



SECURITY INSPECTORS L. M. Ford (left) and R. A. Collins raise the new POLARIS Team Flag presented at Livermore Laboratory.

SANDIA CORPORATION

LAB NEWS

PRIME CONTRACTOR TO THE ATOMIC ENERGY COMMISSION / ALBUQUERQUE, NEW MEXICO / LIVERMORE, CALIFORNIA

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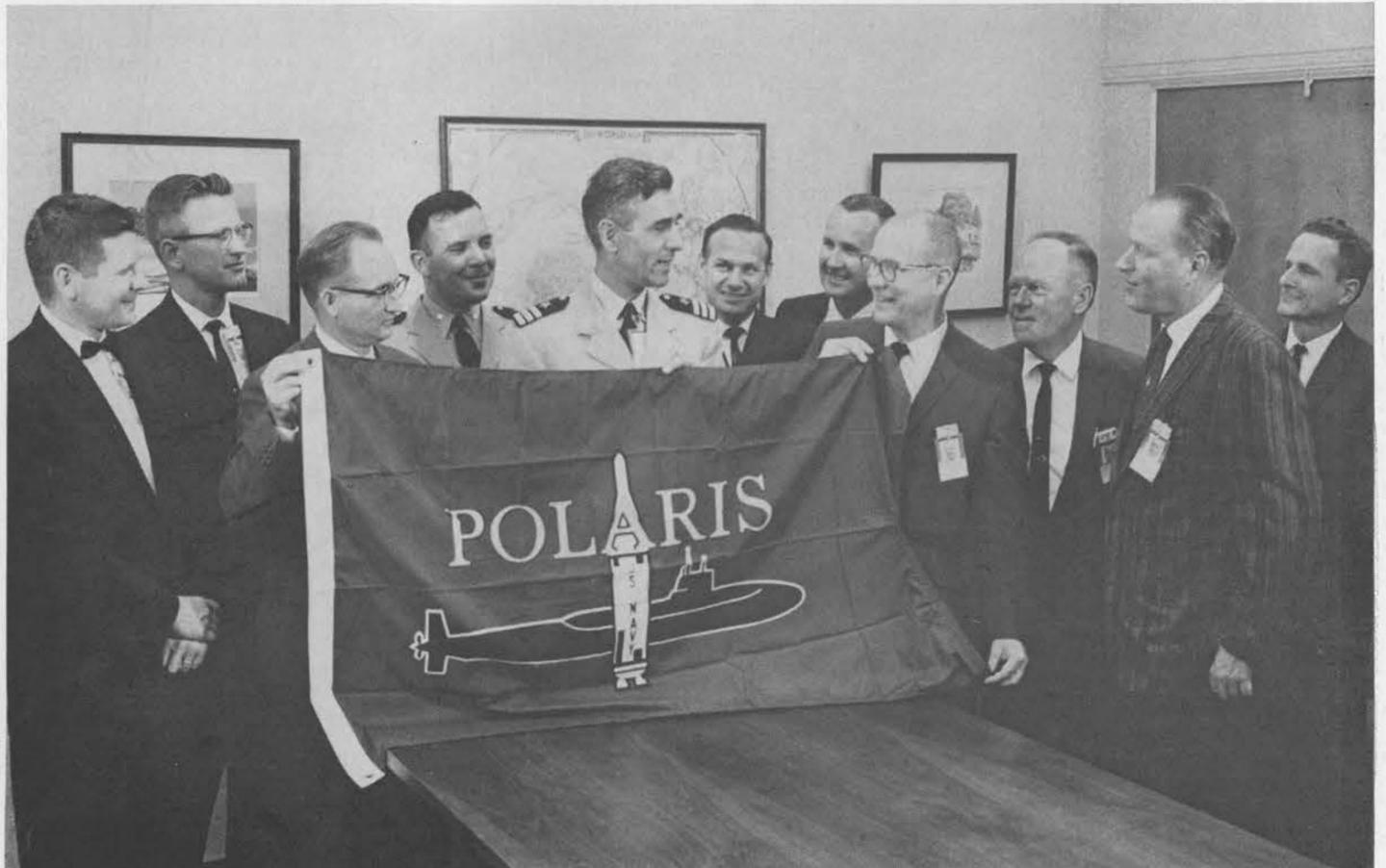


Navy's POLARIS Flag Awarded Livermore Lab

Sandia Corporation was presented with the new POLARIS Team Flag at an informal ceremony May 12 at Livermore Laboratory. Commander Alexander J. Julian, Special Projects Office, presented the flag for Rear Admiral I. J. Galantin, Director of Special Projects.

In a letter accompanying the flag, Admiral Galantin wrote, "This flag is not presented as an award, but as a badge of membership in a unique and vital team dedicated to the defense of our country and the preservation of peace. The support which is received from Sandia Corporation has enabled the POLARIS Team to meet demanding schedules on time and to provide our country with the finest weapon system in the world today."

C. H. DeSelm (8200) accepted the flag on behalf of the Corporation.



THE POLARIS TEAM FLAG PRESENTATION included (left to right) L. E. Davies (8110), E. H. Daus (8168), E. A. Aas (8168), Lt. Comdr. W. T. Boyer, Jr. (Special Projects Liaison), Commander A. J. Julian (Special Projects, Washington), R. C. Dougherty (8145), J. F. Sladky (8123), C. H. DeSelm (8200), J. A. Larned (AEC-ALO), R. L. Brin (8160), and V. M. Field (8116).

ECP Contributions Reach \$81,164 Total So Far This Year

Members of the Employees Contribution Plan have given a total of \$81,164 to the United Community Fund and seven other agencies since the drive closed last December. As the April checks — totaling \$14,372 — were mailed last week, the following distribution has been made:

	April	Year to Date
United Community Fund	\$11,713	\$65,486
American Cancer Society	718	4,095
Bernalillo County Heart Association	589	3,407
National Arthritis and Rheumatism Foundation	186	1,062
National Multiple Sclerosis Society	186	1,062
New Mexico Society for Crippled Children & Adults	531	2,991
Cerebral Palsy Association of Bernalillo County	100	564
Muscular Dystrophy Association of America	201	1,135
Reserve Fund	143	802
	14,372	81,164

NO MAGIC but a number of scientific and technical exhibits will be on display inside Sandia Laboratory's Sphere of Science tomorrow from 9 a.m. until noon. The "Sandia Story" movie will be shown at 9:15, 10, 10:45, and 11:30 a.m. Employees and their families are invited to attend. "Painting" the sign in the sky is Will Ouellette of Community Relations Division 3143.

Jack Hueter Board President Of N. Mex. Goodwill Industries

John M. Hueter (2563) is a man of many commitments, both at Sandia and off the job. He spends a large part of his spare time working with several Albuquerque service organizations, and he considers it spare time well spent.

He's president of the board of directors of Goodwill Industries of New Mexico, a non-profit organization which gives jobs and training to disabled people. Jack has been a member of the board since 1950, and has served in a number of offices of the organization.

"There are currently 67 people at Goodwill Industries," Jack says. "Last year, they earned \$100,216 in wages, out of which they paid \$9,135 in income taxes and \$2,944 in social security. If it weren't for Goodwill Industries, chances are that many of them would be on relief. Instead, they're proving to be self sufficient while making meaningful and worthwhile contributions to the community."

The Goodwill workers collect donated clothing, shoes, toys, rags, furniture, dishes, books, etc., which they clean, repair, and restore for resale at Goodwill stores. Five of these stores are located in Albuquerque, and one is in Santa Fe. The organization is entirely self-supporting; its income is paid in wages to Goodwill workers and for workshop expenses.

"The organization has provided income and experience for its participants, but it's also enabled some of them to move on, after six months or so, to take up full-time employment in the community," Jack continues.

Goodwill Industries isn't the only community activity to which Jack donates his time. He was also president of the Bernalillo County Community Council; and he recently completed a period of 11 years on the Albuquerque Park Board, during five of which he was board chairman. He was president of the New Mexico Area Chapter of the American Institute of Industrial Engineers from 1962-1963; and he's active in

Kiwanis Club activities in Albuquerque. "The activities don't take too much time," he concludes, "and I find a lot of satisfaction in working for the welfare of other people."

Robert McKelvey New President of Systems Group

The Albuquerque Area Chapter of the Systems and Procedures Association has elected officers for the 1964-65 year. The new officers are: president, Robert McKelvey (4114); vice-president, Don Dunick (ACF); secretary/treasurer, Harold Bateman (4111); and international director, Perry Davis (4114). The new officers will be installed at the May 22 meeting.

The committee chairmen for the 1964-65 year are: program chairman, Perry Davis; education chairman, Murl Moore (4111); membership chairman, Bob Wylie (4112); and publication chairman, Bob Eldredge (4112).

The systems specialist is engaged in methods, procedures, and related work. The Albuquerque Chapter of SPA was established to facilitate dissemination of systems and procedures information and provide educational opportunities to those in the area who are involved in some phase of systems and procedures work.

During the 1964-65 year, the Association had programs on management information systems; a two-session presentation on linear programming by Parker Fowler of the University of New Mexico; a speech (on tape) by Congressman Carl Olsen, D., Minn., on electronic data processing in the government; a discussion by Ed Wolski (2563) on flow charting techniques; and a speech by SPA Regional vice-president, Ossie Aabert from Portland, Ore., on "The Systems Man and His Future."

OPEN HOUSE

May 23



(Editorial Comment)

Here's \$500 Million You Needn't Spend

"Every litter bit hurts," goes the current warning. And truer words were never spoken. One piece of paper dropped weekly from every car in the United States would in a year make a pile of trash weighing 260,000,000 lbs.

To the waste paper dumped along the highways add the other trash: tin cans, old tires, deserted automobiles, etc. You come up with a colossal collection of junk.

