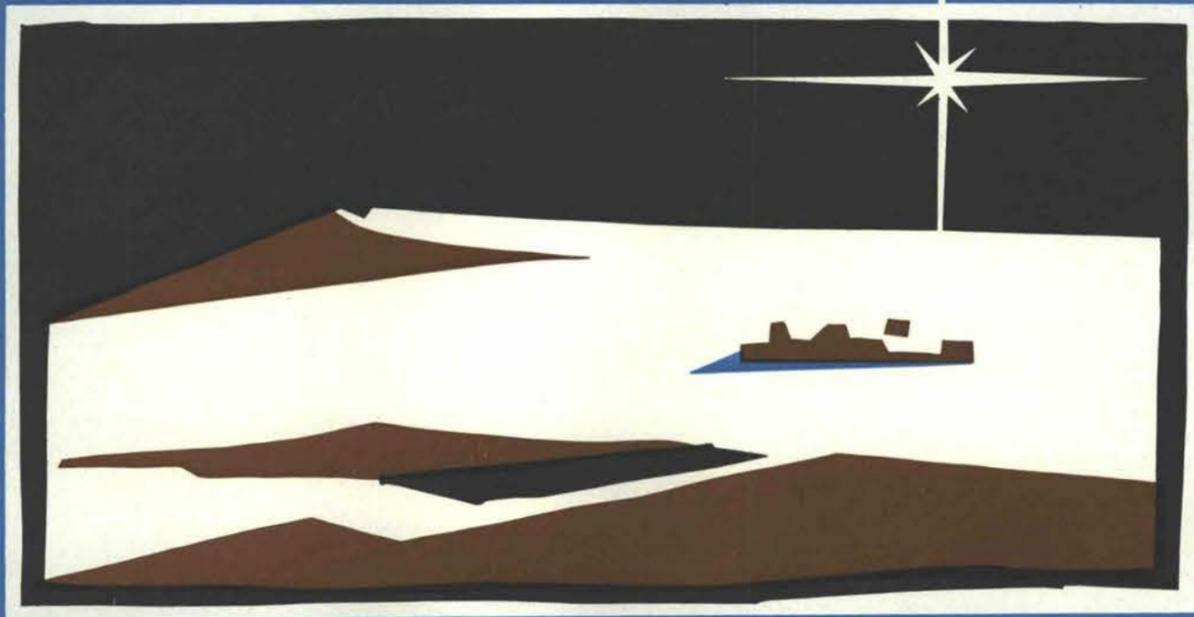
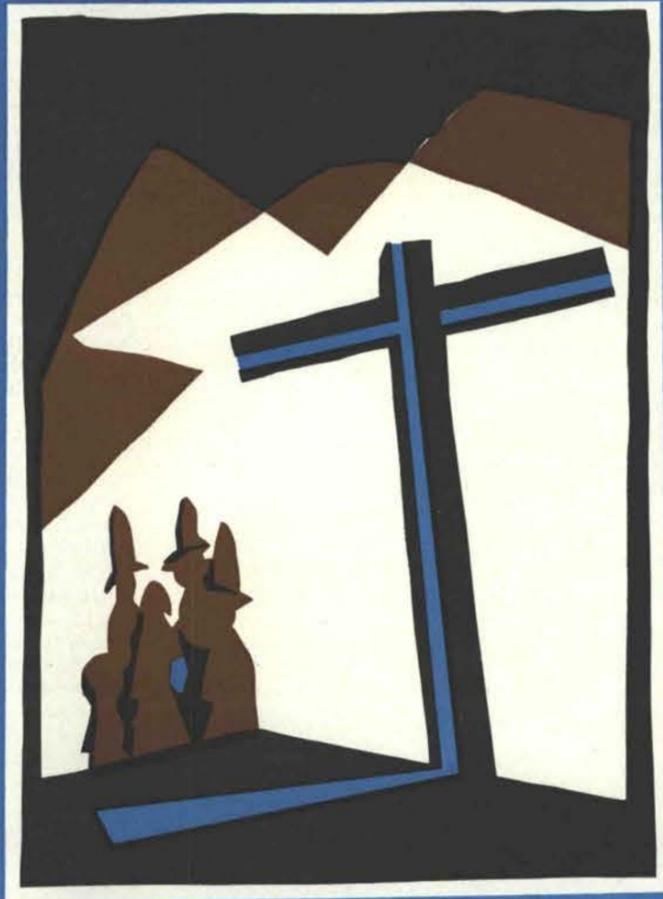


lux et pax
LUZ Y PAZ



M. Moore

SANDIA LAB NEWS

The Sandia Lab News is an official publication of the Sandia Corporation, Albuquerque, N. M. Office: Room 10, Bldg. 829, Employee Services



Telephones Sandia Base
Alpine 6-4411
Ext. 25253, 26135



Deadline
Friday noon of week
prior to publication



Member Association of Nuclear Editors, Border Council of Industrial Editors, and affiliated with International Council of Industrial Editors.

Give, But Give Properly

Elsewhere in this issue of the Sandia Lab News is an article on charitable activities being engaged in by employees of Sandia Corporation during the Christmas season.

Charity is the fruit of a generous heart and well meant, but too often in the enthusiasm to give reason takes a wrong turn. Then the proper spirit of giving to the needy is lost.

Maimonides, a 12th Century prophet, had these words on the eight degrees or steps in the duty of charity:

The first and lowest degree is to give, but with reluctance or regret. This is the gift of the hand, but not of the heart.

The second is to give cheerfully, but not proportionately to the distress of the sufferer.

The third is to give cheerfully, proportionately, but not until solicited.

The fourth is to give cheerfully, proportionately, and even unsolicited; but to put it in the poor man's hand, thereby exciting in him the painful emotion of shame.

The fifth is to give charity in such a way that the distressed may receive the bounty, and know their benefactor, without their being known to him.

The sixth, which rises still higher, is to know the objects of our bounty, but remain unknown to them.

The seventh is still more meritorious, namely, to bestow charity in such a way that the benefactor may not know the relieved persons, nor they the name of their benefactors.

Lastly, the eighth, and most meritorious of all, is to anticipate charity, by preventing poverty.



FIREPROOF DECORATION is this Christmas tree erected in Bldg. 802 by Divisions 1471 and 1473. Peg Taylor (1473), left, and Laura Duben (1471) hang the last of the scrap lathe turnings on the branches cut from coffee cans. Balls and nylon and teflon curls complete the trimmings of this unique Christmas tree.

Holiday Parties

A crowd of around 400 employees and their guests attended the annual Christmas party for organization 4100 at the Coronado Club Dec. 7.

Dining and dancing were the main features of 2300's annual party on Dec. 10, also at the Coronado Club.

Organization 2200 is holding its holiday dance tonight from 8:30 to 12:30. Music by Ray Giles and door prizes are included on the program.

Hot to Sweet

Sections 4135 and 4131 are planning a pot luck luncheon on Dec. 23 which will have a menu ranging from hot tamales to Bohemian pastries.

Missed Hurricane

Eddie Berry (8212-3) and her husband, Bill, celebrated their 25th wedding anniversary by spending several weeks in the Hawaiian Islands — fortunately before the big storm. Their itinerary included flights to the islands of Kauai, Maui, and Hawaii, and to Kailua, Kona.

New Daughter

Mr. and Mrs. Norman A. Littrell (5216) have welcomed a new member into their family. Little Debra Marie was born Nov. 26.

Aid to Injured

Salton Sea Base Fire Department was of service recently to two Navy personnel injured in an accident on the state highway eight miles south of the base.

Firemen H. V. McNabney, J. A. Culver and Nurse L. E. Nesbit treated and transported to the Brawley Hospital the men, who were en route from the Naval Air Station at El Centro to Salton Sea Base when their pick-up truck was involved in an accident and rolled over several times.

Returns to Work

Back to work after a recent operation is Bud Tate (7122-3).

