

F. C. Childs Bellcomm Gen'l Atty; F. C. Cheston Named to Fill Vacancy

Sandia Corporation's General Attorney, Secretary and Treasurer, F. Carter Childs, has accepted the position of General Attorney, Secretary and Treasurer, of Bellcomm, Inc. Bellcomm is the new jointly-owned Western Electric and AT&T subsidiary established to provide systems planning support for NASA's Office of Manned Space Flight. Mr. Childs' resignation is effective June 30.

F. C. Cheston, Jr., presently Attorney for Western Electric Company, will succeed Mr. Childs as General Attorney, Secretary and Treasurer of the Corporation, effective July 1, 1962.

Mr. Cheston was graduated from Princeton University in 1935 with a BA degree. In 1938, he received a Bachelor of Laws degree from Harvard Law School. Shortly thereafter, he joined the firm of White and Case in New York City as an attorney.

He began his Western Electric career in 1953 as an attorney at the Company's headquarters in New York. The following year he



F. C. Cheston

became a contract attorney, and on Nov. 1, 1955, he was appointed to his present position. During World War II and the Korean conflict, he served as a commissioned officer in the Judge Advocate General Corps of the U.S. Army.

Adm. Arleigh Burke to Speak At Memorial Day Services

Sandia Corporation employees and their families are invited to attend Memorial Day services at University Stadium at 9:30 a.m., May 30. Principal speaker at the program will be Admiral Arleigh A. Burke, U. S. Navy, (Ret.).

The program will include a memorial service conducted by representatives of the three major faiths, honoring all of the dead, including persons who died in defense of their country.

Admiral Burke, a Navy veteran of 42 years, graduated from the U. S. Naval Academy in 1923. He advanced through grades to the rank of Admiral in 1955. From 1955-61 he was Chief of Naval Operations and a member of the Joint Chiefs of Staff. He is one of America's strongest advocates of high principles, patriotism, and firm religious beliefs.

"We deem ourselves extremely fortunate to have a man of Admiral Burke's standing to address us," W. Peter McAtee, general chairman of the program, commented. "It is our belief that Americanism is everyone's business, and that the program will do much to revitalize the patriotism and loyalties of everyone."

The Memorial Day program will



Adm. Arleigh A. Burke, USN (Ret.)

begin at 9:30 a.m. with the Posting of the Colors and selections by local high school bands. At 10, the Flag-Raising Ceremony will begin. It will be followed by Admiral Burke's address.

The address will be followed by music by the Chanters, the American Legion Drum and Bugle Corps, and the high school bands. After the musical selections, the Memorial Service will be held, honoring the dead of all faiths.

Editorial Comment

Debt of the Living

Logan's Order, a directive of commander-in-chief of the Army, has been intoned in countless cemeteries on warm May 30ths ever since 1868. John A. Logan had ordered that May 30, 1868, be set aside "for the purpose of strewing with flowers or otherwise decorating the graves of comrades who died in defense of their country . . ." He also included in his order the desire that decoration of graves would become an annual affair.

It did become an annual event and in a few years became known as "Memorial Day."

Today, the dead of all wars are honored on May 30. In most communities flowers are placed on every grave, not only on those who died in a war.

There are few men and women in this country who did not lose a friend, relative, or acquaintance in World War II. May 30, 1962, will renew the pain of loss for many Americans. The persons they mourn were very dear, very near. The justness of the cause for which they died will not make the loss less keen.

And now American troops are moving into another far off land. More lives may be lost. The task to be undertaken Memorial Day of 1963 may be even more saddening than that of 1962.

The cost of freedom has always been lives. There is little to indicate that this will change. Those of us who did not give our lives for freedom will pause this Memorial Day to say a word of prayer for those who did. Their sacrifice was complete; ours was slight.

The least those living can do is continue to preserve the freedom others died protecting.

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Sandia Engineering Reactor Facility Construction Phase Is Now Completed

Although minor modifications are being performed by sub-contractors, the Sandia Engineering Reactor Facility (SERF) is essentially complete. Some personnel of Radiation Physics Department 5310 and Radiation Effects Department 5320 have occupied the structure since the middle of last month performing "checking-out" programs.

The reactor is expected to go critical in July.

SERF was shown to representatives of local press, radio, and television and national news services May 14-15.

SERF has been under construction three years. The three-level structure contains approximately 20,000 sq. ft. of space. Some 7000 cu. yards or 28,350,000 lbs. of concrete went into its walls, floors, and shielding. Shielding concrete is a high-density type containing magnetite and steel balls.

Construction, equipment, and projects costs for SERF have totaled \$3,185,000.

Primary purpose of SERF is to study effects of nuclear radiation on materials, electronic components, and electronic circuitry. Conditions of heat, cold, pressure, vacuum, and vibration may be created in SERF for compounding stresses on test materials. SERF provides facilities for fundamental and applied research which uses both the particulate nature and wave nature of neutrons.

Salient features of SERF include:

A five-megawatt thermal neutron reactor in a dry irradiation cell;

A "hot (radioactive) area" with six through-the-wall manipulator positions and remotely operated handling equipment;

A beam tube facility which permits the extraction of neutron beams from the reactor;

A hydraulic shuttle tube which sends experiments in capsules to the core of the reactor;

A controlled-temperature facility which makes it possible to cool

or heat objects undergoing irradiation;

Very low temperature irradiation facilities provided by two cryostats — apparatus for maintaining and regulating low temperatures to -423°F.;

High temperature irradiation facilities up to 700°F.; and

Radiation locks with movable shield doors so that experiments may be positioned in or removed from the irradiation cell by means of a remotely operated tug, without shutting down the reactor.

The layout of SERF, as well as the design of ventilation and the radioactive waste systems, prevents dispersion of hazardous gases and materials. Constant monitoring will assure ample warning should there be any increase in radioactivity.

SERF is designed to:

Permit leakage of neutrons and gamma rays from the reactor into the irradiation cell to perform radiation effects experiments;

Allow the movement of test specimens into and from the ir-

radiation cell without interrupting other experiments;

Permit the reactor to operate uninterrupted on long-exposure radiation effects experiments;

Subject test objects in the irradiation cell to vibration and variations in temperature and pressure in controlled combinations during exposure to nuclear radiation;

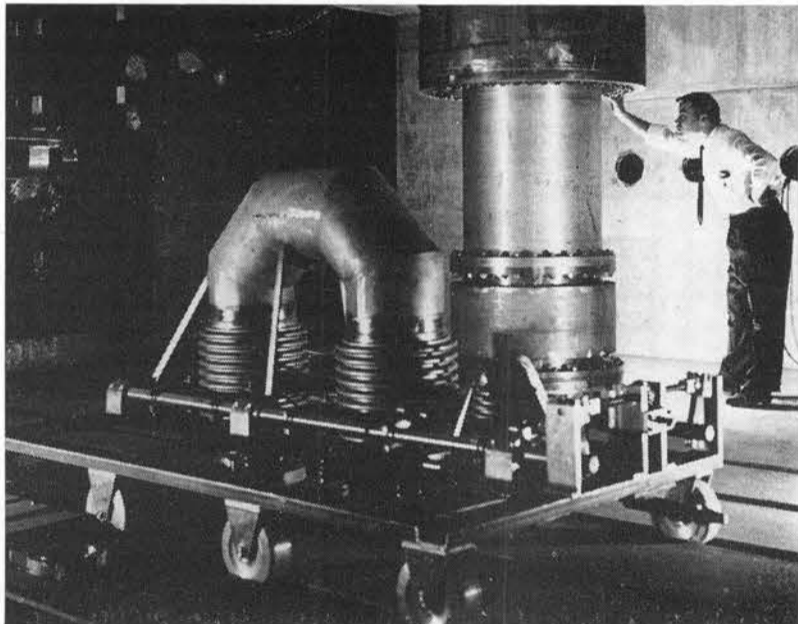
Instrument specimens for remote monitoring during dynamic tests;

Permit post-irradiation analyses of test specimens in hot laboratories;

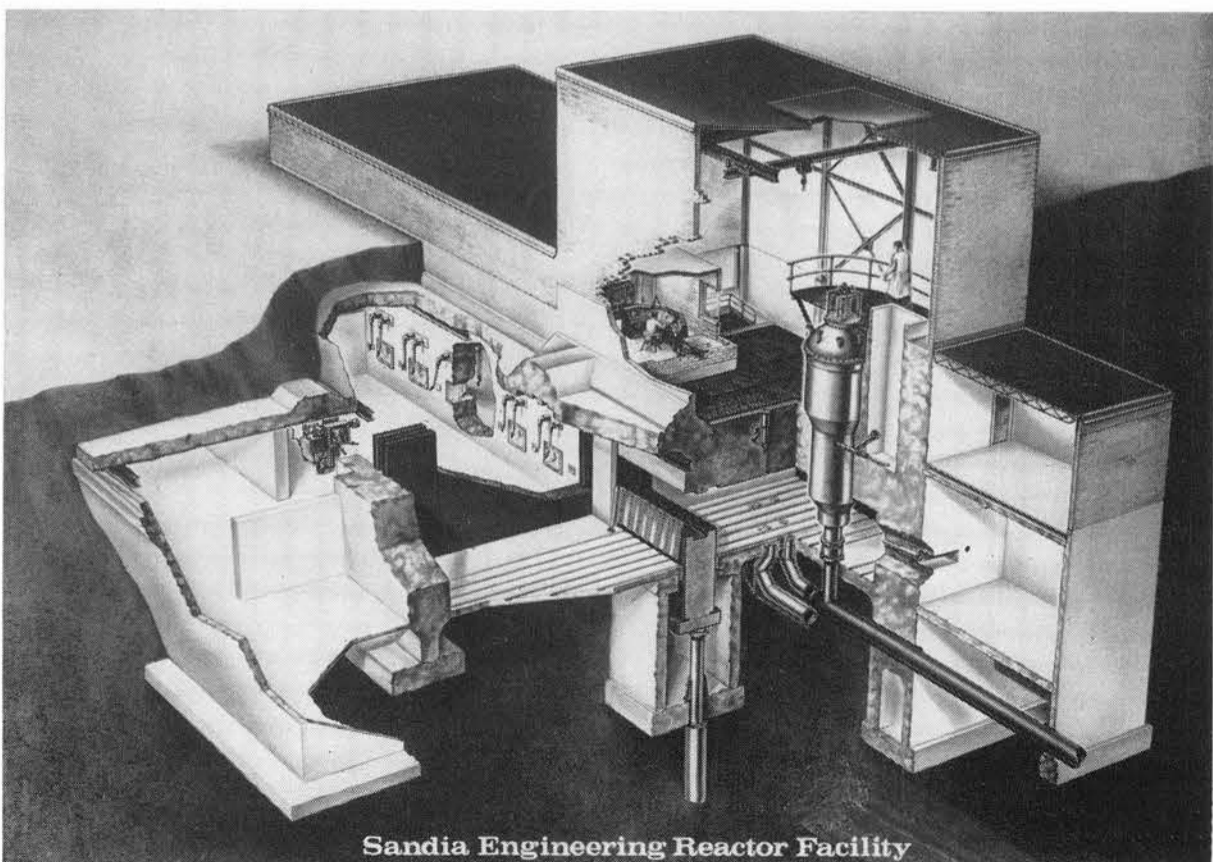
Provide limited in-core irradiation for the preparation of short-lived radioisotopes and the irradiation of small specimens; and

Permit isolation of areas where radioactive material and contamination may exist and to provide maximum safety control.

Pressure Vessel and Core
A 28-ft.-tall stainless steel pressure vessel contains the reactor. Access to the core is convenient (Continued on Page Three)



C. A. ANDERSON inspects interior of SERF irradiation cell prior to operation of the reactor. The lower portion of the pressure vessel and core shell extend from the ceiling to the floor. One of the trailers used for transporting experiments into the cell is in foreground.



Sandia Engineering Reactor Facility

ARTIST'S SKETCH shows general layout of the recently completed Sandia Engineering Reactor Facility (SERF). Some of the special remotely operated equipment for handling experiments in the large post-irradiation analysis rooms is shown

in the left center of the drawing. The 28-ft. tall stainless steel pressure vessel, which contains the reactor and provides access to the reactor core, is shown at right center. Control console with operator is shown in the center of the photograph.



A TOUCH OF SUN is enjoyed at the Coronado Club swimming pool by Sandy Hults, left, and Barbara Hanna. Both girls are employed at the Coronado Club. The pool will be open May 26, 27, and 30, and every day beginning June 2. Club season swimming memberships are available at \$5.10 for adults; \$2.55 for children.

Rio Grande Boat Races Challenge Sandia White Water Enthusiasts

The Fifth Annual Rio Grande Boat Race will be held Sunday, May 27, near Pilar, N. M., with a group of Sandia "white water" enthusiasts planning an overnight camp-out in connection with the event.

