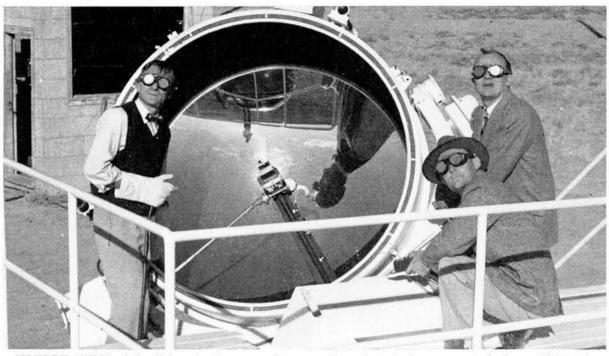
published every other Friday for the employees of sandia corporation, contractor to the atomic energy commission

Vol. 8, No. 1

ALBUQUERQUE, NEW MEXICO

JANUARY 13, 1956



SILVERY "EYE" of Sandia's solar furnace gathers brilliant rays of New Mexico sun, turns them into vast amounts of heat. Here Carroll Coonce, left, engineer

on the project, checks movement of mirror which tracks sun across the sky. At right are Harlan Lenander, and John Eckhart, both of 5220.

# Solar Furnace Made of Old Searchlight 'Burns' Metals

The giant silver eye of a new Sandia Corporation test device is using the bright rays of New Mexico's sun to produce temperatures ranging to many thousand degrees Fahrenheit!

Called a solar furnace, the newly-developed unit was constructed from an Army surplus anti-aircraft searchlight. It is used here to test thermal characteristics of materials, and to calibrate instruments.

Follows Sun

The searchlight, some five feet in diameter, follows the sun with the aid of an automatic photocell tracking system. Its great silver mirror focuses the sun's rays into a tight circle less than 1/4-inch in diameter, and produces sustained temperatures higher than can be attained by gas torches or electrical currents, according to Carroll Coonce, 5221, who was instrumental in developing the new

Coonce says the sun's reflected heat is "clean," there is no carbon residue, and the specimen can be kept at a higher temperature over a longer period of time than by any other means.

### Concentrates Rays

Rays of the sun are concentrated by the searchlight mirror at a point 25.58 inches above the mirror's surface. The mirror is a highly-polished cast brass slab, plated with rhodium in a concave or saucer-like shape inside the searchlight shell. The mirror has a high reflective capability and more than 70 per cent of the sun's rays falling on its shining surface are reflected.

In operation, Coonce explains, a test specimen is placed into jaws of an automatic holder which once fed carbons into the searchlight arc. Then a manually-controlled shutter which protects the specimen prior to testing is pulled aside to permit radiant energy to pour onto and through the material.

Coonce says that anything will "burn" when struck by the concentrated heat of the sun. Even those metals and elements customarily considered impervious to flame: tungsten, tantalum, 4130-steel, "burn" brightly, and emit a luminous ball of gas which can be seen at the center of the furnace.

### Not Energy Machine

The mirror itself, Coonce explains, is not a solar energy machine. The mirror can only reflect and concentrate the small solar "bullets" or photons shot by the sun across 93,000,000 miles of space; it concen-

trates their energy at the searchlight's focal point.

Temperatures attained depend upon the reflectivity, chemical composition, physical shape and other physical properties of the material tested, Coonce says.

Present work on the solar furnace includes construction of instruments to measure more accurately the temperatures attained within the heat circle. Sandians engaged in the work include George Reis, 5223, who is working on measurement of the specimens' temperatures; Ken Kemp, 5221, who planned some of the optical units; and F. L. Pace and John Lan-non, also of 5221, designers of the tracking mechanism which holds the searchlight on the sun.

Carroll Coonce, project engineer, developed the overall solar furnace design and primary programming was done by John Eckhart. Division Supervisor,

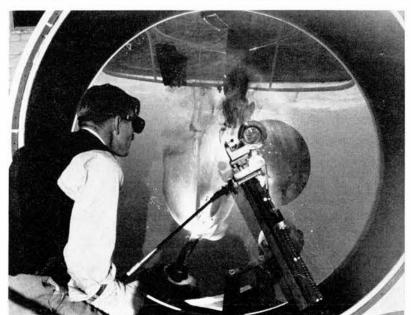
## **Patents Awarded Twelve Sandians During Past Year**

Twelve Sandians were awarded patents during 1955, according to records in the office of Donald Mac-Kenzie, patent manager.

Conrad Roeschke, 5443, who was awarded two patents, invented an Automatic Control System, and an Indicator System. Eugene Aas, 1335, received a patent award for a Thyraton Trigger Circuit, and Thomas Marker, 5400, received a patent for a Voltage Stabilizer.

Invention of a Pressure Ascertaining Means won a patent award for Carroll Osborne, 1333. Three Sandians. James Scott, 5220, James Valentine, 1547, and W. Gross, since terminated, invented a patentable Method and Apparatus for Discriminating Frequency Modulated Rec-

Wilbur Joerndt, 1243, and James Kane, 1243, patented a Switch Me-



BALL of gas and flame from burning steel is revealed in this unusual photograph taken by Roy Dunlap of Sandia's Photo Lab. Actual size of flame is very small, is distorted by curved shape of mirror. Carroll Coonce, 5221, is the operator.

## Reliability, Quality Symposium Attended By Sandia Engineers

Five persons from Sandia Corporation were among 700 scientists and engineers throughout the nation who attended the National Symposium on Reliability and Quality Control in Electronics held in Washington, D. C., Jan. 9 and 10.

Attending from here were L. Paddison, 5500; A. F. Cone, 5510; L. A. Smoll, 5533-1; J. M. Wiesen, 5131, and M. C. Schiess, 5533. J. W. Mc-Rae, president of Sandia Corporation is a member of the symposium's advisory board. Mr. Paddison is a member of the general committee of the Professional Group on Reliability and Quality Control of the Institute of Radio Engineers, sponsors of the meeting.

Cone, a member of the publicity committee for the symposium, delivered a paper at the meeting on the subject of preventive testing

## Frank C. Di Luzio Named AEC-SFO Asst. Manager

Frank C. Di Luzio has been appointed to the newly created position of Assistant Manager for Production of the Atomic Energy Commis-

sion's operations

office in Albuq-

uerque. He as-

sumed his duties

Mr. Di Luzio

will supervise

and coordinate

all SFO manu-

yesterday.



facturing programs. Frank C. Di Luzio The new office has been assigned most of the responsibilities of the former Assistant Manager of Development and Production Operations, a position held by the late Commodore Daniel F.

Worth, Jr. Mr. Di Luzio has been Manager of the Los Alamos Field Office of the AEC since 1952, and has been with the Army and AEC at Los Alamos since 1944.

He is being succeeded in Los Alamos by Paul A. Wilson who has been Assistant Manager of the AEC Field Office there.

Born in Rome, Italy, Mr. Di Luzio was brought to United States as a small child. He attended public schools in Cleveland, Ohio, and later was a student at Case Institute of Technology there. He received a degree in Civil Engineering at the Cleveland Institute of Technology

He is a member of the Western Society of Engineers, American Society of Civil Engineers, International Association of Hydraulic Research, New Mexico Water Resources and Development Committee, Advisory Committee for New Mexico to National Rivers and Harbors Congress, and the Governor's Advisory Committee on Economic Development.

## George P. Kraker **Renamed SFO Deputy Manager**

George P. Kraker, veteran administrator in the Atomic Energy Commission's weapons organization, has



George P. Kraker -assumes previous post-

resumed his duties as Deputy Manager of Santa Fe Operations.

Mr. Kraker returns to his staff position after serving as Assistant Manager of SFO Inspection and Storage Operations. His prior service as Deputy Manager of Santa Fe Operations was from 1951 to 1954.

A native of Gallup, N. Mex., he is a graduate of the U.S. Naval Academy at Annapolis, saw considerable service with the Navy in overseas combat areas during World War II. and ashore with the Bureau of Or-

He retired with the rank of Rear Admiral in June, 1948, to accept appointment as Manager of Sandia Field Office of the AEC.

Mr. and Mrs. Kraker reside at Sandia Base. They are the parents of two children and four grand-

## Pollard Speaks On Transistors to AIEE

A meeting of the Northern New Mexico section of the American Institute of Electrical Engineers will be held Jan. 17 at 7:30 p.m. at the Electrical Engineering building on the University campus.

Neith Pollard, 5413, will speak on "Transistors."

### Engineers Meet

The New Mexico Society of Professional Engineers will meet Jan. 23 in Room 101 of the University of New Mexico chemistry building on the campus.

After a dinner in the women's dormitory dining hall at 6:30 p.m., members will convene in the Chemistry Building for election of officers and other business.

## Credit Union Completes Biggest Year In History; Members to Meet Jan. 24

Members of the Sandia Laboratory Federal Credit Union will meet at 7:30 p. m., Jan. 24 in the Coronado Club for their annual business meet-

Agenda for the meeting includes: Reports, consideration of dividend and elections.

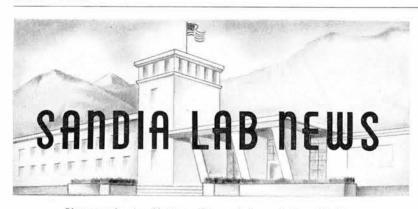
Reports will be heard from the board of directors, supervisory committee, credit committee and treas-

Members will also vote on a divi-

dend to be paid from earnings of the past year.

Four directors will be elected for two-year terms. Two members of the credit committee will be elected to serve for two years. Two members will be elected to serve on the supervisory committee, one for one year, one for two.

The Credit Union chalked up its biggest year during 1955 and members are urged to attend this meeting and help make future plans.



Photography by Photographic and Reproduction Division

Deadline Friday noon of week prior to publication Telephones Sandia Base 6-4411 Ext. 25253, 26135

Office: Room 10, Bldg. 829, Employee Services

Frances Ramsey, William H. Puder, Assistant Editors Robert S. Gillespie, Editor

## common L

## How About a Honeymooners Sandwich Week?

Read the calendar listing special days, weeks and months of the year for 1956 — it will make your head spin.

In January there is National Anniversary of the Tea Bag. There will also be National Crochet Week, Large Size Week and Odorless Decoration Week.

February will have the well-known Ground Hog Day, the not-so-well-known National Kraut and Frankfurter Week.

March provides Mardi Gras (Shrove) Tuesday, Texas Independence Day, National Peanut Week and Irish Linen Week.

April is the month of Maryland Day, Wildlife Week, Laugh

April is the month of Maryland Day, Wildlife Week, Laugh Week, and National Daughters Day.

The year runs on pretty much the same with each month setting aside a period of time for such things as: Confederate Memorial Day, Fig Festival, Straw Hat Day, Foot Health Week, Secretaries Day, Old Maid's Day, Let's Play Tennis Week.

If we look far enough we'll find National Ice Tea Time, Bow Tie Week, Old Stove Day, National Donut Month, Save The Horse Week, Cleaner Air Week, Beggars Night, Posture Week, Car Week, Sadie Hawkins Day, Holiday Butter Cookies Day and the Day Before Christmas which is a legal holiday in South Carolina.

The Chamber of Commerce of the United States publishes a list of these days each year in booklet form and if you want to know what is going on you may write them in Washington, D. C.

We're not trying to draw any moral, teach a lesson or deliver a sermon with this article, but thought you might enjoy reading a bit of Americana which helps to explain what keeps our country young at heart and long on initiative. We could do another feature on "What Rising Starlets Have Been Crowned Queen Of."

Oh, yes. About a Honeymooners Sandwich Week. Maybe it would appeal to more than the newly weds. What's a honeymoon sandwich? Just "lettuce alone."

All of us!



#### 'Seamster' Determined

Lone male in an evening sewing class at Albuquerque High School is Bonifacio Lopez, 2711-6. Undaunted by the impact of his initial appearance in the ladies' class last week, Bonifacio stuck to his needles and is stitching for himself some fancy western shirts and jackets.

#### Sick and Getting Better

Convalescing at home following a lengthy stay in Bataan Hospital is Jerry Neuberger, 2532. "Get Well" cards may be addressed to her at: Box 333, Cedar Crest, N. M. Leo Apodaca, an order clerk in 7241, has been in St. Joseph's Hospital since Jan. 1. Tom Harrison, 2553, left Jan. 4 for San Antonio, Tex., where he expects to undergo surgery. On Jan. 2, Gertrude Stewart, 3153, returned to work after an illness of several months.

#### Skiers Await Snow

Art Eldridge, 1652, vice-president of the Albuquerque Ski Club, reports that ski enthusiasts are eagerly awaiting signs of snow at La Madera ski run so the club and the Southwestern Ski Council can push ahead with plans for racing competitions and other winter sports events previously scheduled for January and early February.

#### Vacation Pleasure

A "June in January" holiday was enjoyed by Betty Risk, 1925-5, and husband Bill, 2122-1, who spent a Yuletide vacation eating dates, pecans, and basking in the sun at Phoenix, Ariz., the home of Betty's mother.

#### Sandian Married

The marriage of David W. Miller, on military leave from 1932, and Barbara Morrison, of Albuquerque, was an event of Dec. 30 in First Presbyterian Church. Dave is presently assigned to AFSWP at Sandia Base. He is the son of Jim Miller, 2351, with whom the couple is living at 2409 Parsifal NE until Dave's discharge from the Army in October this year.

#### Catches Big Yellowtail

"Cap" Carmody, 2223, and his wife, Elsie, spent the Christmas holidays at Guaymas, Mex. Cap went on sev-



eral fishing trips with friends of the family, Dr. and Mrs. George C. Widney, Sr., of Albuquerque, who are spending the winter in Guaymas. As proof of the fishing, Cap produces this photograph of a 21-pound yellow tail.

#### New Year's Eve Wedding

On New Year's Eve, Clarence M. Coats, 2553, and Isabel Atencio, of Albuquerque, were married in Bernalillo. They now reside at 412 19th St.

#### 2500 Party

The 2500 Christmas Party last month netted a profit of \$15.07, which will be donated to the March of Dimes.

### Just Under the Wire

Arriving 14 minutes before the stroke of midnight, Dec. 31, was Sally Rae Burks, daughter of Mr. and Mrs. Charles C. Burks. The father of this new '55 income tax deduction works in 1322. Carmel Mares, 3122, and his wife, Beatriz, also became parents the last day of the year. Their daughter, Cecilia Anna, was born at 3:45 p. m.

#### Faculty Members

Bennett L. Basore, 1441, will be teaching a graduate course in the Engineering College at the University of New Mexico this spring term. His class will be Communication Theory. Three other Sandians, all consultants, will be teaching in Electrical Engineering — C. S. Williams, F. J. Janza and E. F. Buell.

#### Southern Honeymoon

Honeymooning in Indiana, New Orleans, and Houston, Tex., are Andrew Lieber, 1223-1, and his bride, the former Marguerite Cox, AEC-SFOO. The pair was married Jan. 7 in the Catholic Chapel on Sandia Base, with a reception following at the Coronado Club. Upon their return to Albuquerque, they will be at home at 1808 Alvarado NE.



THREE GENERATIONS in this family photograph are represented by L. to R. Marie Ream, 3100 grandson, Gary Kent Ferguson; and Marie's daughter, Mrs. Beverly Ferguson, of Fairbury, Nebr.

### Crystal Collection

Crystal specimens from practically all 48 states and many foreign countries compose the private rock collection owned by Ellen Wood, 2533-3. Started only five years ago, the collection already boasts several thousand varieties and has taken honors at gem and mineral exhibits.



HOLIDAY FESTIVITIES — Santa Claus was a much anticipated "ole" fellow this Christmas at Salton Sea Test Base and a party at San Felipe Lodge greeted the occasion.

The program was under the direction of Mrs. Harry Schnarr. The Nativity Scene was re-enacted in a beautiful set complete with Shepherds, Wise Men, Joseph and Mary and the Star.

Narrations were done by Ida Neil of San Felipe Lodge and A. L. Pearson, 2483-1. Ted Sprink, 2480, was master of ceremonies and youngsters of the Sandia Corporation and Fred B. Prophet Company employees were the entranced audience. Christmas carols were sung and stockings were hung by the chimney. After the program refreshments were served in the Lodge dining room.

Salton Sea Test Base family party has become a happy tradition for the personnel of Sandia Corporation's "Southern California Branch."

## Sandianotes



HOLIDAY POTLUCK-Members of Division 1342 observed the holiday season with a potluck dinner at the home of Bill and Pat Barth in

Getting Well

A happy report comes from Salton

Eugene W. Pierce, 3120, and his

family vacationed in Mexico over the

Holiday season. They drove 3500

miles and stayed in their trailer

every night of their 10-day vacation

but one. According to Gene they had some "experiences" but no bad

Congratulations to Chester Corri-

gar, Lawrence Crackel and George Newfield, all 2483, Salton Sea, who

Professional

Sea Test Base that the son of Tony

Uszuko, 2481, is back home from the hospital after an attack of polio. He

is progressing satisfactorily.

South to Christmas

Salton Sea Stork

recently became fathers.

