



Drive Starts Sept. 27

Full Value of ECP Gift Can't Be Computed; More Than Money Given

Annual enrollment period for the Employees Contribution Plan will start Sept. 27. The ECP, now entering its ninth year at Sandia Laboratory, provides an ideal method for Sandians to meet one of their responsibilities to the community. Small deductions from each paycheck add up to a sizable contribution by the end of the year. The ECP committee has always advocated a "fair share" contribution from each employee—one hour's pay per month.

Last year, the payroll deduction cards provided for this amount to be deducted automatically. Nearly 2000 Sandians checked this selection when they turned in their cards. The total contributions of Sandia employees increased 20 per cent over the previous year.

Total amount pledged by Sandians in 1965 will amount to \$220,700 when the contribution period ends in November. Average gift of ECP members will amount to \$37.79 for the year.

This money goes to the 29 agencies of the United Community Fund and eight other national health and welfare agencies. The 29 local agencies provide the services for the health, welfare, and recreational needs of our community while the national agencies help local patients and support national research programs for such diseases as muscular dystrophy, arthritis and rheumatism, and cerebral palsy.

In Albuquerque, the greatest number of people served by the United Community Fund are the thousands of happy, healthy youngsters who participate in the recreation and character-building programs provided by the Boy Scouts, Girl Scouts, Camp Fire Girls, YMCA, YWCA, Albuquerque Boys' Club, and the Martineztown House of Neighborly Service.

On the other hand, many thousands of persons who are in desperate need of help find it from the agencies of the United Community Fund. Dollars are no yardstick to measure the value of hearing restored, learning to walk, learning to talk, or lifting an emotional cloud to find reality.

These services, too, are a large part of the work of the UCF agencies. There are others: A young father saved from alcoholism, a young mother able to leave her

child for a few hours each day in an agency nursery while she works to support herself and her child, physical therapy to restore muscular control, meals and lodging for stranded travelers, a home for an abandoned child, and psychiatric help for disturbed children and adults.

There is no way to measure what these services are worth. However, \$50 would buy one pair of earphones for the Albuquerque Hearing Society, or linens for 20 beds at St. Anthony Home for Boys, or provide a scholarship to a Boy Scout camp, or a leg brace for a crippled child.

The list is endless. The need, unfortunately, continues.

In addition to contributions, Sandians also give of their time and effort. Many Sandians serve on boards, committees, and actively participate in the work of the agencies.

One of the remarkable things about America's system of voluntary support of community funds is the number of volunteer workers who staff the agencies, who direct the fund raising, who make the calls, and who give their labor.

ECP agencies serve everyone, regardless of race, creed, or color. From concept and financing through operation, the system is uniquely democratic.

Sandians have made a record of which to be proud in supporting the Employee Contribution Plan. It's that time again, however, when the full meaning of our gift needs to be re-evaluated. All that is asked is a fair share.

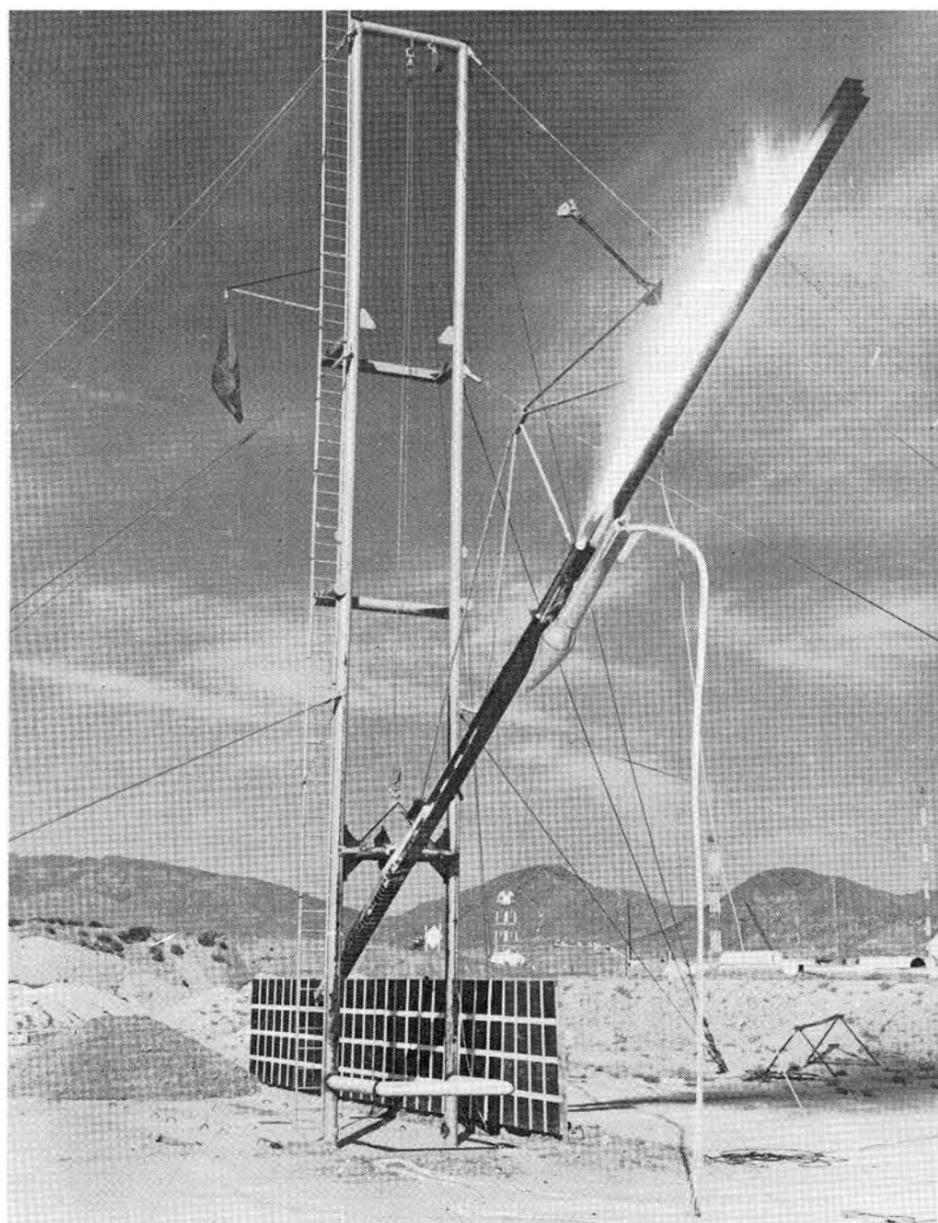
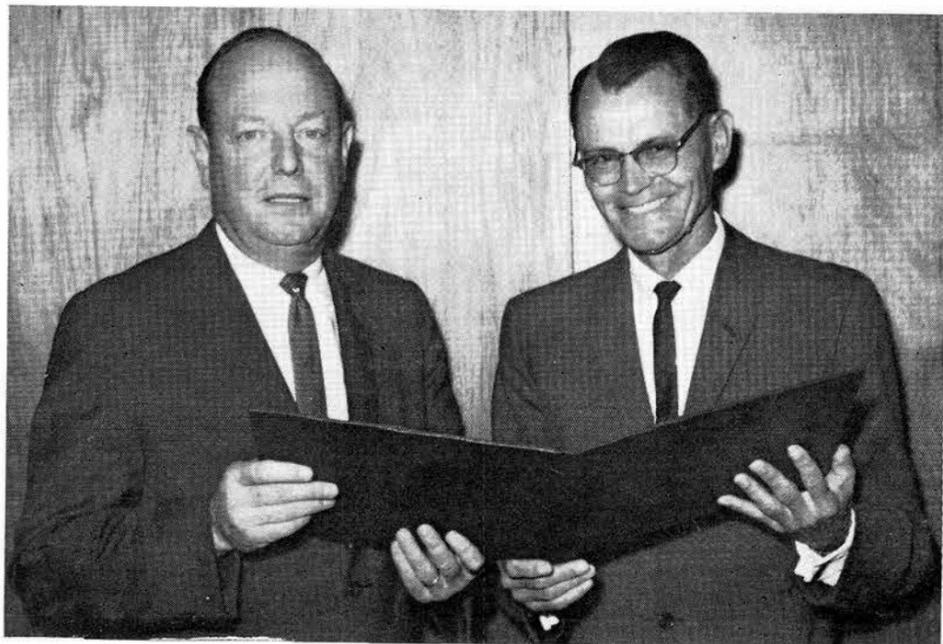
AEC's L. W. Otoski Marks 30 Years of Government Service

L. W. Otoski, manager of the AEC/ALO's Sandia Area Office, recently received an award pin and citation commemorating 30 years of Government service. The presentation was made by L. P. Gise, AEC/ALO manager.

Mr. Otoski's service with the Federal Government includes employment with Civil Works Administration, Works Project Administration, and the Federal Works Agency prior to joining the AEC in Los Alamos, N. Mex., in July 1948 as a budget analyst.

In 1953 he became director of the ALO Budget Division, and in 1962 was appointed deputy assistant manager for Administration. He has held his present position since Apr. 1, 1964.

AEC'S SANDIA AREA OFFICE Manager, L. W. Otoski (right) was presented this citation by L. P. Gise, AEC/ALO Manager. It marked 30 years of Government service.



