SANDIA LAB NEWS

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

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Retirement Plan Gives Sandians Big Return on Small Investment

Two Sandia Corporation employees who are retiring this month will raise the total of retired employees to 46 since the retirement plan went into effect in 1950.

Although they are scattered all over the country—from the east to the west coast—all have received monthly retirement checks from Prudential Insurance Co., carriers of the Sandia Corporation retirement plan.

Right now at Sandia, there are approximately 5600 employees enrolled in the plan who are eligible for this monthly retirement income and you may be one of them. How will this benefit you? How much will you receive? Take the case of John Doe as an example.

John is now 35 years old—the age of the average employee at Sandia. He plans to retire at age 65 and will make monthly contributions to the retirement plan until then. If his average salary over this period is $5500 he will be contributing three per cent of the first $3000 of his income per year or $90 and six per cent of the remainder, or $150. His total yearly contribution will be $240.

By contributing $240 annually, he can retire with an income of $2400 a year for life, plus at least one year's annuity paid as a death benefit to his beneficiary. Since John can expect to live until he is 79 (according to insurance statistics), he will collect a total of $33,600 on an investment of only $7200. In addition, his beneficiary will receive $2400 in death benefits.

If John were to seek his own retirement plan, either by saving for retirement through a bank or by investing in an outside insurance retirement plan, he could not realize as great a return as he could through Sandia.

By investing the same $240 a year in one private retirement plan for 30 years, he would receive only $54.72 a month upon retirement. To increase this amount to $200 a month income, or $2400 a year, John would have to earn an additional $796.56 a year, pay additional income tax of $159.30, and deposit the remainder, $637.20, with the insurance company.

In other words, the Sandia Corporation retirement plan is worth an additional $66.38 a month to John in terms of salary.

If he were to deposit $240 a year in the bank for 30 years at two per cent interest compounded annually, Mr. Doe would have only $9,931.07 at his retirement.

To compute your own retirement income under the Sandia plan, follow this simple formula:

Take three per cent of the first $3000 of your income and add to it six per cent of the remainder. This represents your annual contribution to the plan. Multiply this figure by the years remaining until you reach age 65. Divide this figure by three and you'll have the amount you will receive each year thereafter as retirement income.

Of course this formula is based on your present salary. Additional earnings later on will result in a greater retirement income.

RETIRED SANDIAN, Francis A. Newman (formerly of 2112) and his wife, remove his monthly retirement check from the mailbox at the Moon Motel, 2318 Central SW, which they recently purchased.

Henry Austin to Retire This Month

Looking forward to his retirement this month is Henry N. Austin, who presently has more interests than time to pursue them.

Henry Austin

Henry has worked in Sandia's carpentry shop (Division 2413) since October 1948.

In the spring he plans to travel to Oregon, Washington and Minnesota to visit relatives and to fish, but he'll be back in Albuquerque in time to plant lots of flowers in his garden at 5611 N. Fourth.

Later Henry intends to make custom hand-carved furniture for sale.

He has seven children and 20 grandchildren, most of them in Albuquerque.

J. W. McRae to Speak At Education Meeting

James W. McRae, President of Sandia Corporation, has been invited to participate in a conference at Los Alamos Jan. 20 on "The Problems and Needs of New Mexico Junior and Senior High Schools of the Future."

Mr. McRae has been asked to speak on the topic, "Maintaining Proper Balance in Instructional Programs of Secondary Schools."

The conference is sponsored by the Albuquerque, Los Alamos and Santa Fe schools and the University of New Mexico.

Walter M. Wilson Goes on Retirement

Retiring at the end of this month is Walter M. Wilson, a crane and crib operator in 2112-3, who has been at Sandia since Mar. 1952. Dec. 31 will mark the start of his retirement, his birthday and New Year's Eve, all rolled into one.

W. M. Wilson

Walter and his wife plan to go to Florida this winter to visit their married daughter in Sarasota and to permit Walter to follow his hobbies of golf and fishing. They also have a son in Albuquerque.

The Wilsons make their home at 1600 Vassar SE.

Contract Awarded For Bldg. 880 Modification For Use by Field Test

A contract has been awarded an Albuquerque contractor for the modification of a portion of Bldg. 880 in preparation for occupancy by the Field Test Organization (5200) in February.

Bradbury & Stamm was awarded the $30,693.00 contract to transform present office space in the west quarter of the building to laboratory facilities. The work includes modifications and changes in the power distribution system and lighting.

When the work is completed the Field Test Organization will occupy the entire west portion of the building.

THE SIZE OF THINGS: Illustrating the range in size of objects purchased by Sandia Corporation in New Mexico is E. J. Dadian, Assistant Buyer (2361-3). He is standing against an instrumentation trailer and holding a small electronic relay.

Annual Payroll Rose in 1957 And Local Purchases Gained

Sandia Corporation's payroll and the Corporation's local purchasing activities in New Mexico showed big increases over last year, according to figures just released.

The annual payroll for 1957 showed an increase of $8,500,000 over last year, or 23 per cent, while employees on the roll increased by 900, or 15 per cent.

Local purchasing in the state rose to $4,800,000, or $1,300,000 more than last year.

Sandia's annual payroll for 1957 was approximately $45,000,000, compared with $36,500,000 for 1956. The average number of employees on the roll per month this year was 6800 compared with 5900 for 1956.

In 1956 Sandia purchases in New Mexico amounted to $3,500,000, with 480 suppliers doing business with the Corporation (excluding AEC contractors). This year the number of suppliers increased to 504, of whom all but 25 are located in Albuquerque.

Items purchased in New Mexico ranged in size from large assembly jigs and instrumentation trailers to office supplies and miniature electronic parts.

T. S. Trybul Speaks To Central Illinois ASME Chapter Jan. 9

T. S. Trybul (5143) will present a technical paper at a meeting of the Central Illinois Chapter of the American Society of Mechanical Engineers in Peoria Jan. 6. Mr. Trybul will speak on "The Principles of Heat Transfer Measurement by the Schlieren Method."

Asian Flu Shots Total 11,396 in Free Sandia Plan

Sandia Corporation's recently concluded voluntary immunization program against Asiatic flu has been termed highly successful.

During a month-long period 11,390 shots were administered by members of Medical Department 3160. Each person was given two inoculations of .1cc each during a ten day interval.

The immunization was given to all Sandia Corporation employees who wished to participate, without charge. Dr. Sheldon P. Bliss, Medical Director, noted that the procedure went along "very smoothly."

Although the Medical Department is keeping track of the incidence of Asiatic flu among Corporation employees, no final figures are available since the danger is not yet over.

Burnard Biggs Succeeds Townsend As Materials and Standards Head

Burnard S. Biggs, Assistant Chemical Director—Development, Bell Telephone Laboratories, Murray Hill, N. J., has been appointed Director of Materials and Standards Engineering at Sandia Corporation.

He succeeds J. R. Townsend who recently resigned to accept a position as special assistant in the Office of the Assistant Secretary of Defense in Washington, D. C. The appointment is effective January 1, 1958.

A veteran of 21 years service with the Bell System, Dr. Biggs is a well-known authority in the field of plastics and synthetic rubbers. In his present assignment with Bell Telephone Laboratories, he is directly in charge of polymer research and rubber and adhesives development.

During World War II he worked on synthetic rubber studies and since that time has been concerned with the application of polymers in telephone equipment and research on processes of deterioration of plastic and rubbers in commercial use.

Dr. Biggs holds patents on hydrogenation of coal, synthesis of dielectric compounds and organic intermediates, and on methods of stabilization of certain types of synthetic rubber. He is the author of papers in the field of nitrogen, bases from petroleum, chemistry of coal, dielectric compounds, polyesters, polyamides, synthetic rubber, and deterioration of plastic and rubbers.

He is a member of the American Chemical Society and the Society of Chemical Industry. He is a member of the Scientific Advisory Committee of the Center for Prevention of Deterioration, National Research Council.

SANDIA LAB NEWS

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Proper Parking Procedures

The Sandia Base Provost Marshal's Office reports that several citations have been issued recently to Sandia Corporation employees for improper parking.

As a reminder, here are some pertinent facts taken from the Sandia Base traffic regulations:

Vehicles should be parked only in authorized parking lots or where curb parking is permitted. On streets where parking is permitted cars should be parked parallel to the curb, headed in the direction of the traffic lanes.

