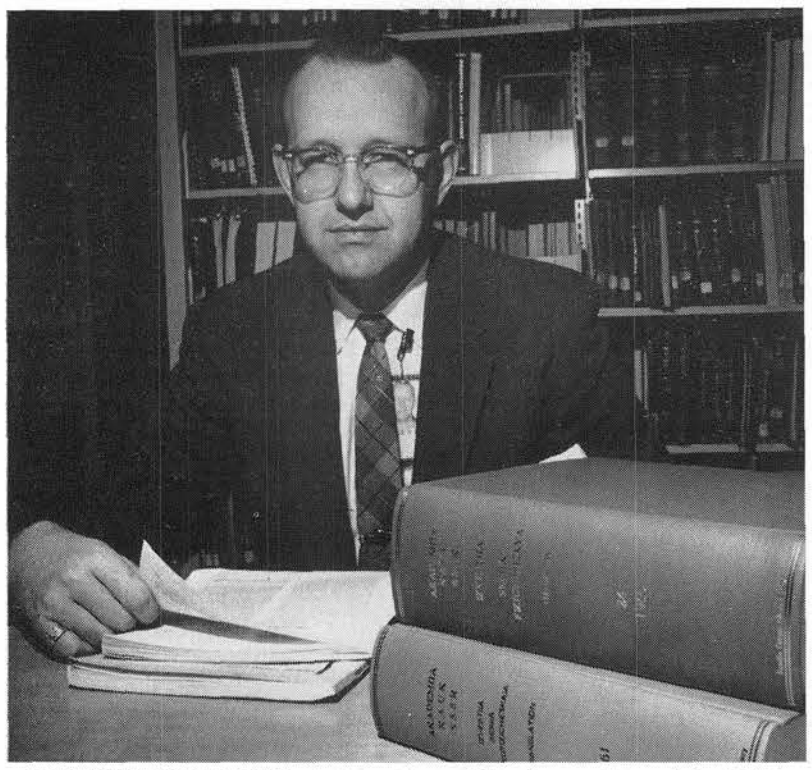

ENGLISH TRANSLATIONS of six sections of the Proceedings of the USSR Academy of Science (Akademiia Nauk SSSR) are available in the Sandia Laboratory technical library. W. H. Richardson (3421-1) is holding one of the recent monthly translations of Russian scientific articles.

Western Electric Announces Opening Of New Engineering Research Center

Western Electric's new laboratory and office facilities at the Engineering Research Center were officially opened on Jan. 9. The Center, where some of the Company's research scientists and engineers are developing new techniques for manufacture of communications products, is located on a 192-acre tract in Hopewell Township near Princeton, N. J.

Opening day visitors were New Jersey Governor Richard J. Hughes and representatives of education, government, the press, neighboring laboratories, and community and industrial leaders. The group toured the new office and laboratory facilities.

The work at the Center will be in three areas of manufacturing operation: Mechanization studies —the development of radically new concepts and techniques to permit automatic manufacture of communications apparatus; System studies — the application of mathematical techniques, automatic data processing and computer technology to plan and control production; and Process studies — the application of the principles of chemistry, metallurgy and physics to manufacturing problems.

The Research Center staff works closely with Bell Labs' development people to evolve new manufacturing processes for new products designed by B.T.L. The Center's staff also works closely with W.E. engineers at various plant locations to introduce new processes and improve existing ones.

Timothy E. Shea, vice president-Engineering, welcomed the visitors and introduced President H. I. Romnes. Mr. Romnes listed the objectives of the Center. Glen R. Simmons, Director of the Center, described the facilities and the make-up of the staff. Governor Hughes spoke on the importance of research to New Jersey.

The Engineering Research Center was established in 1958 in a building formerly occupied by the Princeton Film Center. This building is currently used by the Company's Graduate Engineering Training program conducted in cooperation with the Graduate School of Engineering of Lehigh University. This program leads to the master's degree in either solid-state physics or operations research.

The present staff numbers nearly 300, including technical and administrative support personnel.

Russian Technical Journal Translations Are Increasing

What's new in the Russian scientific world?

Although not all foreign literature is available, rapid strides are being made in the number of Soviet technical journals being translated into English. The time lag between original publication date and completed translation is being narrowed.

As a result, Sandia Corporation research men and engineers at both Sandia and Livermore Laboratories have access to vast resources of translated material.

