 8 p.m. to midnight. Admission will be a \$5 donation to the Heart Association. Further information may be obtained from Irene Berger (7352-2), tel. 4-4506.

Two former Sandians made the news in Western Electric circles recently. Harry Snook, former Vice President of Engineering for Manufacturing 2000, has been named Vice President — Manufacturing, Transmission Equipment. He left Sandia in 1959 and recently has been serving as General Manager of WE's Merrimack Valley works. . . . Robert Peters, who was manager of Attorney Department 6030 when he left Sandia in June 1968, has been assigned permanent responsibility for patent activities of WE's Allentown Works, Reading Plant, and Kansas City Works.

Events Calendar

- Aug. 15-17—Inter-Tribal Indian Ceremonial, Gallup.
- Aug. 15-17, 21-24—"The Empire Builders" by Boris Vian. Aug. 29-31—"Garlic and Sapphires," choreographed by Randy Keys. Old Town Studio, 1208 Rio Grande NW.
- Aug. 15—"Le Rossignol," and "Help! Help! The Globolinks"; Aug. 16 & 22, "The Magic Flute"; Aug. 20, "The Devils of Loudun"; Aug. 21 & 23, "Tosca," Santa Fe Opera.
- Aug. 22-24, 29-31—Albuquerque Civic Light Opera Assn. production of "Peter Pan." Popejoy Concert Hall.
- Aug. 23-24—Family backpack above Santa Fe ski basin. N.M. Mountain Club, leader Peter Harris, tel. 898-3600.
- Aug. 28-Sept. 1—Navajo Tribal Fair, Window Rock (Ariz.).
- Aug. 28—Spanish fiesta at Isleta.
- Aug. 29-Sept. 1—Annual Santa Fe Fiesta.
- Aug. 30-Sept. 1—Backpack to La Plata Basin. N.M. Mountain Club, leader Bob Kyriach, tel. 296-1725.

SHOPPING CENTER

CLASSIFIED ADVERTISING

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

RULES

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

FOR SALE CARS & TRUCKS

- '57 METROPOLITAN, \$135. Gallegos, 243-1846 after 5:30.
- '56 GMC 1/2-ton pickup, AT, four new 6:50x16 tires. R&H, Gorman, 255-4431.
- '59 PLYMOUTH 4-dr. sedan runs good, \$150. Durrant, 298-4952.
- '64 VW sedan, \$200 below book. Blackwell, 296-3898.
- '58 9-passenger Chevy wagon, PS, auto., 283-cyl. engine, R&H, Holiday, 298-1333.
- '64 CADILLAC, 4-dr., \$1650 (book \$1770); dog house, \$7.50. Ward, 298-7320.
- '62 4-dr., white Oldsmobile station wagon, PB, PS, R&H, original owner, \$600. Garcia, 298-8460.
- '57 1/2-ton CHEV. pickup, 6-cyl., R&H, long narrow bed, Heidrich, 344-7669 after 5:30.
- '67 MERCURY station wagon, 9 pass., AC, PS, PB, luggage rack, P/RW. Gay, 299-5625.
- '63 CHEV. II, 2-dr., 6 cyl., manual trans., \$400; motorcycles: '65 BSA trail, 175cc, \$120; '65 Yamaha, 125cc, \$150. Toya, 898-0491.
- '63 CORVAIR Monza, 2-dr., recent motor overhaul, 5 good tires, \$500. Carmichael, 536 San Pablo SE, Apt. B, after 5 or 255-2531.
- '65 VW Squareback, new paint, \$1100 or trade for 4 wd. Hantsche, 247-2589.
- '63 OLDSMOBILE 98, 4-dr. Holiday, AC, power everything, under book at \$900. Robertson, 296-4613.