Parking or stopping is not permitted on sidewalks, in front of driveways or loading zones, within 20 feet of a fire hydrant or intersection, on a crosswalk, within 20 feet of a fire station driveway, alongside any vehicle (except where angle parking is permitted) or within 20 feet of any fence bordering a restricted area.

Parking will not be permitted within 20 feet of any building unless otherwise indicated, or where curbing is painted yellow, unless limited parking is indicated by signs.

Stopping on Main Street is not permitted from 6:30 to 8 a.m., 11:30 a.m. to 1:30 p.m. and 3:30 to 6 p.m. during duty days.

HAPPY TRIO was (L to R) Mel Pliner (1222), Ralph Wilson (1222) and Jay Wardlow (1224) following a successful hunt in the Sacramento-Guadalupe area. Mel and Jay shot their bucks within 100 feet of camp, but it took four men two and one-half hours to drag and push Ralph's deer back to camp.

Sympathy

To F. A. Leckman (7424) for the death of his father in Los Angeles on Dec. 5.

To G. B. Roberts (7422) for the death of his brother in Beechwood Park, Pa., on Dec. 6.

To R. E. Ridenour (7424) for the death of his father in Weslaco, Texas, on Dec. 7.

To Frances Voorhies (3160) on the sudden death of her mother on Dec. 17 in Camilla, Ga.

To Lou Fisher (8111-2) for the death of his father recently in Cleveland, Ohio.

To Elmer Irving (2522) for the death of his father in Albuquerque on Dec. 8.

Caravan Club Members To Hear Yearout Talk On Direction-Finding

"Loops and other direction-finding equipment" will be the topic of a talk by Dean Yearout (1455) at the Jan. 8 meeting of the Amateur Radio Caravan Club of New Mexico.

The time and place will be announced during the regular on-the-air roll call at 29.6 megacycles. The roll call is at 7:30 p.m.

The meeting is the first of a series on transmitter hunting in preparation for spring and summer direction-finding exercises, according to Brian Ward (1262), club secretary.

Congratulations

Celebrating their 20th wedding anniversary on Dec. 12 were Frank Vest (2234) and his wife.

On the day before Christmas Edwin T. MacKenzie (2711) and his wife observed their 14th wedding anniversary.

Marking 18 years of marriage on Dec. 30 will be Mr. and Mrs. William H. Lueders (2711).

C. A. "Buck" Weaver (2742) and his wife celebrated their 27th wedding anniversary on Dec. 17.

FIRST DEER FOR MICHAEL, 11-year-old son of Abe Jojola (2152-3), was this six point buck. Abe downed a seven-point buck later in the day near Fort Stanton, southern N. M.

Free Lancer

Hy Young (7422) has been very successful in selling some of his manuscripts. He has sold five lately as well as a feature length article. Some of the magazines that have accepted his stories are: "Our Navy," "Church Business," Christian Home Builder" and the "Baptist New Mexican."

Hike Up Sandias

Hardy members of the New Mexico Mountain Club will spend New Year's Day scaling the west slope of the Sandias in their annual slosh up La Luz trail.

The group will leave from the Nob Hill shopping center at 8 a.m. Armin Behr (ALO), leader of the climb, suggests that hikers dress appropriately for snow is still on the trail.

Double Trouble

When J. O. Ozmina (2721-2) became a grandfather for the first time last month he had double cause to boast — his daughter gave birth to twins, a girl and a boy.

Sandianotes . . .

Sandians Enjoy Green Christmas And Holiday Party At Livermore

Proud Parent

Russ Herbert (2151-2) is very proud of his daughter, Mickie. On Jan. 2 she will leave for Washington, D. C., to start her new job as personal secretary to U. S. Sen. Dennis Chavez. Mickie is 21 and has worked for the AEC approximately two years.

No Lawns to Mow

Mobile homes seem to be the latest thing in 2153. Henri Guerin and Henry Sellers (both 2153-2) recently bought spacious trailers.

Brief Tour

Back at Sandia after six months of Army duty is Lawrence Biggs, who served in ordnance at Aberdeen, Md., and Fort Sill, Okla. He is a staff member in 1263 and has been with the Corporation since August 1956.

Lawrence Biggs

Sick List

Get well wishes are extended to Raul Sanchez (2235), who is recuperating from an operation.

Wishes for a speedy recovery are extended to Barney Myer (2440), who is convalescing following a major operation.

Best wishes for a speedy recovery are sent to John N. Garcia (2131).

Council Holiday Plans

Members of the Salton Sea Base Community Council had as their speakers at their December dinner meeting Ward Casey, California State Assemblyman, George Johnson of the Brawley Bank of America, and Mack Lee, inspector for the California State Department of Fish and Game.

Mr. Casey and Mr. Johnson both spoke about the United Fund organization, its history and activities of the seven participating charities.

Mr. Lee told of the hunting and fishing opportunities in the Imperial Valley.

Other December activities of the council included the annual children's Christmas party and the "Adopt a Family" program.

Welcome Back

Fellow workers in 2721 welcome back Carolyn Ridgley after a month's illness.

Division 7423 welcomes Alice Priest back to work after hospitalization.

Superstitious

The Friday the 13th that fell in December, 1957, will long be remembered by Jimmie Schaefer (1473-2) and his wife. On that date they became the parents of twin girls. Brenda Ree weighed 3 lbs. 10 oz. at birth and Bonnie Jo tipped the scales at 4 lbs. 13.5 oz.

Sandians spent a green Christmas at Livermore, and occasional rains failed to dampen the spirits of employees attending a flurry of parties and activities.

The biggest event marking the Christmas season was the second annual dinner-dance held at the Castlewood Country Club near Pleasanton, Calif., Dec. 21. Almost all of the Livermore branch and their families turned out for the party.

Chairman of the dinner-dance committee was J. P. Brock (8221-2). He was assisted by R. S. Cook (8113-2) and D. E. Gregson (8124-1) who were in charge of entertainment. W. A. Maupin (8123-2) and J. M. Munyon (8122-1) handled the finances, while D. C. Held (8212-3)and R. E. Huston (8212-5) were in charge of arrangements.

R. E. Zumwalt and G. C. Steinhauer, both of 8111-3, took charge of procurement. H. C. Walker (8122-3) was master of ceremonies.

A number of Sandians and their families attended a children's benefit party conducted Dec. 14 in a Livermore school. The party was put on by the UCRL Mechanical Engineering group. Entertainment included clowns, magicians, a puppet show, dancers, tumblers, and Santa Claus, who gave each child a gift.

Members of the Livermore staff did away with card giving and purchased food instead for needy families recommended by the local welfare agency. They also gave used clothing and toys.

MIT Alumni Planning Regional Conference

Plans for a 1958 regional conference in Albuquerque, sponsored by Massachusetts Institute of Technology, are being made by alumni representatives.

Mr. Alexander

According to F. C. "Ted" Alexander, Jr. (4111), president of the New Mexico MIT Club, purpose of the conference will be better understanding of technology and engineering. Feature of the program will be a community meeting.

F. J. Given (7000) is chairman of the regional conference. W. R. Perret (5112) and Mr. Alexander are also members of the preliminary planning committee.

Weddings and Engagements

Eileen Dahlberg will be married to B. Patterson Young of Albuquerque on Saturday afternoon, Jan. 12, at St. Paul's Lutheran Church.

The bride has been with Sandia Corporation since 1950 and is now secretary to the 1450 department manager.

Mr. and Mrs. Jerry A. Hood are at home at 8305 B Decatur SE following their honeymoon in Oklahoma and Texas. The wedding ceremony was Dec. 22 at the Central Methodist Church. The bride is the former Norma Dale Dennisson of Albuquerque. Jerry has been with Sandia a year and a half as a component development engineer (1453).

Following a wedding trip to Arizona, Mr. and Mrs. J. Wayne Ellis will make their home at 2216 Garfield SE. Wayne and the former Arlene Clayton were married Dec. 15 at the Hoffmantown Baptist Church. Wayne has worked for the Corporation in 5243 since last February.

Congratulations

Born to:

Mr. and Mrs. Frank N. Reeder (5213) a son, Frank N., Jr., on Dec. 7.

Mr. and Mrs. Jay Davidson (3122-2) a son, Craig Steven, on Dec. 10.

Mr. and Mrs. M. F. Hansen (2551-2) a son, Joel David, on Dec. 8.