Infant Son Dies

Sympathy is expressed to W. B. Russell (2314) and Mrs. Russell for the death of their infant son on Nov. 24. Our best wishes are with Mrs. Russell during her convalescence from an illness of several months.

Congratulations

Born to:

Mr. and Mrs. W. K. Gentry (7411) a daughter, Victoria Lynn, on Nov. 23.

Mr. and Mrs. J. D. Anderson (7412) a son, Stephen Edward, on Nov. 26.

Mr. and Mrs. R. S. Hooper (1611) a son, Thomas Gregory, on Nov. 20.

Mr. and Mrs. Philip Boling (1461-1) a son, James Philip, on Nov. 28.

Mr. and Mrs. George Chandler (2514) a daughter on Dec. 1.

Mr. and Mrs. Norm Richardson (5213) a daughter, Jane, on Dec. 4.

Mr. and Mrs. M. E. Holcomb (2551-1) a son, Daniel Lee, on Nov. 30.

Mr. and Mrs. Hugh A. Colvin (5126) a daughter, Karen Marie, on Nov. 26.

Mr. and Mrs. Amos D. Alire (2234) a son, Lloyd Michael, on Dec. 3.

Mr. and Mrs. J. M. de Montmollin (1262-1) a daughter, Nancy Michel, on Nov. 29.

Weddings and Engagements

Best wishes are extended to Mary Kathleen Collins (2713-2) on her marriage to F. Prachar in Chicago on Nov. 23. Prachar has been with the Chicago area office of Field Inspection Division since last December.

Doris Beaver will be married to R. L. Cox Jr., of Albuquerque tomorrow afternoon at a ceremony in the First Presbyterian Church. A small reception at the home of the bride's parents will follow.

The bride has been with Sandia Corporation since 1950, serving in the capacities of division and department secretaries. She is presently secretary to the Superintendents of organizations 2700 and 2200.

After a brief honeymoon the couple will be at home at 515 Morningside Dr. NE.



Doris Beaver Mrs. Ortega

Mr. and Mrs. James M. Ortega are making their home at 4708 Marquette NE following their marriage Nov. 27 in Albuquerque. The couple took a wedding trip to Phoenix.

Mrs. Ortega, the former Sara Martin (7225), has been with the Corporation since October 1955. Jim (5216) has been at Sandia a little more than a year.

The engagement of Gloria M. Adler (7225 assigned to 1470) to Harold Garcia (2461-5) has been announced. The couple plans to be married Jan. 11 at St. Joseph's Catholic Church in Springer.

Gloria's former home is in Springer. She has been at Sandia since last April. Harold has worked at the Corporation since August 1956 and is from Fort Sumner.

Wedding plans are being made for Christmas Day at Nortonville, Kans., for Mary Nelson and William O'Trimble.

Mary is in 2464-2 and has been with the Corporation since July. Bill has been in section 2464-3 since last April.

Carol Kolb (8212-4) and Eugene Strom were united in marriage Nov. 16 at the Presbyterian Community Church in Pleasanton, Calif. Following a brief honeymoon the couple moved to Dublin, Calif.

Anniversaries

Wedding anniversaries will be observed Dec. 20 by Mr. and Mrs. Dick Hildner (5122), their 16th, and on Dec. 27 by Mr. and Mrs. Howard Wicke (5126), their 12th.

Sandianotes . . .

Religious Theme Used in Los Altos 1957 Christmas Luminario Display



COME CLEAN! Why exchange Christmas cards with the co-workers you see every day when the holiday goodwill and money could aid a needy family? Contribute to your organization's Christmas collection. (Sarah Kathryn Huber, granddaughter of R. L. Probst, of 2723.)

"Ye are the light of the world. A city that is set on a hill cannot be hid."

This quotation from the Book of Matthew is the theme of the annual Christmas display of luminarios at the Los Altos subdivision in southwest Albuquerque.

About 6000 luminarios, paper bags filled with sand in which lighted candles are placed, will outline the housetops, walls and walks in the area on Christmas Eve in keeping with the old Spanish custom—lighting the way for the coming of Christ.

Sandians in the Los Altos area who will participate in the annual custom will be Florenzio Baca (2414), president of the Los Altos Association; Norma Bright (2472); Maude McCarthy (7225); C. J. McGarr (2200); M. V. Gowdey (7123); Larry Lavenir (2314) and Jim Marsh (7223).

To reach the area go west on Rt. 66 across the river to Gate Rd. 45 (Coors Rd.) and go south about three-quarters of a mile. A more picturesque route is to go straight west on Bridge St. to the corner of Coors Rd. This approach gives the impression that Los Altos is a castle set high on a hill, making it one of the outstanding sights in Albuquerque on Christmas Eve.

Sick List

Employees of 2150 send get well wishes to Bill Costales (2152-1), who is recovering from surgery.

Wishes for a speedy recovery are conveyed to Charlie Abeyta from organization 2711.

Best wishes for a speedy recovery are extended to Margaret Reese by her friends and co-workers of 3160. Margaret underwent surgery recently and is now convalescing at home.

Quick recovery is wished for Jim Coughlin (7122-3), who is convalescing following surgery.

New Homes

H. B. Evans, Jr. (2711) and his family expect to be celebrating the holidays in their new home at 3100 Georgia NE.

Moving into their new house at 1521 Elizabeth NE just in time for Christmas will be Mack Wells (1283) and his family.

Bill Jackson (2153-2) and his family recently moved into their new home at 1822 Somervell NE.

Another family recently going through moving pains were the Gordon Cummings (2153-2) who now reside at 4104 Palo Duro NE.

Several new home owners in Department 5140: Milton Kane (5141-2) and family are now at 6801 Kiowa NE; Ken Shipley (5141-1) and family have moved to 3012 Indiana NE, and Roger Tate (5144) and family have a new address — 9009 Snow Heights Blvd. NE.

Sympathy

To Vance Prutsman (2742) for the death of his wife in Albuquerque, Nov. 24.

To H. G. Andrews (5125-1) for the death of his wife Nov. 30 in West Lynn, Mass.

To Leigh Hendricks (5125-1) for the death of her mother Nov. 28 in Caruthersville, Mo.

To John A. Christopher (2353) for the death of his sister on Nov. 25.

To Anthony J. Graff (7232) for the death of his sister on Nov. 29 in Albuquerque.

To W. E. Rehbeck (2731) for the death of his mother in Kokomo, Ind., on Nov. 25.

To E. H. Draper (1200) for the death of his father in Denver, Colo., Dec. 8.

Welcome Newcomers

Nov. 25-Dec. 6

Albuquerque	
Anne O. Baker	2332
Jack E. Cannon	2461
Edward Coca	2133
Jean M. Cowley	2335
Velma A. Edwards	2418
Richard C. Gonzales	2112
Margaret E. Jones	2333
Tommy G. Lane	2461
Letha P. Stewart	5254
California	
Earl S. Ostrander, Jr., Livermore	8221
Lorene E. Ward, Sunol	8212-4
Illinois	
Arthur G. Bracher, Deerfield	2151
Louisiana	
Larry E. Wilhelm, Bossier City	2461
Michigan	
Nicholas Hapsas, Detroit	2711
Charles W. Quillen, Allen Park	5711
Ohio	
Charles T. Link, Bay Valley	2533

PROMOTIONS

Luciano Gurule (2462) to Pressman (Offset)
George A. Block (2131) to Technician (Electronic Fab.)
Madeline L. Thompson (2111) to Secretarial Typist
Betty J. Matthews (7225) to Typist Clerk
Leslie N. Schofield (5112) to Data Reduction Clerk
Lucille R. Montoya (7121) to Record Clerk (Accountability)
Cid H. Dalin, Jr. (2462) to Pressman (Offset)
Lillian P. Bowers (4152) to Accounting Clerk
Robert P. Fjelsted (4135) to Tabulating Equip. Operator
Erma G. Campbell (2333) to Record Clerk
William L. O'Trimble (2461) to Document Clerk
Rita J. Rayburn (2542) to Secretarial Stenographer
Holman V. Peterson (4151) to Staff Asst. Admin.
Donald J. Hosterward (7123) to Staff Member

Niveo Fisher Sandia Retiree

Retiring last week was Niveo S. Fisher, a layout operator in organization 2152. He had been at Sandia since June 1948.