R Group

Antennas-Microwave

Jan. 23 at 8 p. m.

Circuit Theory

**E** Activities

The IRE professional groups on

antennas and propagation, and

microwave theory and techniques

will meet jointly at the home of

George Oltman, 1004 Parsifal NE,

A tapescript by H. C. Nelson of the

Polytechnic Research and Develop-

ment Co., Brooklyn, N. Y., will be

presented. Subject of the script is

"Microwave Techniques and Equip-

ment Used in Impedance Power and

Julian E. Gross, 5413, will address

members of the IRE professional

group on circuit theory Jan. 25 at 8

p. m., on "Circuits for Computer Use." The meeting will be held in

Room 218, Mitchell Hall, on the Uni-

Frequency Measurements.

#### Wits End Catch

A six-pound, three-ounce brook trout caught by Irving M. Kodel, 2552-3, at the Wits End Ranch at



Bayfield, Colo., will be entered in the 1955 Field and Stream Magazine contest. For his catch, Kodel re-ceived, courtesy of Wits End Ranch, an all expense paid, four-day, 62-mile pack-in trip to Colorado's San Juan Wilderness area.

### Pigeon Club Official

Re-elected secretary of the Albuquerque Racing Pigeon Club this week was Ed Harley, 1711. Ed and the other dozen active club members are already preparing for the spring and fall racing seasons. He has a racing team of 14, over one year old, which he will enter in April's eight racing events, ranging from 75 to 600 miles. He also owns four pair of breeders, and in February he will begin breeding for the fall series.

## Congratulations

Mr. and Mrs. Carmel Mares, 3122, daughter, Cecilia Anna, born Dec.

Mr. and Mrs. J. L. Wilson, 1652-3, a son, Reid Keith, Dec. 28

Mr. and Mrs. J. R. Roy, 1621-3, a daughter, Tracy Lynn, Dec. 31.

Mr. and Mrs. Richard A. Rael, 2221-1, a daughter, Valerie Jean,

Mr. and Mrs. R. E. Henderson, 1632, a son, Kirk, Dec. 17.

Mr. and Mrs. Floyd Maston, 2721, a daughter, Jessica Lynn, Dec. 11.

Mr. and Mrs. Al Herrera, 2721, a daughter, Lorraine, Dec. 22.

Mr. and Mrs. Skip Baca, 2465, a daughter, Mary Dolores, Dec. 29.

Mr. and Mrs. Carl Michael, 2417, a son, Glenn Scott, Dec. 8.

Mr. and Mrs. John Cunningham, 1442-2, a son, Paul Church, Jan. 6.

Mr. and Mrs. Robert G. Rickey, 5321, a daughter, Janet Marie, born

#### A&M Alumni Gather

Alumni of Colorado A&M College will hold a dinner get-together at Leonard's on Jan. 19 at 7:30 p.m. Sandia graduates of A&M and their guests are invited.

Movies of the Colorado A&M-University of Colorado football game and slides of the new campus building program will be shown.

Reservations may be obtained by calling Rod Chisholm, Alb. 2-6262.

#### Welcome Home

Sandians at Salton Sea Test Base are happy to have back home Mrs. Ted A. Sprink who has been in New Jersey for some time. She has been with her son and daughter-in-law. Her daughter-in-law is recovering from a severe attack of polio.



CREWCUT, barefoot Steven Biegel prefers a plane every time. He is the 19-month-old son of Jerry and John Biegel, 2533.

## Stanford Professor Speaks to Members Of IRE Jan. 20

Dean A. Watkins, associate professor of electrical engineering at Stanford University, will speak on "Applications of Traveling Wave Tubes" when the Albuquerque-Los Alamos section of the Institute of Radio Engineers meets Jan. 20. The meeting is set for 8 p.m., in Room 101, Mitchell Hall, on the University campus.

Dr. Watkins was employed at Los Alamos in 1948-49, and has a wide background in electrical engineering. He obtained his BS degree at Iowa State College, and his Ph.D at Stanford in 1951.

## Valparaiso Alumni

Members and guests of the Valparaiso Technical Institute Alumni association will tour the studios and transmitter facilities of KOAT-TV Jan. 13, at 7:30 p.m., according to James Drake, 6152.

Tour begins at 122 Tulane Drive SE, and will include the transmitter site on the west mesa. Further information may be obtained from Drake at ext. 40232.

7:30 p.m.

## Grand-dad Stood Guard, Had Fatigue **Duty During Civil War Like Today's G!**

"February 6th, 1864, — Left home for the Army. . . .

"January 10th, 1866, . . . This day at 12 M I was discharged from the U.S. Service once more free.

Between these dates, Benjamin F. Sheaffer, grandfather of Wilbur F. Sheaffer, 5215, wrote a stirring tale of the War Between The States — as he saw it.

#### Tale of War

WAR STORY-Wilbur Sheaffer,

5215, has discovered that his

grandfather's diary contains a

thrilling story of the Civil War.

Written in a neat script on yellowing pages of a leather bound book is the simple account of the boredom, thrills, drudgery and pain of war.

The book came into Wilbur's hands a year ago through a relative in California. For some 40 years prior to that it had been in a bank safety deposit box. Still in a good state of preservation, the book is a prized possession today in the Sheaffer household.

Benjamin Shaeffer's tales of the war bear such passages as these: "The fight was desperate and

lasted all day. "This day I belped bury our dead who bravely fought and fell on the

battlefield.' "We had a very good dinner of cabbage and potatoes.

"The salute of 200 guns has been fired for the surrender of Lee and his whole army - today I fell in the mud of Opeguan creek.'

"During the day we received bad news by telegraph that Lincoln was assassinated.'

### "I Had Guard"

Day after day, for long weeks his only comments on activities were to the effect that "I had guard" or "I was on fatigue duty."

A good businessman, Soldier Sheaffer wrote down in the book an account of the money sent home. He recorded his debts and the money owed him. He made a note of his pension claim number.

Some of his experiences are not recorded in words. After reports of a battle his handwriting appeared unsteady. An ardent follower of the weather conditions, he commented on rain frequently and some of these pages bear water marks.

And like many veterans of later wars, after the fighting was over Grandfather Sheaffer looked far afield for new opportunities. In a

7:30-10:45 p.m

pocket inside the back cover of the book is a pamphlet addressed to members of the Grand Army of the

"Free lands in the west!" it promised, and told how 160 acres near Lamar, Colo., was to be had for \$16.

## Lived in Pennsylvania

But ex-soldier Shaeffer didn't go west right away. He settled down in Pennsylvania and became a successful farmer. But after some years the call of the west proved to be too great to ignore.

In 1880 Benjamin and his eight children climbed aboard a prairie schooner and headed for Kansas where they homesteaded.

On that farm Wilbur Sheaffer was born. The farm still remains in the Sheaffer family and for many years a trunk in the farmhouse attic concealed the priceless diary. Another son of Benjamin stored it safely in a Pasadena bank for four decades and now it's in Wilbur's hands.

"When I'm through with it," Wilbur says, "I hope it will stay in the hands of another Sheaffer, then another and another."

## Antique Collector Speaks to Club

Early American Clocks" will be the subject of a talk given by Lee Deeter, 1440, Jan, 16 at 8 p. m. He will speak to the Albuquerque Arts and Antiques Club in the Hostess Room of the Southern Union Gas Company.

Lee is vice-president of the club and a member of the National Association of Watch and Clock Collec-

Guests are invited to bring any clocks representing early Americana. On display will be some early American clocks from Mr. Deeter's collection. Colored slides will be used to illustrate the talk.

9 p.m. - 1 50c person

#### coronado Fri., Jan. 13 SOCIAL HOUR 5:15-6:45 p.m. Lee Sprague Trio Sat., Jan. 14 Jan. 13 - 28 JUKE BOX Square Dano 8; 11:30 DANCE 9-1 Sun., Jan. 15 GRAND OLE OPRY! Songs, Dances Entertainment Fri., Jon. 20 SOCIAL HOUR 5:15-6:45 p.m. Stylists Combo TEENS DANCE 8 - 11:30 p.m. Thurs., Jan. 19 Wed., Jan. 18 Mon., Jan. 16 Tues., Jan. 17 BINGO DUPLICATE Sat., Jan. 21 Open BRIDGE 8 p.m. Open 7:30-10:45 p.m 8 p.m. - 12 \$1 a card Sat., Jan. 28 DANCE Fri., Jan. 27 Thurs., Jan. 26 Wed., Jan. 25 Tues., Jan. 24 Sun., Jan. 22 Mon., Jan. 23 DUPLICATE SOCIAL HOUR 5:15-6:45 p.m. Dreamweavers Orchestra CHESS NIGHT LADIES BRIDGE Open Open BRIDGE SQUARE DANCE 8-11:30 p.m.

1:15 p.m.

# UNM Community College Offering Many Engineering, Math Courses in Evening

Registration for second semester evening credit courses at the University of New Mexico takes place Friday and Saturday, Feb. 3 and 4, in Carlisle gymnasium on the campus. Classes begin Monday, Feb. 6.

Listed below are some courses which are of interest to many Sandia Corporation employees.

#### **Business Administration**

Business Law, Principles of Marketing, Credits and Collections, Collective Bargaining.

#### Accounting

Principles of Accounting, Principles of Accounting laboratory, Intermediate Accounting, Income Tax Accounting, Seminar in Advanced Tax Accounting.

#### Electrical Engineering

Principles of Electronic Circuits, Communication Theory, Microwave Technique, Digital Computers.

Mechanical Engineering Design Analysis.

#### Mathematics

Intermediate Algebra, College Algebra, Plane Trigonometry, Plane and Solid Analytical Geometry, Introduction to Calculus, Mathematics of Statistics, Advanced Calculus, Partial Differential Equations and Orthogonal systems, Theory of Functions of a Real Variable.

#### Physics

Introduction to Weather and Climate, Contemporary Physics, Methods of Theoretical Physics (advanced), Quantum Mechanics.

Information concerning these courses may be obtained from the UNM Community College office, telephone Alb. 7-0391 or 2-9013.

Offices of the Community Evening College are located in the Administration Building, Room 208. The office will be open all day and from Jan. 28 to Mar. 3 will remain open 6 to 8 p. m. Monday through Thursday and from 8 to 12 Saturdays.

Non-college credit courses of interest to Sandia's machine shop personnel include: Acetylene Welding, Arc Welding, offered on both Monday and Tuesday evenings of each week; Basic Electricity and Electronics, Industrial Trigonometry, Mechanical Drawing, and Woodworking.

A supply of bulletins for Community College courses is now in Employee Services office, Bldg. 829.

High school level courses are available at the Albuquerque High School evening sessions, but enrollment in most beginner's classes is now nearing end of registration period. Courses available include: Silk Screening, Copper Tooling, Block Printing, Woodworking, Painting and Sketching, Sewing, Leathercrafts, Ceramics and Copper Tooling, Typing, Shorthand, Bookkeeping, Income Tax, Business Arithmetic, Filing, Business English, English for Non-Speakers, and Beginning Spanish.

Further information on high school shop and business courses may be obtained through the Administration Office, Board of Education, Alb. 7-9541.

## Historical Tool Exhibit Will Be Here This Month

Two sessions of the "Civilization Through Tools" exhibition will be held Jan. 18 in Albuquerque,

The exhibit, which is being brought here by the American Society of Tool Engineers and the American Society of Mechanical Engineers, may be seen at 4 p.m. and 7:30 p.m. in the Albuquerque High School auditorium.

The session at 4 will be for public school and university students, Boy Scouts, Girl Scouts and the general public.

At 7:30 p.m. members of the Council of Technical and Scientific Societies and their guests, businessmen, military, and the faculties of the public schools and University are invited.

Following are the Sandia Corporation employees who are helping arrange the exhibition:

Nicholas Sannella, 1424, president of Joint Council of Technical and Scientific Societies; Robert W. Henderson, 1200, president of ASME; Julian C. Moody, 1651, president, ASTE. Hubert R. Hanen, 2532, is chair-

Hubert R. Hanen, 2532, is chairman of the education committee; Paul Stewart, 2532, chairman of the military committee. Allen F. Hurford, 1431, is acting as council coordinator in presentation of the exhibit.

Don Bliss, 2533, and Larry Lowe, 2113, are assisting with publicity for the exhibit.

## Ask Meteorologists To Prepare Papers For National Meeting

Officials of the Albuquerque branch of the American Meteorological Society this week invited interested southwestern weathermen to submit papers on any phase of their work, according to C. Eugene Buell, Sandia Corporation consultant in 5123. The papers will be considered for the national meeting of the Society to be held in Albuquerque Sept. 5-7, 1956.

Although the conference will emphasize southwestern meteorology: dry climates, cloud seeding and cloud physics, papers on any aspect of meteorological science will be welcomed.

## Grand Ole Opry Here

A gala appearance of "Grand Ole Opry," direct from Radio Station WSM, Nashville, Tenn., will take place in the Coronado Club Jan. 15, from 8 p.m. to 12.

Included in the stars who will sing, dance, and entertain here are Smiley Wilson, Kitty Wilson, Sherman Colline

Prices are \$1.10 per person for members, \$1.65 for guests.

## Jerry Bass Rescues Neighbor From Smoke-Filled Home New Year's Eve

As the Old Year turned into 1956, Jerry Bass of 2353 returned to his duplex home, smelled smoke, moments later carried an unconscious neighbor to safety from the smudgefilled apartment in the same building.

Jerry, a receiving clerk with the Sandia Corporation since 1949, says the woman apparently was smoking in bed and fell asleep. Her smoldering cigarette set the bedclothes afire. The neighbor was taken to a hospital where she was treated and released. Albuquerque police reported that Jerry's quick action probably saved the woman's life.

Jerry Bass and his wife, Minnie, live at 1642 Del Norte Drive SW.

Two of Jerry's sons-in-law also work for the Corporation: Clem M. Dixon, Jr., 2353, and Harvey Large, 1941



MAKING A CHECK of incoming shipments at a Sandia warehouse is Jerry Bass, 2353, who entered a burning apartment to save a woman's life.

## J. R. Townsend to Do Special Study For Government

The Office of Defense Mobilization has announced that John R. Townsend, Sandia Corporation Director of Materials and Standards Engineering, will do a special study on the shortage of nickel for that agency.

Arthur S. Flemming, ODM Director, says that "the study will put particular emphasis on the defense position for this metal and the impact defense requirements are having on the civilian economy."

Nickel has been scarce for civilian use since the start of the Korean War in 1950.

Mr. Townsend's study will analyze all government activities relating to nickel, including the stockpiling and expansion programs, as well as the set-asides for military and atomic energy needs. Nickel, the ODM pointed out, is a vital material in jet planes, the atomic energy program and many other military applications.

Mr. Townsend is Chairman of the Materials Advisory Board of the National Academy of Sciences and has served as materials consultant to the Office of Defense Mobilization.

Assigned to Sandia Corporation in Dec., 1952, he came here from Bell Telephone Laboratories where he was Director of Materials Applications Engineering.

## S. C. Hight Tells High School Students Of New Scientific Field — Solar Power

Science students at three Albuquerque high school are hearing addresses by Stuart C. Hight, Sandia Corporation Director of Research, on "Ap-



Stuart C. Hight
—speaks to young scientists—

plied Solar Energy" today. Mr. Hight was Sandia Corporation delegate to the First World Symposium on Solar Energy, held in Phoenix, Ariz., in November.

He is speaking at Valley High School at 9 a. m., at Albuquerque High School at 10:50, and at Highland High School at 1:50 p. m.

The hour-long talks will be illus-

trated by color slides depicting solar machines and heat generators on display at the Phoenix, Ariz., conclave.

JANUARY 13, 1956

More than 1100 U. S. businessmen, engineers, and solar energy authorities from 34 countries were in attend-

ance at the meeting.

Mr. Hight has prepared his talks for high school science students in an effort to interest potential scientists in a growing and challenging form of industrial power. He spoke on the same subject last night before members of the Albuquerque Philatelic Society.

The First World Symposium on Solar Energy, Mr. Hight says, represented a joint effort to assemble world knowledge on solar energy. Some 140 technical papers and panels discussed the possibilities of applying sun-generated heat to industrial and domestic use.

Solar power is being considered as a primary source of energy for undeveloped and backward countries. Mr. Hight foresees practical use in the near future of solar heat generators for homes. He is telling students that domestic solar water heaters are already in use in many parts of Florida.

Solar energy cannot compete today with conventional sources of heat and power, Mr. Hight says, but will assume an ever-increasing importance when oil and gas reserves become depleted in the U. S. and elsewhere.

### Superstitious?

## Research On Legends Shows All Fridays Bring Bad Luck—Not Only Those on 13th

Better not get married today or make your bed because legend has it that those who do will suffer ill fortune. In case you haven't looked at the calendar, today is Friday the 13th, a day fraught with bad luck and evil spirits.

If a black cat crosses your path today or you walk under a ladder, spill salt or crack a mirror, double misfortune may befall you.

