

3,100 Visit Livermore Facilities During Family Day Open House

Family Day at the Livermore Laboratory drew 3,100 visitors last Saturday including employees and their families, Lawrence Radiation Laboratory employees, student groups, Livermore Valley residents, and members of the Bay Area press.

Guides and hostesses greeted the visitors and conducted them on tours through each of the five major laboratory buildings. In the Administration Building reception room hostesses greeted these visitors and handed them programs which included a welcome message from R. E. Poole, Vice President, Livermore Laboratory, plus a view of the tour route.

The guides took groups of about 15 visitors into the office and laboratory building.

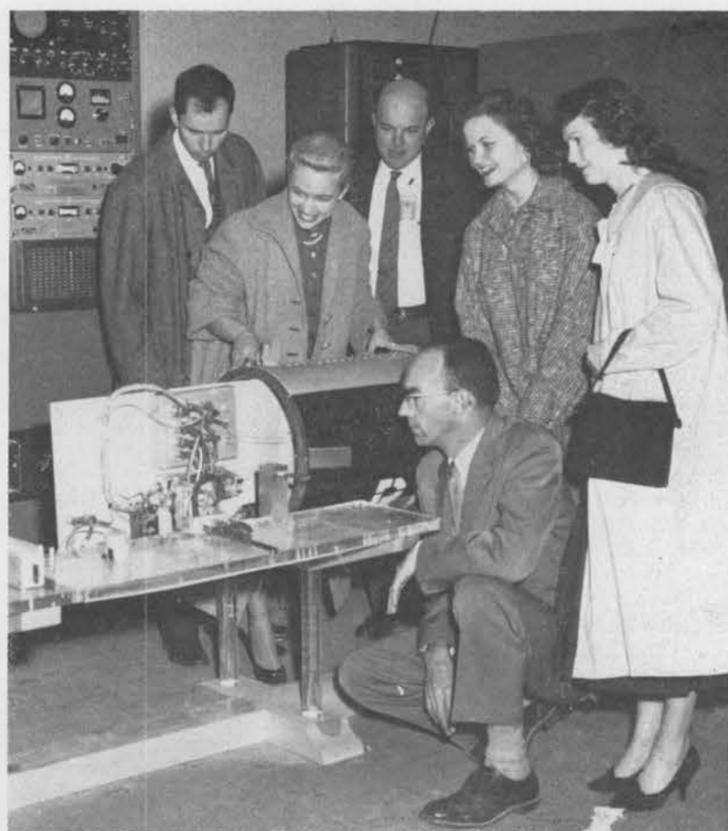
The route was marked in arrowed yellow tape, and three dimensional cartoons represented various functions along the way. Guides, who had rehearsed previously, carried their tour script on packs of cards, including a card detailing emergency procedures.

After seeing the office and laboratory areas, highlighted by an engineering display of unclassified components, busses took each group to the model shops. There visitors saw displays of telemetry systems, handling equipment, inspection and machine shop equipment, and the plastics laboratory with equipment in operation.

As part of the plastics display visitors were given turquoise-colored plastic letter openers made as they watched by an injection molding machine. The letter openers bore the Thunderbird symbol and the word "Sandia."

From the model shops the group toured the physical test building where they saw the quality assurance display used at the 1958 New Mexico State Fair exhibit. Laboratory and environmental test equipment were also displayed.

Busses then took the groups to their final stop at the warehouse where safety and plant equipment displays were set up. Here copies of a special issue of the Sandia Lab News, plus a Livermore Laboratory brochure, entitled "The Story of a Weapon," were distributed.



TELEMETRY DISPLAY at the Livermore Laboratory Family Day is examined by a group of employees touring the new facilities. From left, Frank Cupps (8233-1), Dolores Van Noy (8211-1), Phil Leiserson (8212-2) tour guide, Joan Tucker (8233-2), Caroline Johnson (8212-3), and Dick Ballard (8212-2). The tour was Feb. 14.



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Try This Electric Bill for Size - \$30,752 Monthly for Sandia Lab

If you opened your monthly electric bill and it read \$30,752 instead of \$6.30, the average bill for a residential customer, you'd be horrified!

But the \$30,752 doesn't represent the total bill for 4,881 homes in Albuquerque for a month, it's the electric power bill for Sandia Corporation for the month of November 1958. During the past year the bill has ranged from a top of \$39,460.70 in September to a low of \$29,134.11 last February. With figures like that it is easy to see why Sandia Laboratory is the largest customer in the entire system of the Public Service Company of New Mexico.

Originally Sandia Laboratory paid a percentage of the overall power supplied Sandia Base; however in recent years the billings have been based on actual metered usage. Either way the bill is figured at the reduced rate for large power users.

As Sandia Corporation expands the demand for power increases. At the present time buildings 840 and 860 are the heaviest power users due to the heavy machinery in those areas, but heavy power capabilities are also required by certain special test facilities. The centrifuge, in Area III, for instance, must be served by a separate substation.

Electric lights alone account for about 40 per cent of the bill. D. D. Knott, supervisor of the Electrical Design Section, estimates there must be 13,000 to 14,000 light fixtures within Sandia Laboratory. Eighty-five per cent of these are of the fluorescent type which provides more light for less power.

Flicking a light switch "off" when the light is not in use is a way in which every employee can do his part to help conserve electricity and save money.

Power is not limitless. A new sub-station to be located west of Bldg. 803 is in the design stage, but until it is in operation it would be possible for Tech Area I to run short of power if there were a sharp increase in demand, according to Mr. Knott.



HIGH VOLTAGE photographic spotlights surround Richard Reed (4562). Lighting costs alone account for about 40 per cent of Sandia Corporation's power bill, which averages \$30,000 monthly.

R. A. Bice to Give Welcoming Talk to Engineers Convention

A number of Sandia Corporation engineers will attend the 13th annual state convention of the New Mexico Section of the National Society of Professional Engineers to be held Feb. 27 and 28 at the Alvarado Hotel.

Presiding at a dinner meeting on Friday, Feb. 27, will be A. Burton Metzger, Sandia Corporation Safety Department Manager. City Commissioner Richard A. Bice (5200) will give the welcoming address, and Tom Popejoy, President of the University of New Mexico, will be the speaker. Albuquerque Chapter of the NSPE, which is serving as host for the convention, expects more than 500 engineers and their wives from all sections of the state to attend the two-day gathering.

Display booths around the lobby of the Alvarado Hotel will be maintained by various New Mexico companies during the meeting. Some of the latest products and procedures available to the engineering profession also will be demonstrated.

Theme of the conference is the same as National Engineers' Week, "Engineering for the Age of Space," a salute to the contributions made by the engineering profession toward the conquest of space. Registration will be in progress from 9 a.m. until noon Friday in the Alvarado Hotel lobby. The first special event will be a field trip at 1:30 p.m. to Sandia Corporation's test area and solar furnace.

A special meeting on "Engineering for the Age of Space" will be held at 10 a.m. Saturday in the hotel dining room. Guest speaker will be Lt. Col. Bernard W. Marshner, Deputy Director of Advanced Technology, Air Force Missile Center, Holloman Air Force Base.

Kirtland Speaker

A "Men Only" luncheon will be held at noon Saturday. Dr. Eric H. Wank, head of Structures Research, Kirtland AFB, will speak on "Survival from Atomic Attack Through Structural Design."

For the ladies a luncheon and style show are planned at 1:30 p.m. at the Robin Hood Inn.

Following the Saturday afternoon business meetings, the annual banquet and ball will be held. Governor John Burroughs will be the special guest speaker at the 1959 banquet. After the presenta-

W. R. James Appointed WE Co. Superintendent, Purchasing, Plans

W. R. "Bob" James (4310) has been appointed Superintendent of Purchasing and Planning, Western Electric Company Headquarters, New York, effective April 1.

Mr. James has been Assistant Purchasing Agent, Electrical and Sandia Apparatus, since he transferred to Sandia Corporation in March 1956.

His service with the Western Electric Company began in May 1942 when he was hired as a methods analyst with the Methods organization, New York. He was with the Purchasing organization before transferring to Sandia Corporation.

An alumnus of Dickinson College, Carlisle, Pa., Mr. James was with Bankers Trust Company and National Cash Register Company in New York before becoming associated with Western Electric.



W. R. "Bob" James

J. M. Campbell Retirement March 1 Ends 42-Year WE Company Career

A Western Electric career, dating back to 1917, will end March 1 with the retirement of J. M. Campbell, presently Superintendent of Accounting and Assistant Secretary for Sandia Corporation.

He had worked at the Hawthorne Works, Kearny Works, and in New York City, where he was chief auditor before transferring to Sandia Corporation last May.

During his years of employment

in the East Mr. and Mrs. Campbell made numerous vacation trips to Florida and they have tentatively decided to settle in Lees-



J. M. Campbell
—retiring March 1—

burg, a citrus fruit growing community 30 miles northwest of Orlando. There Mr. Campbell can easily participate in his favorite sports—fishing and golf. Their new address is 101 N. Chester St., Leesburg.

The couple has a son in Chicago and a daughter in Massachusetts and five grandchildren, "one just born this month," Mr. Campbell noted.

tion of state and chapter awards and the installation of new state officers, the Grand Ball will conclude the convention.

Editorial Engineering for the Age of Space

Engineering knowledge and skill has helped mankind move forward through the ages. From the "ingeniators" of the Middle Ages to the highly proficient engineers of today these men have by their labors helped make a better life for man.

In this year of 1959, the engineer, hand in hand with other men of science, is taking American industry into the age of space. He is working on the frontiers of knowledge and, as he progresses, man's vistas of understanding will move forward another step — this time into the vast areas of investigation beyond the planet Earth.

Engineering for the age of space is the keynote of National Engineers' Week this year. Throughout the nation industry is participating in the observance of this week using the theme that engineers are bringing man across the threshold of his greatest adventure.

Each year the nation salutes the members of his profession during the week of George Washington's birthday. The observance is recognized by the President of the United States, state governors and municipal officials. Recognition will be given this week to the practicing engineers and also to the engineers of future years. The young man in college, the youth in the grade school and the engineers yet to be born are saluted for their choice of profession.

As in the past, engineers are serving their countries and mankind well. Engineers of the years to come will carry on this tradition.



THUNDERBIRD SYMBOL made an impression on Erma Campbell's (4333-2) uncle during a glimpse of Sandia Laboratory on a recent visit to Albuquerque. After his return to Harrisburg, Pa., he got busy with plastic and jig saw and turned out mementos of his visit.

The Case of Mysterious Flat Tires Baffles New Volkswagen Owner

This is the story of a 330 mile auto trip that was uneventful—but it should have been the opposite.

Ann Barrett (5240) bought her first automobile, a Volkswagen, in Flagstaff, Ariz., about two weeks ago and a friend helped her drive it back to Albuquerque. During a dinner stop one of the tires seemed to be going flat so they had some air put in it. They got home without further incident.