Not only is this litter a national eyesore, it calls for quite a chunk of clean-up money. Experts estimate taxpayers of this country pay \$500,000,000 yearly for the big pick-up.

Trash along the highways is a national eyesore, a safety hazard, and an expense. What can we do about it? It's easy. Put all trash in a trash can. Put a litter bag in the car and use it. Train the kids. Never be a litter-bug.

Thinking Lights, Thinking Drivers

Lights controlling traffic at intersections frequently crossed by Sandia motorists almost have the ability to think. Take, for example, the light at the corner of Eubank Blvd. and Central Ave. in Albuquerque. It will let 75 automobiles cross Central if there are that many on Eubank waiting to cross.

If each of these cars has only the driver in it, 75 people cross the intersection on a green light. Use a little multiplication and you can see how many more people would cross the intersection if there were two, three, or four more people in the cars.

Lights at other intersections (Louisiana-Gibson; Wyoming-Central) "think" too, but they cannot count the number of people in the automobiles. They count cars.

Keeping in mind that there are about 7,000 or so people using these three intersections at the close of the work day, you can quickly grasp one of the advantages of having more than one person per car.

There are other advantages in pooling rides to and from work. Savings of wear and tear on the family car. Gasoline savings. And even savings on frayed nerves.

Next time you are in traffic, lined up bumper-to-bumper, consider the merits of sharing the ride.

Roentgen Discovers X-Rays In 1895 Laboratory Experiment

The work of J. Clerk Maxwell and Michael Faraday on the theory of electromagnetism occurred at the end of the period of "classical" physics and the opening of the era of modern physics. The great discoveries which followed—those of Roentgen, Rutherford, Thomson, Bohr, Planck, and others—were truly events of the modern era. In this issue, we shall recount experiments made in 1895 by the German physicist, Wilhelm Roentgen, which led him to discover the X-ray. His research on the nature of X-rays was part of an effort by several scientists which led to the subsequent discovery of sub-atomic particles, radioactivity, and the laws of quanta.

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At the end of the 19th century, the attention of physicists was turned to the phenomena associated with the passage of electricity through gases. The Englishman Sir William Crookes, with the aid of a vacuum tube containing an anode at one end and a cathode "target" at the other, had demonstrated the generation of certain rays which he called "cathode rays" and which, he found, could be deflected by a magnet held near the surface of the tube.

Michael Faraday and others had investigated the rays; however, although their experiments enabled them to observe a number of things about the rays, they were limited by the inefficiency of the vacuum pumps with which they evacuated the Crookes tubes.

Gradually, with an increase of efficiency in the design of their vacuum pumps, they were able to produce the rays with increased success. As the air or other gas in the tubes was being exhausted, the glass walls of the tubes were made to glow brilliantly by the electric current passing through the tubes.

The color of the glow could be changed by varying the type of gas in the tubes (our contemporary neon signs are somewhat elaborate examples of the principle).

Although the glow which permeated the tubes was not finally explained until 1898, the cathode ray phenomenon occupied the interest of a number of the prominent physicists of the early 1880's. Among them was the German physicist and teacher, Wilhelm Roentgen. Roentgen began his studies in Holland, but took his doctor's degree in Zurich.

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On Nov. 10, 1895, while experimenting with a Crookes tube in a darkened room, he noticed that a paper screen coated with barium salt which was standing nearby became brilliantly luminous when the electric current was passed through the tube. Since it had previously been determined that cathode rays cannot penetrate the tube in which they are generated, some other radiation was evidently being produced.

The fluorescence was visible even when the paper screen was turned with its uncoated surface toward the tube. "The most striking feature of this phenomenon," Roentgen reported later, "is the fact that an active agent here passes through a black cardboard envelope (shielding the tube) which is opaque to the visible and the ultra-violet rays of the sun or of an electric arc; an agent, too, which has the power of producing active fluorescence.

"We soon discover that all bodies are transparent to this agent, though in very different degrees. I proposed to give a few examples: paper is very transparent; behind a bound book of about one thousand pages I saw the fluorescent screen light up brightly, the printer's ink offering scarcely a noticeable hinderance."

Roentgen also submitted tinfoil, wood blocks, aluminum, and glass to the rays, and noted that their effect on the fluorescence of the barium-salt screen was variable, depending on their thickness and density. Lead, he noted, even if carried as a salt in a pigment of paint, was particularly opaque to the rays.

He further noted that the rays were able to produce images on photographic plates. "If a hand be held between the discharge tube and the screen," he continued, "the darker shadow of the bones is seen within the slightly dark shadow image of the hand itself." The first photograph he made was of the hand of his wife; the bone structure and her wedding ring were clearly visible.

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Today, we recognize "X-rays" as electromagnetic radiation of exactly the same nature as light but of much shorter wavelength. X-rays occupy the region between gamma rays and ultra violet rays, an area of from 10^{16} to 10^{20} cycles per second in the complete electromagnetic spectrum.



As a means of differentiating X-rays from cathode rays, Roentgen noted that he was unable, despite repeated efforts, to deflect X-rays with a magnet. Nor were the rays diffracted by prisms of glass, water enclosed in mica, rubber, or aluminum; nor could they be concentrated or dispersed by means of lenses of glass, rubber, or metal. He had postulated that the rays possessed properties similar to those of rays of light; however, he spent years vainly attempting to prove that they could be diffracted or concentrated.

Twelve years after his initial discovery of X-rays, Roentgen was approached by a young theoretical physicist named Max van Laue, who had succeeded in diffracting the rays by passing them through a crystal. Two of van Laue's assistants had succeeded in photographically recording the crystal diffraction patterns. Van Laue had postulated that, since the rays showed no diffraction when ordinary optical diffraction apparatus was used, they must have a much shorter wave length than ordinary light.

Several years later, further investigation of the nature of cathode rays and X-rays was carried out by J. J. Thomson and Ernest Rutherford, and the particulate nature of the rays was established. It was this work which led to Thomson's discovery of the first sub-atomic particle, the electron. A later issue of the Lab News will narrate this discovery.

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Service Awards



Sally Forrest (8212-2)

Take a Memo, Please

Short cuts are never time savers when they are unsafe.

Two Employees Appear in Play 'The Best Man'

"The Best Man," a political comedy by Gore Vidal, will have two Sandians in its cast when it is presented by the Sandia Theater Workshop: Paul F. Becht (4315) and Alan Swain (1443).

The topical play, which has as its setting a political convention, will be presented Wednesday, May 27, at the Sandia Base NCO Club (civilians are invited), and Friday, May 29, at 8 p.m. at the Coronado Club. There is no admission charge for either performance.



B. E. Arthur
2540
June 1, 1949



La Rue W. Wildgoose
3413
June 1, 1949



Johnnie Garcia
4624
June 2, 1949

15 Year Pins



C. E. Muchow
2123
June 2, 1949



Eliseo L. Chavez
1433
June 2, 1949

10 Year Pins

June 1-5

Wilson Brown 7256, Della Mae Jelski 3411, R. Bonnie Smith 4310, and Elfeego G. Sanchez 4614.

Sympathy

To Mr. and Mrs. H. H. Dancy (2341 and 3421) for the death of Mrs. Dancy's mother in Munich, Germany, where she was visiting, on Apr. 29.

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AEC Seeks Bidders For Sandia Laboratory Building Projects

Work will begin soon on one Sandia Laboratory construction project and bids have been invited on two others, the Atomic Energy Commission has announced.

John C. Snowdon (4543) is the Plant Engineering project engineer for construction and surfacing of an instrumentation trailer park for the Field Testing organization. Universal Constructors, Inc., of Albuquerque, is the apparent low bidder at \$64,197.

The work is to be completed within 75 days after the contractor is notified to proceed by the AEC.

Bids will be opened June 24 on a project to modify Bldg. 913 in Tech Area II. The project will include construction of reinforced masonry partitions, installation of asphalt flooring, caulking and

TOP PLAYERS in Sandia Laboratory's table tennis singles tournament received trophies last week. Presentation was made by Milt Madsen (7324), left, to (l to r) Fred Cericola (7324), third place; Jack Chavez (2626), second place; and Benny Garcia (4611), first.

painting, modification to electrical power distribution, and installation of heating and air conditioning equipment.

Personnel of Special Devices Department 1310 will occupy the building.

Bids were invited this week for construction of a Photometric System for the Area III Drop Tower. The project will include erection of six prefabricated metal camera shelters, six concrete camera pedestals, and 46 camera targets—complete with electrical power and instrumentation systems connecting camera locations with Bldgs. 6505 and 6540. Photometrics Division 7226 will operate the system.

A. W. Dennis (4543) is the Plant Engineering project engineer for both these projects.

House Built in Four Stages Shows Care of Early Planning

How do you build a house in four separate stages and still achieve an integrated floor plan and a unity in exterior design?

Ask R. J. "Bob" McConkie (2441). Take a look at his home in Corrales. Bob started work on his house in 1955 and completed the final addition late in 1958. The house encloses 2000 sq. ft. and the low pitched roof extends over a double carport. Inside there is less than six ft. of hallway, one indication of the thoroughly integrated floor plan.

With the exception of pouring the concrete foundation, plastering, and laying the brick in the fireplace, Bob constructed the entire house. He did it almost entirely with manual hand tools; however, at one point he did borrow a power hand saw.

An electrical engineer at Sandia, Bob had no training in carpentry or construction. His father-in-law is a carpenter, however, and Bob used his advice.

The house is frame stucco construction throughout. It contains a large combined kitchen-family room, dining room, living room, three bedrooms, utility room, and one and 3/4 baths.

