



Charles S. Williams



Celine Walker

Human Rights Committee Honors Two Sandia Laboratory Employees

Two Sandians will be among seven persons honored by the Human Rights Committee of the United Nations Association USA during a banquet Dec. 10.

One Human Rights Award will be presented Charles S. Williams and a joint award will be given Dr. and Mrs. Arthur B. C. Walker, Jr. The banquet will mark the 16th anniversary of the UN's adoption of a declaration of universal rights. Albuquerque is one of the 17 communities in the country in which the awards will be made.

Chuck Williams started working summers or part-time at Sandia in 1952 and became a full-time employee in 1957. He is supervisor of Statistics and Components Division in the Reliability Department. The awards nominating committee cited him for his consistent activities in behalf of civil rights and liberties.

As legislative chairman of the New Mexico Council on Human Relations, Chuck was interested in a penalty clause proposed during the last session of the State Legislature which would in effect put teeth in the existing public accommodations law. He was instrumental in getting a legislator to introduce the proposed bill; contacted members of interested organizations and encouraged them to send representatives to the legislative committee hearings; and informed members of the legislative committee of the council's feeling on the proposal. The bill was passed. Chuck previously served as vice chairman of the council for three years.

He is also a member of the board of directors of the New Mexico Civil Liberties Union. This organization feels strongly about the right of an individual to criticize without being jeopardized. The union recently filed an "amicus curiae" brief in connection with the contempt of court case against Santa Fe political columnist Will Harrison. An appeal of the contempt conviction is pending in the State Supreme Court. The brief indicated willingness of members of the union to advise the court by furnishing information or taking the witness stand.

Chuck's support of civil rights and liberties has understandably extended into the partisan political arena. He was an unsuccessful candidate for the State Legislature, District 12, in the Democratic primary election last spring. During the State Convention he introduced a plank calling for a New Mexico statute to eliminate discrimination in the sale and rental of housing. The proposal was adopted by the convention and has become a plank in

the party platform. He is also democratic committeeman in voting division 38D and a member of the Bernalillo County Democratic Executive Committee. His wife goes along with his political activities—she's Democratic chairwoman in Precinct 38.

The other employee award recipient, Celine Walker, is a comparative newcomer to Sandia. She has been a cataloguer in the Technical Library since late August—only a few months after becoming an American citizen.

A native of St. Lucia, British West Indies, Celine came to the United States to attend New York University, but before enrolling she worked a year for the United Nations. At NYU she met Arthur, her future husband. Celine received her Bachelor's degree in library science at the University of Illinois and did graduate work while her husband was completing work on his doctorate in physics. While at Illinois, Arthur was president of the NAACP chapter on campus and Celine served as secretary. Both have continued their active work since coming to Albuquerque (Arthur is a research scientist at Kirtland AFB). Arthur is vice president of the Albuquerque branch and Celine is chairman of the Employment Committee which receives notices of all government jobs and contacts qualified persons.

She is also on the Archbishop's Interracial Action Council which has as one of its objectives to bring to the attention of the public discrimination in housing. The Walkers recently used a day of their own vacation time to picket in protest against an alleged discrimination.

Celine and Les Theard, another Sandia employee who is a member of the Council, are among several who recently conducted personal interviews with negro 1964 high school graduates to determine what type of jobs they have been able to acquire. The report based on their findings will be ready soon.

Prior to the recent general election, Celine did door-to-door canvassing to encourage registration of negro voters. The Walkers are also members of the Civil Liberties Union but have not been active in the local organization.

The banquet honoring all seven is open to the public and will be held at the University of New Mexico Student Union. Featured speaker will be Mrs. Elizabeth M. Swayzee of New York, a non-government delegate to the UN and former radio network commentator. Tickets are available at the UN Gift Shop in Old Town or may be purchased at the door on the evening of the banquet.



Sandia Artist Prepares Layout for Livermore C of C Billboard

Wally Arevalo, Livermore Laboratory technical artist, prepared the layout for a billboard depicting "Livermore — City of Energy." The layout was used to prepare the billboard for the Livermore Chamber of Commerce.

Chamber publicity chairman Bob Norvill, Classification and Public Information Division, asked Wally to prepare sketches for presentation to the Chamber; one of the three he prepared was selected.

He has been in the Technical Illustration Section at SCLL since July 1961 and is responsible for much of the creative art used by Livermore Laboratory, in addition to his work in technical illustrating.

This was his first attempt at billboard artistry. His primary art interests lie in contemporary and abstract art, but he has experience in many other areas. Wally recently designed the cover illustration for the San Jose City College catalog.

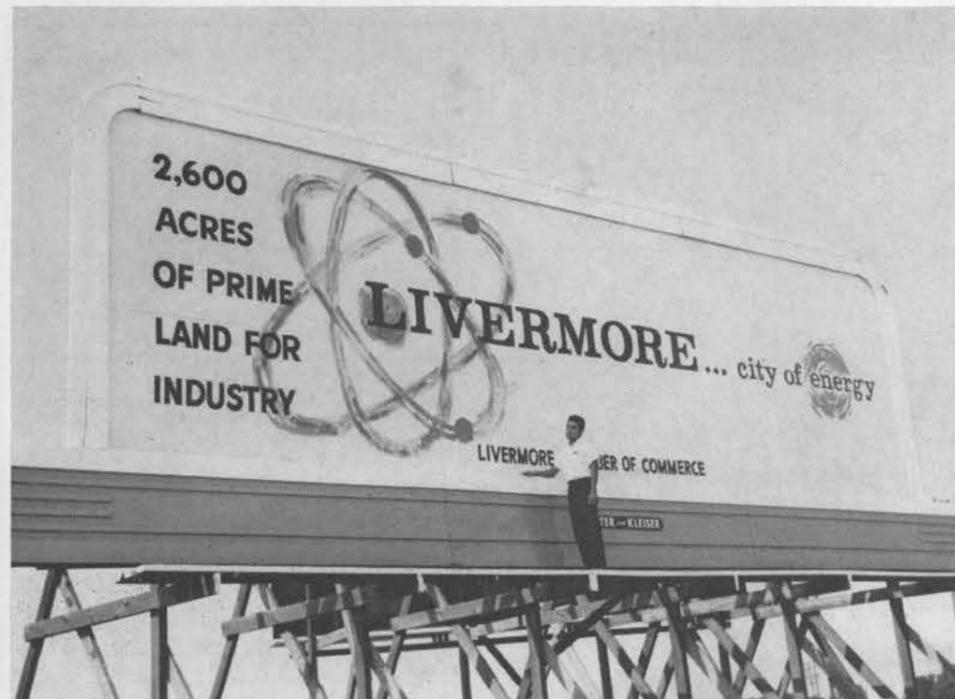
CRITIQUES of recruiting interviews made during the College Employment Workshop held here recently, represented an important part of the training. Taped recording of interview is basis for critical discussion by (l to r) Bill Garrett, Long Lines Division, AT&T; Ed Nixon of Bellcomm, Inc., and Don Jenkins, Manager of Sandia's Employee Research, Training, and Education Department. Mr. Jenkins was a coach for the workshop.

Names Added to List of Employees Teaching at UNM

Still more Sandia Laboratory employees are reported as teaching part-time at the University of New Mexico.

In the university's Mechanical Engineering Department, the instructors include J. D. Ramsey of Value Engineering and Cost Reduction Section and Richard D. Prairie of Statistics Section.

R. K. Traeger of Structural Plastics Division is an instructor in Chemical Engineering.



LIVERMORE — CITY OF ENERGY. This is the theme of the billboard designed by technical artist Wally Arevalo. The sign is viewed by thousands of motorists traveling to and from the Bay Area, and is part of Livermore's effort to attract new industry.

Memorable Indian Event Available To Hardy Souls Who Shun Sleep

The Shalako Dances will be held at Zuni Pueblo this weekend and anyone who has driven the 175 miles, then stood through the night in the shivering cold, will vouch that it is a memorable experience.

The Shalako is the culmination of the Zuni's ceremonial year, and is considered by many to be one of the best of the Pueblo ceremonies, both in format and religious significance.