The next day, Sunday, the tire was flat. Ann left it for the time being but Monday morning there were two flat tires. The garage

checked the tires and found nothing wrong with them.

Thursday morning the other two tires were flat! Ann was ready to give her Volkswagen back to the Germans.

Another session at the garage determined the trouble. Her car had tube-type tires on it, but someone had forgotten to put tubes in them.



SNOW AND COLD weather can blow away as far as Marylyn Reed (4621) is concerned. She's ready for spring so she can rake away debris and start planting.

card by Feb. 28.

Mrs. Thomas Pace, president of the Sanado Club, has announced that Mrs. James McRae has been presented a life-long membership in the Sanado Club for her efforts in founding the club.

Palkovics Adopt Son

When a TWA plane landed in Albuquerque Jan. 29, Jan (formerly of 4131) and Fred Palkovic (4511) were at the airport to meet their adopted son, just arrived from his native Italy.

Little Kenneth Michael is two and a half years old, blond with blue-green eyes and a wonderful smile.

The Palkovics say the youngster has made fine progress in orienting himself and has picked up several English words already. They've also learned a few Italian words in the process.

New Homes

Jim (8121-2) and Eloise Perry (8232-2) bought a new home recently at 1253 Carnell Way, Livermore.

Getting settled in their new residence are Larry J. Bowen (4254-1) and his family at 11105 Prospect NE.

Organization 4743-2 has two members talking about the decisions required by new home owners. Mr. and Mrs. Alvin Beezley have moved to 1012 Kentucky SE and Ned Barnes is now at home at 204 General Bradley NE.

Another new home owner is Troy Wideman, whose address is now 324 Moon St. NE.

Get Well Wishes

Friends of Jim South (4224-2) wish him a speedy recovery from his recent major surgery.

Get well wishes are extended for A. J. Kent and R. R. Petrini (both 4232).

Also on the sick list is Ernest Gurule (2223). His friends and co-workers wish him a speedy recovery.

Time Marches On...

Ed Harley (5311) and T. W. Strome (2531) were quite surprised to see their names on the editorial page of the *Albuquerque Journal* on Feb. 11. The newspaper's "20 Years Ago" column noted that the two had been made Eagle Scouts on Feb. 11, 1939.

Boating Anyone?

Anyone interested in forming a boating and water sports club is urged to contact Roger Rice (4253), ext. 44233 to help in forming an organization. With summer just around the corner, Roger hopes to get the club rolling soon.

Lapidary Club Meets March 2

Offering both beginners and experienced lapidarists an opportunity to further their knowledge and interest in the art of cutting and polishing gem materials, the newly organized Lapidary Club is looking for new members.

The club will be meeting Monday, March 2, at 7:30 p.m. in Bldg. 301. A cordial invitation is extended all interested Sandians and AEC employees to attend, Ancil Hines (AEC), temporary chairman, reports.

Weddings and Engagements

Thomas T. Burnett and his bride, the former Winifred Russell, are at home in Albuquerque following their marriage last month in Santa Fe.

Winifred has worked for Sandia Corporation (4725) since last April.



Mrs. Burnett Sigrid Nissen

Sigrid Nissen has set March 27 for her marriage to Terry McCain of Sandia Base. The ceremony will be at 7:30 p.m. at the Highland Church.

Sigrid is in organization 2562-3 and has been at Sandia Corporation four and one-half years.



Mr. and Mrs. John Lucas

John Lucas (8114-1) and Karen Lammerts were married at Our Savior's Lutheran Church in Livermore on Jan. 31.

After a family reception, the young couple left for a week's honeymoon in Southern California. They are making their home at 434 Junction Ave., Livermore.

John rejoined Sandia last fall after working a year and a half for a contractor at Eniwetok. He formerly was in 7412-2.

Committee of Sandians Helping to Organize Livermore Elks Lodge

George Mincks (8221-1) has been named chairman of a six-man committee formed to contact people in the Livermore Laboratory interested in organizing a Livermore-Pleasanton area Elks Lodge. Other committee members are: John Bryson (8223-1), Jesse Floyd (8222-2), Hugh Odell (8123-2), Mike Lettrich (8211-2) and Chandler Smith (8211-1). Plans call for the installation of a new lodge by the end of March.

Congratulations

Born to:

Mr. and Mrs. B. L. Cafferty (5521) a daughter, Colleen Cay, on Jan. 30.

Mr. and Mrs. Thomas L. Bolz (4411) a daughter, Karen Ann, on Jan. 14

Mr. and Mrs. G. S. Kinoshita (1264-2) a daughter, Carolyn Jane, on Feb. 7.

Mr. and Mrs. Al Schwarz (1464-3) a daughter, Carol Sue, on Feb. 10.

Mr. and Mrs. Adolfo Sanchez (4233-1) a son, Anthony, on Feb. 4.

Mr. and Mrs. Donald M. Johnson (8115-1) a daughter, Jean Ann, on Feb. 1.

Mr. and Mrs. Ferd F. Thome (8224-1) a son, James Patrick, on Feb. 1.

Mr. and Mrs. Mark P. Forster (4221-2) a son, Mark Paul, on Feb. 12.

Mr. and Mrs. Malcolm H. Woodward (1614-2) a daughter, Linda Jan, on Jan. 11.

Mr. and Mrs. Donald McFall (1611-1) a son, Allan Timothy, on Feb. 2.

Sympathy

To Nora O'Neill (4000) for the deaths of her father on Jan. 15 in Ireland and her aunt Jan. 27 in Albuquerque.

To Hildegard Fink (4566-3) for the death of her mother-in-law in Cincinnati, O., recently.

To R. A. Quelle (4621) for the death of his sister Feb. 12 in Nebraska.

To Woodrow Hammons, Sandia Laboratory insurance counsellor at Livermore, on the death of his daughter in an auto accident on Feb. 10.



Bobbie Porterfield (4764)

Take a Memo, Please

Here is an easy formula for anyone to remember: a safe employee's greatest need is twice the caution and half the speed. Perhaps equally important is an awareness of safety hazards.

Earns Masters Degree

Victor G. Pappas (4621) has recently been awarded a Master's degree in industrial management from Western Reserve University, Cleveland.

"Vic" received his Bachelor's degree in industrial administration from the University of Kentucky in January 1951. Before coming to work for Sandia Corporation two years ago he completed all except three credit-hours of graduate course work by attending night school in Cleveland. The remaining course he attended at the University of New Mexico and he also wrote his thesis here.

New CPA

Congratulations are extended to Alan A. Rosner (4152-3) who became a Certified Public Accountant this month after passing the strict tests. He has been with the Corporation since last November.

Bob Nelson Speech Winner

The Sandia Toastmasters Club 765 held their annual speech contest on Feb. 12 with Bob Nelson (4421) chosen the winner.

He competed against Art Redlinger (2713-3), Nate Wineberg (2543) and Fred Boop of Albuquerque.

The winner will participate in the area contest on March 7 against other outstanding speakers from 10 Albuquerque Toastmaster clubs.

Rebel Riders Hold Horse Show

South Valley Rebel Riders will hold their first horse show and Gymkhana on Sunday, March 8 at 1 p.m. The event will be held at their new grounds on Route 85, opposite Snow's Adobe Acres.

Post entries will be accepted, according to Betty Tatum (4961), a participant in the show. Members and non-members are welcome. For further information contact Betty at CH 2-9021.

Welcome Back

Earle Paxton, Jr. (8233-2) was welcomed back to work by friends recently. He had been hospitalized for several months. He returned Feb. 9 which was the anniversary of his fifth year of service. Art Eiffert (8230) presented him with Sandia Corporation's five year service pin.



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Supervisory Appointments

WILLIAM A. JENKINS to supervisor of the Publications and Public Relations Section 8233-1, Information and Publications Division, Livermore Laboratory.



"Bill" joined Sandia in 1951 and for three years was associate editor of the Sandia Lab News. In 1954 he became a reporter for the Nashville Tennessean and a year later joined the Pensacola, Fla., News-Journal, operating a two-county news bureau.

In 1956 Bill returned to Sandia to rewrite the Corporation drafting manual. In 1958 he was transferred to the Livermore Laboratory information and publications organization.

Before coming to Sandia Corporation Bill worked for over a year as a reporter on the Bergen Evening Record, Hackensack, N. J. He received a Bachelor's degree in journalism from Tulane University.

Bill is a veteran of two years army service, including a stint as Berlin correspondent for Stars and Stripes.

He is a member of Sigma Delta Chi, national professional journalism society, and the Northern California Industrial Editors Association.

Welcome Newcomers

Feb. 2-13

Albuquerque		
N. Bernice Baymaker	4333	
*Richard L. Chapman	4152	
David J. Chavez	1612	
*Wallis L. Daily	4725	
Jerry F. Knight	4233	
Frank W. Scheer	4541	
Arizona		
Roy E. Diesing, Tucson	1210	
Stuart B. Over, Tucson	4962	
California		
Margi G. Balas, San Leandro	8161-3	
Helene R. Patlovich, Livermore	8221-1	
Herbert A. Zenger, Danville	8212-4	
Joyce A. Moore, Concord	8212-3	
Darlene M. Martinell, Livermore	8212-3	
Theodore A. Robinson, Martinez	8223-1	
Jessie L. Berry, Hayward	8223-1	
Illinois		
David H. Anderson, Urbana	5132	
Jack W. Puariea, Urbana	1400	
Massachusetts		
Thomas J. Tisch, Cambridge	5143	
Michigan		
Robert E. Ledbetter, Ann Arbor	4152	
Henry DeRuyver, Berrien Springs	4253	
Nebraska		
James Jacobs, Lincoln	1225	
New Mexico		
Harold L. Sherwood, Socorro	4233	
Oklahoma		
Ronald D. Snidow, Dewey	4224	
Tennessee		
Steven P. Koczan, Oak Ridge	8142-2	
Texas		
Jarrell D. Pruitt, College Station	1245	
John T. Williams, Austin	5323	
Frank K. Truby, San Antonio	5150	
Washington		
Harry W. Jacobs, Seattle	1613	
* Denotes rehired		
Returned from Leave		
Edward G. Paboucek, Albuquerque	4411	
John E. Tarpley, Albuquerque	2544	
Thomas L. Bills, Albuquerque	1284	
Faye C. Hole, Albuquerque	4413	
Thomas H. Kutzley, Albuquerque	4413	
Doris M. Furry, Albuquerque	5512	

ESQUIPULO BACA to supervisor of the Reproduction Section 8232-2, Reproduction, Mail and Records Division, Livermore Laboratory.



"Skip" joined Sandia in 1948 and worked in motion picture photography, primarily at the West Lab, until he was transferred to Livermore last August. Until his promotion he worked in the Livermore Laboratory Test Department.