Mr. and Mrs. Garrett B. Drummond (7321) a daughter, Margaret, on Nov. 30.

Mr. and Mrs. Ronald Helm (4135) a daughter, Eileen Sue, on Dec. 12.

Mr. and Mrs. J. Luna (2722) a daughter, Mary Ann, on Dec. 5.

Mr. and Mrs. Norman Zirwas (2711) a son, Mark Allen, on Dec. 11.

Mr. and Mrs. Jim Poore (1614) a daughter, Rita Marie, on Dec. 17.

Mr. and Mrs. Stephen D. Chester (1453) a son, Stephen D., Jr., on Dec. 10.

Mr. and Mrs. Gresham G. Downs (1453) a daughter, Lilli Ann, on Nov. 14.

Mr. and Mrs. Al Mares (2221-2) a son, Robert Al, on Dec. 16.

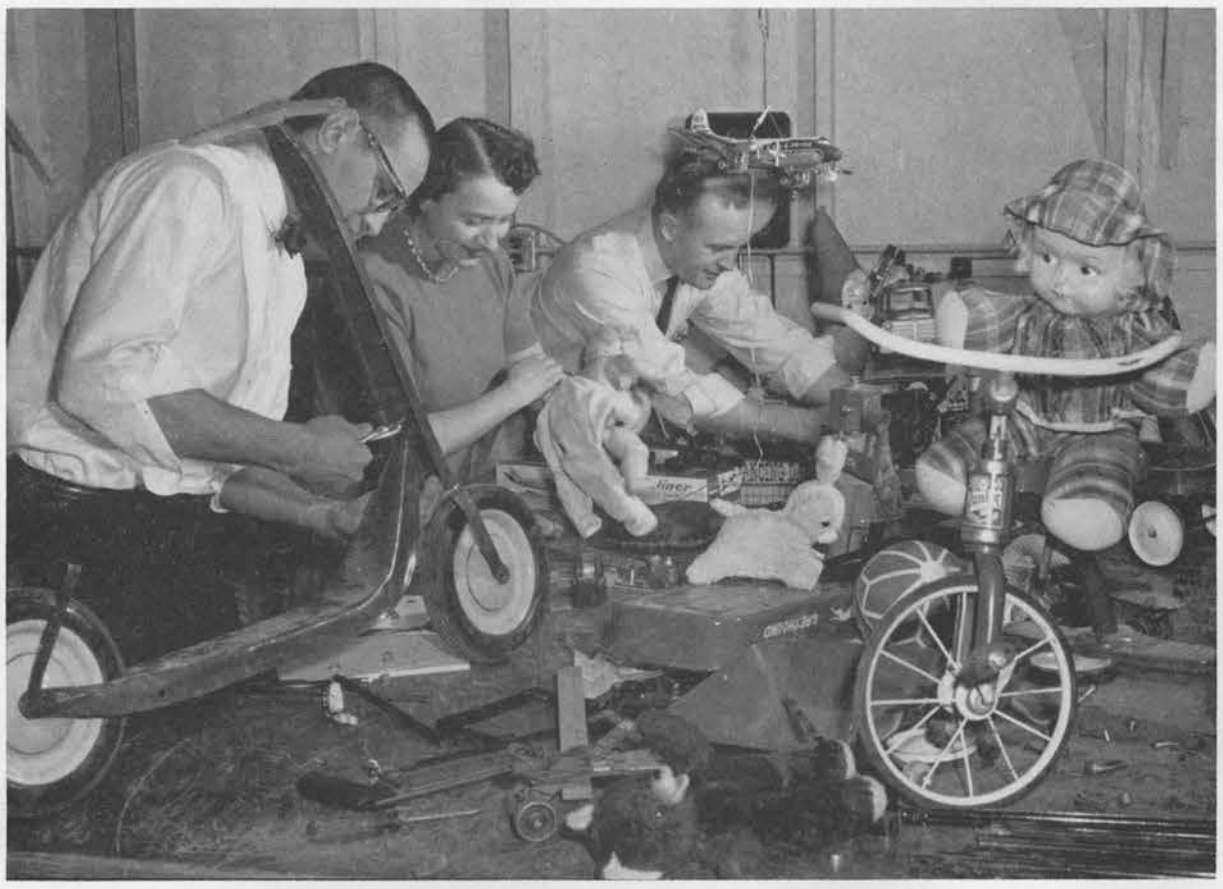
Nice Idea

Organization 7226-1, headed by Frances Hale, held a unique Christmas party to welcome 15 new members into the organization. The meal was buffet style and the leftover turkey and trimmings were taken to a needy family.

New Heir

Mr. and Mrs. Richard Kidd, Jr., (1245) have welcomed five-week-old Carter Richard to their home.

FIELD INSPECTION REPRESENTATIVES located on the East Coast to service Sandia Corporation suppliers attended an orientation conference in New York City last month. Back row (L to R) A. P. Coar, A. D. Catuna, J. G. Wimpling, S. E. Gromko, J. R. Smith, C. L. Stoner (supervisor of 2713-1), M. K. Rhoads, W. F. Trent and S. A. Butkus. Front row (L to R) J. H. Jones, J. W. McGowan, J. C. Keefe, R. G. Allison, G. W. Cosden, T. R. Cannon and H. G. Andrews.



CHRISTMAS HELPERS (L to R) Paul Abrams (4113), Mabel Otero (4113) and Gerry Miles (4112) repair toys donated by members of organizations 4110 and 4160 for 12 children in two families.

Children's Toys, Food for All Part of Christmas Charity By Sandia Organizations

The annual "charity in lieu of Christmas cards" drive among Sandia Corporation organizations resulted this year in a large amount of food, money and clothing, brightening the holiday season for needy families.

In addition to the extensive plans announced by various groups in the last issue of the **Sandia Lab News**, others joined in the spirit shortly before Christmas.

Department 2150 collected $158 to aid three families in Santa Fe, Bernalillo and Isleta. Of the total, $123 was used for food and remainder was spent for toys for the 29 children.

Departments 4110 and 4160 adopted two families with 12 children. The cash donation was sufficient to provide both families with an adequate food supply over the holidays and clothing and toys were stacked high before delivery. One family also received a used refrigerator and stove, while a new crib and mattress was given to the other group.

Division 2232 used the $95 donated by its employees to purchase food baskets for three families.

Plant Engineering Department 2440 collected $56 in lieu of Christmas card exchange and divided the amount among the agencies cooperating with the Council of Social Agencies in the coordinated Christmas aid program.

The three sections of Division 2721 adopted an Albuquerque family and used $63, contributed by members, to purchase food and some clothing. Additional clothing, bedding and other articles were also donated.

Members of Military Liaison Services (7100) donated $75 to the Bernalillo Department of County Welfare to be used to purchase shoes and overshoes for the children of needy families living outside of the city limits.

The family with five children that Division 2131 adopted for the holidays will not only have a food basket but one of the Sandians also has donated a TV set.

Food baskets for needy families were gathered by Divisions 7311, 1621 and Department 2510.

Department 5220 made Christmas happier for six families, which had a total of 43 children. Baskets to each family contained about $35 in groceries. Clothing and toys were also contributed to the A. Montoya School in Tijeras.

Department 5510 was pleased to note that a $10 contribution to their Christmas benefit fund for needy families came from Boy Scout Troop No. 182. Jim Brown (5511-1) is leader of this troop.

In keeping with the Christmas spirit Section 7225-5 gave food, clothing, yarn, toys and other useful items to members of the Stanley community. This is a farming area in which there have been seven consecutive years of crop failures.

Naval Reserve Unit Receives Commendations

Sandia Corporation employees are among the members of the Albuquerque Naval Reserve Research Company 8-7 which recently finished second in Eighth Naval District competition for competency.

Jack Houston (7132) is commanding officer of the unit, Calvin Rogers (5242) is training officer and Robert Ault (1612) serves as personnel officer.

Other Sandia employees who are members of the unit are: Raymond Butler (5524), Mark Elich (7113), Irvin Gasser (5523), Frank Macek (5521), George Hosking (5521), Jack Halliday (1411), William Robertson (1292) and Edwin Johnson (1624).

The company is composed of scientists and engineers who served in World War II and the Korean conflict. Members cooperate actively with the U. S. Office of Naval Research and in addition to Sandia Corporation come from Sandia Base, Kirtland AFB, industry and educational institutions.

Meetings are held each Wednesday evening and qualified scientists and engineers are invited to join.