It is the festival when the gods enter the village to bless the new houses. The gods are nine-ft. superstructures propelled by an almost-hidden Indian; the houses are not necessarily new, but merely replastered for the occasion; nevertheless, the dances portray an element of mystery, are extremely colorful, and offer an excellent opportunity to study the participants and visitors. Best of all, no one tries to sell you anything! The existing pueblo was built in 1692

gas. It is located 35 miles south of Gallup on paved highway 32. The adobe houses are scattered on both sides of the Zuni River—which means there is a considerable distance to be walked (usually in mud or snow) to see the six Shalakos perform, as well as the Mudheads, and the Rain Gods of the North and South and their accompanying warriors. The latter group is well-adorned with nugget turquoise. The dances start after sundown and continue through the night.

The Shalako mask—from top-to-bottom—includes a headdress of eagle feathers, a painted head with beak-like mouth which can be opened and snapped shut, a ruff of raven's feathers, glossy black hair which hangs five ft. down the back, and hoop-like skirts of double Hopi kirtles. Of the Zuni beneath, you see his feet and hear the bells on his knees.

Editorial Comment

'Tis the Season . . .,' But —

At the risk of being considered a spoil-sport, the **Lab News** would like to offer a few cautions for the holiday season.

Probably the most inclusive warning and certainly among the most appropriate is: "take it easy." Demands on the system this season are sometimes out of proportion to the body's ability to stand the strain. Too often the spirit is willing but the body's weak and as a result something has to give—and we turn up ill at the happiest time of the year. Exercising restraint and moderation in everything we do will help contribute to a more enjoyable holiday period.

Each day of the year is the best day to live safely. However, when the holiday season comes around and threatens us with extra rush, new pressures, and attractive pitfalls it's time to make our habits of safety even stronger. There is more cause at Christmas time for us to think safely and to live safely. No season of the year is so good that it should be the last one we ever enjoy.

As a closing thought, it is suggested that the reason for all this Christmas activity be recalled. That, if anything, should temper our over-enthusiasms and make it possible for us to recall the holidays of 1964 with a warm glow of pleasure, not regret.



MEGA BUCK INVESTMENT CLUB members discuss stock analyses during a monthly meeting. From left, seated, are D. R. Brown, J. P. Wakeland, and J. E. Davidson. Standing are R. E. Gaeddert and C. A. Davidson.

Congratulations

Mr. and Mrs. Raymond J. Holesinger (1333), a daughter, Kristen Leigh, Oct. 27.

Mr. and Mrs. Robert A. Baker (7322), a daughter, Alison Leigh, Nov. 4.

Mr. and Mrs. Leonard Kracko (7246), a son, Dean Andrew, Oct. 31.

Mr. and Mrs. R. L. Shuman (7334), a son, Johnathon Lee, Nov. 8.

Mr. and Mrs. A. G. Bauer (7332), a daughter, Pamela, Oct. 30.

Mr. and Mrs. Paul Hafley (4411), a daughter, Nancy Lynn, Nov. 5.

Mr. and Mrs. Ralph H. Carden (7623), a son, Lawrence, Nov. 7.

Mr. and Mrs. Sam B. Martin, Jr. (1322), a son, Thomas Ray, Nov. 10.

Mr. and Mrs. Jimmie R. Burnside (2552), a son, Timothy Earl, Nov. 12.

Mr. and Mrs. James F. Cope (5413), a daughter, Conchita Angela, Nov. 12.

Mr. and Mrs. Robert Hannigan (2134), a daughter, Kathleen Marie, Nov. 16.

Mr. and Mrs. F. R. Gustke (7334), a son, Frederick, Jr., Nov. 16.

Mr. and Mrs. Royce Lindsey (1513), a son, Brett, Nov. 17.

Mr. and Mrs. S. V. Asselin (1522), a son, Timothy Charles, Nov. 17.

Mr. and Mrs. J. A. Ruggles (4411), a son, James, Nov. 22.

Mr. and Mrs. R. E. Stinebaugh (1543), a daughter, Jennifer Ann, Nov. 22.

Mr. and Mrs. Curtis Anderholm (7442), a daughter, Mary Elizabeth, Nov. 12.

Mr. and Mrs. H. S. Levine (5414), a son, Aaron Leslie, Nov. 14.

Mr. and Mrs. Chester Claghorn (1524), a daughter, Kathy Lorraine, Nov. 21.

Sandia Photographers Display Work at New Mexico Student Union

An exhibit of Sandia Laboratory photographs, displayed for the past week at the New Mexico Union, University of New Mexico, will move on to several other Universities and Colleges for display during the coming year.

Members of the Association of College Unions, Region 13, which encompasses New Mexico, Arizona, Wyoming, Utah, and Colorado, will schedule the photographs for display.

The collection illustrates five areas of photographic activity at Sandia. The categories are industrial, scientific, documentary, photometrics, and optical design. The photographs were prepared by members of Industrial Photographics Division, Optical Development Section, Photometrics Division, Diagnostic Instrumentation Division, and Public Relations Department. L. E. Erne of Industrial Photometrics Division organized the exhibit. Community Relations Division helped prepare and hang the collection.

The collection will be rescheduled for another showing at UNM. An announcement will be made in the **Lab News** when the dates are set.

PHOTO DISPLAY—University of New Mexico students examine part of a Sandia Laboratory photographic exhibit on display in the New Mexico Union. The exhibit will be shown at universities and colleges in a five-state area during the coming year.

Mega Buck Club Members Don't Get Rich But They Do Become Smarter

"The market has had its ups and downs," says Pete Wakeland, "and so has our Club." Pete is the current president of Mega Buck Investment Club. Organized three years ago with membership required to invest \$10 monthly, the Club has weathered its formative years.

"According to the National Association of Investment Clubs," Pete says, "the first two years are the roughest. We vouch for that. We started with 13 members and we're now down to six. Some members left Sandia and others didn't maintain interest."

The club meets monthly, after work. The members decide how to invest the monthly "dues." Members present individual reports on various aspects of the market or an analysis of a particular stock.

"Most of us knew very little about the stock market when we organized the club," Pete says. "But we've learned a great deal

and we keep learning. It's been an education, sometimes gained the hard way."

One of the problems of any investment club is keeping the membership active. As former members of the Mega Buck Club left, investments had to be sold to buy out their interests.

"This didn't always happen at an opportune time," Pete says. "But, overall, the club has done well. Primary value from the activity has been the knowledge members have gained on the stock market. Most of us have made private investments on the basis of this knowledge."

Other members of the group include D. R. Brown, J. D. Rex, and J. E. Davidson, Personnel Development Division; C. A. Davidson, MD Components Programming Division; and R. E. Gaeddert, Administrative Assistant Division.

The club is a member of the National Association of Investment Clubs and the treasurer is bonded. All other officer positions rotate about every six months.

"We'll consider new members," Pete says. "Contact one of the members and come to a meeting. You may not make much profit but you'll become knowledgeable about the market."



Judy Shafer

Take A Memo, Please

Practice safety on the job, at home, and on the highways. There should be no "quitting time" for safety.



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Christmas Charity Plans Going Full Steam at Sandia Corporation

It's 20 more days until Christmas and employees experienced as chairmen of organization-wide holiday charity projects aver that now is the time to get rollin'.

Sandia Corporation has long encouraged the idea of helping the needy at Christmas time in lieu of exchanging greeting cards with persons you see every day. Such plans have become almost traditional in some organizations.

Well-along with arrangements are Al Hachigian of Military Liaison organization's Shoes for Kids drive; E. Alice Preist of Design Information Processing Department's gifts for children in foster homes; and A. L. Ouellette who for the seventh year is helping with Design Definition Department 4410's Christmas Baskets for the Needy drive. In addition, arrangements are already underway for the United Unions' annual Christmas party for the children of Riverview School.

Al Hachigian is being assisted by Dick Collins and Floyd Hursh in collecting donations this week for the Shoes for Kids fund. "Last year we collected enough money to purchase shoes for 80 children from Riverview School, and extra funds were deposited at the shoe store to be used later in the year for cases of extreme emergency as determined by Desi Baca, the school principal," Al said. It may be a different story this year. Previously there were more than 200 employees in the 2300 organization; due to reorganization, the three departments now comprise only about 100 persons.

No matter what the amount, on Dec. 15 shoe clerks will be fitting a number of deserving children with footwear—courtesy of Sandia employees. It's a rewarding sight.

Alice Preist's project is in its second year and growing. She has obtained from the Bernalillo County office of the New Mexico Department of Public Welfare the first names and ages of 40 children in foster homes and the youngsters' gift preferences. The names are circulated in Design Information Integrating Division and Release Division. Employees in these groups buy the gifts (or give Alice the money for such purchases), and Alice delivers the whole batch of presents to the welfare office by Dec. 18. She also gift wraps the items when necessary. "Anyone who wants to can participate in this project," Alice says.