Before coming to Sandia, Skip operated his own commercial photo studio in Las Vegas, N. M., for two years. Previously he served seven years in the Air Force as an aerial photographer.

Skip studied civil engineering for two years at the University of New Mexico. He is a member of the Society of Motion Picture and Television Engineers.

ERNEST E. ALFORD to supervisor of the newly-organized Electronics and Plastics Section 8223-3, Model Shop and Inspection Division, Livermore Laboratory.



"Ernie" came to Sandia in 1949, working a year and a half in the motor pool, then four years in the electrical fabrication shop. Before he was transferred to Livermore in 1956, Ernie worked two and a half years in an engineering project division. Since his transfer he has worked in full-scale testing and on telemetry systems.

Ernie studied electrical engineering for two years at the University of New Mexico and a year at Creighton University and is now studying electronics at San Jose State College night school.

He is a veteran of two years service in the Air Force.

Victim of Circumstances

Several Sandians were aboard a flight which was turned back to San Francisco Monday afternoon as the result of a "bomb" scare. The plane was met at the airport by a crash truck, demolition squad, and other emergency equipment. Passengers were interrogated individually as baggage was examined and the plane was searched from stem to stern.

The Sandian who had the most talking to do was an engineer carrying in his brief case several experimental detonator cables, unclassified and harmless. The plane and passengers finally left San Francisco four hours later, with no bomb or prankster located.

LURL S. OSTRANDER to supervisor of the Physical Security Section 8231-1, Security Division, Livermore Laboratory.



Lurl joined the Livermore Laboratory in November 1957 and has since worked in the security organization and as a technical department service representative.

Previously he worked about a year and a half with the Lawrence Radiation Laboratory, first as office manager in personnel and later, on the business office staff. Before that Lurl was an F.B.I. agent for four and a half years. From 1948-51 he was an elementary school teacher.

Lurl received his Bachelor's degree in geology from Fresno State College in 1948 and is a veteran of three years with the U. S. Marine Corps.

Alfred Amato Elected New President of Office Workers Union

Alfred Amato (4742) is the newly elected president of the Office Employees International Union, Local 251. Stanley Eastman (4211) is vice president and Josephine Norwood (5513) is secretary-treasurer.

Elected Trustees of the Local were James Talley (4793), Timothy Regan (4741) and Arturo Pino (4743).

American Legion Has Openings for Drummers, Buglers

Like to toot a bugle or bang a drum? The Drum and Bugle Corps of the American Legion Hugh A. Carlisle Post 13 has a few vacancies for qualified persons.

Five Sandia Corporation employees are already members of this group, one of the oldest continuous drum and bugle corps in the country.

The corps meets every Thursday at 8 p.m. in the Legion hall at Lomas and Mountain Road and year's activities include all expense paid trips to conventions. Last year they went to Artesia and Chicago, this year the group will go to Farmington and Minneapolis. All instruments and uniforms are furnished.

Further information may be obtained from any of the Sandia members or from the Legion post.



OPERATION FIREBALL, a non-nuclear test equivalent to 7000 pounds of TNT, made quite a bang in Coyote Canyon on Feb. 10, but was not felt or heard off-site. The shot was part of a series to study the pattern of earth stress waves traveling through the ground. The information will be needed in planning for tests of the Plowshare and Gnome type. Here Charles Reed (5223) checks his watch as the countdown begins at an observation point two miles from the site. At right is William W. Peters (4773).



MINIATURE MUSHROOM blossoms as non-nuclear test shot is fired at Coyote Canyon. In preparation for the shot a pit 100 feet long was dug, the rocks removed, and the pit backfilled after pressure gauges were placed in a carefully arranged pattern. Results will show character of shockwave forces moving through the ground.



TOPPING OUT, the cloud towers over the Manzanos, but there will be no "fallout" because it is a non-nuclear test, set off in Sandia's Backyard Bikini to provide information to be used in planning peaceful applications of nuclear blasts, such as mining and harbor work. The work is performed under the direction of D. G. Palmer (5112), with cooperation of many Sandia groups.

Sandia Authors Invited to Submit Papers for Radar Return Symposium

A radar return symposium will be held at the University of New Mexico, sponsored by the Naval Ordnance Test Station, China Lake, Calif., on May 11-12. Papers dealing with radar return from ground and water targets will be presented. Subjects having application to radar altimeters are to receive special emphasis.

The sessions for May 11 will contain papers that are unclassified and are open to all interested in the field of radar return. Classified sessions requiring a clearance of Secret will be held on May 12. The meetings will be held in Johnson Gymnasium.

Authors are invited to submit, on or before March 1, titles and a 100-150 word abstract of paper for presentation at the symposium. Papers should be prepared in duplicate, and if unclassified, mailed to F. J. Janza, Symposium Coor-

dinator, E. E. Dept., University of New Mexico, Albuquerque. Otherwise, make arrangements for classified papers with H. L. Walker, UNM Director of Research, Box 4036, Albuquerque.

Unless otherwise specified by the authors, all papers presented or received, and considered pertinent to the problem area, will be published in an unclassified Radar Return Symposium Report. These reports will be available to all participants immediately after publication. Papers must be received not later than May 12 and should include author's name and address.

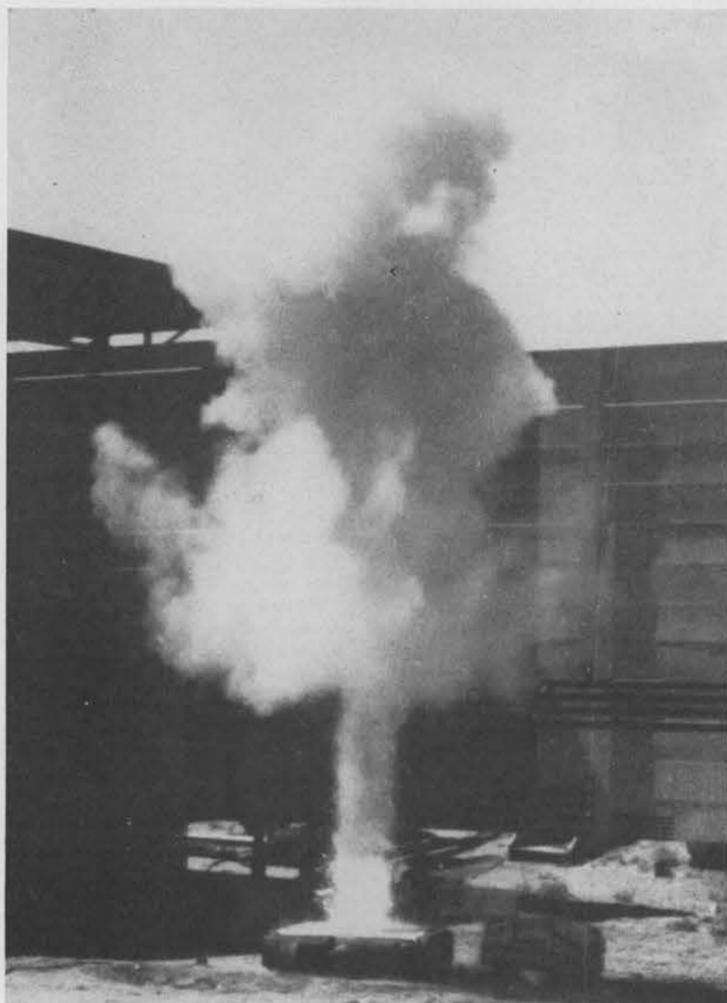
Topic areas that are of interest for this symposium are Theoretical Analysis of Radar Returns, Measurement Methods, Results of Measurements, Data Reduction and Applications to Systems Design and Analysis.



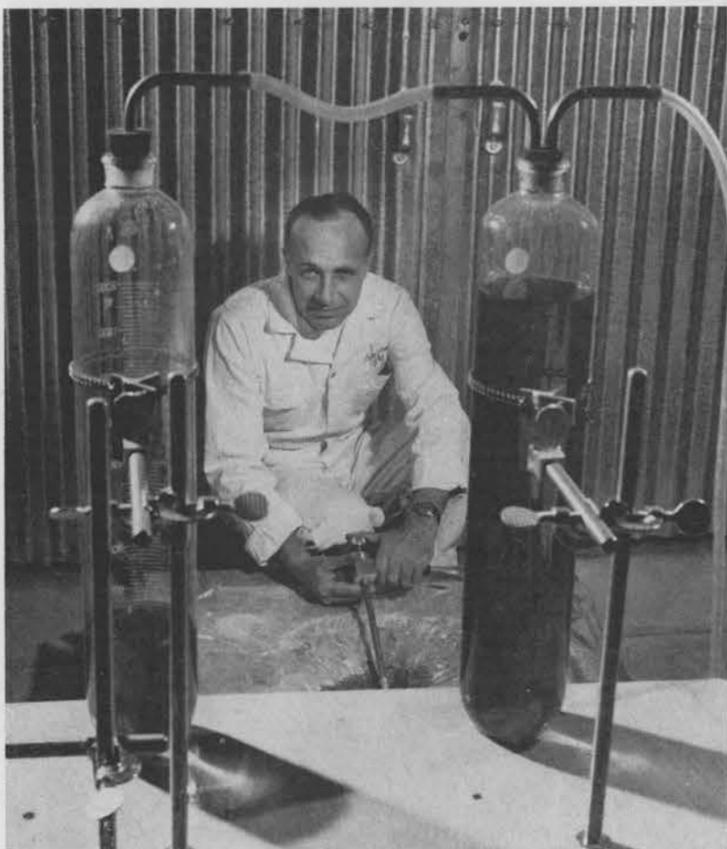
DRUM AND BUGLE CORPS members include these Sandians: (L to R) C. E. Foster (2555), Mike

Zownir (4252), Leroy Petersen (4510), Travis Bogue (now retired from Sandia), and Sol Chavez (4512).

Minute HE Shots Pave Way For Nuclear Earth Moving Projects



MINIATURE BLAST assumes the familiar shape of a mushroom cloud as a half-ounce charge of high explosive is exploded in Area III. The laboratory-scaled model blast is one of the series in an exploratory study to determine cratering effects of explosions.



MEASURING MINIATURE CRATERS, Earle Anderson uses a separatory funnel apparatus to precisely measure the volume at various levels in both the "apparent" and "true" model craters.



PHYSICAL DIMENSIONS of the model crater are carefully measured by M. R. Zimmerman. Results of the research study may have applications in the Plowshare program, peaceful atomic energy uses.

Miniature half-ounce charges of high explosive detonated in Area III may someday help determine the size and placement of nuclear explosives utilized for earth moving projects.

The project is being conducted by the Physical Research Department 5130. It is aimed at studying the results of small scale buried explosions to provide a "yardstick" for determining beforehand what will happen when a nuclear device is detonated under comparable conditions.