Oak Ridge Scientist at Sandia Research Talks

J. W. Cleland of the Oak Ridge National Laboratory will address a meeting of the Sandia Corporation Research Colloquium at 9:30 a.m. Thursday, Jan. 9. Mr. Cleland's topic will be "Radiation Effects in Semi-conductors."

The meeting, to be held in the basement conference room of Bldg. 802, is unclassified and tickets will not be required, it was announced by Craig Hudson (5111) of the Colloquium committee.

To Present Paper at Electronic Conference

K. D. Hardin, Electronic Component Development Department, will appear on the program of the Los Angeles Electronic Components Conference next spring.

Mr. Hardin will present a paper to the conference on fast operational electronic systems in military applications. He will treat tube design and circuit considerations in the systems which have become so important to the military.

Math and Oil Paints Mix Well For Woman Physicist at Sandia

Arts and sciences find an equal place in the heart of Dorris Hankins (5112) who is as adept with a slide rule and mathermatical equations as she is with a brush and easel.

The only lady physicist employed in the Model Studies Division,

Lady Physicist
Dorris M. Hankins — 5112

Dorris is doing fundamental research on the effects of high wind velocities on block structures, or as she explains it, what forces act on buildings when struck by high winds accompanying an atomic explosion.

Information from these studies would be of value to architectural engineers in the design of buildings to withstand atomic blasts.

When not at work Dorris finds time to dabble in oil painting, take care of her 14-month-old daughter, Debra Jean, climb mountains and go skiing with her husband Russell.

Dorris' interest in physics began in high school in Montezuma, Ia. Her good marks in physics and mathematics earned her the position of valedictorian of her class. Following her graduation she enrolled at Central College in Pella, Ia., where she earned her BA degree in mathematics. Winning a teaching fellowship, she entered Iowa State University as a physics major, where she was awarded her MS degree.

During her last year at Iowa State, she worked under a research fellowship granted by the Institute for Atomic Research. Her thesis, "Photo-conductivity of Cadmium Sulfide," was published by the AEC.

Following her graduation from Iowa State Dorris was employed as an aeronautical research scientist with the National Advisory Committee for Aeronautics at Moffett Field, Cal., and as a psysicist at the Southern California Cooperative Wind Tunnel at Pasadena.

It was at the recommendation of friends at Sandia, who were formerly with NACA, that Dorris applied for a position with the Corporation. Next month Dorris will receive her five-year service award here.

Supervisory Appointment

RALPH T. MILLER to supervisor of Maintenance Section 2473-2, Motor Pool Division.

Ralph has worked in the motor pool since he came to the Corporation in August 1951.

He has been employed as a mechanic by various motor firms in Albuquerque since he moved here in 1937.

He attended public schools in Mission Valley, Tex., and various trade schools in automobile maintenance.

During World War II, Ralph served two years in the Infantry including duty in the Pacific.

Calls About Tickets Interfere With Work

Procuring and issuing tickets for official trips of employees is a big job for Financial Division 6021. Although they strive to give the fastest and most efficient service the tellers at the cashiers' windows where tickets and cash are picked up are being needlessly inconvenienced by employees calling to inquire about tickets.

According to the rules (SCI-3974) tickets may be picked up after telephone notification, usually the day before the scheduled trip. Employees who call to inquire about their tickets force the tellers to keep other people waiting while they handle the inquiry.

As a New Year's resolution the tellers hope that Sandia employees will help ease their job by heeding the advice: "Don't call us; we'll call you."

Management Division Meeting Set by ASME

A meeting to organize the Management Professional Division of the New Mexico Section, American Society of Mechanical Engineers, is scheduled Jan. 8 at 7:30 p.m.

Programs for future meetings will be established at this meeting, which will be held in Rm. 101, Mitchell Hall, on the University campus, according to E. H. Copeland (1471), publicity chairman.

Welcome Newcomers

Dec. 9-20

Albuquerque	
Silverio J. Armijo	2474
Joan M. DiLuzio	4135
Rosetta L. Flippin	4161
Dawn E. Gerwin	2224
Shirley A. Hake	2461
Phyllis L. Johnson	3153
James R. Shepard	2335
California	
lark Calder, Concord	8222-1
Beverly J. Deatrick, Livermore	8212-4
Ruth C. Flanagan, Livermore	8212-4
Alma M. Jones, Oakland	8212-4
Minnesota	
Martin D. Kessler, Minneapolis	4112
Ohio	
Stanley L. Owens, Norwood	
Oklahoma	
Robert C. Cranfill, Norman	2514
Texas	
Lewis S. Brownlow, Fort Worth	2234

Service Awards

TEN YEAR PINS

Elmo J. Whitmore
2235
Dec. 30, 1947

James M. Allen, Jr.
5211
Dec. 19, 1947

Charles E. Garcia
2473
Jan. 5, 1948

FIVE YEAR PINS

Dec. 27-Jan. 2

Stanford G. Cain 8122, Gene W. Abbott 3151, Frederick Shoemaker 5212, Ethel M. Kind 4135, Hugh L. Tallman 4152, Celeste K. Gatling 7221, Candelario B. Torres 2121.

James C. Southall 2124, Robert L. Burgess 5213, Donald R. Knapp 7130, Donald A. Belmore 7213, Stuart C. Hight 5100, and John A. Rohrer 2531.

Jan. 3-9

George L. Hutchinson 2232, Robert M. Betz 6000, Jerome E. Ligocki 1246, Harry C. Olson, Jr. 2531, Franklin Barnett 7123, John A. Garcia 2124.

James M. Kelly 2231, William R. Atkins 2541, Wilber D. Connelley 5523, Bernice T. Umland 7225, Ellen R. Jones 7423, and Theodore E. Neubauer 2154.

TWO YEAR CERTIFICATES

Dec. 27-Jan. 2

Patsy R. O'Boyle 7225, Richard E. Demo 7412, Robert M. Ferguson, Jr. 2462, Gerald T. Long 7411, and Dolores I. Dudeck 2461.

Jan. 3-9

William A. Jenkins 7422, David E. Kosanda 1281, Clarence A. Loveless, Jr. 1216, Robert A. Harley 2552, Jerrolyn R. Dolson 7421.

A. Marie Willis 7225, Edward G. Dlouhy 7412, Manuel Cordova 7232, Louis H. Ragsdale 5126, Francis N. Rebarchik 7311, Wilbur F. Cronk 7412, and Charlie N. Eden 2461.

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON 25, D. C.

DEC 13 1957

Dear Mr. McRae:

On behalf of the Division of Military Application, I want to extend to you and the entire Sandia organization our best wishes for the Christmas season and the coming New Year.

Our relationship in the past has proven effective, stimulating, and most pleasant. 1958 will, undoubtedly, bring us many problems of mutual concern and I am certain your organization will more than equal its past accomplishments.

May all of you enjoy a most happy holiday season and successful New Year.

Sincerely,

Alfred D. Starbird
Brigadier General, USA
Director of Military Application

Mr. James W. McRae, President
Sandia Corporation
Sandia Base
Albuquerque, New Mexico

BEST WISHES were sent to Sandia Corporation by Gen. Alfred D. Starbird, Director of Military Application, in this letter addressed to James W. McRae, President of Sandia Corporation.