The race starts at 1 p.m. just south of Pilar (24 miles south of Taos) and ends 4.7 miles downstream at the Taos-Rio Arriba County line. Spectators alongside U. S. Highway 64 will be able to follow the kayaks and rubber rafts through "The Narrows," beneath low-swinging Glen Woody bridge, past "Big Rock Rapids" where the river pinches down to 10 ft. in width, and past "Sousehole Turn" where there is a large "hole" in the fast-moving water before an irrigation diversion dam.

In previous years winning times for rubber rafts have been about 50 minutes and 25 minutes for kayaks. Times are faster when the Rio is in flood stage.

Boatmen from the Albuquerque White Water Club plan to camp alongside a calm stretch of the Rio Grande on Saturday for a few practice runs. Saturday night movies of river cruises will be

shown using a portable electric generator. All boatmen are encouraged to bring movies or slides. The public is invited.

Sandians planning to be on hand for the race (on the shore or in the water) include P. J. Komen (1422), J. R. Brathovde (5151), H. E. Harling (5300), George Steck (5425), J. E. Gross (1413-2), Al Hachigian (2313-2), and H. H. Patterson (7160).

Participants may register before the race with J. H. Fretwell of the Los Alamos Outdoor Association, Inc., sponsors of the event. All boatmen must be at least 21 years old, and wear a suitable life jacket.



Elaine Cooper (3126/1113)

Take a Memo, Please

Get help or use mechanical aids when a heavy or awkward load must be moved.

O-Positive Blood Needed for Wife Of Sandia Man

Since 1948 Mrs. Muriel Newfield, wife of Edward J. Newfield, (2642), has needed a transfusion of one to two pints of blood each month. She is suffering from a rare blood disease called either Cooley's or Mediterranean anemia. She is able to perform normal activities as long as transfusions continue.

"The problem is finding donors," Ed says. "We must find persons with type O-positive blood, but not all O-positive blood is compatible.

"We are deeply grateful to many persons who have helped in the past. They are still helping, but this compatibility requirement changes seemingly from transfusion to transfusion, and it is necessary to continually find new donors."

Anyone with O-positive blood is urged to contact Ed, ext. 32235.

Frank W. Cazier Receives WE Fund Scholarship at Colo. U.

Last summer, Frank W. Cazier, Jr., was employed by Sandia Corporation as a summer-hire draftsman. Formerly from Albuquerque, Frank now lives in Boulder, Colo., where he majors in aeronautical engineering at the University of Colorado.



He recently received a Western Electric Fund Scholarship for the coming academic year. The scholarship is awarded on the basis of a student's academic achievement, and is drawn by an academic committee from a fund provided by the Western Electric Company.

The reasons for Frank's having received the scholarship are not hard to fathom. His high school studies emphasized science and mathematics. In college, he is maintaining a 3.811 grade-point average in his major field. (4. is "A" or perfect.)

He is participating in the Army ROTC program. He has received the Freshman Chemistry Award, the Army ROTC Superior Cadet Award, and the outstanding pledge award from Sigma Tau. This year, he became a member of Tau Beta Pi, an engineering honorary fraternity. For the past three semesters, he has been president of Tri-C, a campus religious organization.

Frank counts his summer-hire experience at Sandia as significant in shaping his career plans. Upon graduation, he will enter active duty in the Army, but after his military service, he hopes to apply for employment at Sandia Corporation.

Frank's family are strong advocates of his plans. His wife, Connie, is employed by the Mountain States Telephone Company

Congratulations

Mr. and Mrs. E. A. Koenig (7132) a daughter, Melinda Sue, on May 7.

Mr. and Mrs. F. W. Neilson (5130) a son, David Hayes, on May 9.

Mr. and Mrs. Marvin L. Coon (4151-3) a daughter, Peggy Linn on May 8.

Mr. and Mrs. Wendell Nelson (4152-2) a son, Brian Terry, on May 4.

Mr. and Mrs. Louis C. Brossard (1121) a daughter, Lisa Ann, on May 12.

Mr. and Mrs. Everett V. Breeden (4513-2) a daughter, Virginia Lee, on May 3.

Mr. and Mrs. R. P. Clark (1323-2) a son, Robert Carl, Jr., on May 8.

Mr. and Mrs. John Armijo (4234-1) an adopted son, David.

Sympathy

To L. P. Wilson (1121) for the death of his wife May 11.

To V. E. Arnold (1124) for the death of his father in Anthony, Tex., May 9.

To Alfredo Fernandez (4573) for the death of his father-in-law on May 2, and the death of his father in Taos May 6.

To Lloyd Kelton (4573) for the recent death of his father-in-law in Hot Springs.

To Carlos Candelaria (4573) for the recent death of his brother in Albuquerque.

To D. J. Massey (7532-1) for the death of his brother in Covington, Ind., May 1.

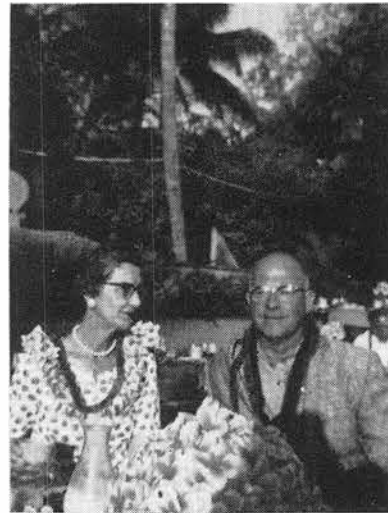
To Amadeo Ortiz (4212-1) for the death of his brother-in-law in Los Angeles May 8, and for the death of his father-in-law in Albuquerque May 13.

To John H. Formea (4511-4) for the death of his mother-in-law in Illinois May 12.

To Louis E. Armijo (4234-1) for the death of his mother in Albuquerque recently.

in Boulder. His mother, Mrs. Rose Cazier (7180) is a Sandia employee. His father-in-law is employed by the Atomic Energy Commission in Albuquerque.

Frank Cazier is one of many young people who have gained from their experiences in Sandia's summer-hire program. He is one of the fine young men continually sought as permanent employees by Sandia Corporation, and the type Sandia counts upon as a strong asset.



WEDDING anniversary luau in Hawaii for Frances and Wilbur Scheaffer, both Sandians.

Luau-Anniversary Party for Scheaffers

A luau at the Queen's Surf Hotel in Honolulu helped make Frances (4423) and Wilbur Scheaffer's (7231) 35th wedding anniversary this month a memorable event. Wilbur is temporarily assigned to Hawaii; Frances visited the islands on a two weeks' vacation.

Almost-Mother-of-Year One of Five Finalists From 8200 Candidates

When the "Mother-of-the-Year" contest was held in Albuquerque last week, LuVena Trujillo (4573) was one of the five finalists chosen from approximately 8200 entries.

Although LuVena wasn't the final winner, she received a gift certificate and corsage, and appeared on radio and TV. The decisive questions on the personal interview were mostly on child rearing. LuVena says, "I think that's where I goofed. I have a tendency to be somewhat lenient with my children — and my husband has the same tendency."

Eugene Trujillo, age 12, secretly registered his mother for the contest. Their 15-year-old daughter Elizabeth was looking forward to a trip to Las Vegas if LuVena won.

Base Day Nursery Will Accept 7 & 8 Year Olds For Summer Session

The Sandia Base Day Nursery will accept seven- and eight-year-old children during the summer months with handicrafts, music, swimming, and supervised play offered. Further information may be obtained at ext. 34120. The Day Nursery is now open Monday through Friday from 6:30 a.m. to 5 p.m.



APPOINTED—Charles C. Campbell, formerly manager of the Sandia Area Office of the Atomic Energy Commission, has been named new manager of the Commission's Los Alamos Area Office. He succeeds John J. Burke who is being transferred to AEC's Washington Hdqtrs.

Retiree Visits Friends At Sandia Laboratory

A retired Sandia Corporation employee returned to Albuquerque for a visit this month and was honored at a luncheon at the Coronado Club.

Approximately 25 of Henry Strege's former co-workers in Department 2450 attended the event on May 11. Mr. Strege retired last September and has since opened a TV repair shop in Billingham, Minn.

Salomon Jaramillo Retires from Sandia

Salomon Jaramillo (4574), a Corporation employee since Oc-



tober 1950, will retire May 28. He has been on sick leave since February.

He and his wife live at 2420 Hollywood NW. A daughter and grandchild also make their home there. The Jaramillos have a second daughter and two sons. The couple has been married 42 years.

Mr. Jaramillo will be visiting the Jemez area where he usually has a small garden plot on his brother's land. "Our family has been there a long time," he remarked. "My grandfather died in the 1930's at the age of 96, and he had lived at Jemez his entire life."

Bruce C. Slack Died May 8

Bruce C. Slack of Design Definition Section 4411-5 died May 8 after a lengthy illness. He was 44.

Mr. Slack joined the Bell Telephone Laboratories 25 years ago and had been assigned to Sandia Corporation since May 1957.

Survivors include his widow, two children—Paul 13 and Diane 16—and his mother, who resides in San Diego, Calif.

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Paul Delker to Help Establish New Peace Corps Training Procedures

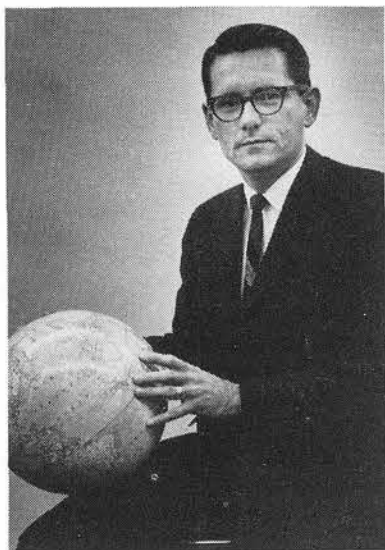
On May 18, Paul V. Delker of Staff and Management Development Section 3131-1 began a five-month leave of absence from Sandia Corporation. Paul will spend the time in Washington, D. C., as a training officer with the Peace Corps, establishing training procedures at seven universities in the Washington area.

"The training procedures are part of a new program involving a different means of utilizing existing facilities for training Peace Corps volunteers," Paul explains. Formerly, groups of volunteers for foreign duty in a specific country were sent to one college or university where they received their entire Peace Corps training.

Under the new system, however, each group of volunteers will be trained by teachers in several colleges and universities. A group of approximately 600 volunteers—some 25 per cent of the year's total volunteers—will be trained under the new system, utilizing the talents and facilities of seven schools located in the Washington area. Later, the system may be initiated in other areas of the country.

"The program will be divided into three phases: college academic training, physical-cultural conditioning, and indoctrination in the customs of the country to which the volunteer is assigned," Paul continues. "The use of the seven Washington-area schools in the first phase represents the Peace Corps' first use of an integrated program designed to secure the best training facilities available in U. S. colleges and universities."

His job will involve development of college academic training courses. Volunteers will receive



LEAVE OF ABSENCE for Paul V. Delker (3131-1) will enable him to spend five months in Washington D. C., establishing training procedures for the Peace Corps. He started his training duties this month.

training in a specific trade or technical subject, and in language, American studies, world affairs, health and medical training, physical training and recreation, and Peace Corps orientation.

At Sandia Corporation, Paul develops and conducts staff- and supervisor - training conferences. "In a sense," he says, "the Peace Corps work is based on an adult-education program related to industrial training. Perhaps my work at Sandia will enable me to provide significant help in implementing the new program. At any rate, I feel privileged to be called on to aid the Corps in its vital work."

Supervisory Appointments

EDWARD J. PETERSON to supervisor of Branch Shop Section 4252-6, Mechanical Department.



Ed has worked as a Model and Instrument Maker in the Development Shops since he came to Sandia nearly 10 years ago. During his employment here he served two years as president of Machinist Local 1689, two and a half years as vice president of the Metal Trades Council, and since January 1961 has been president of the Council. The Metal Trades Council represents some 1200 members of 12 affiliated locals.

Ed previously worked four years for Davey Compressor Company in Kent, Ohio, and was with another machine company in Kent for seven years at which time he served his machinist apprenticeship.

After graduation from Roosevelt High School in Kent, Ed served two years in the Merchant Marine.

ROBERT M. JEFFERSON to supervisor of Facilities and Equipment Section 5331-1, Reactor Facilities and Operations Division.



Bob has been assigned to the Radiation Effects group during his five years at Sandia Lab. In this period he worked as one of the project engineers on Sandia Engineering Reactor Facility (SERF) and in designing much of the equipment for it, and was also connected with design of Sandia Pulsed Reactor Facility (SPRF).

Previously he served three years in the Air Force, part of the time assigned to Sandia Base as Field Command control officer and as an instructor in Physics and Life Sciences for the nuclear branch of Training Command, FC/DASA.

Bob worked for Convair in Fort Worth, Tex., in design of landing gear in the hydraulics group following graduation from Michigan College of Mining and Technology with a BS degree in mechanical engineering. He has finished all course work for a Master's degree in business administration at the University of New Mexico.