But for those who are superstitious, Friday the 13th has no more significance than any other Friday, for all Fridays are, according to believers, evil days.

Researchers who have pored over legends of black magic find that European folk belief warns it is bad luck to take a new job or visit the sick on Friday. If you turn a bed on Friday you will not sleep, so say the folk tales, and criminals expect a heavy sentence if they are tried on Friday. If all this worries you, better not bite your fingernails because that is supposed to be bad luck too, at least on Fridays.

Perhaps the most popular reason for the Friday superstition is that Christ was crucified on a Friday, giving the day special significance. Supporting this theory is the fact that Friday is associated with the passion of Christ and that it is a day of abstinence in the Catholic church.

Going back a little further to mythology, Friday was considered the festival day of the Goddess Freya, the northern Venus. The ill luck which, by popular superstition, is still ascribed to projects or journeys undertaken on Friday is traceable to the goddess.

The day was originally regarded as sacred to the goddess, whose honor was held to be disregarded by all who, instead of participating in her festive worship, followed their own pursuits. To these persons Freya was supposed to bring ill fortune. Although this explanation has been forgotten, the superstition remains.

Sea-faring people, by nature more superstitious than most, have a great respect for Friday. A prevalent legend has it that a ship built on Friday by a sea captain who intended to put an end to the superstition, foundered on its first voyage. The tale, still heard from the salt-caked lips of sea-faring men in Wilmington. Delaware, goes like this:

Isaac Harvey laid the keel of the brig on Friday. That night his wife had an ill dream and strongly urged him to tear it up and begin the ship anew on Saturday. But Isaac, a hard headed man, placed no faith in women's dreams. Not only did he fit out the brig on Friday but also named her The Friday and sent her out under the command of a good captain on a Friday.

On that Friday week, in the midst of a gale that piped and roared and thundered as if the Dutchman and his demon crew were loose, a homeward bound vessel, running before the gale, saw the hull of a brig pitching heavily in the trough of the sea while her crew ran about the deck cutting loose the wreckage of the masts and sails that dragged and bumped alongside.

As the homeward bound vessel darted past, down the slippery side of a great wave, a wail went up from the doomed brig and under her counter they say, painted in white letters, "Friday of Wilmington." The incoming wave rose like a wall between the two ships and when they lifted on the crest of the next, nothing was to be seen but a few timbers.

When Mrs. Harvey heard the news she folded her hands and remarked, "I told thee so, Isaac. This is all thy sixth day doings. Now see the consequence. Thee never had the vessel insured."

In England, there exists a belief that a marriage consumated on a Friday will end in bad luck. Hence, only two per cent of all marriages in the midland section of England occur on Fridays. But in Scotland where people believe that Friday is a day of good luck almost nine-tenths of all marriages there take place on that day. In Scandinavia Thursday is considered as a day of ill omen for a wedding and in India to be married on a rainy day is to invite trouble.

Closer to home, a superstition which has found its way to New Mexico from Spain and Old Mexico is that Tuesday is an unlucky day to get married. The Spanish have a saying, "En martes ni te cases, ni te embarques, ni de tu casa te apartes," which means, "On Tuesday neither be thou married, nor go on a voyage, nor leave thy house." Some say this expression is especially true during Leap Year and this year, 1956, is one.

# Bowling Tournament Deadline Monday

Last call for bowling tournament

Only three days remain for interested Coronado Club bowlers to submit entries in the annual Men's Bowling Tourney which begins Jan. 28. Singles, doubles and team entry blanks must be in by 5 p. m. on Jan. 16

Highest average as of Jan. 13 must be used. Any Club member with an approved ABC bowling average, based on a minimum of 18 games played, may enter. Entry fees are \$2.25 for each entry, with an optional 25 cents for all events.

Cash prizes will be awarded for each ten entries in any category. A new bowling ball will be first prize for all events. The Coronado Club will also award a trophy to winner of each event.

Entry blanks are available from Coronado Club league secretaries, team captains, Ronnie Heuer, AEC, or Charlie Kaspar, bowling chairman.

### Mountain Club to Explore Ancient Indian Dwellings

The primitive ruins of Pueblo Bonito in Chaco Canyon will be explored by members of the New Mexico Mountain Club Jan. 14 and 15. The largest group of Indian dwellings north of central Mexico, they date to 1100-1235, and are the best preserved from that period in the Southwest, according to Hank Tendall, 1215, club president.

The group will meet at 1 p. m., Saturday, Jan. 14, at Nob Hill Drug, 3500 Central SE, and will be led by C. R. Cundiff, 2551.

Sympathy

To Bertha Merrill, 5241-2, and husband Jack, 5221, for the death of her father Jan. 4 in Albuquerque.



## Organization of Corporation Has **Changed Recently**

With the appointment of three new vice-presidents and a general rearrangement of several technical organizations, Sandia Corporation organization chart took on a new appearance Jan. 1.

To help Sandia employees understand the new alignment, a new organization chart is published on this page.

The chart shows these changes from the former organizational set-

Glenn A. Fowler is now Vice-President - Research, 5000, succeeding Walter A. MacNair who has returned to Bell Laboratories.

Fred J. Given is also a new Vice-President heading the new organization, R&D (Research and Development) Technical Services, 7000. Reporting to him are four superintendencies: Military Liaison Services, 7100 (formerly 1700); Staff Services, 7200 (formerly 1900); Surveillance and Operations, 7300 (formerly 5600). A new superintendency, Drafting and Specifications, 7400, is performing work previously done by Engineering Service Department, 1640, and the specifications writing functions of division 1623. The superintendent of this organization has not yet been named.

Fred Schmidt, Vice-President -Operations, 2000, is retiring at his own request Jan. 31 and will be succeeded by Raymond P. Lutz, who has been Superintendent of Programming Manufacturing Engineering,

The activities of the former 5300 and 5400 organizations which were under Mr. Fowler and Mr. Given are transferred to L. A. Hopkins who now has the title, Director of Component Development, 1400.

With the exception of the Electronic Test Equipment Department, 1340, (now 1440) those weapon system development organizations, 1320 and 1330, formerly reporting to Mr. Hopkins, have been transferred to the 1200 organization headed by R. W. Henderson.

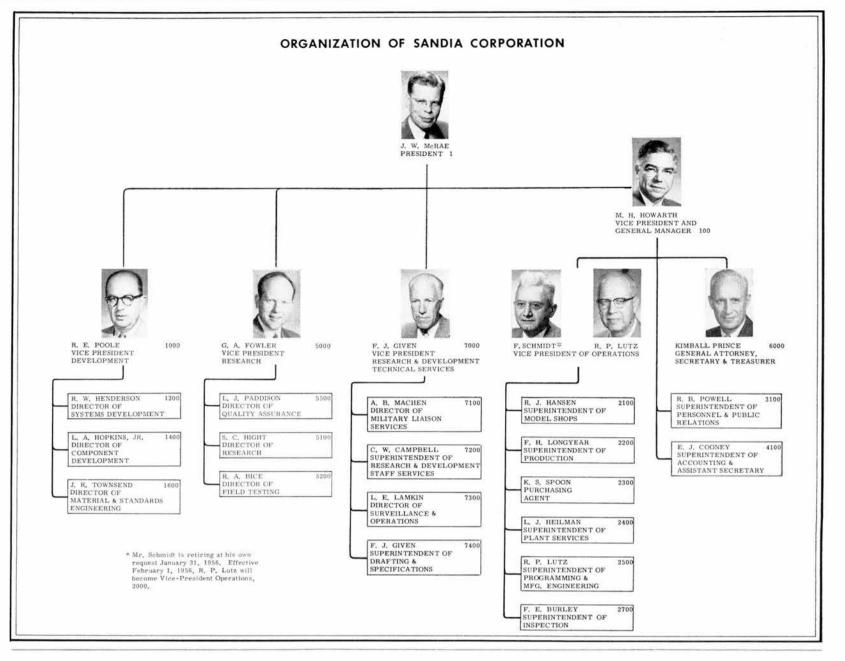
## Sandian Will Teach Engineering Drawing

George W. Randle, a mechanical engineer in 1335, will teach a course in Engineering Drawing at the evening session of St. Joseph's College for the spring semester.

George is a registered professional engineer in the state of New Mexico, holds BS degrees in mechanical and electrical engineering from the University of New Mexico and the master's degree from the University of

The class will teach the use of drawing instruments, lettering, principles of orthographic projections, and other mechanical drawing fundamentals. It will meet each Monday evening, from 6:45 to 9:25.

Interested applicants are urged to contact the Registrar, St. Joseph's College, for further information.



## Tech Writers Hear Conference Reports

The Albuquerque Society of Technical Writers will hear two brief reports of technical writing conferences attended by Sandians in recent weeks.

Lee Parman, 7123-1, will report on the Conference on Scientific Editorial Problems held recently in Atlanta, Ga., under the sponsorship of the American Association for the Advancement of Science.

Reporting on the Symposium on Standardization of Technical Manuals held in Los Angeles on the UCLA campus will be G. C. Hollowwa, 7120.

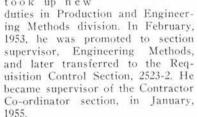
Reservations may be obtained from Justin Heineman, ext. 21148. Tickets are 25 cents per person. Refreshments will be served. All interested technical writing personnel, editors, and their guests are wel-

## 'Blast' Appointment

Max Weber, 5122, has been appointed chairman of the publications committee for the IRE publication, "The Blast." Weber succeeds Bennett Basore, 5441.

EDWARD C. DOMME to supervisor of the Program Services Division, 2523.

Ed's Sandia service dates from February, 1951, when he was hired after graduation with BBA degree from the University of New Mexico, and took up new



During World War II, Ed served as a patrol bomber pilot in the Asiatic-Pacific Theater with the U. S. Navy. He is a member of Delta Sigma Pi, professional business fraternity.

## **Promotions**

HAROLD H. BRUEGGEMAN to supervisor of Program Control Division A, 2521.

Hal came to the Corporation in 1951, after five vears in partnership with his father in an oil field parts manufactur i n g concern in Enid, Okla. In June, 1953, he was

promoted to supervisor of section 2531-1, Manufacturing Engineering Department.

Prior employment has included five years as a field service engineer with the Wright Aeronautical Engineering Corp., at Woodridge, N. J., and 21/2 years as a technical representative with the Lockheed Overseas Corp.

A graduate of Oklahoma A&M College with the BS degree in mechanical engineering, he is a member of Sigma Tau, honorary engineering fraternity, and Pi Tau Sigma, mechanical engineering honorary.

HAROLD F. GUSTAFSON, to supervisor of Manufacturing Relations Engineering Section, 2531-1,

Manufactur i n g Relations Engineering Department I.

Gus began his Sandia Corporation service in March, 1951, after employment with the Pure

A graduate of the New Mexico A&M College at Las Cruces, he participated in naval campaigns in the Pacific theater during World War II. He was a motor machinist's mate assigned to the submarine, USS Cutlass, which sailed in Japanese

we cannot take time to perform our work safely.

ROBERT S. LEMM, to manager of the newly-created Electronics and Standards Department, 2130.

Previously, Bob was supervisor of the Inspection Division, 2112 He came to Sandia Corporation in October, 1950, from Los Angeles, Calif., where he was self-employed as

a manufacturer of medical electronic equipment.

Bob studied mining engineering at Michigan College of Mining and Technology, Houghton, Mich., mechanical engineering at Ohio Mechanics Institute, Cincinnati, and metallurgy at California Institute of Technology, Pasadena.

He is a member of the National Society of Professional Engineers, the Society of American Military Engineers, and vice-chairman of the Albuquerque section of the American Society for Metals.

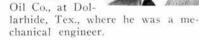
A member of the New Mexico Society for Professional Engineers, he holds a professional engineers'

WILLIAM A. LITTLE to supervisor of section 1211-2, Engineering Department A.

A native of St. Louis, Mich. and graduate of Michigan State University where he received his B.S. degree in Electrical Engineering in June, 1951, Bill

came to Sandia Corporation as an electrical engineer

assigned to 1270. From 1942 to 1946 he served in the Air Force as a radio instructor at Scott Field. A member of the American Institute of Electrical Engineers, Bill is also a member of the honorary engineering fraternity Tau Beta Pi, Eta Kappa Nu, honorary electrical engineering fraternity, and Pi Nu Epsilon, honorary mathematics fraternity.



No job is so important and no service is so urgent that



In the near future more than 4000 Sandia Corporation employees will have received service recognition awards as the initial phase of a program being launched this month,

Certificates are going to 2537 emplovees who have completed over two but less than five years service. Pins or lapel buttons bearing the colorful Thunderbird emblem will be awarded to 1771 employees having over five years with the Corporation and to 24 employees who will have completed 10 years of service by the end of January.

For the 10-year awards the emblems will be mounted on the employee's choice of jewelry, including tie bars or chains for men and brooches and bracelets for women, There will be no charge to employees for any of the awards. The total number receiving service recognition awards this month is 4332, more than 75 per cent of the employees on the

Effective service dates for many employees are prior to the date of the founding of Sandia Corporation in November, 1949. For those employees who were here before then, the Sandia Corporation service date is the date employment began at Los Alamos or at Sandia Laboratory while it was operated by the University of California.

The design chosen for the emblems was submitted by H. C. "Clyde" Walker, 7362. Clyde's idea for a "thunderbird" emblem was born while he was away from Albuquerque on a business trip. He sketched his impression on paper and submitted it as soon as he returned. His was the last entry to get in before the contest deadline. The winner was selected by employee balloting.

His award for designing the emblem was presented by James W. McRae, President of Sandia Corporation - U. S. Savings Bonds with maturity value of \$75.

Beginning next month, the emblems and certificates will be presented to employees on their second, fifth and tenth anniversaries at Sandia Corporation. The type of awards for longer periods of service will be determined later. The plan is to be administered by the Employee Records and Processing Division,

Beginning on the next page are the names of employees who have two years service but less than five.

Names of five and 10 year service award recipients will be printed

'Do-it-Yourself'

## Sandia's Expert Tells Amateur How to **Build Strong, Safe, Attractive Block Wall**

In a city where the patio walls are almost as much a part of a house as its roof, Sandia's Ken Reynolds, a mason in the Grounds Maintenance Division, 2415, offers a short course in block wall-laying, exclusively for Sandia Lab News readers.

Ken Reynolds has been putting up block and stone walls for a dozen years, and he maintains that it's one of the easiest jobs in the world, "if you proceed slowly - and think before you slap mortar around."

Biggest, most important step in the construction of a block wall, Ken feels, is the digging and leveling of the footings. "Only way to do this correctly," he says, "is with a surveyor's transit which you can rent easily at any of Albuquerque's do-ityourself places."

#### Use of Transit

"With a transit you can sight in your grade stakes, put up batter boards, and square your corners." He adds that the man who rents you the transit can give sufficient instruc-

tions for operation of the instrument.

Ken says you can build a patio wall with any one of a hundred possible combinations: adobes, baked brick, tile, or concrete blocks. In Albuquerque, concrete blocks have proven most popular because they lay up rapidly, are comparatively cheap, easy to handle.

Ken insists on the standard concrete block, eight inches wide, eight inches high, 16 inches long. He feels the eight-inch block is best, because there's more of a bearing surface to lend strength to the wall. Upon occasion, he has used six-inch blocks, but doesn't like to. He will use nothing less than six-inch blocks because the wall loses strength on long spans.

"For an overall estimate on the quantity of materials you will need," Ken says, "you can figure on 110 eight-inch blocks for 100 square feet of wall surface."

Once the footing has been poured, then scraped and cleaned, a dry course of block is laid upon the new footing, and the proposed joints



FINISHING TOUCHES to concrete block wall are made by Ken Reynolds, Sandia's masonry expert in 2415. Assisting at the mortar board is Antonio Mata.

marked on the footing in crayon. This will lessen waste during the actual laying of the blocks, Ken adds, and will give you an idea of where to place your pilasters, the double-thick, supporting columns so necessary to block walls to withstand Albuquerque's winds.

Pilasters also tend to absorb the stresses of drying and shrinking,

though they will not completely eliminate the possibility of cracks. Usually they are placed about 10 feet apart, on double-width footings. They are supported by internal reinforcing rods sunk into the wet concrete of the foundation.

"Now that you've gotten the first dry course down," says Ken, "we're ready to go. Start with one corner, and lay up three courses of blocks using a mason's level and steel square. If the corners are straight and square, the rest of the wall is

Mortar is spread on the edges of the blocks, one block at a time. The do-it-yourself Sandia mason picks up a block, sets it on end, slaps on a layer of mortar.

"Now knock the block sharply against the ground," Ken advises. "This will set the joint, and the mortar will stick to the block instead of sliding off." Next, use a hammer to tap the block into place, then "strike" or indent the joint with the tip of your trowel.

Guideline for straight-away laying of the blocks is provided by a string placed from top of one corner course to an adjacent corner. "Keep the string taut, placing the upper edge of the block against the string. Do not lay one vertical joint above another as this weakens the wall."