- '60 CHEVY, radio, \$185. Peterson, 299-6473.
- '61 FORD Fairlane 500, R&H, AT, needs front-end work, \$275 or best offer. Tischhauser, 298-1407.
- '59 INTERNATIONAL Carryall, 6-cyl., 4-spd., positraction, \$350; '56 Chev. station wagon, 6-cyl., std. w/OD, \$150. Brinkley, 344-5334.
- '59 RAMBLER VS, AT, PB, R&H, \$75. Halburt, 299-6659.

REAL ESTATE

- 40 ACRES mountain land, \$295 per acre, easy commuting distance to Sandia Base., Causey, 299-0089.
- LOT, SW Valley, 2/3 acre between Arenal and Blake, 3 blocks east of Foothill, Benton, 877-2473.
- LOT 75' front, 2 blocks from Los Altos Grant school, utilities, walls, pavement incl. 1021 Glorietta NE, Cordova, 299-1652.
- C-3 LOT w/small house near Sandia Base, LaPoint, 268-2290.
- TRADE: 5 acres of irrigated land between Tome & Belen, valued at \$7000, for land of comparable value in the Rio Bravo area. Waddoups, 242-4009.
- 7-ROOM HOUSE, bath & 3/4, w/chicken house, corral, sheds, on 3 acres, Bosque Farms, will consider trade. Minor (1) 636-2194.

MISCELLANEOUS

- GREAT BOOKS of the Western World plus syntopicon, 10 volumes Great Ideas Program, and 7 annuals. Summers, 298-1001.
- SILVER BEIGE MINIATURE POODLE, male, AKC reg., 8 wks. old, excellent pedigree. Aronson, 268-7109.
- AKC REG. Carin Terrier puppies, 6 wks. old. Hansen, 898-3251.
- CAR air conditioner from '59 Pontiac, fits most cars, \$50. Mata, 898-1452 after 6.
- FREE PUPPIES, "purebred mutt," will weigh about 25 lbs. when grown. Costello, 256-1041.
- WOOD LATHE, Sears model 149.23860, 36" between centers, 12" swing, 3 Craftsman wood turning tools, electric motor, 1/6 HP, 1740 RPM, \$30. Duncan, 299-2415.
- POMERANIAN PUP, male, AKC, very light, excellent stock. Westman, 255-6048.
- 4-YEAR-OLD male wire-haired terrier w/papers. McGuire, 255-5048.
- CRAFTSMAN deluxe 18" reel type power lawn mower w/grass catcher, \$25. Bear, 298-2744.
- TRAVERSE ROD, adjustable from 10 to 18 1/2", Sears 2469103N, cost \$11.95, sell for \$5. Allen, 243-7085.

- '68 650cc BSA Lightning, 4000 miles; Volvo P 1800S super charger, will install free, \$150. Schulze, 299-0152.
- SNOOPY SHED doghouse, removable roof, carpet, colonial green, \$6; 2 new wood sawhorses, folding hinge, \$4. Kist, 298-3602.
- 2 END TABLES, 1 coffee table, lt. wood. Trujillo, 255-5053.
- HORSE, reg. Morgan mare, excellent harness and saddle horse. Alarid, 898-3722.
- ETHAN ALLEN maple step end tables, \$10 ea.; Kling maple cheval mirror, \$20; oak child's school desk, \$10. Erickson, 299-6824.
- NATIONAL HRO-50T w/all coils 80-10 mtrs., \$135. McAvoy, 1-636-2223.
- GOODYEAR Polyglas studded snow tires, G70-14, on Chevrolet wheels, 12'32" tread remaining, best offer for pair. Bennett, 268-5157.
- REDFIELD 4X scope w/Buehler mounts for M70 Win., will sell items separately. Westfahl, 298-5087.
- STEYR auto. pistol w/ holster, \$55; trade for old English or American hunting knives. Smitha, 6303 Indian School Rd., #809, 299-1096.
- 8MM BH zoom camera, projector & editor, \$150 value for \$75 or trade for good shotgun; .357 Magnum 6-shot single action 6 1/2" barrel, pearl handles, holster & cart. belt, \$100. Scott, 299-3412.
- DESK, single pedestal, lg. center dwr., dark mahogany, heavy duty construction. Gutscher, 255-3736.
- MATERNITY CLOTHES: complete wardrobe suitable for tall person. Jordan, 299-4004.
- '68 SUZUKI 120cc, street-trail, \$285; custom 2-motorcycle trailer, \$95. Rufsvold, 268-5970.
- DANISH MODERN COUCH: 4 chrome wheels for Volkswagen; 50" 12" flexible ducking. Campbell, 268-8445.
- BASS GUITAR, Hofner, electric, w/case, \$200. Kuhn, 842-1385.
- SILVER CHEST tarnish resistant, "The International Silver Company," walnut, holds 12 6-piece place settings & some serving pieces, \$12.50 or best offer. O'Bryant, 268-9049.
- 18-MO.-OLD Brittany Spaniel, papers, all shots, & 2-m. dog house. Hutton, 255-7435.
- MOTORCYCLES: '68 Yamaha 100 twin, '65 Yamaha 250, either one \$325. Duvall, 299-8744.
- TRAVEL TRAILER, 12' '63 Aristocrat, stove & ice box, sleeps 4, spare wheel, \$595. Zickert, 898-3475.
- HEAVY DUTY swing set, \$15. Komen, 299-8881.