After the holidays Niveo and his wife plan to travel to Old Mexico, where they may decide to settle.

The Fishers came to Albuquerque nearly 10 years ago from Detroit. Niveo has been active in the Albuquerque Shrine Band; he plays the flute and piccolo.

Another of his leisure-time activities is golf. "I've tried to interest my wife in golf but she hates to walk, and I love to," he said.

The Fishers presently live at 524 Carlisle NE.



Niveo Fisher

Sandia Organizations Join in Big Christmas Charity Move

The idea of Christmas aid to the needy in lieu of exchanging greeting cards has snowballed this year at the Corporation with most organizations making plans for such assistance.

The methods of collecting money, food or clothes and their disposition varies from group to group, but in all there is the sincere desire to share with those less fortunate the good will and spirit of the holiday season.

Four organizations have made their arrangements on a superintendency-wide basis.

Organization 1400 has completed its fund drive and has contributed \$392 to the Council of Social Agencies for use in distributing grocery orders to needy families.

Organization 2300 will collect food, clothing, toys and candy for families with children who would otherwise "go without" at Christmastime.

An original way of contributing to a holiday fund has been followed by members of the 2500 organization. All surplus funds collected from ticket sales for their annual Christmas party last Friday will be used to help bring Christmas cheer to some needy family in the form of food, clothing and children's toys. Employees of the organization have been asked to suggest the names of any deserving families and after a careful check one family will be selected. The mother will be advised before Dec. 25 in order that the family's most pressing needs may be met. Those who did not attend the party and who wish to help may contact Lyle Schultz (2533), room 226 in Bldg. 892.

All departments of organization 5200 will probably join to deliver Christmas baskets. Department 5210, which has followed a "food in lieu of card" policy for about five years, contributed and delivered 10 food baskets last year. With the other departments joining in the plan the number of families aided will probably number 18 or 20.

Divisions 5521, 5522 and 5523 collected \$109 which was used to purchase a selection of toys for the 136 children at St. Anthony's Orphanage, who range in age from two months to 14½ years. A total of 147 individual toys—games, tinkertoys, model plane kits, nurse items, etc.—were purchased through a wholesale outlet by committee members Frank J. Feery (5523), Carl Lundbom (5522) and Ben F. Blythe (5521) with the assistance of orphanage representatives.

"Operation Food Basket," originally planned by division 7411 has been adopted by all divisions in 7410. Section solicitors have been named and a collection will be taken up today and Monday.

The drive organizers plan to provide food baskets and children's toys for about 15 families. Delivery will be made the morning of Dec. 24, according to Chairman A. L. Ouellette (7411-4).

Last year organization 5140 assisted a needy family in Edgewood, N.M., which was located through a local school teacher. The teacher also helped in shopping for the food and clothing, as well as the distribution. The members of 5140 plan to follow the same procedure this Christmas with Edgewood families; however, clothes and toys are also being donated this year in addition to a collection of baskets of food.

Other Christmas assistance plans underway include:



Rupert "Mac" McHarney—creates Christmas cover this issue—

Christmas Cover Work of Sandia Artist McHarney

Cover art for this Christmas issue of the Sandia Lab News was done by Rupert "Mac" McHarney of Technical Art Division 2463.

"I wanted to show a moving religious feeling in the drawing," Mac says, "and portray a mood of the historical development of New Mexico." Mac chose a technique resembling that used in making a woodcut print for the drawing.

His woodcut prints have been shown at the Boston Museum of Fine Arts. He earned a Master's Degree in Fine Arts from the University of New Mexico specializing in woodcuts and graphic arts. He received his BA in Art Education from UNM in 1946.

Mac has been a technical artist at Sandia for two years. Previously he taught art and crafts at Clayton High School for eight years.

When he isn't putting the finishing touches on his new home which he designed and built at 4105 Hannett NE, Mac keeps busy in the evenings with free-lance commercial art.

Mac piloted a patrol bomber for the Navy during World War II and received three Air Medals for action at Tarawa, Guam, Saipan and Eniwetok.

Department 1220: money is being collected for donation to the Salvation Army.

Department 1610: family will be clothed and fed. Last year food help was extended through five months for a family with five children.

Division 1624: money for food, extra clothes and other needs for a family.

Division 1625: money to a needy family.

Department 1650: clothes and toys being collected for a needy family, money will be deposited at a super market for the family's use for food.

Division 2133: food basket and clothing for a family.

Department 2150: food for several families, toys for children.

Department 2220: food basket for families.

Division 2234: members plan to support two families with food and clothes.

Division 2232: food basket for a family.

Section 2461-2: money to Salvation Army.

Division 2713: assistance to a needy family.

Sections 2713-3 and 2713-4: committee selecting a family for food, clothing and other needs.

Division 2731: food and clothing for a family.

Divisions 2741, 2742 and 2743: plans incomplete but intend to participate.

Division 2743: family will be given food, clothes and toys. Family includes 11 children from one year to 15.

Each shift of Security Guards plan to help a different family.

Division 3152: Bob Garcia is heading fund committee.

Sections 3153-1 and 3153-2: three committee members chosen from each section to collect money for food for family.

Department 3160: will give assistance to family as in previous year, plans incomplete.

Department 3220: will join with Department 3120 in helping a needy family.

Division 4131: gift certificate for groceries will be given a family.

Division 4153: Christmas basket will be given a needy family.

Departments 4110 and 4160: committee is deciding on recipient for assistance.

Department 5120: family being chosen for help; Zelma Beisinger heads committee for plans.

Department 5130: family being chosen for help.

Department 5510: family to be given clothing, groceries, toys and additional money. Letter distributed on plans for Christmas Fund.

Section 7225-5: All Faiths Home, assisted last year, will probably be recipient of fund again this year.

Division 7231: hard luck family with four children will be helped.

Division 7422: toys will be contributed to a fatherless family with eight children.

Merry Christmas
and
A Happy New Year
to you
and your family

Jim McRae

Name Committee to Manage \$100,000 Contribution Fund

The committee that guided the 1957 Sandia Employees Contribution Plan fund drive to a successful conclusion has been re-appointed to administer the plan during 1958.

Members of the group who will manage the \$100,000 fund are:

David S. Tarbox (2440), chairman, Peter J. Cook (5532), William B. Davis (4131), Luther J. Heilman (3200) L. M. Jercinovic (7210), Noble Johnson (3122), Robert A. Knapp (7130), William F. Leverenz (2152), C. E. Long (7223), Webb E. Shaffer (2742) and Ted B. Sherwin (3125).

With the 1957 drive completed, employee pledges and cash donations to the combined fund have reached \$93,670. Contributions by those who did not join the com-

bined plan but made a donation to the United Fund or one of the other participating agencies amounted to an additional \$7,000. The \$7,000 contribution by the Corporation to the United Fund, plus contributions from the Coronado Club, Anderson-Dunham and the Sandia Credit Union, brought the grand total to \$108,132.

The fund will be apportioned among the Albuquerque United Fund and local chapters of the Cancer, Heart, Cerebral Palsy, Muscular Dystrophy, Multiple Sclerosis, Crippled Children, and Arthritis & Rheumatism organizations. In all, 31 agencies will be aided.

Under the distribution plan worked out by the committee prior to the campaign, 75 per cent of the Contribution Plan fund, or \$70,000 will go to the United Fund and approximately \$23,700 to the seven participating health agencies. Payments will be made to them from the fund each month. These figures do not include the designated contributions or the Corporate gift.

Designated gifts by employees who did not join the combined plan amounted to \$7,462, of which approximately \$7,000 was given to the United Fund or one of the 24 agencies it includes. The United Fund agencies receiving the largest number of earmarked contributions were the Salvation Army (38 gifts amounting to \$295) and St. Anthony Boys Home (23 gifts totaling \$254).