At Livermore Laboratory, the Technical Library subscribes to 12 Russian-language technical journals, which are received in translated editions. These journals are in addition to numerous cover-to-cover translations of complete technical books, which are also available on the shelves of the Livermore Laboratory Technical Library.

At Sandia Lab, Library Section 3421-1 has completed a new listing of available translations. It includes 54 translations of Russian journals. Almost all are cover-to-cover translations. Most of the journals are routed to several individuals or research organizations before they are placed on the library shelves.

According to Boris I. Borokhoff of Massachuetts Institute of Technology, until 1955 fewer than 10 Soviet journals were available in English translation. In 1958 the figure jumped to 54, and in 1961 to 85. The sharp increase was attributed to interest in Russian science at the time of the first Sputnik, and also to a change in Soviet policy in 1956 which liberalized government controls over publication of scientific and technical information.

Few restrictions were placed on disclosures of pure science; in fact much of the material published in Soviet technical journals would probably be considered proprietary information in the United States. The easing of controls had no effect on the strict security on advancements with direct military applications.

The "Proceedings" of the USSR Academy of Sciences comprise about 9000 pages annually. Only 11 of the more than 60 sections are translated into English. Of these, six are available in the Sandia Lab tech library.

The translations are co-sponsored mainly by the National Science Foundation and universities or technical societies. Others are provided by the U. S. Joint Publications Research Service (which furnishes such service for government agencies), the U. S. Atomic Energy Commission, Office of Naval Research, National Library of Medicine, and the Department of Scientific and Industrial Research of the British Government.

The time lag between publication and translation is often between six months and a year. In an attempt to narrow this gap, Sandia Lab also subscribes to the "Express" series in Electronics, Physics, and Power. These are digests prepared from journals sent by air mail and are available about three months after Russian publication date.

Catching up with the Russians in the field of abstracting appears very difficult. It's estimated that the Russian All-Union Institute of Scientific and Technical Information has more than 20,000 specialists abstracting articles in 66 languages from 12,500 periodicals.

Editor Praises Article Written by Livermore Laboratory's J. D. Gilson

Editors are traditionally sparing with their praise, but an editor of "Tool and Manufacturing Engineer" recently broke with tradition. He wrote an unusual letter of praise about an article submitted to the magazine by J. D. Gilson (8151-2).

"Occasionally an engineering editor is privileged to edit an article which goes to the root of a problem and finds a fundamental solution to it," said Felix M. Giordano, associate editor of the Tool and Manufacturing Engineer, in a letter he wrote to the Technical Information Division at Livermore Laboratory.

"Such an article is 'Computer Corrects Gaging Bias,' by J. D. Gilson," the editor continued. "Both he and Livermore Laboratory are to be congratulated for this signal contribution."

The "Tool and Manufacturing Engineer" is the official publication of the American Society of Tool and Manufacturing Engineers. Jay's article is expected to be published in March.

The article is based on a paper Jay gave at the Interagency Mechanical Operations Group meeting in Albuquerque last September. In basic terms, the article describes a numerical analysis technique using a computer which will eliminate gage bias, caused by improper placement of parts. The new technique may lead to a more flexible method of part dimensioning.

Jay has been with Sandia Corporation since 1955, working in project groups at Sandia and Livermore Laboratories until his assignment to Acceptance Equipment Design Division 8151 about two years ago. He has been at Livermore Laboratory for the past three and a half years.

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lab news

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VOL. 15, NO. 3 — Published every other Friday for the employees of Sandia Corporation, contractor to the Atomic Energy Commission — FEBRUARY 1, 1963

Credit Union Members Reelect J. S. Miller To President Post

J. S. Miller (4122) was reelected president of the Sandia Laboratory Federal Credit Union Board of Directors at the annual meeting last week. Also reelected to the Board were E. R. Frye (1112), secretary; D. S. Tarbox (3200); and M. E. Grothe (4150). D. W. Ballard (2564) was newly-voted to the Board.

R. A. Quelle (3122) was reelected chairman of the Credit Committee.

Mr. Quelle is also serving an unexpired term on the Board of Directors with R. L. Kollman (4171), vice president; J. J. Michnovicz (3465); and Dale Bellamy, Credit Union treasurer and manager.

Other members of the Credit Committee include R. F. Campbell (3441), E. W. Shepherd (3425) and Credit Union employees Mrs. Molly Raisen and Mrs. Lily Redic.