The study is expected to show what happens when the devices are exploded in patterns and in sequence.

Ray Reed and Warren Taylor of the Applied Sciences Division 5131 are conducting the experiments in a recently completed laboratory in Area III. The facility allows close control of the small explosions and provides a wind-break so that "fallback" from an explosion can be carefully observed.

The research team is particularly interested in the size and shape of craters produced in many materials and in the particles which fall back into the crater. Crater size and volume is carefully measured after each test. High speed cameras, which can take more than 10,000 pictures per second, record each blast.

Various Materials

When the project is completed, experiments will have been performed on materials having a wide range of properties ranging from semi-liquidity to extreme hardness. Results of these model experiments will be used to gain insight into the process of earth moving by large yield explosives and will help in the prediction of probable results of a nuclear blast in any given type of soil or terrain.

The little spheres of high explosive — smaller than a golf ball — are imbedded in blocks of various materials. Currently the group is using plaster that is carefully mixed and poured to yield desired strength and density characteristics. The plaster is poured in a form and allowed to harden, then a sphere is inserted into a hole cast in the block. It is then tamped with another pouring of the same plaster.

When the HE is exploded, the "apparent" crater is measured. This is the hole blasted out of the material that contains broken bits of shattered material as it has fallen after the blast.

When the debris is cleared from the hole, the "true" crater is uncovered. This too is carefully



RECORDING INSTRUMENTS used in the miniature blast experiments are checked by Warren Taylor (left) and Ray Reed, who have been assigned to head the research project.

measured. The method of measurement for volume is to place a piece of plastic film into the crater and pour in liquid. When the liquid is measured at successive levels, the volume and contour of the crater is revealed.

Craters Vary

In hard material, the crater formed by the blast is much different from a crater blasted in sand. The sand crater is a smooth sided symmetrical hole while the crater in hard material is formed with an irregular "shelf" near the top and abruptly changing circular dimensions.

The half ounce charges of HE have only four ten-billionths of the explosive force of the World War II atomic bomb. "The scaling laws involved when such miniature blasts are projected to multi-kiloton size are not yet completely understood," Ray Reed says. "But important information — what happens when a measured burst of energy is released suddenly in a material of known strength and characteristics — can be accurately recorded, leading to improved understanding." All of the factors that influence the resulting crater (such as size of the charge and its rate of energy release, depth of placement, properties of the crater material, and in the case of multiple charges, the timing sequence and geometry of placement) can then be related to the crater dimensions.

This information, correlated

with known blast effects from nuclear explosions, will be invaluable in the planning for digging harbors and canals or moving mountains with nuclear devices.

"Our work is of a basic nature, however," Ray says, "and the information should prove useful in many areas for years to come."

The work of the group can some day aid such peacetime uses of nuclear explosives as the proposed digging of a harbor in the region of Kotzebue, Alaska, as contemplated under Project Plowshare. Tests have already been conducted on craters blown in frozen sand, similar to the permafrost of Alaska, and in other materials of strengths and characteristics similar to Alaskan rock.

ASM Members Honor Wives, Past Chairmen At Dinner Tonight

Albuquerque Chapter of the American Society for Metals will hold a combined Ladies and Past Chairman's Night at the Sandia Base Officers Club tonight at 6:30.

R. W. Henderson, Vice President, Development, will speak on "Your Atomic Powered Future" following dinner. This is a semi-technical talk on where we stand now in regard to conventional fuel supplies, and what part atomic fuels will play in the future.

Douglas Ballard (2541) will be awarded a certificate in recognition of his services as Chairman of the Albuquerque Chapter of ASM during the past year.

Dancing will be from 9 p.m. to 12 to the music of Nato Hernandez.

For dinner reservations call Don Adolphson (1621), ext. 42250.

Accountants Found Local Association

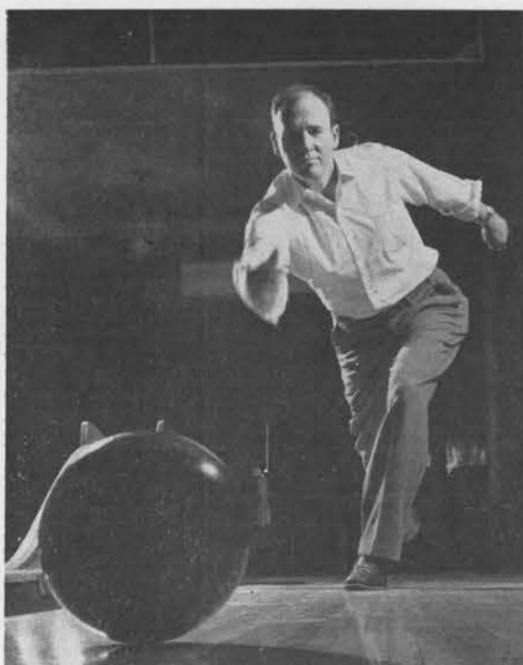
Albuquerque members of the National Association of Accountants were recently officially recognized as an organized group.

According to Byron Garriston (4171), vice chairman, the current membership of the Albuquerque chapter includes 38 persons actively engaged in the accounting field.

The NAA seeks to keep its members aware of constantly changing methods and techniques through education and self-improvement. Services offered by the organization are aimed at helping the accountant contribute constructively toward the progress of business through potential expansion and forward planning.



STRENGTH AND CHARACTERISTICS of the materials in which the miniature craters are exploded are carefully plotted by Nancy Feight, above. She is shown mixing the samples which will be used as a guide when actually pouring the blasting blocks.



ALL EVENTS WINNER, Andy Blaine (2232), won the title for his performance in singles, doubles, and team events during the recent Coronado Club Bowling Tournament. He scored 1,818 pins.



SINGLES CHAMPION of the recent Coronado Club Bowling Tournament is Al Kapling (4332) shown above. Al bowled the high series in singles competition and scored a high total of 676 pins.



ABLE DIRECTOR of the Coronado Club Bowling Tournament is Tom Cook (AEC) who earned the praise of Club members for getting American Bowling Congress sanction for the tourney. Here he displays some of the trophies presented winners of the tournament.

Sherwood Machines Colloquium Subject For Feb. 25 Meeting

Dr. Hugh Karr, Los Alamos Scientific Laboratory, will present "A Review of Sherwood Machines" at a meeting of the Sandia Corporation Research Colloquium Wednesday, Feb. 25. Tickets will be required to attend.

On Mar. 4, the Colloquium will present a tape recording of a talk by Dr. John Foster, Lawrence Radiation Laboratory, Livermore, Calif., entitled "Small Weapons Development." The talk was first presented at a Sandia Colloquium meeting last January. It is a Sigma II meeting and requires tickets to attend.

Both meetings will begin at 9:30 a.m. in the basement conference room of Bldg. 802, according to Craig Hudson (5111), Colloquium chairman.

Sandia Players Open 'My Three Angels' at Little Theatre Tonight

"My Three Angels" will be presented by the Sandia Players tonight and tomorrow night and Feb. 27 and 28 at 8 p.m. at the Sandia Little Theatre.

A three-act comedy by Sam and Bella Spewack, the play is about three convicts who escape from prison on Devil's Island and their subsequent adventures while in hiding.

Lola Jamme (wife of L. W. Jamme, 4412) plays the part of Madame Parole in the play. On the production end will be Myron Vale (2722), who is assisting with lights and sound.

Nat'l Tennis Stars To Play Matches at Johnson Gym Feb. 24

Tennis fans are looking forward to a repeat appearance of Jack Kramer's pro tennis tour on Feb. 24 at 7:30 p.m., Johnson Gymnasium.

The attraction is sponsored by the University of New Mexico and the Tennis Club of Albuquerque, which has nearly 20 Sandia Corporation employees among its active members.

Making their appearance this year will be: Pancho Gonzales, defending his world championship title for the fifth year; Lew Hoad, former Wimbledon and Australian Davis Cup star; Ashley Cooper, winner of the 1958 Australian, Wimbledon and U. S. Singles championship, and Mal Anderson, former U. S. Singles Champion and member of the Australian Davis Cup team.

Tournament play in Los Angeles on Feb. 23 will determine the pairings for the Albuquerque matches, according to H. S. "Hupp" Wallis (5331), Tennis Club director.

Tickets are available at sporting goods stores and at Johnson Gym on the 24th and are priced at \$2 for general admission, \$3 for reserved seats and 90 cents for students and military.



DOUBLES WINNER of the Coronado Club Bowling Tournament total their score of 1,208 pins in the series. Left is G. W. Krause (2532) and J. R. Reese (2553), is pictured at the right.

Movie Schedule

The Sandia Corporation noon hour movie schedule for the coming two weeks is:

Feb. 24-27—Movie "A" is "All My Sons" with Edward G. Robinson and Burt Lancaster. Movie "B" is "Joe Dakota" starring Jack Mahoney and Barbara Lawrence.

March 3-6—Movie "A" is "Free for All" with Robert Cummings and Ann Blyth. Movie "B" is "My Man Godfrey" starring David Niven and June Allyson.

All these movies are full length features and are shown in two parts starting at 12:05. Movie "A" will be shown in room B-6 of Bldg. 802 on Tuesdays and Wednesdays and in Bldg. 849 on Thursdays and Fridays. The schedule for Movie "B" is the reverse.

Final Basketball Standings

Team	Won	Lost
2400-I	12	1
2500	11	2
4100	11	2
7400	11	2
5100	8	5
5200	8	5
5500	8	5
1600-I	6	7
1400	5	8
1200	4	9
2400-II	3	10
2700	3	10
2100	1	12
1600-II	0	13

Individual High Scorers

Name	Team	Avg. Points Game
Ken Flynn	5500	30.1
Fred Millsap	5200	26.1
Louis Sanders	2400-I	19.9
Frank Comiskey	4100	19.7
John Vick	1200	19.1



"Of course I want it today. If I wanted it tomorrow, I'd give it to you tomorrow . . ."



TOP TEAM in the Coronado Bowling Tournament pose here with their trophies. In the first row are Fred Johnson (4112), Ed Wood (5251), team captain, and Gresham Downs (1414). In the second row are Henry Mays (2633) and E. R. "Dick" Clark (5513), who is Coronado Club Bowling Director.



A NEW SERVICE, traveler's checks for those traveling on Corporation business, or for vacation-bound employees, has been established at Livermore in 8213. Teller Karl Tucker (8213-1) is instructing Wanda Shult (8213-2) on how to properly fill out the checks, while Connie Garber (8212-3) waits to take the instruction.

20 Shop Employees Honored For Perfect Attendance Records

R. J. Hansen, Director of Development Shops (4200), recently wrote letters of commendation to 20 employees in his organization in recognition of their perfect attendance.