LARGE LIVINGROOM of the McConkie house reflects the craftsmanship of the builder. Fireplace wall and lighting were designed by Bob but a contractor placed brick. Mrs. McConkie was in charge of painting and daughters Mary, center, and Barbara, right, helped in the building job.

The first section built was the kitchen-family room, bathroom, and two bedrooms. Later, the wall separating the two bedrooms was removed to make one large room.

Second section was the dining room, utility room, and other bathroom.

Third section completed was another bedroom, and finally, the living room, third bedroom, and carport were completed.

In all, Bob estimates that the house took two and one half years of spare time work. He didn't work on Sundays, but he spent many a midnight hour working on the interior.

The house is basically a horizontal T-shape. The right wing contains kitchen, family room, dining room, bath, utility room and one bedroom. The living room extends north from this wing. The carport adjoins this section on the north side.

The short hallway runs south from the entrance area to two bedrooms and the second bath.

Bob's wife, Phyllis, was in charge of painting and his two daughters Barbara, 13, and Mary, 12, also helped in the building job. Now they enjoy the large, comfortable house and the "country living," which means they have horses. Once they had four quarter horses; now they have two.

Bob's next project will be to build a stable and enlarge the corral.

After 13 Years of Classwork Frank Baczek Gets BA Degree

In the forthcoming UNM graduation exercises, Frank Baczek, supervisor of Classified Information Distribution Division 3427, will receive the degree of Bachelor of Arts in Business Administration. With the degree, Frank will reach a goal he set for himself 13 years ago.

He came to Sandia Base in 1946 with the Manhattan Engineer District, and transferred to the AEC's Sandia Area Office in 1948. In 1950, he started his college career.

"I attended on the GI Bill at first," Frank says. After he came to work at Sandia in 1952, he enrolled in the Educational Aids Program.

During the school years, the Baczek's family was growing; they have seven children now, ranging in age from two to 15 years. What little spare time Frank had left was devoted to Army Reserve activities, the Boy Scouts, and church work.

During the years he was going to school, he was involved in the following activities: general stores, explosives and material handling, microfilming, archive retrieval, mail room, traffic, classified document central accountability, and technical information distribution. He went on loan to Engineering and Research Support Division 2643 on May 18.

"It's been an eventful 13 years, working for a degree, holding eight division jobs, and raising seven children," he concludes. "I've been lucky. My wife and family have been very patient and understanding; so have my friends and fellow workers. They deserve a large share of the credit for making the degree possible."



— F. A. Baczek —

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Retiring . . .



David B. Miller will retire the end of May after more than 16 years at Sandia. In fact, he proudly mentions he was the 304th person on Sandia's payroll.

Through the years he helped set up Sandia's shipping and receiving, general stores, and reclamation functions. For the past seven years he has been with Reclamation Division 4622.

"Now," he says, "my wife and I are going to act like the birds." They have on order a large travel trailer and plan to go north in the summer and south in the winter. In mid-June they will drive to Washington and visit their son and youngest daughter, and then head east to visit relatives in Pennsylvania. A second daughter lives in Albuquerque — her husband is Robert Isidoro (2113).

For the present, the Miller's address is 309 Solano NE.

Mr. Miller is a rockhound, specializing in fluorescences and crystals, and both Mr. and Mrs. Miller enjoy fishing.

BOB McCONKIE (2441) built this attractive frame stucco house in Corrales in about two and one-half years of spare-time work. House was built in four separate stages but achieves an integrated floor plan and a unity of exterior design. It contains 2000 sq. ft. of living space plus double carport.



Lucy Cochran Hegwer, a Sandia employee for 11 and a half years, will retire June 4. She is a lab technician in Power Supplies Development Division 1323.

Mrs. Hegwer and her husband, Clyde, have definite plans for the future: they'll fish, hunt, and travel. They already have a boat and make frequent trips to Elephant Butte. Plans call for purchase of a camper for use on longer trips.

Home will continue to be a large trailer, located at Terrace Mobile Home Park, 9000 Zuni Rd. SE.



Lucille Brett (4574), a Corporation employee for almost 11 years, will retire June 30.

After "resting for awhile," Mrs. Brett plans visits to see a son in California, a son in Aztec, N. Mex., and a daughter in Colorado. She has five children, two of whom live here, and eight grandchildren.

Her son Roy Brett (3234) is a Sandia Security Inspector.





DECISIONS ARE HARD TO MAKE when it comes to purchase of any of the varied paintings on exhibit at the annual Arts and Crafts Fair in Old Town. The fair will be June 25-28 with booths open all day.

EXHIBITS at the annual Arts and Crafts Fair in Old Town are varied — and so are the visitors! Original works representing the diverse cultural heritage of New Mexico will be on display in open-air booths in the plaza area from June 25-28 this year.



AEC Again Seeking Bids of Road Into Nevada Test Site

Sandians traveling into the Nevada Test Site will drive on a new road after all. First bids received on the project were too high. The Atomic Energy Commission has called for new bids with revised specifications on a stretch of road to connect U. S. Highway 95 with the access road to NTS.

The new access road will provide improved visibility at the road junction, eliminate two hazardous curves, and provide a slightly shorter route between Mercury and the main highway.

Four bids ranging from \$149,042 to \$269,000 were received when the project was offered for bids in April. Because all bids exceeded programmed funds for the work, they were rejected and plans were revised.

The roadway is part of a highway improvement program between Las Vegas and NTS financed by the State of Nevada, the Department of Defense, and the Atomic Energy Commission.

Employees Helping Launch Special Pre-School Class

Three Sandia Laboratory employees are participating in activities of the Albuquerque Montessori Society. Marvin Moss is vice president and vice chairman of the Society's board of directors, J. Read Holland is participating in teacher recruitment, and D. L. Smith is assisting in publicity. All are members of Materials Research Division 5135.

The Montessori Society sponsors a new and unusually effective form of pre-primary education based on principles enunciated by the Italian physician and mathematician, Maria Montessori, 57 years ago.

Enrollments are open for a Montessori school to be started by the society in September. Children from 3-6 years of age will be accepted without regard to race, religion, or national origin. Requests for additional information should be addressed to the Society at P. O. Box 11265, Albuquerque, N. M. 87112.

Sandia Artists Plan To Show Works at Arts, Crafts Fair

"New Mexico — Crossroads of Three Cultures" will be the theme of the third annual New Mexico Arts and Crafts Fair, to be held June 25-28 in Old Town Plaza.

The Indian, Spanish, and contemporary cultures, as they exist together in the state today, will be exemplified by the arts and crafts on display in booths erected in the historic plaza and along the intersecting streets.

Last year more than 105,000 Albuquerque residents and visitors from all parts of the country attended the fair. Over 200 artists and craftsmen displayed their works—many of which were sold during the fair. The exhibit area is open to the public, free of charge, from 10 a.m. to 10 p.m. during the four days.

The fair, a non-profit venture manned by community volunteers, gives the general public an opportunity to view a composite of Southwestern art forms. The displays of original work will include painting, graphics, sculpture, jewelry, leathercraft, metalwork, wood carvings, textiles, weaving, ceramics, glassware, and studies in photography. Various demonstrations of jewelry making, ceramic work, Navajo sandpainting, and other crafts will be held in the display booths and in the patios throughout Old Town.

Sandians who plan to exhibit paintings or other types of art include T. M. Clark (3463), Frank Ewing (3463), Cecilio Sanchez (4413), David Paschal (4413), and R. L. Burgess (7215). Richard K. Strome (3463) was one of the judges for the fair program cover contest, which was open to state high school students.

Old Town itself is a favorite spot for newcomers to Albuquerque and for those seeking a different atmosphere. The Spanish-style adobe buildings (dating back to 1706) and their adjoining courtyards house numerous restaurants and shops offering Indian, Mexican, and Southwestern wares.

In addition, during the Arts and Crafts Fair, Indian and Spanish dances will be performed in the Plaza, Mexican troubadours will serenade, and an old horse-drawn streetcar will provide transportation around the square.

For a composite of Southwestern culture—it's Old Town, June 25-28.

Systems Procedures Assn. Installs New Officers Tonight

The Albuquerque Area Chapter of the Systems and Procedures Association will hold its annual dinner meeting tonight at Kirtland Officers' Club. New officers for the 1964-65 year will be installed.

Speaker for the meeting will be George R. Fischbeck, Science Consultant to the Albuquerque Public Schools. He will discuss education through the medium of television. Mr. Fischbeck has been teaching since 1950 and he specializes in TV science courses. In 1961 he won a national General Science Program award from the Institute of Education by Radio and TV at Ohio State University.

Mr. Fischbeck has been the subject of articles that have appeared in the *Saturday Evening Post*, *Reader's Digest*, and *Life* magazines. He is president-elect of the New Mexico Academy of Science.



TECHNICAL ILLUSTRATIONS and wildlife studies done in tempera, oil, and charcoal by Gordon Snidow of Commercial and Animation Art Section 3463-3, appear in the Spring 1964 issue of *Famous Artists Magazine*. It's the second time his work has appeared in the publication. He was also honored recently by a one-man exhibit of his work at the Museum of New Mexico.

Do You Have SGL*?

Ninety-five per cent of eligible Sandia employees are enrolled in the Supplemental Group Life Insurance plan (SGL). If you are among the 5 per cent not enrolled, you should pause to ponder.

In one six-week period during March and April 1964, \$97,100 in SGL benefits went to beneficiaries of 10 employees. This included two double indemnity payments for deaths resulting from accidents.

Who can afford to be without this insurance?

You can buy life insurance equal to one year's base pay, rounded to the next higher \$1,000. It's available at rock bottom prices. You pay 40 cents per month per thousand. The Company pays for the first thousand of coverage as well as the balance of the premium above the 40 cents.

If you wish to enroll or just have some questions about this insurance, visit Benefits and Services Division 3122, Bldg. 610, or call 264-2633. At Livermore Laboratory, contact Employee Services Section 8212-2, ext. 2252.