The amount pledged this year far surpasses the employee contributions of previous years. Last year, when the payroll deduction plan was made available on a year around basis for the first time, \$64,000 was raised for the United Fund, approximately \$57,000 of which was from employees. The total pledged by employees this year is almost twice that amount, with seven new agencies participating. The UF total alone is expected to be approximately \$77,000.

Tech Library Open 23 Hours A Day Effective Monday

Effective Monday the reading room of Sandia Corporation's technical library in Bldg. 802 will go on a near 'round-the-clock' operating schedule.

The room will be staffed with a librarian during the regular working schedule (8 a. m. to 5 p. m. in the winter), however, as in the past doors will be closed from 8 a. m. to 9 a. m. Monday thru Friday for record keeping purposes.

After working hours and on week-ends persons using the reading room are requested to sign a register in the library.

According to "Bea" Allen, supervisor of 7223-3, the extended hours stemmed from an increased demand by research people for this type of service.

The longer hours apply only to the reading room in Bldg. 802.

Departments Have Families For Christmas Open House

Floors of the carpentry shops will be swept clean of shavings and tools will be neat in their bins on Sunday, Dec. 22, when departments 2410 and 2470 again hold open house for their employees and families in Bldg. 887.

Last year the occupants of Bldg. 887 combined the open house tour of the shops with entertainment at the Coronado Club. This year the event will be entirely under one roof in Bldg. 887 from 2 to 4:30 p. m. Some 800 guests are expected. The building is east of the Corporation's Technical Area.

A refreshment stand with doughnuts, coffee and punch will be set up in the carpentry shop. The locker room will be converted into a movie room for children.

J. E. Tillman (2410) and J. C.

Hart (2470) will greet their employees at the front door. Inside, division and section supervisors in 2410 will be hosts (and foot the bills) and the girls from the "front office" will be hostesses.

Committee members working on the party include: movies, Vincent Domme (2411-1) and Bill Elskes (2411); seating arrangements, J. H. Simmons (2413-2), H. M. Roberson (2413) and C. H. Crass (2415); refreshments, C. J. Lucci (2410), J. E. Tillman (2410), Jim Winter (2418-1), Walt Martin (2418), Dave Hake (2412), Bob Bennett (2414-1), Lloyd Chapman (2414), Ronald George (2314-3), W. N. Bullock (2412-3), V. L. Brockway (2411-2) and R. L. Boase (2414-2); shop signs, L. F. E. Koehler (2412-1) and finance, John Ransom (2415-2).



BIG PARTY PLANS are being mapped by (L to R) J. H. Simmons, V. L. Brockway, L. F. E. Koehler and other division and section supervisors of 2410 and 2470, who will play hosts Dec. 22 to families.

Two Fine Films Are Scheduled for Noontime Showing

A documentary film and the first part of a feature-length dramatic story are slated for the Corporation's noon movie hour during the coming weeks.

Dec. 17-20 the offering will be "Behind the Ticker Tape."

Dec. 24-27 part I of "The Glass Web," starring Edward G. Robinson, will be shown.

The free movie starts at 12:10 p.m. in Room 3, Bldg. 849 on Tuesdays and Thursdays and Room B-6 of Bldg. 802 on Wednesdays and Fridays.

Handmade Greeting Cards Take Extra Work; Effort Worthwhile

When is a card a Christmas gift? When a large dash of imagination is combined with a liberal sprinkling of good will and plenty of hard work to produce a handmade card.

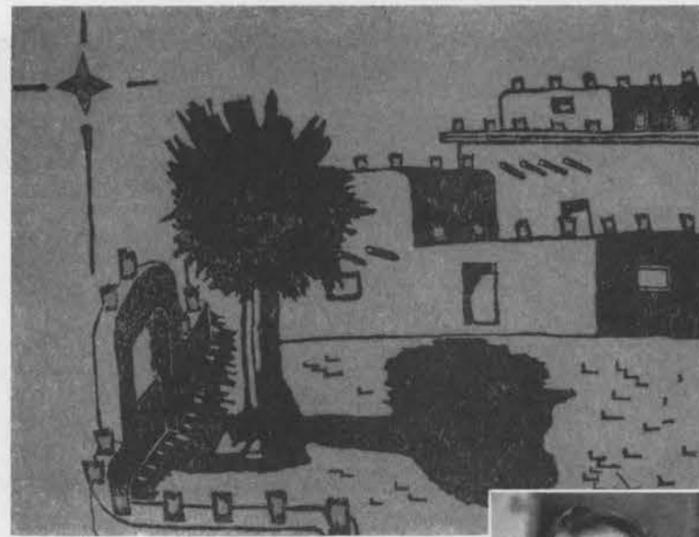
Numerous Sandians make the special effort each year. One Christmas season artist remarked, "A few years back I just didn't have the time to make cards to send to out-of-town friends. Some of them were really unhappy about being slighted."

W. A. Whitfield (7412-2) has been making Christmas cards of one sort or another for 25 years, start-

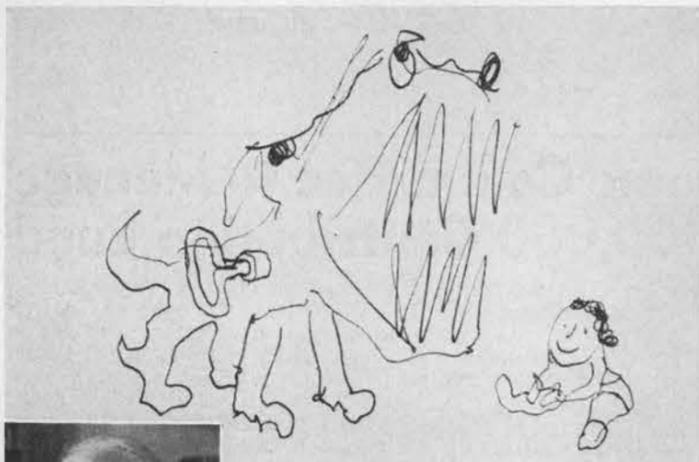
ing with linoleum block prints and finally using the silk screen process.

Eugene Alesch, an illustrator in Technical Art (2463-2,) has been drawing all of his life. This year he is making 100 India ink drawings, each different, to mail to friends. In theme they range from conservative to "real wild." Each takes about 20 minutes for "Gene" to sketch.

A newcomer to Christmas card art is A. V. Luhrs (2552). "Van" and his wife are using linoleum blocks for printing their cards.



SOUTHWESTERN THEME was depicted by "Van" Luhrs on his holiday greeting cards.



GAY HOLIDAY spirit is conveyed by "Gene" Alesch in his greeting cards for Christmas.



ACOMA CHURCH was theme for Christmas card made last season by W. A. Whitfield.



R. P. Lutz Named Head of R&D For Western Electric

R. P. Lutz has been named Director of Research and Development in the Engineering Division of the Western Electric Company. He will assume the new position Dec. 15. In his new capacity he will be in charge of the Western Electric Company Engineering Research Laboratory at Princeton, N. J.

Mr. Lutz' successor will be transferred from the Western Electric Company and will be elected at the Board of Directors' meeting in December.

Coming to Sandia Corporation July 1, 1955, Mr. Lutz was named Superintendent of Manufacturing,



Raymond P. Lutz

Planning and Inspection. On Feb. 1 the following year he was named Vice President, Operations, the position he now holds.

Prior to coming to Albuquerque Mr. Lutz had been superintendent of Western Electric's Greensboro, N. C., Shops. He joined Western Electric in 1929 as a materials engineer. He became Superintendent of Engineering at WE's Burlington Works in 1951.

A native of Kentucky, Mr. Lutz attended Purdue University and holds a BS degree in Physical Chemistry and an MS in Engineering. He later taught chemistry at that institution for a year. He also worked at the Mellon Institute of Industrial Research as an Industrial Fellow.

AWS Christmas Party to Be Dec. 14

Albuquerque chapter of the American Welding Society will hold its annual Christmas party Dec. 14 at the Chinese Village Restaurant.