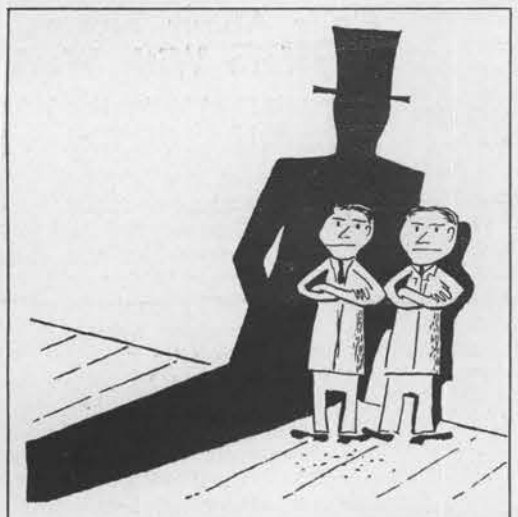
Sandia highlights of 1957

FROM THE FILES OF THE Sandia Lab News

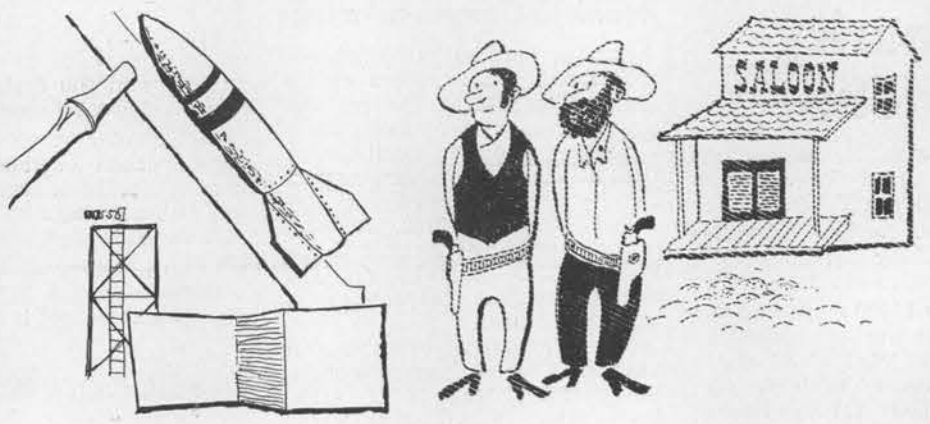
Sandia employees earned the AEC's Award of Honor for working 3,610,-632 man hours without a disabling injury. Proper use of safety equipment helped a lot.

Sandia Corporation is having a movie made about itself. Called "The Sandia Story," it will cover all phases of our complex and far-flung operations.

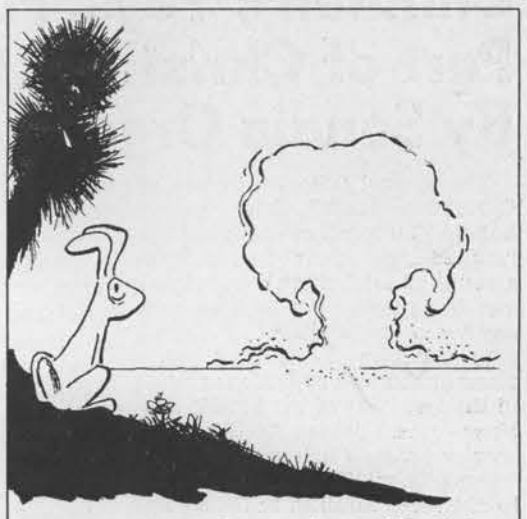
President James McRae went down to New Mexico Western college to attend a banquet and make a speech. It became a dinnerless dinner when somehow the food failed to arrive. Mr. McRae made his speech which probably had to be good to keep the guests' minds off their appetites.



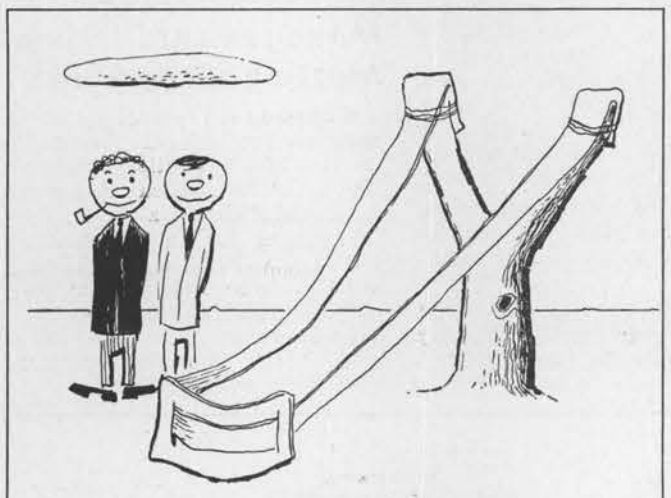
Some 500 Sandia people decided the Government ought not to tax their moving expenses, took the case to court and won the first round before Judge Hatch. The Government appealed.



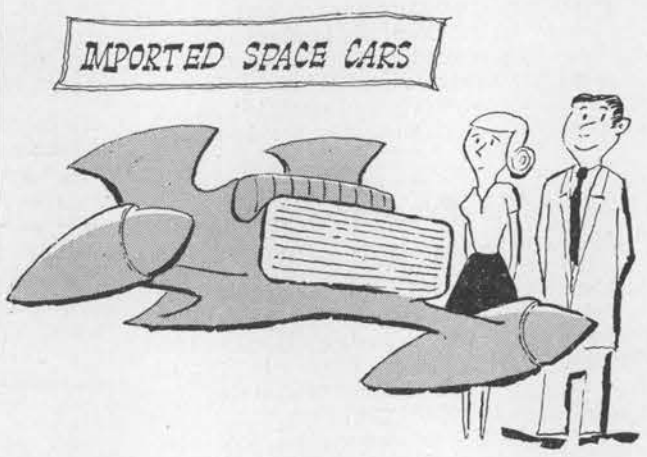
From rocks to rockets just about sums up the story of historic old Tonopah, Nevada. Once the area yielded two hundred million dollars in silver, now it is the site of Sandia Corporation's Ballistic Test Range. Sandia personnel shoot off rockets at Tonopah these days and one single-stage missile reached an altitude of 80,000 feet.



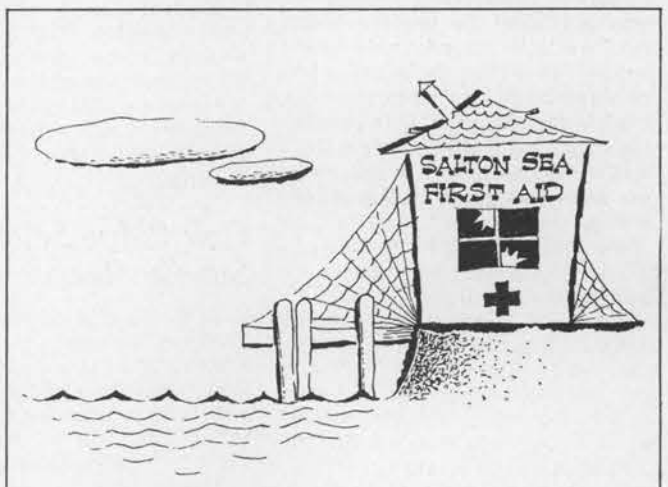
Biggest explosion ever set off in this country was "Hood," out in Nevada. Around a hundred Sandia personnel participated in this year's operation "Plumbbob."



Area III installed a big "slingshot" for shock-testing weapons. Known as the Shock Cord Accelerator, the device is powered by elastic bands and exerts a force of 480,000 pounds.



Sandia's exhibit at the New Mexico state fair this year featured a Progress for Tomorrow theme. Atomic energy is going to make life a lot better for us in the future whether we ever get to the moon or not.



Salton Sea worked five years without a disabling injury. They're just naturally careful not to get hurt out there, otherwise they wouldn't be able to enjoy the fine California climate.

Sandians gave a whopping one hundred thousand dollars to the Employees Contribution Fund. Under a new plan at the corporation we could give "Once and for All." Several other deserving organizations were included in the drive and employees found they liked the idea of only one contribution.

Folks out at Livermore like to go on picnics. Had their second annual get-together this year. Everybody ate hamburgers and beans and had a big time.

As usual, people got married, bought homes, were active in civic affairs, went hunting and fishing, and for the most part enjoyed the fine type of life in New Mexico. Most popular ad appearing in the paper seemed to be WANTED: HOMES FOR KITTENS, and a prolific cat named Calico Kate made headlines. Happy New Year.

Indian Dances and Miracle Plays Both State's Holiday Observances

Indians garbed in feathers and leather dancing to tom-toms inside a church.

The search of Mary and Joseph for lodging in Bethlehem reinacted in small adobe mountain villages.

A jolly Santa Claus distributing gifts beside a brightly lit Christmas tree.

All these represent observance of Christmas in New Mexico.

This state is unique in its historical background: the various Indian tribes, the 16th Century Spanish explorers, and finally the Anglo-Americans who made their way westward on the Santa Fe Trail. Each has conrtibuted from its own culture toward present day traditions and observances.

Newcomers to New Mexico find most surprising the way the holiday season is observed in Indian villages. At San Ildefonso, Laguna, Jemez, San Felipe, Tesuque and Santo Domingo Pueblos, ceremonial dances are held inside the mission churches on Christmas Eve following the Midnight Mass. The resounding beat of the dance drums combined with the jingle of the dancer's bells have a rather hypnotic effect when heard inside such a small structure. Usually the braves are the only participants in these dances. In some pueblos the dances continue for three or four days after Christmas.