*7400 Sandia employees do, and they're happy.

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NEWLY-ELECTED officers of the Albuquerque Area Chapter of the Systems and Procedures Association include (l to r): Perry Davis (4114), international director; Robert McKelvey (4114), president; and Donald Bateman (4111), secretary and treasurer.



Sandia Authors

Current or forthcoming articles by Sandia authors in technical journals include the following:

Oscar L. George, Jr. (7422), "Graphic Design of Supersonic Nozzles," May issue, *Graphic Science*.

L. M. Barker (1124) and R. E. Hollenbach (1113), "A System for Measuring the Dynamic Properties of Materials," June issue, *Review of Scientific Instruments*.

W. F. Hartman (1113), "Determination of Unloading Behavior of Uniaxially Strained 6061-T6 Aluminum from Residual Strain Measurements," July issue, *Journal of Applied Physics*.

O. E. Jones (5133), and J. R. Holland (5135), "Bauschinger Effect in Explosively Loaded Mild Steel," June issue, *Journal of Applied Physics*.

G. W. McClure (5152), "Ionization and Dissociation of Fast H₂ Molecules Incident on H₂ Gas," June 1 issue, *Physical Review*.

Bruno Morosin (5151) and J. R. Brathovde (formerly of Sandia), "The Crystal Structure and Molecular Configuration of Trisacetylacetonatomanganese (III)," May issue, *Acta Crystallographica*.

L. M. Barker, C. D. Lundergan (both 1113), and W. Herrmann, Massachusetts Institute of Technology, "Dynamic Response of Aluminum," April issue, *Journal of Applied Physics*.

J. M. Peek (5152), "The Inelastic Scattering of Electrons," May 8 issue, *Physical Review*.

W. E. Warren (5152), "A Note on the Transient Axisymmetric Thermoelastic Problem for the Solid Sphere," June issue, *Journal of Applied Mechanics*.

J. O. Wear (5153), "Rate Laws for the U(IV) - U(VI) Exchange Reaction in Aqueous-Organic Mixed Solvent Systems," November 1963 issue, *Journal of Inorganic and Nuclear Chemistry*.



Value Engineering Project Teams Report on Workshop Studies

Five project teams participating in Sandia Corporation's first Value Engineering Education Program presented the results of their team projects to a group of Sandia management personnel at a meeting on May 15. After presentation of team results, the team members were awarded certificates of course completion by L. A. Hopkins, Jr., Director of Electromechanical Component Development 1300.

The presentations climaxed a 40-hour workshop seminar program in which 25 Sandians and representatives from Bendix Corporation, Kansas City, ACF Industries, Albuquerque, and AEC-ALO participated. Program sessions began May 4, under the direction of Elmer Devor, J. M. Hueter, R. F. Phillips, K. A. Sarason (all members of Division 2563), with the assistance of E. R. Servis, and D. L. Hughes (both of Technical Training and Education Section 3132-1).

As part of their training, participants in the program were divided into project teams, each of which applied Value Engineering techniques to a piece of typical Sandia hardware in an effort to reduce the cost of the hardware without compromising its reliability, quality, or safety. In effect, they studied the techniques and then put them into use.

All of the presentations illustrated the

effectiveness of the Value Engineering approach. One team, for example, produced a way of significantly reducing the cost of their item. This team produced several feasible ideas for reducing the cost of the item; six of these ideas were carefully examined as possible solutions before a final one was chosen.

Value engineering is a new and effective organized approach to reducing the costs of product and services without compromising reliability, quality, schedules, or safety. The approach consists of analyzing true function to identify and eliminate excessive or unnecessary costs. The technique also often reveals major improvements to product manufacturability and performance, as well as improvements to operations.

"There are five major steps in the value engineering process," Mr. Devor pointed out. In the Information phase, the item is identified and its function is analyzed. The Speculation phase involves creation of ideas about how else to provide the required function. During the Analytical phase, the best of these ideas are selected; from them, a single best idea is selected and refined in the Development phase. Finally, in the Reporting phase, this idea is presented for implementation consideration.

TRAINING PROGRAM in Value Engineering techniques is being presented to members of several Sandia organizations by Product Data Division 2563. R. F. Phillips of the Division presents lecture material during training session, part of which is used by trainees to practice techniques on actual Sandia hardware. Program began May 4.

TEAM APPROACH is used in Value Engineering to devise new ways of getting top value from hardware at lowest possible cost. Project team comprising (l to r) G. O. Folkins (1512), T. H. Reed (1331), M. E. Bailey (2543), J. R. Cejka (4543), and M. E. Holcomb (2451) discusses the function of a typical piece of hardware. They attended Value Engineering Training Program being presented by Product Data Division 2563.



Take Note . . .

Part of the job of Public Information Division 3141 is to handle requests for information from outside sources. Students often write for information to be used in their schoolwork.

Recently, Phyllis Swartz, who handles such requests for the Division, received this letter:

Dear Miss Swartz:

In February of this year, I wrote to you asking for material on Atomic Energy in preparing a term paper for CBA chemistry The material you sent was very helpful, and I came up with an A² (which is four A's) on the term paper.

My sincere thanks and deep appreciation you for the material which helped to make my A² possible. Thanks² (four times!).

Commander Sverre Johannesen, USNR, and LCDR E. C. Domme, USNR, have completed the Defense Atomic Support Agency Cadre Course (General Familiarization Phase and Nuclear Hazards and Safety Orientation) Class No. 270, held from Apr. 24 through May 6. Both are members of the U. S. Naval Reserve Weapons Training Unit 703 in Albuquerque.

At Sandia CDR Johannesen is supervisor of Product Data Operations Section 2563-2, and LCDR Domme is supervisor of Design Information Integrating Division 4431.

Shelby Banks (4135) scored tops in the recent Sandia Laboratory Women's Bowling Tournament held at the Coronado Club. Shelby took the singles title scoring 617, and her 1204 earned her the All Events championship.

Cynthia Kelly (3113) and Marie Ryzanczek (AEC) teamed to take the doubles crown with 1130.

Lee F. Parman, Technical Libraries Department 3420 manager, will moderate a panel discussion during the Nuclear Science Section's program at the Special Libraries Association convention in St. Louis, Mo., June 8. The panel will explore the subject, "Library-Management Relations: Evaluation of Libraries."

Walter C. Hunter, Physical and Electrical Standards Department 2410 manager, was recently elected to the national Administrative Committee of the Institute of Electrical and Electronics Engineers, Instrumentation and Measurement Group. Mr. Hunter's three-year term will begin July 1.

"Choosing a Secretarial Career" was discussed by Winifred Sandusky (6000) with five groups of students during recent Career Day activities. She talked to two groups at Albuquerque High School and to three groups at Valley High School. Winifred is a Certified Professional Secretary and a member of the National Secretaries Association (International).

AEC Planning Two Building Projects For Coyote Test Field

The Atomic Energy Commission will call for bids about June 3 for construction of two buildings in Coyote Test Field Area Y. The bids, set aside for small business firms only, will be opened about June 26.

The project includes construction of a 1,500-sq.-ft. instrumentation shelter and a 225-sq.-ft. explosive test facility. The instrumentation shelter (Bldg. 9965) will be a prefabricated metal insulated building with concrete slab foundation. The explosive test facility (Bldg. 9966) will be a concrete bunker with exhaust fans.

Both buildings will be used by Test Support Department 7240.

Frank W. Scheer (4543) is the Plant Engineering Department project engineer.

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LAB NEWS

MAY 22, 1964



MOST MODERN of welding shops, such as Sandia's, must occasionally use ancient techniques of metalworking for a particular job. Fred Buttrey hand-shapes a part using hammer and anvil. Piece was torch heated.

the art of joining

Welding Sparks Progress

The progress of civilization has been affected by man's ability to shape and join metals. From the first crude bronze and copper implements of primitive man to the precision parts of today's space craft, the art of welding has helped spell success to man's ventures with metal.

The use of a forge fire to heat metals was practiced in the time of the ancient Greeks. The forge plus the hammer and anvil were the tools of the blacksmith for centuries.

Welding, in the modern sense of the process, was invented in France in 1881 when DeMeritens joined parts of a storage battery by heating them with an electric arc. A Russian inventor, M. V. Bernados, was granted a patent on carbon arc welding in 1887.

Early efforts to introduce welding machines to the United States were not successful. Riveting seemed to satisfy the needs of industry at that time. However, in 1911 the petroleum industry started making widespread use of welding to join lengths of metal pipe. Pipelines had been made from hollow logs previously.

During World War I, welding came into the forefront with industrial assembly techniques and has remained an invaluable tool since.

In Sandia Laboratory's Development Shops, welding makes possible the creation of exotic shapes, high strength metals bonding, and leakproof sealing in addition to a thousand and one assembly and fabrication jobs. Welding is used in such large jobs as the giant watertight 16x8-ft. shielding partition in the Gamma Irradiation Facility pool and in the fabrication of tiny microcircuits.