Two of these employees were neither late nor absent on any scheduled work day for periods of five years or more, and these men received personal congratulations from F. J. Given, Vice President Administration. Harold W. MacGregor (4224-2) has a record of perfect attendance for six years. William E. Myers (4221-1) was

commended for five years' perfect attendance.

The following persons received letters for two consecutive years, 1957 and 1958: Edward P. Darnell (4254-2), Vern N. Sowards (4254-1), and Jesse W. Williams (4253-1).

Commendation letters for one year were given: Guy E. Sanders (4212-1), Gordon E. Cheek (4221-2), James Dickie (4221-2), George A. Dupre (4224-2), George Mancuso (4221-2), Joseph Murphy (4221-1).

Robert A. Stewart (4224-2), Wanda M. Stevenson (4233-2), Jesse E. Harness, Jr., (4231-2), Estill R. Wood (4231-3), Merritt D. Hummer (4231-1), Robert F. Carleton (4231), Walter L. Kurlfink (4252-1), Albert F. Miller (4251-1), and Theodore E. Neubauer (4253-2).

Klipschorn Inventor To Speak at Audio Group Meeting Feb. 27

Paul Klipsch, inventor of the Klipschorn loud speaker, will discuss latest sound reproduction techniques at a meeting of the Institute of Radio Engineers Professional Group on Audio at the Kirtland Officers Club lounge on Feb. 27 at 8 p.m.

Considered one of the foremost authorities on exponential loud speaker systems, Mr. Klipsch has written a number of technical articles on the subject.

During the meeting, he will demonstrate his new 3-channel stereo system using 2-channel tapes. Any interested persons are welcome to attend.

Maximum Monthly Deposit for Savings Set by Credit Union

The Sandia Laboratory Federal Credit Union will limit deposits to a maximum of \$350 per month beginning March 1, the Board of Directors announced this week.

The new ruling will apply to dependency accounts as well as individual accounts. However, a husband and wife who are both members of the Credit Union may each deposit the maximum amount.

The new ruling becomes necessary, the Directors report, with the share accounts growing more rapidly than the rate of growth for loans and thus creating a danger of lowering the dividend rate.

J. R. Townsend Heads American Standards Ass'n

J. R. Townsend, formerly Sandia's Director of Materials Standards, took office this month as president of the American Standards Association. The organization is the national coordinating body and clearing house for voluntary engineering, industrial, safety and consumer standards in the U.S.

Mr. Townsend left Sandia in 1957 to become Special Assistant in the Office of the Assistant Secretary of Defense for Research and Engineering. He is Materials Consultant for the Bell Telephone Laboratories.

Sandians Help Cub Pack 182 Observe National Scout Week

Observing National Scout Week recently were members of Cub Scout Pack 182, who attended their annual Blue and Gold banquet at the Coronado Club.

The troop is part of the Sandia District of the Kit Carson Council.

Wilson Maglidt (4110) gave a talk on "Everyday Citizenship" to the scouts and their guests. D. D. "Dolly" Dollahon (4112) presided over the banquet.

Engineer Key Man in Sandia Job Of Nuclear Weapons Ordnance

The business of Sandia Corporation is ordnance engineering of nuclear weapons. This makes the engineer the key man in our scheme of things. Sandia has other important functions—research, manufacturing engineering, military liaison and training, reliability development, quality assurance and surveillance, but in these activities, too, the engineer is a key man.

It is appropriate, as the nation observes Engineer's Week, Feb. 22-29, that we take a look at what engineers do at Sandia Laboratory.

Development, both component and systems development, is the largest single engineering activity and this is where the primary job of the Corporation is performed. From the nuclear explosive device developed by either Los Alamos Scientific Laboratory or the Ernest O. Lawrence Radiation Laboratory at Livermore, Corporation engineers design and develop a reliable and deliverable weapon.

The weapon takes various shapes and forms depending on the military requirement. Weapons are designed to drop from aircraft, to be the payload of a va-

riety of missiles, or to be shot from cannons.

Project groups of engineers tackle hundreds of details and solve a thousand problems. Their skill converts ideas into physical reality.

The development engineers create the ideas, draw the plans and write the specifications.

Test engineers and material engineers run the prototypes through a torture chamber of environmental testing to make sure that they meet the specifications and fulfill the requirements. Field Test engineers take the devices and prove them under field conditions.

Manufacturing engineers and industrial engineers design the production tools, follow the hundreds of components through manufacturing plants throughout the country, watching methods, trouble shooting, constantly aiming for quality and economy in production.

Field Engineers of the military liaison organization monitor the stockpile, work with the military organizations, and evaluate performance of weapons in the hands of the military forces.

Sandia electrical engineers work in fundamental and applied re-

search, weapon systems engineering and component development. They are involved in standards engineering, quality assurance and surveillance activities. Environmental testing is a major field for electrical engineers as well as field testing and manufacturing engineering. Electrical engineers also work in the important area of military liaison and field engineering and reliability development.

The mechanical engineer at Sandia is also an important man in the same areas of Corporation activities as well as in design of nuclear weapons handling equipment.

Another man at Sandia performing important work in the development of nuclear weapons is the aeronautical or aerodynamics engineer. He is versatile both in research and development. Ballistic shapes, compatibility of weapon and aircraft or missiles, and trajectories are his special areas.

Chemical engineers, plant engineers and industrial engineers, safety engineers plus the trained engineer who devotes his ability to writing detailed information reports all contribute their talents to the Corporation's business.

At Sandia the engineer is a key man.

Two Employees Give Paper Before American Physical Society

F. O. Lane, Jr., and W. J. Byatt of the Full Scale Effects Division 5111 are co-authors of a paper delivered before the recent meeting of the American Physical Society in Los Angeles.

Title of the paper is "On the Radial Eigenfunctions and Asymptotic Phase Shifts of Electrons Scattered by Hartree Potentials."

The paper described the elastic scattering of electrons from various atoms with principle interest focused on nitrogen and oxygen. Calculations were performed on the analog computer operated by the Test Data Department 5240. Involved was the solution of the Schroedinger wave equation for the electrons moving in a Hartree-type potential field.

The results will be of value in computing scattering and momentum transfer cross sections as well as in determining the diffusion coefficient of electrons in air.

UNM Classes Instructed by Eight Sandians

Eight Sandians are teaching parttime at the University of New Mexico the Spring Semester, one for the first time.

Tim C. Preston (1592) is teaching a Trigonometry class. He received his BS from the University of New Hampshire and his Master's from the University of Michigan. He then returned to New Hampshire where he taught Mathematics. At Sandia Laboratory he has taught a course in Statistics for engineers in the 1000 organization. Tim has been here since June, 1952, except for a 9 months absence in 1956.

Other Sandians and the courses they are teaching are: Rudyard Goode (2514), Business Statistics; Stoughton Bell II (5122), Applied Advanced Calculus; Floyd Forsythe (5242), a combined course of Analytic Geometry Calculus; Douglas Gragg (1454), Astronomy I.

Richard Hildner (5122), Analytic Geometry Calculus, combined course; Howard Wicke (5126), Applied Advanced Calculus, and Phil Mead (4723), Business and Professional Speech.

Judson Ford (AEC) will be teaching a Government course, Administration Process. This is the first regular class he has instructed although he has been a visiting lecturer and conducted seminars at UNM.



Dr. Stuart B. Over
—New Physician in Clinical Division—

Dr. Stuart Over New Physician in Clinical Division

Dr. Stuart B. Over, newly arrived to Sandia's Clinical Division of the Medical Organization 4900, is an old hand at industrial medicine.

An internal medicine specialist, Dr. Over's career for the past 10 years has been in industrial medicine. He served several industrial firms in Tucson, Ariz., in addition to his private practice, for five years prior to joining Sandia.

From 1948 through 1954 he held a staff physician position with the American Cynamid Co. in Pittsburgh, Pa. During 1946-48 he was in private practice in Williamsport, Pa.

Prior to this he was an assistant to an internal medicine specialist in Chicago and spent the preceding year as an industrial physician with the Alabama Ordnance Works in Childersburg, Ala.

Dr. Over graduated in 1941 from Jefferson Medical College in Philadelphia, Pa., and interned at the Williamsport General Hospital.

Sandialiers Need Ten New Members

The Sandialiers, a mixed chorus group, have started rehearsing for their new musical which will be presented this spring.

Composed of singers from Sandia Corporation, AEC and military personnel from both Sandia and Manzano Bases, the group has about 20 members in it.

Rex Elder (1472), the director, would like to have about 30 persons in the chorus, and invites anyone interested in singing to meet with them.

Matt Ungerman Retiring From Sandia Feb. 28

Sandia Corporation will lose one of its most enthusiastic boosters when Matthew Ungerman retires Feb. 28.



M. P. Ungerman

He was hired July 1951 as a janitor but a few months later joined Stores Division 2223, where he has remained.

For the past eight years "Matt" and his wife have been in charge of the Christmas displays and decorations in front of the Administration Building.

Matt is also well-known for being one of the founding members of the Junior Chamber of Commerce which has grown from a small group of men in St. Louis in 1919 to more than 3,400 chapters throughout the United States.

As for retirement plans Matt says, "After working for 55 years the first two months I'm going to just take it easy—take the kinks out. Then I want to plant a garden and study botany and biology."

Next fall the Ungermans plan to visit their son in California but they'll continue to make their home in Albuquerque at 6500 Co-chiti SE.

Funeral Services For Jose Anaya

Funeral services were held Feb. 14 for Jose C. Anaya, who had been a janitor at Sandia Corporation for eight years.

A native of Albuquerque, Mr.



Jose Anaya

Anaya died Feb. 12 at a local hospital. He had been on sick leave since Jan. 5.

Survivors include his widow, seven children, 26 grandchildren, 23 great-grandchildren, two brothers and a sister. One grandson, John Martinez (2243-2), is also employed at Sandia.



Sandia Corporation Has Worked
16 Days
Without a Disabling Injury

HERE'S WHY...

Sandia employees know that caution is not cowardly and carelessness is not courage. Only the foolhardy neglect the rules of safety and tempt the hand of fate. Safety rules are known at Sandia and safety equipment is used—thus employees are safer on the job than in their own homes.

Service Awards

10 Year Pins



Leslie L. Cole
4231
Feb. 21, 1949

Julian C. Moody
1651
Feb. 23, 1949



Andrew J. Max
5253
March 1, 1949

John Kirby, Jr.
5534
March 2, 1949

Five Year Pins

Feb. 21-Mar. 6

Robert L. Boyles 4842, Lewis C. Pearl 4842, Charles R. Freund 2711, P. L. Vandelinder 5126, Johnnie P. Harlow 4842, Wilson M. Payne 1613, James C. Farmer 4513, George W. Revels 2711, Melquiades Sanchez 2232. Nathan W. Eytcheson 4224, Raymond C. Knight 4412, Roger S. Rhodes 1264, Walter A. R. Schmersh 4153, Walter W. Walker 1613 R. H. Wickersham 5416. Paul A. Begin 4511, Carl W. Manuagh 4254 Beverly O. Strauch 4411, Jack M. Houston 5332, Victor J. Roh 1264, Joyce D. Coffus 4321.