Design Definition Department 4410 is again sponsoring their annual Christmas Baskets for the Needy drive. A. L. Ouellette, who has been chairman of the drive for many years, will be assisted this year by co-chairman John Bewley. A committee, comprised of one representative from each of the sections, will collect money to be used for the purchase of food baskets for 25 families. The names of the families are obtained from both Catholic and Protestant churches. On Dec. 24 the baskets are delivered along with any donated toys and usually a few Christmas trees.

The charitable act involving probably the largest number of Sandia Laboratory employees is the annual Christmas party

for the children of Riverview Elementary School sponsored by the United Unions—International Brotherhood of Electrical Workers, local 1988; International Association of Machinists, local 1689; and Office Employees International Union, local 251.

Large boxes have been placed in Bldgs. 802, 806, 836, 840, 880, 892, and 894 (and will remain until Dec. 14) for collection of gifts for the children. Members of the locals will then match children's names and ages with appropriate presents from those donated. The 380 children of the school will be treated to Christmas dinner at the school's cafeteria on Thursday, Dec. 17.

On the following Saturday, the Christmas party will be held at 1 p.m. Santa Claus will distribute a personal present to each child and in addition there will be socks stuffed with peanuts, candy, oranges, and apples; ice cream and cookies; and entertainment. Co-ordinators for the project are Jim Mick, Granville Dourte, and B. L. Stewart.

A note to union members: help will be needed Dec. 15 in preparing the gifts, checking the lists, and stuffing the Christmas socks. These activities will be carried out starting at 7:30 p.m. at the Metal Trades Council Hall, 919 San Pedro Dr. SE.

Sandia Speakers

Following is a list of speakers, titles, and places of presentation for recent talks by members of Sandia Corporation.

J. A. Sisler of Ancillary Equipment and Design Division and R. C. Gauerke of Projects Division, "New Developments in Containers for Shipping Radioactive Materials," 1964 Winter Annual Meeting of the American Society of Mechanical Engineers, Nov. 29-Dec. 3, New York City. Mr. Gauerke will make the presentation.

B. T. Kenna and F. J. Conrad, both of Analytical Methods Division, "Determination of the Fast Neutron Flux Pattern for a Small 14 mev Neutron Generator," American Nuclear Society Annual Meeting, Nov. 30-Dec. 3, San Francisco, Calif. Mr. Kenna will make the presentation.

J. O. Wear of Plasmas and Kinetics Research Division, "Kinetics of the Reaction Between Np(V) and U(IV) and Aqueous-Chloride Medium," American Chemical Society Meeting, Dec. 3-5, Shreveport, La.

Katheryn E. Lawson and Bruno Morosin, both of Electronic Structure of Solids Division, "The Configuration and Electronic Absorption Spectra of Tetrachloro- and Tetrabromocuprate Ions," American Chemical Society Meeting, Dec. 3-5, Shreveport, La. Mrs. Lawson will make the presentation.

Robert M. Jefferson of Reactor Engineering and Operations Division, "50 Kilocurie Gamma Irradiation Facility," American Nuclear Society Annual Meeting, Nov. 30-Dec. 3, San Francisco, Calif.



LUNCH TIME stuffing and assistance at home from her family helped Mary Lee Peckum to prepare 7500 envelopes for the Bernalillo County Tuberculosis Association's annual Christmas Seal campaign.

Christmas Seals Sent to Thousands Thanks to Volunteers Like Mary Lee

If your Christmas seals have a touch of peanut butter on one corner this year, you can be sure they were in one of the 7500 envelopes stuffed by Mary Lee Peckum.

Sandia Corporation employees customarily have been active in the Bernalillo County Tuberculosis Association and contributing manual labor is equally important as serving as an officer or board member.

"My daughter, Mary Floy, helped prepare the Christmas seal envelopes many years, but now she lives in California. When the association office called and said they badly needed help, I said I'd donate my spare time," explained Mary Lee, who works in Sandia's Benefits and Services Division.

"My spare time" was putting it mildly. Her daughter, Nancy, visiting from California, helped. Her husband, Floyd, helped. "If anyone was sitting around watching TV, I put a box of envelopes in their hands," Mary Lee said. When the deadline drew

close, she brought a box of envelopes to work and stuffed during the lunch hours—and that accounts for the peanut butter.

She estimates it took an hour and a half to stuff each 500 envelopes. All that "stuffing" and no "turkey." The reward in donating service to the association and in buying Christmas seals is in knowing that you are helping support a County Chest Clinic and are informing others about respiratory diseases. The goal for Christmas seal sales this year is \$35,000.

Promotions

Barbara E. Bergamo (3126) to Secretarial Typist
 Jane B. Everett (3126) to Secretarial Typist
 Carol A. Flower (3427) to File Clerk
 Fay A. Tome (3126) to Record Clerk
 Tillie K. Pierce (4432) to File Clerk
 Mary L. Newmons (3427) to Document Clerk
 Mary Lou Cooper (3421) to Librarian
 Joaquin E. Chavez (2551) to Order Detailer
 Robert M. Padilla (8232) to Messenger
 Maxine Ludi (3152) to Typist Clerk
 Jeni L. Sweley (4112) to Control Clerk
 Lawrence L. Kiefer (7323) to Lab Assistant
 William J. Stokes (7324) to Lab Assistant
 Jane E. Jens (8233) to Reproduction Service Clerk
 Donald A. Baumann (8114) to Staff Associate Designer
 Henry G. Cole (1322) to Staff Assistant Technical
 Charlie M. Barnes (1432) to Staff Assistant Technical
 Esther V. Donaldson (7241) to Staff Assistant Technical
 Bernard R. Reicks (4412) to Staff Assistant Draftsman
 Eugene Byron Lopp (8114) to Staff Associate Designer
 Joe Salas (4574) to Janitor
 Jose E. Vigil (4574) to Janitor
 Donald K. Hoffheins (4622) to Stockkeeper
 Perm N. Dwyer (4252) to Rigger
 Benjamin F. Lopez (4252) to Rigger
 Otis Virgil Short (4252) to Rigger
 Laura M. Kurtz (3126) to Typist Clerk
 Deanna M. Irvin (3126) to Secretarial Steno
 Robert H. Ausfin (3143) to Staff Member Administrative
 Nepomuceno J. Gallegos (4575) to Laborer
 Ruben E. Trujillo (4613) to Stockkeeper
 Robert P. Williams (4611) to Stockkeeper
 Donald L. Greene (4252) to Machinist
 William D. Lynch (4252) to Machinist
 Robert D. Baca (4253) to Machinist
 Kent J. Bowen (4253) to Machinist
 Charles D. Salazar (4253) to Machinist
 Rudolph E. Lovato (4512) to Millwright
 Leroy H. Baker (4234) to Technician
 Carlos Candelaria (4573) to Heavy Equipment Operator
 Keith E. Gawith (4254) to Apprentice Machinist
 Joetta C. Miller (3126) to Secretarial Typist
 Donna Kay Jackson (2551) to Record Clerk
 Gene R. Gray (4624) to Record Clerk
 Harry R. Shortt (4542) to Property Clerk
 Janet H. Johnson (2321) to Editorial Assistant
 Edsel L. Gunn (4333) to Control Analyst
 Bernetta I. Mark (8141) to Secretarial Steno
 Gayl R. Tschritter (8154) to Secretarial Steno
 Frances M. Roelle (2130) to Secretary
 Ann Paxton (3151) to Employment Clerk
 John H. Formea (4517) to Schedule Clerk
 Frank Henry Fox (4517) to Schedule Clerk
 Elwyn R. Clark (2111) to Staff Member Administrative
 Clarence E. Muchow (2123) to Staff Associate Technical
 R. B. Oliver, Jr. (2124) to Staff Associate Technical
 Richard G. Jones (2132) to Staff Associate Technical
 F. Patrick Freeman (2136) to Staff Assistant Technical
 Calvin D. Thomson (2136) to Staff Assistant Technical
 Raymond D. Wilkinson (2136) to Staff Assistant Technical
 Ward E. Mitchell (8233) to Staff Assistant Technical
 W. A. Warren, Jr. (4341) to Staff Associate Administrative
 Hugh A. Sumlin (4251) to Staff Assistant Technical
 Lamberto Baca (4613) to Stockkeeper
 Jerry Cole (4232) to Inspector
 Filimon Tenorio (3427) to File Clerk
 Benjamin Garcia (4432) to File Clerk
 Edmund W. Starr, Jr. (4432) to File Clerk
 Mary E. Golden (3126) to Secretarial Steno
 J. Joe Martinez (3427) to Document Clerk
 Eugenia L. Flickinger (7241) to Data Reduction Clerk
 L. C. Hilderbrand (4153) to Investigator
 Bernie Vallesos (3465) to Photographic Printer
 Brad L. Sanders (4252) to Shop Clerk
 Jimmie R. Burnside (2552) to Order Analyst
 Benny M. Garcia (2552) to Order Analyst
 Kenneth L. Wiley (2523) to Expeditor
 Carole A. Hoff (8143) to Secretarial Steno
 Carol M. Johnson (8231) to Service Clerk
 Charles F. Cloyes (4413) to Draftsman
 Helen M. Walsh (5140) to Secretary
 Frank Fuentes (4574) to Janitor
 Leo B. Griego (4574) to Janitor
 Salomon S. Baca (4614) to Utility Operator
 Benjamin L. Armijo (4575) to Laborer
 Susan K. Lundy (3126) to Steno Clerk
 Marcia L. Simon (3126) to Steno Clerk
 Lois H. Hayes (3126) to Typist Clerk
 Sharon Sue Burnett (3126) to Secretarial Steno
 Lawrence D. Long (3413) to Message Center Equipment Operator
 Edwin E. Moss (4432) to Document Clerk
 Glada C. Costales (3421) to Library Assistant
 Jose D. Aragon (7611) to Tabulating Equipment Operator
 P. R. Candelaria (2523) to Expeditor
 Leatrice J. Hay (8232) to Library Assistant
 Bobby R. Branch (8232) to Senior Clerk
 Elaine A. Brint (8161) to Service Clerk
 Roberta M. Cody (8161) to Service Clerk
 James K. Fjelseth (7324) to Laboratory Assistant
 Michael L. O'Neal (1413) to Laboratory Assistant
 Fidel G. Chavez (4221) to Flame Sprayer Assembler
 Victor D. Schaeffer (4252) to Layout Operator