Article to Appear

S. H. Peres (3133) and P. H. Arnold (3451) have been informed that their article, "Performance Dimensions of Programmer Positions," will appear in an early issue of *Communications of the Association for Computing Machinery*.



TECHNICAL ASPECTS of reactor core of Sandia Engineering Reactor Facility (SERF) are explained by F. A. Hasenkamp (5331-2), left, to newsmen during press tour of the Facility on May 15. Bob Brashear, center, is from ALBUQUERQUE TRIBUNE, and Bill Tucker is from KOB-TV. Twelve newsmen made the SERF tour.

Continued from Page One . . .

SERF Construction Complete

and, if necessary, the core could be replaced completely. Several parts of the vessel—rupture disc, core container, and expansion joint—can also be replaced by remote handling techniques.

The core container is made of aluminum surrounding a partial cylindrical sheet of boral (aluminum and boron carbide material). The boral reduces the number of low-energy (thermal) neutrons escaping from the core region. Three inches of cooling water between the core assembly and the inside surface of the vessel also serves to reflect some of the neutrons back into the reactor.

The pressure vessel is eight feet in diameter at its widest point, and narrows down to 30 inches in the core section. Cooling water enters a 12-in. inlet in the side of the vessel, is then diverted upward around the periphery of the vessel, and flows downward through the core zone to an outlet pipe. Water stands 21 feet deep between the fuel elements and the top of the vessel, providing an efficient radiation shield.

Fuel for SERF will be enriched (93.5 per cent U-235) uranium.

The reactor core is divided into quadrants, each containing eight positions for fuel elements and one position for a shuttle tube. In the spaces between the quadrants are the control blades which, with the central control rod, can be manipulated to increase or decrease the rate of the chain reaction and, consequently, reactor power.

Control Room

Adjoining the upper reactor room is the operating control room. The operator at the control console can place the reactor on "automatic" operation, with constant monitoring, or he can operate it manually.

All SERF operating information is available to the control panel operator. Information instantaneously available to him from the instrument display panels includes the exact location of the control rods in relation to the reactor core; the temperature of the water coolant at several locations in the system; radiation levels at key points in the building; and the position of the shielding doors around the irradiation cell.

At least one qualified reactor operator, one qualified reactor supervisor, and one health physicist will be on duty whenever the reactor is in operation.

In addition to instrumentation for reading operating information and for controlling the reactor, the operator has five different communications systems with

which he can contact all parts of the facility and certain offices at Sandia Lab in Tech Area I.

Post-Irradiation Analysis Area

The large post-irradiation area is a unique feature of SERF. Most irradiation facilities use a series of individual hot cells for post-irradiation analysis. Advantages of the large hot area include maximum flexibility for post-irradiation tests and a considerable savings in initial construction costs.

The analysis and testing area of SERF consists of two rooms each 100-by-30-ft. In the west wall of one room are "manipulators" where operators, peering into the analysis and test area through two-ft.-thick lead glass windows, operate "master-slave manipulators."

Other remote handling equipment includes bridge cranes and monorails, a robot mobile remote handler, a robot fork-lift truck, and a radio-controlled tow tug.

"Sandy Mobot" will handle most operations in the large hot areas of SERF. This robot mobile remote handler is completely controlled from behind a shielding wall. Power and information are transmitted through a trailing cable. It is equipped with three television cameras, two mechanical arms, and a radiation monitor.

Operating Personnel

About 60 persons will work full time at SERF with about 20 others spending part of their time there.

Operation of SERF will be performed by Reactor Facilities and Operations Division 5331 under W. C. Hunter.

Facilities and Equipment Section, 5331-1, headed by R. M. Jefferson, with the assistance of the Plant Engineering Organization, did SERF preliminary design work. The section is now working on special test equipment and fixtures and helping prepare experiments to be undertaken by SERF.

SERF Operations Section 5331-2, C. A. Anderson, supervisor, has responsibility for operation and maintenance of SERF and will assist in experiments.

Startup experiments will be handled by 5331-2 staff members F. A. Hasenkamp, J. G. Lareau, J. A. Moeller, and W. H. Schmidt. They will supervise reactor operations and will conduct some original research projects.

Assisting the Section staff will be N. C. Lucas, W. H. McAtee, L. W. Morrison, K. E. Nowotny, R. G. Tackett, and D. N. Todd.

The third section in the division, SPRF Operations 5331-3, headed by P. D. O'Brien, operates and maintains Sandia's Pulsed Reactor Facility.

K. A. Smith to Head Division II Of 1962 Albuquerque UCF Drive

K. A. Smith, Director of Information, Publications, and Public Relations, has been appointed campaign vice chairman in charge of Soliciting Division II for the 1962 United Community Fund campaign. Mr. Smith's appointment is to the position recently vacated by F. Carter Childs. Mr. Childs is leaving Albuquerque to accept a position with Bellcomm, Inc., in Washington, D. C., July 1.

A. H. Spiegel, Albuquerque UCF Campaign Chairman, expressed regret for the community's loss at the transfer of Mr. Childs, but expressed his pleasure at being able to announce Mr. Smith's appointment. "Mr. Smith has worked on past campaigns," Mr. Spiegel said, "and is well qualified to take over the position."

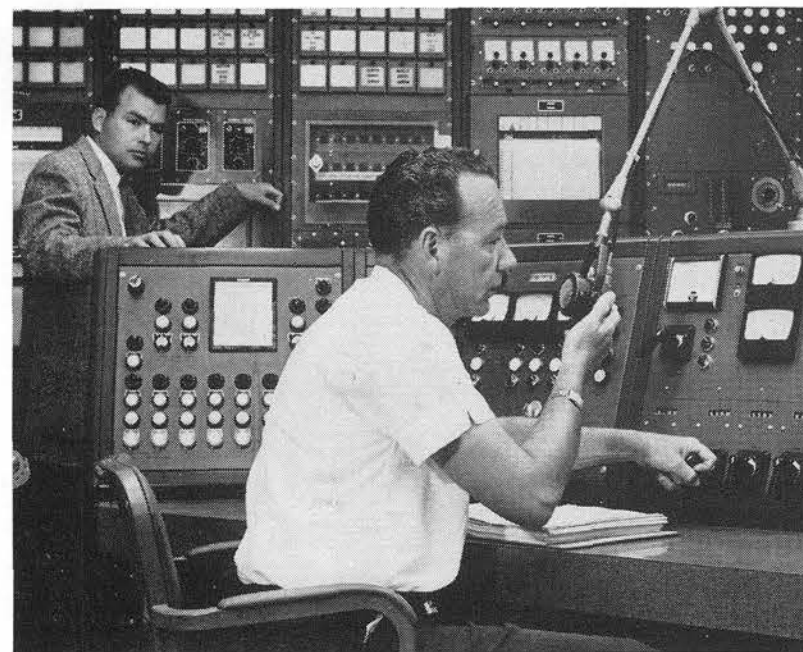
Soliciting Division II includes: the Atomic Section, headed by W. Lee Hancock; the Schools, Colleges, and Hospitals Section, headed by W. C. Scrivner; and

Seek Students for Special Course at UNM This Fall

University Education and Liaison Section 3131-2 has announced that a four-credit course in Manufacturing Processes, 63L, can be made available to Sandia employees by the University of New Mexico if 15 or more sign up.

The course, required in the Mechanical Engineering curriculum, would meet on Tuesday and Thursday, 5:20 to 6:10 p.m., with a laboratory session on Saturday, 7 a.m. to noon. All classes would be on the UNM campus.

The class would start Sept. 25. As fall schedules are now being prepared, prompt action is necessary. Interested persons are asked to call Section 3131-2 at ext. 4-5157.



SERF CONTROL CONSOLE displays necessary operation information to operator, F. A. Hasenkamp, right. He can place the reactor on automatic operation or control it manually. At left is C. A. Anderson, the supervisor of SERF Operations Section 5331-2.

Physical Research Scientists Explore Frontiers of New Knowledge, Understanding

Although a Sandia scientific program may be of pure or fundamental nature, it is chosen in a field of direct interest and is relevant to our engineering problems. In this way, R. S. Claassen, Director of Physical Research 5100, explained the function of his organization.

"Our work," he said, "should not be judged by the same standards as one judges the work of an engineering group. We place less emphasis on the apparatus-type product, and more importance on the scientific output of an individual and the gaining of new knowledge or new understanding."

In determining an individual's research project, the area suitable for Sandia is generally defined by the supervisor. The specific problem and method of solution is left up to the individual. In working on such projects, Staff Members (most have their doctoral degrees) are paired with Staff Assistants (in most cases graduates of Technical Institutes who gain broad on-the-job experience as research technicians).

For the past year, the organization has made a particular effort to add Ph.D.'s. As a result, 17 additional men with doctoral degrees have joined 5100. "Work on a doctorate is natural training for research," Mr. Claassen said, "but individuals with other academic backgrounds make equal contributions."

Organization 5100 has been strengthening its capabilities for the past four years and will continue to do so in line with the general Corporation philosophy of increased research activity. In addition to the increase in number of employees, there has also been more interest in informing the scientific community about Sandia Corporation. This is done through the publication of articles in scientific journals and books, and through presentation of talks at scientific and technical meetings. This emphasis has a dual purpose: it keeps Sandia's scientists in personal contact with the scientific community and informed of the research activities of others.

Nuclear Burst Physics Department 5110 is oriented toward research in natural phenomena and environments (earth, atmosphere, upper atmosphere, and space). Physical Research Department 5130 is interested in research leading to new components (or "hardware"). Physical Sciences Research Department 5150 does research based on scientific or engineering problems which recur throughout Sandia projects and in which much fundamental understanding is still missing.

Research in Natural Phenomena
Thomas B. Cook, manager of Nuclear Burst Physics Department 5110, defines his group's job as "to understand nuclear weapons outputs for the ultimate purpose of allowing better use of nuclear explosions whether for peaceful or mili-

tary applications. An essential part of this effort is to conceive, plan, and be responsible for the scientific experiments performed at full-scale nuclear tests."

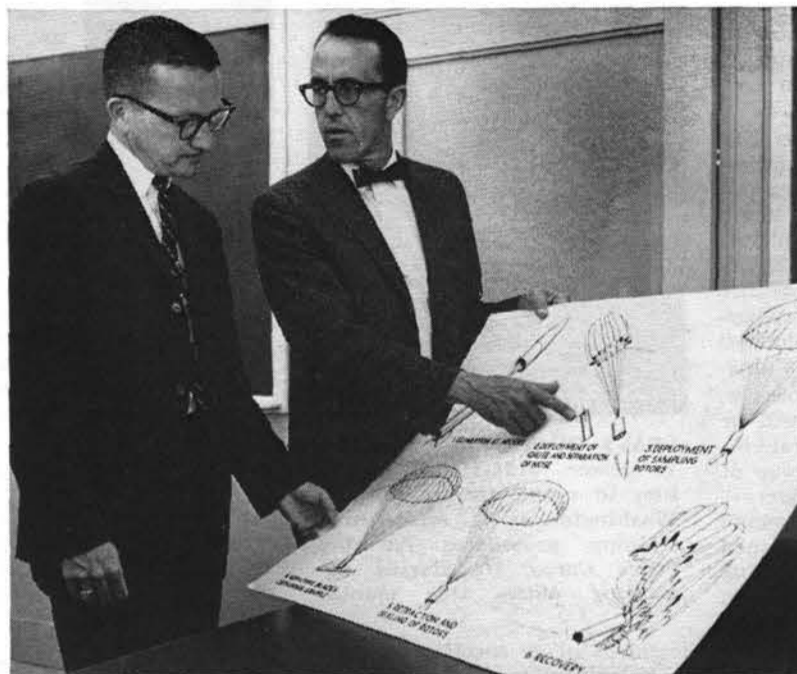
When Field Testing organization 7200 conducts Sandia's part of full-scale programs, a project scientist from Department 5110 is usually paired with a project officer from Aerospace Instrumentation Department 7230 for upper atmosphere shots or from Nuclear Test Department 7250 for underground experiments. The most exciting and unexplored areas of phenomena produced by nuclear bursts now lies in high altitudes and underground because so much information has been gained during the 1950's on explosions in the atmosphere near the earth's surface.

During the moratorium on nuclear testing, Theory and Analysis Division 5111, headed by Clarence Mehl, analyzed data and produced theories of weapon outputs. Lab experiments provided guidance for theoretical models. Men in this division work in the fields of nuclear radiation, electromagnetic field theory, plasma physics, spectroscopy and hydrodynamics. "We seek useful theoreticians — those who have the ability to develop new theoretical results and in addition can bring their analytical ability to bear on explaining an experiment or suggesting a new experiment which will give us further insight into a physical phenomenon," Mr. Cook explained.

Explosives Research
Underground Physics Division 5112, M. L. Merritt supervisor, studies physical events in the following general categories: explosion or transient hydrodynamic measurements, equation of state of materials at high pressures (how materials are compressed by pressure); plastic deformation of geologic materials (possible from field measurements and lab work); and character of seismic signals from explosives, explosive crater formation mechanisms and their dependence on yield.