- MARE, 14 hands, and 3 1/2 mo. old colt, \$275. Woodworth, 282-3726 after 6.
- '68 YAMAHA 305 motorcycle, original owner. Phillips, 298-6109.
- VERY LARGE Lindsay water softener, come get it for \$25. Roth, 877-4997.
- 2 PR. NEW DRAPES, custom fiberglass, lined, never used, beige w/top border of moss green, turquoise & pale green w/gold scroll, 90" lon., 112" and 116" pleated width, \$50/pr. Cook, 265-5027.
- WHITE, kingsize bedspread, \$15; maple double bed w/mattress & box springs, \$65. Chandler, 296-3323.
- SHOTGUN SHELL LOADERS, Texas model AP-1, 20 gauge, & 12 gauge, table mounted, loading materials, Redding bullet, powder scale. Stewart, 298-0439.
- COLLIES, AKC show quality, terms, 345-1974; misc. baby items: walker, buggy, cradle type rocking horse, carrier. Lotz, 296-2473 after 5.
- '68 KAWASAKI 120 motorcycle, \$200. Harley, 299-7172.
- FORMICA top table & 6 chairs; crib & mattress; stroller. Bridge, 296-2310.
- 4-PC. LUDWIG DRUM set w/cymbal, black & silver. Hichtower, 299-4528.
- RADIO SPEAKER & antenna, solid state, 6-volt, \$15. Warner, 242-1780.
- TRAIL BIKE, \$125, '61 Harley Davidson, 175cc. Heavirland, 298-8976.
- 2-HORSE TRAILER, '66 Safari, purchased new 1967, tandem axels, all metal, '69 license, \$800 or best offer. Corwin, 256-0779 weekdays.
- ENGINEERING & non-fiction books, magazines (SCIENTIFIC AMERICAN & HIGH FIDELITY); boy's 26" bicycle. Sluyter, 298-5844.
- POOL TABLE, Reid, 296-3454.
- TENT TRAILER, sleeps 6, built-in bottle gas stove, sink, water & dinette. Constant 296-1431.
- CLARINET w/case, \$50; guitar w/case, \$40; 2 girl's bikes, 20" & 24", \$25/ea. Colp, 268-8035.
- FURNITURE, Spanish Colonial from Mexico. Matching living & dining room sets plus headboard in mahogany & leather. Beeson, 268-8206.