NOBODY GOOFED—an artist changed the shape of this test vehicle, but not the direction. Environmental test engineers have been launching rocket-powered vehicles downward for more than two years. The tests are conducted to subject components and systems to impact environments.

Sandia Engineers Make Unique Use of Rocket Launcher in Area III

Conducting rocket tests can be relatively simple if you don't have to worry about problems of aerodynamics, telemetry, trajectory, tracking, recovery, etc.

Sandia's environmental test engineers are not concerned with these problems, because their rockets don't fly—at least not in the usual way. Instead of launching rocket powered vehicles skyward, they launch them downward into a concrete target—about 10 feet from the end of the launcher.

Data is carried through wires from the vehicle to tape recorders, high-speed cameras have no trouble tracking the free

flight, and recovery of the vehicle is no problem at all.

The rocket launcher in Area III has been in operation since the spring of 1963. It was created to provide velocity requirements that could not be achieved with free fall from Sandia's drop towers.

D. W. Bauder (7311), who designed the rocket launcher, reports that it was built with surplus materials, except for the "H"-beam which cost about \$250.

The H-beam is 60 feet long, and has a 10-inch wide flange. A carriage is slipped onto this flange and held in place with high strength bolts and explosive nuts. The test vehicle, containing components or systems to be subjected to impact, is mounted to the carriage with another set of bolts and explosive nuts. And the rocket motor is affixed to the carriage.

The rocket motor is ignited (by remote control), but the carriage is held stationary until the rocket thrust will provide a desired velocity. Then the explosive nuts are detonated, and the carriage with the test vehicle shoots about 30 feet down the H-beam. Protruding blades on the carriage contact an electrical source on the launcher, which ignites the explosive nuts holding the test vehicle to the carriage. The carriage and rocket motor are stopped by a block of polyurethane foam packed between the flanges of the H-beam. The test vehicle continues on into the concrete target.

During a test, usually some 45 feet from ignition to impact, the vehicle travels at about 120 feet per second (80 miles per hour). Velocities can be controlled by the length of time the carriage is held in place after the rocket motor is ignited and by the number and type of rocket motors.

The angle of impact can range from zero to 90 degrees. This angle is established by raising or lowering the top end of the H-beam and by setting the target at a given incline.

Test vehicles can be pre-conditioned to temperatures from -65 to $+160^{\circ}\text{F}$. Thus dual environments can be imposed on the components or systems being tested.

W. R. Kampfe (7326), project leader for the facility, says, "About 80 tests have been conducted since 1963, and we'll be running about two tests per month for the next year."

L. E. Torkelson (7326) is currently conducting the tests on this facility.

Red Cross Selects R. J. Hansen for Advisory Council



R. J. Hansen, Director of Development Shops, has been appointed to the Western Area Advisory Council of the American Red Cross. Announcement of Mr. Hansen's appointment to this volunteer committee was made

by Donald W. Stout, manager of the Red Cross Western Area with headquarters in San Francisco.

The 18-member council is selected from officers or members of governing boards of Red Cross chapters. It meets at least twice a year and advises administrative officials of the national organization. It also is a means of contact between the chapters and the Board of Governors, a volunteer group of 50 with powers of government, direction, and management of the American Red Cross. Board of Governors members residing in this area serve as ex officio members of the advisory group to which Mr. Hansen has been appointed.

Active in the Bernalillo County Red Cross Chapter, Mr. Hansen has served as Budget Chairman, Disaster Chairman, and as Vice Chairman of the local chapter. He is presently serving as Chapter Chairman, a position he has held since 1963.



DURING BUSINESS-EDUCATION DAY Aug. 24, some 28 new science teachers of the Albuquerque Public Schools visited Sandia Laboratory. A program to inform new teachers about business and industry in Albuquerque, the event is sponsored by the Albuquerque Chamber of Commerce. While at Sandia the group visited the Sphere of Science, toured clean room facilities adjacent to Bldg. 892, and viewed environmental test facilities in Bldg. 860. R. C. Fletcher, Vice President 5000 (right), talks with John R. Ingle, Valley High School (left), and Mrs. Sandra Berkow, Del Norte High School (center), after lunch.

Supervisory Appointments



MAX A. RICHTER to supervisor of Instrument Service Section A 4615-1, General Services Department, effective Sept. 1.

In his new position, Max will coordinate instrument maintenance contracts, and cataloging systems. He previously had been with Environmental Testing since July 1949 and was associated with testing and evaluation of electronic and electromechanical components.

Before coming to Sandia, Max was with Western Electric installation groups in the Rocky Mountain area for nine and a half years.

He attended the University of New Mexico.

RUSSELL V. RICHARDS to supervisor of Electronic Fabrication Section 8223-3, at Livermore Laboratory, effective Aug. 16.

Russ joined Livermore Laboratory in June 1957. He worked as a staff assistant technical in various project division electrical labs for approximately three years. In 1960 he transferred to Acceptance Equipment Division where he has been responsible for building, inspecting, and modifying product testers.

He served with the U.S. Navy in both World War II and the Korean conflict. In 1957, after 21 years of service, he retired with the rank of Chief Warrant Officer. For three years during his military service, Russ instructed courses at the Navy Electrical School at San Diego, Calif.

Russ is a graduate of the International Correspondence School, Scranton, Pa., with a major in electrical engineering.



Promotions

Jack V. Almstad (8144) to Staff Member, Technical
 Carol A. Shulver (8144) to Staff Member, Technical
 Lloyd E. Barnes (2521) to Staff Member, Administrative
 Charles E. Champe (4542) to Staff Associate, Technical
 Lyle T. Davis (7267) to Staff Assistant, Technical
 James I. Morewood (9212) to Staff Assistant, Technical
 George Skinner, Jr. (3465) to Staff Assistant, Administrative

Lyle Wetherholt (9233) to Staff Assistant, Administrative
 James J. Ryan (4233) to Technician
 Margaret Riordan (3126) to Typist Clerk
 Mary H. Romero (3126) to Typist Clerk
 Dolores M. Stuart (3126) to Typist Clerk
 Paula J. Wilson (4333) to Record Clerk
 Lois H. Hayes (3126) to Secretarial Steno
 I. Louise Miller (3126) to Secretarial Steno
 Frances M. Phipps (3126) to Secretarial Steno
 Helen Watkins (4362) to Steno Clerk
 Blanche Vines (3421) to Library Assistant
 Thomas Spindle (3428) to Document Clerk
 Frances Clement (4545) to Record Clerk
 L. Sue Chalteux (4135) to Calculating Machine Operator
 Voroqua Yoakum (3428) to Camera Operator
 John Sandoval (2232) to Reproduction Service Clerk
 Angela Granger (3126) to Typist
 Dixie D. Ketcham (9423) to Data Processing Clerk
 Benito Chavez (9411) to Tabulating Equipment Operator
 Eulogio Sanchez (9411) to Tabulating Equipment Operator
 Broward Moss (8253) to Reproduction Equipment Operator

Elton C. Medeiros (8245) to Utility Operator
 Marie Dremalas (8232) to Library Assistant
 Lawrence Wells (8232) to Mail Clerk
 Charles E. Drury (8253) to Reproduction Service Clerk
 Frances A. Hodgkins (8253) to Senior Clerk
 Josephine A. Beatty (8116) to Editorial Assistant
 Kenneth T. Riddle (8244) to Order Analyst
 Phyllis C. Armijo (3153) to Typist
 Susan Gum (3151) to Secretarial Steno
 Maxine Schafer (3341) to Receptionist
 Zona Mae Hamm (7260) to Secretary
 Donald M. Miller (8223) to Machinist
 Dennis Hayes (5623) to Staff Member, Technical
 Gordon Snidow (3463) to Staff Member, Administrative
 Arthur Finlayson (2524) to Staff Assistant, Administrative
 Earl C. Deno (8222) to Boiler Plant Operator
 Mary Ann Seery (3126) to Typist Clerk
 Robert Vaughan (3415) to Messenger
 Gloriann Garcia (3126) to Secretarial Steno
 Kathryn Moore (4333) to Senior Clerk
 Florence Moore (3126) to Typist
 Kay Collins (3421) to Library Assistant
 S. Joan Myers (3421) to Library Assistant
 Donald A. Downey (9411) to Data Processing Clerk
 Thaddeus Werner (9411) to Tabulating Equipment Operator

Bernice Umland (4545) to Senior Clerk
 Cora Callender (7216) to Data Reduction Clerk
 Betty C. Hogan (8244) to Steno Clerk
 Jerry Wackerly (8244) to Order Analyst
 Ruth Bontrager (3152) to Administrative Clerk
 George W. Perkins (8241) to Staff Member, Administrative
 Lawayne Janssen (8243) to Staff Assistant, Administrative
 Juan B. Pacheco (4514) to Boiler Plant Operator
 Doyle Clark (4513) to Helper-Trades
 Abbie Williams (3413) to Typist Clerk
 Harry Corcoran (3428) to File Clerk
 Deyoe Stark (3413) to Typist
 Phillip Vouterin (2132) to Property Clerk
 Durwood Green (8115) to Technician
 Ramona Andersen (8232) to Library Assistant
 Robert Padilla (8111) to Data Reduction Clerk
 Linda Anderson (8161) to Service Clerk
 Cecil Fitzgerald (3154) to Record Clerk
 Margaret Clem (3154) to Personnel Clerk
 Barbara V. Ruminski (3400) to Secretary

NASA Deputy Director To Discuss Gemini Flights Here Sept. 17

William C. Schneider, Deputy Director, NASA, Washington, D.C., will address a meeting of the American Institute of Aeronautics and Astronautics, Friday, Sept. 17, at 7:30 p.m. in Sandia's Theater Bldg. 815. Members of the technical staff are invited to attend, according to Ken Touryan (9326), AIAA vice chairman.