At the famed Taos Pueblo in northern New Mexico a Christmas Eve torchlight religious procession is marked by firecrackers and rifle shots, intended to frighten away evil spirits.

On Christmas Day the San Juan and Cochiti Pueblo Indians perform Los Matachines dance, depicting the struggle of an Indian maiden against evil forces. The dance is supposed to come originally from the Aztecs of Mexico.

In many remote, rustic mountain villages in New Mexico the Spanish customs of Las Posadas (The Inns) and miracle plays are continued almost in their original form.

Candlelit nativity scenes are found in almost every settlement and many villages on Christmas Eve burn bonfires in front of their doors.

PATCHES OF SNOW combined with bright blue skies are customary for New Mexico's mountain villages, which often mark the Christmas season in the manner of 16th Century Spain. This scene was taken at Juan Tomas in the Manzano Mountains.

Livermore Basketball Team Slates 10 Game Round Robin League Series

Livermore Branch's basketball team moved into a 10-game schedule during December in the Livermore single round-robin league.

The quintet, managed by Orval Wallen (8111-1) got off to a slow start by bowing to the Rad Lab Old Timers and Baughman's.

Sandia team members are: Jim Blanchard (8122-2), Dick Cook (8113-2), Ed Daugs (8124-1), Phil Gallagher (8221-2), Pat Gildea (8111-2), Dan Gregson (8124-1), Leo Gutierrez (8124), Billy Pontsler (8124-1), Marlin Pound (8212-1), Arnie Schuknecht (8212-5), Bob Tockey (8122-3) and Karl Tucker (8212-3).

—2500 Team Captures First Flag Football Crown—

ASTE Speaker's Topic To Be 'Cutting Lore'

Vernon Wade, representative of Brown and Sharpe Co., Providence, Rhode Island, will discuss "Cutting Lore" at a meeting of the Albuquerque Chapter, American Society of Tool Engineers, Jan. 9.

The place of the meeting is the Hilton Hotel. Dinner will be served at 7 p.m. and the meeting will begin at 8 p.m., according to Leonard Nelson (2711), program chairman.

Engineers Week Topic Of Tech Council Meet

The New Mexico Council of Technical and Scientific Societies Board of Directors will meet Jan. 6 to discuss plans for the Council's participation in National Engineers' Week in February.

Lee McKittrick (1511), president of the Council, asked that representatives of all member societies be present at the meeting, which will be held at 7:30 p.m. at the warehouse conference building at the University of New Mexico.

Color Television Set Put in Coronado Club

A 21-inch color television set has been purchased by the Coronado Club and is now in operation in the club lobby, it was announced by Frank Abbott (AEC), club president.

Plans are to keep the club open during the Tournament of Roses parade on New Year's Day so that the spectacular event can be viewed in color at the club, Mr. Taylor said. The club was originally scheduled to be closed Jan. 1.

Two New Facilities To Be Constructed In Technical Area

Bids will be opened soon for the construction of two technical facilities in Area I.

Scheduled for opening next week are bids for construction of a testing facility for the Field Ordnance Division (5212). The facility, to include a 36-foot steel pendulum, will be used to obtain moments of inertia data, measurements of ballistic qualities of inert experimental weapons. It will connect to the south end of Bldg. 880 and is expected to cost between $20,000 and $25,000.

Included in the construction will be heating, ventilating and lighting equipment, and installation of a hoist and hydraulic floor lift.

In January bids will be opened for modification of a room in the northeast corner of Bldg. 880. The room will house the IBM 705 Electronic Data Processing Machine expected to be installed next summer. The modification, to cost between $100,000 and $110,000, will include installation of refrigerated air conditioning equipment and a raised floor to accommodate power cables. The room will be made dust-free with controlled humidity and temperature for proper operation of the sensitive equipment. Organization 4140 will operate the 705 when it is installed.

Base Gym to Open

The Sandia Base Gym will be open beginning Jan. 2 for Sandia Corporation basketball league practice.

The basketball facilities have been closed for floor refinishing. League play will begin Jan. 15.

2500 Team Wins In Flag Contest

The 2500 team closed out the season by defeating 1400 by a score of 12 to 6, and became the only undefeated team in the first Sandia Corporation flag football league.

The winning team, pictured above, are standing (L to R): James Beaudet, George Hilderbrandt, Don Wagner, H. T. Cushman (team manager), George Chandler, Ray Rychnovsky and Norm Pokorny.

Kneeling (L to R) are: Dave Poli, Harvey Morse, John Souza, Tom Kelly, Al Kaping, Ron Zottnick, and Bruce MacDonald. Not in the picture are R. A. Govig, Don Hewitt and Warren Johnson.

Chosen for exhibiting the best sportsmanship in the league during the season were the combined teams of organizations 7200, 5200 and 2300. The sportsmanship trophy and the winning team award were presented at the league party at the Coronado Club Dec. 10.

Eight teams made up the Sandia Corporation flag football league this season with approximately 120 employees participating.

DeHaan, Monahan Doubles Champs

Trophies will be presented soon to Sam DeHaan (2223) and Eugene "Ted" Monahan (2234) for winning the Sandia Corporation horseshoes doubles championship. They defeated Stanley Eastman (2112) and Antonio Garcia (2153) in a close match.

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CLASSIFIED ADVERTISING

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

RULES

1. **Limit: 20 words**
2. **One ad per issue per person**
3. **Must be submitted in writing**
4. **Use home telephone numbers**
5. **For Sandia Corporation and AEC employees only**
6. **No commercial ads, please**
7. **Include name and organization.**

FOR SALE

DIAMOND RING, ½ carat; wedding rina, 7 cut diamonds: certified appraisal, $437, will sell for $199 cash. Hanley, AL 6-6969.

SAW, JOINTER, jigsaw, drill press, cement mixer, spray painter, weed burner, roaster, slide, dinette, bedspreads, refrigerator. electric range, TV's. LeCompte, AL 5-3261.

'57 RAMBLER, 4 door sedan, ivory and green, sleep seats, seat covers. 25 miles per gallon. Kilmartin, AX 9-1241.

LIGHT PLANT, aasoline, 1000 watt, push button start, $75. Mathias, AL 5-0156.

SEWING MACHINE, portable, Singer, $90. Blea, AL 6-5216.

TANDEM TRAILER, 4 wheel, 6½ feet wide, 16 feet long and 10x18 feet tarp. Smith, TOwnsend 5-9525, Los Lunas, New Mexico.

VACUUM CLEANER, tank-type, $15. Hudson, AL 6-2137.

KITCHEN RANGE, Dutch oven, Maytag, deep well cooker. Grant, AL 6-5730.

'53 CHEVROLET pickup, 4 speed, $400. Lloyd, AM 8-0959, 510 Richmond SE.

BABY TENDER, $2; hammock, $2; wooden ironing board, $1; gasoline iron, new, $3; kerosene stove, $4; man's lightweight bicycle, $25. Biegel, AX 9-7318.

UNIVERSAL JEEP, many extras, foam rubber cushions, 5 tires, 19 miles per gallon, $725. Smith, AL 5-0623.

AUTOMATIC WASHER, Bendix, with soak cycle, $40. Urbanoski, AX 9-2319.

'55 DODGE, V-8, 2-door hardtop, three-tone, automatic transmission, R&H, WWs. turn signals, spinner wheel covers, 26,000 miles. Gay, AX 9-5625.

2 BR. HOME, furnished, close to bases, $6975 w/$150 down on real estate contract. Manley, AX 9-4727.

ELECTRIC STOVE, large, w/deep fry, $60. Everett, Ext. 44162.

'51 CHRYSLER Saratoga, V8, 4-door, power steering, power brakes, new paint, $395. Hansen, AX 9-3397.

'56 FORD station wagon, 4-door, 6-passenger, auto-transmission, heater, tinted glass, fitted mattress. Baliey, AL 6-2360, 3818 La Hacienda Dr. NE.

'49 CHEVROLET, 4-door, custom built, $150. Saavedra, AL 6-2997.

SEAT COVERS for '57 Dodge, 2-door, clear plastic, small star design, brand new, lifetime guarantee, sell for $12.50. Burbidge, AL 6-7239.

ENGLISH BICYCLES, one 26" girls with basket, one 26" boys with basket and carrier. Clyde, AL 5-6805.