Conventional high explosives tests have been conducted in Coyote Canyon for years. Studies of this type help determine how deep, how large a charge, and what instrumentation is needed for desired scientific data. A series of HE cratering tests conducted at Nevada Test Site in 1960 culminated with the "Scooter" shot in which 1,000,000 lbs. of TNT was buried 125 ft. in desert alluvium.

This study was part of the Ploshare Program to determine reaction times of nuclear explosions. As early as 1956, L. J. Vortman (5112) reported on peaceful applications of craters from nuclear explosives and high explosives. He predicted the results of detonating simultaneously individual, spaced nuclear



J. D. SHREVE (5114), who is in charge of Sampling of Aerospace Nuclear Debris program, shows T. B. Cook, Manager of Nuclear Burst Physics Department 5110, how physical samples would be obtained at high altitudes and returned for later laboratory study.

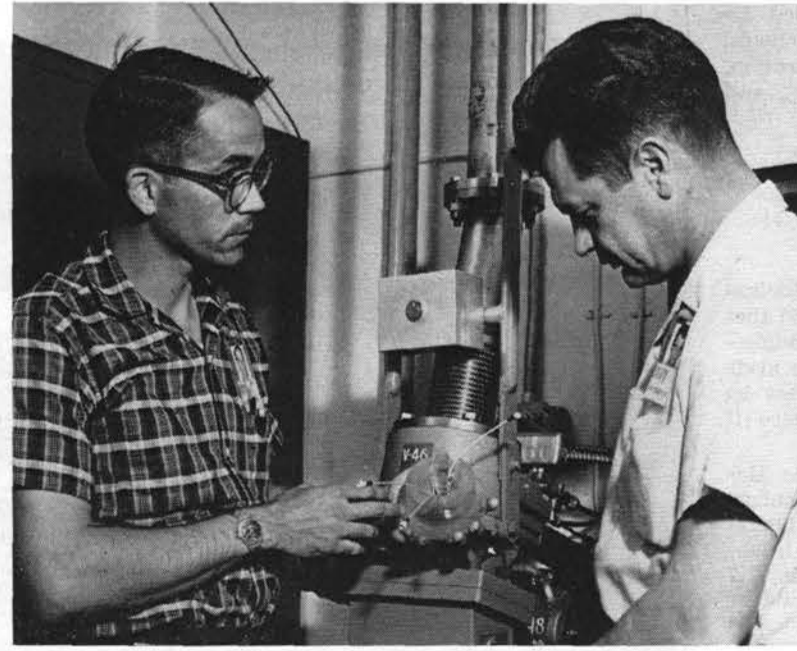
charges to produce a linear crater or ditch which could be used for a 600 ft.-wide ship canal in Central America.

Members of Radiation Physics Division 5113, under the direction of C. D. Broyles, are studying many forms of radiation which are of interest in upper-atmospheric and space bursts of nuclear explosions. This radiation ranges from the visible light which we can see, through the ultra-violet, into the range of x-rays and gamma rays. Particle radiation, such as neutrons, beta rays, and heavy charged particles, is of equal interest.

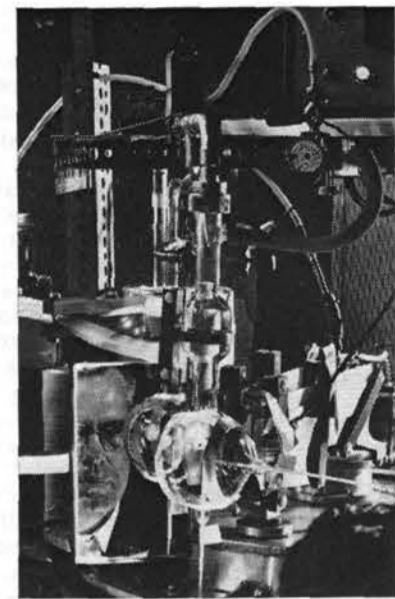
At the present time much of the work is in connection with the full-scale test program. Measurements of the intensity and color distribution of light were made on the previous high-altitude shots in 1958 and have been planned for this year's test also. These require many different types of high-speed cameras and spectrographs. These measurements not only provide an understanding of radiation from a nuclear explosion but also help to determine the physical properties of the upper atmosphere and to understand natural phenomena that occur then, such as auroras.

These studies use scintillation detectors and the newer semiconductor junction detector to measure the number and energy of the gamma rays, x-rays, and neutrons put out by a nuclear explosion.

Properties of Atmosphere
During the moratorium several laboratory programs were developed to study the properties of the upper atmosphere when it is exposed to a nuclear burst. Better



RESEARCH on piezoelectric properties of dynamically shocked single crystal quartz, carried on by R. A. Graham (left) and F. W. Neilson (both 5130), led to development of quartz gauge for measuring stress-time profiles in other materials. Mr. Graham holds one of gauge configurations used for experiments in helium air gun.



FACE OF PHYSICIST John Banister, supervisor of Research Division 5153, is reflected in mirror used in plasma assemblage experiment with magnetic cusp geometry. Magnetohydrodynamics is one of fields which holds his organization's interest.

aerodynamic heating, physics of melting and vaporization, and chemical reactions of fuel materials with oxygen, to determine behavior of radioactive materials in the upper atmosphere for the Aerospace Nuclear Safety program (see Lab News, Apr. 13, 1962).

Scientists of Physical Research Department 5130 work in the fields of physics, chemistry, metallurgy, ceramics, electrical engineering, mechanical engineering and applied mathematics. Frank W. Neilson, 5130 department manager, said, "We feel each program must be broad enough so that the work at the proper stage is capable of being engineered. The emphasis is on fields of interest directly applicable to Sandia needs."

The work of the Department is divided into six general programs: Materials, including growth of single crystals, ceramics, and metallurgy; Physical Properties (solid state), including ferroelectrics with emphasis on those with an anti-ferroelectric phase, ferromagnetics, and superconductivity;

High Pressure, static pressures in the order of 100,000 atmospheres and dynamic or shock pressures up to 1,000,000 atmospheres.

Internal Field or nuclear magnetic resonance, with emphasis on ferroelectrics and high pressure effects; High Magnetic Fields, in the range of 1,000,000 gauss, with interest in both the production of the fields and the behavior of materials under the influence of the fields;

Initiation of Explosives and Detonators. "In making these studies," Mr. Neilson explained, "we attempt to avoid isolated problems—each individual's research problem ties in with those of others."

Static High Pressure
Don Killpatrick, Ralph Olson, George Samara, and Charles Daniel (Applied Research Division 5132) are working on static high pressure studies of materials. In one experiment, material is placed in the test chamber of a hydrostatic apparatus to determine electrical conductivity. The machine can also be modified for compressibility studies. Material can be tested under 30,000 atmospheres of pressure at 200°C. through use of a liquid medium (pentane) or at 800-1000°C. using nitrogen. (One atmosphere equals approximately 15 lbs./sq. in.)

Another static high pressure apparatus is a tetrahedral anvil, which applies 100,000 atmospheres of pressure at 3000°C. This is used to study chemical reactions of solids at high pressures and for studies of synthesis of new materials. After undergoing the extremely



RECRUITING PROGRAM for new employees with doctoral degrees has resulted in 17 additions to the 5100 organization in the past year. R. S. Claassen, Director of Physical Research 5100, (left) is discussing a candidate's qualifications with F. P. Hudson, Manager of Physical Sciences Research Department 5150.

high pressure, X-ray diffraction studies are made of the samples.

Recent research in Department 5130 on the piezoelectric properties of dynamically stressed (shocked) single crystal quartz has led to the development of a gauge for measuring stress-time profiles in shocked materials. Frank Neilson describes the quartz gauge as a tool for use in studies of the dynamic yield of materials and dynamic pressure-induced phase changes. The quartz gauge has proved useful in studies involving pressures through 21,000 atmospheres (315,000 lbs./sq. in.).

The gauge is being studied and used by members of Dynamic Stress Research Division 5133. O. E. Jones and W. J. Halpin are using the quartz gauge to study the dynamic yield behavior of various metals. Properties of quartz and other piezoelectric materials are being studied by R. A. Graham.

Various methods are used to apply the dynamic stress. Conventional high explosives are used at a site in Area IV and a compressed air gun is used in Bldg. 808. Recently a helium gun with a capability of applying an impact pressure of 3,000,000 lbs./sq. in. has been placed in operation.

The compressed air gun was designed by C. F. Muehlenweg, supervisor of Design Section 5134-1, and Sig Thunborg (5134-1) designed the helium gun. Since the time scale of the experiments is less than one microsecond, the data are gathered by high speed oscilloscopes. W. B. Benedict (5133) is also closely connected with this project.

Broad Scientific Territory
Nine general areas of research are covered by Physical Sciences Research Department 5150. "Our responsibility is to study the broad range of scientific territory which forms a foundation for Sandia's engineering activities," said Department Manager Frank P. Hudson. "We accomplish this through projects which emphasize the responsibility of the individual scientist for all aspects of a program — theoretical, experimental, as well as the general area of scientific activity and its relationship to Sandia programs."

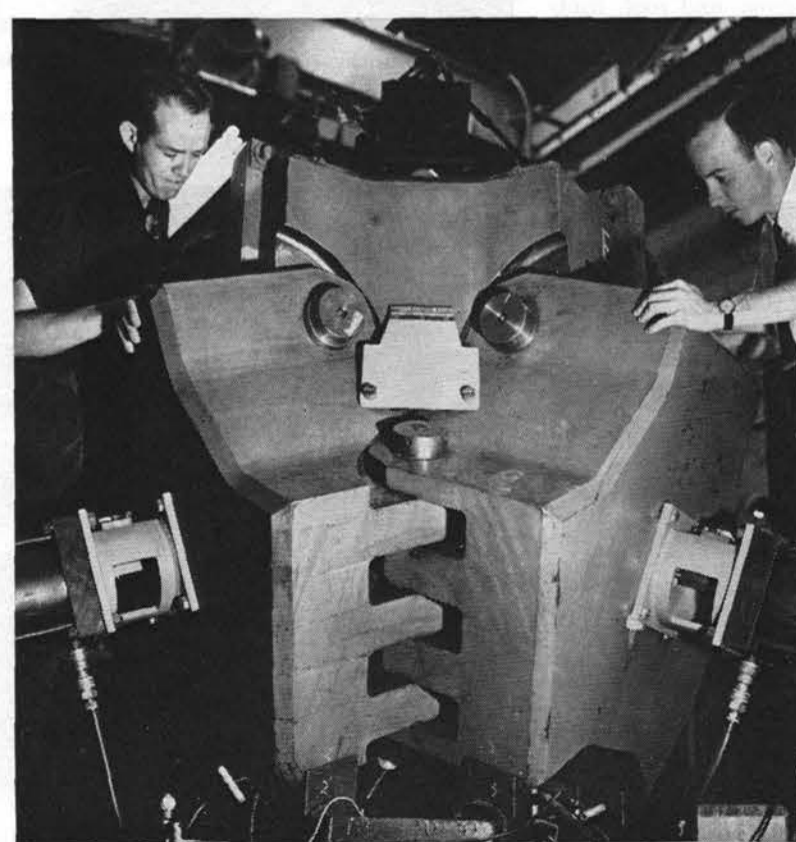
Division 5151 has Staff Members engaged in Solid State Physics studying magnetism in crystalline solids, Fermi surfaces, and magnetoresistance; Molecular and Crystal Structure studies using optical spectroscopy; and X-ray and neutron diffraction; and Radiation Effects experiments in mechanism of radiation protection, kinetics of radiation effects produced in polymers, and diffusion of radiation-induced defects in an electric field.

Division 5152's fields and specific problems are: Physical Electronics—fundamental processes occurring in gaseous discharges, secondary emission of electrons from metals using the Cockcroft-Walton accelerator as a source of energetic protons; Theoretical Mechanics — non-linear mechanical problems related to various engineering programs: Theoretical Physics—magnetism, dielectric breakdown, anharmonic lattice vibration in solids. Gordon McClure is supervisor of this division.

The scientific fields in which personnel of Division 5153 are involved are Plasma Physics (magnetohydrodynamics), Chemical Kinetics, and High Temperature Physics (ultrasonic techniques to study properties of grain boundaries in metals).

Magnetohydrodynamics, a branch of fluid mechanics, is the study of behavior of conducting fluids in the presence of magnetic fields. The group at Sandia is concerned with the behavior of dense plasmas which show scalar rather than tensor electrical properties in the presence of moving, rotating, and changing magnetic geometries.

Use Simple Equipment
John R. Banister, supervisor of



STATIC HIGH PRESSURE studies of materials are carried out by Ralph Olson (left) and Don Killpatrick (both 5132) with this tetrahedral anvil. Pressures as high as 100,000 atmospheres at 3000°C are possible. Samples later undergo X-ray diffraction studies.