FOR RENT

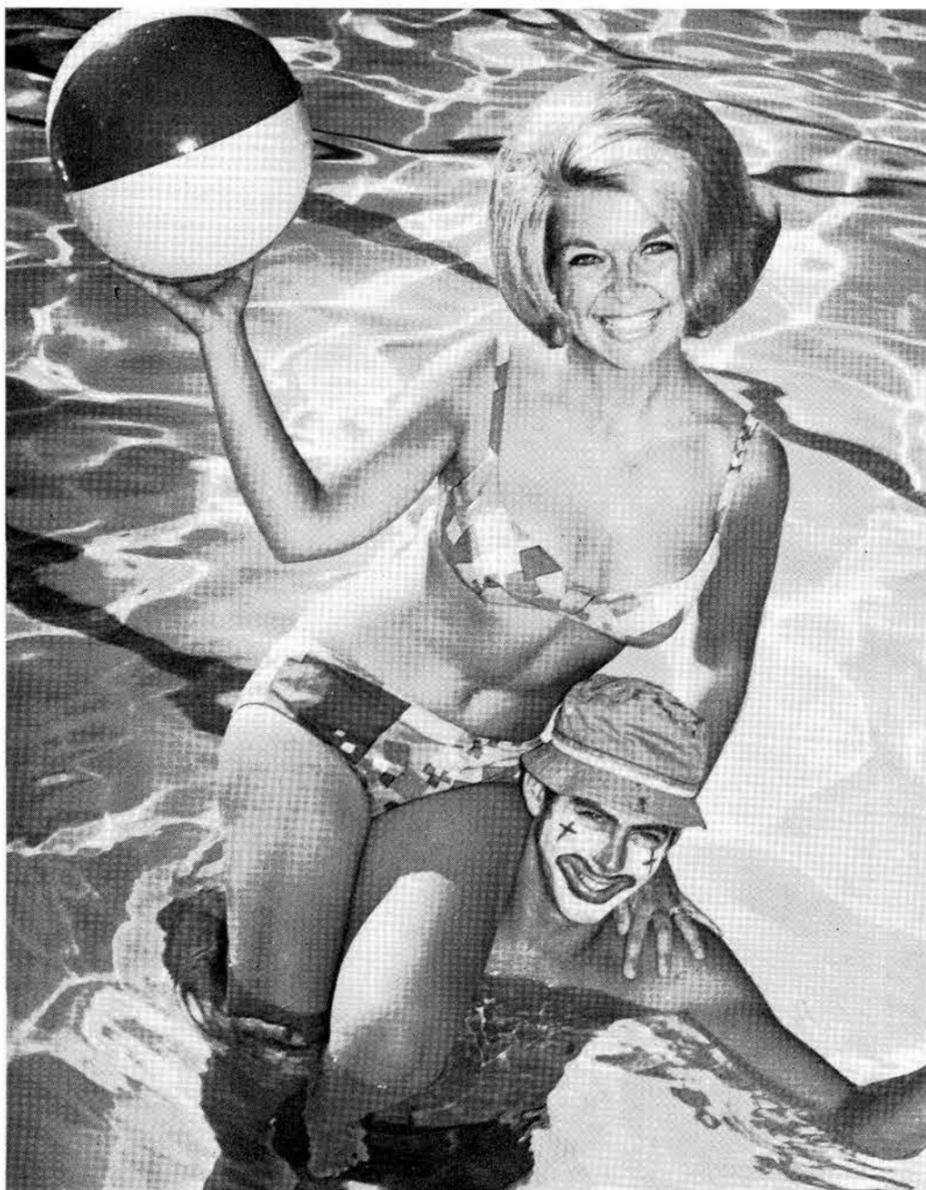
- HOUSE, completely furnished, near Los Altos Grant, available Sept. 1. Maciolek, 299-1696.
- 2-BDR. apartment, unfurnished, utilities paid, near Sandia, Los Altos Golf Course. Available Aug. 15, no pets. Berynk, 299-9171.