First action of the new board was to appoint a Supervisory Committee. Members are W. H. Meyers (4173), chairman; C. R. Andes (4152); and R. C. Mueller (4112).

MIT Alumni Invited To Luncheon Meeting

The MIT Club of New Mexico will meet for luncheon at the Coronado Club at noon, Thursday, Feb. 14. Plans for the spring meeting will be discussed. All former students at Massachusetts Institute of Technology are invited. Reservations are not required.

Engineer Sees Promise in Diminutive Power Reducer

"Project DUMB" is what Dean E. Gladow (7224) called it. After three months of work in Advanced Development Division 1322, the project proved a shrewd answer to the need for a 1000-to-one power-reduction mechanism in a volume less than one cubic inch.

Project DUMB (**D**rive **U**nit, **M**ylar **B**elting) was a study to see if a flat belt system instead of metal gears could be used to achieve power reduction.

The assignment was suggested by R. P. Stromberg (1322) last spring when Dean was rotated into the Division as part of Sandia's Technical Development Program. Dean was carrying nine hours at the University of New Mexico at the time.

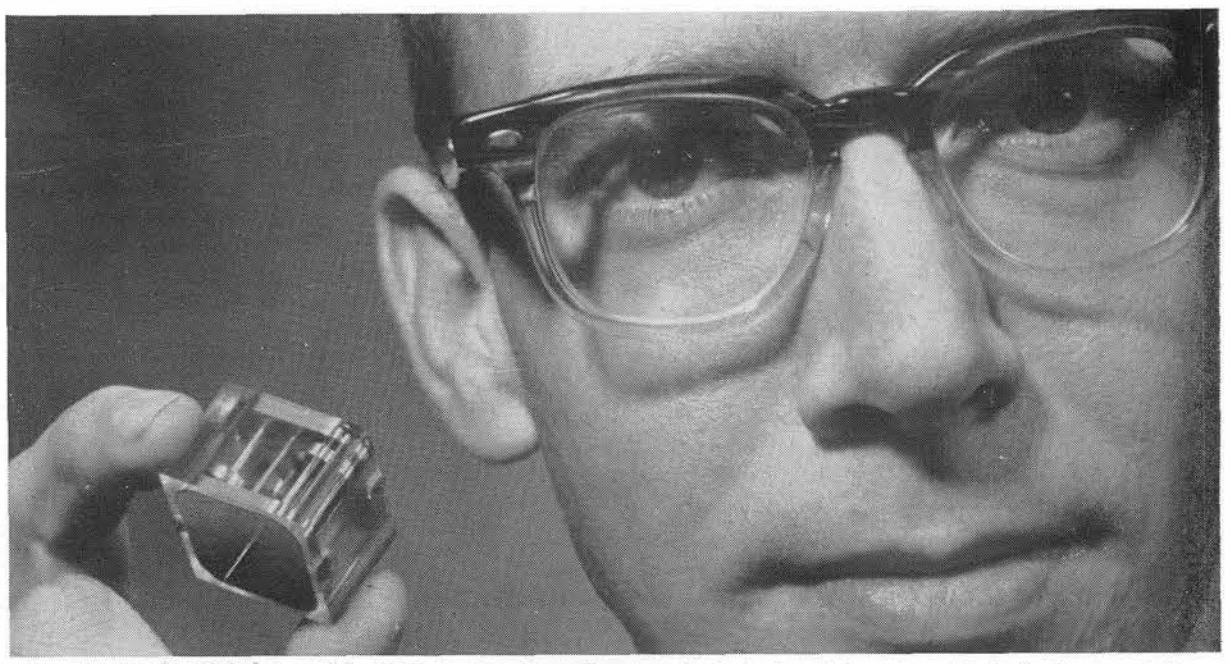
Mylar polyester film proved to be an ideal material for making the tiny one-piece belts. The prototype unit contains five belt stages. In each stage, a 0.0937-in. shaft serves as the "driver pulley." The "driven" pulley has a major diameter of 0.3735-in. and "crown" of ¾-in. radius. Arrangements of the belts and pulleys can be made to provide approximate speed ratios of 16:1, 63:1, and 250:1, by the use of two-, three-, and four-stage reductions. All five stages produce 1000:1.

Special test equipment was needed to evaluate the prototype unit for efficiency, slippage, output torque, etc. No commercial device was available for the measurement of the small torque values produced by the prototype unit.