Research Division 5153 and a physicist working on this problem, said, "We concentrate on studies which can be made with simple equipment, allowing us more flexibility in our experiments." He also mentioned that the Department is interested in developing scientists as well as carrying out research since through such development they enhance the scientific reputation of Sandia and become more useful as consultants to engineering efforts.

E. H. Beckner is also working on the experiment with Mr. Banister. Larry Witt and L. E. Larson (5153) assist them. Their experimental techniques include use of small capacitor banks operated at high voltage, magnetic probing, spectroanalysis, and a framing camera to study phenomena such as luminosity pattern emitted by plasmas. To date the research has produced several studies related to engineering applications.

Another typical experiment is that being conducted in Research Division 5153 by Richard T. Meyer, assisted by James M. Freese. "Our interest," Mr. Meyer said, "is in the reactive intermediate chemical species produced in chemical reactions; these molecular species often have lifetimes as short as microseconds or milliseconds."

Typical examples are the OH and HO₂ radicals, which are present in most systems involving hydrogen and oxygen. Specific interest at the present time is in the role of the HO₂ radical in the decomposition of hydrogen peroxide.

The mode of initiating this chemical reaction is with a flash photolysis technique, in which ultraviolet radiation is absorbed by the gas molecules inducing their decomposition and rapid secondary reactions. A Bendix time-of-flight mass spectrometer provides a complete analysis of the molecules present and their relative concentrations in the reacting system every 100 microseconds.

This chemical kinetics project has application in combustion, flame, and explosion processes, and in understanding the chemistry of the atmosphere. "More important to us," the scientist said, "is that the experimental studies may provide information that will lead to a more quantitative theory of chemical kinetics."



RECRUITING PROCEDURES are discussed by (l to r) R. W. DeVore (3150), J. K. Merillat (3151-1), J. L. Wheeler (3151-1), and Robert N. Ford, Management Supervisor, AT&T, at College Employment Workshop at Western Skies Hotel, Albuquerque, May 7-11.

Patent Issued AEC For Work Done by Former Employee

A patent for "Explosive Means to Separate Casing Members" has been assigned to the Atomic Energy Commission in the name of Neilan E. Botsford, a former Sandia Corporation employee. Mr. Botsford worked at Sandia Laboratory from June 1954 to September 1961. Patent No. 3,032,356 is based on his activity while a Staff Member in Physical Research Department 5130.

W. R. Rosenberg Heads UCF Section Solicitor Training

Walter R. Rosenberg, Assistant Purchasing Agent for Sandia Corporation, has been appointed to head the Solicitor Training Section for the 1962 United Community Fund campaign. The appointment was announced by R. B. Ragan, campaign vice chairman in charge of the Service Division.

Mr. Rosenberg also had the responsibility in last year's campaign for the training of solicitors. In addition he was chairman of the Sandia Laboratory Employees' Contribution Plan Committee during last year's UCF campaign when Sandia Corporation employees established an all-time high.

Mr. Rosenberg has been quite active in Albuquerque community affairs for many years and was recipient of the Junior Chamber of Commerce Service Award in 1958. He is vice chairman of the Board of Governors of the Heights YMCA, a member of the executive board of the Albuquerque Citizens Committee, and a member of the American Ordnance Association.

Mr. Rosenberg said that he believes the training job is most important this year. "We have failed to meet our goals these past four years," said Mr. Rosenberg, "so it is more important than ever that we place a heavy emphasis on solicitor training. As Darrel Miller, UCF's new Executive Director, recently said—top leadership, dedicated workers, and good organization are the essentials of a successful UCF campaign. These three ingredients plus good training should result in a successful drive this year."

Military-Sandia Team Presents Explosives Course At Livermore Lab

A course in explosives familiarization was conducted at Livermore Laboratory May 15-17 for personnel involved in the development, testing, and firing of explosive components and devices.

Attending the course were 30 representatives from the Project Engineering groups, Test Projects division, Environmental Testing organizations, and the Health and Safety organization. Also present were six representatives from Lawrence Radiation Laboratory and one from Sandia Laboratory.

The program, offered for the first time at Livermore Laboratory, included classroom sessions at Area 8 and a field demonstration at Site 300. Subjects covered

Sandians Attend Team Recruiting Workshop Here

Sandia Corporation was host to a College Employment Workshop sponsored by the American Telephone and Telegraph Company at the Western Skies Hotel, May 7-11. The workshop was attended by Sandia personnel from Livermore and Albuquerque, as well as by AT&T personnel from other locations throughout the United States.

Robert N. Ford, Management Training Supervisor, AT&T, conducted the workshop. Coordinator was J. L. Wheeler (3151-1). Attending the workshop from Sandia were R. B. Powell (3000), W. C. Scrivner (3100), R. W. DeVore (3150), Walter Dzugan (8212-1), J. K. Merillat (3151-1), W. A. Doyle (3151-2), K. P. Hill (3151-2), W. G. Funk (3120), and S. H. Peres (3133).

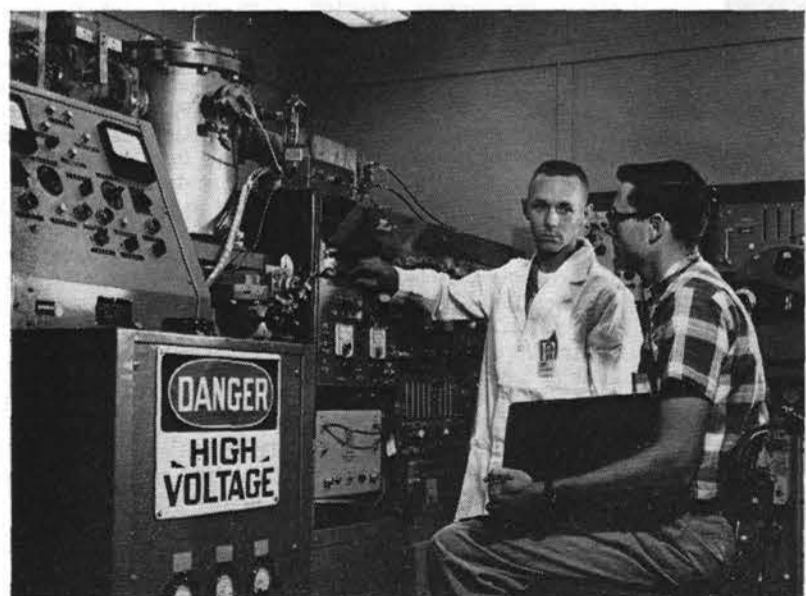
Keynote speaker for the conference was Dr. Frederick Herzberg, Professor of Psychology, Western Reserve University, Cleveland, O. He spoke on concepts from his book, *The Motivation to Work*.

The workshop was concerned with techniques and procedures of Bell System recruiters operating as a team in campus recruiting activities.

G. E. Harwood Completes Public Health Service Reactor Safety Course

George E. Harwood (3311-2) attended a week-long training course in Reactor Safety and Hazards Evaluation at the Robert A. Taft Sanitary Engineering Center in Cincinnati, O., this month.

The Center is a major research, engineering, and training laboratory of the U. S. Public Health Service. The 25 participants in the course received instruction in the basic principles of reactor operation and protection against radiation hazards.



MASS SPECTROMETER is used by James M. Freese (left) and Richard T. Meyer (both 5153) in analysis every 100 microseconds of molecules present their relative concentrations in chemical reacting system. They seek a quantitative theory of chemical kinetics.

Rudy Sadler's Self-Built Adobe House Now Provides Casual Way of Life in Corrales



TRANSMITTING INFORMATION from missiles in flight is explained by S. G. Cain (8122-3), as CSF students see how a physical force can be converted to an electrical impulse and read out on an oscilloscope. Temperature, pressure, and vibration were shown.

Northern California Students Tour Livermore Lab Technical Facilities

Schoolbook theories on scientific subjects took on new meaning for a group of top high school science students who toured technical facilities at Livermore Laboratory May 5.

The 39 students who took part in the tour were among 1300 students from all parts of Northern California who attended the Central Region Conference of the California Scholarship Federation in Livermore.

During the four hours they spent at Sandia, they saw, among other things, how high school mathematics can be used with a Hyge actuator to compute shocks during missile stage separation, and how the laws of motion and natural frequencies are applied to missile vibration, aerodynamic flutter, and rocket motor noise.

Other demonstrations showed how optical instrumentation can be used to compute velocity; how information from missiles in flight can be transmitted, recorded, and analyzed; how altitude chambers can simulate conditions an astronaut might encounter in space; how plastic foams are made and used; and how the strength of materials can be determined.

High Grades Stressed

The students were welcomed by B. S. Biggs, Vice President, Livermore Laboratory (8000), who stressed the importance of high marks in considering engineering applicants for work in industry. Concluding remarks were made by C. H. DeSelm, Director of Staff Services (8200), who described the role of support organizations in assisting engineers in their work, and the importance of good communications in conveying ideas between technical and non-technical groups.

One of the faculty members accompanying the group on the tour said, "This was the most impressive tours I've ever seen put on for

students. I've been on quite a few, but not a one of them was as well organized, as well presented, or as instructive as this one was. Those people out there really put on a show."

In addition to students and faculty members, press representatives from the *Livermore Herald and News* and the *Hayward Daily Review* attended the tour.

Technical directors for the tour were H. C. Walker (8133) and D. A. Skinrood (8123). Program director was R. A. Dickson (8233-1).

Speakers

Facilities demonstrated and speakers included: Hyge actuator, Elizabeth H. Juckeland, assisted by Richard Cortez (both 8121-1); 7500-lb. shaker, D. F. Hillyer, Jr., assisted by G. A. Hickey (both 8121-1); optical instrumentation, D. P. Van Dyke and D. M. Abrahams (both 8122-1).

Telemetry, S. G. Cain (8122-3); data center, D. N. Bray, assisted by W. B. Vandermolen (both 8123-1); data analysis, E. D. Holbrook, assisted by R. W. Stammer and W. J. Harrington (all of 8123-2); altitude chamber, T. F. Meagher, assisted by H. T. Vincent (both 8121-2); plastics, H. F. Brumfield (8115-2); strength testing machines, H. W. Jacobs (8121-2), assisted by G. C. Gray (8121-1).

Others who took part included George Hosoda and D. G. Knudsen (8122-1), photography; Raymond Raty and Imogene R. Kelly (both 8241-1), security; G. L. Rhodes (8242), safety; R. L. Durham (8233-4), classification; R. S. Jacobson (8121-2), tour guide; W. A. Jenkins and R. J. Harks (both 8233-1), public relations; J. A. Martin (8224-2) and D. B. Sparger (8222-3), seating arrangements; W. J. Henderson (8212-2), refreshments; M. S. Taylor (8233-3) and I. C. Ellicott (8114-4), visual aids.

A satisfying and comfortable way of life is worth working for. Rudy Sadler (1432-4) and his wife Eleanor spent every spare minute for five years to achieve theirs.

Former New Englanders, the Sadlers are now enthusiastic for the casual, informal Southwestern style of living. Their large sprawling adobe home in Corrales reflects this thinking.

Located only one-half mile from the Rio Grande, the house is sheltered in a grove of tall valley cottonwoods. A long drive loops in front of the house providing ample parking for friends.

From a shaded porch, the front door opens into a cool entryway. Immediately, colorful Indian-Mexican decor catches the eye. A bright Navajo rug over a polished red brick floor leads into the large living room. A round Indian fireplace dominates the room.

Overhead is a heavy wood beam ceiling with pine planking. Bowls and vases of colorful flowers are placed on low tables and the divider between the dining area. Oil paintings accent the brown plaster walls.

The kitchen, Eleanor's "pride and joy," features built-in electric appliances, knotty pine cabinets, and Mexican tile. Behind the range, the wall tile has Eleanor's favorite recipes permanently printed on individual tiles.

A utility room and two large bedrooms complete the living portion of the house. In addition, there is another wing which has an enclosed breezeway and a large room with a fireplace. This room is now used for storage and to house Rudy's tools but will eventually be finished into a hobby-workroom.

The house contains about 2400 sq. ft. of space.

From the living room, sliding glass doors lead to the large bricked patio with its swimming pool and protected lounge area. Four of the original cottonwood trees were left standing in the patio to provide shade.

The swimming pool is heated with a simple, but effective, solar furnace that Rudy built. Water from the pool is pumped through a system of pipes to spread over a large corrugated black iron "heat collector." The heated water drains into a collector pipe and re-enters the pool. A water temperature of 78 degrees F. is easy to achieve and only costs 75 cents a month.

"The swimming pool sort of evolved," Rudy says. "While building the house, I needed mud for the walls and fill dirt for the floors. And so I wound up with a hole in the ground that finished nicely into a small pool."

With the exception of making the adobe bricks, portions of the wiring, plumbing, and roof, Rudy constructed the entire house. He did the cabinet work and built much of the furniture. He has just now reached a point where he can relax.