WANTED

- EVAPORATIVE air conditioner, sident for use in window. Tholburn, 298-8146.
- HOUSEKEEPER, 10 a.m. to 5 p.m., Mon. thru Fri., Swain, 265-0098 after 6.
- SEWING MACHINE, prefer Singer portable, must be in good condition. Blaine, 299-1036.
- ROLL-UP GARAGE DOOR, Sanchez, 242-3625.
- BABYSITTING in your home after school until 5:30 p.m. for 4th grade boy. Comanche Elementary school district. Davison, 298-8544 after 5:30.
- 9" SOUTHBEND machine lathe w/motor. Laskar, 299-1024.
- SKI BOOTS, ladies, to fit 6 1/2-7 extra narrow foot. Gallagher, 268-1988.
- GRAPHIC "23" roll holder, 2 1/4"x3 1/4". Grayning, 299-0117.
- ONE or two children to play with my pre-schooler, SE Heights, walled yard, any age considered. Courtney, 256-0085.
- RIDER for car pool from vicinity of Copper & Juan Tabo NE to Gate 6&7 parking lot, drive one day per week. Bartlett, 299-0117.
- 10' OR SO U-HAUL type trailer. Falacy, 345-1731 after 5:30 Monday.
- SWAP 2Xtelxender auto. f miranda, 5000 BTU Coleman catalytic heater, 20-3 speed fan, want light meter, 10-gal. aquarium, fire plug., etc. Aaron, 296-6822 evenings.

LOST AND FOUND

- LOST—Silver double-link charm bracelet—no charms, manila envelope w/personal effects, Dietzen slide rule in black case, white pearl dangling earring, yellow London Fog jacket, turquoise oval-shaped brooch. Rx safely bi-focal glasses. LOST AND FOUND, tel. 264-2757, Bldg. 610.
- FOUND—Old class school picture, single key, black chiffon scarf, gold watch, nail clip on chain. LOST AND FOUND, tel. 264-2757, Bldg. 610.
- LOST—1912—\$2 1/2 gold piece cuff link, \$50 reward. Mesnard, 255-0654.



FUN, GAMES, CLOWNS, PRETTY GIRLS and refreshments at special prices are some of the features planned for the Coronado Club's Water Carnival Saturday, Aug. 23. Susan Hopkins (1643) and Eddie Sims, lifeguard, illustrate the idea nicely.

Coronado Club Activities

Water Carnival Scheduled Aug. 23

Summer will soon be over. Only 17 more days of swimming are left at the Coronado Club twin pools. To take the season out in grand style, Club members will celebrate with a water carnival Saturday, Aug. 23.

The event will be a family affair, free to members, with emphasis on swimming, racing and diving contests plus games and prizes for the youngsters. Club swim team

members are not eligible to compete in the contests.

Parents will not be neglected. Special prices on refreshments will prevail from noon until 6 p.m.

Club manager Jim Noonan promises to wear short shorts for the event.

Teen Go-Go

The Wedges is the name of the rock group booked for tomorrow night's Teen Go-Go at the Club. The band will plug in about 7:30 and blast until 10:30 p.m. Member parents should pick up tickets (25 cents for members, 50 cents for guests) by 9 p.m. tonight.

Social Hours

Tonight, Max Madrid makes the happy music while the Club's famous chuckwagon roast beef is the buffet feature. Social hours start right after work on Friday evening, and special prices prevail until 8 p.m. The band plays for dancing from 6 until 9 p.m. and the buffet is spread from 6 until 8 p.m. Pat Reich and piano entertain in the main lounge with a sing-a-long from 9 until midnight.

On Friday, Aug. 22, Tommy Kelly and the smiling Irishmen return to the bandstand while the chicken buffet is served.

Frank Chewiwie will play for dancing Friday, Aug. 29. The Club's kitchen staff will wheel out the Mexican food buffet.

Tuesday Social Hours

A new feature has been added to a mid-week event. Pat Reich and piano will entertain during the Tuesday evening social hours. Special prices are in effect in the main lounge from 5 until 8 p.m.

Swim Tickets — 1970

To qualify for the "continuous member" rate (\$5 per family) for 1970 swimming, Club membership should start in September.

Bridge

Duplicate bridge meets Mondays at 7 p.m. Ladies Bridge meets Thursday, Aug. 21, at 1 p.m.