"Mylar belt transmission can combine the advantages of flexible design, zero backlash, reversible operation, smoothness of operation, and low cost," Dean concluded from his study. "In addition," he said, "the system offers advantages of high belt speed (up to one million rpm), low flutter, and high efficiencies. The system appears quite promising for many miniature, non-synchronous applications. The system is currently being considered for use in an instrumentation-type tape recorder."

Dean is due to complete the TDP program in June. He graduated from Kansas State University in 1961 with a degree in mechanical engineering.

A bachelor, Dean spends his off-hours studying for exams and building hi-fi stereo sets and modernistic furniture for his apartment. An accomplished model builder, Dean makes models of his Sandia designs at home. Currently he is working on a giant tracking antenna model.



SPECIAL PROJECT, conducted by TDP student Dean E. Gladow (7224), produced 1000-to-one power-reduction in a volume less than one cubic inch. Tiny prototype unit used five Mylar belt stages instead of gears.

The High School 'Drop Out' Problem

"My urgent message to you is, return to school. For thousands of you, the decision you make this September about returning to school may mean the difference between possible hardship and unemployment or a fruitful life as a productive member of our society."

—President John F. Kennedy

* * *

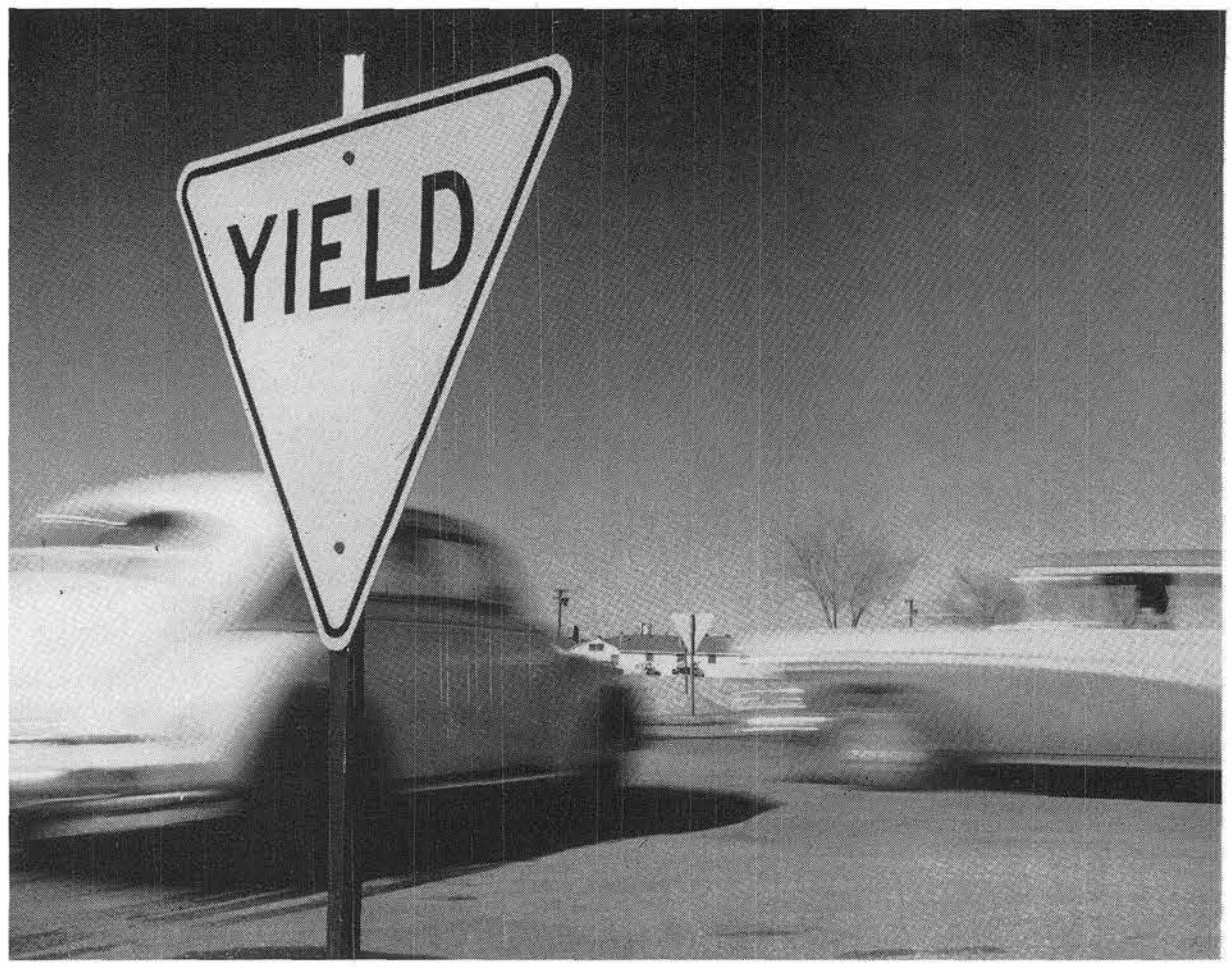
President Kennedy's concern is the concern of all Americans: How do we keep students in high school? In the next decade, 12 million young people will drop out of high school. This will create a situation which will be a national catastrophe unless it is resolved.