Mr. Schneider will discuss in technical detail Gemini flights four and five.

Reservations are required. Call Mr. Touryan, 264-5341, for tickets.

Instrument Society Elects A. P. Gruer Honorary Fellow

A. P. Gruer, manager of Component Quality Engineering Department 2130, has been elected a Fellow of the Instrument Society of America.

The honor will be presented to him at the society's Honors and Awards Luncheon, Tuesday, Oct. 5, in Los Angeles during the 20th annual ISA Conference and Exhibit. He already is a Senior Member of ISA and is past president of the society's Albuquerque chapter.

Mr. Gruer has been at Sandia since January 1949 and has headed departments in Field Testing and Quality Assurance for the past 11 years. During the same period, he has been active in technical societies and helped organize a National Telemetering Conference, held in Albuquerque, and an International Telemetering Conference, held in England in 1963.

Sympathy

To Leo C. Chavez (4212) for the death of his mother, Aug. 24.

To Richard Lujan (2524-1), for the death of his mother-in-law, Aug. 23.

Now Supports 37 Agencies

ECP Committee Votes to Accept Cystic Fibrosis Association in Plan

The New Mexico Cystic Fibrosis Association is now a part of the Employees Contribution Plan. The ECP committee voted last week to accept the application of the agency, a chapter of the National Cystic Fibrosis Research Foundation. This brings the total number of agencies supported by ECP to 37, which includes the 29 agencies of the United Community Fund. The others are local chapters of national health research agencies.

The New Mexico Cystic Fibrosis Association conducts several programs in the Albuquerque area. It operates a clinical research center at the Rehabilitation Center of Bataan Methodist Memorial Hospital. This center provides physicians with an easily available and up-to-date facility for determining the presence of cystic fibrosis in patients. The Association also provides emergency treatments, medications, and equipment for cystic fibrosis patients. In addition, the organization conducts a public education program and an informative program for medical professionals.

Cystic fibrosis is responsible for almost all serious lung disease in American children. Largely because of lung complications, it is second only to cancer among diseases causing death in children under 15.

There is no known cure for the disease; however, early diagnosis and proper treatment can relieve symptoms and prolong life. The only hope for control of cystic fibrosis lies in research. Much research is currently performed in Regional Care, Research, and Training Centers. These have been established by the National Cystic Fibrosis Research Foundation in many teaching hospitals affiliated with medical schools.

Criteria established by the ECP committee for acceptance of an agency into the plan includes the following:

1. Agency must qualify as a non-profit charitable, health service or public wel-

fare agency as defined by the U. S. Treasury Department.

2. Must be ineligible for participation in the Albuquerque United Community Fund due to the national organization's regulations prohibiting participation in United Funds.

3. Must be operating actively in the Albuquerque area and providing a needed service not duplicating one already offered by an agency of the UCF.

4. Must be conducting successful fund-raising activities in Albuquerque, obtaining sufficient funds from the public to perform its local services. Must agree to submit at the time of acceptance, and annually thereafter, an audited statement of income and expenditure.

5. Must agree to instruct its fund-raisers to avoid re-solicitation whenever possible of those employees who are members of ECP.

Physical Society Meet In 50th State Attracts Sandians

Five Sandia scientists presented technical papers during the American Physical Society meeting held Sept. 2-4 in Honolulu, Hawaii.

Representing Sandia in the technical sessions were: D. K. Brice (5211), "Theory of the Channeling Peak"; J. R. Holland (5133), "Effect of Shock Loading on the Lattice of a Silicon Bronze with Low Stacking Fault Energy"; Bruno Morosin (5151), "X-ray Diffraction Studies on Iron Group Halide Dihydrates"; A. R. Sattler (5211), "Ionization Produced by Energetic Germanium Atoms Within a Germanium Lattice"; F. K. Truby (5122), "ESR Studies of γ -Irradiated Alkyl Halides in Hydrocarbon Matrices at 77° K." Juan Yguerabide (5122) is co-author of the last paper.



TABLE TENNIS WINNERS—Individual honors in Sandia Laboratory Ping-Pong competition went to Jack Chavez, who captured the singles championship. He is flanked by Ernie Gurule (left) and Eugene Chaves, who teamed to win the doubles crown.

UNM Scholarships Available to Sandia Dependents

Two scholarships to the University of New Mexico are being offered by the Sandia Base Woman's Club to dependents of military, Sandia Corporation, and AEC personnel at Sandia Base.

The scholarships cover second semester tuition for both a freshman and a sophomore student, and are awarded on the basis of academic achievement, financial need, and recommendation of faculty advisors. Last year, both of the recipients were the children of Sandia Corporation employees.

Application forms are available at the Sandia Base Branch of the Bank of New Mexico and are due Nov. 15 in the UNM Student Aids Office.

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LAB NEWS

SEPTEMBER 10, 1965

SANDIA CORPORATION LAB NEWS



ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

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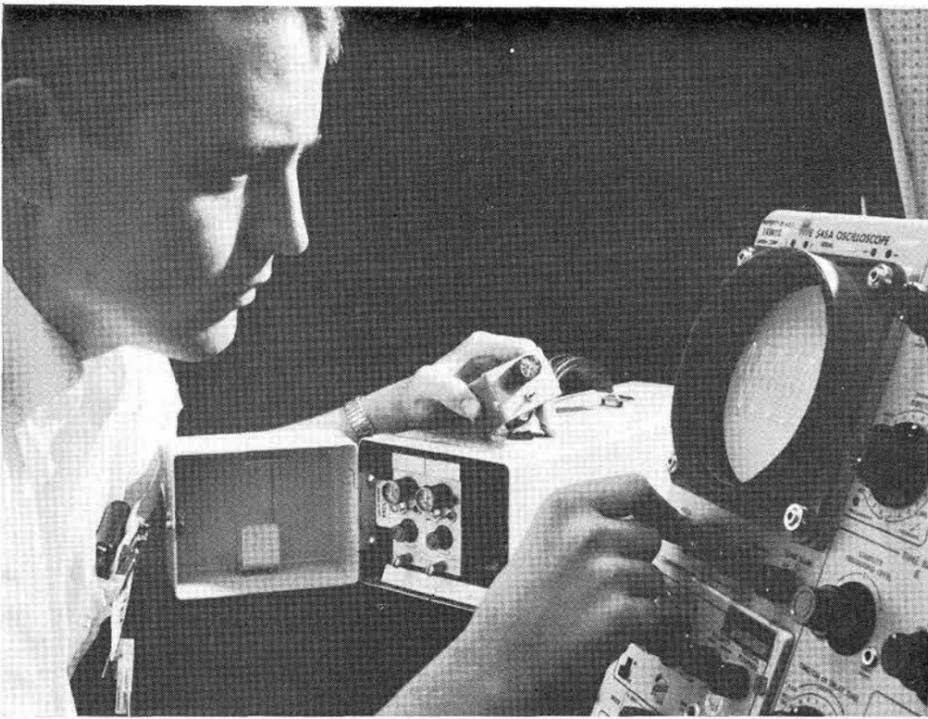
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LIVERMORE NEWS



A PORTABLE CHARGE SOURCE is held by Eugene R. Fisher of Environmental Test Area I, 8111. Mr. Fisher developed the battery-powered instrument to check out the operation of charge amplifiers which are used in data collection for various types of environmental tests. Previously such check-outs required more unwieldy and cumbersome equipment which created problems during tests outside of a laboratory.

Additional Procurement Seminars Scheduled for Livermore Lab Employees

A three-day seminar, "Procurement and the Technical Man," is in progress at Castlewood Country Club. The seminar, which covers Sandia procurement policies and practices, is also scheduled for Sept. 13-15, Oct. 6-8, and Oct. 11-13.

The seminars are being offered because of the success of four seminars conducted last spring, which were attended by approximately 64 Livermore Laboratory employees.

Participants include engineers and staff assistants in the 8100 organization and those employees in the 8200 organization connected with the purchasing function.

The objectives of these seminars are to: —clarify the technical man's role in the procurement process, —introduce the team approach to procurement, —improve communications between organizations involved in procurement, —introduce new procurement tools, and —emphasize cost savings.

Conducting the sessions are R. R. Davies and R. T. Lassiter of Purchasing Administration Division 4332 and Joseph Danclovic of Organization and Management Development Division 3131. F. E. Abbott, Director of Requirements and Facilities Division, AEC/ALO, will present and discuss the integrated contractor aspects involved with procurement.

Sandian to Teach Business Course At Chabot College

George Damoulos (8234) will begin teaching business administration courses for Chabot College this fall. George's first assignment, Introduction to Business Organization and Management, is a three-unit course offered in the evening at the new San Leandro campus.