Plan Addition to Sandia Laboratory Steam Plant

Bids were invited this week for construction of an addition to Sandia Laboratory's steam plant, the Atomic Energy Commission has announced.

The project will include a 100,000-lbs.-per-hour addition to the existing steam production system, a building addition approximating 4125 sq. ft., a 5000-barrel fuel oil storage tank and transfer facility, site improvements, electrical power service improvements, and other work relating to steam generating facilities and a diesel engine generator.

Bids are scheduled to be opened about Jan. 21. Work is to be completed within 210 days after the contractor receives notice to proceed from the AEC. Plant Engineering Department project engineer is C. C. Whitcomb.

Take Note . . .

Annual Christmas Dinner of the Albuquerque Amateur Radio Club will be held at 8 p.m. Friday, Dec. 11, at the Holiday Inn, according to John P. Hoice of Electronic Development Division, president. Speaker will be E. R. Harrington, Coordinator of Secondary Education, Albuquerque Public Schools, who will discuss "Ghost Towns of the Southwest."

All radio amateurs and their families are invited to attend. Tickets are available from Mr. Hoice or Ed D. Bales of System Test Development Division I.

The Technical Information and Publications organization Christmas party will be held Friday, Dec. 11, at the Alvarado Hotel. Sol Chavez' band and the Derridowns Trio will provide music and entertainment from 9 p.m. 'til midnight. Tickets are available from division representatives.

EQUAL EMPLOYMENT OPPORTUNITY—B. S. Biggs presided over the Plan for Progress supervisory meeting at Livermore Laboratory recently. Guest speaker at the meeting was Dr. H. R. Northrup (seated at right of Mr. Biggs) of the Wharton School of Finance and Commerce, University of Pennsylvania. The meeting, one of a series for Sandia Corporation supervisors, was held to explain Sandia's Plan for Progress agreement with the President's Committee on Equal Employment Opportunity.



'Visiting Scientists' Enter Fifth Year of Work With Public Schools

The Visiting Scientist Program embarks on its fifth year this semester. Started in the Fall of 1959, the program has brought professional scientists, many of them Sandians, into hundreds of science classrooms throughout the state.

The visiting scientist brings up-to-the-minute information of industrial applications of science to augment regular junior high and high school science courses. In addition to the content of the lectures, the visiting scientist presents career information and answers students' questions.

"The professional scientist is no stranger to students in Albuquerque, Los Alamos, or any of the larger cities of the state," Albert Goodman says. Al is supervisor of Sensor Development Section and has been a participant in the Visiting Scientist Program since its beginning. "In the smaller schools," he says, "the visiting scientist can perform a true service. He can show how science textbook information is actually used by industry and business. His presence helps stimulate the students' interest in pursuing science as a career."

Like the other 10 Sandians who participate in the Visiting Scientist Program (see below), Al is a member of the New Mexico Academy of Science, sponsor of the program. The Academy is an affiliate of the American Association for Advancement of Science and exists to further scientific knowledge in New Mexico. The academy conducts various programs aimed at assisting the classroom science teacher and also is an assisting agency for the regional and state Science Fairs each year.

Sandians who participate in the Visiting Scientist Program include Irving Auerbach of Plasmas and Kinetics Research Division. Irv is a former president and secretary-treasurer of the New Mexico Academy of Science and also has participated in the program since its beginning. Although he will not be visiting classrooms this year, Irv has presented lectures on "Chemistry of Polymeric Materials" for the past four years.

N. C. Anderholm of Development Section II, Satellite Systems Division, is starting his second year with the program. He discusses lasers, cryogenics, electricity, and magnetism in his lectures to students.

Charles L. Carpenter, supervisor of Project Division, Weapons Systems Development Department I, will be serving his fourth year as a member of the program. He speaks on "This Engineering Business" and "Why Education?"

Ronald I. Ewing has participated in the program for two years. In forthcoming talks, he will lecture on "Fundamental Nuclear Particles" and "Atoms, Radiation, and Things." Ron is in Atomic Interactions Research Division.

"Modern Physics in a Nutshell" and "Peaceful Uses of Nuclear Detonations" are two of the titles of talks given by Fred A. Gross, Jr., of Advanced Systems Studies Department II. A retired Air Force officer, Fred also discusses technology as related to air power. He has been in the program for three years.



VISITING SCIENTISTS—On call to lecture in science classrooms throughout the state are these Sandians. From the top are Ron Ewing, Charles Carpenter, Read Holland, Fred Gross, Bill Zimmer, Al Goodman, and N. C. Anderholm. Not shown are members Art Key, Don Morrison, and George Steck.

J. Read Holland of Dynamic Stress Research Division discusses "The Metallic Elements" and "Behavior of Metals" during his visits to schools. He's been in the program for two years.

Don R. Morrison, supervisor of Computer Mathematics Division, explains Boolean algebra and iterative processes in his talks. Don has been a member of the Visiting Scientist Program for the past year.

"How to Win in Nature's Casino" and "The Language of Chance" are the titles of talks presented by George P. Steck, supervisor of Statistical Research Division. George has been presenting talks for the past year.

William J. Zimmer of Statistical Research Division discusses "The Statisticians Role in Scientific Testing." He has been in the program three years.

A newcomer to the program is Art A. Key, a member of the Community Relations Division staff. Art will lecture on "Chemistry of Plastics."

Al Goodman specializes in lectures on physics. "All participants in the program are flexible," Al says, "and adapt their talks to the needs of the teacher who has invited us to speak. All of us welcome the opportunity to visit a school and enjoy being a part of science education."

Usually, when a visiting scientist travels to a school, he addresses several classes during a day. Most school systems in the State have been visited at least once by one of the Sandians in the program.

"On the personal side," Al says, "one of the greatest satisfactions of being part of the program is the collection of letters we accumulate. From these we get the feeling we have contributed much to the student's understanding of science."

Al recently spoke at the Melrose, New Mexico, Public Schools. One of the students wrote, "In our high school, as in any small high school I suppose, there is not much link with science and mathematics . . . I would like to thank you again for coming to our school and lecturing about physics. I have been interested in science since I was about 11 or 12 years old. . . . I have built a cloud chamber and plan to build a few other devices. . . . I would like to attend college at the University of Arizona or the University of New Mexico."