Stock Market Seminar

Make plans now to attend a seminar on stock market investing to be conducted by the Club starting Sept. 2. The group will meet at 8 p.m. on Tuesday evenings for four weeks.

Anyone for Tejo?

Old Spanish Game Has Devotees; Daily Matches at Bldg. 851

The ancient game of tejo (Spanish for round tile or metal washer) is being revived at Sandia. During nearly every break, devotees of the game can be found in an area just east of Bldg. 851 cheering their teammates or deriding their opponents.

Tejo is sort of a cross between pitching pennies and horseshoes. Each player has two round metal washers two inches in diameter. Object of the game is to pitch the tejo into a three-inch hole at the op-

posite end of the court 50 feet away. If a player manages to toss the tejo into the hole—a difficult feat since a two-inch disc in a three-inch hole leaves little room for error—he is awarded four points. The tejo closest to the hole is worth one point. Twelve points is game.

Bonifacio Griego (4212) is considered by his teammates and opponents as one of the masters of the game. "I've played tejo since I was a child," he says. "In the old days, when work in small villages in New Mexico was seasonal, the game was a favorite pastime. My father, who lived to be 103 years old, played all his life."

Bob Banks Elected President of Coronado Club Board of Directors

Six newly-elected directors were installed and officers of the board were elected at a recent meeting of the Coronado Club board of directors.

Bob Banks (5100) was named president of the board. Bill Weinbecker (5234) is vice president, Chet Fornero (4335) is secretary, and Howard Romme (4117) is treasurer.

The newly-elected directors include Romme and Weinbecker who were reelected to the board for one year terms. Serving two year terms will be Fornero, Pete Gallegos (2352), Don Graham (3432), and Bill Bickley (AEC).

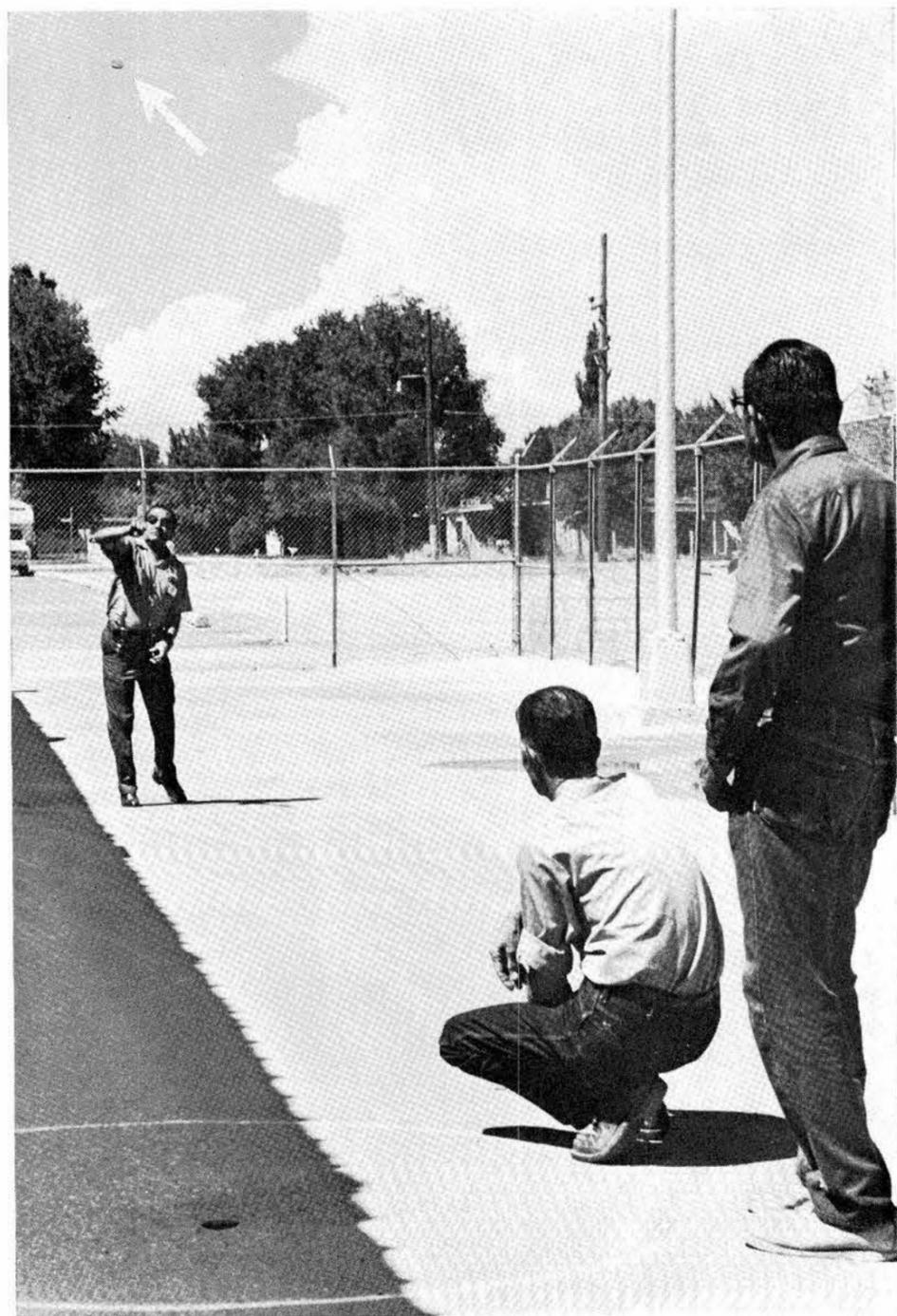
Suggestions about Club operations or activities are welcome from all members. Use the suggestion box in the Club lobby or contact any member of the board.