A graduate of Sacramento State College, George received his MA degree in industrial relations and personnel from the University of California at Berkeley. He joined the Administrative System Organization at Livermore Laboratory in August 1962, transferred to Albuquerque in February 1964 where he worked as a personnel representative, and returned to Livermore Laboratory in May 1965.

George will teach with a temporary credential until the State of California awards him a junior college credential in business education.

Sympathy

To Mearle Hicks (5510) for the death of his son in Livermore, Aug. 15.

To Herb Turnbull (8151) for the death of his mother in Los Angeles, Aug. 4.

Livermore Notes . . .

The first meeting of the 1965-66 season of the Mt. Diablo Subsection of the San Francisco American Society of Mechanical Engineers (ASME) will be held at Castlewood Country Club Sept. 16. Guest speaker at the meeting, Dr. John Cusak of Aerojet General Nucleonics of San Ramon, Calif., will talk on "Modern Day Alchemy." Social hour will begin at 6 p.m., followed by dinner at 7. For reservations or further information, contact Del Elliott (8154), ext. 2688.

David M. Abrahams (8233) has been appointed to serve on a local pre-screening jury for the ninth annual San Francisco International Film Festival in November. Robert J. Harks (8253) and Hugh L. O'Dell (8233) were reappointed to this jury.

The three Sandians will review films in the "Film as Communication" division. The local jury is one of several in the Bay Area assigned to prescreen films for final judging. Juries are composed of film makers, educators, artists, writers, and audiovisual experts.

The festival is the only event of its kind recognized by the International Federation of Film Producers Association, and is sponsored by the Art Association of the City of San Francisco. Entries are received from countries throughout the world.

Plans Announced for 1965 United Bay Area Crusade

Gilbert L. Rhodes (8215), chairman of the Livermore Laboratory Campaign Committee for the 1965 United Bay Area Crusade, has announced plans for the forthcoming Crusade drive to be held at SCLL in September.

According to Gil, a goal of \$20,000 in total employee contributions has been established by the committee for this year's drive which will begin Sept. 27 and end Oct. 1.

"This is a reasonable goal," said Gil, "one that Sandians at SCLL will want to meet. Participation is the key. If everyone gives his fair share we should have no trouble reaching our goal. People from all walks of life, including Sandians and their families, benefit from Crusade funds—a total of 170 health, welfare, and youth service agencies are wholly or partially supported by your one gift each year."

Assisting Gil is F. J. Maloney (8112), vice-chairman; K. C. Purchase (8213), treasurer; and M. J. Connors (8213), auditor.

Congratulations

Mr. and Mrs. Dick Clarkson (8252), a son, Ryan Alex, Aug. 19.

Welcome Newcomers

Aug. 14-30

| | |
|------------------------------|------|
| California | |
| Jerry C. Clough, Livermore | 8232 |
| *Zelma M. Creager, Livermore | 8243 |
| Bill B. Lavinsky, Sacramento | 8223 |
| Candis J. Lloyd, Livermore | 8215 |
| Betty A. Parker, Livermore | 8211 |
| Nevada | |
| Raymond H. Foster, Las Vegas | 8233 |
| Returned from Leave | |
| Conrad G. Stayner | 8222 |
| *Denotes rehired | |

Career-Family Compatible

Sydell Gold Enjoys Scientific Work; Says More Women Should Try Field

There are relatively few women in today's scientific world.

Sydell Gold, a mathematician, is one of two women at Livermore Laboratory who carry the title of "staff member technical." (The other is Carol Shulver, 8144-3, who is also a mathematician.)

Assigned to Numerical Applications Division 8144, on loan to Advanced Systems Research Department I, Sydell's job involves constructing mathematical models for analyzing weapon systems, frequently using the computer in specific cases.

"I find my work most enjoyable," she says, "but then, I entered the field because I found mathematics so interesting and challenging."

After earning an AB degree from Barnard College, Columbia University, and an MS degree at the University of New Mexico, both in mathematics, Sydell joined Sandia at Albuquerque in July 1962. She worked in Mathematical Research Department approximately one year; then she and her husband Ted (8117) transferred to Livermore Laboratory. Both are presently working on their doctorate degrees—Sydell in mathematics at the University of California, Berkeley, and Ted in applied physics at the University of California's Department of Applied Science at Davis/Livermore.

"It is unfortunate that the percentage of women in science is so low in the United States," says Sydell. "The scientific field is a wonderful challenge for an interested and capable woman, just as it is for a man."

She adds, "Many people seem to have a fear of mathematics—perhaps with the new math teaching methods, a better un-



MATHEMATICIAN Sydell Gold finds work at Livermore challenging. She performs weapon systems analysis in Livermore's Numerical Applications Division 8144.

derstanding of the field will develop."

When asked about her views on career vs. family, Sydell commented, "I believe both are compatible. They need not be conflicting interests in a woman's life."

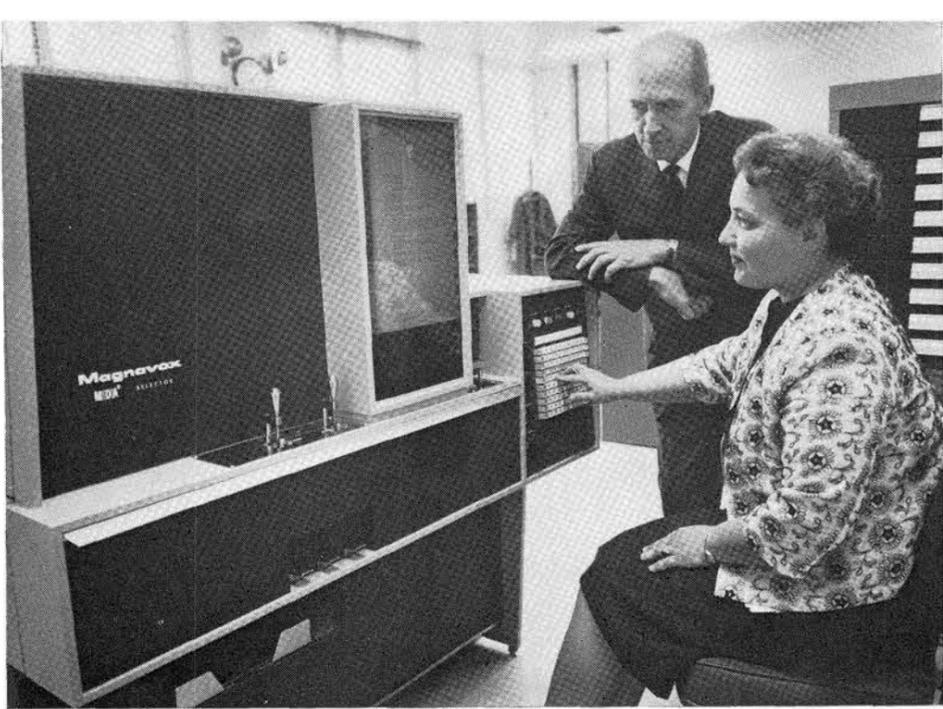
Sydell prefers outdoor recreational activities; her favorites are camping, swimming, and skiing. She also enjoys reading in any spare time her full schedule allows.

One gift works many wonders.

United Crusade give your fair share



CAMPAIGN for the 1965 United Bay Area Crusade will be conducted at Livermore Laboratory from Sept. 27 through Oct. 1.



RETRIEVAL/READING MACHINE in Central Technical Files is demonstrated by Betty Baros. Selection is made by keyboard, and 180-200 film chips in each capsule are scanned until desired one is located. An item can be located in an average of eight seconds. Clarence Schooley of Records Management Division helped train Betty.

New Film Chip Filing System Gives Compact Storage, Quick Retrieval

The keeping of records is necessary in every business. But the storage of these records as well as easy access to them can be quite a problem.

"We believe we've found a way to reduce the contents of 75 four-drawer file cabinets into material that can be stored in two film cabinets," says Bill W. Scott, supervisor of Records Management Division 3428. "This means that records that occupied 825 square feet of storage space will now occupy only eight square feet."

"In addition, we'll have a faster and more efficient method of retrieving records that we have stored."

"We have been checking out a new microfilming system and are now ready to use it to record on film the material entering our files for the first time, as well as material already in our files."

The division's objectives are (1) to gather complete technical correspondence and related information into a central file and make it available, (2) to maintain a rapid and accurate record retrieval system, (3) to devote less space to storage, and (4) to selectively purge and place inactive information in archives.

Mr. Scott says, "Points one and three appear to be conflicting, but we need to have classified and unclassified letters and other pertinent information placed in Central Technical Files where others may use the information."

Film equipment and files have been moved from Bldgs. 836 and 880 into Bldg. 802. The equipment consists of a camera-coder, film cutter, special storage cabinets, and a retrieval-reading machine.

The camera-coder can photograph on 16 mm film one, two, or three standard 8½ x 11-inch typing sheets at one time and reduce them to 1/30th of their original size. In addition, the top edge of this film chip has 17 spaces where the camera operator can key-in identifying Arabic numerals, which are duplicated in the next line in a binary code used by the retrieval machine in its scanning. "At the present time," Mr. Scott says, "we're using this space on the film chips to identify the program, categorize within the program, denote the originating organization, and list the date of the document."

All material filmed is indexed by personnel in the Central Technical File under the supervision of Mrs. Mavis G. Randle.

The documents and identifying codes are photographed on 100-foot rolls of film which next pass through a standard film processor. The negative becomes Sandia's inviolate file, and two positive prints become working files to be categorized as to program and organization.