SANDIA LABORATORY'S Flag Football All Stars took the recent Intra-Base tournament the hard way. In the double elimination tournament, Sandia played five straight defeating Kirtland AFB 44-22, losing to Manzano Base 40-30, bouncing back to take Sandia Base 22-12, and moving on to the finals to beat Manzano two in a row—50-20 and 30-16. Standing at left is coach Don Lundergan. In the first row from left are Bob Henderson, Bill Saric, Terry Lubeck, Larry Ferree, Norris Rose, Phil Lopez, Pete Thoma, Cliff Kinabrew, and John Otts. Standing in the second row are Ron Martel, Bill Emrick, Carl Cron, Charles Salazar, Bob Gardner, John Robertson, Don Smith, Bob Dosch, and Joe Abbott.



IT WON'T BE LONG, before these chairs and tables are grouped in appropriate fashion in the recently-redecorated Tech Area cafeteria, Bldg. 839.

New Tech Area Cafeteria Enough to Make Lunch-Toters Change Habits

Brown bag lunch carriers will have to unite to fight the temptation offered by the new Tech Area cafeteria when it opens soon.

The bright, clean look of the recently redecorated facility in Bldg. 839 is enough to attract three-course lunch gourmet or soup sipper alike.

The entry hall on the north side of the building separates the table-savers from the food-grabbers. The previously long queue leading from the food counter has been eliminated by individual serving units placed throughout the serving area. Salads and other dishes tastiest when chilled are in one unit. Hot entrees, soup and vegetables are in another unit. Desserts are in a loca-

tion of their own, as are coffee and other beverages.

If you have in mind a tete-a-tete with a colleague or lunch with the whole gang, the dining area with its various sized tables and 240-person-capacity can accommodate you, you, and you.

Good food, same location, but stop by to check the difference!

Short Shop VE Course Given At WE Works

The "Short Shop" Value Engineering orientation developed at Sandia Corporation was presented last month at the Western Electric Indianapolis Works by Elmer L. Devor and W. F. Stinnett.

Both men are in Value Engineering, Cost Reduction and Supplier Evaluation Division and have given the "Short Shop" many times here to acquaint management personnel with the concepts and technology of value engineering procedures.

On Nov. 16 the orientation was given upper management levels of the Western Electric and Bell Telephone Laboratories group at Indianapolis; on Nov. 17 the presentation was for WE engineers and department heads.

AEC to Improve Bldg. 9920 Located at Coyote Test Field

Bids will be invited next week for a modification to Bldg. 9920 in Coyote Test Field, the Atomic Energy Commission has announced.

Bldg. 9920 is an explosive firing facility operated by Explosive Facility Division of Applied Physics Research Department. The modification project will include relocating air conditioning equipment, installation of 50 ft. of 12-in. underground conduit with concrete pit-type junction boxes, and other electrical modifications.

The air conditioning equipment will be relocated outside the building to make room for additional instrumentation used in the study of solids under high pressure shocks.

Bids will be invited from small business firms only. They will be opened about Dec. 30. Robert F. Armstrong is the Plant Engineering Department project engineer.

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LAB NEWS

DECEMBER 4, 1964



LEAGUE CHAMPS—The 1100-4200-AEC flag football team closed out the season with a record of eight won, two lost to take the Sandia league championship. In front are, from left, Gordon Cummings, Pete Thoma, Charles Salazar, Gary Lloyd, Charles Hills, Ray Dunaway, and Don Lundergan, coach. Standing in the second row are Leo Chavez, Olden Buchett, Carl Cron, Don Smith, Bob Dosch, Lou Brossard, Tom Towne, Joe Gallegos, and Frank Murray. Not shown are team members Joe Dal Porto and Phil Lopez.

ASME Member Jack Foster Advisor To Junior Engineering Tech Society

Livermore engineer Jack Foster is one of two advisors for the new chapter of the Junior Engineering Technological Society (JETS) recently organized at Livermore High School. The other advisor, Albert Ofiesk, teaches mathematics at the school.

Jack became involved with the JETS program as chairman of the Student Affairs Committee of the Mount Diablo Sub-section of the American Society of Mechanical Engineers. This local ASME organization voted to assist the JETS program in Livermore because of the lack of colleges in the immediate area where the Student Affairs Committee might fulfill its mission.

JETS was originally launched as an experimental project in 1950 by Michigan State University. Today this organization serves as a cooperative effort through which industry, technical societies, and educational institutions may work together to familiarize high school students with the fields of mechanical, aeronautical, and electrical engineering as well as the physical sciences.

Under this program the assistance and guidance of professional men, actively engaged in technical work, is combined in classroom activity with the guidance of high school instructors of science and mathematics. Student interest in technology and engineering is stimulated through actual technical projects provided as practical applications of principles learned in high school subjects. By personal acquaintance with these professional men the student receives a preview of technical vocations and can gauge his abilities against scholastic and personal requirements.

About 14 high school students presently form the Livermore JETS chapter, which meets each Wednesday during lunch. Members must be enrolled in a science program and maintain above-average grades.

Carl Earthman, Rich Genoni, James

Grady, and Gregory Pegan, all sons of Sandians, are members of the group.

Generally, two to four students work together with one advisor on a single project. Sophomore students may work on an additional long-term project that could carry them through their senior year.

Each project should have an application as a teaching aid in the school. For example, the proposed Millikan's oil-drop experiment (which determines the charge on the electron) will be used in conjunction with the chemistry department at Livermore High School.

Since membership in the group is increasing, Jack anticipates quite a need for additional engineering advisors, especially electrical and civil engineers.

The JETS chapter is new in Livermore but there are many which have been operating throughout the United States and foreign countries. Over 1100 chapters are affiliated with the national office.

Seventh VEEP Program Starts At Sandia Lab

Sandia's Value Engineering Division will present the Seventh Value Engineering Program (VEEP) beginning Dec. 7. The 44-hour workshop will have two weeks of training sessions in which participants in the program apply value engineering techniques to typical Sandia hardware or paperwork tasks.

So far, 196 Sandia Corporation employees and eight guests have participated in the program. The guests have been from Mound Laboratories, ACF Industries, Bendix Kansas City, and Field Command, Defense Atomic Support Agency.

In addition, there have been five brief sessions known as Short Shops. Attending these have been 246 supervisors from Sandia.

In the 44-hour workshop attendees are divided into teams. Each team tackles a specific problem with the aim of reducing costs without compromising reliability, quality, or safety.



BRIDGE CHAMPS—Top hands in the recent Laboratory-wide Team of Four duplicate bridge tournament are, from left, P. D. O'Brien, supervisor of Reactor Engineering and Operations Division; Dorothy Capes, secretary in Applied Nuclear Science Department; Patricia Waggoner, secretary in Industrial Photographics Division; and R. W. Mottern, supervisor of Climatic, Leak Measurement and Nondestructive Test Section. Twelve teams competed in the finals held at the Coronado Club.

Woman's Club-Operated Thrift Shop Gives Profits to Charitable Groups

The Sandia Base Thrift Shop offers the following information regarding sale of items.

Property is received by the Thrift Shop for sale primarily as a convenience to the seller and he is subject to terms and conditions in a contract which he must sign. Some of the more important conditions are:

The seller assumes all risks concerning damage or loss. Articles which have not been sold after 60 days and which the seller has not removed shall become the property of the Thrift Shop by donation. The seller may reduce the price of any article but not below 50 cents per item. Merchandise for sale must remain in the Thrift Shop a minimum of 15 days. Unsold property will be returned to the seller on the Thrift Shop premises only and he must return his copy of the contract. All donations and commissions received, less operating expenses, are used for charitable purposes.

Services of the Thrift Shop are available to Sandia Corporation employees either as a shopper or a seller. The shop, operated by the Sandia Base Woman's Club, is open Monday, Wednesday, and Friday from 11:30 a.m. to 3 p.m. It is located in Bldg. 319 just south of the Base Commissary.

The Thrift Shop has been designated

the collecting point for "Toys for Tots for Christmas 1964" sponsored by the U. S. Marine Corps Reserve. Donations of toys in good repair should be made there during shop hours.

Bridge Association Elects Officers for Coming Year

Ira Holt of Range Optics Division is the newly-elected president of the Sandia Laboratory Employees Bridge Association. Other officers include Joe Connell, Data Analysis and Statistical Development Division, vice president; Lucille Stewart, Environmental Research and Operations Department, secretary - treasurer; and George Arnot, Electronic Development Division, and Marvin Causey, Structural Analysis Division, members of the board of directors.