This is the bleak report set forth in "Don't Let Your Child Drop Out of High School," a booklet scheduled to be placed in the Sandia Corporation racks.

This waste of human resources is "social dynamite," according to Dr. James B. Conant. He believes it is "a serious threat to our free society."

Every American child is entitled to a full high school education, says the author of the book, Sterling M. McMurrin, former U. S. Commissioner of Education. He points out that it is up to the schools, the community, and parents to see that young people are given at least the promise of a good life—and to do so we should keep them in school.

The booklet discusses in detail what parents can do to help the situation. And the situation needs help, for last year, out of the 1000 students who had been enrolled in the fifth grade, only 604 stayed long enough to receive their diplomas.



THIS AGONIZED SPLIT SECOND before an accident could have been avoided if the driver on the left had observed the "Yield" sign. Too often, the signs go unheeded. They're there to protect you. Yield to them.

Two Employees Among 10 Candidates For Albuquerque Board of Education

Paul R. Kintzinger (5412) and Candelario Trujillo, Jr. (3451-1) are among the 10 candidates who have filed for two positions on the Albuquerque Board of Education.

The election will be held Feb. 5, with polls open from 8 a.m. to 7 p.m. The six-year terms will begin Mar. 1.

Mr. Kintzinger is in the Underground Physics Division and has been at Sandia Laboratory since June 1960. Previously he taught geophysics for three years at New Mexico Institute of Mining and Technology, and was a technical assistant for the United Nations in Egypt for a brief period. He holds a Bachelor's degree in physics from Harvard University, a Master's in physics from Yale University, and a doctorate in earth sciences from NMIM&T.

Mr. Trujillo is in the Electronic Data Processing Department and has been at Sandia since September 1955. After coming to work here, he continued to take evening courses at the College of St. Joseph and in 1960 received his Bachelor's degree in business administration He currently is halfway through course work for obtaining a Master's degree in management from the University of New Mexico.

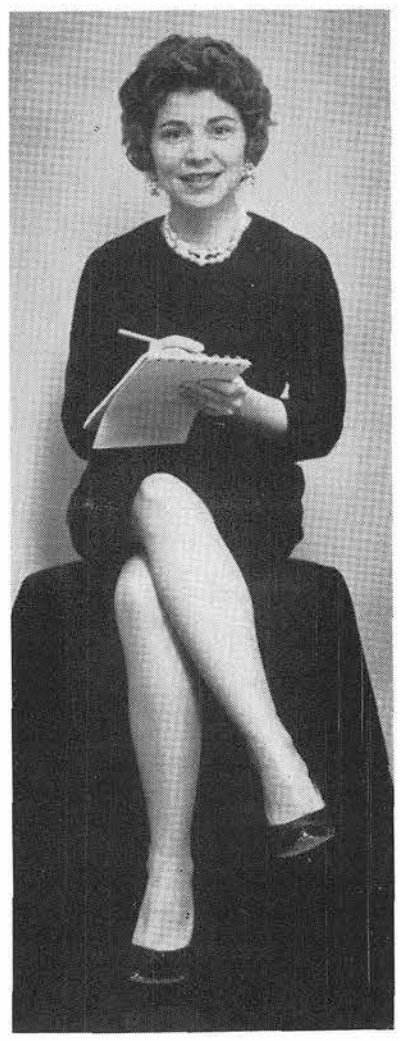
The other candidates are: Jack J. Kennedy, Syria Di Bella, John D. Vogel, Evelyn Sowell Martin, Joe A. Montoya, N. Tito Quintana and incumbents Floyd Darrow and Robert K. Elder.