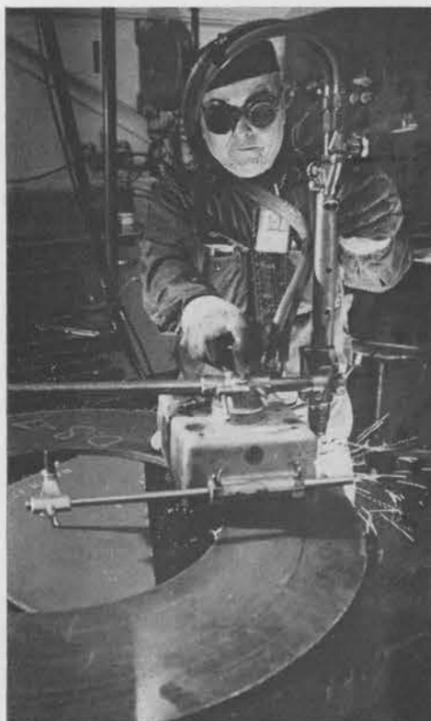
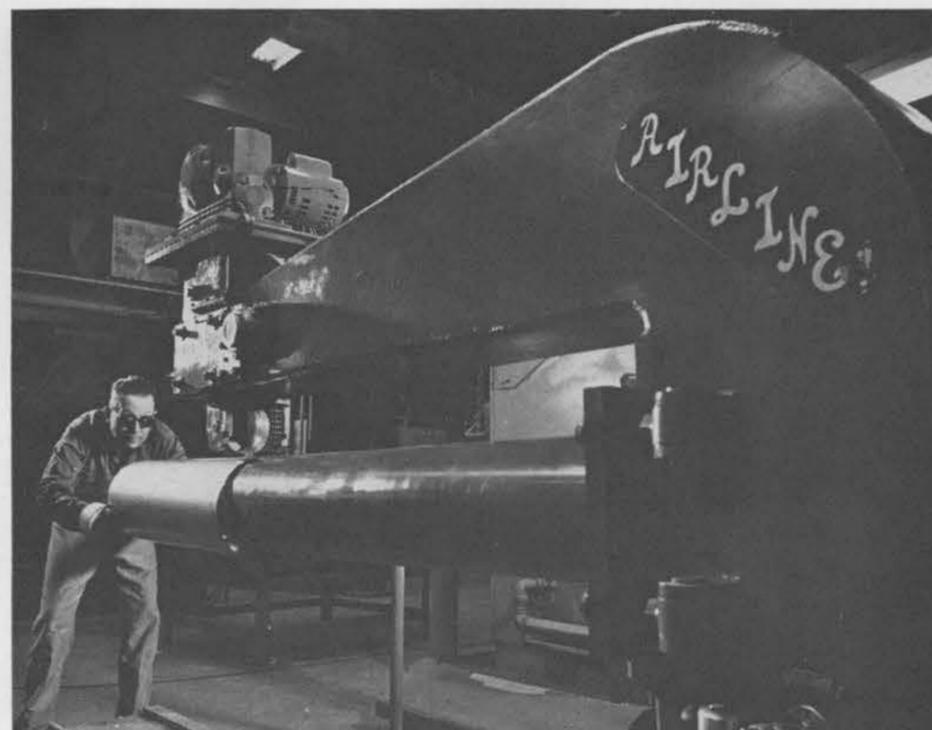
A wide range of knowledge and skills is required of the nine welders in Welding Section 4224-4, headed by Chester A. Corbin. Chet estimates that the men can pool a total of 267 years of experience among them. Adding his own experience in the trade plus that of S. C. Waldorf, Welding Shops Staff Assistant, the total comes to 321 years.

Most of the men have seen welding advance from heavy industrial uses in outside assembly yards or grimy garages to a refined art in spotless fabrication areas, even in ultra clean rooms and vacuum environments.

Sandia's Welding Shops in Bldgs. 841 and 845 are as modern as any in the country. Designed for rapid and versatile work handling, the Shops contain the latest in specialized equipment.

Pride of the Shops is an electron beam welder which produces a stream of pre-

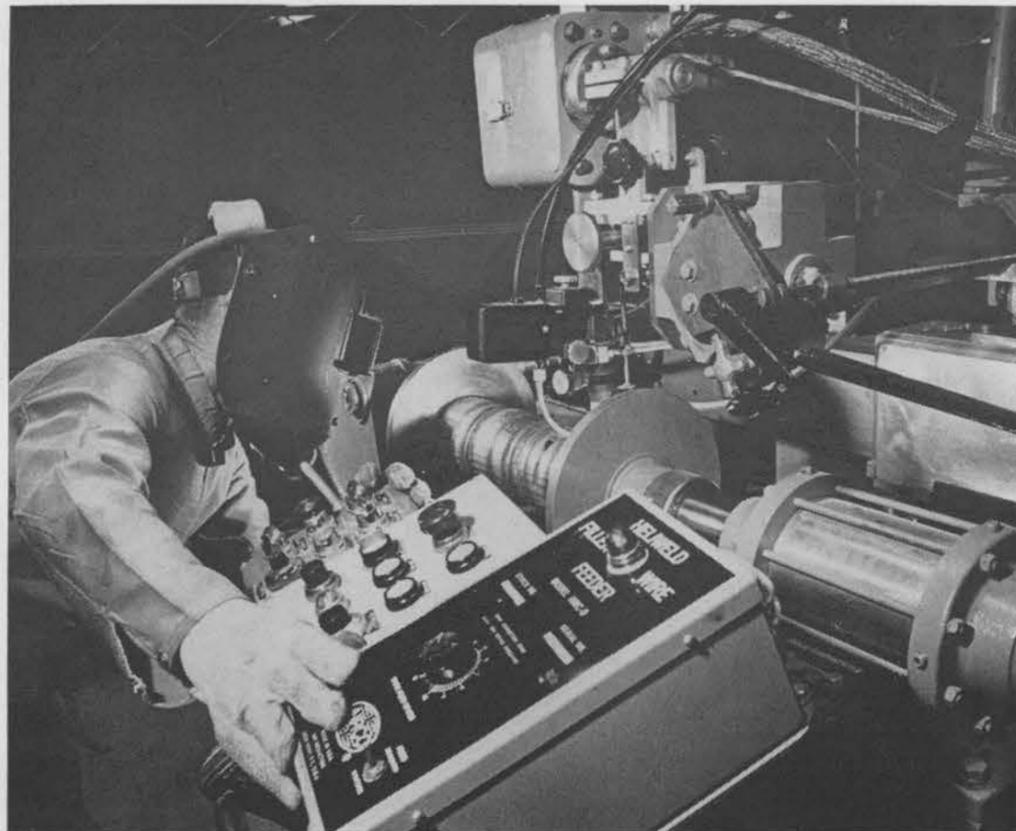
AFTER WELDING CYLINDER, Leslie Cox places it on planishing roll machine. Metal expands and shrinks in welding process. The planisher, using rolling and pressure action, can be set to restore original finish and dimension to welded pieces. The action is automatic.



GEORGE TORRES burns a circle out of sheet metal using a semi-automatic positioning device. The machine automatically cuts any size circle to within 1/32-inch accuracy.



POSITIONING a cylinder on the automatic longitudinal welding machine, Leslie Cox completes setup operations. The machine automatically completes welding process.



CIRCUMFERENTIAL AUTOMATIC welding machine is operated by Charlie Bates. The welding head, controlled electronically, moves up or down to hold the welding quality uniform.

cision-controlled electrons which penetrate materials and weld by the creation of internal heat. The equipment joins refractory and dissimilar metals in diameters up to 12-in. and thicknesses up to 1-in. in stainless steel and 1/2-in. in aluminum.

The electron beam welder is especially suited for welding with a minimum of heat input, for closing containers, and for welding near thermal sensitive materials. The machine performs in a vacuum which keeps contamination to a minimum.

Two other machines which extend the capability of the Shops are a circumferential welding machine and a longitudinal welding machine. Both are automatic, flexible, and capable of handling large volume with a minimum of set up time.

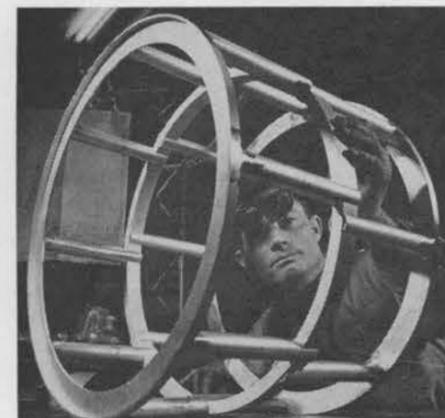
Other facilities used by the Welding Shops include an inert gas welding enclosure which contains pieces to be welded in an argon gas or other gas atmosphere. The welder operates the equipment by inserting his hands into the chamber through rubber glove inserts. The chamber is transparent for easy visibility.

A Whitfield laminar-flow clean bench has been added to the Shops for welding small components in an "ultra dust-free" atmosphere.

An induction power supply is also in operation. This equipment is used for induction brazing operations such as small enclosure leads and copper and brass tub-

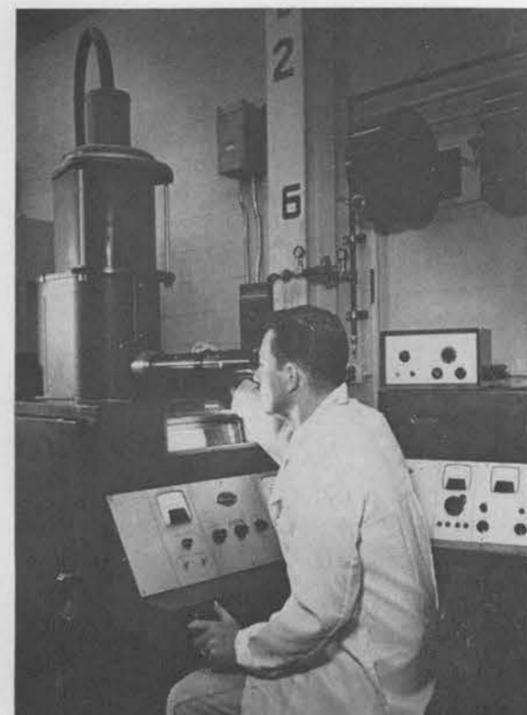
ing assemblies where uniform heat distribution with hand torches is not practical.