Ken, who has been a Sandia Corporation employee since 1950, reminds Sandia's week-end workers that block-laying is a comparatively simple masonry task. Plastering, however, is another matter. Reynolds feels that Sandians who crave the "real adobe look" should contract their plastering and stucco needs, unless they've had expert instruction.



B. F. Fisher, Jr., William A. Little, Vernon M. Field, Harvey N. Pouliot William B. Marsh, Harvey E. Thiermann, Stanford G. Cain, C. Y. Whiteomb, Wayne A. Grimshaw, Dennison Lanza, R. L. Peurifoy, Jr.

Bernard F. Heinrich, Frank J. Thomas, Louis Kent Stam, Jr., Oswald B. Tjeltweed, Jerome H. Johnson, George E. Sheridan, John Wesley Gumm, Vincent G. Redmond, Richard C. Williams, Marion L. Drago, Wallace Ray Green, James A. Stark, Jr., Raymond Troy West, Lewis A. Fjelseth, Grover W. Hughes, Donald Spatz, August E. Binder, Jr., Charles A. Gump, Donald Bliss Webb, Theodore P. Krein. 1240

Milton E. Bailey, James Embry Smith, Clifford J. Fisk, C. L. Carpenter, Robert J. Brown, Jr., Pierce L. Brown, Joffre P. Myers, Carleton W. Sprague, F. Shoemaker, Donald D. Morison.
Parker Frank Jones, Pete C. Hernandez, Arthur C. Grover, Garold Lee Fowler, John James Marron, Charles G. Hughes, H. T. Schneemann, Bernard A. Sandberg, Delfred M. Olson, Robert W. Hunke, J. M. Demontmollin, Holt Junior Gay, D. J. Chenoweth, Jr., Wiley T. Holmes, Harold F. Howard, R. D. Robinett, Jr., John H. Brengle, Lawrence E. Myers, Madison E. Oliver, Chester F. Sishe, Frank J. Maloney, Jr., Roger Asa Baroody, Albert E. Sensel, Richard H. Watkins, David Fred Lange.

John W. McKiernan, Leonidas T. Wilson, Rollins S. Howard, George A. Kloepfer, William Lyon Wood, Robert Allen Milby, Daniel Vernon Lotz, Severn Starzynski, William A. Gorry, Arthur Burton Cole.

Cole.
Robert M. Lacey, S. Thunborg, Jr., Fred John Weibell, Asa C. Wilson, Richard M. Dayhoff, Wilhelm E. Scorr, Reynolds R. Moore, Helen Marie Tolmie, William E. Mileski, C. F. Magnuson, Louis E. Bothell, Robert H. Rector, David Maurice Webb, Joseph Crompton, Ray E. Williams, William E. Baker, John J. Colwell, Jr., Audra Wood Reger, W. L. Morehouse, Robert J. Kindley, Nellis Eugene Hill, George L. Adkins, Jr.

Robert A. Dawirs, William James Daly, Harold A. Krieger, Frank L. Benscoter, George Hiram Duke, Alfred V. Engel, Walter Wolf Joseph, Frank W. Millikin, Joseph Bruce Boyd, John Louis Cameron. Ismael Ortega, Burton E. Dieruf, Andrew Lieber, Jr., Harry R. Botts, James A. Ford, James Howard Davis, Edward R. Stepka, Eugene K. Gardner, John P. Watterberg, Lasiter M. Spivey, L. L. Rainwater, William J. Shock. 1320

1330

R. R. Middlesworth, Fernie F. McEwin, Lyle A. Dillingham, George W. Randle, Carl J. Bachmann, John F. Neuberger, F. R. Edwards, Robert M. Beck, Bonnie G. Prentice, Jerome E. Ligocki.
George W. Treadwell, John P. Ford, Jr., Dean A. Hitchens, John Adams Balaban, Glem L. Morter, Harold M. Barnett, Ralph A. Reane, Thomas R. Bates, Robert Allen White, George S. Kinoshita.
Paul K. Goen, James D. Manweller, L. Middleditch, Jr.,

1340

Ernest C. Fuentes, Ronald A. Hayenga, Robert J. McConkie, John L. Reimholz, Hubert R. Sheppard, Oliver C. Srygley, Bobby Olson Allen, Glenn S. Mills, C. B. Stillwell, Gino Carli, Joseph D. Schauer.
Thomas W. McKinney, Clayton A. Loftin, John C. Cunningham, John Levi Hilton, A. C. Ellingson, Robert W. Roberts, Laurence W. Platt, Glenn R. Elliott, Richard H. Williams, Walter S. Jenkins, Rudolph S. Stefoin, Robert Keith Parry, Lee Baxter Neeley, Norman Walton Berg, Pete C. Morris, Paul F. Bahr, Dale Moroni Richey.

1610
Don Williams, Jr., John W. Pearce,

Don Williams, Jr., John W. Pearce, Charles A. Fletcher, Hugh R. Bowers, Warren A. Moore, Sr., Howard Lewis Davis, Charles K. Connolly, Robert G.

First of Service Awards

# 2-Year Certificates Awarded to 2537

Hamilton, Herrmann G. Page, Grady E. Raybon, Jr., Richard S. Jacobson, Delmar L. Longmire, William E. Bosken, Rollin W. Russell, Robert S. Hooper, G. H. Bruington, Jr., Arthur Bullhorse, Vernon L. Barcafar, Albert John Tucker, Aaron B. Lawrence, David Terry Judd. Carl Endres, Dulin G. Westfall, Bobby L. Schmedeman, George A. Lucky, Max McWhirter, Clyde P. Howard, Elmer White, William H. Cross, Frank Curtis Low, Andrew M. Imrisek, William C. Clark, M. M. Karnowsky.

Juan Martinez Mata, Richard A. Buck, James H. Harrell, Jr., Leo Peter Navoda, Robert L. Ault, James H. Stoever, Milton Owen Jones, Milton R. Madsen, Cleavord N. Giles, Sidney Burton Cook,
D. Maxwell Ellett, Lloyd R. Myers, Howard E. Westgate, Donald A. McCoy, A. J. Yorgiadis, John L. Kane, Edward K. Bauer, Eugene E. Medina, Jr., Roy Lewis Buckner, Frances T. Steckel, Jordan L. Parrish, James Ivan Poore.

1620

Daniel J. Yarbrough, William L. Neeves, Gilbert L. Eggert, Harry R. Holmes, Avenancio Lucero, Herman Romero, Vernon Edds Arnold, Robert E. Whitford, Johnnie B. Duran, Frank James Conrad.

Louis Milton Berry, Ishmael Ortega, Orelio Montoya, Alfred J. Quant, James Russell Roy, George H. Conrad, Lelia Ann Williams, Peter Franz Linde, Charles Henry Maak, Allen S. Buchanan.
Benjamin R. Armijo, Arthur Troum, Richard C. Jackson, Vernon V. Pheils, Clifford A. Fawer, Charles E. Arthur, Floyd A. Philgreen, John Olson, John J. Simpson, John L. Abbott, Carlton A. Scott. Helen M. Schmuck, C. A. Davidson, Arthur G. Everitt, John Donald Grenko, Valentine Hoffman, Clyde Ira Millard.

Thomas A. Kelly, Mclvin N. Pliner, David C. Robertson, Ralph Spencer Fox, Richard F. Prokash, L. E. Snodgrass, Monroe J. Willner, Floyd L. McFarling, John Albert Larson, Roy Edward Maxwell. Loran G. Anderson, Kenneth A. Sarason, Harry B. Evans, Jr., Joseph H. Placek, William M. Sodja, Jerome F. Jones, Carl E. Dahl, R. E. Henderson, Gustave W. Krause, James Wilbur Sims.
J. A. Paulhamus, Edwin R. Phillips, Richard O. Murdoch, Walter H. Barbier, Gene William Mead, Ferne L. Saylors, J. Gordon King, Edward P. Quigley, Edwin F. Johnson, Lee McKittrick. Wilbert W. Parker, Byron H. Wickett, Lewis M. Larsen.

Wilbert W. L. Lewis M. Larsen. 1640

Wilbert W. Parker, Byron H. Wickett, Lewis M. Larsen.

1640

Carl H. Nylander, Albert I. Martin, Jesse B. Edgar, Carmelo P. Rindone, Lewis A. Caffo, Charles H. Christic, Charles A. Tucker, Martha E. Howard, Vera Belle Reed, Emil J. Steinkraus, Quirin F. Simon, Harold P. Muchowski, Robert Roy Murray, Margaret L. Grover, Jean L. Braswell, Kenneth L. Hankins, Tommy R. Glauner, Arthur Huchmala, Victor H. Osterby, Nelson T. Radman, John Richard Lenz.

Marilyn C. DeBetty, Gene Allen Daniels, Donald A. Baumann, Paul Eugene Pogue, Merril J. Robinson, Nellie R. Calder, Martin J. Vigil, Frank W. Henry, Donald Max Locke, Willard R. Benneche.

John Paul Pupelis, Walter L. Cole, St., Genevieve R. Hines, Robert Earl Evans, Joseph H. Lackey, Jr., William E. Melegan, Merrill H. Merry, David Linson Berry, Edward S. Roth, Phillip H. Park.
Robert J. Mueller, Earl A. Sherwood, Daniel John Alvino, Mary Ruth Jansen, Eugene Byron Lopp, Irving L. Luke, Jr., John J. Flanigan, Wallace A. Hansen, Rodney G. Whiteaker, John E. Marquis, Ralph Leon Farnham, Carl E. Longfellow, Wilbur V. McGuire, Robert H. Fletcher, Charles M. Goad, S. O. Edwards, Jr., David A. Whitcomb, Wayne Lee Cyrus, Arthur Russell, John A. McIntosh, Burton K. Ferris, John J. Bahlman, Woodrow W. Hunt, Gilbert B. Lenert, Thaddeus R. Blaz, Cecilio E. Sanchez, Floyd Albert Stake, Frances L. Matheson, A. J. Brewster, Jr., Juan Rey Abeita. Adolfo Eliu Barcla, James A. Dempsey, Jr., Blanche M. Faltyn, Canuta C. Ortiz, Simona Quintana, Lyndall Lee Carter, Frances L. McCord, Toni G. Montano, Margaret P. Ramirez, Maxime N. Pierce, Ellen R. Jones, P. R. Luetkehans, Carter W. Gibbes, Allen C. Dale, Edward

A. Gorey, Richard P. Tyler, L. W. Newhouse.

1650

K. R. Dickerson, Joseph M. Bunch,
Hiram D. Chambliss, William E. Lane,
Edward A. Ryan, Arthur J. Eldridge,
Howard F. Burgess, John Edwin Ansley,
Patrick F. Proulx, Alexander Thom.
Michael C. Robel, Marilyn J. Franzen,
James C. Drake, William H. Blair, Leo
Henry Bressan, Albert W. Snyder, Neile
L. Hensinger.

Clifford A. Smith, Harry K. Daniel, Cliffon Davis Boxx, Donald E. Gregson, John R. Sundberg, B. H. Bueffel, Jr., Lyle W. Newman, Jr., Ernest Wm. Kersten, Herbert L. Webster, John Emil Haaland, Carl A. Denney, Charles A. McKeever. 1720

Gerald J. Hurley, Mildred M. Hinds,
Anna R. Beam, Lucile S. Marcrum,
Lillian V. Erickson, Angie E. Rivera,
Elsie R. Willis, Arlene Armbruster, Nena
A. Brannan, R. R. Teasdale,
Mary Antha Clem, Evelyn A. States,
Ralfella D. Corbitt, Barbara G. Spence,
Floyd W. Tate, Jr., James W. Coughlin,
Ruth Lois Conner, Eralia A. Carleton,
Charles F. Masse, John McKinley Hart.
Maurice V. Gowdey, Howard C. Sieberman, Franklin Barnett, E. Ronald Burke,
1730 1730

Donald Roger Knapp, Herbert S. Wallis, Gaynor E. Atkinson, John R. Tolmie, Joseph A. Gregory, George F. Dickins, James A. Sisler, Neal Loring Vinson, Wesley D. Furman.

1910

Harold Victor Catt, F. B. Philipp,
Gurdon R. Miller, Leroy Edwin Cole,
Charles W. Peterson, James McMinn,
Lyle C. Guynes, Robert P. Kelly, Thomas
E. Zudick, F. H. Viquesney, Jr.
Edward W. Shepherd, Paul L. Kirby,
George W. Cromie, Jack W. Reynolds.

1920

Edward W. Shepherd, Paul L. Kirby, George W. Cromie, Jack W. Reynolds, 1920

Max K. Linn, Frances H. Odle, C. P. Bortniak, Virginia B. Chavez, V. G. Dalesandro, Robert J. Guerin, Haddon C. Redding, Marcel I. Weinrich, Ruth Lavern Farley, Martha A. Leverenz.

Deluvina S. Montoya, Dorothy Harrington, Cloy B. Knock, Estelle M. Muses, Celeste K. Gatling, Marian S. Flynn, Mary Agnes Neuman, Dorothy G. Douglass, Irene Edith Leyba, Catherine E. Norton, Evelyn M. Abbott, Thomas B. Heaphy, James K. Zartman, Ricarda Gallegos, Robert E. Dunlap, John C. L. Leslie, Lee F. Parman, Betty A. Spieler, Robert E. Dewhurst, Helen June Kelly.

Frank Lucero, K. E. Scranton, B. F. Brooking, Felix C. Almaraz, Richard E. Burnam, M. A. Petrillo, Anna Marie Canavan, Louise S. Cebuhar, Hyacinth M. Walker, Betty Jule Bentley.

Diana V. Gonzales, Edra Mae Billings, Lillian J. Priddy, F. P. Tennessen, Barbara A. Angstadt, Viola M. Gomez, Mildred C. Knight, Geraldine O. Hickey, G. D. Robinson, Mary Ann Mares.

Alice K. Winchell, Rosalie Mae Walker, Betty June Cook, Dorothee A. Drury, Angelina F. Gurule.

E. C. Thompson, Clara E. Taylor, Lila Mae Ness, B. S. Cervantes, Celeste M. Meilner, Delia C. Jaramillo, V. A. Southerland, Elvina B. Strance, Mary L. Goolsby, Virginia R. Golding,

Jose T. Castillo, Mary Haines Davis, Urcel W. Coombe, Aileen M. Moran, Mary L. Valdez, Theresa C. DeBaca, Cecil S. Price, Josephine Sandusky, Ruth Dorwaldt Wood, Marie Hunter Terry.

Roma S. Coats, Juliette Leal, Lois Elsie Merriam, Anne F. Barrett, Blanche O. Evans, Elvira M. Antuna, Violet N. Barela, G. B. Stephens, Mary Ann Sikora, Monica J. Tomczak, Estelle Richardson. Davic Buck Ray, M. Nell Campbell, Mary R. Strickland, Leah Frances Cohen, Elinor V. Anderson, Betty M. Thurmond, Marilyn H. Langmyer, Faye G. Dobbs, G. M. Jungmeyer, Johnnie E. Johnson. Ruth A. Redmond, Ruth K. Pearson, Maridel M. Dyke, Sylvia Weinberg, Letha P. Stewart, D. Laney Miller, Gloria C. Garcia, Elsie H. Robinett, Adelina Sanchez, Elizabeth W. Sloan.

Evelyn M. Rodgers, Dorothy Lily Wh

Martha E. Whitford, Dorothy I. Cohen, M. Dolores Kaspar, Patsy C. Longerot, Ruth Aileen Glaze, Dana Tucker.

Bernice T. Umland, Jean Cowie Stebner,
Mary Jane Goetz, Charlene H. Winn,
W. G. Sandusky, Lorraine E. Cook, Grace
Ann Vigor, Eva J. Gallegos, Allene Pace
Cole, Frieda P. Salazar, Doris M. Oberdeck.

Norma Lee Bird, Gertrude G. Herring, Rebecca Ann Wade, Patricia D. Normann, Elizabeth R. Ames, Elizabeth L. Trump, Lila E. Heimer, Edith F. Jolly, Helen A. Whittemore, L. J. Bainbridge.

Catharine M. Smith, Shirley M. Willett, Glorya J. Maginnis, Andrey M. Benderman, Constance H. McNew, G. Ardelle Chambers, Shirley M. Zaluga, P. L. Porterfield, Beatrice L. Kenagy.

Hildegard L. Reiche, Gladys M. Middleton, V. M. Smeltzer, Agnes E. Mahinske, Kathryn F. Vickery, Barbara J. Gaddis, Marie E. Dillon, Daphine D. Tripp.

1930

Eugene Kemp Baker, Cyril Brady, Arlis A. Gruenoch, W. F. Gamberale, Roger G. McKenzie, Elfides Salazar, Roy Melvin Smith, Pedro Arturo Pino, George Ladanye, Thomas Leo Moran.

Melvin Smith, Fedro Arturo Fino, George Ladanye, Thomas Leo Moran.