The Association, affiliated with the American Contract Bridge League, meets on the second Thursday of the month to play duplicate bridge. All Sandia employees and retired employees are eligible for membership in the Association.

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LAB NEWS

DECEMBER 4, 1964

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

- '57 FORD V8 Ranchwagon, 2-dr., 6-passenger, ST, one owner car. Hankins, 256-0712.
- FREE KITTENS: '57 Pontiac parts for sale. Tatum, 877-0997.
- '61 JEEP Stn. wagon, 6-cyl., fwd, R&H; Magnus chord organ; 30-06 Sporter, 4x scope, sling, recoil pad. Dick, 299-1146.
- 1/3 HP CRAFTSMAN sabre saw; girl's 20" bicycle; set car top racks. Calvery, 255-9545.
- 12" TRICYCLE, \$5. Allen, 256-3234.
- "WONDER" Hobby Horse, 26 1/2" saddle height, vinyl body, steel frame, \$18. O'Sullivan, 298-4171.
- '63 RAMBLER station wagon, model 770, AC, bucket seats, OD, \$2000. Jenkins, 2725 June NE, 299-6395.
- MAGAZINE STAND, black wrought-iron, \$5; 2 white shantung lamp shades, never used, \$5/pr.; Packard-Bell table radio, \$5. Newman, 256-3295.
- '63 20 HP Motorcycle, \$275; trumpet, \$90; accordion, \$20; sectional, \$30; end tables, \$5. McFall, 298-1552.
- CHILD'S 3 1/2' skis, bindings, poles, and size 11 boots; also size 2 boots, all used about 5 times. Kidd, 299-0035.
- '60 CHEVROLET station wagon, V8, 4-dr., 6-pass., R&H, Powerglide, Ramsey, 298-3433.
- DRAPES, new custom made, soft pattern on white, green predominating, three large pair. Williams, 256-6008.
- H.O. TRAIN SET, steam engine, several cars, board, track w/trestle and transformer, \$25. Sharp, 299-3745.
- BELLHAVEN, no qualifying, 3 & den, w/fireplace, courtyard garden w/waterfall, \$19,500, \$1180 or car to mortgage, assume Gl. Courtin, 299-9056.
- HOBBY HORSE: fireplace screen; electric metronome; new undrilled bowling ball; 10'x13' tent w/4'x8' zippered front; Coleman stove; 4 air mattresses. Marceau, 255-2343.

- '64 FLEETWOOD 10x50 2-bdr. mobile home. Kilmartin, 268-7887.
- CORRALES HOME on one acre, 3 fireplaces, 3-bdr., electric kitchen, coral, double garage, independent efficiency apt. Swiss, 898-2083.
- 6 FT. CAR TOP luggage rack, \$7; mahogany Danish modern bed frame, 3/4 size, \$10. Post, 298-0481.
- SKI BOOTS, Men's size 9D, used, \$5. Bruce, 299-2542.
- '59 FORD Galaxie-500, factory air protack; '55 Chevrolet 1/2-ton, 3-speed, new paint. Kelley, 255-2262.
- CHIHUAHUA, female chocolate brown w/white feet, 4 months old, \$20. Armstrong, 268-2124.
- WESTINGHOUSE automatic washer, large tub, deluxe model, \$35; tractor tricycle for young children, \$10. McIntire, 298-6145.
- CURRENT MODEL, dual manual spinet organ, \$400; pure bred German Shepherd, six weeks old, \$25. Minnear, 344-5419.
- TRUMPET, Besson, \$55; bunk beds, hard rock maple, \$50; 35 mm slide projector, \$10. Bell, 299-4643.
- ONE-WHEEL TRAILER w/box and hinged lid, hitches, licensed, \$60; Italian flute, good student model. Breitenbach, 268-7900.
- 7.65 MM MAUSER, partially sporterized, \$25; Lyman 310 reloading set for 7.65 mm or 308 Winchester, \$10. Peterson, 298-4097.
- 4-BDR., den, 2 extra rooms, 1 full bath, 2 half baths, walled, a/c, built-ins, 1750 sq. ft., \$500 down to new FHA loan. Couzin, 345-1589.
- GENUINE COWITCHIN INDIAN hand knit sweater from British Columbia. \$50. Flowers, 256-1656.
- STUDIO COUCH w/2 bolsters, sleeps two, w/corduroy slippers, coral shade, \$35. Richter, 299-0409.
- TOY POODLES, silver, 8 weeks old, \$75. Forster, 298-2373.
- '59 FORD, 4-dr. Galaxie, PB, PS, AT, \$625, will trade. Morgan, 256-7994.
- '52 HILLMAN MINX, 17,000 miles since overhaul, \$78. Lemmon, 255-2028.
- GARAGE SALE: bicycle, trailer, camping equipment, furniture, model airplane, clothes, etc. Dec. 4-6. Ward, 2909 Valencia NE, 256-9286.
- COTTON MATTRESS, standard double bed size, \$10; 2000-lb. capacity chain hoist, \$25. Eden, 298-5182.
- SKI BOOTS, lady's size 7, worn four times, \$5. Maglid, 268-7601.
- '53 BUICK Special, V-8 engine, AT, 2-dr. Kern, 265-1042.
- SPORT COAT, man's size 38 reg.; twin size bed, complete. DeLaPorte, 299-7256.
- GATELEG TABLE, maple; 2 ladderback chairs, \$40; Empire library table, mahogany, \$90; house, small office bldg. in Estancia. Ogden, 242-8351.

- WESTINGHOUSE electric roaster, \$20; Kirby upright vacuum cleaner, \$15. Kent, 256-1221.
- KENTUCKY percussion rifle; German Luger, \$75; pair Colt .22 derringers, cased, \$40. Smitha, 8607 Menaul, 299-1096.
- DELUXE UNIVERSAL Waste King portable dishwasher, \$95; special edition Glenn Miller album, carton never opened, \$20. Harley, 898-0594.
- EICO FM tuner, can be adapted to multiplex, \$15. Petersen, 299-3941.
- 24" SCHWINN girl's bicycle. Prutsman, 299-2555 after 3:30.
- MINIATURE POODLES, registered, six weeks old Dec. 23, silver. Loeper, 265-0472.
- SHOTGUN, 12 gauge Savage pump, \$45. Metzgar, 242-1028.
- PICKET FENCING, 400 linear ft. w/4x4 posts, 24" high when installed. Bertrand, 268-4191.
- HIDE-A-BED couch and chair, both need recovering. Wymer, 299-0717 after 5:30.
- PLAYPEN, \$8; training chair, \$2.50; walker, \$5; child's safety belt, \$2.50; maple coffee table, \$20; maple rocker, \$15. Jackson, 299-5996.
- CLOTHES LINE poles, one pair, \$12. Jones, 268-5236.
- HI FI, Heathkit 55 watt monophonic amplifier and preamp, never used, \$45. Wenz, 299-5488 after 6 p.m.
- '54 INTERNATIONAL pickup, 1/2 ton, \$350. Bishop, 265-4502.
- '52 CHEVROLET sedan, seat belts, \$125. Wright, 299-6458 after 5.
- 8" TABLE SAW with metal stand and 1/2 hp motor, \$65. Laskar, 299-1024.
- PORTABLE record player, RCA, 45 rpm, \$85 new, sell for \$35. Smythe, 247-9804 after 6.
- BENCH SAW, Sears 8", \$35; 26" girl's bicycle, J.C. Higgins, \$7; Hotpoint ironer, \$20; 50" mahogany buffet, \$35. Browning, 299-0169.
- SEMI-FORMAL, blue chiffon with lace top, sub teen 7, \$10; white satin evening slippers, 7-M, \$3. Dyckes, 299-7280.
- 21" TV, new picture tube, \$65; 2 boy's football uniforms, \$5 each; ice skates, \$5. Little, 255-7864.
- '58 BORGWARD, \$250. Troyer, 298-3092.
- ATLAS, Floor-Horiz. mill w/motor, power feed, swivel vise, arbor, dividing attach., \$450. Carey, 255-6154.
- LARGE HOME, more than \$1000 under appraisal, \$500 down, \$125 month. Ramshaw, 3200 Colorado NE, 256-3176.
- ELECTRO-VOICE Aristocrat speaker enclosure corner, folded horn, \$20. Corey, 299-5168.
- '64 DELUXE RCA Whirlpool washer and dryer, pink, \$290. Wadley, 298-8488 after 7.
- VALVOLINE 10W-30 motor oil with additive, 30c a quart or trade for Havoline 20; 230v electric plant, not operating, \$125. Aaron, 282-3124.