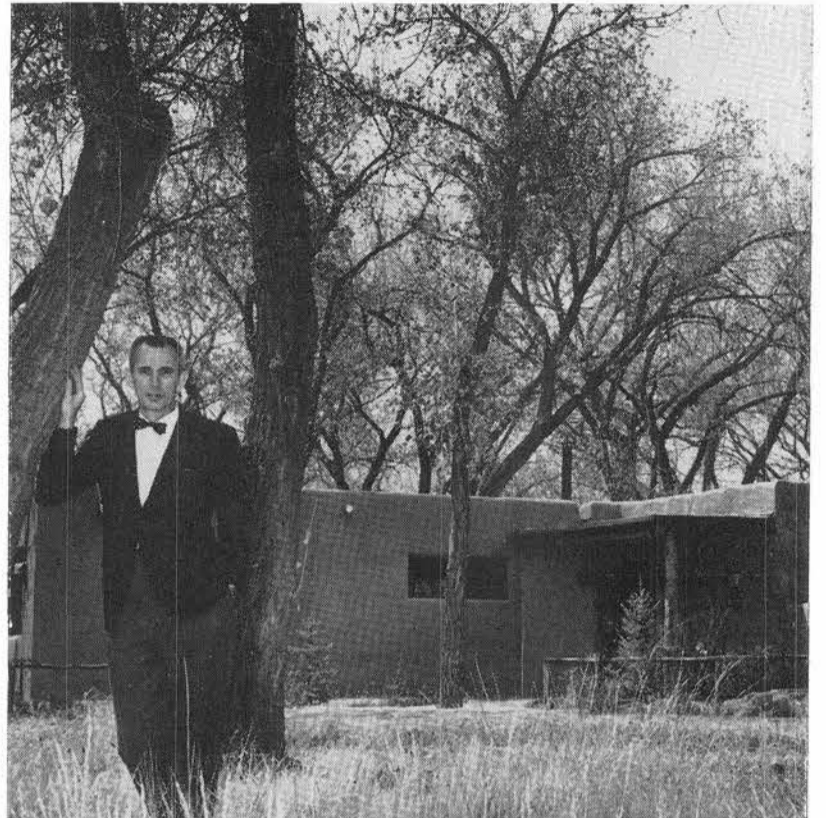
"You can never say a house like

this is finished," Rudy says. "There is much yet to do, but there's no hurry now. For the time being, I'll concentrate on landscaping the outside and finishing the patio wall."

In the meantime, the house serves as an informal headquarters for the Corrales Community Council. Rudy is president of the organization while Eleanor serves

as a volunteer worker in the Corrales library, one of the many civic projects of the Council.

"Between entertaining friends, community projects, and work on the house," Eleanor says, "we manage to stay busy. This is the way we like it; this makes the five years building the house worthwhile."



SHELTERED in a grove of tall valley cottonwoods is the adobe home of Rudy Sadler. Rudy, in the foreground, built the house himself. It took five years to complete, doing work in extra hours.



SLIDING GLASS DOORS open onto large sheltered patio. Brick floors are used throughout the house and on the patio. A swimming pool is located in rear of the patio area.



WELCOMING ADDRESS by B. S. Biggs (8000) explained Sandia Corporation's role in the nuclear weapons program and stressed the importance of high marks in seeking employment as an engineer.



RUDY AND ELEANOR enjoy large comfortable living room with Indian-Mexican decor. Oil painting by Eleanor's mother is permanently mounted in the large round Indian fireplace.

Many Questions to Designer Of Whitfield Clean Room

Sandia Lab's ultra-clean room may have been designed in a weapons laboratory but the implications of the development are getting attention in many fields.

The Lab News reported the clean room as a development of Willis J. Whitfield (2564-2) on Jan. 2, 1962. Since then magazines the country over have reported on this clean room which Sandia called "cleaner than the cleanest" and a "significant breakthrough."

Sloan-Kettering Institute for Cancer Research has shown particular interest in the room's complete air change every six seconds.

A query from the Israel Institute for Biological Research seeks information as to the room's adaptability as a chemical laboratory.

A request for additional information on the absolute filters comes from an oil company in Panama.

Sandia has received an inquiry about the possibility of adapting the filtering system to hospital operating rooms. This came from a physicist who was in his fourth week in a hospital as the result of a staphylococcus infection contracted during surgery.

And still another correspondent ends his letter to Mr. Whitfield, "Our congratulations on your project must sound superfluous; nevertheless, we are all speechless."

These Ski Club Members Never Throw in Towel

Coronado Ski Club members and guests will dine and dance at the Coronado Club Saturday, June 2. Snow conditions will be perfect for lodge skiers.

Social hour activities start at 6 p.m., followed by a hamburger-chuckwagon dinner in the patio area. There will be dancing 'til closing time.

Tickets may be obtained from Marian Sliwinski (7147), Marilyn Pilkington (4413), or Ski Club President Max Newsom (7164-2).

N. J. DeLollis Named Chairman ASTM Committee

The current issue of Adhesives Age contains an item on the election of N. J. DeLollis of Explosives, Adhesives and Foams Section 1112-2 as chairman of the American Society for Testing and Materials Committee D-14 on Adhesives.

The election was conducted during the ASTM Spring meeting in New York City recently. Mr. DeLollis previously served as vice-chairman of the committee.

Bell System Chess Tournament Open

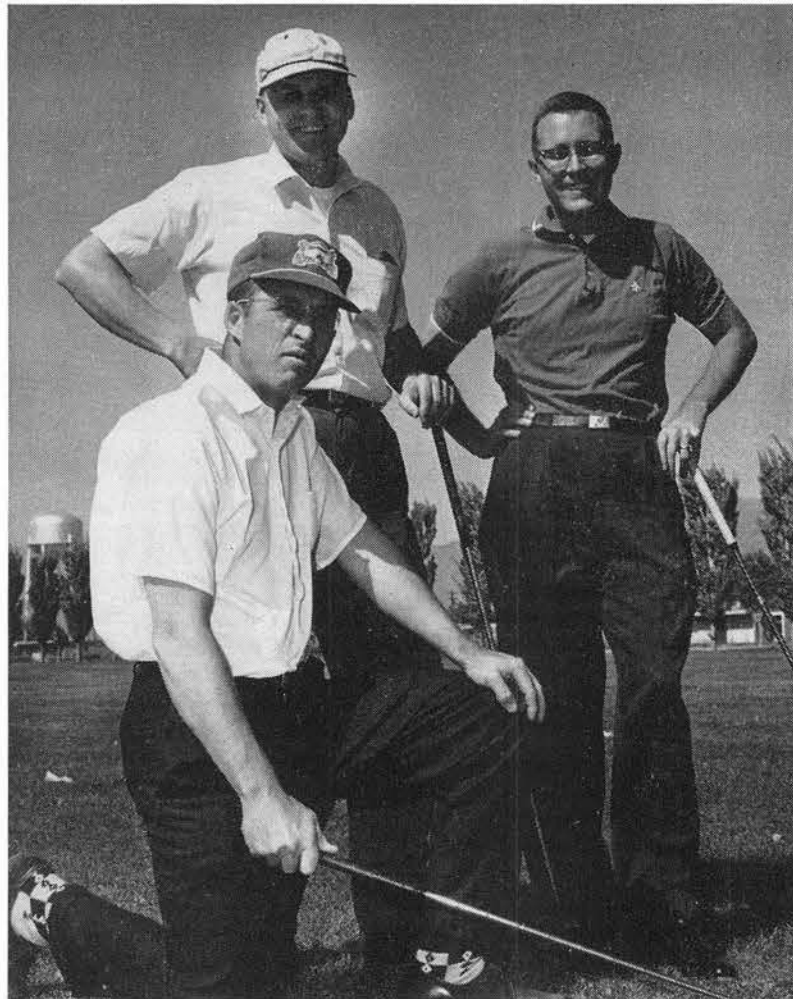
You can relax at home and set your own playing pace, competing with people throughout the Bell System by mail in the System's 16th Annual Postal Chess Tournament. Some 800 Bell people are currently participating — men and women, retired and active, novice and expert.

Players from different Bell System companies are grouped into sections of relatively the same skill. Each player in a section plays all the other members of the section at the same time. A victory certificate is awarded to the winner of each section.

A point system is also used so that players with more wins than losses may progress to a higher rated section in subsequent annual rounds. The top section is known as the championship section, and its winner is declared the Bell System champion. He will be presented with the chess trophy at his company location when the round ends in two years.

The 16th Annual Round will start early in the fall, but entries for the tournament close July 13. Send your name, company, business address, and home address to: Chess Tournament Director, American Telephone and Telegraph Co., Room 1338, 195 Broadway, New York 7, New York.

Indicate whether you'd like to compete in one, two, or three sections simultaneously, and with above-average, average, or below-average players. If you have participated in previous rounds of the tournament, give your code number of company affiliation at the time.



WINNERS OF RECENT GOLF TOURNAMENT held at Four Hills are shown above. From left are Wendell Nelson (4152), Bill Doyle (3151), and Jim Leonard (7147), tourney director. Wendell and Jim along with Ken Flynn (not shown) tied for Low Gross honors. Ken took Low Net. Bill received a trophy for being closest to pin.

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4. Use home telephone numbers
5. For Sandia Corporation and AEC employees only
6. No commercial ads, please
7. Include name and organization

FOR SALE

- '55 THUNDERBIRD, stick shift, Cont. kit, turquoise, \$1500 cash. Miller, DI 4-8253 after 5 p.m.
- '41 CHEVROLET 4-dr., \$40; 1941 Ford pick-up, \$50; both running but need some repair. Couch makes into bed, \$15. Merewether, CH 2-5451.
- 30-06 SPRINGFIELD target rifle, good performer, nicely finished with all match features, \$165. Cranston, 256-1662.
- FRIGIDAIRE WASHER, custom Imperial; GE refrigerator, yellow color; Wilton grey rug, approx. 10'x13'. Shoemaker, 255-8820.
- TWO HOUSES, one with six rooms and bath, second has two rooms and bath. Frontage 75'x150', Northwest area. Frances, CH 3-4844.
- '58 PONTIAC and Fiat shop service manuals. Westman, AL 5-6048.
- ASSUMPTION 1 blk, 3 bdr., 1 1/2 baths, den, oak floors, carpeted, garage, electric kitchen, patio, walled. Sell for appraisal. Frankel, AM 8-0100.
- OR TRADE one power mower for hand mower with catcher. Dunaway, AX 9-1422.
- BUILDING LOTS, located adjacent to expensive new home development in NE Heights. Priced below market. Dodd, AX 9-6330.
- 23" ZENITH 1961 TV chassis, 2 speakers, metal mask, fits 20"x25 1/4" opening, \$145; 14" RCA portable TV, \$65. Kutzley, AL 5-3572 after 5:30 p.m.
- DESK, blond oak, two-pedestal, executive type, six drawers. Williams, AX 8-2671.
- HO GAUGE trains, 4 engines, 25 cars, 40 magazines, roundtable and misc., all for \$100. Lightweight bicycle, \$10. Bowland, AL 6-1861.
- FREEZER, chest type, approx. 500 lb, reasonable. Williams, AX 9-3828.
- '56 RAMBLER station wagon. Groll, DI 4-0442.
- '52 PONTIAC, hydramatic, rebuilt: front end, valves, carburetor, generator; new: universals, battery, tune-up, 66,000 miles, \$195. Floyd, AX 9-2419.
- GAS RANGE, 36" Kenmore, porcelain enamel finish w/electric rotisserie, broiler, top griddle, oven door glass, electric clock, \$100. Johannesen, 898-2398.
- '61 MONZA cp., white/red interior, straight shift, ww, padded dash, R&H. Curzi, 8908 Shoshone NE.
- '58 OLDSMOBILE, 4-dr, power steering & brakes, auto. trans., six good tires, clean, reasonable. Newton, 265-1042.
- SE CORNER Frost Rd. & 217, 2 1/2-5-10 acre tracts, small down payment, \$35 a month. Carpenter, AX 9-4312.