"We're set up to handle most any kind of welding job," Chet says, "and we get some tough ones here at Sandia. So far, we've been able to handle almost all of them and keep up with the technology."



FINISHED FABRICATION JOB of welded aluminum pieces is examined by Charlie Bates. The precision job is typical of the majority of the work performed by men of the Sandia Laboratory's Welding Shops.

ELECTRON BEAM WELDER, operated by Jim Taylor, is contained inside vacuum chamber of the console. Thin stream of high energy particles welds by creating internal heat in the parts to be welded. Pinpoint accuracy can be achieved by electron beam welders.





Sandia Lab Screening Program Discloses Possible Health Problems

Sandia Laboratory's Medical Organization 3300 recently called for employee volunteers to participate in a screening program to detect high blood pressure and diabetes. Some 2800 employees responded and, so far, about half have been processed.

Results to date indicate that 11 per cent have possible high blood pressure and two per cent have possible diabetic problems.

In either case, the employee is counselled by a Sandia physician and referred to his own doctor for further treatment. If the results of his screening are positive, the employee is informed within a week.

"The program is in keeping with the company's philosophy of preventive medicine," says S. T. Mancuso, supervisor of Medical Administration Division 3341.

BENNY LUCERO (1112) was the first employee to receive a high blood pressure and diabetes screening in the Medical Organization's current program. More than 2800 employees volunteered for the screening and, to date, about half have been processed. Completion is expected June 15. Taking the reading is Marge Ready (3321).

"Similar programs are planned for the future."

Completion of the current program is expected June 15. Employees have been scheduled for the screenings at Medical Bldg. 831 or at one of the Medical stations in Area I or III. About five minutes are required for a blood pressure reading and deposit of a urine specimen.

Congratulations

- Mr. and Mrs. K. W. Shrock (7334) a daughter, Cheryl Sue, on May 3.
- Mr. and Mrs. James A. Leonard (7419) a son, Jeffrey James, on Apr. 24.
- Mr. and Mrs. James A. Gilbert (1121) a daughter, Jeanne Marie, on Mar. 26.
- Mr. and Mrs. Neal A. Banson (4421) a daughter, Cynthia Jane, on May 5. Ellaine is on leave of absence from 2621.

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LAB NEWS

MAY 22, 1964

SHOPPING CENTER

CLASSIFIED ADVERTISING

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

RULES

1. Limit: 20 words
2. One ad per issue per person
3. Must be submitted in writing
4. Use home telephone numbers
5. For Sandia Corporation and AEC employees only
6. No commercial ads, please
7. Include name and organization
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

FOR SALE

- '61 FALCON 2-dr., seatbelts, seatcovers, stand, trans., less than book. Olson, 268-5312.
- HI FI AM/FM tuner by Approved Electronics, cost \$65, sell for \$30. Vivian, 299-1785.
- '61 CHEVROLET Corvair half-ton pickup, \$1195. Sparks, 344-9054.
- '59 MORRIS MINOR 1000, 4-speed, 23,000 miles, \$375 full price. Stronach, 1831 Bridge SW.
- RIFLE, 30.06 customized, 4 to 7 variable scope, complete with case and 200 rounds of ammo. Will trade. Little, 255-7864 after 6.
- PHOTOGRAPHIC enlarger, Besseler model 23C w/2" Componar and 4" lenses, \$195. Other darkroom equipment. Bel-den, 299-3867 after 6.
- BOY'S 26" bicycle, \$12; 10 gal. aquarium complete with filter pump, heater, lighted cover and 12 fish, \$25. Cashon, 242-3345.
- 8 STEEL legs (folding type for a ping-pong table), frosted bathroom window with crank, 2"x2". Brown, 299-5405.
- SEARS window entry air conditioner, 4000 cfm, two years old, used one summer, \$40. McVey, 299-1994.
- PATIO SCREEN, sliding, 6'7 1/2" long x 3'10 1/2" wide, \$8; steel casement 38 1/2" x 52 3/4", center vent, \$6. Huebner, 813 Florida SE, AL 6-0978.
- '46 WILLIS jeep, aluminum top, body needs paint and minor repairs, \$300. Jones, 265-1166 after 5.
- CHIHUAHUA, male, fawn colored, 1 1/2 years old, registered, all shots, \$50. Kerstetter, 299-3766.
- '58 CADILLAC 4-dr Coupe De Ville, full power, factory air, low mileage, \$1495; 1955 Oldsmobile Super 88, 4-dr., PS, PB, radio, \$475. Anderson, 299-2232.
- 24" GIRL'S bicycle, \$12. Luna, 299-2488.
- BLOND BRICK 3-bdr, 1 1/2 baths, large lot, DR, covered patio, sprinklers, FHA appraisal \$19,500, \$900 down or assume existing 5 1/4% loan. Nix, 298-4282.
- WINCHESTER Model 70 rifle, 30.06 with scope, \$135; engraved 8mm Mauser Sporter \$125; Winchester 401 self-loading rifle, \$65. Trade. Smitha, 299-1096.
- '59 CADILLAC El Dorado, R&H, AC, completely power equipped, 4 new white sidewall tires with guarantee. Hammerstran, 268-3047 after 5.
- GAS RANGE, 36", \$30; single sink 32 x 20" w/fixtures, \$20; two steel windows, 9 and 4 pane, \$20. Perea, 5516 Granite Ave. NE, 255-6902.
- DRESS FORM, adjustable, \$5; brown 8 x 10" wool rug, felt pad, \$10; 21" DuMont table model TV, needs repairs, \$25. Duvall, 299-8744.
- 4-BDR, 1 1/2 bath, large den, fireplace, Bellamah split-rock, 1500 sq. ft., AC, wall-to-wall carpeting, patio, double driveway, 1208 Betts NE. Pepper, AX 9-2459.
- COMPLETE Girl Scout uniform, hat, dress, sash, belt, socks, and manual; white Palm Beach jacket, size 36. Swanson, 256-3693.

'57 CHEVROLET LWB, 4-speed, 6-cyl., w/cab-over camper, sleeps 4, \$1100 complete. Young, 898-2078 after 6.

VW deluxe sedan, 1960, very clean, must sell. Abbott, 299-9017.

'53 MERCURY, 2-dr, hardtop, complete records. Wentz, 298-2630.

BY OWNER, 3-bdr, 1 1/2 bath, carpeting, drapes, pitched roof, hardwood floors, walled backyard, 3116 Cuervo NE. Sanders, 298-7800.

120 Pumice blocks, 16x8x6", 8 cents each or \$9 for all. Goen, 268-7521.

SADDLE, Roughout, roping saddle, \$65. Heath, 255-5418.

GO-CART, West Bend 580 power, live axle, \$65. Stinebaugh, 298-4801.

TWO TORO reel-type power mowers: 18", \$22; 20", \$30. Complete with instruction books. Taylor, 256-3774.

GREAT DANE pups, seven weeks old, AKC registered, all-black males and females, one fawn male. Holt, 299-5943.

OLD FASHIONED Underwood upright typewriter, \$5. Simpson, AX 9-2266.

3-BDR, hardwood floors, built-in range, on cul-de-sac near Constitution and Eu-bank. \$100 down, \$91 month. Patterson, 299-6590.

GROVES Prestige deluxe target bow, 45 lb. draw, new Arrow shafts, premium grade, \$1.50 doz. Davis, 298-3277.

FREE to good homes, two kittens. Smeltzer, AL 6-3908 after 5.

OPEN-COIL bed spring, 54 in. width, double-deck coils, \$15. Stark, 1334 Marron Cir. NE, 299-5953.

HOME, Ashcraft resale, 3 bedrooms, den, 1 1/2 bath, 1100 San Pablo NE, under \$25,000. Breipohl, 256-3368.

PAIR AKC Great Pyrenees, must go as pair, need lots of room, famous farm dogs. Murfin, 298-0760.

STEREO console; stereo tape recorder; speakers; 26" boy's bicycles (2); camping tent w/floor. Seeley, 298-2402 after 5.

MOUNTAIN CABIN w/2 lots in Manzanos. Secluded, quiet, has electricity. Small down payment and your terms. Must sell. Ogden, 242-8351.

VOLVO shop manual for Model PV444 (and some PV544 and PV445), includes B14A, B16A, B16B, and B16D engines, \$3. Winter, 299-4746.

5-PC dinette set, gray formica table plus 4 gray chairs with orange buttons, \$25. Hook, 255-1897.

MOTOR SCOOTER, German made 50cc Mo-ped type, less than 3000 miles, \$75; double bed springs and mattress, \$35. Houghton, 299-3386.

AUTO COOLER, 12v. Wright, floor type, \$15. Hurley, 256-0746.

2 TON chain hoist; boy's bicycle; 2 electric plants, not operating; single wood garage door w/hardware. Will trade. Aaron, 282-3124.

BUTANE/PROPANE tank, 23 gal. cap., 14" OD x 39" long, fittings on side, \$25. Gubbels, 298-3528.

NYLON-COVERED flexsteel sectional and chair, \$125; vinyl-covered chair, hassock, \$35; coffee and end tables, \$5 each. Everything, \$160. Woodall, 8916 Aspen NE, 298-4658 after 5.

65 ACRES mountain land, 3/4 mile north of Juan Tomas. Title insurance. Platt, 255-1973 or 344-7573 evenings.

HOUSE, 3-bdr, bomb shelter, hobby room, den, built-ins, 2-car garage. O'Nan, 299-1803.

WOOD LATHE, complete with motor and cutting tools; baby bed and mattress; hospital bed, complete. Otero, 256-6597.

8-UNIT efficiency apartment, very low maintenance, \$37,500 total, with terms. Viquesney, 243-1442.

3-BDR HOME, carpeted, near schools and shopping center, newly decorated, \$500 down FHA, total \$11,550. Martinez, 2701 Carol NE, 299-8288.