No one is sure if the game was brought here from Spain by early Spanish colonists or if it was adopted from the Indians. It probably came from Spain, however, since tejo is a Moorish word that refers to the flat, round roof tile found in Spanish architecture.

Jacobo Mata (4212), another devotee, said that when he was a child tejo players used malpais stone instead of metal washers. Malpais stone, of volcanic origin, is found naturally round and flat on one side.

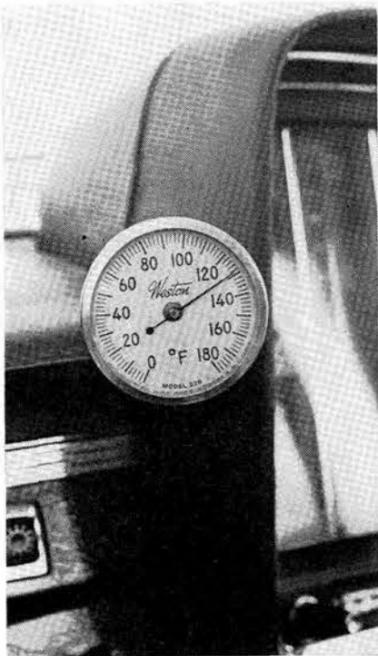
Among other Sandians likely to take part in the twice-daily tejo battle outside Bldg. 851 are Phil Moya, Pete Peshlakai and Dick Gonzales (all 4212).

"We've heard that another group at Bldg. 887 also plays," says Jacobo. "If they think they're good enough, we'd welcome a challenge."



TEJO FORM is demonstrated by Bonifacio Griego (4212). Object of the game is to put the two-inch "tejo" (see arrow) into or near the three-inch cup (lower left) from a distance of 50 feet. Jacobo Mata (kneeling) and Pete Peshlakai (both 4212) are among Sandia fans of the old Spanish game. These men and a few others can be found during nearly every break playing the game most of them knew in their childhood.

Sandia Safety Signals



KEEP A WINDOW of your car partially open when parked in the hot summer sun. Temperatures in completely closed cars can reach as high as 150 degrees. If windows are tightly closed, expanding hot air may shatter the glass. In this car, the temperature reached nearly 130 degrees even with windows open.