- BABY CAR seat w/steering wheel, \$2; walker, \$2; swing set w/stand, \$3; tenda spring chair, \$2. Hatcher, 10313 Snow Heights Pl. NE, AX 9-1593.
- DESK, solid oak, top 3'x5', 2" thick, eight drawers, \$25 or best offer. Massey, 298-4650.
- SMALL REFRIGERATOR, GE, \$35. Johns, CH 2-8946.
- '59 MUSTANG motorcycle, 12 hp, 4-speed, recent overhaul, new paint, terms. Brown, DI 4-6831.
- LESLIE TONE cabinet and amplifier; Winchester 30-06 with K 2.5 scope. Will trade for good table, band, jig and/or skill saw. Poore, AM 8-2036.
- NORTH VALLEY—charming, large 3-bdr, big trees, corral, garden, irrigation, \$4,500 down or partial RE contract. Fraunglass, 345-0119.
- VACUUM CLEANER, Eureka, extra attachments, \$40. Miller, AM 8-7176 after 6 p.m.
- 2 BDR house, office bldg. on 2 lots, 15 fruit trees, garage, completely fenced, shade trees, in Estancia. Cash, trade, real estate contract. Ogden, CH 3-4723.
- CORRUGATED PLASTIC "filon", 14 sheets 2'x8' mixed colors, ideal for patio cover, partition, solar screen. Bargain. Wimberga, 299-7388.
- ACCORDIAN, 120 bass, Italian made, \$100. Heath, AL 5-5418.
- CLOSET DOOR, folding steel, 3'x3'8", \$10; umbrella-type clothes line, \$7; sofa-bed, \$30; old-fashioned square trunk, \$2. Koletar, AL 5-4751.
- TRAILER HITCH, custom made for 1953, 1954 Chevrolet, \$4. Clenney, UN 4-8394.
- PUREBRED DACHSHUND, female, one year old, black & tan, all shots, spayed, wonderful pet. Harshman, CH 3-4369 after 5 p.m.
- '56 PLYMOUTH Plaza 6, 4-dr., overdrive, best offer. Bouchard, 1617 Anderson Pl. SE, AL 6-1495.
- CRAFTSMAN 18" rotary mower, 2 hp gas engine, motor just overhauled, \$25 or best offer. Burnett, 298-4291 after 4:45 p.m.
- HOFFMAN ROYAL 3 bdr, 1 1/2 baths, landscaped, carpeting. Redmond, AL 5-0348 before 5 p.m., AX 9-4390 after 5.
- '55 FORD, runs and looks very good, motor just overhauled, \$550. Smith, AX 9-6873.
- POWER MOWER, belt-driven, reel type, \$25. Hooper, AX 9-4896.
- '58 LAMBRETTA, low mileage. Smith, 243-4962.
- HAND MOWER, \$8. Petrini, AX 8-0433.
- GAS RANGE, 42" Kenmore with timer and grill. Make offer. Trujillo, 520 Dallas NE, 255-5053.
- PLAY PEN, folding, \$10. Mahoney, 2708 Louisiana NE, AX 9-6241.
- ELECTRIC REFRIGERATOR, Crosley; 40" electric range; 16 gauge pump shotgun; Ansonmatic Model II slide projector. Calvary, 255-9545.
- WEIMARANER puppies, purebred (no papers), \$50 for males, \$60 for females, or make offer. Bourne, 299-0788 after 6 p.m.
- 3 BDR, activity room, fireplace, 1 1/2 bath, central forced heat, hw/floors, landscaped, patio, sprinklers, walled, Zia-Fatima district, \$18,500. Groll, 828 Truman NE, AL 5-9638.
- KITCHEN SINK, double, with double faucets, \$20. Fisher, 265-0626.
- '59 RENAULT Dauphine, clean. Heckler, AL 6-7192 after 5 p.m.
- '51 CHEVROLET 1/2 ton pickup, \$295. See at 625 Georgia SE, Baca, AL 5-8452.

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, June 1

- 3 BDR. MANKIN, no qualifying, immediate poss., built-in GE dishwasher, central heat, AC, patio, landscaped, near Los Altos golf course. Fry, AX 8-1613.
- BABY BED, side lowers, 4 levels for mattress, \$12.50; hand lawn mower, 18", with catcher, \$10. Williams, AX 9-9150.
- '50 CHRYSLER Royal club coupe, \$150. Reeves, 1013 Princeton Dr. SE, CH 2-5052.
- UPHOLSTERED CHAIR, large, sturdy, \$9. Wallace, AL 5-2368.
- '58 VOLKSWAGEN Microbus, good tires and motor. Morrison, UL 5-9173.
- GARAGE DOOR, 9'x7', overhead type, hardware included, \$30; luggage carrier, 4'x3' with tailored tarp, \$10. Klamers, AX 9-5235.
- '55 CHRYSLER, PS, PB, auto. trans, R&H, white sw tires, \$395. Randall, 298-1381 after 5 p.m. or weekends.
- QUIKFRET apt. size refrigerator, ideal for bar, pink interior, no scratches, \$75. Wimberga, 299-7388.
- CROWN GRAPHIC (Pacemaker) 2 1/4x3 1/4, F4.5, 101mm; 2 roll film adapters; 6 holders, RF, Focuspot; Solenoid, 3-cell Grafix; 15' cord. Osterby, AL 6-1342.
- UMBRELLA TENTS, 9'x9' and 9'x12' with floor, \$70 for both or will sell separately. Duvall, 898-2295.
- '59 PONTIAC Catalina, power steering, brakes, seats, one owner; Ranger cooler, 24"x32", cost new \$110, sell for \$50. Sanchez, AX 9-8722.
- AUTOMATIC WASHER, Hot Point, \$45. Bristor, 268-0735.
- EVAPORATIVE COOLER, portable, 2 speed, 2200 cfm; car cooler, evaporative window type. Amos, 298-4470.
- 2 BDR SPARTAN, 50'x8', washer, wall oven, air conditioner, clear title. Will trade. Capaldi, CH 2-0073 evenings and weekends.
- GOLF CLUBS, Wilson matched set 1-2-3-4 woods, 2 through 9 irons. Hansen, AX 8-0308.
- POWER MOWER, Sunbeam rotary, cost new \$150, sell for \$50, best offer or trade. Wagner, AX 9-2347.
- ALMOST NEW Blizzard 550 portable air cooler, \$25, cost new \$50, three speeds, two motors. Deffenbaugh, AX 8-1162 after 5 p.m.
- '53 OLDSMOBILE 4-dr., R&H, good tires, \$150. Meyer, 298-4825.
- EVAPORATIVE COOLER, about 3000 cfm, wood stand, duct to fit steel casing window, \$35; portable room-size cooler, \$12.50. Moore, AX 9-3758.
- STEREO, 1961 console model, 3 channel, 8 speaker sound system, AM-FM radio in beautiful walnut cabinet. Loeper, AM 5-0472.
- 5 ACRES in North Albuquerque Acres, near airport and main thoroughfare, RE contract or terms considered. Curry, 256-9779.
- BUESCHER CORNET, \$75; Conn mellophone, \$25. Nielsen, AL 5-2045.
- '52 MERCURY convertible, standard transmission with overdrive, \$275. Hoke, AX 8-2384.
- 8mm B&H movie set, magazine load camera, projector, screen, and editor. \$110 total. Nelson, AL 6-6300.

- 5 ACRES secluded land two miles north of Placitas, 30 miles from Albuquerque. Stueber, 299-2414.
- '51 CADILLAC 4-dr., R&H, \$265. Runyan, AL 5-6719.
- PORTABLE DISHWASHER, Westinghouse; 21" Zenith TV, year's warranty on picture tube; Columbia portable stereo phonograph. Best offer. Joyner, AM 9-7502.
- '59 BUICK Electra 225, all extras available. Bourne, 299-0788 after 6 p.m.
- MOTORCYCLE, 1956 Triumph T110 with spares, extras, crash helmet and tools, \$400. Wilhelm, AM 8-6575 after 5 p.m.
- BELOW FHA, \$14,500 total, with extras, 3 bdr, 13x19 den, 1 1/2 bath, fp, AC, private patio, 17 trees, schools 1/2 block. Boling, AX 9-1346.
- WASHER, DRYER, dinette set, best offer. Mauney, AX 9-3634.
- 3 BDR HOUSE, 1 1/2 baths, drapes, carpeting, fireplace, private patio, sprinklers, many extras. Immediate possession. Below appraisal. Martin, 1505 Elizabeth NE, 865-9555.
- POWER MOWER, 24" rotary, 3 hp Briggs & Stratton engine, \$20, extra blade. Baker, 3606 California NE, AX 9-9317.
- 21" TV, GE console, mahogany, works well, \$35. Hamilton, AM 8-9787.
- MOSSMAN, blond brick, 3 bdr, fireplace, hw floors, screened patio w/bbq pit, partial basement, 80' frontage, sprinklers. Schneider, 3518 Dakota NE, AM 8-0679.
- 3 BDR HOUSE, choice SE location, extra large, newly-decorated kitchen and LR, dishwasher, disposal, completely landscaped, \$15,500. Reynolds, AL 5-4263.
- GATE-LEG TABLE, genuine mahogany, \$8; cherrywood desk, collector's item, \$60. Hill, CH 3-3493.
- 3-YR-OLD house, clean, large walled yard, close to schools, shopping and Base. Graham, AX 8-0686.
- TURFLIPPER, push-type lawnmower, used 1 year, \$5; portable room air conditioner, evaporative, squirrel cage, \$15; Heathkit FM tuner, \$15. Smith, AX 8-0767.
- 220v, 1 ton, Vornado air conditioner, \$100; 20" 3-speed window fan, \$15; 26" bicycle, \$10. Granow, AX 9-8914.
- BABY CRIB, double drop sides, adjustable height, mattress, cream color, \$18.50; two desk chests, three drawer, \$19.50 each. Goodman, AX 8-2287.
- LONE STAR 14 ft. metal fishing boat, \$85 full price. Smythe, 242-1503.
- ROBERSON 3 BDR, 1 1/2 baths, carpeting, AC, near schools and shopping, \$14,950. Alexander, 9619 Arvada Dr. NE, AX 8-4415.
- WINDOW MOUNTED Fedders refrigerative air conditioner, washable metal filter, 110v, 8000 BTU, cool room or small apt, \$90. Nix, 298-4282.
- KENMORE WASHER, \$30. Lawrence, AL 6-2613.
- '60 TRIUMPH roadster, R&H, 12,500 miles, \$1,550. Sliding door wardrobe, wooden frame, reinforced 3-ply fiberboard, 48" wide, \$10. Blasyk, AM 8-2171.
- WARDROBE TRUNK, tan and brown, 22" x42", "Royalrobe Trunk" brand, \$75. Wallace, 256-1846.

- HEATHKIT Single Sideband Adapter, Model SB-10. Johnson, AX 8-0735.
 - ONE OR TWO riders to share driving and expenses to Pennsylvania, June 15. Kociscin, 299-6695.
 - HOMES for long-haired kittens, assorted colors. Merritt, AX 9-6630.
 - TO TRADE, Kenmore electric clothes drier, never used, for gas drier. Tatum, TR 7-0997.
 - TO JOIN car pool, vicinity Comanche and Natalie, San Pedro and Louisiana, to Bldg. 880. Harwi, 298-3876.
 - RIDE FROM Sixth and McKnight Sts. NW to Bldg. 802. Dyer, CH 2-8830.
 - RIDE FROM 65th and Churchill SW to south gate, Sandia Base. Salazar, 242-9474.
 - TWO OR THREE drivers to join car pool from South Valley, Highway 47, Tome, Valencia, Peralta, Bosque Farms. Clenney, UN 4-8394 or O'Connor, UN 4-3623.
 - BABY SITTING in my home, 1 or 2 preschoolers, close to Sandia Base, references. Markle, 228 Gen. Patch NE, AX 8-0638.
 - RIDERS from area Constitution-Lomas and San Mateo-San Pedro to Bldg. 800-805. Estill, AM 8-8367.
 - USED REFLEX camera with 3.5 lens and shutter speed to 200. Will pay \$20. Roth, CH 3-0522.
 - RIDE FROM Moon NE to Bldg. 802. Jeffs, ext. 26269.
 - AIR CONDITIONER (evaporative or refrig.) for small house trailer. Westman, AL 5-6048.
- #### FOR RENT
- 2 BDR HOUSE, NE area, stove furnished. Martin, AX 9-7045.
 - DUPLEX with stove and refrigerator, garbage and water paid, 417 1/2 Rhode Island SE, \$50. Inquire next door. Saavedra, 268-6945.
 - AVAILABLE June 5, 3 bdr house, unfurnished, built-in range, walled-in backyard, near Sandia Base. Lamoria, 298-5043.
 - NEW—\$80, unfurnished 2-bdr. apt, refrigerator and electric stove, AC. Watson, 210 Charleston NE, Apt. 4, or 268-4814 after 6 p.m.
- #### LOST AND FOUND
- LOST—yellow gold and platinum wedding band engraved 7/1/50 PJA/CSS; 3 diamonds set in yellow gold ring; Timex watch; heavy Italian knit red w/black sweater; brown bone handle jack knife; stainless steel pocket knife with 2 small blades; lavender earring; green and white bead earring; leather and mesh tan glove; silver money clip marked "Karl Johnson-Ruidoso Downs"; house and car keys; Calculus Textbook by Peterson; brown leather glass case; gold dangle earring; sterling Oriental cuff link; greenish-brown rain coat and brown hat; silver ballpoint pen; safety glasses; dark green felt hat; tissue copies of wills; light frame reading glasses; 14k gold lace ear pin; cross silver pen and pencil set; keys on chain with flashlight; book left in bike basket; black-grey and metal glasses. Lost and Found, ext. 26149.
 - FOUND—lady's watch; thunderbird earrings; silver and black drop earring; black kid gloves; silver earring; brown fabric glove; tan fabric lona glove; man's prescription heavy-framed sun glasses; black frame, green lens glasses in red case; USN zipper lighter; glasses in tan case; clip-on sun glasses; keys; lady's blue frame glasses in velvet case; green pen knife. Lost and Found, ext. 26149.