Members will receive notice in the mail of the time of the party and ticket information, it was announced by Vince Nelson (1624-4), publicity chairman.

Talk on Coming Jets Planned at 'Ham' Meet

The Sandia Base Radio Club will hold its annual Christmas dinner tonight at Leonard's Restaurant at 8 p.m.

Jack Smith, an executive of the Continental Air Lines, will address the group on the subject of "Coming Jet Aircraft and Radar Landing Techniques." Tickets, at \$2.50 each, may be obtained from any club member, it was announced by John S. Cundy (7232), secretary.

R. H. Williams Author Of Technical Article

Electronics Magazine has accepted for publication an article by Richard H. Williams (1442) entitled "An Improved Accuracy Time-Interval Clock for Low Voltage DC Operation."

The article, which is to be published in a forthcoming issue, is based on Mr. Williams' work in Development Division II of the Electronic Test Equipment Department.

Supervisory Appointment

EARLE A. PAXTON, JR., to supervisor of Section 8221-1, Administrative Division, at Livermore Branch of Sandia Corporation.

Earle was transferred to Livermore Branch last December and was assigned to the Personnel Section 8212-1. His new duties will include supervision of reproduction of reproducible items, mail and records, print files and distribution.

Before joining Sandia Corporation in February 1954, Earle graduated with a Bachelor's degree in Business Administration from the University of New Mexico.

His military service career took him to Italy in World War II as an Army Air Corps photo reconnaissance pilot, flying converted P-38s.

Metal Progress Story Reviews Long Career Of John R. Townsend

An article titled "Biographical Appreciation . . ." written by William F. Carstens (7223-1) and reviewing the contributions of John R. Townsend (formerly 1600) appeared in the November issue of Metal Progress.

The article traces Mr. Townsend from his early interest in medicine through his long career with the Bell System which began in 1920.

It was on his early assignment of evaluating the Bower-Baroff finish for steel desk telephones that Mr. Townsend formulated the principle upon which he has based his entire career: "In order to evaluate a material or a process, you must first bring it under quantitative control and measurement. If you can measure, you can evaluate change."

Military Service Completed by Group Of Sandia Corporation Employees

Another group of Sandia employees has been welcomed back to their jobs in the Corporation after leaves of absence for military service.

William A. Sanchez served nearly four years in the Air Force in a mobile training detachment which changed bases every six months. He had been employed by Sandia for six months before leaving for service and is now a document clerk in 2464.

Robert Craven came to work at Sandia in October 1955. Last May he left for six months' training in the Army at Fort Chaffee, Ark., and Fort Hood, Tex. He is a draftsman in 7412-5.

Two other draftsmen have also recently returned to Albuquerque. Jimmie West (7412-3) served three months in the Air Force at Lackland AFB in Texas, and Jerry Cummings (7412-6) was in the Army for six months at Fort Hood, Tex. Both were hired by the Corporation about a year ago.

Carl Schuster, an electrical engineer in 5253, received his basic Army training at Fort Monmouth, N. J., then completed his six months' duty at White Sands Proving Ground, N. M. He had been with Sandia nine months before reporting for military service.



Carl Schuster



Wm. A. Sanchez



Robert Craven



Jerry Cummings



Jimmie West



SANDIA CORPORATION ALL-STARS
—Upset of Sandia Base Team Results in 38-13 Victory—

Corp. All-Stars Beat Base Team

The Sandia Corp. All-Stars team in its first annual flag football battle with the Sandia Base All-Stars, came away victorious tromping the Base team 38 to 13.

The game, played under the lights on the Sandia Base football field Nov. 26, was witnessed by 400 people. Leading the scoring for the Sandia Corporation team was Charlie Salazar (2461), former all-city football star from Albuquerque High School.

Charlie scored 25 points for the Corporation, making four touchdowns and one conversion. The remaining points for the team were made by Jerry Cole (2153) on a pass from Salazar, Dick Peterson (2461) on a 22-yard paydirt run, and Pat Moore (1471) on a conversion.

Members of the winning team, pictured above, in back row (L to R) Howie Smyth (2461) coach; George Porter (3123) backfield coach; Julian Lovato (7412); Dan Power (5241); Bob Loncharich (5142); Larry Tichenor (2461); Pat Moore (1471); Archie Smart (AEC); George Hildebrandt (2552) line coach; Hal Cushman (2551) end coach.

In the front row (L to R) are Jerry Cole (2153); Foy Graves

(2461); Dick Peterson (2461); Charlie Salazar (2461); Ron Zottnick (2511); Tommy Shelton (2461); Tony Garcia (2154) and Bob Hedges (1624).

Metzger to Speak

A. Burton Metzger (3210) will be the principal speaker at a dinner meeting at the Manzano Base Officer's Club this evening.

Coronado Club New Year's Party Ticket Sale Starts

Tickets go on sale Monday at the Coronado Club for the annual New Year's Eve party. The year-end celebration will include dancing to the tunes of the MBC Trio and Lee Sprague's orchestra, free party favors, and a New Year's Morning breakfast.

Tickets for members are priced at \$2.75 and \$3.85 plus tax for guests.

Other events planned include a free Christmas party for children from 1 to 3 p.m. Saturday, Dec. 21, and a free cocktail party for members from 3 to 5 p.m. Sunday, Dec. 22.

Six Sandians to Play On Base Hockey Team

Six Sandia Corporation employees are playing with the Sandia Base Bombers Hockey Team this season and positions are still open for experienced players.

Playing defense with the team are Stoughton Bell (5120); Don Rigali (5142); Bud La Moria (2353) and Glen Haycock (2351). Playing wing positions are Robert Des Jardin (1473) and Burdette Stearns (1282).

The next game of the season will be played at the Ice Arena Dec. 21 against the Albuquerque Falcons. Game time is 8:15 and tickets are 90 cents each if purchased at the arena or 50 cents if purchased in advance at the base gym.

The Employee Services Division (3122) reports that positions for experienced players are still open and equipment is available. Further information may be obtained from Gordon Ross, ext. 29157.

Elected to Office

Larry Smith (5111) was elected secretary-treasurer of the Albuquerque Chapter of the American Meteorological Society at a recent meeting.

Honor Hugh Odell At Farewell Dinner

Hugh L. Odell (5216) was honored last week at a farewell dinner given by the Albuquerque chapter of the American Society of Photographic Instrumentation Engineers.

Mr. Odell, who will have been with the Corporation 10 years in January, was honored for a decade of outstanding service in the field of photographic instrumentation, according to Irv Lenz (5221), president of the group. Mr. Odell is leaving shortly for Livermore where he will be assigned to 8122.

Employment Division Seeks Colored Slides

Employment Division is seeking 35mm slides of New Mexico sports and recreation activities to be used in recruiting activities.

Sandia Corporation employees who are willing to lend such slides to the Division are asked to contact Nicholas Vytlaclil, supervisor of the Division. The slides will be copied and returned to the owner quickly.

Subjects needed are: hunting, fishing, skiing, hiking, mountain climbing, picnicking, archaeology, photography, gardening, horseback riding, baseball, golf, bowling, archery, sports car racing.



WINNING CIRCLE: Standing with the winners of the Sandia Employees Golf Association is Chet Fornero (third from right) of 7329, association president. With him (L to R) are Dick Kidd (1245); John Puhara (7411); Harry Wild (2221); Dan Freshman (7221); George Horne (4153) and Jim Arnold (1611).

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

CRIBS, MATTRESSES, hardwood, both sides and springs adjustable; one makes into play pen, \$17.50 each. Eagan, AL 5-6820.

WATCH, Lord Elgin, 23 jewel, new, \$100 or will trade for 8mm movie equipment. Day, AL 6-6360.

WASHING MACHINE, wringer type with pump, \$35 or best offer. Argyle, AM 8-2239.

TEETER-BABE, new, still in carton, \$6. Anderson, CH 3-5310.