- BASENJI PUPS, AKC, perfect house dog and excellent hunters, no barking, no doggy odor. Weart, 298-0614.
- AUTOMATIC WASHER, 2 1/2 years old, Hamilton, \$50. Smith, 298-3113 after 5:30.
- BICYCLE, boy's 26", red with chrome fenders, \$16. Schreiner, 268-4159.
- PORTABLE DISHWASHER, Kenmore 400, 15 months old, \$75. Bagg, 298-1088.
- 30-30 WINCHESTER model 94, w/carrying case, \$55; RCA TV, 19", console, \$40; Wonder Horse, \$3. Durgin, 298-3581.
- COIL SPRING roll away double bed, \$20; portable steel laundry tub, \$10; Italian cord organ, \$65. Morgan, 299-2850.
- CUSTOM 3-bdr. and den home, near Sandia High, below FHA appraisal at \$21,800; 30.06 Remington 03 model military rifle, \$30. Campbell, 298-4446.
- 21 FT. STEEL TRUSS w/welded corner posts, excellent for patio roof support, \$40; lot, 65'x-135', El Vado Lake, \$100. Ballard, 299-5990 after 6.
- CUSTOM BRICK split level 4-bdr., 3 bath, two large recreation rooms, 3000 sq. ft., below appraisal, \$34,500. Haskins, 298-1997.
- SANTA FE Super Chief streamliner electric train set (American Flyer), w/transformer, \$25; trombone w/music stand, \$60. Gorney, 299-8901.
- '64 RAMBLER CLASSIC WAGON, large 6-cyl, AC, R&H, OD, positraction, twin stick, \$350 under book, will trade. Ingersoll, 268-8532.
- 14' GLASSPAR fiberglass speedboat, 40 HP electric starting motor, Gator heavy duty tilt-type trailer. Crowley, 299-8419.
- KITTENS, FREE, 7 weeks old, white w/some black or gray tricolor stripes. Wade, 299-2050.
- WARD'S 2-wheel trailer, '64 Childcraft, \$25. McReynolds, 418 Bryn Mawr SE, 255-2615.
- UPRIGHT PIANO, refinished oak. Elbert, 9006 Cordova NE, 298-2204.
- PORTABLE TV, 17", \$25. Toya, 125 El Pueblo Rd. NW, 898-0491.
- SMM MAUSER bolt action w/several rounds ammo, \$20. Barton, 298-1240.
- '64 DKW deluxe (Mercedes Benz product), owner attending university, \$200 and take over payments. Church, 242-7426.
- ADMIRAL PORTABLE STEREO w/45 spindle, \$25. Strausberg, 298-3221 after 5.
- 1 1/2 YR. OLD frame stucco, 1/2 acre, 3-bdr., 4' chain link fence, payments \$67/mo., Abbie Lane SW. Aragon, 877-4352.
- MATCHING GE washer and dryer. Shoemaker, 255-8820.
- '64 BUICK RIVIERA by original owner, all power, air, 9100 miles, like new, priced under NADA for quick sale. Henderson, 255-1941.

LOST AND FOUND

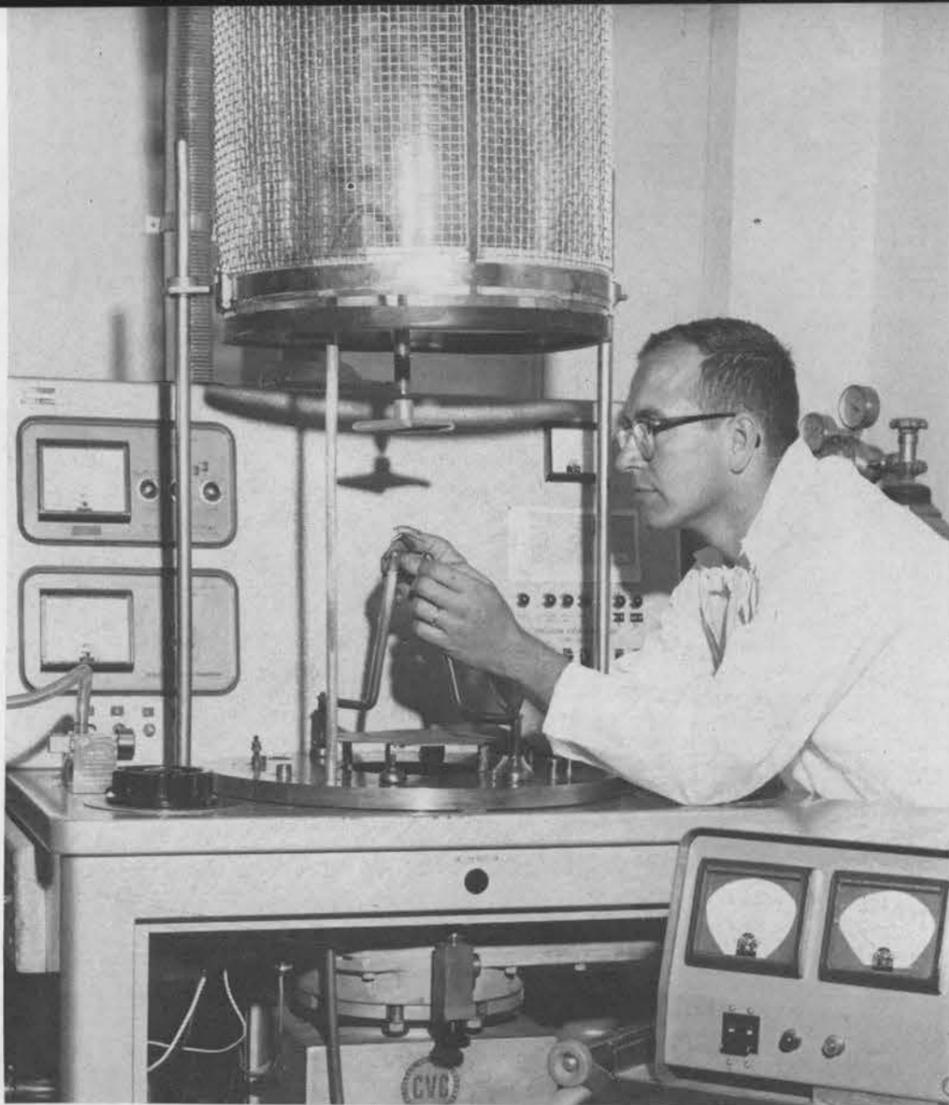
- LOST—Blue earmuffs, booklet Adult Life, lady's black pin, aquamarine ring, silver and turquoise cuff links, 6 keys on ring, 3 keys on chain, lady's sunglasses. LOST AND FOUND, tel 264-2757.
- FOUND—Lady's safety glasses, necklace, prescription glasses (clear), man's brown slippers, car keys in red plastic case, lady's black glove, car keys in black case. LOST AND FOUND, tel. 264-2757.

WANTED

- SHERWOOD Multiplex adaptor self-powered. Andreas, 255-3949.
- EICO 30 watt basic power amplifier or equivalent. Corey, 299-5168.
- RISE from University Blvd. NE to 806 parking lot. Holzhauser, 242-7131.
- RISE from Indian School Rd. and Eubank to Bldg. 802. Davies, 298-8043.
- VERSATILE Pro DeJura components. Scott, 298-1554.
- NEED sax and organ players for weekend work, modern music plus Rock and Roll. Polaco, 298-2851.
- WOMAN to share home, own bdr. and bath, kitchen privileges, garage. Stickie, 298-3017 after 5:30.
- WANT TO RENT completely furnished apt. approx. 4 months, responsible retired couple, prefer Winrock or Mossman area. Bear, 298-2744.
- TRADE: Florida lakefront home, furnished, for comparable house in Albuquerque. Gomel, 268-1263.
- USED ROCK POLISHER. Coffee, 299-5461.
- ENCYCLOPEDIA BRITANNICA. Floyd, 299-2419.
- CHILD CARE in my home, age 3-6. Wilburn, 4904 Burton SE, 268-4859.
- FEMALE ROOMMATE to share rent and utilities. Castillo, 268-0623 after 5.