WANTED

- RIDE FROM 5305 Mountain Rd. NE to Gate 1 south. Vigil, AM 8-7083.
- TO TRADE: '55 Chevrolet 4-speed, one ton panel for 4-speed 1/2 ton panel. Also want scooter that needs work. Pritchard, AM 8-6430.

Versatile Repairmen of 4516-2 Keep Sandia Lab's Office Machines Working

In the offices of Sandia Laboratory there is a generous variety of office machines. Eight men of Office Machine Repair Section 4516-2 have the responsibility for maintenance and repair of these machines.

"Our repairmen are probably the most versatile in the business," John J. Ransom, section supervisor, says. "In addition to various kinds of manual and electrical typewriters, we are called upon to repair adding machines, calculators, duplicating machines, dictating machines, tape recorders, and drafting machines. We also maintain Justowriters used by Military Publications compositors and Flexowriters used as typewriters in some offices as well as for readouts on smaller computers and automatic testing devices in some instances."

The section has responsibility, too, for maintaining and repairing time recorders and all the electric wall clocks in the Laboratory.

"We get around," John says. "We receive a good number of trouble calls each day. Usually, we manage to take care of them all before the end of the day. However, if a call comes in late in the afternoon, we might not get to it until the next morning. If a repairman can't handle the job on the spot, the machine is brought into the shop for extensive repair while the user is issued a replacement machine."

Four of the repairmen have responsibility for all the machines in Area I. The area is divided into four zones with a repairman assigned to each zone. The repairman handles all trouble calls in his zone as well as performing regular preventive maintenance on all typewriters in his zone.

The other repairmen of the sec-

tion work in the shop or repair specialized equipment.

The section maintains a record of every typewriter in the Laboratory and regularly every six months makes an inspection of the machines. Maintenance history of each machine is kept on file to aid the repairman in diagnosing trouble and in determining when the machine should be brought in to the shop for a thorough cleaning and overhaul.

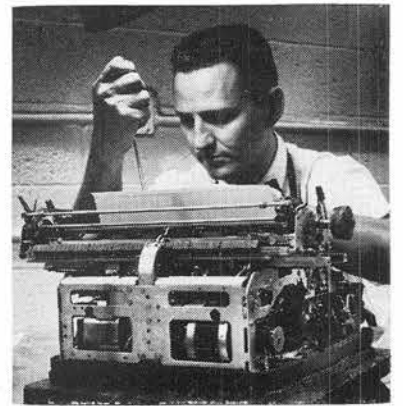
In the Bldg. 887 Office Machine repair shop, the section has a "washing machine" for typewriters. The typewriter is stripped of its cover and placed in a series of tanks containing cleaners and solvents.

"When it comes out of the washer," John says, "it gleams."

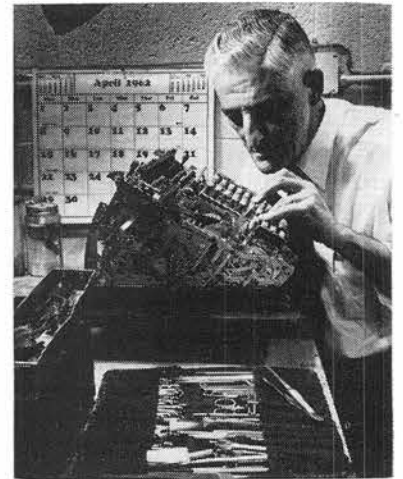
Repairmen of the section are Philip L. Archuleta, Albert P. Disch, Tony Gabaldon, Orlando Garcia, Dean A. Harrell, William W. Olheiser, Jr., and Felix Padilla. Average length of service at Sandia for the men is eight years. With one exception, all had previous office machine maintenance experience prior to coming to Sandia.

"In our job," John says, "we have to keep learning. New machines are continually being put on the market and new models are being issued. Sandia Corporation purchases the best in office equipment, so we have to be familiar with new developments in the field. Our men attend schools conducted by local distributors and occasionally attend factory schools."

"Each man becomes a specialist," John says, "on every kind of office machine."



ELECTRIC TYPEWRITER receives an overhaul from Al Disch. Every typewriter at Sandia Lab is given inspection regularly and preventive maintenance is performed if needed.



CALCULATOR MACHINE presents no problem to Bill Olheiser. He will have it back in operation on the user's desk usually within a few hours.



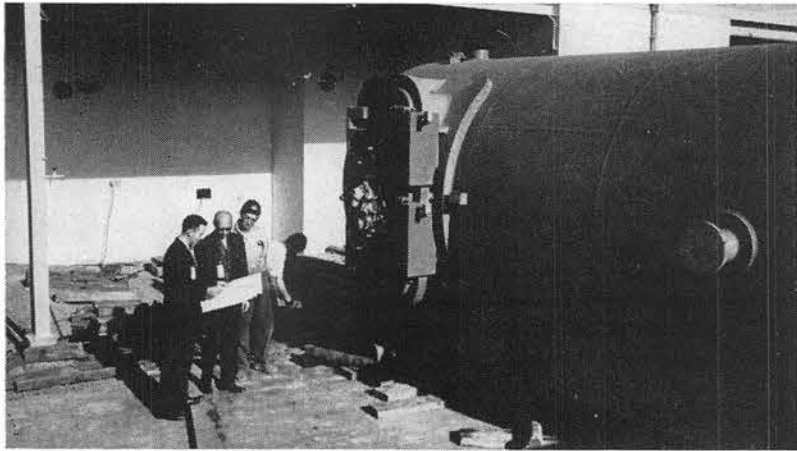
FELIX PADILLA puts a Justewriter in Bldg. 807 back in running order. The machine is used to set type for Sandia's Military Publications Dept.



FLEXOWRITER READOUT, part of an APAR, automatic testing machine, is repaired here by Phil Archuleta.



VARIOUS KINDS of typewriters and office machines in the shop for repair are displayed by repairmen of Section 4516-2. From left are supervisor John Ransom, Bill Olheiser, Felix Padilla, Phil Archuleta, Al Disch, and Tony Gabaldon. Repairmen Orlando Garcia and Dean Harrell were not available for picture.



STEEL FIRING CHAMBER, Livermore Lab's second, stands ready to be moved into Area 8. The chambers will be operated by Natural Environmental Section 8121-2 for diagnostic studies of small explosive charges. Checking installation plans with contractor (right) are W. E. Thompson (left) and H. C. Smith of Design Section 8221-2, Plant Engineering Division at Livermore Laboratory.

Sandia Technical Papers, Talks on Numerous Subjects Given Recently

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

J. W. Guthrie (1413-2), "Approaches to Mass Spectrometer Gas Analysis Using Photographic

Plate Ion Detection," 10th Annual Meeting, American Society for Testing and Materials Committee E-14 on Mass Spectrometry, New Orleans, La., June 5.

B. O. Allen (2442-2), "What is Reliability?," College of Engineering Assembly Program, University of Kentucky, Lexington, May 10.

L. D. Shoemaker (4254-2), "Non-Ferrous Machining Techniques and Problems," American Society for Metals Education Symposium, University of New Mexico, May 7.

Patent Granted AEC For Cable Connector Work of J. M. Caller

A patent for a cable connector has been assigned to the Atomic Energy Commission in the name of James H. Caller (1432).

The device is a high voltage coaxial connector with a special ejection feature.

Mr. Caller has been with Sandia Corporation nearly 10 years. He has been working the entire time in development of high voltage and radio frequency components.

Application for this patent was made June 26, 1961.



C. J. McGarr Talks In Washington, D. C., Meetings May 16-18

C. J. McGarr, Director of Service Operations 4600, made two presentations of "Statistical Work Measurement" in Washington, D.C., May 16-17 under auspices of the National Archives.

The meetings attracted management analysis people from various governmental agencies.

On May 18, Mr. McGarr made a four-hour presentation of "Economic Ordering Quantity Theory" before a General Services Administration seminar in Washington.

Service Awards

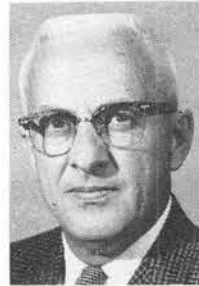
15 Year Pins



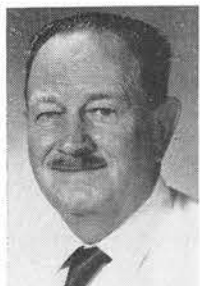
T. S. Church
1410
May 26, 1947



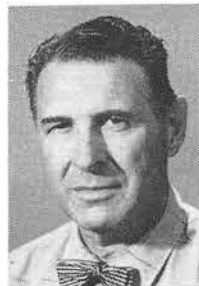
W. A. Smith
3422
May 29, 1947



K. W. Seaver
4123
June 2, 1947



R. E. Sumner, Jr.
2642
June 2, 1947



D. P. Saunders
3463
June 6, 1947

10 Year Pins

May 26-June 8

Arthur Bullhorse 7324, E. R. Pitts, Jr. 4254, P. B. Burns, Sr. 2643, D. S. Carrick 7532, Leo Arellano 4113, N. A. Branson 2563, John Erni 1423.

Gerhard Horn 4252, M. A. Kuliasha 4541, F. L. McFarling 2534, C. H. Purdue 2422, A. D. Thornbrough 7251, P. A. Didomenico 4333, Faye G. Dobbs 3241.

R. J. Guerin 4113, H. P. Hanna 4173, P. L. Brown 7144, W. L. Shoemaker, Jr. 1424, C. P. Canady 2563, G. J. Wilson 1413.

Welcome Newcomers

May 5-18

Albuquerque

*Marylee H. Adams	3126
*Lois H. Anderson	4632
*Nancy S. Haskell	3126
Donna M. Martinez	2632
Carlos P. Mendoza	4542
Rita Montoya	4132
Carolyn A. Nelson	3126
Gertrude L. Piraino	3126
Peggy L. Wheeler	3131
Margaret B. Wilson	4361

Illinois

Robert J. DeBoon, Chicago	5114
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New Jersey

Friedolf M. Smits, Murray Hill	5310
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New York

Harold B. Gottlieb, Brooklyn	7215
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Wisconsin

Edwin L. Hollar, Madison	1121
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*Denotes rehired

Returned from Leave

Albert W. Dennis	4543
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Promotions

Camille A. Rudeau (4231) to Technician
M. F. Stewart III (3446) to Reproduction Service Clerk
Martha A. Leverenz (8232) to Document Clerk
Spencer N. Truitt (8232) to Mail Clerk
Gabriel Gutierrez (8232) to Senior Clerk
Stanley E. Whittet (7324) to Laboratory Assistant
James A. Enlow (7324) to Laboratory Assistant
Lenor W. Morrison (5311) to Staff Assistant, Technical
Gerald T. Gay (7325) to Staff Assistant, Technical
Henry H. Passmore (7246) to Staff Assistant, Sr. Draftsman
Donald W. Shadel (7254) to Staff Assistant, Sr. Draftsman
J. Bryant Hamlet (2631) to Staff Member, Administrative
Maurice E. Richards (2621) to Staff Associate, Administrative
Dianne J. Cleveland (3126) to Secretarial Stenographer
O. Marie Blakey (3126) to Secretarial Stenographer
Arturo Jimenez (4611) to Control Analyst
Beverly R. Elrod (8212) to Secretarial Typist
Lillian C. Sprague (8114) to Service Clerk
Anna M. Isham (8161) to Service Clerk
Verna L. Thompson (3441) to Document Clerk
Thelma B. Carpenter (4000) to Secretary
John R. Crye, Jr. (4542) to Staff Assistant, Technical
Barbara A. Illig (3446) to Document Clerk
Jerry A. Wackerly (8224) to Stock Analyst
Edmund S. Kuroski (8234) to Order Analyst
Josef Leo Martinez (7241) to Staff Assistant, Technical
Stephen R. Zdunek (4623) to Material Handler
Santiago J. Abeyta (4234) to Wireman
M. R. Gutierrez (4212) to Toolkeeper
W. Jean Anthony (4423) to Typist
Elizabeth A. Posey (2563) to Data Reduction Clerk
Clarence R. Ray (2644) to Order Analyst
Maurice E. Grant (2341) to Service Coordinator
Iris Alford (8161) to Production Release Clerk

Supervisory Lateral Transfers

W. L. Martin from 3111 to 3221
W. H. Chandler from 3221 to 3111
D. L. Hayes from 2323-3 to 2323-1
W. F. Peay from 4252 to 4211
R. J. Gorney from 4254-1 to 4253-3
J. W. Carroll from Senior Auditor 4123 to 4352-1

Sandia's Safety Record

Sandia Laboratory HAS WORKED 700,000 MAN HOURS OR 20 DAYS WITHOUT A DISABLING INJURY

Livermore Laboratory HAS WORKED 1,000,000 MAN HOURS OR 181 DAYS WITHOUT A DISABLING INJURY