DX-100 TRANSMITTER, $150; going single side band. Snyder, AL 5-0833, Flying D Trailer Ranch, 424 Utah SE, Lot 20.

MERCURY ENGINE, 59L Canadian block w/aluminum pistons, 4-inch crank, A heads, clear plastic wire, chrome looms. Anderson, AX 9-4518.

'54 BUICK, 4 door sedan, R&H, power steering, power brakes, new nylon WW tires, $1150 or trade. Davis, AL 6-4962, 1108 Alcazar NE.

NEXT

DEADLINE

FOR SHOPPING CENTER ADS

Friday Noon, Jan. 3

MOTOR SCOOTER, '56 Sears. Coleman, Ext. 51205.

HAM RECEIVER, 9-tube, 6-band, 550kc-65mc, bfo, crystal filter, tuning indicator, electrical band spread, first $30 takes it. George, AX 9-3147.

21" TV CONSOLE, Motorola, needs new picture tube, $35. Nielsen, AL 5-6497.

3 BR. HOUSE, 1¾ bath, hw floors, central heating, attached garage, Mankin Carlisle Plaza. Barth, DI 4-0309.

ADDING MACHINE, Remington Rand, hand operated, 10-key, 8-column, subtraction, sub-total, $100. McCullar, AX 9-0638.

HOME FREEZER, Maytag, 15 cu. ft., '55 model, make offer. Casey, AL 5-2915.

26" BICYCLE, girls, English Schwinn, $30 or best offer. Ray, AX 9-1330.

TAPE RECORDER, 2-speed, Pantron, $65; portable record player, 3-speed, $15; deep fryer, General Mills, $10. Boling, AX 9-1346.

30-30 WINCHESTER carbine, brand new in box, retails for $79.95, sell for $59.75 cash. Morgan, AL 6-9637.

DINING ROOM set, living room set, $25 each. Samuelson, AL 5-8243, 5605 Bell SE.

ARMY COT, steel, $3.50. Pitti, AL 6-1629.

'54 CHEVROLET, 4 door, 210 sedan, blue and white, low mileage, R&H. Brown, AL 5-0566.

'49 FORD, 2-door, $225. Smith, AL 5-6478.

3 BR. HOME, Inez brick, 1¾ baths, carpeted, 2½ car garage, patio, walled, sprinklers, air conditioning, other extras, $17,900. Wank, AX 9-3450.

AIR FORCE UNIFORM, officers, blue, blouse and trousers, size 40, $20. Abruzzo, AL 6-6735.

MILK GOAT, bred, best offer or trade for two-wheel trailer, Skelly, Ext. 26134, Rt. 1, Box 354, Los Lunas.

ROLLER SKATES ,women's, white, size 7½, fiber wheels, leather, $12 or best offer. Gercia. AL 6-7606.

'49 FORD, V8, clean, tudor, $150. Houston, Ext. 35187 after 5 p.m.

TARGET REVOLVER, .22 caliber w/holster, $35 or trade for old pistol, revolver or rifle. Smitha, AX 9-1096, 8607 Menaul NE.

'50 PLYMOUTH, tudor, $150 or best offer. Grace, AL 5-4009.

RADIO CONTROL receiver and transmitter for model airplane, boat, etc., single channel, $20; slide rule, $15. Yearout, AX 9-6810.

PICNIC SET, 3-piece redwood; trumpet; cold-quartz sun lamp; curtains to fit 3 bedroom house on base. Lutz, Ext. 43271.

'57 REFRIGERATOR, GE, rotating shelves, separate 77 lb. freezer on top, or trade for smaller refrigerator. Petrini, AX 9-0356.

'49 CHEVROLET, needs some repair but it runs. Demmel, AX 9-5639.

'56 SCOOTER, Cushman, make offer; polaroid camera & flash, $50. Ouellette, 116 Penn Ave. NE, Apt. 1 after 5 on weekdays.

LUGER, .22 caliber single action; Craftsman jigsaw, Truline Jr. reloading tool; 15 inch coaxial speaker in bass reflex cabinet. Galbraith, AX 9-6554.

RELAX ACIZOR, Model 5, $140. Cordova, AL 6-6672.

SECTIONAL COUCH, 3 piece modernistic, $100; Bendix Economat washer, $50; wrought iron and brass bar w/2 bar stools, $60. Meyer, AL 6-3926.

HICKORY SKIS, 2 pair, 7'3" and 6'6", both with bindings and steel edges. Ladies ski boots, size 7. Claassen, AL 5-4347.

'55 DESOTO hardtop, full power equipment, $1,500. Reaser, AL 5-4663.

WANTED

WOMEN BOWLERS for Monday Night League, 2, same team, at Bowl-o-Drome. Fleming, AX 9-6833.

TO TRADE RIFLE, Mod. 70 Win. .243 cal., custom stock for drill press. Goens, Ext. 26241.

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

VACUUM CLEANER in good condition. Murray, DI 4-5289.

CHILD CARE, my home, all ages, any time, 2 blocks east of Fairgrounds, reasonable. Bice, AM 8-8671.

TO TRADE 30:40 Krag for 9mm Luger. Miller, Ext. 4-5275.

TO GIVE AWAY pair of men's skis, first come, first to get. Brownson, AX 9-0449 after 4 p.m., 9714 Woodland Ave. NE.

FOR RENT

BEDROOM AND BATH, private entrance, $40. Jones, AL 5-3390, 608 Richmond SE.

2 BR. HOME, completely furnished, will lease for six months. Wilson, CH 2-9223, 1600 Vassar SE.

LOST AND FOUND

LOST—Five year pin, blue and silver pen, blue wool scarf, brown knit glove with white trim, sterling cuff link, wallet with ID, lipstick, blue stone earring in silver mounting, silver "V" shaped earring, copper hoop dancer earring, man's brown leather gloves, gold and black pencil, orlon beige sweater, Revlon lipstick with mirror. LOST AND FOUND, Ext. 26149.

FOUND—Keys on chain w/knife and safety deposit key; brown leather zipper coin purse w/9 cents, pink and pearl earring, black knit glove and head scarf, pair black wool gloves, rosary w/mother of pearl beads. LOST AND FOUND, Ext. 26149.

Part III: Sandia Corporation's Place in the Nuclear Weapons Program

Project Groups Design Complete Weapons Systems

Editor's Note: The preceding article of this series told of Sandia Corporation's research role in the nuclear weapons program. This article is concerned with the Corporation's development activities, or how an idea for a new weapon becomes a reality.

Actual development of a specific nuclear weapon system begins when research has established the feasibility of a weapon and the military has requested that such a weapon be added to stockpile.

When this has occurred, the details of development become a matter for the AEC and its contractors to work out. Los Alamos Scientific Laboratory or University of California Radiation Laboratory, Livermore, concentrate on the development of the explosive systems to meet military requirements and Sandia designs a suitable ordnance system.

The job of designing a specific weapon system is assigned to a team of engineers at Sandia which comprises what is called a "project group." These engineers are concerned basically with two tasks: the design of the complete ordnance system for the weapon and the design of the components which make up the system.

The systems engineers associated with the project group perform the first step in the actual development of the ordnance system for a given weapon.

First they lay out a block design of the weapon system, with each block representing a particular function. Then they investigate each link in the system to determine what device or combination of devices could perform this function. If the desired device does not exist, as is often the case, the project group asks the component development engineers to design one to meet the desired specifications.

In general, the job of the systems engineer and the project group is: establish requirements for new component development; design and test the weapon system; and coordinate the work done on the system from its inception until it is retired from stockpile.

* * *

In the design of a weapon system, simplicity, ruggedness and reliability receive prime consideration. It is essential that a weapon fire at the proper time and place. An unreliable system might cause the weapon to detonate in the delivery aircraft before the target is reached, or result in a dud.

For these reasons much of the systems engineer's work is directed toward minimizing the possibility of duds or premature detonations, and increasing reliability and safety.

In the course of his quest for the best system possible, he will design many that will work but the search will continue until the proper one is found.

Requirements for components to make up the weapon system are given to the component development engineers for design. Each request is carefully reviewed to see if components previously developed will serve the purpose or can be modified to meet the desired requirements.

If this is impossible the component development engineer initiates a new development program for the design, development and preparation of specifications for production of the required item.