Walker K. Vallely, Parker B. Burns, Sr., William E. Andrews, Violet M. Bernard, Robert L. Murray, Fred Kerns Silva, A. Margaret Smith, Eloy C. Pena, Amado U. Chavez, Theodore F. Pfeffer.
Larry Wilmer Eden, Luis Martinez, Carlos B. Baca, James E. O'Connor, Woodrow O. Lerke, Richard J. Callahan, Julian C. Baca, Henry James Meyers, Arthur R. Verardo, John Serna Armijo.
Arturo Jimenez, Robert B. Barry, Jack K. Dobson, John Walter Tanner, Jerald J. Johnson, Frank C. Rivera, Jr., Harold Joseph Wild, Alex Griego, Kenneth R. Edwards, Joseph G. Comiskey.
Lennox B. Green, Jr., John Lambie, Lewis Butler, Clifford A. Blossom, Robert E. Dick, Elvin M. Beezley, Antonio Skender, Adam Trujillo, Jr., Russell W. Sheppard.

James A. Deakin, Jr., Harvey D. Large, Harry A. Schultz, Jr., Willard Joel Freed, Carl L. Hawk, Jr., Arnold Colin Lamb, George Orr Thorne, Joseph K. Rutledge, Nell Louise Dean, S. A. Merriam, Jr. Audilio Barela, G. B. Drummond, Jr., James Boyce Petrie, Conrad S. Pickens, Howard A. Keever, Eunice J. Staggs, James Lloyd Talley, Allan M. Schonberg, Lamps Coven Avis. Howard A. Keever, Eunice J. Staggs, James Lloyd Talley, Allan M. Schonberg, Kenneth J. Bennett, James Owen Avis, Joellyn S. Vandock, Joe Ray Duran, Guy W. Jones, Joaquin E. Chavez, Onofre G. Perea, Floyd C. Elder, Eulogio C. Sanchez, Ernie Gurule, William E. Hall.

2110

Earl G. Coffee, Gilbert H. Weaver, Eloy Barela, Kenneth L. Cahill, Audrey C. Boxx, Tony R. Lopez, Jr., Ruth M. Hunt, Lloyd Earl Lincoln, Milo C. Robertson, Nelson Weidman.
Charles E. Horner, Warren C. Elder, Charles E. Sherred, Harry David Doro, Daryl William Orth, Cecil C. Tolbert, James Donald Wade, Stanley Urevitch, Ruth Naomi Brown, Charles B. Taft, Lamar D. Treadwell, Leroy R. Petersen, Charles E. Sherred, Harry David Doro, Daryl William Orth, Cecil C. Tolbert, James Donald Wade, Stanley Urevitch, Ruth Naomi Brown, Charles B. Taft. Lamar D. Treadwell, Leroy R. Petersen, Ralph E. McClure, Charles T. Wormeli, Ernest J. Tavasci, Howard T. Bowman, Elio Cultreri, Harold Lloyd Myers, Dorothy Ruth Lucas, Thomas H. Martin.

Robert C. Ruttle, Neal Keith Howard, C. O. Armstrong, Stanley Eastman, Henry Earl Miller, Elmer G. Goepfert, Robert F. Carleton, John Cotch, Johnson B. Jordan, Bonnie L. Smith, Jacob Emil Isoma.

Bomifacio B. Griego, Gene W. McClendon, Alfred J. Brady, Brad L. Sanders, Benjamin F. Lopez, Andres Landavazo, Lorenzo B. Holcomb, Otis Virgil Short, Abelio T. Garcia, Beno L. Baerwald.

Huel B. Brashears, Edwin C. Wahlstrom, Patricio G. Romero, Procopio L. Lopez, Flavio Gonzales, Jr., Lorenzo Garcia, Candelario Garcia, Altman Jones, Cecil R. Wallace, Max Orval Watson.

Peter A. Peshlakai, Harry W. Lindquist, Walter M. Wilson, Fred Wm. Lovato, William L. Rogers, Charles Bray, Chester A. MeMillan, Andres Mora, Jr., Francis A. Newman, Albert C. Hall.

Merry C. Campbell, James Asheraft, Lomse M. Klopolsky, J. B. Sweatman,

Robert J. Dineen, Paul L. Davis, Edwin William Joch, Ira J. Honeycutt, Floyd Harry Myron, Ervin T. Bureta. Roscoe G. Brooks, Lee Lawrence Hofer, Ernest A. Krahling, Harold G. Dusing, Clarence P. Canady, John Miziker, Henry J. Schroer, James W. Penick.

2120

Edith Briggs Blum, T. L. Barry, Jr., Fred C. Coston, A. C. Carabajal, Dorcas L. Richie, Manuel Rico, Calvin T. Howard, Adolfo Sanchez, Robert Read Evans, Mildred Smith, Gerald E. Hannan.

Deforest H. Rushing, Robert G. Higley, Harold H. Conley, Thaddus N. King, Dale Grover Irving, Charles J. Skaloud, Pearl G. Rauch, Robert C. Jaramillo, John Paul Stewart, Clifford C. Savage, Juan D. Griego, Pauline A. Laforest,

John Paul Stewart, Clifford C. Savage, Juan D. Griego, Pauline A. Laforest, Marian A. 1111man, Pearlie M. Kelley, Edward J. Szyper, Mattie Lee Wise, Wencel Frank Duben, Richard V. Pass, Lois F. Donaghy, Harold E. Burrell, Ramon Armijo, Harold E. Payne.

Warren Linden Buck, Fidel G. Chavez, Joseph A. Thomas, William J. Bounds, Solomon L. Apodaca, Alvarado S. Torres, Lorenzo D. Duran, Harry A. Gelwicks, Ralph L. Breneman, Orville L. Rowin, Charles C. Riley, Arthur E. Becker, Ir., Walter Gerald Self, Stev Moreno Ball, James E. Taylor, Marvin Lee Harvey, Harold W. MacGregor, Leon Avon Park, Byrd Carroll McKay, William L. Caffee, Karl O. McGinnis, Casper L. Doty, Erineo A. Pollack, George T. Mancuso, Ernest Lee Manning, Cecil W. Mewhorter, John W. Hinson, Jr., Nabor Rael, James R. Bowser, James T. South, James Dickie, Phil Meckins, Joe D. Ferguson, Chester A. Corbin, Manuel G. Martinez, Charles L. Ritter, Kenneth L. Peterson, Fritz J. Wettin, Merle W. Alexander, C. B. Torres, James C. Southall, John A. Garcia, George W. Day, Jr., Elizabeth C. Durand, Paul Edward Sumter, Roland W. Curry, Jr., Hugh E. Sherman, Joe Natt Skelton, Lawrence E. Stone.

2150

Joanne Grace Boyd, James D, Anderson, Ora Linell Case, C. M. Gueldenzoph, Francis E. Berry, Leslie B. Johnson, W. Rappleyea, Jr., Lawrence I. Ratliff, Abe Bertholomey, Winston W. French. Wilbur Leroy Drake, Ernest C. Cordova, Delmar W. Dufty, Martin A. Serna, James W. Courtin, Larry Leroy Brown, W. F. Leverenz, Jr., Edward Grossman, G. S. Spaulding, Donald R. Atkinson.

Loren F. File, Maurice E. Grant, E. H. Baber, Jr., Walter L. Kurlfink, Cameron C. Paschal, Jack M. Miller, Lawrence E. Leierer, H. J. Salazar, Jose D. Baldonado, Jesse W. Mitchell, Elmer R. Pitts, Jr., Gordon Rubert Zahm, Gerabl Horn, Robert Chappell, Burrell R. Snelling, F. K. Gregory, Harold D. Cochrell, George Albert Peel, Earle B, Anderson, Lewis Walton Carl, John Earl Homer.

Omar O. Sensel, T. E. Neubaner, B. F. Stricker, Chauncey J. Cole, Russell P. Asbury, Arthur S. Kraft, Amon Hart, Clarence F. Kohr, Jose Demus Jojola, Gilberto Sandoval, James A. Hay, Vern N. Sowards, Michael Zownir, Shelton B, Shannon, Elmer A. Kraft, Alfred J. Laneville, Henry L. Sellers, Howard P. Melling, Ralph W. Griffin, William B, Minser, Leo Elwood Paxton, Donald John Bunten, James J, Weber, Anthony F. Sullivan, Ervin W. Lehmann, John Erni, Edward J, Peterson, Richard C. Holman, Rupert F, Shattuck, Gordon Hugh Armour, Alva Louis Ayers.

2210

Andrew Blain, Donald J. Jurgensen,
Pat Homan, Kyle E. Benton, Andrew
R. Lunsford, Walter T. Parker, Frank
Henry Fox, Grant Bird, F. Archibeque,
Fred T. Crocker.

Fred T. Crocker.

Etta May Russell, Edward Lee Jolly, Robert W. Hewes, Richard Alvin Rael, Marvie D. McFee, Mary Ann L. Chavez, James T. Grier, Jr., Lee Grey Adam, James Edward Fitch, Richard M. Lujan. Steve Drago, Carl Bonilla, Ruth D. Derrick, Edwin Harry Kerl, Loren D. Blakely, Russell B. Wheeler, Bernard A. Clouse, Carolyn L. Herring, Thomas O. Harrell, Willard D. Clark, Cappi Lola Lynn, Edna M. Meyer, Gilbert Atencio, Alexander S. Abergo,

## List Names of Sandia Corporation Employees With 2-5 Years Service

Walter W. J. Rediker, Matthew P. Ungerman, Tomas Apodaca, Frank L. Leyba, Jr., Frederick Koehl, Lonnie J. Johnson.
Preme Ulibarri, Ramon Carol Garcia, S. Jane Maples, Price M. Hennan, Jr., James B. Becker, Eyelyn Fay Chenot, Elsie B. Sandy, Joseph P. Gaynor, Esther E. Morgan, Melvin L. Berg, Dewey Byrl Farmer, G. P. Marsico, Wilbert F. Leclair, Russell W. Doherty.

2230 Jo Ann Urevitch, Piffie R. Chavez, Samuel F. Boyden, Jr., Fred C. Brock-hausen, Edna Louise Miller, Julian B. Chavez, Fred R. Callahan, Clyde Harold

Jo Ann. Greviten, Pittie R. Chavez, Samuel F. Boyden, Jr., Fred C. Brockhausen, Edna Louise Miller, Julian B. Chavez, Fred R. Callahan, Clyde Harold Green, Edith Jane Irwin.

Eloine M. Whitehill, Alfred Herrera, Hubert J. Franklin, Roy Ross Williams, Florence M. Smythe, Henry W. Carrejo, Juan B. Pedroncelli, Santiago Chavez, Jr., Alvie A. Barrett, Gaylo I. Redlinger.

John Joseph Harper, Ruth Evelyn Gustin, Lucy E. Cochran, Blake J. Liston, Patsy H. Garrett, Lillian M. Liskovec, Myrtle E. Davis, Bruma N. Cesaretti, James M. Kelly, Leoma B. McMillan.

Ordella M. Folkman, Verna Ann Clark, Dolores D. Kobernat, Dorothy C. Pratt, Frances R. McKenzie, Guadalupe Mireles, Jose P. Sanchez, James R. Sawtelle.

Robert A. Harris, Ernest Santillanes, Matt Joe Bustos, Byron Lee Stewart, Elias Benavidez, Ben Jojola, Jr., Joseph A. Maldonado, Ralph W. Ambrose, Sam Apodaca, Juan S. Sanchez, Silverio Lujan.

Roy Dewitt Nix, Oscar H. Berlier, Joe G. Chavira, Raymundo P. Garcia, Robert Gail Dodge, James A. Slusser, Daniel Vallejos, Everett O. Smith, Johnnie G. Apodaca, G. Abousleman, Jr.

Victorino Lopez, Jr., Doomas T. Easton, G. T. Kleindienst, Milton Ophis Guest, Ludwig A. Eversgerd, Adenago B. Perea, John C. DeBaca, Charles E. Ross, Joe M. Benavidez, Samuel Louis Smith.

John G. Peterson, Jr., Lugarda S. Fields, M. J. McLaughlin, Frank M. Batchelor, Salomon Hidalgo, E. M. Bartolucci, Gilbert T. Leyba, James Brandolino, G. E. Cunningham, Walter A. Blevins.

Cassimero Baker, Livinus F. Desmet, Filomeno C. Chavez, Hubert A. Stewart, Ronald K. Skelley, Louie Bryant, Flovd Lowell Irwin, Raymond Saiz, Ignacio B. Ortiz, Jr., Leonard J. Baker.

Louis Baca Flores, Jose M. Sanchez, Joe Die Fulmer, Phyllis J. Harris, Irene B. Qualle, Donald L. Tyson, Harold E. Kindschi, Wendell B. Eskridge, Claude Baca, Felix T. Miles, Jr., Ralph W. Gustin, Eugene P. Monahan, Fred Junior Brown, W. A. Johnson, Jr., Archie J. Fisher, Hermenes Chavez, Eloy Garcia, John Chavez, Jesus Maria Lopez, Leonard L. Motichko, Henry T. Flowers.

John H. Franklim, Flor

2310

Eleanor M. Scotten, Alfred M. Granum, Chenault Davison, Arthur E. Willett, Mil-licent C. Hulgan, Don Merle Lucas, Josephine Mounyo.

Edward G. Dylo, Betty G. Pickel, G. G. dillespie, Jay Woodrow Hughes, Juanita J. Dewart.

Edward G. Dylo, Betty G. Pickel, G. G. Gillespie, Jay Woodrow Hughes, Juanita M. Dewart.

2330

Elizabeth F. Six, Elmer J. Stymiest, Daniel E. Neff, Jr., Ray C. Smelich, John W. Frizzell, Ralph Glenn Bowers, John A. Johnson, J. L. Collins, Henry J. Przystas, Guy Vernon Pearson, Billy Guy West.
Dilia Fernandez, William C. Garcia, W. A. Warren, Jr., Fred A. Collatz, Sr., Anna D. Michele, Mary O. Sumpter, Vera Lee Miller, Betty Ruth Womack, Helen W. Hakes, Willella Golden.
Hugh H. Howe, Frances J. Rinn, Ruby E. Childers, L. W. Gustafson, Charles J. Uribarri, Doreen L. Westfall.

2350

Moses Loretto, Theodore B. Harris, Santiago Otero, Judson L. Santo, John H. Samuelson, Nazario J. Gonzales, Alfredo I. Montoya, Eloy V. Sedillo, Gordon Wade Marney, Jose Inacio Garcia.
Perfecto Garcia, Candido C. Montano, M. J. Contreras, Laddie R. Sladek, Albert M. Mares, George L. Pacheco, Gabriel M. Baca, Roman Garcia, Tircio Ortega, L. C. Trujillo, Estella T. Baca.
Evaristo I. Alvarez, Eduardo M. Chavez, Emilio Ted Torres, Joseph H. Billings, Hilario Garcia, Louis Yannoni, Richard M. Sanchez, Gilbert Ramirez, Luther F. Martinez, Kermit G. Schuette.
Rudolph J. Walter, Candido A. Mieras, David Arthur Watt, R. J. Kronberger, Nasario G. Romero, F. B. Baldonado, Orlando Sanchez, Clarencio L. Lucero, Russell K. Leahy, Joseph M. Hammond. Flaviano Saavedra, Eufemiano Garza, John Martinez, Jose A. C. Chavez, Bruce G. Scott, G. W. Browning, Jr., Herman Romero, Jr., Goebel C. Renfro, Nathan Knapp, Donato R. Lovato.
Henry C. Baisdon, Dennis R. Benedict, Colfita H. Aragon, Joan Hartnitt, Avris

Henry C. Baisdon, Dennis R. Benedet, Colfita H. Aragon, Joan Hartnitt, Avris L. McReynolds, Ted B. Baldonado, Mary V. Simpson, Shirley A. McKain, Leopoldo A. Armijo, Gladys G. Lacher.

L. McReynolds, Ted B. Baldonado, Mary V. Simpson, Shirley A. McKain, Leopoldo A. Armijo, Gladys G. Lacher.

2410

Erlinda Duran. Calimero J. Lucci, C. H. Diguiseppi, Hazel Anita Poteet, Donald M. Hansen, Tomas Hernandez, Charles J. Davis, Ora John Crum, Joseph E. Tilley. Elden M. Vanvickle, Eloy Earl Ogaz.

Stewart B. Castle, John A. Fackelman, Donald Peacock, Layern E. Dumond, Wallace R. Mitcham, Richard Lee Smith, Neal Nowlin Rozell, William A. Adamek, Herbert C. Frahm, James Carl Vincent.

Charles Z. Mitchell, William P. Morales, Claude C. Edwards, Donald B. Underwood, Silas Dean Shane, Epifanio Padilla, Benjamin Trujillo, Henry Ray Welch, Allen J. Williams, Florence L. Vigil.

Santiago M. Aragon, John W. Manegold, Floyd C. McGimsey, William B. Treharn, Juan A. Sanchez, Wilfred N. Bullock, Leonard Glover, Solomon Chavez, Isaac L. Clements, Dennis A. Doherty.

Vences G. Chavez, Bennie D. Padilla, Charles H. Weidman, Glen Loyd Wisher, Augustine Apodaca, Frank J. Lesperance, Dale Albert Easton, Leonard Brooks, Revnel Garcia, Thomas J. Brooks.