"Before the prints are made," Mr. Scott adds, "each negative is checked for film quality, indexing accuracy, and content."

The prints are fed through a film cutter, which snips and stacks the film chips in capsules roughly the size of an ordinary cigarette lighter. Each of these capsules will hold 180-200 film chips, and 1000 capsules fit in the drawers of one cabinet—the equivalent of almost a half-million sheets of paper.

To regain the information, the appropriately labeled capsule is withdrawn from the drawer and is inserted in the retrieval-reading machine. The operator selects, via the keyboard, the search pattern which will retrieve the information re-



THIS DRAWER, when all the capsules are filled with film chips, will hold the equivalent of 45,000 sheets of 8½ x 11 inch paper. Edna Baca of Central Technical Files holds an indexed capsule of microfilms.

quested. The machine can scan the entire 200 chips in the capsule in 15 seconds. If the desired chip is in the capsule, an enlarged image is projected on the screen, the operator presses a button, and within 12 seconds a print on 8½ x 11-inch paper is produced.

The machine can also be keyed to purge film chips with certain dates or subject matter. Since the chips are at random in the capsule, a new film chip can be added to the capsule files at any time—or obsolete chips can be withdrawn.

Sandia's original order was for six of the filing cabinets and, ideally, one camera-coder will be used for new material, and a second for microfilming papers in the existing central technical files.

The system can reproduce photographs, charts, and graphs up to 8½ x 14 inches as well as typewritten material; however, there is no way to differentiate between colors.

"It should be pointed out," Mr. Scott says, "that not all typewritten material is of filmable quality, nor is this system economically suitable for reproducing a report of 20-60 pages. The latter would be better filed in a hard copy or recorded on reel microfilm. Our system is mainly for correspondence of probably not more than 12 pages per document."

Present plans call for two indexers to operate the selector-viewer-reproducer, and two trained camera operators.

"This system gives us a unique opportunity to expand our existing central technical files without requiring more storage space," he concludes.

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LAB NEWS

SEPTEMBER 10, 1965

Green Grass Can Grow in City-- Sandia Gardener Tells How

The lush green grass in front of Sandia Laboratory's Bldg. 800 stands as a constant reminder that beautiful lawns are possible in Albuquerque.

As lawns all over town are turning yellow, being attacked by worms, or slowly wilting in the summer heat, Sandia's lawn looks better than ever. (It's enough to make the average homeowner dig out his grass and put in green concrete.)

So the LAB NEWS cornered Charles Smith of Labor Support and Ground Maintenance Division 4575, Sandia's number one gardener since November of last year, and asked him to confess his secrets.

"All it takes is H₂O and EG²," Smitty says.

What is EG²?

"Elbow grease," Smitty says. "Lots of water and lots of elbow grease."

How much water?

"A good soaking four times a week," Smitty says. "We soak the Bldg. 800 lawn about an hour on Monday morning before most people come to work. We mow it on Tuesday and then soak it about 40 minutes each day for the rest of the week."

Why do you water it early in the morning?

"This helps prevent fungus. If you water in the evenings, then the grass stays wet all night and gives fungus a chance to grow."

What about fertilizer?

"Very important," Smitty says. "Sandia mixes its own fertilizer, but it's equivalent to a good grade of commercial fertilizer. The main thing is to be sure the fertilizer is a 'full' fertilizer containing nitrogen, phosphate, potash and some iron. These are important. A good feeding in the spring and in the fall, plus a little nitrogen in mid-summer is enough for just about any lawn."

What about worms?

"Well," Smitty says, "you can encourage birds. A good soaking usually brings the worms to the top of the lawn and the birds will take care of them. At home, I toss a few bread crumbs around regularly, just to keep the birds friendly."

Suppose this doesn't work. Suppose there are cats in your neighborhood?

"Then use a good commercial worm poison. I like the liquid kind which can be sprayed on the entire lawn. It takes longer but it will usually work. Bare spots should be reseeded."

What do you do about weeds, Smitty?

"I cuss them and then dig them out, just like everybody else does. For lawn weeds you can use any of the good weed killers. For flower beds you can help prevent weeds, and elm tree shoots, too, if you spread a thin layer of a humus material—compost, peat moss, or sawdust—in the fall. This usually rots the weed seeds by the following spring."

Fall is just around the corner. Smitty, is there anything special for lawns at this time of year?

"Use some humus material on the lawn in about the middle of October. Also, give the lawn a good dose of fertilizer, and

water it about every two weeks in the winter."

Are you going to do anything special to the Bldg. 800 lawn?

"That lawn is a mixture of several kinds of grass," Smitty says. "In October we'll seed the lawn with rye grass to keep it green this winter. Other than that, we'll just give it normal care."

Smitty is lead man for the crew that is responsible for the Bldg. 800 lawn, the Coronado Club greenery, and all of the shrubs and trees in the Tech Area.

Anything about trees that we ought to know, Smitty?

"The only thing that grows easily in this country is cactus," Smitty says. "Anything else is work. That goes for trees. One of the problems in Albuquerque is the lack of iron in the soil. I put nuts and bolts and other small scraps of iron around the base of the trees. I think it helps keep them green."

Smitty has been gardening as an avocation in Albuquerque for 37 years. Many years ago, he worked in a greenhouse here. He has a lifetime interest in plants and gardening.

At his home, Smitty maintains a huge compost pile, more than five feet high in an area the size of a double garage. This is the secret of his verdant garden. Using the compost in the soil, Smitty raises melons, giant cucumbers and radishes, and plenty of other vegetables.

To discourage tomato worms, he plants garlic, onions, and basil around the garden. This also discourages aphids.

"Maybe not 100 per cent," Smitty says, "but I think it helps."

Smitty's methods seem to work. The greenery of Sandia is a tribute to his skill.

Take Note . . .

Visitors to the New Mexico State Fair, Sept. 16-26, will be able to visit "Your Stake in the Atom," a special display on atomic energy research and development. Housed in a portable geodesic dome, the exhibit includes both animated and audience-participation displays. The exhibit is managed by the Oak Ridge (Tenn.) Institute of Nuclear Studies under direct contract with the Atomic Energy Commission.

The Sandia Gun Club will stage a "sight-in" shoot at the Sandia Base Carbine Range, tomorrow, from 12 noon to 3 p.m. This is a good opportunity to check the sights on your rifle and be sure they're properly aligned. Club President Robert E. Fox (1322) says, "Everyone's invited to participate, and Sandia Gun Club members will be on hand to give assistance. There will be no admission or other charges."



CHARLES SMITH (4575) is Sandia Laboratory's number one gardener. Smitty has been engaged in growing plants for 37 years. The Bldg. 800 lawn is a tribute to his skill.

Service Awards 15 Years



10 Years
Sept. 10-23

R. B. Oliver, Jr. 2133, C. Christensen 2541, C. I. Johnson 7322, M. L. Dieter 7331, C. E. Cundiff 3113, Edith M. Duffy 2513, Oreste Ganzerla, Jr. 3463, M. G. Hicks 5510.
K. E. Pilkington 7247, I. W. Janney 7252, T. M. Myers 1121, Patte A. MacPherson 2524, F. J. Sparber 9211, H. W. Benischek 4343, B. S. Hill, Jr. 9312, and M. L. Jones 2232

J. J. Atencio 4221, Homer Ator 2533, D. F. Baca 2132, G. P. Barnett 7332, R. L. Bryant 4513, R. L. Byrd 3242, A. L. Cary 7233, Gabriel Chavez 4624, W. F. Cihak 2523, C. R. Clark 1443, S. C. Cordova 4575, E. P. Darnell 4254, J. E. Davidson 3154, G. L. Dingman 3242, Chester Eaves 3242, R. L. Eaves 3242, B. O. Ellis 3242, W. B. Ferguson 4315, Hugo Flores 3242, M. M. Gasta 1312, J. J. Grady 8161, H. V. Jacobs 7251, T. F. Laney 7267, C. L. Leyba 7213, F. R. Lopez 3242, F. H. Martin 3242, H. M. Meidal 4232, J. M. Miller 4611, Alfred Montoya 4573, E. G. Ortiz 4511, W. R. Parker 4252, R. T. Pegue 4231, M. J. Phelps 7214, C. R. Pickens 7245, T. H. Reed 1331, B. G. Salazar 4624, T. W. Sandoval 3242, J. M. Seiler 4614, M. N. Servis 4513, R. P. Stromberg 1322, Joseph Szymanski 2423, Irwin Troyky 8215, G. A. Uzuiko 3242, Ted Varoz 3242, D. E. Wanner 1122, D. R. Weldon 3152, A. E. Wickham 4232, T. R. Wright 3242

Two Sandians to Teach UNM Courses for ASQC

As part of the educational program conducted by the Albuquerque Section of the American Society for Quality Control, two Sandians will teach courses in the University of New Mexico Community College this semester.

G. O. Hawley (2513) will instruct a course in basic quality control which will cover probability distributions, control charts, and samplings theory. The class will begin Sept. 22 and will meet Wednesdays from 7 to 9 p.m. for 12 weeks.