MAHOGANY BOOKCASE, 1 ft. deep, 3 ft. wide, 46" high, 4 adjustable shelves, glass doors, \$20. Brown, AX 9-2510.

26" BICYCLE, boys, English style, 3 gears, \$30. Vermillion, AL 6-6249.

SKIS, 3 pair; 2 small gas heaters; solid maple dining table, \$25; Mixmaster, \$15; blender, \$15; electric heater, \$15. Harshman, CH 3-4369.

LOOP RUG, small, 6'x9', cocoa color, cost \$34.50, sell for \$15; 1 set radius gauges, \$7.50. Martin, AL 5-5145 after 5:30.

AUTOMATIC WASHER, Kenmore, \$40; ladies ice skates, size 6, \$7.50; men's hockey skates, size 11 1/2, \$12.50; flute, \$35. West, CH 2-8981 after 5.

GARAGE DOOR, overhead, w/hardware, \$25. Goncher, AM 8-1360.

5 ACRES of land in Sandia Park area plenty of trees on North 10, \$3000 cash. Liston, AL 6-6017.

'56 MOTORCYCLE, Harley-Davidson Model 165 \$300 or best offer. Beach, AL 6-6165.

LOUNGE CHAIR and matching ottoman, finished in red Baliflex plastic, front of back rest has crack in surface, \$25. Carton, AL 5-6306.

STEEL WINDOW, "3423" 3' wide, 4' high, w/glass, hardware and screen, \$23.50. Glenn, AL 5-6569.

BABY CARRIAGE, Storkline, reversible folding handle, folding top, \$20 or best offer. Hogue, AX 9-1807, 1435 Espejo St. NE.

RADIO CONTROL receiver and transmitter for model airplane, boat, car, etc., \$20. Yearout, AX 9-6810.

KODAK CAMERA, Retina 1A, f 3.5 lens, case, light meter, used only four times. Tschaeche, CH 2-0405 after 6 p.m.

BUTANE HEATER, 15,000 B.T.U. w/safety pilot for trailer or home, new, never used, \$20. Schneider, AX 9-6243 after 4:30 p.m.

BABY CARRIAGE, Storkline, blue and grey, wind-breaker shield, ballbearing wheels. Ruddy, AL 5-3501.

TAPE RECORDER, Pentron, 2 speed, priced for immediate sale at less than 1/2 original cost, \$60 or best offer. Atkins, AL 6-0322.

MODERN SOFAS, twin, almost new, foam rubber, reversible, grey, metallic thread, make offer. Pickel, AX 9-1291.

35mm CAMERA, Ciro, Graflex f/3.5 lens, rangefinder, flash bulbs, flash attachment, film, Ma adapter, carrying case. Freshman, AL 6-7853.

TELEPHOTO LENS, 100 mm f. 4 Serenar for Leica, Nicca or Tower, w/case and auxiliary finder, has rangefinder coupling, \$50. Corney, AL 5-1490.

BOXER PUPPIES, ideal for Christmas, very reasonable. Williams, AL 5-5310 after 5:30.

RIFLE, 30:06 caliber, \$35; Winchester carbine, \$40, trade for pistol or revolver. Smith, AX 9-1096, 8607 Menaul NE.

STEAM IRON, \$5; man's large 2-suit, \$5; bird cage, \$3; twin size 6" foam rubber mattress, \$40. Hobbs, CH 2-4745.

REFRIGERATOR, '55 Gibson, 12 cu. ft., 55 lb. freezer capacity, \$150; working wringer washer, \$30. Malenfant, AL 5-4964.

ELECTRIC STOVE, Welbilt, 4 burner, with oven, rotisserie, \$150. Hankins, AL 5-1566.

21" TV portable w/stand, \$75; 17" TV console, \$100; kitchen table w/4 chairs, \$40; twin desk dressers w/mirrors, \$30 each. Schaefer, AX 9-2826.

'51 HENRY J, six cylinder w/heater, \$250. Wiesch, AL 5-8563, 2828 Arizona NE.

TWIN BED, chest, stand, chair, Ethan Allen maple; springs, mattress, \$200 or sold separately; Mixmaster, juicer, \$15. Hobart, AX 9-2698.

'48 BUICK, Special, 4 door sedan, good second car, \$150. Guynes, AM 8-2127.

CHILD'S TRACTOR, Murray, w/dump trailer, \$13. Kohut, Ext. 20296.

DINETTE SET, lined oak, 6 chairs, \$35. Crampton, AL 6-3861.

TV set, maple cabinet with front closing, \$30. Graves, DI 4-1460 after 5:30.

AUTOMATIC WASHER, Frigidaire, \$45; Spanish guitar and carrying case, \$40. Poole, AX 9-2642, 10205 Propps NE.

TRENCH COAT, AF officer's, size 40L, zipper lining, \$29; PX jacket, \$58. Chandler, Ext. 49247, 4416 Palo Duro.

ELECTRIC TRAIN, Lionel, smoke locomotive, whistle tender, cars that couple, switches, mounted on plywood frame. Welker, 8510 Flower Pl. NE. AX 9-1179.

TROMBONE, Pan American, used only one school year, will sell reasonable. Brown, AX 9-1689, 8006 Marrow Rd. NE.

NEXT DEADLINE
FOR SHOPPING CENTER ADS
Thursday Noon, Dec. 19

MALE DACHSHUND, black & tan, 15 mos. old, AKC registered, shots, housebroken, \$35; Winchester, Model 94, 30-30 rifle, Redfield sight, recoil pad w/case, \$55. Shinn, Ext. 49153.

MALE BEAGLE, 2 years old, nice, good with children. Trade for? Lane, AX 9-3962.

VACUUM CLEANER, Hoover, less than 3 years old, \$15. Charlton, AL 6-1865.

UPRIGHT FREEZER, '57 Norge, 15 cu. ft., \$300; misc. items to trade for building supplies. Aaron, CH 3-4684, 437 Maple NE.

COMBINATION Zenith 3-speed new record player, blonde cabinet, 26"x17"x32" high, \$25. Eggert, AL 5-4980.

BABY CRIB, Gem, w/matching dresser, mattress; Teeter-Babe, best offer. Robinson, AX 9-0971.

FRENCH POODLE, black puppy, AKC registered, famous blood line, 3 mos. old, reasonable. Dunn, CH 2-9042.

HORSEHIDE JACKET, new, brown, size 38, \$15; Casco baby-tenda, \$10; large size baby bed w/innerspring mattress, \$15. Ross, AX 9-1526.

DAYBED w/wrought iron legs, suitable for den or child's room, \$15; Hi-Standard target pistol. Ankeny, AX 9-5320.

EVERETTE PIANO, good quality, elderly but reliable, black case, \$125. Weber, AL 6-2947.

DINING ROOM SUITE: two baby cribs and stroller. Sumlin, AX 9-6137.

ADMIRAL RADIO, table model, 3-speed phonograph combination, \$35 or best offer. Bytheway, AL 6-4843, 308 Louisiana NE.

COLLECTORS ITEMS, Lionel and American Flyer, train accessories, \$2 to \$10; '50 Crosley, less engine, make offer. Laskar, AX 9-1024.

ENCYCLOPEDIAS, 20-volume Standard International, 1955 Edition, never used, \$25. Holloway, Ext. 43171.

12 ACRES of land in Valencia County. For more information call Romero, DI 4-3950.

CLARINET, B flat, metal, completely overhauled, new mouthpiece, \$40; want case for Hawaiian guitar. Tatum, CH 2-9021.

CAMERA, folding, 35mm, Voigtlander, Vito 11A, 3.5 lens, 1-1/300 shutter, Eveready case, instruction booklet, nearly new, \$35. Miller, AL 5-7716, 239 Solano NE.

GAS RANGE, Estate, standard size, 8 years old, \$50. Shape, Ext. 51238, 3001 Indiana NE.

TETHER BALL, complete w/10 foot, 2 inch galvanized pipe pole, \$10. Westman, AL 5-6048.

21" TV, RCA mahogany console, \$100 or trade for piano. Morgan, AL 6-7480.