Hadley Merton Rowe, Marcus M. Peeples, Junior A. Woellhart, Louis F. E. Kochler, D. C. Davis, Jose T. Gomez, Elton Dean Carroll, Albert D. Coulter, James Thomas Knott, James M. Meagher, Louis J. Price. Guy Denton, Joseph J. Schauer, Frank B. Dubois, Alphonse Jiron, George H. Lester, Elmer C. Temple, Mike A. Bucklin, Monico Martinez, Jose A. Armijo, Eusebio E. Montano, Mike Silva, Frank G. Armijo, Francis S. Shea, Charles Bud Litz, Winford G. Mabery, N. R. Scalzitti, Wilfred Sanchez, W. E. Glisson, Samuel J. Mullins, William K. McKim, Donald J. Sullivan, W. Vern Sawyer, Jose R. Gonzales.

Antonio Jose Mata, W. W. Olheiser, Jr., E. J. Hartenberger, Tom Vigil, Nicanor Gonzales, Seferino Sanchez, Pedro Gallegos, Efren Ortega, Lonnie D. Skinner.

Juan Pena, Victor Padilla, Eligio Baldonado, Joe S. Ochoa, James J. Schenck, A. J. Lesperance, Carlos Jaramillo, Jacob Barreras, Victor Reano, Aubrey E. Hanks, Glenn Ivan Hastie.

Jose I. Garcia, Rosalio A. Silva, Joe A. Trujillo, Ralph Troy Miller, Carl Larry Michael, Joseph C. Torres, O. B. Trujeque, Baltazar G. Romero, George Simpson, Joe A. Gurule.

Orval Donald Wray, Vicente C. Garcia, Tomas A. Baca, Manuel A. Romero, Guillermo Romero, Abel S. Lucero, Reyes Coriz, Hazel M. Smeltzer, Juan D. Herrera, Abram Arellano, Jesus Gutierrez. Juan B. Gabaldon, Geneva M. Howell, Pancrasio Gonzales, Amado F. Salazar, David M. Reid, Eugenio Roybal, S. C. Gallegos, Gregorio Lopez, John T. Watkins, Adam Manzanares, Jose A. Saavedra. Andres M. Laramillo. Eustavio Uli. David M. Reid, Eugenio Roybal, S. C.
Gallegos, Gregorio Lopez, John T. Watkins, Adam Manzanares, Jose A. Saavedra.
Andres M. Jaramillo, Eustaquio Ulibarri, Bonnie M. Montano, Jose C DeBaca,
Delfino Lopez, Andrew Moller, Joseph
Catallo, B. P. Benavidez, Pedro Cordova.
Mary M. Catallo, Emiliano O. Baca.
Manuel Gallegos, Santiago Villareal,
William H. Greaves, Isidoro Apodaca,
Ethel T. Hooten, Ibre Lee Brazell, Sabino
Luna, Ramon M. Martinez, William M.
Lansdell, Charles H. Smithey.
W. A. McCormick, Luis Santillanes,
Odes Caster, Hettie Mae Boggs, Jessie
O. D. Waddles, Roy Travis Lovin, Milton
Dewey Meek, Lucile W. Brett, Isaias F.
Chavez.

2441 George Eben Power, Charles E. Starr, M. A. Kuliasha, T. A. Rosenwald, Jimmie Otero, Jr., William F. Stamm, C. R. Meister, Winifred R. DeWitt, Robert J. Edwards, Omar H. Heins.
Kenneth E. Finders, Adalbert J. Sweede, Thelma B. Carpenter, Eugene L. Drake, Carlton C. Whitcomb, Clifford K. Rudy, Elwin L. Schaefer.

2450

Elwin L. Schaefer.

2450

Gertrude B. Mora, Wesley F. Hodges, Jr. Bernard J. Hussey, Amado Padilla, V. L. Messersmith, Martha E. Williams, Anthony N. Chavez, Doris M. Welch, James Brice Hiser, Wayne F. Bottoms.

Vernon W. Moore, Murt W. McMullen, Lewis D. Walrath, Marshall B. Ludlam, George H. Davies, James H. Kimbrough, T. J. Dawkins, Jr., Ambrose M. Watson, Luther Z. Beatty, Everett R. Gourley.

Joe R. Mahboub, Gene Harold Romero, Thomas Louis Mead, Lawrence E. Colson, Sabino G. Garcia, Hugh Ralph Young, Webb Edwin Shafer, Harold Leo Bigley, Brooks Lee King, Robert Lee Cresson.

John Quiney Toler, Hubert L. Hacker, Malcolm Ward, Reuben J. Montoya, John F. Berger, Havis Howard Black, James C. Wyer, Raymond A. Humes, Jr., Donald D. North, Don Jordon Finney.

William L. Dowd, Johnnie J. Sedillo, Gwinn H. McCarty, Oscar I. Thompson, Thomas J. Chiado, Jr., Jack Eugene Rich, Richard W. Dyer, Eugene C. Moser, Hilman Frock, Thomas J. Tangney.

P. Valverde, Jr., James F. Rabold, Robert W. Cruzen, Leo A. Baca, Charles R. Goodwin, Paul Melvin Hecht, Albert Joe Angel, Julian T. Chavez, Orville F. Padilla, Sam Rodocovich.

William S. Bedwell, Arthur M. Evans, John Fuller Wise, Charles R. Ortiz, Clyde Lovin, William G. Fribley, Chester L. Cox, Frank J. Shingola, Donald E. Thayer, William W. Spence.

Cox, Frank J. Shringola, Donald E. Thayer, William W. Spence.

2460

Howard J. Smyth, Jr., Opal M. Dogger, Dorothy Ham, C. A. Gonzales, Tony Manuel Lopez, Alice E. Dysart, Phoebe B. Chavez, Sue Annie Mafit, Don N. Odell, Dorothy M. Wall, Ellen C. Foster, Sherwood J. Embry, Helen L. Moulder, Margaret V. Armijo, Mary A. Vanbrocklin, Nellie S. Sanchez, Dorothy M. Dempsey, Deana B. Piper, Viola Ann Maestas, Harriet L. Evans, Shirley Cleary. Marian E. Hazelwood, Leo C. Cordova, Betty Louise Baros, Hildegarde E. Fink, Jacob E. Aragon, Joe M. Costales, Helen B. Nelson, Mabel L. Sylvester, Helen Lyons Kluver, Gloria L. Sannella. Raye C. Knoff, B. O. Martinez, Norma N. Goodwin, C. A. Poindexter, Ruth J. Lilley, Norma Mae Nash, Ruby Blanche Groll, Florence C. Stowers, Grace M. Harrington, Mary Emma Sparger.

Marcella Armijo, Dorothy R. Nolasco, Helen L. Allen, Elliot W. Harris, Josephine D. Lobato, H. E. Wehmhoff, H. W. Richardson, Jane T. Robertson, Gladys L. Didero, Christine G. Baca.

Ina A. B. Alexander, Edith A. Worley, Alice M. Graves, Erma G. Campbell, Vincent J. Newman, Basil K. Laskar, C. C. Martinez, Richard E. Hodges, K. K. Holloway, A. I. Novogrudski.

Leota Marie Beller, Margaret D. Harper, Lane Fisher Baker, Jack W. Choate, Cecil B. Foster, Eleanor L. Martinez, Malcolm K. Hamm, Terrence M. Clark, Millard S. Taylor, Ernest L. Parker, Jr.

John Edsel Bassett, Alice Tudor Marks, George B. Marks, Clifford O. Booth, J. A. Abraham, Anna Mary Martinez, Martha J. Williams, James H. Hockett, S. Berenice Henry, L. C. Hillebrand.

Donna P. Volkman, Cora Berndt Beckes, Gruine Robinson, Gladys M. Boren, Manie Grae Daniel, Dorothy A. Matlack, Edith D. Miller, Geraldine K. Rehkop, Dorothy R. Parslow.

2470

Shirley M. Meloche, Georgia M. Howard, Felix E. Castillo, Frank Bachicha, Arthur D. Bacon, Gomesindo Lopez, John R. Sisneros, Manuel Joe Caire, Cornello S. Padilla, Alsid F. Lamoria, Buford A.

2480

Helen C. Kreissl, Loren L. Chambers, B. J. Coveney, John Bashaw, Robert Eugene Fair, James H. Hall, Jr., Charles C. Pappas, John E. Stevenson, William D. Price, J. L. Blackerby.
Ovid B. Kizer, Pierre Chevalier, John F. Clevenger, James Wesley Shinn, Frank A. Garcia, Albert L. Baldwin, Owen Henry Schutt, Robert T. Mobley, George H. Cheeseman, George Neufeld.
G. O. Thornburgh, John H. Mitchell, Joe Thomas Evans, Harry M. Sanderson. 2520
Lack Roy Sublett, Mary L. Goodman.

Jack Roy Sublett, Mary L. Goodman, Charles F. Selby, Jr., Queento Leon Vandi, Paul Irwin Gaither, Arthur R. Hopper, Meliton John Otero, Rolland R. Pyetzki, James Erwin Hare, Sally F. Cole.
Edward C. Domme, Francis X. Vogel, R. D. Frevermuth.

Edward C. Domme, Francis X. Vogel, R. D. Freyermuth.

2530

Doris J. Miller, William T. Price, Jr., James M. Phillips, Walter J. Henderson, Harold F. Gustafson, Richard R. Bassett, H. H. Brueggemann, Robert S. Tarbell, Gerald W. Vangundy.

Thomas A. Reinhardt, Roy Evert Carlmark, J. R. Wimborough, William F. Stinnett, Helen D. Robinson, Robert Blick

Evans, John Alvin Rohrer, James E. McGoorty, Ralph R. Wynant.

Mabie L. Shoemaker, C. B. Saunders, Louis F. Pinger, Paul L. Stewart, F. S. Williams, Robert T. Sylvester, Fred T. Hansen, Muriel R. Neuberger, Dixie Lee Lamoria, Joseph O. Phillips.

Harry C. Olson, Jr., G. L. Hutchinson, Harold F. Maciolek, Howard S. Bluestein, Henry L. Durflinger, Donald L. Harrison, Thomas W. Strome, Ellen C. Wood, Mercedes E. Baca, Adrienne M. Goff.

Ralph K. Fries, Paul Eugene Miller, Mary Guajardo, Louis E. Doherty, Neal Alvin Branson, Joe Davis Highfill, L. G. McDonagh, Joyce E. Breslin, Ralph R. Davies, Odilia S. Silva, John Edward Biegel, Herbert L. Milligan.

Davies, Odilia S. Silva, John Edward Biegel, Herbert L. Milligan.

2540

Harold G. Jeblick, Frank A. Sanchez, Dorothy Schardon, James R. Holliday, Edith Mary Moya, Reuben Villanueva, Andrew C. Czainski, Nick T. Pavletich, Nyrah H. Marchant, Bonifacio A. Lopez, Kathleen Wilson, L. J. Underwood, Robert K. Crawford, Leonard J. Nelson, George James Pasko, E. M. Chavez, Jr., John Paul, Victor S. Gabaldon, Jose S. Montoya, Lemoyne Browning.

J. W. Windsor, John Rudolph Piri, H. Zimmerman, Jr., John W. Cooper, Jay Arnold Andrews, Berta L. Guest, George E. Chaffee, Joseph K. Manley, Jr., Delfin O. Salazar, Gene Anselmo.

Ralph D. Lepore, Jose L. Sanchez, Leon B. Strauch, John C. Abeyta, Ernestina M. Romero, F. E. Tomlinson, H. E. Beadersted, Barbara B. Taylor, Garland L. Ross, Frank M. Takahashi, Owen C. Higgins, Joseph G. Brooks, William H. Lueders, Mary E. Flanagan, Ruth Ybarra Romero, Arthur Lee Gregory, John E. Wesbrook, Emily Joyce Coris, David B. Hill, Jr., Raymond B. Frank, Aldis S. Hayes.

Raymond Suchiu, Joseph F. Gordon, Samuel Allen, Dan William Wood, Artie I. Redlinger, Frank Donald Kite, Adin Sponseller, Jr., M. D. Washington, Hurston J. Adkins, Gladys A. Stumpf.

R. K. Morrissey, Robert Elmer Berg, Albert R. Bender, Andrew Paul Coar, Werner Willie Bach, Carl Emil Drew, Joseph F. Gabrhel, Alex Anthony Ruff, Everett M. Gieseker, Mary Hazel Bailey.

Robert Goldsworthy, Kenney E. Loughlin, Virginia J. Spencer.

2550

G. J. Hildebrandt, Ruth I. Schooley, William A. Bains, Clarence M. Coats, David S. Carrick, Thomas Orin Meyer, Theo. J. Chauveau, John Ross Smith, Paul A. Stickler, Carmen M. Gabriel, Eloise Lucy Nieto, Fred Juam Villa, James Bone, Lee S. Culbertson, Donald S. Pitts, William H. Allen, Leon Berkley Hobbs, Harold T. Cushman, Charles Jerry King, Karl Einar Lindell, Donald A. Loren, Herschel W. Rogers, Arthur W. Miller, Robert S. Summers, George Reidel, John Soares Souza, Harold E. Houts, Alden V. Luhrs, Dwayne Richard Fry, Leo James Reynolds, Lyle R. Murphy. Renfroe R. Beach, Everett G. Hayes, Carmel C. Nuanez, James A. Beaudet, Gilbert S. Wallace, Reinhart C. Gauerke, Emil R. Pearson, Floyd Albert Kunz, John Edward Stang.

Emil R. Pearson, Floyd Albert Kunz, John Edward Stang.

2560

Robert Frank Masak, Olivia Viola Geffe, Bertha E. Berger, Gene A. Lucero, Millie Stout, Naomi E. Morris, Mae L. Johnson, Bruce Ross Jackson, Raymond M. Caster, Homer R. Messenger, Martin W. Hansen, Joseph Paruta, Fleta H. Forsman, Lorenzo Lopez, James E. Simpson, Joseph A. Ozmina, John Allen Gill, Herbert O. Howe, Floyd Lee Mastin, Robert L. Burroughs, Paul E. Carlson.

Lorenza E. Gilbert, John Byron Hobart, Joe Leon Armijo, Ramon Carrillo, Harold B. Thomas, Leonard G. Thompson, Marion M. Holmes, Dollen C. Wall, Richard A. Miller, Ora William Nairn.

Gerald Ward Hinman, Fred Wyman Stewart, Ormand W. Williams, Jerry Frank Dussek, Donald E. Goodrich, Ancel Dwite Hinds, Laverne W. Lathrop, Edward Bryan Davis, John A. Kaczar.

Roy A. Rogers, Jr., Richard A. Candlin, Allen L. Thornton, Wayne T. Welkenback, M. J. L. Gallegos, Jr., Virgil A. Bailey, Glen F. McFall, Clarence S. Lane, B. S. Gardiner, John Wheeler Hahn.

George T. Kross, Wilhur Edwin Henry, C. M. Bassett. William C. Randolph.

2570

Max Donald Engle, Jack F. Hammerstran, Harold L. Smith, Fred K. Harrison, Oscar M. Schroll, Eugene R. Helz, Adrian J. Swain, Rudolph J. Chermak, Mary E. Schutte, R. P. Lewis, Jr. 2610

Lloyd E. Fuller, Truman L. Daniel, William L. Martin, Lorena C. Schneider, Richard L. Ballard, Chester J. Ricker, Paul Donald Pewe, Violet L. Foderaro, James A. Kenagy, Raymond W. Clark, John Louis Cordaro, Louise Major, Harold W. Hanna, Edgar Paul Cave, Jr., Melvin A. McCutchan, La Vern J. Wehby, Clarence R. Sandin.

Cecil E. Jordan.

Ruth M. Davidson, Walter Dzugan, Reinhardt A. Quelle, Sam Thomas Man-cuso, A. G. Schuknecht, Lewis S. Sorley, Jr., Cecile B. McIntosh, Gene Walker Abbott.

Abbott.

Jerome H. Gibson, Kenneth A. Smith,
Betty Jane Winblad, B. Jeanne Shinn,
Brian Hale Finley, Francis E. Bell, M. E.
Therkildson, Evelyn Ruth Clark, Albert
M. Fellows, Richard N. Reed,

Therkildson, Evelyn Ruth Clark, Albert M. Fellows, Richard N. Reed.
Winifred M. Fellows, K. E. Sutton, Jr., Mollie C. Nason, Martha J. Tuffs, John N. Timmons, Raymond E. Scharpen, Robert E. Thompson, Ray Edward Huston, Darrel Reid Brown, Howard T. Stump, Jr. John L. Wheeler, Charles J. Kaspar, Lucille C. Sanchez, Bernice P. Sanders, Evelyn L. Stewart, Janice D. McSwain, Mary M. Sherman, Stanley M. Krell, C. L. Steputis, Joseph R. Garcia, John Noble Johnson, Janice G. Buntz, Virginia E. Oliver.