T. P. Conlon, Jr. (2514), will teach a course in Process Start and Control Technique on Mondays from 7:30 to 9:30 p.m. The class will start in October and will be held once a week for six weeks. The process start and control technique is particularly useful for setting up machines or performing adjustment operations on predetermined nominals. It is a statistical technique simplified for easy use in the shop.

Enrollment information on the courses is available through the UNM Community College, Extension Division.

Sandia Physicist Turns Actor for 'Happening'

"Happening 3," a new approach to entertainment which combines pantomime, fantasies, and satire, will be presented through September with Crawford MacCallum (5231) again participating both on stage and off.

Crawford was one of the originators of this type of attraction in Albuquerque. The present offering includes a satire on Madison Avenue, a short play on The Law (in which Crawford portrays a judge), a sequence called evolution which reaches the stage of modern man in 10 minutes, and finally improvisations suggested by the audience.

"Happening 3" is presented Friday, Saturday, and Sunday evenings at 9 in the Old Town Studio at 1208 Rio Grande NW. "Our new location seats an audience of 50," Crawford said. In converting the building, Crawford made use of surplus equipment from Sandia's salvage yard for lighting, and old skids became the risers under the audience seats.

G. W. Elliott Named to Tech Institute Committee

The American Society for Engineering Education has invited G. W. Elliott (3151) to serve on the James H. McGraw Technical Institute Award Committee along with six academic representatives.

Mr. Elliott is technical institute recruiting coordinator for Sandia's Employment Division.

Four Present Tech Papers During Spectroscopy Meet

Technical papers were presented by four Sandians during the Fourth National Meeting of the Society for Applied Spectroscopy, held Aug. 30-Sept. 3 in Denver, Colo.

The men and their presentations: D. R. Anderson (1111), "Differential Thermal Analyses of Polymers"; R. A. Hill (1122), "A Multiple-Scan, Rapid-Scan Spectrograph"; R. T. Meyer (5122), "Gas Phase Flash Photolysis Studies by Time-Resolved Mass Spectrometry"; L. S. Nelson (5234), "Combustion of Zirconium Droplets Studied by Flash Heating and Time-Resolved Spectroscopy."

In addition, Mr. Nelson was chairman of a session on time-resolved spectroscopy.

Sandia Authors

W. E. Warren (5251) and W. T. Holmes (former Sandian), "Thermal Stress Concentrations in a Tooth," Vol. 1, 1965, pages 54-59, ACTA MECHANICA (an Austrian publication).

D. C. Wallace (5155), "Thermal Expansion and Other Anharmonic Properties of Crystals," Aug. 2 issue, THE PHYSICAL REVIEW.

V. O. Henning (3152), "Technical Institute Graduates Win a Place at Sandia Corporation," September issue, JOURNAL OF ENGINEERING EDUCATION.

Marvin Moss (5154) and D. L. Smith (former Sandia employee), "Focused Heat Source for X-Ray Diffractometer," August issue, REVIEW OF SCIENTIFIC INSTRUMENTS.

G. C. McDonald (5501), "Production by Pictures" (Section One) "A New Method—How It Works," August issue, MECHANICAL ENGINEERING.

Joseph Crompton (3415), "Production by Pictures" (Section Two) "Constructing the Visual Aids," August issue, MECHANICAL ENGINEERING.

K. J. Touryan (9321), "The Ablation Mechanism for Impregnated Tungsten," September issue, JOURNAL OF THE AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS.

T. W. Eglinton (4543), "Planned System Ventilates Plating Room," August issue, PLANT ENGINEERING.

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LAB NEWS

SEPTEMBER 10, 1965

SHOPPING CENTER ● SHOPPING CENTER ● SHOPPING CENTER ● SHOPPING CENTER ● SHOPPING CENTER ●

CLASSIFIED ADVERTISING
Deadline: Friday noon prior to week of publication unless changed by holiday.
A maximum of 125 ads will be accepted for each issue.

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

3-BDR., 1 1/4 baths, built-in stove/oven, AC, garage, cfa, carpeting, drapes, near schools, landscaped, assume GI or make new FHA. Taylor, 344-8176.

ANTIQUES: colored glass, furniture, Chinese Foo dogs, oil and watercolor paintings; guitar, \$15; Meakin ironstone pitcher-bowl, \$35. Cotter, 298-3820.

'59 FORD, 4-dr., PB, PS, R&H, new water pump, new brake linings, \$475. Morgan, 256-7994.

'64 FORD Country Squire, 9 passenger, factory air, R&H, PS, other extras, \$2500. Chandler, 256-6415.

CLOCKS: various sizes from mantle clocks to Grandfather size; '61 Corvair pickup w/rebuilt engine, R&H, wholesale book price. Netz, 282-3607.

INSULATION, 3 new rolls, glass fibre, 2" x 16", will cover 280 sq. ft., \$6 total. Eglinton, 256-1921.

BABY STROLLER, deluxe model Folda-Rolla, fringed canopy, basket, \$12.50; Matlack, 256-7371 evenings.

315 VIRGINIA SE, 4 rms., fireplace, large lot, small down, balance, \$9150, \$75/mo. including taxes and insurance. Summer, 299-1912.

LUGGAGE RACK for Renault or other compact cars, chrome plated tubular steel complete w/ matching tarp, \$14, 3591 51st Loop, Base. Schaechter, 264-1886.

ACCORDION, Camerano, 120 base, pearl blue, 2 base shift, 3 keyboard shift, \$100. Rand, 268-1875.

3-BDR., 2 bath, separate LR, DR, panelled family rm. and kitchen, 2246 sq. ft., dbl. garage, sale, rent or trade for country property. Shurter, 268-0490.

SLEEPING BAG double, J. C. Higgins, \$10; air mattress, tufted, \$8; gasoline stove, compact type, 2-burner, needs repair, \$3. Pardee, 255-1998.

WURLITZER SPINET PIANO, traditional styling in light cherry. Bircher, 268-0726.

3-BDR., family room, 1 1/4 bath, AC, carpeted completely, walled yard, near schools, \$14,600 FHA or GI, no down payment GI. Stiefel, 344-7931.

FRIGIDAIRE electric range, 42", \$25; two fabric air mattresses for sleeping bags, \$5. Freyer, 299-2053.

'60 CHEVROLET SEDAN, 4-dr., V-8, AT \$795; exterior paint, Benjamin Moore, cost \$7/gal. sell \$2, 6 gals., sand color. Hill, 268-1420.

5-BDR., immediate possession, all brick, 3 bathrooms, all-electric country kitchen, 3000 sq. ft., \$1500 under appraisal. Goodman, 299-3652.

26" GIRL'S bicycle, \$10. Rush, 298-0197 after 5.

PING PONG TABLE w/net, 1 yr. old, legs fold for easy storage, \$25. Garcia, 298-8630.

AKC registered Dachshund puppies, miniature breed, 8 wks. old; cornet, \$25; clarinet, \$70. Duimstra, 299-9278.

BOX SPRINGS and mattress, \$30; new 7.50x14 tire, \$10; Scoutmaster uniform, \$5. Coalsen, 298-8074.

3-BDR., 1 1/4 bath, AC, drapes, walled yard, landscaped, NE, near schools, hw/floors, garage, abundant storage, CFA. Crammond, 298-2660.

3-BDR., 1 bath, pitched roof, block walls all around, landscaped, sell for appraisal. Maes, 298-8215 after 5.

WESTINGHOUSE automatic electric clothes dryer, \$60; Suburban lawn mower, 25" swath, 4-cycle B&S engine, \$25; B. F. Goodrich 7.60 x 15 4-ply nylon w/w new innertube, \$10. Ryan, 299-3318.

'55 FORD, 4-dr., AT, R&H, 2-tone, new shocks and seat covers, 6 tires and wheels, \$300. Arrington, 256-3788.

HOSPITAL BED, adult; living room chair. Rodriguez, 298-9962.

16' x 20' Mountain Cabin, forest service land located on grass mountain north of Pecos. Weir, 299-1160.

'61 CHEV. PICKUP, 4-spd., 8-cyl.: four trailer leveling jacks; 10 meter mobile rig. McGarvie, 298-3364 after 5.

3-BDR. BRICK, 1 1/2 baths, carpeted, custom drapes, large patio, walled yard, water softener, cfa, \$14,500; '62 TR4, \$1495. Wilson, 298-0049.

RIFLE, Mod. 70-270 cal., std. weight as factory issued, \$90. Goens, 282-3492.

CESSNA 120 2-place airplane, completely rewired electrical system, ARC radio, new panel, many extras, \$1800. Cope, 298-5864.

'58 CHEVROLET V-8 wagon, AT, radio, 4-dr., cash, trade, or credit available. Villella, 268-4731.

'57 DODGE Sierra wagon, \$250. Lobley, 877-4685.

'53 STUDEBAKER PU, 6-cyl., \$150 cash; '53 Studebaker car, V-8, standard shift, \$75. Louie, 243-1846.

VERTICAL ANTENNA, 10-15-20-M—12AVS hygain ant. w/12RMK roof mounting kit, 8 mos. old, \$20. Heustess, 256-6337.

BOY'S ICE SKATES, size 13, \$5; football shoes, size 9 1/2, \$12; B&B clarinet-Evette, \$90; children's barbell and dumbbell, \$5. Fletcher, 268-2094.

MANKIN HOME, 3-bdr., den, 1 1/4 baths, dbl. garage, 1700' living space, \$2800 cash to loan, balance \$17,500. Watkins, 516 Hillview Ct. NE, 298-3667.