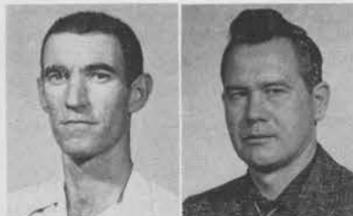
Two Year Certificates

Feb. 21-27

B. Tom Fox 4141, Wanda M. Stevenson 4233, Jeanette B. Passmore 4431, T. June Santiago 4135, Ruth B. Barrett 2731, Marie M. Conrad 4623, Wilda M. Ward 4761. Orrin T. Caudill 1614, Jimmy Schaefer 1473, Donald D. Baker 1217, Richard J. Dye 4543, Charles F. Kyger 2541, S. L. Gonzales 4261. Raymond Garcia 4762, Helen M. Pipher 4623, Ira H. Patterson 4574, Elbert L. Paine 8123, Mary Barala 4623, G. C. Steinhauer 8111, Wesley B. Estill 1622, Robert M. Jefferson 1626, Aurelio R. Teta 2711.

Feb. 28-Mar. 6

Eunice A. Cope 5422, J. F. McManus, Jr. 8114, Clarence W. Karls 8115, E. A. Dietrich 8212, Loyd E. Kelley 4152, R. F. Turnbough 4254, Bruno D. Navalesi 4153, C. P. Thomson, Jr. 4511, James S. Zappas 4111, Rudy Lucero 2241. Hugh W. Church 5111, Frank A. Delnick 4412, G. Robert Sharp 4541, Bruce Wilcox 1231, Antonia M. Garcia 2525, Irma Ann Mack 4411, Frank A. Ross 2551, Vester L. Harker 4411, Esther L. Stevenson 4131. Ralph R. Hamilton 4842, Edgar E. Davignon 4762, Joseph R. Doyle 1218, Loris L. Fox 4651, Elaine H. Aidikonis 2541, Barbara A. Ilig 4142, Margaret B. Burgess 4131, Prospero E. Armijo 2711, Howard M. Wilkerson 2514. Richard H. Miner 2554, John J. Blomberg 4413, Wilma R. Ash 4153, Ruth J. Cesarz 4623, Juan J. Gallegos 4574, Mary Ann Perkins 4343, Wilbur E. Boyd 1474, Marcia L. Morgan 8231.



Wayne C. McCrory
5533
Feb. 24, 1949

Alfred T. Aldrich
1247
Feb. 25, 1949



Salome Ramos
4514
March 2, 1949

Andres Sanchez
2233
March 2, 1949



William B. Fears
5513
March 3, 1949

Jose Jajola
4513
March 3, 1949

Archery Club Meets Mar. 5, New Members Invited to Attend

Persons interested in archery—men, women as well as juniors—are invited to the monthly meeting March 5 of the Sandia Archers Club.

The meeting will be held at 7 p. m. in the clubroom on the third floor of Bldg. 361 on Base.

According to Bob Skeleton, the program will include a discussion of small game hunting and bow fishing, films, and displays of archery equipment. For further information Bob may be reached at ext. 22113.

Promotions

Tom C. Garcia (2711) to Inspector
Troy L. Wideman, Jr. (2721) to Inspector
Charles W. Horvath (4732) to Property Clerk
Kathleen R. Morgan (4411) to Draftsman
Bob O. Wood (5426) to Technical Assistant
Ralph M. Johnson (8221) to Staff Asst.—Tech.
Hugh R. Bowers (1613) to Staff Asst.—Tech.
George Banos (4152) to Staff Member—Adm.
A. Villegas, Jr. (4574) to Janitor
Cid H. Dalin, Jr. (4562) to Pressman
Alfredo Pena (4562) to Pressman
Rocco S. Natoli (2711) to Layout Operator
Joseph B. Flanagan (4564) to Camera Operator
V. N. Sullivan (4721) to Library Asst.
Mary L. Carter (4725) to Steno-Clerk
Jeanne M. Luhn (4725) to Secretarial Typist
Shirley A. Dean (4725) to Secretarial Steno.
Jane R. Smith (4725) to Secretarial Typist
Patricia J. Miller (5512) to Message Center
Equip. Optr.
Doris L. Willard (4135) to Accounting Clerk
James L. Talley (4742) to Order Analyst
Charles F. Newman (4142) to Tab. Analyst
Frank A. Maestas (8224) to Utility Operator
Barbara A. Cardoza (8212) to Typist
Mary A. Clay (8212) to Secretarial Typist
Ramona K. Rothe (8212) to Typist
Grace L. Matuska (8212) to Employment Clerk
Elaine L. Clough (8212) to Secretarial Steno.
Margaret M. Morgan (8233) to Typist
Barbara J. Reeder (4725) to Secretary
George W. Perkins (8234) to Order Analyst
Robert Chappel (8234) to Staff Asst.—Tech.
Dewey B. Farmer (2562) to Staff Member—
Administrative
Esther G. Floth (8212) to Secretarial Typist
Flossie G. McCoy (4900) to Secretary
(Adm. & Tech.)
John P. Gallagher (8232) to Senior Clerk
James C. Mashburn (2555) to Staff Asst.—
Technical
W. Schuessler (5531) to Staff Asst.—Technical
Dale O. Cook (8141) to Staff Asst.—Technical
Mack M. Marrs (4231) to Technician
Lois A. Winfrey (2532) to Typist Clerk
Dolores C. Chavez (4151) to Accounting Clerk
Maxine N. Pierce (4572) to Secretarial Typist
Glorya J. Maginnis (4362) to Purchase Service
Clerk
Arthur C. Finlayson (2562) to Property Clerk
Robert G. Fugner (2562) to Property Clerk
Marlene S. Dunaway (5241) to Data Reduction
Clerk
Robert T. Tuffnell (4153) to Investigator
Dorothy Harrington (4561) to Librarian
Horace Lucero (5141) to Laboratory Asst.
Lateral Supervisory Transfers
L. A. Shope from 1455-1 to 1413-1
A. Dillingham from 1225-2 to 1263-4
H. R. Shilton from 5524-2 to 5522-2
J. M. Ralls from 5522-1 to 5524-2
J. H. Teresi from 5522-2 to 5522-1
G. J. Felzman from 4362-1 to 4361-2
T. J. Jorgensen from 4362-2 to 4361-4
D. M. Lucas from 4361-3 to 4362-1
G. L. Hildebrandt from 2550 to 2540
W. C. Kraft from 2540 to 2550
T. M. Bozone, Jr., from 5421-1 to 5521-2
R. D. Staller from 5254 to 5241
W. V. Hereford from 5241 to 5254
R. W. Male from 5254-1 to 5255-1
L. E. Aragon from 4711 to 4171
J. L. Hickey from 4161 to 4516
J. J. Ransom from 4515-2 to 4516-2
H. C. Redding from 4132 to 4152
J. P. Mahoney from 4572 to 2227
B. J. Hillard from 4151-1 to 4172-1
H. V. Catt from 4121 to 6021
W. E. Prekker from 6021 to 4121
U. M. Karpen from 4571 to 2226



INDUSTRIAL HYGIENE chemistry demonstration was one of several shown to visiting high school students during Edison Day at Sandia Feb. 11. Here Bob Elsbrock (4961-1), right, describes to a group of Rio Grande High School students a device used in sampling air for toxic materials. More than 100 students visited Sandia.

Sandia All-Stars Chosen; To Play Military March 5

Fifteen Sandia All-Star basketball players have been named by the league to play the Sandia Base Military All-Stars in a game scheduled March 5. Action will take place in the Base Gym beginning at 8:15. Admission is free.

Fielding a strong team, the Sandia Military All-Stars have racked up an impressive record against Albuquerque teams and other military teams in the area.

Sandia hopes are pinned on league high-point men Ken Flynn (5521) and Fred Millsap (5241), who have consistently averaged 30 points a game in Sandia Corporation league play.

Other Corporation All-Stars and the teams they represent are as follows: Tom Patterson (4100), Jim Tichenor (5100), John Vick (1200), Julian Lovato (7400), Clyde Hughes (7400), Ron Smith (2500).

Ron Zottnick (2500), Verle Swinney (7400), Len Kracko (1600-1), Carl Duimstra (1400), Frank Comiskey (4100), Louis Sanders (2400-1) and Werner Jones (2400-1).

Merrill Gentry Retiring Today

Retirement today for Merrill E. Gentry, after 10 and one-half years at Sandia Laboratory, means that at last he will have time to follow all his hobbies and special interests.

He is a receiving clerk in Handling and Delivery Section 2243-2.

There will be visits with relatives in Colorado and Kansas, tours of scenic spots, then Mr. Gentry figures it will be time to plant vegetables and his flower garden.

He is presently superintendent of the adult department of the Fruit Ave. Baptist Church and intends to continue with church work. However, there will also be time for fishing, pitching horseshoes and maybe an occasional game of ping pong.

Mr. and Mrs. Gentry and their daughter, Marilyn, live at 2717 Monk Court NW.



Merrill Gentry

SHOPPING CENTER

CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday.

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.

FOR SALE

CLOTHES LINE poles, 2, T-shape, four 30 ft. wire lines \$10. Hann, AX 9-4216, 8406 Haines NE.
26" BICYCLE, boy's Schwinn racer, 3-speed shift, hand brakes, thorn-proof tires, luggage carrier, terms available, \$45. Kubiak, AL 6-1513.
SPINDRY WASHER, Easy, make offer. Wideman, 324 Moon NE after 5:30.
ELECTRIC FAN, Westinghouse, used 1 week, 24" diameter, \$35. Reinertsen, AL 5-1954 after 5:30.
STOVE, refrigerator, and dining room set. Kaspar, ext. 46297.
'56 VOLKSWAGEN deluxe sedan, sun roof, radio, \$1395, terms. Reed, AX 9-7425, 9637 Morrow Rd. NE.
DERRINGER, .22 caliber, new \$20; Liama .380 automatic, \$25; Colt .38 special police positive revolver, \$30. Donaldson, ext. 45240 noon hour only.
DINING ROOM SET, dark walnut, three extra leaves w/protective pads, six chairs buffet w/mirror, \$125. Campbell, CH 3-8803, 1208 Roma NE.
'57 FORD Fairlane 500 Fordor Sedan w/ Fordomatic, will take older model as trade-in, \$1820, can be seen at 1213 Kentucky NE. Takahashi, AL 6-0743.
10" TV, Emerson table model, needs working over, Schematic supplied if wanted, make an offer. Hogue, AX 9-1807.
'56 CHEVROLET, 210, six, power glide, R&H, original owner, 26,000 miles, two-tone, ivory and green. Rolloson, AL 6-1259, 4215 Marquette NE.
DUNCAN PHYFE mahogany dining table, \$15. Anderson, AL 6-4728.
GAS RANGE, 36", 2 years old, moving and will sell to highest bid. Strawderman, AX 9-6733.
GAS RANGE, 36" Magic Chef, clean, \$20. Risse, AX 9-5002.
DOUBLE BED, Hollywood, box spring and mattress, little used. Fox, AL 6-2606.