This includes design work done at Sandia as well as coordinating development work done on contracts with established industrial concerns which possess special or unique knowledge of devices used commercially or previously developed for ordnance application.

* * *

The reliability of nuclear weapon components is of utmost importance. In an actual military operation second chances to bomb a target might be few, and the failure could be costly if not catastrophic. Therefore, the design and manufacture of these components must meet tighter specifications and closer tolerances than are normally required in commercial products.

As an example, say that an electronic timing device is to be incorporated in the arming circuit of a new weapon system. When the component development engineer has designed the timer he orders a prototype model of it fabricated in Sandia's model shops.

Here at this modern installation, considered to be one of the best equipped shops west of the Mississippi, prototype or preproduction model components are produced under rigid specifications for test purposes.

* * *

When the model is completed the component development engineer must make sure that it will perform according to specifications under the most adverse environmental conditions. Here are some of the environmental tests the device must undergo in Sandia's Environmental Testing Laboratory before it can be considered acceptable:

1. High temperature test:—The timer is cycled for 30 tests of 24 hours duration during which it is exposed to temperatures between 90 and 160 degrees Fahrenheit.

2. Humidity test:—The device is exposed to relative humidities of 90 to 98 per cent in ten 48-hour periods at temperatures of 68 to 149 degrees.

3. Temperature shock test:—The timer is subjected to 160 degrees for four hours and -65 degrees for four more hours, three times.

4. Vibration test:—The mechanical resonant frequency is determined and the device is vibrated at 10 g's along each mutually perpendicular axis for 60 minutes at room temperature; 15 minutes at 160 degrees and 15 minutes at -65 degrees.

5. Mechanical shock test:—The timer is impacted 18 times at 15 g's along each mutually perpendicular axis.

6. Acceleration test:—The component is subjected to 50 g's along each mutually perpendicular axis in each direction.

7. Salt spray test:—The timer must withstand an atmosphere of wet, dense, salt fog for 50 hours at 95 degrees.

Then, to complete the tests, the device is subjected to low and high pressure tests, explosive vapor, fungus, sand and dust, rain and ice, and bright sunshine. During all this the component must perform its required function at optimum efficiency.

* * *

Other components, such as radar, power supplies, cables and connectors and many others are subjected to equally rigorous tests. Environmental testing of weapon components and materials, as well as the maintenance of accurate standards in the design and manufacture of weapon components, is carried out in Sandia's well-equipped Environmental Testing and Materials and Standards laboratories. Complete chemical, analytical and spectrographic laboratories, equipped with the most modern and accurate equipment, are available for materials testing work.

Specialized facilities have been provided at Sandia for the experimental production and/or analysis of many materials. Included are plastics, rubber, adhesives, lubricants, ceramics and metals. There are also laboratories for maintenance of high standards of measurement of length, mass, radiation, pressure, and high and low electrical frequencies, and for determination of magnetic resonance.

In addition, Sandia has a Radiation Effects Group which conducts an environmental testing program to obtain engineering information on the effects of radiation upon the physical properties of materials. An experimental test reactor of the boiling water type is planned for construction at Sandia in the near future.

This program approaches the problem of radiation effects on materials in a direct, engineering manner. Many samples of materials are placed in a radiation environment for various lengths of time and under several levels of radiation intensity. Engineering tests to evaluate the physical properties of the irradiated materials are performed remotely in suitable "hot cells" to protect operating personnel from the harmful radiation.

The results of these post-irradiation tests are compared with similar tests performed on unirradiated control samples of the same materials to determine the effects of the radiation.

Sandia's engineering reactor facility will provide adequate irradiation facilities on the premises and will permit the testing of irradiated material in the environments of heat, cold, vibration and altitude.

* * *

Also assisting the engineer in his development work is a Technical Standards Group which incorporates into technical standards the related technical information and needs of Sandia's engineering organizations.

As an example, a technical standard may be prepared by the group which incorporates the best available information and procedures on printed circuitry. Another standard might be prepared outlining all of the various environmental test conditions that a new component must pass before it is acceptable.

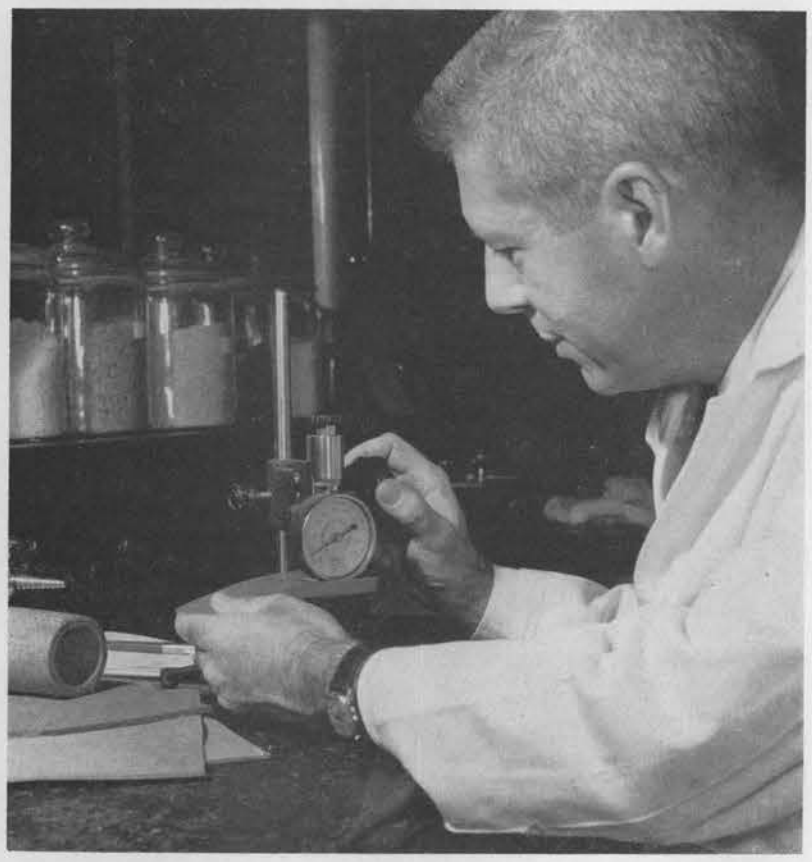
The services of experienced detail and design draftsmen and specifications engineers are also available to Sandia's development design engineers to assist in formulating ideas into finished design release drawings and manufacturing specifications. Such assistance relieves the development engineer of much of the detail effort required.

As the foregoing indicates, there are many facilities at Sandia to assist the engineer in the development of nuclear weapons. In fact, the entire laboratory has been organized to serve the project group. There is no fixed order in which these services are supplied.

Just as a golfer carries all his clubs from hole to hole, so are these services available at all times and at all stages of the "game" to aid the project team.

"The proof of the pudding is in the eating," says an old proverb which applies also to the development of nuclear weapons. One of the final steps in the development of weapons is Field Testing — putting weapons through their paces under actual operating conditions. This will be discussed in the next issue of the Sandia Lab News.

DEVELOPMENT CONFERENCE. This is one of many conferences which take place during the development of a new weapon system at Sandia Corporation. Gathering around a blueprint of an experimental device are (L to R) E. H. Draper, Director of Systems Development (1200); J. I. Hegge (1470); R. R. Sowell, (1625); C. F. Bild (1620); John P. Cody (1220); R. W. Henderson, seated, Vice President in charge of Development (1000), and Robert P. Stromberg 1473).



TESTING HARDNESS of rubber is George Dykes (1625). This is one of the many tests new materials must undergo in the development of experimental weapon components at Sandia Corporation.

Paul Rowe Addresses Valley High Students

The second in a series of talks to local high school students was presented last week at Valley High School by Paul W. Rowe, Aerodynamic Research Division (5141).

Assisted by R. W. Olson (5141), Mr. Rowe outlined to an assembly of science and math students the unique problems encountered in designing aircraft for supersonic and subsonic flight.

After the talk students gathered informally to witness a demonstration of Sandia Corporation's model wind tunnel that was first exhibited at the New Mexico State Fair.

Mr. Rowe recently presented the same program to students of Albuquerque High School and will talk to students at Highland High next month.

Noon Movie Showing Includes Robinson Film, Two Others

The second half of "The Glass Web," starring Edward G. Robinson, will be shown during the Corporation's noon movie hour next week.

Jan. 7-10 the program will include two black and white films, "New Horizons" and "The Making of Fine China."

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