FOR RENT

- MODERN FURNISHED insulated Sandia Mt. cottage, suitable for 1 or 2, water and butane paid, carport, \$45/mo. McMillin, 282-3226.
- FURNISHED APT., 1 bdr., large rooms, 3708 Arno NE, near Edith and Candelaria, \$60. Browne, 344-9675 after 5:30.
- DUPEX, 1 bdr., unfurnished w/stove, near Sandia Base, 417 Rhode Island SE. Saavedra, 268-6945.
- 3-BDR., 1 1/2 bath, LR, DR, attached garage, new carpeting, partially furnished, \$120/mo. Durgin, 298-3581.
- FURNISHED 3-bdr. house, nice SE location, near Bases, schools, shopping, bus, bachelors welcome, \$150/mo. Campbell, 256-1015.
- 3-BDR., 2 baths, dr. large utility room, garage, CFA heat, WB fireplace, walled yard, sprinklers, near public and parochial schools, close in NE. Meahl, 282-3681.



ION PLATING apparatus is readied by Don Mattox of Inorganic Materials Science Division. The process combines vacuum evaporation and ionized gas discharges to deposit thin films on a variety of substrates heretofore impossible with conventional techniques.

Ion Bombardment Cleans Surfaces For Deposition of Thin Films

"Ion Plating," a new technique for depositing thin films and coatings, has been developed by Don Mattox of Inorganic Materials Science Division. The process allows the deposition of adherent metallic coatings on a wide variety of materials. Many of these coatings give poor adherence to particular surfaces when deposited using conventional coating techniques.

In the ion plating process, the part to be coated is made the cathode of a high voltage circuit and is cleaned by ion bombardment from an inert gas discharge. When the surface has been cleaned by the ion bombardment, the film material to be deposited is then thermally evaporated from a filament which is the anode of the high voltage circuit. A portion of the evaporated film atoms is ionized in the gas discharge, then accelerated across the cathode dark space, where it strikes the surface of the part to be coated with a high energy.

This high energy deposition method affords a means of cleaning and coating the part in one step and confines the energy flux to the surface giving high surface temperatures which enhance chemical reaction and diffusion between the materials. This results in a more adherent coating than can be obtained using conventional techniques where the surface cleaning is a separate step and the film atoms arrive at the surface with low energies.

Using this process, it is possible to deposit adherent metal coatings on metallic substrates which are impossible to coat effectively using conventional techniques. Examples are the deposition of copper and gold on molybdenum, aluminum on steel, and uranium and gold and copper on aluminum.

"In a recent experimental application," Don says, "we deposited an aluminum coating on a uranium safety block for the Sandia Pulsed Reactor Facility. The coating is being evaluated for possible use as a corrosion-resistant coating for reactor components."

The technique is useful in applying electrodes to electronic components. It has been successfully used to deposit gold plating on experimental relay contacts, electrodes on ferroelectric ceramics, and electrodes on semiconducting materials.

The process can also be applied to the metallizing of ceramics where a metal coating is applied to the ceramic so parts may be brazed together. This is one of the few techniques which allows the ceramic to be metallized using a thin film of pure metal.

Since cleaning is inherent in the deposition process, the technique is simple to use and requires no special equipment other than that normally found in vacuum deposition facilities.

A patent application setting forth the

new process has been filed in the U.S. Patent Office by the Atomic Energy Commission.

Don has been engaged in thin film and coatings research since joining Sandia Laboratory in 1961. He earned his BS degree in 1953 and his MS degree in 1960 from the University of Kentucky. Between degrees, he spent four years in the U.S. Air Force as a meteorologist.

Don is the author of an article describing ion plating which appears in the current issue of *Electrochemical Technology* along with a cover picture. The process is further described in two Sandia publications "Film Deposition Using Accelerated Ions," SC-DR 281-63, and "Metallizing Ceramics Using a Gas Discharge," Sandia Corporation Reprint SC-R-64-1330.

Sandia Authors

Articles by Sandia authors appearing in technical journals include the following:

L. W. Rook of Development and Systems Division, "Evaluation of System Performance from Rank-Order Data," October issue, *Human Factors*.

A. T. Fromhold, Jr., of Electron Structure of Solids Division, "Kinetics of Oxide Film Growth on Metal Crystals III. Nonhomogeneous Field Approximations," October issue, *Journal of Physics and Chemistry of Solids*.

A. T. Fromhold, Jr., and Albert Narath, both of Physical Sciences Research Department, "Transient Nuclear Magnetic Resonance Study of the Conduction Band of Metallic Na_2WO_3 : ^{23}Na . Relaxation," Oct. 19 issue, *Physical Review*.

E. H. Beckner of Electro Physics Research Division and J. R. Banister of Molecular and Plasma Physics Research Department, "Interaction of a Plasma Stream with an Inhomogeneous Magnetic Field," November issue, *Physics of Fluids*.

E. S. Roth of Advanced Manufacturing Development Division, "Throw Away That Separate Go Gage!" November issue, *The Tool and Manufacturing Engineer*.

A. R. Sattler of Crystal Lattice Defects Division; H. W. Boyd of Vanderbilt University; J. H. Hamilton of Vanderbilt University and Instituut voor Kernfysisch Onderzoek, Amsterdam, Holland; and P. F. A. Goudsmit of Instituut voor Kernfysisch Onderzoek, "The Thermal-Neutron Capture Cross Section of ^{108}Cd and the Decay of $^{109}\text{Ag}^m$," Vol. 30, Pages 124-128, *Physica* (a technical journal of the Netherlands).

George Volda of Ancillary Equipment and Design Division, "Quality Characteristics of Military Cables," November

Sandia Service Awards

20 Years



Elizabeth F. Foley
4131
Dec. 7, 1944



Bennidetto J. Russo
3143
Dec. 16, 1944

15 Years



Joseph I. Hegge, Jr.
2564
Dec. 1, 1949



Leo White
1321
Dec. 5, 1949



Rosendo Lesperance
4514
Dec. 5, 1949



Reo T. Depew
1411
Dec. 7, 1949



James E. Robinson
4512
Dec. 14, 1949

10 Years

Ernest J. Ramirez 4623, George W. Buddrus 2124, Charles M. Griffin 2553, John A. Devensau 4361, Charles E. Alderman 4518, Henry K. Togami 7412, M. Margaret Platt 3126, Homer C. McIlroy, Jr. 3111, Louise D. Patterson 3411, Victor D. Schaeffer 4252, Richard E. Burken 4613, George W. Hosking 2122, Voris V. Hope 3126, Arthur L. Savage 2332, and Charles R. Cundiff 2332.

Welcome Newcomers

Nov. 16 - 27

Albuquerque	
Donald W. Cook	3413
Terry E. Demaree	3413
Laura S. Gustafson	4152
Kathryn W. Uren	3126
Patricia A. White	3126
New York	
Harry Gelman, Bronx	5122
Texas	
Paul E. Matson, San Antonio	1124

Sandia Employees Invited to Enter Bridge Tourney

The Sandia Laboratory Employees Bridge Association will participate in the National Industrial Recreational Association Bridge Tournament, according to Ira Holt, Association president. The local tourney will be conducted Jan. 14 at the Coronado Club.

Regional winners will win an expense-paid trip to Chicago to compete in the national playoffs. National winners will receive a two-week Caribbean cruise.

To enter the competition, contact O. J. Foster of Benefits and Services Division, Bldg. 610, for application forms. All Sandia employees and their immediate families are eligible to enter.

Sympathy

To Burl Alsup (4573) for the death of his mother in Amarillo, Tex., Nov. 15.

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LAB NEWS

DECEMBER 4, 1964

Sandia's Safety Scoreboard

Sandia Laboratory:

110 DAYS
4,015,000 MAN HOURS
WITHOUT A
DISABLING INJURY

Livermore Laboratory:

104 DAYS
528,230 MAN HOURS
WITHOUT A
DISABLING INJURY

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R. G. Hickman of Special Materials Division, Discussion of "Mass Transfer at Plane Plate Electrodes" by J. P. Elder and Gosta Wrangler," December issue, *Electrochemical Technology*.

D. C. Wallace of Crystal Physics Research Division, "Lattice Dynamics and Elasticity of Stressed Crystals," January issue, *Review of Modern Physics*.
William Van Dusen of Radiation Effects Division—Dielectrics and F. K. Truby of Plasmas and Kinetics Research Division, "Energy Migration in Y-Irradiated Crystalline Solids at 77°K," January issue, *Journal of American Chemical Society*.

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