SILVER REGENT CLARINET, w/12 instruction books, \$40. Bild, 256-3873.

WOOD LATHE, new, H.D. 12", sell or trade for aquarium. Smith, 268-1228.

DODGE, 3-ton moving van, new motor, hydraulic lift, \$695. Roth, 308 Osage Pl. SW, 247-3867.

3-BDR., 1 1/4 bath, AC, cfa, fireplace, new carpet, drapes, built-in range/oven, dbl. garage. Taylor, 298-0426.

C FLUTE, \$35. Pewe, 255-3518.

TIRE AND WHEEL, four holes 3 1/4" from center to center, \$15. Schmierer, 299-2352.

USED KENMORE electric range, 40", pushbutton controls, single oven, \$25. Roberts, 255-9527.

POODLE PUPPY, AKC registered, standard, black, champion blood lines, 7 weeks old. Goodlow, 299-6449, 9606 Elvin NE.

'62 FORD GALAXIE 500, PS, Cruise-O-Matic transmission, \$1150. Schroeder, 268-5812.

'58 FORD Ranchwagon, 4-dr., R&H, OD, \$225. Beavis, 344-6360.

'55 OLDS 98, 4-dr., AC, full power. Kent, 877-3821 after 5:30 or weekends.

17" PORTABLE RCA TV, needs some work, \$25; dark swivel-top TV table, \$5; 3-shelf bookcase, \$5. Campbell, 256-1015.

DESK; diamond solitaire, 60 pt.; 20 ga. Wingmaster Remington pump. Sena, 265-4990 after 5.

REMINGTON model 722, .308 Win., w/3 variable scope, \$79. Flesner, 256-6173 after Sept. 12.

BC-221-Q frequency meter w/calibration charts; less antenna, earphones, and batteries, \$49.50. Houts, 256-7218.

14 VOLUMES of New Illustrated Encyclopedia Gardening, original price \$40, make offer. Glaze, 299-4340.

TEARDROP TD8 camper, used twice, \$700. Goodwin, 256-2216.

BUNK BEDS w/mattresses, can be converted to singles or trundle, \$35; TV, 27" console, trade for portable. Murray, 344-5289.

WASHER, Kenmore automatic, \$25. Davis, 298-8559.

STEREO, console, walnut cabinet, stereo tape playback, Eico 14 watts per channel amplifier, Webcor 3-speed automatic changer, \$100. Echer, 265-4851.

MALE PUPPY, mixed breed, good w/kids, housebroken, all shots, 8 mos. old, dog and house for \$15. Frankel, 298-6265.

POWER MOWER, 18" reel type, \$20; hand mower, 16" blade, \$8; Burns, 255-3757.

APPROX. 1900 sq. ft., \$17,500, 3-bdr., den, garage w/2 additional large rooms, low down. Jackson, 299-0942 or 255-3823.

WALNUT bedroom suite, complete, \$100. Love, 298-6484.

CLARINET w/case and music stand, Schreiber and Shoner, 1 yr. old, \$75. Bourgeois, 298-4998.

ROBERSON 3-bdr., 1 1/4 bath, den, fireplace, electric kitchen, large utility rm., screened patio, dbl. garage, professionally landscaped, carpeted. Healy, 298-1755.

WEIMARANER PUPS, AKC registered, superb pedigree, excellent as pointer retriever or gentle house pet. Solomon, 898-2095.

'54 OLDS, 2-dr., R&H, PS, PB, \$125. Condit, 344-9887.

FRENCH POODLE, 2 yrs. old, \$15 to right party. Towne, 299-2982.

PUSH-GO-CART frame w/wheels, brake, w/engine mount, \$20. Stromberg, 255-6131.

MONTGOMERY WARD'S evaporative room air cooler w/stand; hardly used, still in original box, \$30. Caffey, 255-1062.

'62 OLDS-CUTLASS Console, factory air, PS, R&H, Olson, 268-5312.

TRUMPET, B flat Besson, \$40. Bell, 299-4643.

MAPLE HUTCH CUPBOARD, Pennsylvania House, \$75; maple spindle bed, Kling, \$25. Catek, 282-3285.

AF-67 XMTY and power supply, \$50; TX1 and SB 10, \$160; Collins 75A1, \$110; Halli-crafter SX100, SWAN 120, \$130. Hansen, 344-8985.

TYPWRITER, Royal Futura, portable, standard size keyboard. Stusher, 268-0258.

FROST ROAD LAND, beautiful view in all directions, 2 1/2 acres, \$1600 per acre, terms. Sinnott, 299-1300.

ENFIELD military rifle for big game hunting, \$35; Universal gas clothes dryer, \$45. Summers, 299-4674.

'49 INT. PICKUP, 3/4 ton, 4-spd., \$195. Sebert, 256-6253 after 5.

SERVEL REFRIGERATOR, apt size; gas stove, both w/butane adaptors; Simmons hide-a-bed; '59 Ford station wagon, stick shift, 4-dr., \$450, 7609 Harwood Ave. NE. Kennedy, 298-2226.

TOOLS: Blackhawk Porta-Power, oxygen-acetylene welding outfit, Craftsman micrometers, power saw, electric drills, etc. Geilenfeldt, 265-0294.

4 EA. 7.35 x 14 Goodrich Silvertown original equipment tires, 11,000 miles, no punctures, best offer. Carpenter, 299-3519.

WANTED

USED WHEELS, 3/4 inch shaft. Stromberg, 255-6131.

HOME for two black kittens. Day 256-6360.

VOLUNTEERS w/executive ability for work on the Commissioner's Staff in the Rio Grande District of the Boy Scouts of America. Harley, 898-0594.

TRICYCLE for 3-yr.-old. Yaple, 265-7005 after 5.

RIDE from 2619 Gen. Bradley NE to gate 10 parking lot. Walton, 298-8342.

BABY SITTING in my home, any age, any hours. 11704 Rosemont NE. Cannon, 299-4592.

RIDE from vicinity of 12th and Candelaria NW. Armijo, 344-7938.

FOR RENT

315 Virginia SE, near base, 4 rms., fireplace, large lot, \$75/mo. Summer, 299-1912.

3-BDR., furnished house, good heating, AC, walled backyard, carpeted, garage, nice neighborhood, convenient to bases, schools, Campbell, 256-1015.

UNFURNISHED 2-bdr., AC, near Sandia Corporation, stove and refrigerator furnished, water paid. Villella, 256-2853.

FOR LEASE

4-BDR. house, 1 1/4 baths, AC, carpet, drapes, near elementary, junior high schools, 9221 Shoshone NE. Shunmy, 299-2787.

LOST AND FOUND

LOST—Men's prescription glasses, bracelet w/linked gold leaves, men's sunglasses w/grey frames, sterling fish-shaped earring, men's safety sunglasses, 40 keys on ring, ladies grey sweater, ladies sunglasses. LOST AND FOUND, tel. 264-2757.

FOUND—Man's gold ring w/red stone, pipe stem, silver tie tack, J. C. Higgins Bicycle. LOST AND FOUND, tel. 264-2757.

Coronado Club Bowlers Organize Extensive Plans for Juniors, Adults

The latest of the Coronado Club special activity groups to be formed is the Coronado Bowling Club. Officers were elected and constitution and by-laws were adopted by approximately 50 charter members at a meeting Aug. 23.

Purpose of the club is to promote competitive bowling under sponsorship of the Coronado Club in conjunction with the American Bowling Congress, Women's International Bowling Congress, and the American Junior Bowling Congress. The Bowling Club also wants to develop interest in the sport among both Junior League members and any adults who are not active bowlers.

The newly elected officers are O. B. Tjeltweed (1533), president; C. J. Kaspar (4541), vice president; Cynthia L. Kelly (3113), secretary; and J. D. Brandt (2122), treasurer.

Planned activities include quarterly meetings and a dinner dance to be held later in the bowling season. The next quarterly meeting, to be held Oct. 14 at 7 p.m. at the Coronado Club's La Cana room, will feature a Jerry Lewis bowling film. Several other movies and a guest speaker will highlight the regularly scheduled meetings. Marilyn (Mrs. C. F.) Jacobs is chairman of the program and publicity committee.

Membership in the Bowling Club is open to all Coronado Club members and their dependents. Interested persons may obtain further information from G. H. Whiting (5611), membership committee chairman.