HALF ACRE lot North Valley, outside city, irrigation pump, 3 bedrooms, den. Will trade for two bedroom or small duplex, Northeast Heights. Roberson, AX 9-0130.

15-FT DEVILLE trailer, sleeps 5, \$750. Dickerson, AX 9-5330.

NEXT

DEADLINE

FOR SHOPPING CENTER ADS
Thursday Noon, May 28

PROJECTOR and screen, Bell & Howell 8mm, \$50. Austin, 299-8598 after 5 weekdays.

BOOK of Knowledge and Greater Science Encyclopedia, sell all or part; Hammond organ, spinet M-3, walnut, two years old, financing possible. Wolcott, 255-0663 after 6.

3-BDR, 1 1/2 bath, carpet, AC, attached garage, 5316 Palo Duro NE. Pine, 256-9043.

'64 CHEVROLET Biscayne, 6 cyl., R&H, pay \$2,237 on \$2,595 balance; Lone Star 14' fiberglass boat w/7 1/2 hp motor, trailer, extras, \$375. Silva, 855-9150.

21" TV, Hoffman, console-type, maple cabinet, \$35. Raftery, 268-4266.

'56 CHEVROLET Bel Aire, 2-dr., R&H, \$375. Sanchez, 256-1064.

COMPLETE MOBILE rig, AF-67Xmitter, MBR-SRCVR, 1040 supply TR-relay, load coil, whip spring mount mike. Silva, 298-8039.

3-BDR HOUSE, large rooms, walled yard, hardwood floors, carpeted, attached garage, at appraisal, SE Heights. Gallagher, 255-2588.

UPRIGHT PIANO, blond, with mirror on top, \$110. Gonzales, 242-6750.

'58 FORD Ranch Wagon V-8, AT, \$435. Jacobs, 344-1512.

TIRES, four 6.50x13 tires, some tread, whitewalls, \$3 each or \$10 for all. Tafia, AX 9-2763.

GIVE AWAY small dog, age three, intelligent, loves children, mother-cocker, father-circus performing terrier. Resembles terrier. Gary, 256-7325.

3 BDR HOUSE, 1 1/2 bath, carpet, drapes, sprinklers, large patio, AC, garage, corner lot, \$13,800, 9336 Alta Monte NE. Villanueva, 299-9219.

TO LICENSED pilot, 1/2 or 1/4 interest in Beech A-35 Bonanza. Hart, 299-0669.

HIDE-A-BED, red nylon, \$100; kitchen set, 4 chairs, extra leaf, \$35; rotary power mower, Craftsman, half price. Morrissey, 299-0677 after 6.

3-BDR, den, 2-car garage, complete built-ins, AC, pitched roof, brick front, fireplace, carpeting, patio wall, \$1000 below FHA. Johnson, 242-8758.

HAM STATION: HQ-110, DX-40, VF-1, all accessories, \$150. Bodhaine, 298-1566.

EVAPORATIVE floor-type auto air conditioner, \$25; electric reel lawn mower, \$25. Nelson, AX 9-0884.

REFRIGERATOR, used, \$35. Hughes, AX 9-1533.

BABY SCALE, Detecto, \$5 or best offer; Magic Chef gas range and oven, \$50 or best offer. Kataski, AX 8-1732.

'52 STUDEBAKER Commander, 4-dr., V-8, \$150. Stephenson, 264-4339.

'59 CHEVROLET El Camino, auto. trans., R&H, factory air, \$600. Leonard, 255-4825.

'57 BUICK 4-dr. hardtop, auto. trans., R&H, \$250. Smith, 255-7047.

RAILING, 40" wrought iron; '61 Ford Wagon, low mileage, will trade for economy car; '55 Chev 4-dr., overhauled. Salozar, AL 5-1301.

BOY'S bicycle, 26"; Craftsman push-type lawn mower, 18" cut, rubber tires. Garcia, 256-6609 after 5:30.

BIRD CAGE, 48", \$6; pair airlifts, hoses, \$15; 15" Ford wheel, \$2.50; 17" TV, \$25; black firescreen, \$3. Erni, 255-8350.

15" DODGE Lancer spinning hub caps, complete set with locks, \$15. Tassia, 264-6401.

ROTARY MOWER, 25", 3 hp, \$20; 1903-A3 30-06, Redfield sight bases, speedlocked firing pin, new bolt handle, \$40. Karnes, 299-9033.

PINK FORMAL, size 5, \$10, worn twice. Johnson, 268-4410.

SECTIONAL SOFA; swivel chair, student desk; round coffee table; corner table; bass reflex speaker enclosure w/speakers; sofa bed; rocker. Chaney, 298-5220.

'57 DODGE station wagon, auto. trans., R&H, ww tires, \$395. Airmet, 299-6381.

'52 CHEVROLET 6, 2-dr., standard, recent overhaul, \$250. Fagan, 247-9285.

33' STEEL tower with hardware, \$50 or trade. Need concrete mixer, signal generator, or tube tester. Make offer. Banks, AL 5-2544.

FIVE BLACK kittens need homes. Colgan, CH 3-4882.

GO-KART, Simplex live axle kart with racing slicks, two drive sprockets, west bend 5 port engine, make offer. Schulze, 242-8388.

10-YEAR-OLD mare; 5-year-old gelding; 3-year-old stallion, tentative AQHA; '55 Pontiac station wagon; stock rack for step side Chevy pickup. Schurr, AX 9-2985.

STEREO pre-amplifier for magnetic cartridge tape heads, \$12; 3-band radio in walnut cabinet, dual beanoscope antenna, \$10. Browning, AX 9-6384.

'54 CHEVROLET, 2-dr., sedan, leatherette upholstery, R&H, 2 seat belts, \$225. Lilly, 298-2560.

KITTENS, free, cute, long-haired, seven weeks old. Engelland, 298-4571.

'57 VW sedan, deluxe upholstery, radio, seat belts, new paint, low mileage, \$795. Shea, 115 Quincy NE, 255-8092.

POWER MOWER, reel type, \$40; Rototiller, \$50, bedroom set, \$40; dining room table, 4 chairs, \$15; Philippine lawn chairs (3), \$25. Watt, 298-0595.

GAS refrigerator. Doucett, 299-2272.

'56 PLYMOUTH, auto. trans, PB, PS, reasonable. Boyer, AX 9-1864 before 6 p.m.

'62 RENAULT Gardini, white outside, red inside, \$850. Randle, Placitas.

LUND VOYAGER water skis, \$20; steel fuel tank, \$50; 42 gal. ringer washer tubs, \$15. Nogales, 1100 Silver SE, CH 7-1178.

TWO MATURE guinea pigs, cage, and food. All for \$2. Cejka, 299-2441.

TWO ROOMS plus lot and utilities. Located 610 Edith SE. Henderson, 242-7189 after 5.

BEGINNER'S trombone with case and music stand, \$65. Gorney, 299-8901.

'63 IMPALA SS convertible, 4-speed full power and air, \$27 in. \$400 below book. Chrisman, 255-5267.

22,000 BTU Fedders air conditioner, \$100; Viking stereo tape deck with preamplifiers and tape, \$210. McIntire, 298-6145.

'62 PHILCO 30" pushbutton electric range, \$75. Smith, 256-0375.

LUGGAGE CARRIER (cartop), largest size, covered, reduced to \$25; Kenmore washer-dryer, reduced to \$65. Bargains. Jennings, 299-5965.

MOSSMAN 3-bdr, 1 1/2 bath, 2-car garage, space for den, recently redecorated, new wool carpet, AC, FA heat. Wheeler, 256-7284.

PORTABLE hand mixer, GE, turquoise, \$8; 12" GE oscillating fan, \$12. Dehon, 898-2219.

FREE PERSIAN kitten, seven weeks old, only one left. Lynes, 268-0144.

'59 RAMBLER wagon, \$650; 11 ft. refrigerator, \$30; dinette set, \$15. Brooks, 264-1938.

LINEAR amplifier, 2-813 tubes with power supply, \$75; antique clock, \$35. Welker, 299-1179.

3-BDR, 1 1/2 baths, pitched roof, attached garage, fireplace, range, garbage, appraised at \$17,250, sell for \$14,500, \$1000 down, assume GI loan. Rush, 298-0197.

'63 RAMBLER station wagon, 6 cyl. w/overdrive, still in warranty, take older car in trade. Harrington, 282-3188.

EASY Spin-dryer washing machine, sell or trade for tools. Russell, 299-0159.

'57 BUICK 4-dr. 8, R&H, auto. trans, AC, seat belts, low mileage. Vickers, 256-1418 between 5-7 p.m.

YARD TOOLS and storage rack. Lincoln, 268-9649.

BRICK HOME, 3-bdr, carpeted, 1 1/2 baths, paneled den, fireplace, covered patio, landscaped, walled, sprinklers, near Winrock, Fair Plaza, \$18,000. Fite, 255-6943.

DRAPES for living room and 3 bedrooms, \$50 or best offer. Whitlock, 298-6638 after 5.

'55 FORD 4-dr., overdrive, radio, \$235; AMECO code cover records and instructions, new, \$5. Burgess, 299-2070.

WANTED

CAR TOP rack for Volkswagen. Bluett, 282-3686.

CHILD to care for in my home, prefer infant. Davis, 298-6509.

TO RENT: furnished houses and apartments, 1, 2, 3, and 4 bedrooms from June until September for Sandia Corporation summer employees. Call 264-2757.

BABY to care for in my home, Princess Jeanne area. Shaff, 298-6248.

HOMES FOR kittens, large selection similar to Chandoha's pictured in April National Geographic. Healthy, housebroken, lovable. Johnson, 255-8851.