MODERNISTIC BAR, black wrought iron and brass w/2 bar stools. Meyer, AL 6-3926.

'49 FORD, clean, fourdoor. Potter, AL 6-5451 after 5:30.

STUDENT DESK and swivel chair, mahogany finish, \$15. Sherwin, AL 5-8866.

COCKER PUPPIES, female, thoroughbred. Grubbs, AL 5-0172.

MOVIE PROJECTOR, Universal P-500, 500 watt, \$25 or best reasonable offer. Palkovic, AL 6-4196 after 5.

ELECTRIC SHAVER, Norelco, used three months, \$15. Ramin, Ext. 24259.

POODLE PUPPIES, black standard, registered, championship lineage; no smell, no hair-shedding, gentle, easily trained, intelligent, \$100. Shunney, AX 9-2787.

ELECTRIC RANGE, 40" GE, large oven, deep well, \$50. Elliott, AL 5-5742, 4734 Southern Ave. SE.

BEAGLE PUPS, registered, eight weeks old, one male, one female. Kantz, AX 9-5450.

JIG SAW, 24" Delta, heavy duty production machine complete w/steel stand and 1/4 hp motor, four speed range. Joyce, AL 6-1605.

VIOLINS, 2, each with bow and case, \$55 and \$150. Ray, AX 9-1253.

MAN'S BICYCLE, J. C. Higgins European style, \$25. Biegel, AX 9-7318, 9516 Euclid NE.

FIBER RUG, 9x12 solid grey, \$15. Petrone, Ext. 45194.

'55 FORD Custom Ranchwagon. Ford-omatic, power brakes, R&H, 25,000 miles, original owner. Freedman, AL 5-3623.

BABY BED, 6 year size, \$12; ironing board, \$5. Willson, AL 6-7694.

TOY TRAIN TRACK, 12 pieces, \$1.50; one 35 watt transformer, \$3. Porter, AX 9-1583.

MAN'S TOPCOAT w/zipper liner, almost new; light brown, size approximately 38 short, \$15. Barbier, AX 9-1305.

GERMAN SHEPHERD puppies, 5, pedigree stock, AKC registered. Beck, 4113 Comanche Rd. NE.

PROFESSIONAL CLARINET, \$35; Westinghouse roaster over, \$17. Browning, 2130 Erbbe NE.

'50 MERCURY, two-tone, clean, new battery, 58,000 actual miles, \$350. Roller, 9620 Aspen NE.

HOTPOINT MANGLE, portable, w/chair, used twice, \$40. Richardson, AX 9-2796.

'50 CHEVROLET convertible, \$250. St. Clair, 2100 Erbbe St. NE.

MAPLE BUNK or twin bed set, flat springs included, \$20; two metal coil springs, twin bed size, \$10 for both. Fleming, AX 9-6833.

BENCH SAW, 8" Delta, 4" Delta planer and joiner. Calvery, AX 9-1804.

'55 FORD, Custom, 2 dr. sedan, one owner. Alvarez, CH 2-3821, 2014 Second NW.

'51 REFRIGERATOR, Westinghouse, 8 ft. \$75. Asher, AX 9-1668 after 5.

OUTBOARD BOAT, 14' Semi V runabout, steering controls installed, 15 hp motor w/trailer. Dollahon, AX 9-2471.

WANTED

CARPET LOOM, 36 inches wide, suitable for weaving woolsens or cottons. Wood, AL 6-1732.

TOBAGGON, used. Robinett, AX 9-3019.

HOMES FOR KITTENS, Be lucky! Get one of Calico Kate's 13th litter, silk cushion type, housebroken. Johnson, AL 8-8851.

CHILD CARE in my home, days, Princess Jeanne Division. Boley, AX 9-7348.

BABY SITTER, Lady with transportation to baby sit with me on New Year's Eve. I'm 14 months old. Jordan, CH 2-8928.

TO CONTACT someone who has built "Knight" Hi-Fi amplifier kit; to buy radiant heat wall furnace with or without thermostat. Westman, AL 5-6048.

ELECTRIC DRILL, 1/2", electric grinder, 1/2 hp or smaller. Glenn, AL 5-6569.

WANT TO BUY tape recorder, 8mm projector and screen and transistor radio. Jordan, AL 5-4832.

TRADE EVEN—'56 Ford 4 barrel carb. and manifold for '57 2 barrel and manifold. Shaum, AL 5-1904.

RIDERS, two or three, to Las Vegas, Nev., over Christmas holidays. Leave approx. Dec. 23, return approx. Dec. 27. Upchurch, AL 6-5340.

TO SHARE APARTMENT. Girl to share nice apartment close to Sandia Base. Ellen Mendibles, AL 5-4699 after 5:30.

PLAY PEN w/elevated floor. Knight, AX 9-3783.

GIRLS BIKE, prefer training wheels. Alderman, CH 2-6077 after 5.

CHILD CARE in my home in Roberson addition. Johnson, Ext. 52164.

LOST AND FOUND

LOST—Parker pen, sun glasses w/brown plastic frames, dice shape earring, lady's glasses w/rhinestone on grey frame in grey case; earring, tiger eye in silver; flower earring; sterling Rosary. LOST AND FOUND, Ext. 26149.

FOUND—White cotton glove, black leather glove, man's brown leather gloves, prescription bifocals in case, man's vest type yellow sweater, man's gold wedding band, earring, gold loop for pierced ears; Rosary w/black beads. LOST AND FOUND, Ext. 26149.

FOR RENT

TWO BEDROOMS, furnished, bath, \$50 month; 1 room, bath, \$40 month. After Christmas. Jones, AL 5-3390, 608 Richmond SE.

Part 2: Sandia Corporation's Place in Nuclear Weapons Program

Sandia Scientists Work at Frontiers of Engineering

Editor's Note: The quest for new knowledge and understanding in scientific fields and the application of proven principles in atomic ordnance are the jobs of research scientists at Sandia Corporation. In this second of a series of articles on the role of Sandia Corporation in the nuclear weapons program, this major activity is discussed.

In the preceding article, Sandia's five major responsibilities in atomic ordnance, i.e., Research, Development, Manufacturing Engineering and Production Operations, Quality Assurance and Surveillance, Military Liaison and Training were summarized. This article and those following will cover these areas in detail.

The field of nuclear weapons development is relatively new. There are few guide books to follow. On this engineering frontier the separate roles of the engineer and scientist become indistinct. "Applied research" is the term frequently used to describe the job of taking basic research data and converting it into design proposals. But where do research and engineering begin?

Research at Sandia serves a two-fold purpose: to assist the engineer in the design of new weapons for which there is an existing military requirement and to help develop new capabilities for nuclear bombs and missile warheads. To carry out this task, research activities are separated into five major areas: applied research, physical sciences research, weapons effects, systems analysis, aerodynamics.

Applied Research

Scientists employed in applied research at Sandia conduct experimental studies in new fields of weaponry, seeking new and unusual components which would be of interest to engineers in the design of nuclear weapons. By studying the physical phenomena underlying weapon components, scientists can offer the engineers a choice of components to do a particular job.

As an example, a way may be found to decrease the size and weight of a particular weapon, thereby enabling an airplane to carry a greater payload.

This research program is continuous and does not fall under time scales set by the military governing the design and manufacture of particular weapons.

This work requires close liaison with the weapons development groups at Sandia, Los Alamos and Livermore, as well as a practical understanding of the needs of the military services. (The Field Command of the Armed Forces Special Weapons Project (AFSWP), a joint Army-Navy-Air Force team, shares Sandia Base with Sandia Corporation. In addition, the Air Force operates the Air Force Special Weapon Center (AFSWC) at nearby Kirtland Air Force Base, where the Navy also has a Special Weapons Facility.)

Physical Sciences Research

Work of a more fundamental nature is carried out by scientists working in physical sciences research. The primary objective of scientists in this area is to seek new knowledge and understanding in all scientific fields related to work done by Sandia Corporation.