14 FT. KAYAK, Lac du Nord, complete w/1 h.p. outboard Styrofoam flotation and car top carrier, \$150. Rice, AX 9-1261, call Tuesday, Feb. 24 after 1 p.m.
HOUSE TRAILER, Silverdome, 40' Deluxe Model 54. Robinson, DI 4-7792.
17" TV, table model. Kross, AL 6-0223.
TWO ACRES w/cabin in Manzano Mts., will trade for boat and motor or will sell for \$1500. Meyer, AX 9-4341 or AX 9-0837.
TRAILER HITCH, Equalizer, w/attachments, \$45. Payne, AM 8-3184.
SEWING MACHINE, Portable Singer w/ carrying case, \$35. McNeely, AL 6-2553, 1516 Alvarado NE.
PARAKEET CAGE, all chrome stand, \$12. Mancuso, AX 9-4279, 2513 Wisconsin NE.
2 BDRM HOME, 1 1/2 baths, dining room, den, central heat, air conditioning, fireplace, walled, pitched roof, 2-car garage. Strome, AL 6-3469, 4004 Hannett NE.
24" BICYCLE, boys, 17". Wemple, 3045 33rd Pl., ext. 22178.
'55 THUNDERBIRD, Fordomatic, white w/red trim, 31,000 miles, new nylon tires, 2 tops, extras, R&H, need \$2000 Feb. 22. Schuetz, 434 Maple NE.
3 BDRM HOME, custom-built, 1 1/2 baths, built-in range, garbage disposal, fireplace, carpeted, newly decorated, shipping out. Kier, AL 6-4626, 1719 Truman NE.
ELECTRIC DRILL, 1/4", \$7.50. Russell, AX 9-6921.
GE REFRIGERATOR, 8.3 cu. ft., \$100. Hodgen, AL 5-3191 after 5:30 p.m.
BABY BATHINETTE, used only once. Hole, AL 6-4719.
WINCHESTER Mod. 43, 218B Dies 400 Rds, scope mount, \$60; BMM Ackley SM, dies cases, scope mount Timney Trigger, \$85. Cole, ext. 23144.
'51 FRAZIER Vagabond, '59 plates, over-drive, R&H, \$135 or will trade for guns or tools. Pons, AL 6-9249.
'51 NASH, Rambler stationwagon, R&H, new battery, \$375. Glass, ext. 23165.
HEATHKIT 3" Oscilloscope, etched circuit model, \$25. Overturf, AX 9-5852.
ACCORDION, 48 bass w/case, \$75. Randle, AL 6-1747.
'57 OLDSMOBILE, Super 88 hardtop, 20,000 miles, new tires, hydramatic, power equipped, factory air. DeHerder, ext. 31148 (noon).
FENDER SKIRTS, 2 for '53 Plymouth, 2 chromed continental headlight rims for 1953 Plymouth, \$11 for all. Perea, CH 3-7316.
'52 DODGE pickup, 3/4 ton, 4-speed transmission. See at Barkers Chevron Service, 6105 Gibson SE. Jackson, AL 6-0121.
SCIENTIFIC AMERICAN magazine issues, 1952 thru 1956 w/exception of 4 copies, \$5. Deeter, AL 5-5789.

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, Feb. 27

SPRINGER SPANIEL pups (liver and white), available about mid-March, top pedigree, excellent show and hunting stock. Westman, AL 5-6048.
RUGS, 100% all wool w/pads, 10x11, \$45; 12x18, \$140; almost new; two hardwood maple knick-knack shelves. Wachtel, AX 9-3003.
RANCH-STYLE, 5 section wood roll-up garage door, w/one section glazed, adjustable hangers and springs, \$35. Lenz, AL 6-7037.
'57 PLYMOUTH, 4-door Belvedere w/Torqueflite, R&H, WW, '59 plates, \$1700. Will consider trade. Wiesch, AL 6-7236.
2-WHEEL TRAILER w/spare and lights, equipped w/frame and tarp for folding camper, \$85. Scranton, AX 9-4902, 2522 Gen. Bradley NE.
1200 ADOBES, 4x10x14 inches, \$.06 each. McMillin, ext. 37152 during noon hour or write Box 857, Tijeras, New Mexico.
14' BOAT, foam covered seats, nylon cover, factory trailer, 19 cu. ft. (chest) deep freezer, needs new motor, make offer. Nissen, AL 5-5657 after 5:30.
'53 CADILLAC '62" Hydramatic, power steering, etc. Have 3 cars, will sell at sacrifice. Hueter, CH 2-1620.
'58 HICKS Mobile Home, 46'x10' wide, 2 bedroom, front kitchen, full bath, equity free, sell by owner, Fulcher, ext. 43243, 132 Virginia NE, Space 8.
'42 FORD Coupe, excellent transportation, \$95. Cotter, AL 6-0326.
'51 CHEVROLET, original owner, clean inside, \$350 cash. Seay, AX 9-5270, 2315 Hoffman Dr. NE.
'50 FORD V-8, 2-door sedan, R&H, over-drive, has new brakes and tune up, \$250. Cobb, AX 9-1995.
DINING TABLE, four chairs, limed oak drop-leaf; two lamp tables, step table, green club chair, red overstuffed chair. Giles, AX 9-3119 after 5:30.
COLT AUTOMATIC 45 Cal. w/2 clips, clip holder, holster and 100 rounds of ammo, will sell or trade, make offer. Schowers, AL 5-9279.
TWIN BEDS, Englander hotel deluxe firm mattresses, matching box springs, originally \$105, sell for \$75 each. Snyderman, AL 6-6889 evenings.
17" TV, Table Model, Silvertone, 10 new tubes, just installed, \$70. Sikker, AX 9-3966, 1125 Grace NE.

SECTIONAL SOFAS, 2 piece, blue-green, \$65. Lewis, AL 5-5633.
MALE PUPPIES, 2 small, mixed breed, \$2 each. Hurt, AX 9-7263.
3 BDRM HOME, one bath, disposal, 220 volt, utility room, single garage, walled, landscaped, \$11,200. FHA or existing GI. Stiefel, AL 6-4749.
LIVING ROOM SUITE, 3/4 size bed. Smith, AL 5-4036.
REFRIGERATOR-Freezer, Hot Point, 11.4 cu. ft., 100 lb. freezer capacity, \$180. Hot Point 12 cu. ft. freezer, \$220. Hook, AM 8-0291.
TWIN BEDSPRINGS and mattresses, rotary power mower, ironer, air conditioner, Rheem furnace, electric toaster. Hubbs, AX 9-0019 after 5:30 p.m.
SLIDE RULE, 10" K&E, new, log log decitrig, \$15. Dauphine, AL 5-6367.
POWER SAW, Craftsman, 6 1/2"; 3/4 hp motor w/pulley shaft. Pitti, AL 6-1629.
BABY BUGGY, \$10; stroller, \$5; double wash tub w/stand, \$6; cartop carrier, \$8; 115-to-6 volt transformer for Sears auto air conditioner, \$8. Vath, AX 9-1448.
'54 OLDS Super Convertible, one owner car, loaded, new tires. Hankins, AL 5-1566.
'53 FORD Customline V-8, 2 dr. sedan, R&H, overdrive, tinted glass. Sandlin, AL 5-8864 after 5:30 p.m.
'56 FORD Country Sedan, R&H, Fordomatic. Poole, AX 9-5731.
2 BDRM HOME on lot 75 x 250; 1 bedroom home, good business location. Comalli, AX 9-4631, evenings.
MODEL 70 Winchester, .308 caliber, 4x scope, case, used one season, \$135. Deep fry, \$5. Charlton, AL 5-3452.
'58 RENAULT Dauphine, cost \$1845, sell \$1495. Abbott, ext. 44266.
'55 PONTIAC Model 870, 4-door station wagon, R&H, hydramatic, power steering, power brakes, nylon w/w tires. Rayner, AM 8-1705.
BOWLING BALL, Brunswick, brand new, no finger holes, sell reasonable. Mueller, AX 9-1079 after 4:30, 2728 Vermont NE.
LIVING ROOM SET, 2-piece, dark green floral pattern, \$40; rockers: prospectors ultra-violet light, \$12.50. Wade, AX 9-2050.
'50 CHEVROLET, Club Coupe, arctic white, leather interior, R&H, w/w tires, recent overhaul, \$150. Henry, AX 9-0536.
AUTOMATIC PISTOL, Llama, 380 cal., 40 shells, \$22. Parks, AM 8-0875.
GAS RANGE, 36", \$40; 21" TV Console; studio couch, \$20; 2-speed phono-radio, \$20; coffee table, \$3. Large, ext. 29133, 1524 Martha NE.
BABY CARRIAGE, Whitney, \$10; Stepfold playpen, pad, \$10; Westinghouse roaster oven, dishes, \$15. Syroid, AL 6-3943, 1817 California NE.

MALLARD DUCKS, full grown, \$5 per pair. Tatum, CH 2-9021.
2 BDRM HOME, den, study, w/fireplace, shop and garage, \$350 down, FHA. Baudoin, AL 5-2087, 2742 Manzano NE.
PORTABLE TV, brand new 17" two-tone Admiral, 110" tube, built-in antenna, discount price, \$138, cash sale price, \$118. Adams, AL 6-7265.
'55 MG-TF Roadster, bright red w/silver wire wheels, R&H, accessories and tools, a real classic, must sell. Hill, AL 6-1931.
2 BDRM HOME, large rooms, attached garage, nice SE Heights neighborhood, \$350 down, new FHA loan. Pinkham, AL 6-2166, 509 Dakota SE.
TROMBONE, King 2B Liberty, gold lacquer finish, chrome slide, includes case, \$125. Keyser, AL 6-1285.
'52 PLYMOUTH station wagon, will trade on later model station wagon. Would like to buy 1956 or 1957 station wagon in good condition. Long, AX 9-1416.
GAS RANGE, Florence 36" Tabletop, clean, \$20. Harker, AL 6-5803.
BUNDY TRUMPET and case, cost \$138, will sell for \$50. Quillin, CH 2-5985.
'46 FORD business coupe, 1953 Ford truck engine V-8, new battery, \$200 or best offer. Pettit, AM 8-0532.
ROLLAWAY BED, 3/4 size, mattress w/springs, \$15. Rauch, 1525 Dartmouth Dr., NE.