1360

Frances H. Voorhies, Betty B. Tatum, Robert A. Knudson, Mary Getman Murphy, Willa R. Peterson, Grover W. Edwards, Catherine K. Helm, Pauline C. Burnside, Bernice D. Beeson, Pauline Y. Loomis, M. Jane Powell, Wanda S. Bishop, Richard W. Heim.

1370

Elizabeth R. Rainey, James E. Baylor, George J. Zimmerman, Don Louis Rost, Ervin F. Armbrust, Fred George King, E. M. Whittingham.

4110

Viola E. Folkins, Harold L. Brint, James G. Marsh, Charles E. Weld, M. L.

Viola E. Folkins, Harold L. Brint, James G. Marsh, Charles E. Weld, M. L. McDowell, Owen R. Thomas, Mary M. Criswell, John K. Wiehelns, William H. Chandler, Fayne L. Shead. Thomas B. Hanna, Mildred D. Ness, Charles B. Inberg, M. Joan Swing, W. B. Norwood, Jr., La Von W. Burrell,

Gene M. Nielsen, Frank A. Branagan, Richard M. Allan, Janet R. Gober. 4120

Keevin 1 William J. Harmeyer, Keevin T. Moriarty, Joseph S. Miller, John P. Shurter, Julius L. Buss, Paul Darwin Bishop, William H. Myers, Harold D. Chaffee, Leonard H. Best, Marvin Lynn Glaze, William C, Colborne, Russell W. Foster.

Leonard H. Best, Marvin Lynn Glaze, William C. Colborne, Russell W. Foster.

4130

Betty J. Vangundy, Eleanor B. McPhate, Joy R. Cannedy, Maurice S. Chavez, Kenneth Paterson, Evelyn J. Hughey, Lazona M. Wyche, Louis F. Narvaiz, Helen M. Balistrere, Edna J. Bierner.

Beulah E. Hansen, Marian G. Ewald, Joann H. Flinchum, Dorothy J. Mercer, Charles B. Shumate, Mary Lou Clark, Roger M. Campbell, A. Laverne Hartzell, Catherine L. Anesi, Robert Lynes.

F. E. Mitchell, Sr., Retha I. Kay, David Keith McCoy, Jeanete Palkovic, Leon Worth Luke, Kay Marie Graff, James Harry Kelly, Jack Ray Lawrence, Russell P. Hall, Jr., Robert G. Taffe. Kurt Rudolf Baars, Ora Crystal Brooks, Virginia D. Haley, Dorothy Benton, Bernice S. Armour, Carrie Nelson Vick, Frances H. Wright, Nonie Earl Brooks, Beatrice F. Dusek, Clara J. Blasyk.

Annette J. Crays, Lucile Kirt Blake, Wallace Couet Nott, Rodney V. Phillips, Helen L. Keeney, Edward D. Herrity, Bonnie P. Chavez, Mary R. Laughlin, Emily Makal, Ethel Moseley Kind.

Anna Mae Averyt, Alma A. Mischke, Frank Lamar Keene, Frank W. Corner, Ruth D. Kresge.

4150

Howard Nicholson, Martha B. Andrews, Oscar Jones Lewis, Ted Stanley Spack, Franklin I. Martin, Federico Martinez, John E. Anderson, Leo Arellano, Catherine Banks, Elmer Geza Borbely.
Marie R. Gadziala, Myrtle P. Paterson, Willard E. Prekker, Dorain H. Dickinson, Dan Calvin Held, A. Lamar McKay, Jr., David L. Brown, Jr., Marvin L. Barrett, Wallace G. Smith.
Hunter P. Hanna, Earl H. Simonson, Max Dalling Hodge, James Ross Bridges, Bernard E. Shea, G. K. Carmichael, Donnie M. Schuette, Hugh Logan Tallman, C. A. Schooley, Mary F. Barnett.
M. June Gambill, James R. Coleman, Don D. Montgomery, George T. Chapman, Bernard J. Guerrero, William White, Margaret Decou, Donald E. Hinman, Cyril Gene Rambin, Katherine A. Roger, James M. Dixon, Sarah V. Long.

4160
Lillian C. Kraus, Melba J. Griego, Velta
May Hampton, Robert L. Whitlow, C. C.
Rounds, Jr., Andrew J. Alderete, Eugene
Thompson

James D. Shreve, Tr., Maynard Cowan, Jr., Joan U. Longhurst, Thomas B. Cook, Jr., H. M. Richardson, Craig C. Hudson, Carter D. Broyles, Phyllis L. Flanders, Irma N. Buffett, Katherine L. Walker, Ormand J. Birdsong, William R. Perret, Howard H. Sander, James Daniel Smith, Jay Todd, Jr., Dorris M. Ehret, John R. Banister, Orrin Edwin Smith, R. L. Schellenbaum. 5110

Ronald W. Shephard, Sheldon H. Dike, Hugh A. Colvin, Emily G. Young, Walter D. Wood, Karl Edwin Ball, Michael J. Norris, Woodrow W. Bledsoe, Dale Allan Young, William F. Roherty. Dan W. Stoddard, Cyrus R. McAllister, Richard C. Hildner, Lloyd Wayne Davis, Bernard N. Charles.

Richard S. Classsen, Ralph L. Calvert, Ann E. McIntyre, Helen E. Tuttle, Tim Chris Preston, John G. Magistad, Donald K. Robbins, Mabel L. Hendricks, Evelyn Lois Ricard, Frank Peter Hudson. William F. Jemison, Allan Frank Beck, William D. Ingram, C. V. Stephenson, II, Warren E. Taylor, Walter J. Halpin, Robert Carl Swyers, Robert S. Neiman, Jr., Floyd M. McIver, Jr., G. W. Anderson, Jr. 5130

5140 Alan Yates Pope, C. F. Muehlenweg, Warren H. Curry, Paul Willard Rowe, Harold Roy Vaughn, Randall C. Maydew, W. B. Pepper, Jr., James F. Reed, Milton W. Davis, William R. Barton. Eugene J. Meyer, James P. Gallagher, James M. Allman, John C. Weydert.

James M. Allman, John C. Weydert.

5210

Robert W. Burch, C. W. Young, Jr., Charles Reed, Jr., Wilbert R. Wood, Jasper W. Mason, Robert John Burton, Carl Julius Nissen, Edwin C. Wittwer, Ira Bernard Ward, Norman Richardson.

Ivan H. Levalley, Max Emil Ludeke, Connie Lee Taylor, Donald E. Grebe, Loyt L. Lathrop, Melvin D. Petersen, Kermit V. Nixon, George Gleicher, Robert L. Burgess, Norman F. Sinnott.

Dalton W. Savage, Alice V. Bump, Stanley R. Pickens, Harley D. Moody, William R. Moore, Harvey V. Harter, John H. Banker, Thomas J. Intravaia, Earl Curtis Saxton, Franklin E. Moore.

Thomas R. Stevenson, Bobby Gene Edwards, Peter Enseo Anders, Sumner Excell

wards, Peter Ensco Anders, Summer Excell Lane, Richard J. Rudolph, Clifford J. Ruttle, William G. Foy, Clem L. Rawlins, Jr., Evan George Lenont, Stanley W. Ir., Eva Clayton.

5220 Kurt R. Schikowski, D. M. Fenstermacher, Kenneth Lloyd Kemp, James G. Lareau, Daniel Parsons, T. V. Crawley, Jr., Harold Levon Pike, Robert I. Peterson, Richard P. McCann, Norman C. Naley, Harry R. Roberts, Harold Otto Jeske, James B. Wade, Clayton E. Erickson, George Edgar Reis, Farrell B. Brumley, R. H. Gablehouse, C. E. Ingersoll, Paul F. Scheele, David Edward Henry.

5230

James Howard Scott, George W. Rol-

F. Scheele, David Edward Renry.

5230

James Howard Scott, George W. Rollosson, Harry Ernest Bell, Orville L. Howard, Francis E. Thompson, Lawrence J. Witt, Guy D. Woodruff, Jr., Hans Edward Hansen, Trevor C. Looney.

Charles G. Scott, Dean Bernard List, Richard W. Young, Robert G. Scharrer, H. S. Swartzbaugh, Robert E. Pritchett, Eldon W. Upchurch, A. D. Thornbrough, Robert Daniel Pace, Winton B. Pafford.

Henry G. Laursen, Edward E. Wood, John A. Beyeler, Joe William Wistor.

5240

Marrian P. Salomon, Cora S. Callender,

Marrian P. Salomon, Cora S. Callender, B. A. Culbertson, Josue Leo Martinez, Donna D. Brown, M. P. Hitchcock, J. L. Tischhauser, Jr., I. A. Allensworth, Mary M. McNaughton, William W. Rogers, M. F. Bernhard

M. McNaughton, William,
Bernhard,
Robert Peter Crabb, W. E. Jungmeyer,
C. M. Clendenin, Paul H. Jennings, Billy
Max Gragg, Floyd E. Forsythe, Fred V.
Wyatt, M. E. Drummond, Jr., Gerald D.
Sherman, Herminio Baros.
W. Washburn, Lawrence B. Beverly W. Washburn, Lawrence B. mith, Robert K. Heck, Esequiel K.

John E. Blair, Jr., Robert H. Thompson, Lyle Kay Porter, Harold D. Finch, Robert

V. Peet, Joe Donald Benton, C. H. Stock-ley, Jr., John Edward Hinde, Walter Lee Hyde, Bernard Rolsma.

5310

Robert Dean Wehrle, Donald Lee Lawson, Richard C. Zaluga, Francis D. Hess, Frederick H. Darugh, Einar V. Forsman, James O. Lonborg, B. P. Fedukowski, Thomas F. Marshall, W. L. Shoemaker Jr., Jay W. Grear, Jr., Jack Stein, P. H. Beyernheimer, Glenn O. Folkins.

5320

Donald A. McFadden, Alfred E. Winblad, V. G. Polakowski, Kenneth Elvin Pope. 5330

John H. Findlay, Johnny M. Stuckey,
Arthur R. Engquist, Allen F. Hurford,
Robert C. Reineke, Edwin Dale Machin,
Robert A. Jeffrey, William W. Wacek,
K. Dan Hardin, Leland D. Swanson.
Gordon E. Boettcher, Lewis B. Barger,
Theodore E. Smart, Thomas W. Moody,
Clarence E. Sandy, James Moore Caller,
Ralph Eugene Hampy.

S350

Eugene H. Copeland, Arthur J. Clark, Jr., Howard Doyle Reed, Walbert G. Levy, R. S. Pinkham, Jr., Russell L. Maxwell, Alfred R. Holmes, Ralph W. Olson, Ernest H. Bowman, Paul Lester Field, Robert Elliott Fox, John H. Vondreele, Don Thomas Weems.

5410 Barney Joe Carr, Ned Wilde, Douglas M. Gragg, Jack W. Garriott, Frank Joseph Janza, John Richard Ames, Bennett Lee Basore, Harvey Lee Jergins, Julian E. Gross, Howard B. Durham. Gardner L. Krieger, Warren V. Elrod, Jack E. Marceau, Neith J. Pollard, Ralph M. McGehec, Chester J. Smith, Norman J. Elliott, Paul Lester Kerley, John Allen Price.

Price.

S420

Robert A. O'Connell, Francis R. Martin, David Allan Mayhew, Gerald H. Piele, Alton L. Anderson, Wallace Ray Finley, Clinton H. Purdue, Lyle R. Derousse, G. H. Donaldson, III, Ross Jay Sinkey. Dale Sparks, James L. Rogers, Harry B. Barling, Jack K. Williams, James Oscar Reed, Don Van Couden, Elwin L. Checketts, John Robson Harner, Thomas G. Banks, Jr., Charles E. Gumley, Richard W. Willey, Lloyd M. Melick, Merle D. Elifritz.

Jr., Charles E. Gumley, Richard W. Willey, Lloyd M. Melick, Merle D. Elifritz.

5440

Hubert H. Patterson, Agnes L. Cernich, George H. Webber, Leon Dale Moritz, William P. Stearns, Charles E. Morgan, Layton Oliver Warn, R. Fredrik Nylander, William F. Nielsen, Horace M. Poteet, Merrill O. Murphy, Ernest J. Bernard, John Allen Haase.

5510

Phillip H. Bircher, William D. Wing, Elzie Ayers Greene, Leyndal G. Wilson, Robert C. Mueller, Joseph E. Duffy, Janet S. Smith, Gerardo J. Lombardi, Lloyd Kent Hungate, Bertha A. Vencill.

Elwyn R. Clark, Ann Lucy Tafoya, Carl F. Zickert, Mary Males Pasko, C. R. Balistrere, Melvin T. Mattison, Howard M. Warden, Inger J. Johnson, Willie E. Petty, G. C. Warnick, Thomas G. Ogden, Anna Love Widner, Frank T. Owens, C. D. Ramirez, Edwin G. McGarvic, Argelee N. Burnett, Joan Fern Adkins, M. Katherine Teske, Betty T. Howarth. William McWhorter, Harley E. Walker, Charles E. Smith, Jr., Ellis L. Roper, Isoseph E. Davidson, Cecil M. Littleton, Thomas Keith Hill.

Thomas Keith Hill.

Raymond W. Poetzl, Quintin T. Ussery, John A. McPhate, J. J. Platt, Kathryn K. Dieruf, G. C. Hartman, Jr., John Frank Russell, William E. Meahl, Roy P. Lambert, Robert Ray Harnar.

Morris R. Goebel, Dale Swift Cone, Ben F. Blythe, Robert E. Wooley, Leon W. Gotchall, Charles Mck Jensen, Clarence E. Muchow, Dennis L. Vath, James M. Stueber, James N. Demas.

Charles E. Lewis, Walter A. Adams, William Medi Evans, Robert Lowery, William H. Buckalew, Donald J. Coleman, William B. Leslie, Robert M. Jacob, Roxley Eldon Kent, Edward F. Hockett.

Leopold Leo Flores, Edward G. Connelly, E. Benson Pearson, Howard Ray Shelton, Hunter W. Lewis,

Marcel C. Schiess, Thomas R. Arring-Wickly Dale Grant Pipher,

Hunter W. Lewis,

5530

Marcel C. Schiess, Thomas R. Arrington, George A. Wright, Dale Grant Pipher,
Noble A. Gruenoch, Erwin C. Filsinger,
William E. Neitzel, Harry A. Warrick,
Sidney H. Wagner, Wilbur D. Connelley.
Donald B. Wade, William D. Harwood,
Philip W. Shew, Leonard G. Johnson,
Frances Jane Meloy, Jack Richard Hanna,
Richard E. Brian, John M. Bristol, Elwood Cawley Metz, A. E. Randall, Jr.
Richard Aulta Poe, Louis E. Guintard,
Don Everett Larson, Albert R. Elwell, Jr.,
Thomas M. Bozone, Jr.

5610

Robert W. DeVore, James Ralph Holpp,

Thomas M. Bozone, Jr.

5610

Robert W. DeVore, James Ralph Holpp, James B. Quillin, Kirkland H. Waddell, Joe Maria Sanchez, LaRue W. Wildgoose, Arnold B. Draper, James F. McGriff, Earnest Yeager, Georgia Lee Tiley.

Warren B. Ballard, Eldon W. Coomes, Charles Z. Stuart, Aurora B. Baca, Raymond W. Andersen, Robert G. Smith, Clarence W. Carter, D. L. Patterson, Lee Forrest Denton, Harold Grady Brim.

Grafton W. Moses, Barney Velma Aldis, Helen Maxine Marks, Conway L. Wilson, James Lyon Coursey, Charles T. Stewart, Loren B. Converse, James C. Arndell, Harry Paige Farmer, Jerome B. Carter, William Ray Payne, Walton E. Renshaw, Gerald L. Lancaster, Paul Robertson, Jr., Donald Gene Sallee, Henry M. Baker, Bob Chappel Holt, Sara D. Dachlin, Guy John Wilson, Howard J. Henry.

Ross L. Birdsall, Benedict F. Guerin, J. E. Laviolette, William E. Tucker, James R. Perkowski, Jeanne Rose Smith, James F. Denson, Delmar Davis Poer, Eugene S. Acton, Oscar Carl Braune, Louise H. Rambin, Leonard G. Parsons.

Rambin, Leonard G. Parsons.

5620

Wilbert A. Sherman, Leroy W. Ramsey,
Orvis Eugene Bush, Nathan C. Brown,
Lane W. Peterson, Edward Carl Hirt,
F. J. Gallagher, Irvin L. Moulton, Harold
W. Davis, Robert W. Mottern, William J.
Barlow.

Gordon Jay Miller, Herbert A. Peterson,
Maggie A. Wheeler, Wilbur L. Miller,
Irvin W. Long, Marion Mattie Fogg, Carl
W. Tucker, John P. Briggs, Jack D.
Stewart, Albert L. Wyer, Robert C. Breslin,
Alfred J. Coppola, Edgar F. Hoddinott,
S. A. Chemistruck, William M. Simpson,
Matthew J. Connors.

6010

Donald MacKenzie, Edward L. Amonette,

Donald MacKenzie, Edward L. Amonette, Dorothy C. Harvey, Robert M. Betz, Gene Claire Newlin.