Conditions present in the earth's upper atmosphere is one field of study engaged in by these scientists. Information in this and other fields is made available to engineers at Sandia to assist them in the development of weapons.

Weapon Effects

The weapon effects phenomena at Sandia study blast phenomena during and after the detonation of a nuclear device to find answers to such questions as "What amount of radioactive fallout can be expected from the detonation of 'X' weapon?" "What is the temperature at the center of a nuclear fireball?" "At what point should 'Y' weapon be detonated to destroy 'Z' target?" "At what distance from detonation will a fortress be crushed—a bridge blown down?"

To increase the general fund of knowledge of weapon effects, these scientists perform theoretical studies and scale model experiments in the laboratory, and participate

in full-scale nuclear tests in Nevada and in the Pacific. Information gained from these studies has an important influence on the design of overall weapon systems, as well as upon the design of weapon components.

Systems Analysis

Mathematicians and other scientists engaged in systems analysis at Sandia Corporation perform an important research function in the development of new weapon systems and the improvement of existing systems.

Analytical methods are used by these scientists to study proposed ordnance systems or components for atomic weapons before they are developed and tested, and new methods are continually being devised for this purpose.

One of the objectives of these systems studies is to assist in determining what components will perform harmoniously with others in a given weapon system to ensure maximum system performance at minimum cost.

New types of military tactics are postulated in order to study requirements for new weapons and to determine the environments in which future weapons may be required to operate.

The systems analysis group establishes statistical methods necessary for the evaluation of weapon components and for predicting the reliability and life expectancy of weapons in stockpile.

To perform this function new statistical methods and procedures often must be devised, efficient experimental programs must be designed, and optimum sampling procedures must be established for guaranteeing the high quality and reliability required.

In addition, the systems analysis group provides an expert mathematical consulting service to the other groups in Sandia Corporation, offering high speed digital computing services for scientific and engineering problems, a consulting service in mathematical and numerical analysis, and provides digital computing techniques.

Aerodynamics

The complex array of electronic, mechanical and nuclear components which make up a bomb must be placed in some sort of casing if the weapon is to be transported, stored and placed accurately on a target. Assisting Sandia's design engineers in choosing the proper shape for the weapon are scientists and engineers employed in aerodynamics research at Sandia.

These aerodynamicists make studies to determine the best possible shape for weapon casings to satisfy performance requirements. As an example, if a weapon is to be carried externally by an aircraft flying at supersonic speed, the weapon too must be designed to travel at speeds faster than sound without interfering with the carrying aircraft's performance.

In addition to ballistic casing design, these research scientists are concerned with high-temperature effects on weapon casings, balance, stability and control of the weapon in flight or fall, to name a few. Along this line too, these researchers devise and recommend to the Air Force new bombing techniques and maneuvers which aircraft might perform to escape from the effects of the explosion it has delivered.

Research and Development

Scientists at Sandia have at their disposal the latest in laboratory



WIND TUNNEL is one of many research tools used at Sandia to explore new scientific horizons. The tunnel will provide valuable information to engineers on the behavior of objects when they are exposed to the now unknown mysteries of space.

equipment in carrying out research. Laboratory equipment and instruments, valued at \$1,000,000, are available for research work alone.

In addition, other specialized facilities, some unique in industry, are available to the scientists when needed.

Among these facilities are:

1. Modern commercial and Sandia-designed computers.
2. Two solar furnaces.
3. Two high-speed wind tunnels.
4. A 3000-foot rocket sled track for acceleration and impact studies, capable of attaining speeds more than twice that of sound.
5. The world's largest hydraulic centrifuge, designed by Sandia engineers, and several smaller centrifuges.
6. A 300-foot drop tower designed by Sandia engineers for shock studies.
7. A Sandia-designed shock-cord accelerator for "sling shot" design for impact and shock studies.
8. Two field sites on Sandia Base for scale model studies of blast effects (using conventional explosives), and sites at Nevada and in the Pacific for full scale studies of nuclear weapons effects.
9. Ballistic test ranges at Salton Sea, California; Tonopah, Nev.; Cape Canaveral, Florida, and Red Lake, Minnesota.
10. A 200 ton "air gun" to subject components to initial accelerations as high as 4000 times the force of gravity.
11. Complete electronic, mechanical and environmental testing facilities and laboratories at Sandia.

Soon to be in operation is a nuclear research center at Sandia to house a Van de Graaff accelerator to accelerate protons, deuterons and electrons to energies as high as two million volts.

Also proposed for construction is a \$2,900,000 tank-type heterogeneous reactor for testing the effects of radiation on materials.

The fruits of engineering and research are Sandia's product—weapons for the nation's atomic stockpile. The story of how an idea develops into the finished model will be told in the next issue of the Sandia Lab News.

Surplus Autos To Be Sold At Salvage Yard

Dump trucks, panel trucks, and station wagons are among the 19 vehicles offered for sale as surplus property by Sandia Corporation's Salvage Yard. An International pickup truck, an International panel truck and a Reo school bus are offered for sale at Salton Sea.

Vehicles located at Sandia Corporation include two vans, six trucks, three panel trucks, five dump trucks, two station wagons, and a four-door sedan.

All the vehicles are to be sold by sealed bids postmarked no later than Jan. 6, if mailed, or submitted in person at the Salvage Yard no later than 2 p.m. Jan. 13 when the bids will be opened.

Interested employees may inspect the property during the regular hours of Salvage Yard operation—12:10 until 1 p.m. on week days. Further information may be obtained from R. K. Leahy (2352) or G. W. Browning (2332) at ext. 40254. At Salton Sea inquiries should be directed to R. E. Hepplewhite (2480).

Louis A. Selogie Speaks to AIIE Monday Night

A noted industrialist and educator will address the Albuquerque area chapter of the American Institute of Industrial Engineers Monday night on "Statistical Methods in Industrial Engineering."

The speaker, Louis A. Selogie, an Associate in Engineering and

Associate Research Engineer II for the Department of Engineering, University of California, will speak at 7:30 p.m. in Room 201 of the Electrical Engineering Building, University of New Mexico campus. Mr. Selogie will discuss work sampling and measuring in office work and production. Also to be covered will be quality control in production and office, statistical methods in information-communication and data processing.

Members and their guests are invited. Refreshments will be served, it is announced by Al Kaping (2514), president.



L. A. Selogie

10 YEAR PINS



Guy Johnson
2483
Dec. 11, 1947

Herbert J. Bowen
5212
Dec. 15, 1947

George W. Ison
7241
Dec. 15, 1947

David S. Tarbox
2440
Dec. 15, 1947



Corry McDonald
2530
Dec. 18, 1947

Irvin W. Lenz
5221
Dec. 19, 1947

Robert L. Rutledge
2472
Dec. 27, 1947

Verne E. Blake, Jr.
1225
Dec. 24, 1947

FIVE YEAR AWARDS

Dec. 13-19

Howard T. Stump, Jr. 3160, Cecile B. McIntosh 8131, Irvin L. Moulton 7322, William E. Tucker 7315, Juan B. Gabaldon 2711, Bruna N. Cesaretti 2231.

Anna Mae Averyt 4135, James McMinn 8132, Luther F. Martinez 2352, Joe S. Ochoa 2232, Robert F. Carleton 2114.

Billy M. Gragle 5242, Donald B. Underwood 2411, Dulin G. Westfall 1611, Claude C. Edwards 2411, and Floyd L. Mastin 2721.

Dec. 20-26

Clarence A. Schooley 4113, Sidney H. Wagner 5521, Joseph G. Brooks 2711, John Cotch 2114, Richard W. Willey 1423, and Charles H. Smithey 2474.

TWO YEAR CERTIFICATES

Dec. 13-19

Carl A. Scheiber 2531, Robert E. Fay 5112, Emil E. Komarek, Jr. 1451, Margaret V. Taylor 7225, and Jose S. Gallegos 2474.

Dec. 20-26

Donald H. Emrick 7122, Audrey M. Koesche 2461, Robert G. Clay 1281, and Julia M. Cordova 2711.