SHORT WAVE radio communications type preferred, will consider others. Slesinger, 299-4626.

PERMANENT RIDE from 313 Mesilla NE to vicinity of Bldg. 887. Keller, 255-9805 after 5.

SHOPSMITH; duck and (or) goose decoys, all offers considered. Romesberg, 255-1177 or 255-1873.

BUCKET SEATS, late model Ford or Chev. Schmidt, 256-2023 after 5.

TO RENT: 3-bdr. and den or 4-bdr. house in NE or SE Heights. Geronimo, 256-2925.

1929 or 1930 Model A Ford, 2-dr., must be in running condition. Ingram, DI 4-5756 after 4:30.

DRIVERS to join existing car pool, vicinity of Eubank and Comanche to 880/892 parking lot. Henneke, 298-4232.

RIDE FROM Bldg. 880 to 716 Tomasita NE, evenings only. Davis, 288-8559.

TO RENT, long term, 3 or 4 bdr. house in NE near grade school and playground. Espenshade, 268-0645 after 7.

ARIZONA FLAGSTONE, dark red, need enough to cover 65 sq. ft. Burns, CH 2-2407 evenings after May 25.

ONE OR TWO passengers, driving to Minnesota about June 1 or 2, return about June 20-22, air-conditioned Impala. DeRuyver, 298-5332 or 268-8463.

BABYSITTING jobs after June 3, senior in high school, days or evenings, vicinity of San Pedro and Constitution. Smith, 268-2141.

RIDER to join car pool from Mesa Arriba addition. Hinman, AX 8-1027 after 5:30.

FOUR OR five string tenor banjo. Krenz, 298-0619 after 5.

RIDE from vicinity of San Pedro and Montgomery to Bldg. 802. Flower, 298-7943.

FOR RENT

JULY 1st: two bedroom apartment, electric kitchen, tiled bath, AC, walled yard and garbage paid, \$100 month. Kerstetter, 299-3766.

LOST AND FOUND

LOST: man's prescription glasses; diamond-shaped drop earring w/black stone w/3 rhinestones; 1/2 carat diamond; black leather address book w/sketch pad; lady's turquoise sweater. LOST AND FOUND, tel. 264-2757.

FOUND: single key on chain w/safety tag; sun glasses; lady's white scarf w/pastel floral design; glass case; mechanical pencil; 3 keys on ring w/miniature knife; lady's black glove; sun glasses w/heavy plastic frames; man's tan unlined jacket. LOST AND FOUND, tel. 264-2757.

Sandia Speakers

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

W. J. Whitfield, R. C. Marsh, W. E. Neitzel, J. C. Mashburn, and L. C. Trujillo (all 2564), "Proposed Tentative Test Method for Leak Testing 'Hepa' Filters and 'Hepa' Filter Bank Installations in Laminar Flow Clean Rooms and Work Stations." The paper was presented by Mr. Marsh at the Third Annual Technical Meeting and Exhibits, American Association for Contamination Control, held May 5-8 in Los Angeles, and will be presented by Mr. Whitfield at the American Society for Testing and Materials, F-I-X Committee, June 17-18 in Chicago.

V. K. Smith and D. L. Trapp (both 7431), "A Radiation Hardened Telemetry System," 1964 National Telemetry Conference, June 3-5, Los Angeles. Mr. Smith will make the presentation.

K. H. Jones, L. P. Theard, and W. Van Dusen (all 5322), "Inter- and Intra-Molecular Energy Transfer in Gamma-Ray-Irradiated Alkylbenzenes and Related Mixtures," 12th Radiation Research Society Meeting, May 18-20, Miami, Fla. Mr. Jones made the presentation.

R. D. Driver (5421), "Existence and Continuous Dependence of Solutions of a Neutral-Differential Equation," Illinois Institute of Technology, Apr. 23, Chicago.

E. L. Chavez (1433), "Soldering to Thin Film Circuitry," National Electronic Packaging Conference, June 2-4, New York City.



SAFETY AWARENESS CAMPAIGN for Organization 2000 was kicked off last week by R. A. Bice, Vice President, Engineering for Manufacture. He pointed to warning signals — 15 disabling injuries and 2500 minor accidents last year — and called for a renewed effort to stop accidents. "Accidents can be prevented," Mr. Bice said.

Coronado Club Plans Big 1964 Swim Pool Season

A renovated swimming pool area will greet Coronado Club members when the season opens at 10 a.m. Friday, May 29.

New patio furniture, new paint, new concrete areas, a new chain link fence, and a new filtering system will be part of the improved pool area. In addition, a broader aquatic program, with emphasis on family participation, is planned, according to Charles O'Keefe (3126).

Charlie is a member of the Coronado Club Board of Directors and responsible for the swimming pool program.

"In addition to recreational swimming, the program will cover the learning, development, and competitive phases," Charlie says. "We want to encourage youngsters to advance through the various levels of swimming competency and life-saving in accordance with Red Cross standards. Adult lessons are also being offered."

Other changes this season at the Coronado Club pool will include full-time locker room and patio attendants. "There will be hair dryers in the women's locker room," Charlie says.

The adult ticket category starts at 16-years-old instead of 13.

Under a new Family Plan, maximum cost for a family will be \$28. Season tickets for adults are \$8; children under 16, \$4.

Organizational meeting of the Competitive Swim Team parents and swimmers will be held Sunday, May 24, at 1 p.m. at the pool area.

A Family Swim Night, free to members and families, is planned for Sunday, May 31, starting at 6 p.m.

Instruction will be offered throughout the season for all age groups and in areas ranging from beginning instruction to competitive stroke correction. Except for adult lessons, instruction will be offered weekdays from 8 to 10 a.m. Costs start at \$3 per person.

Regular pool hours will be from 10 a.m. to 6 p.m. for open recreational swimming. The north pool will be for adults only from noon until 1 p.m. and from 4:30 until 6 p.m. on weekdays.

Both pools will be available for private rentals after regular hours.

"Our pool personnel have been selected for their experience and qualifications in water safety and are Red Cross certified water safety instructors. We must have an accident-free swimming season," Charlie says. "To obtain this, we ask for the cooperation of all members and their guests to observe, and instruct their children to observe, the swimming pool rules and regulations. Suggestions concerning our aquatic program and physical plant are welcomed."

SUE WILLIAMS (3126/5422) takes a preview look at the improved Coronado Club swimming facilities. Season starts at 10 a.m. Friday, May 29. A Family Swim Night is scheduled Sunday, May 31, from 6 to 9 p.m. Admission is free to members and their families.



Engineering for Manufacture People Taking Long, Hard Look at Safety

"People are the most important asset of the company," R. A. Bice, Vice President, Engineering for Manufacture 2000, told a gathering of all Organization 2000 employees last week. For this reason, he urged a greater safety awareness in a new concentrated effort to stop accidents.

The meeting, held just before the noon hour in front of Bldg. 892, kicked off an Organization 2000 safety awareness campaign directed by an Ad Hoc Safety Committee within 2000 and Safety Engineering Department 3210.

"The year 1960 was a banner safety year," Mr. Bice said. "Sandia Laboratory established a new all-time high AEC safety record of more than 14 million man hours worked without a disabling injury. This contrasts sharply with 1963 when Sandia had 15 disabling injuries. Sandia was charged with 9821 lost days due to these 15 injuries — roughly equivalent to losing the services of 39 employees for the year. "So far in 1964, we have suffered 15 disabling injuries."

The safety record itself is not especially important, he said, but it assumes significance when considered in terms of personal misery and suffering. The safety awareness campaign is an indication of the deep concern we must all have for the well-being of our fellow employees and of ourselves.

Mr. Bice called on each employee in his organization to be part of a team, and perform his part to work in safety and to prevent accidents and injuries.

"We had more than 2500 minor accidents across the Corporation in 1963," he said. "We should accept this as a warning. Accidents can be prevented."

Members of the Ad Hoc Safety Committee from 2000 include W. C. Kraft (2450), chairman; A. P. Gruer (2130); I. M. Moore (2310); J. R. Sublett (2560); and R. W. DeVore (2630).

"Prevention of accidents is the purpose of the committee," Bill Kraft said. "We called on Safety Engineering for help and have started a program designed to promote safety awareness. We also asked employees for help. Many good suggestions have been received."

Every area used by the 2000 organization has been surveyed for physical hazards. Corrective action has been initiated where needed and every job in 2000 is being analyzed for possible hazards.

Safety placards are being posted and safety literature is being distributed. Displays will be changed periodically and a new emphasis will be placed on regular safety meetings.

The 2000 safety program aims at total safety awareness on the job and at home. "Safety Everywhere — All the Time" is the slogan.

Sandia's Safety Record

Sandia Laboratory
HAS WORKED
735,000 MAN HOURS
OR 21 DAYS
WITHOUT A
DISABLING INJURY

Livermore Laboratory
HAS WORKED
651,000 MAN HOURS
OR 119 DAYS
WITHOUT A
DISABLING INJURY

Welcome Newcomers

May 1-15

Albuquerque	
James N. Day	3321
Lois E. Edwards	4431
Leslie E. Evans	3126
James A. Hawkins	2136
William C. Iorg	4574
LaVonns L. Mueller	4431
Marsha L. Simon	3126
Edmund W. Starr, Jr.	3413
Frank M. Zamora	4574
Florida	
Michael W. Golay, Gainesville	7311
Illinois	
Lowell H. Jones, Kenilworth	5323
Robert A. Trudo, Barrington	5151
Terry M. Unkelhaeuser, Barrington	7323
Maryland	
Daniel M. Hull, Baltimore	1311
New Jersey	
Donald L. Espenshade, South Amboy	7222
Pennsylvania	
Anthony J. Geronimo, Beaver	4214
Texas	
Jack V. Walker, San Antonio	5331

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