Four leagues are being sponsored at bowling lanes throughout the city. The Bottoms Up mixed doubles league, Lor-

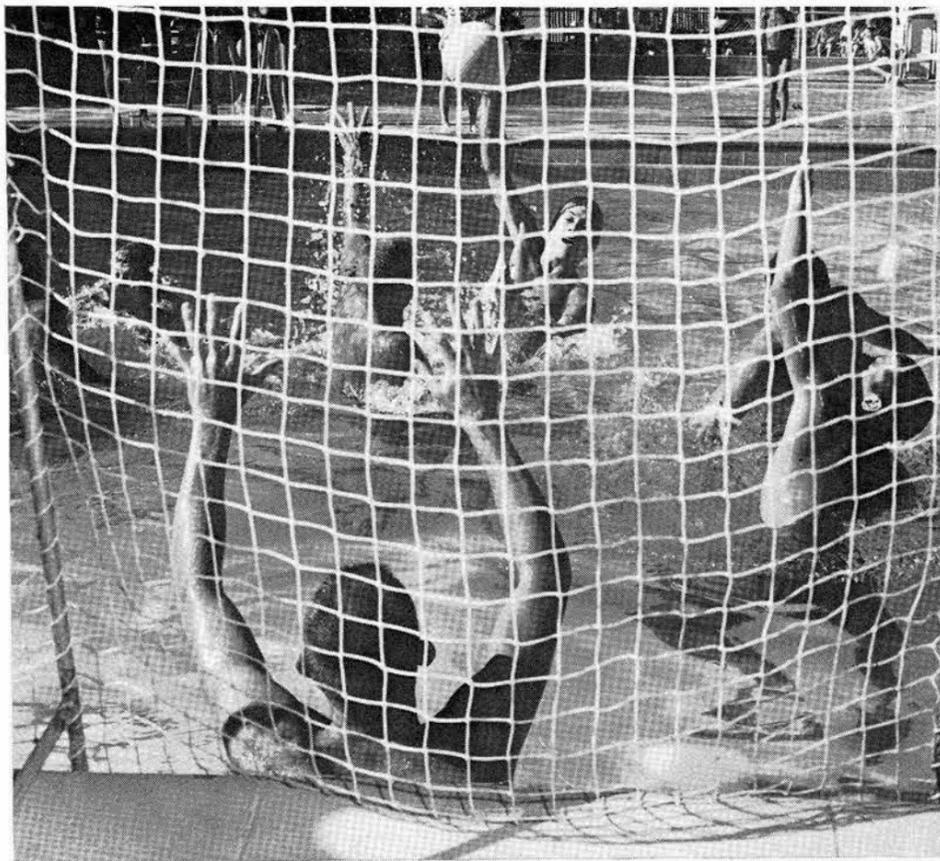
raine Erikson, president, will bowl at EuCan Bowl on Monday evenings at 6:30. The Boozers mixed doubles league, Harry Olson, president, will bowl at Lomas Bowl on Wednesday evenings at 6:30. The Jewettes, women's league, Eunice Frank, president, will bowl at Hiland Lanes on Monday evenings at 6:30. The Junior League, Ed Whittwer, president, will bowl at Holiday Bowl on Saturday mornings at 9:30.

The Bowling Club still has several team openings in mixed doubles leagues and the Junior League. There are sufficient alleys available throughout the city for additional teams or leagues to be formed. Any Coronado Club member or prospective member who is interested in bowling this fall should call G. H. Whiting, during the evening at 298-6598.

Junior Bowling League, sanctioned by the AJBC, is now being formed. Its season will begin with a meeting on Sept. 11 at 9 a.m. at the Holiday Bowl; bowling will begin at 9:30 following the meeting. Bowling shirts will be furnished by the Coronado Club, and a junior bowling instruction program is planned. For further information contact E. C. Wittwer (7214), Junior League committee chairman, during the evening at 299-0311.

Partial financial support is planned for Bowling Club members who wish to compete in Sandia and City tournaments (both adult and junior).

Tournament committee chairman George Kambourelis (1531) also plans one or more novelty tournaments during the coming season.



CORONADO CLUB'S WATER POLO TEAM won its first New Mexico State-AAU Water Polo Championship last month after four years of state competition. Co-captains are David Otto and Steve Goddard, and team coach is Jim Rhudy, pool manager.

'October Fest' Early This Year Same Fun-Food

The Coronado Club's version of the October Fest, a famous festival held each fall in Munich, Germany, is scheduled for Saturday, Sept. 25.

The buffet table will be loaded with traditional German dishes and traditional accompanying refreshments will be served.

The Hofbrau menu will be offered from 7-9 p.m., followed by dancing to the music of the MBC Trio. Tickets are \$3 for members, \$3.50 for guests. Reservations should be made by Sept. 22.

More Club Activities . . .

Social Hours

Two low-priced Friday night buffets are on the schedule for Coronado Club members. Tonight the popular chicken buffet will be served, and Jerry Lee's Combo will play for dancing.

Friday, Sept. 17, the seafood buffet will be available, and Tommy Kelly's Combo will provide the music. Each buffet is priced at \$1.25 for adults, \$1 for children.

Paris Evening

"Evening in Paris" is the theme of tomorrow's gala party at the Coronado Club. Dinner will be served from 6-8 p.m., and the menu will feature many dishes for which France is famous. Following the dinner, a leading Albuquerque store will preview this fall's fashions. Jess Sawaya's Orchestra will play for dancing from 9-1. Tickets for "Evening in Paris" are \$3 for members, \$3.50 for guests.

Chartered Bus Trip To Juarez Sept. 18 For Club Members

A carefree weekend in Juarez, Mexico, without driving worries is assured Coronado Club members and guests who join the Club's chartered bus excursion to the border city.

The group will leave the Coronado Club at 6 a.m. Saturday, Sept. 18, and will leave Juarez for the return trip at 6 p.m. the following day. Travel will be by modern, air conditioned, chartered bus. Overnight reservations will be made at a new luxury motel in Juarez. A special party is planned for Saturday evening.

Transportation costs are \$10 per person, round trip. Motel rates are \$12.60 double, or \$10.80 single.

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DANCE INSTRUCTORS Holly and Charles Balistrere check some records they will use in teaching Latin dance steps to Coronado Club members. Adult classes will start Sept. 13 for both beginners and advanced students. Gail and Jennifer Ward will teach American dance steps.



OFFICERS FOR NEW Coronado Bowling Club are (l to r) O. B. Tjeltweed, president; Cynthia Kelly, secretary; C. J. Kaspar, vice president; and J. D. Brandt, treasurer. The group will promote competitive bowling under Coronado Club sponsorship.

Maynard Cowan To Present Technical Paper At International Conference

Maynard Cowan, Jr., supervisor of Magneto Physics Research Division 5141, will present a technical paper at the Conference on Megagauss Magnetic Field Generation by Explosives and Related Experiments, to be held Sept. 21-23 in Italy.

His paper is entitled "Energy Conversion Efficiency in Flux Compression."

The conference will be conducted at the Laboratorio Gas Ionizzati in Frascati, near Rome.

Technical papers will be presented by both Americans and Europeans. The Americans will include scientists from Los Alamos Scientific Laboratory, Lawrence Radiation Laboratory (Livermore), Stevens Institute, the University of Missouri, and a number of private companies. The foreign scientists will represent Kurchatov Institute (Moscow), Atomic Weapons Research Establishment (Aldermaston, England), Institute fur Plasmaphysik (Munich, Germany), EURATOM, and other research institutes in France, Switzerland, and Italy.

The program includes a visit to the experimental facility for applied explosive experiments of the EURATOM-CNEN group at Colleferro, Italy.

Mr. Cowan has been with Sandia 14 years and was assigned to a nuclear burst studies group before his promotion to division supervisor in 1960. He has a BA degree in physics from William Jewell College in Missouri, and an MS degree in physics from the University of New Mexico.

Welcome Newcomers

Aug. 23-Sept. 3

| | |
|----------------------------------|------|
| Albuquerque | |
| *Patricia A. Bartolucci | 4622 |
| Leonard J. Campbell | 4254 |
| *L. Norene Felter | 3428 |
| Ednae Gross | 3311 |
| Harold E. Jackson | 4254 |
| Kay F. Juric | 3126 |
| Dennis C. Lobley | 3462 |
| Ernesto M. Montoya | 4233 |
| *Lillie M. Radtke | 3126 |
| William H. Roady | 4233 |
| Rosendo Saavedra | 4233 |
| Federico Salas | 4574 |
| Clark R. Sanger | 1542 |
| Judy D. Scheihagen | 3154 |
| Garrude E. Shea | 3126 |
| Edward L. Shoaf | 4254 |
| Jose C. Torrez | 3154 |
| Leo Webb | 4254 |
| Robert E. West | 4254 |
| Arizona | |
| Eldon Steelman, Ft. Huachuca | 5621 |
| Florida | |
| Ronald D. Bentley, Gainesville | 2421 |
| Illinois | |
| Gerard M. Ozanne, Champaign | 9325 |
| Indiana | |
| Glen W. Belden, West Lafayette | 9323 |
| Iowa | |
| Marlyn W. Sterk, Iowa City | 7324 |
| Mississippi | |
| Sidney G. Williams, Starkville | 7245 |
| Montana | |
| Donald R. Bjork, Bozeman | 2421 |
| New Jersey | |
| L. Jefferson Gorin, Princeton | 1413 |
| New York | |
| John S. Farnbach, New York City | 1544 |
| Eugene J. McGuire, New York City | 5242 |
| Ohio | |
| Clayton L. Henderson, Dayton | 5520 |
| Utah | |
| Norman E. Brown, Salt Lake City | 1311 |
| Wisconsin | |
| Gerald L. Brown, Madison | 5252 |
| *Denotes rehire | |

Congratulations

Mr. and Mrs. John P. Grillo (3311), a daughter, Kristine Fay, Aug. 27.

Sandia's Safety Scoreboard

Sandia Laboratory:
74 DAYS
2,590,000 MAN HOURS
WITHOUT A
DISABLING INJURY

Livermore Laboratory:
85 DAYS
432,700 MAN HOURS
WITHOUT A
DISABLING INJURY