WANTED

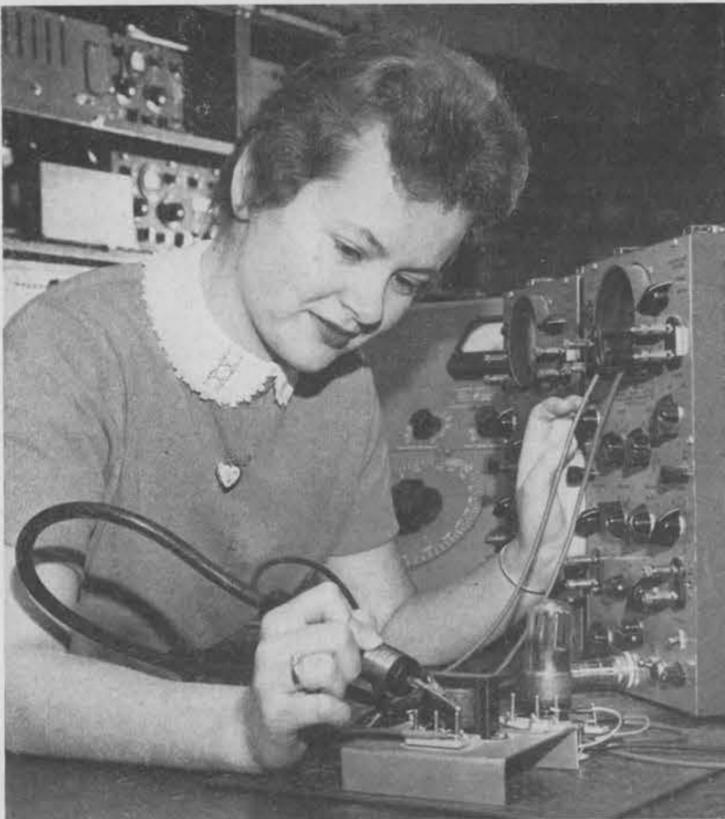
PIANO, well-used, condition not important. Robnett, AL 6-3761.
TYPEWRITER, good used, for beginner, in fair condition and priced reasonable. Lopez, AX 9-0941.
OLD PERCUSSION revolvers and pistols, derringers, daggers, old knives and old military items, private collector. Smitha, AX 9-1096.
INNER SPRING mattress and box spring for 39" standard single bed. Baxter, DI 4-7601.
PHOTO ENLARGER, Nogle, AX 9-3863 after 5 p.m.

FOR RENT

APARTMENT, one bedroom, new, brick, refrigerator, air conditioning, built-in stove and oven, near base, couples only, \$90 per month. Kelly, AL 6-5429.

LOST AND FOUND

LOST—5 year SC pin, 3 blade bone pen-knife, 15 year SC tie clasp, \$48 in cash, wallet w/ID of John Bower, man's turquoise ring, keys in red case w/ad of TV, safety goggles. LOST AND FOUND, ext. 26149.
FOUND—Lady's white cloth glove, lady's white leather glove, Manzano toast masters check book. LOST AND FOUND, ext. 26149.



Pat Tolmie

"Electronics is progressing at an overwhelming rate"

UNM Senior Engineering Student Looking Forward to Work at Sandia

"A woman's place," pretty Pat Tolmie says, "is where she wants to be." Electrical engineering is what Pat wants and come next June she will have it.

She is the daughter of John R. (5332) and Helen (5132) Tolmie and will join her parents at Sandia after graduation from the University of New Mexico. She will work in the Electric Component Development Department 1450 where she was employed last summer.

At the moment she is concentrating on her senior electrical engineering studies at UNM. An honor student, Pat is currently doing original research on the properties of varistors as part of the Honors Program at UNM. She maintains a 2.4 grade point average out of a possible 3.

"I'm looking forward to an exciting future in the nuclear weapons program at Sandia," she says. "Technology in engineering is progressing at an overwhelming rate — things are happening now that are almost unbelievable."

"Last summer at Sandia was a real education. I learned the practical aspects of electronics in industry while at the University, we concentrate on theory."

Pat's curricula has included all of the basic engineering courses such as statics, thermodynamics, machines, strength of

materials, chemistry, basic physics, and currently she's taking an introductory course in solid state physics.

She's taken mathematics courses and, of course, a full range of electronics courses. She has averaged 18 credit hours a semester.

"There is so much to learn," Pat says. "Eventually I hope to get a Master's degree and specialize in semi-conductors. The semi-conductor field is going at such a tremendous rate."

In addition to her avid interest in electronics Pat is also an enthusiastic swimming, bowling and tennis fan.

"But marriage comes first," she says, "in June, to a Sandia engineer, naturally."

Jr. High Student Rick Granfield Will Exhibit Display at Science Fair

Richard Granfield, son of Walter Granfield (4741), is a future engineer. This has been an established fact for several years. An honor student at Monroe Junior High School, "Rick" was recently one of five science students whose special projects were selected for display at the New Mexico Science Fair to be held in Socorro April 11.

Rick's display is a device that



Richard Granfield

"I hope to be part of the conquest of space"

'Engineering . . . for the Age of Space' — a Story in Human Terms

"Today we live in a civilization that is dominated by science and technology. Science is not yet 500 years old and organized technology is perhaps half that age. The contributions of science and technology to the social and economic life of man and to the weapons with which

the military forces of nations protect their sovereignty and freedoms have grown with increasing tempo throughout the 450 years in which the scientific method has been employed. The power of science and technology has become so overwhelming that a nation's eco-

nomie strength and security are more dependent upon the quality and quantity of science and technology than on any other factor."—Dr. Mervin J. Kelly, Chairman of the Board, Bell Telephone Laboratories.

As the nation observes National Engineers' Week Feb. 22-28, the theme is "Engineering—for the Age of Space." The above words of Dr. Kelly point to the significance of engineering as a profession, names science and technology as being responsible for the greatness of modern civilization.

Sandia employees, vitally concerned with the frontiers of knowledge, are well aware of the significance of science. The following vignettes of Sandia-connected individuals are representative of cross sections of varying viewpoints. In observance of National Engineers' Week, the Sandia Lab News offers, in human terms, some aspects of engineering just yesterday, engineering today, tomorrow and perhaps the day after.

Varied Career of W. M. 'Bill' Evans Shows Scope of Science Progress

"Technology has progressed so rapidly during my lifetime that it's hard to predict what the near future may bring," W. M. "Bill" Evans (5523) says.

"When I was a boy in Wales, the automobile was still just an accepted novelty. Agriculture was backbreaking labor, scheduled airlines were just a dream, industry depended on coal for power."

"In contrast, last summer I left London, England, at 11 a.m. and arrived by turbo-jet in Denver, Colo., just after mid-

night, 13 hours later. Technology nowadays is jet propelled."

Bill, an electro-chemical engineer in Component Evaluation Division 5523, originally was a mining engineer. He earned his degree from School of Mines of South Wales in 1924. He has worked in mines both in Wales and in Colorado and has held positions ranging from "door boy" to mining engineer and mine foreman.

"When I graduated it was necessary to serve two years of apprenticeship with seasoned engineers before I was made a mining engineer," Bill says. "It was a difficult two years with tough assignments but I believe strongly that it is a good system. All young engineers can profit greatly with an apprenticeship period."

"There is so much to learn now," he says, "that there is not time for anything but theory in school. A man needs practical experience to earn the responsibility of being an engineer."

Bill came to the United States in 1926 and worked as a mining engineer for the St. Louis and O'Fallon Coal Co. in Illinois.

He moved to Colorado in 1937 to be night foreman at the Boulder Valley Coal Co., a position he held until 1942.

From 1942 through 1944 he supervised rebuilding storage batteries for the Rocky Mountain Fuel Co. in Erie, Colo. During this time he instructed evening classes in coal mining for the State of Colorado.

In 1944 he organized the Evans Battery Manufacturing Co., Ltd., and was president of the business until 1951 when he sold his interest and came to Sandia.



W. M. "Bill" Evans

"It's hard to predict what the near future may bring"

demonstrates the transmission of sound over a light beam. He uses a portable record player with the substitution of a special speaker to vibrate a mirror instead of producing sound. A strong light source beamed at the vibrating mirror is reflected to a photo-sensitive cell connected to a distant receiver. This receiver converts the light into sound and plays music from the phonograph. Rick designed and built the device from spare radio parts.

Rick's interest in science and engineering goes back several years when with the earnings from a summer of mowing lawns he purchased a short wave radio kit and assembled it.

A well-rounded student, Rick won a spelling contest at Monroe Junior High recently and entered the state contest where he placed high in competition with older students. He placed third in a speech contest, radio newscasting category, recently held at Highland High School where, again, the top two places were won by high school seniors.

The future looks good to Rick. "I want to be an electrical engineer," he says, "working in research and development for missiles and rockets. We're on the brink of space now, and I'd like to be part of that."

In the meantime, Rick is taking all the math courses available in school, is consistently an honor student, builds and repairs radios, phonographs and television sets, and is looking forward to building his first hot rod. "That will be next year," he says, "when I'm 15."

Bruce Johnson Finds Livermore Lab Challenging

From high school to college to Sandia is the career of Bruce Johnson (8115-1), a career typical of many of the Corporation's newest engineers.

A native of Seattle, Wash., Bruce joined the Livermore Laboratory last June, the same month he graduated from the University of Washington with a BS degree in ceramic engineering.

"If there was any one major reason why I picked Sandia I guess it was because I'd be the first ceramics engineer at the Livermore Lab," Bruce says.

"As a ceramics engineer, I feel I'm in on the ground floor in a young, rapidly expanding science. In addition, I've found a wonderful opportunity to learn at Sandia, not only through my work, but through the access we have here to up-to-the-minute technical reports and information."

Bruce chose ceramics engineering because it is a relatively new field. "Up to a few years ago ceramics was an art, not a science. It consisted mostly of methods and formulas practically handed down from father to son. Now this has all changed and the field is wide open to new discoveries, new developments."

The future, twenty or thirty years from now, Bruce foresees as a world where mail will travel by rocket, a manned satellite will circle the earth, man will have reached the moon and will be aiming for the planets, and new developments in atomic power, solar energy, and storage batteries will make power cheaper.

But for Bruce, the more immediate future holds promise of a hitch in the service. He plans to take advantage of Sandia's military leave plan and return when his period of service is over.

"Eventually," Bruce said, "I'd like to take a graduate degree in materials engineering, possibly at M.I.T. I believe the Corporation would arrange a leave of absence, which is another reason why I like Sandia. When you want to get ahead, you get help."



Bruce Johnson

"I'm the first ceramics engineer at Livermore Laboratory"