Ruby B. Meck, Mary F. Schwartz, Clory Max Valdez, Edward W. Swanson, Mar-tell Wilkirson, Hardy Victor Lewis, P. A. Didomenico, Shirley W. Crow, Charles E. Roehrig, A. H. Archuleta, William L. Chap-man, Josephine B. Hanna.

**Rockhounds Break** 

**Texas But Manage** 

To Remake Union Grinding wheels, diamond saws, polishing machines were employed by several Sandians and other members

of the Albuquerque Rockhounds Club to construct a map of the United

States . . . in stone. Vic Engel, 1322, Ralph Calvert,

5131, Guy Moser, 1326, and Merrill

Murphy, 5443, assisted in cutting,

sawing, polishing and assembling the

petrified woods, agate, obsidian

The map weighs 20 pounds, meas-

ures 24 inches by 36. It was designed

for display purposes only, and will

be shown in the window of the Public

Service Company building in down-

town Albuquerque this month. Mer-

rill Murphy exercises custodial care of the map when it is not on display.

Patterns for the states were taken

The state of Arizona is cut from fossilized dinosaur bone. Utah was

sawed from desert agate; the natural

design of the state depicts the Great Salt Lake in northern Utah.

Cutting of most states was no trouble at all; but ornery Texas, re-

putedly the largest state, required

special handling and cutting at a

Denver lapidary shop. On return trip

to Albuquerque, Texas was broken, requiring a state-wide splice to re-

from a child's jigsaw puzzle.

pieces which went into the map.



#### CLASSIFIED **ADVERTISING**

Deadline: Friday noon prior to week of publication.

#### 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

Next Deadline: Noon, Jan. 20

#### FOR SALE-

'54 PONTIAC DELUXE, 2-dr. R&H, WW tires, standard shift, 11.000 actual miles, \$1500. McGuire, Alb. 5-0537.

HEATER, 30,000 BTU oil space complete with stove pipe and damper, ideal for mountain cabin \$15. Baltz, Alb. 3-6027.

'55 FORD, 4-dr. Fairlane, light blue, 7,500 miles, loaded, see at 200 Oak St. NE. Goodrich, Alb. 7-9843 (day), Alb. 2-0495

'51 PLYMOUTH SUBURBAN, R&H, new motor and tires, \$650. Meyer, Alb. 6-3926

WASHER, WESTINGHOUSE laundromat automatic, \$60. Goodwin, Alb. 6-1269.

'49 MERCURY, R&H, \$300. Blair, Alb. 6-6064.

WASHER Easy Spin Dryer DeLuxe model \$75. Strascina, ext. 48181.

GAS RANGE, standard size, window in oven door, \$40. McIlroy, Alb. 9-4977.

SEWING MASHINE, Portable GE electric, 1 year old, all attachments, \$65. Bussell, Alb. 6-1729.

DINETTE SET, chrome, 4 chairs, table, extra leaf, \$35. Cherb, Alb. 9-0949.

MOVIE CAMERA, Revere 8 mm. complete with case, \$35. Fletcher, Alb. 4-5331 after

LAUNDROMAT, WESTINGHOUSE, \$65 or best offer. Furman, Alb. 5-8057.

35MM. NICCA focal plane shutter 1/500, 50mm. F2. Nikkor, 100mm. F4. Serenar telephoto, case, etc. \$175; Marlin .22, \$50. Corney, Alb. 5-1490.

FLOOR POLISHER, Regina; Stetson size 7, gun rack, Magnavox combination 17 in. TV, AM-FM radio, phono; want chest of drawers. Ross, Alb. 9-1526.

LINHOF CAMERA, 4x5, all accessories: flash, flash extension, 2 lenses. Hodges, Alb. 6-5097 after 5:30 p. m.

'52 STUDEBAKER CHAMPION Star-lighter, R&H, OD, new paint, 3 new tires, \$175 down, \$500 total. Scotten, Alb. 9-1695 after 5:30 p.m.

REFRIGERATOR, 834-ft. with 30-lb. freezer and dry storage space, \$60. Gools-by, Alb. 5-1174.

\*52 FORD V8 Country Sedan Station Wag-on, R&H, Fordomatic, \$1195. Donaldson, ext. 46233.

WINCHESTER, 30-06 Model 70 with K-4 Scope and custom stock. McGriff, Alb. 2-6503 after 5 p.m.

'49 DODGE MEADOWBROOK 4-dr, 46,000 miles, original owner, \$400. Kidd, Alb. 6-1020.

'48 NASH AMBASSADOR 4-dr, sedan, R&H, OD, bed, one owner, \$250. Stueber, 8410 Flower Pl. NE.

'49 KAISER 4-dr, R&H, visor, \$175; 8-16mm, enlarging camera, new, makes 2½ x3½ negatives from movie film, \$15. Shew, ext. 22156.

FRIGIDAIRE, 8-ft., \$85. Brown, Alb 5-0566.

DRAPES, 2 pr. matching, picture window width, full length, lined, rose colored, both \$35. Cordaro, Alb. 5-0532, 1112 Dakota SE.

HOFFMAN DELUXE BRICK, 3 Br, 134 bath, walls, lawn, sprinklers, air con-ditioner, w/w carpeting. Murar, Alb. 9-

GAS RANGE, WELBILT with glass oven door, electric clock, \$50. Reed, ext.

TRANSMITTER, amateur, bandswitching, V.F.O. 100 watt with National NC57 receiver and S/meter. Perry, Alb. 5-9349.

1000 APPROX. BF No. 3 common pine ton-gue and groove, 1x8, random length, en-tire lot, one buyer, \$105 per thousand. Mlynek, Alb. 4-2974.

JEEP, 4-WHEEL DRIVE with steel cab, extras; Aljoa 13-ft. house trailer. Mil-ton, Alb. 9-4586.

54 JEEP, 4-WHEEL DRIVE, truck, 12,000 actual miles. Armour, Alb. 9-1805.

MOTOR, ½ HP, 110-220V, A.C., 1725 RPM w/shaft and pulley. Dixon, Alb. 4-5933.

GAS RANGE, Detroit Jewel, \$50. Reck, Alb. 4-4123.

SINGLE BED, Beauty Rest, inner spring mattress, box spring, Hollywood frame, all \$50. Zownir, Alb. 6-3717.

REFRIGERATOR, 6 cu. ft. Servel gas; Universal gas range. Tischhauser, Alb. 2-1212.

PEN-PENCIL SET, Shaeffer's Snorkle, never used, half price \$12. Ray, Alb. 9-1330.

HOUSE, 1602 RIDGECREST DR., 2 BR, attached garage w/extra storage, near bases, walled yard, w/w carpeting, dra-peries, w/b fireplace. Hillard, Alb. 5-8515.

DOUBLE BED, couch, chairs, desk, chest of drawers, best offer for all or part. Pearlston, ext. 35251.

52 KAISER, R&H, OD, reconditioned motor reasonable. Hare, Alb. 5-6246 motor reason after 5:30 p. m.

PIANO, GRASEMAR CAPHAM, bargain at \$89. Lopez, Alb. 2-9770.

'49 FORD 2-DR., clean, \$175. Clark, Alb. 5-5747.

DINETTE SET, chrome, 4 chairs, \$35; Philippine-made rattan sofa, 4 arm chairs, superior quality, \$100. Sorley, Alb. 5-9217.

'54 OLDSMOBILE, 4-dr. Super 88 sedan, R&H, Hydramatic, WW tires, 2-tone finish, 23,000 miles, \$1995. Durand, ext. 41138.

'52 DODGE 4-dr, R&H, will sacrifice. Jenkins, ext. 36281 evenings.

BLONDE OAK BOOKCASE headboard, \$10; arm chair upholstered black print, \$10. Burke, Alb. 5-4281.

GAS RANGE, 36-in. Magic Chef, \$30; children's gym set: 2 swings, glider, \$10; Jaeck, Alb. 6-2455.

AQUARIUM HEATERS and thermostat, half price. Campbell, 218 Rhode Island NE.

TV, '52 ZENITH 21-in. table model, \$110; large chrome dinette set, \$65. Shoemaker, Alb. 2-8292.

BABY CRIB w/mattress, \$10. Henderson, A1b. 9-2037,

'37 CHEVROLET COUPE, good tires, body, battery, heater, \$70. Haley, Alb. 4-3919 after 5 p.m.

'47 BUICK SUPER, R&H, no reasonable offer refused. Wiesch, ext. 33165.

BUNK MATTRESS and spring, 2 twin size, ideal for bunk beds, \$12.50 ea. Olive, Alb. 5-9151.

PUPPIES, ENGLISH SPRINGER Spaniel, excellent field stock, good with children. AKC Champion sire, \$50. Barth, ext. 46139.

WASHER, BENDIX ECONOMAT automatic, good condition except for motor, sell cheap; regisered Beagle, 1 yr, old, housebroken. Schuknecht, Alb, 4-3501.

4-RM. HOUSE and bath on 3/4 acre in Sandia Park on Hwy. 10, \$500 down, total \$5950. Fackelman, 10417 Constitution NE.

## WANTED-

TO FORM OR JOIN car pool from 2805 Virgina NE to 800. Lynes, ext. 47152.

RIDE OR JOIN car pool from Columbia and Garfield SE to 894 (Gate 7), Marion Walker, ext. 49163.

CLARINET AND TRUMPET in good condition. Timmons, ext. 20155.

RIDE OR JOIN car pool from 10,000 block Snow Heights Blvd. NE to 800. Diet-rich, ext. 36157.

RIDE FROM FIFTH and Lomas to 800 or 802. Atler, Alb. 2-9352.

OLD WINCHESTER RIFLES, pay cash or trade colt revolvers or cap and ball pistols. Smitha, Alb. 9-1096.

GENTLEMAN TO SHARE modern, furnished, 2 BR apartment, 1832 Alvarado NE. Carli, Alb. 6-3980.

RIDE OR JOIN car pool from 104 Welles-ley Dr. SE. Viola Maestos, Alb. 5-9542.

TO JOIN OR form car pool from vicinity Constitution and Wellesley NE to 800. Hillard, Alb. 5-8515.

TO JOIN CAR POOL from vicinity Claremont and Utah to 880. Cordes, Alb. 9-5745.

RIDE TO LOS ANGELES, Calif. area, about Jan. 20 or 21. Vandi, ext. 46157.

RIDE FROM vicinity Sycamore and Central to Personnel parking lot. Roberta Easley, Alb. 3-7660.

2 DRIVERS to join car pool from vicinity 61st and Central SW. Thomas, Alb. 2-8333.

## FOR RENT-

2 BR HOUSE, \$75 mo.; 1 BR house, \$55 mo., both furnished including utilities, see at 304 Phoenix NW. Hungate, ext. 37147.

NEW APARTMENTS, 1 & 2 BR, available Feb. 1, 5 min. from base, partly furnished. Vigil, Alb. 6-6939 after 4:30.

3 BR HOUSE, redecorated, walled yard, near bases. Birkelo, Alb. 5-2513 after

APARTMENT, 3-RM, furnished, private bath, utilities paid, near schools, walk-ing distance to town, \$60 mo. Lopez, Alb. 3-8550.

ROOM IN PRIVATE HOME near base for young lady. Alb. 9-1418 after 5 p.m.



STONE MAP of Albuquerque Rockhounds Club is displayed here by Merrill Murphy, 5443, president. Each state is cut with diamond saws, then ground to high polish. Big Texas had to be spliced.

## Kibitzers Find Kriegspiel Ideal For **Energetic Spectator Participation**

The outcries of kibitzers and the drone of a referee's voice are distinguishing characteristics of a new chess game called Kriegspiel being played currently during noon hours in the east wing of Bldg. 802.

Kriegspiel's kantankerous kibitzers, according to Mike Norris, 5120, are just supposed to watch the game in a quiet, dignified way. But these chess fans in 5100 often deride a player's strategy, pass caustic comments, are permitted to do anything but execute an actual chess move. "This makes the game exciting," says Norris, a longtime Kriegspiel fan.

Kriegspiel, invented in the early 19th Century by soldiers in a German military academy, is a form of "blind chess," in which both players are kept unaware of their opponent's moves by n iantervening barricade set up between them.

Each player uses a chess board and two sets of men; a third board with a separate chess set is supervised by the third participant, the referee, who monitors all moves, announces checkmates, captures, declares each move legal or illegal. The referee makes declarations as to validity of each

Although the boards of the opponents are visible to the referee, the players cannot, in turn, view the referee's board. They can make moves - and gain information only by pushing out a piece blindly, hoping the play will be legal.

Kriegspiel chess demands a fine memory, good reasoning, and a welldeveloped geometrical sense, according to Norris. Even so, Norris explains, Kriegspiel often deteriorates into a series of unreasoned moves in the latter stages, until a checkmate results, or both players resign under increasing pressure of kibitzers who want their turn at the chess boards.

Sandia's Kriegspiel fans began their games about two years ago. They found the games, at first, too slow for noon-hour play. Later, the conventional chess rules were modified by a Sandia ruling that pawns could not capture unless the move occurred immediately after an adjacent piece had been removed.

Players in the 5100 organization, stronghold of Kriegspiel competition, include Ronald W. Shephard, Michael Norris, Woodrow Bledsoe, David Kleinecke, Stoughton Bell, Joseph Weihe, and Dale Young.

Norris claims the "blind" Kriegspiel chess consumes less time than the routine game, and is more exciting in its challenge to memory and reason. "Most Kriegspiel games last less than 45 minutes," he says, "kibitzers don't let them go on much longer.'

## 240 Players Taking Part in Basketball League Competition

Some 240 Sandia Corporation employees are participating in an 18team basketball league, now in the fourth week of court competition.

Playing Monday, Tuesday, Wednesday and Thursday evenings of each week, interest in the new league is running high.

Teams to watch include the 1900 aggregation, a well-balanced club which employs the fast-break to good advantage; the 2700-AEC squad with height, speed, shooting accuracy, and the 5200 group with three starters who tower over 6 feet 4 inches.

An outstanding player in the League is Lee Daily, 1641-2, who has made game scores of 28 and 19

## **AAU Boxing Planned** At Club Feb. 17

Twenty-four rounds of AAU sanctioned boxing will be presented at the Coronado Club Feb. 17.

The Club Board of Directors has made arrangements with local fight promoter James Cleary to schedule eight bouts. Tickets will be 50 cents for members, 75 cents for guests.

#### LEAGUE STANDINGS Sandia Corporation Employees

Basketball	Association	
Organization	Won	Lost
1900	3	0
1600(1)	2	0
2700-AEC	2	0
5200	1	0
2200	2	1
5500	2	0 0 1 1
1300-5100	2 2 1 2 2 1 1 1 1 1 1 1	1
1700	1	1 1 1 1 2 3
2100	1	1
2400(1)	1	1
2400(2)	1	1
2500-3100	1	1
4100	1	1
5300	1	1
1200	1	2
1600(2)	0	3
2300	0	3
5400	0	3

## SCHEDULE Sandia Corporation Employees Basketball Association Jan. 13 thru Jan. 27

Jan. 16—Monday 2200 vs 5300 1700 vs 2700, 5100, AEC 1900 vs 1300 Jan. 17—Tuesday 5200 vs 1200 5400 vs 2300 5400 vs 4100 5500 vs 4100 Jan. 18—Wednesday 1600 (team 1 vs 1600 (team 2) 2100 vs 2400 (team 1) 2200 vs 1900 Thursday 8:30 6:30 7:30 8:30 2200 vs 1900 Jan. 19—Thursday 5200 vs 2700, 5100, AEC 5400 vs 1300 5300 vs 4100 Jan. 23—Monday 5300 vs 1200 2100 vs 5400 6:30 7:30 2100 vs 5400 5200 vs 2400 (team 1) Jan. 24— Tuesday 2500, 3100 vs 2400 (team 2) 2200 vs 2700, 5100, AEC 1900 vs 2300 Jan. 25—Wednesday 4100 vs 2400 (team I) 5200 vs 5500 1700 vs 5200 8:30 6:30 7:30 8:30

1700 vs 5300 Jan. 26—Thursday 2500, 3100 vs 1600 (team 2) 2100 vs 1200

1600 (team 1) vs 2400 (team 2)

SLEEPING ROOM in private home, near bases and bus line, garage available. Jordan, Alb. 5-4832.

### FREE-

PUPS, 3 Collie-Boxers, 5 wks. old. Pearlston, ext. 35251.

PUP, half beagle. Schuknecht, Alb. 4-

### First Aid Class

RAPT EXPRESSION is common to concentrating kriegspiel contestants,

shown above during a noonhour workout. Left is Stoughton Bell, and

right is Joe Weihe, both of 5124. Referee in right foreground is Mike

Norris, 5121. Kibizter, left, is Dave Kleinecke, 5124.

Members of the Amateur Radio Caravan Club will assemble on the air Jan. 25 at 7:30 p.m. for a firstaid class to be held in the Lovelace Clinic Therapy building on Gibson