L. J. Paddison Member of Board For Quality Symposium

L. J. Paddison (2400), in his capacity as chairman of the IRE Professional Group on Reliability and Quality Control, served on the Board of Directors for the Ninth National Symposium on Reliability and Quality Control held Jan. 22-24 in San Francisco.

During the symposium banquet on Jan. 23 he presented the "1962 IRE-PGRQC Award" to F. J. Bailey, Jr., Chief, Reliability and Flight Safety Office of the NASA Manned Spacecraft Center. Mr. Bailey was honored for his ability to provide effective leadership and communicate reliability needs to the wide variety of personnel involved in the Mercury Program.

J. W. McDowell (2563-2) was one of the area chairmen in charge of publicity.



M. Evelyn Hunter (3320)

Take a Memo, Please

Pay attention to the job at hand. Some accidents are caused by momentary inattention.

No job is so important and no service is so urgent that we cannot take time to perform our work safely.

Professional Engineers Urge Civic Activities for Members

This is the second in a series of articles describing the activities of member organizations of the New Mexico Council of Technical and Scientific Societies.

National Engineers' Week, scheduled Feb. 17-23, calls attention to the sponsoring organization — The National Society of Professional Engineers. NSPE was founded in 1934 to promote the professional, ethical, financial, and social advancement of all engineers.

The Albuquerque Chapter of NSPE has been active since 1946. Primary concern of the 300-member organization is promoting professionalism, but activities include preparing educational projects, supporting and advising on public engineering projects, and conducting campaigns for engineering registration and professional ethics.

A typical program of the organization is scheduled Feb. 18 at the American Legion Club. J. L. Redmond, Chief of Planning and Reports, Corps of Engineers, will discuss the engineering aspects of Albuquerque's flood control project. Financing of the project will also be discussed. Federal funds allocated for this project will be withdrawn Nov. 21, 1963, and the project will cease unless citizens of Albuquerque take action by then to authorize flood control programs. The group will discuss ways in which the organization can help.

The dinner meeting will begin at 6 p.m. with a social hour. It is open to the public. Walt Scott (7184), ext. 28253, is taking reservations.

Walt is vice chairman of the NSPE Albuquerque Chapter. Other Sandians who are officers of the group include M. G. Young (7523), treasurer; and J. T. Black, Jr. (7182), state director. A retired Sandian, Clark Reed, devotes much time to the NSPE program of interesting students in engineering careers.

"NSPE encourages engineers to participate in public affairs," Walt says, "and also to promote the engineering profession. Professional engineering work is largely creative and requires the exercise of independent thought, discretion, judgment, and intellect. In performing his duties, the engineer is guided by the rules of professional conduct. He has a recognized obligation to place service above profit, excellence above mediocrity, and the welfare of society above individual advantage."

On a national level, NSPE serves as consultant to Congress on proposed legislation and as advisors on public projects. National committees, such as Engineers in Industry Committee and the Professional Engineers Conference Board for Industry (PECBI), study the problems of engineers. R. W. Henderson, Vice President, Weapon Programs, is a member of PECBI.

The national organization has 60,000 members. In New Mexico, there are 800 members in chapters in Albuquerque, Santa Fe, Roswell, Las Cruces, Hobbs, and Farmington. State Convention of the group will be held in Hobbs, April 20.

A new section of the organization—Engineers in Industry—will be organized when the group convenes.

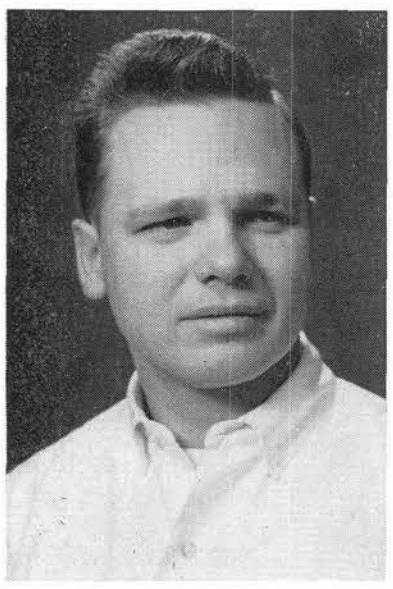
"This functional section will help solve professional and ethical problems for this division of engineering," Walt says, "and is another example of the way in which NSPE works to help the engineering profession."

Sen. Pastore Chairman Of Joint Committee On Atomic Energy

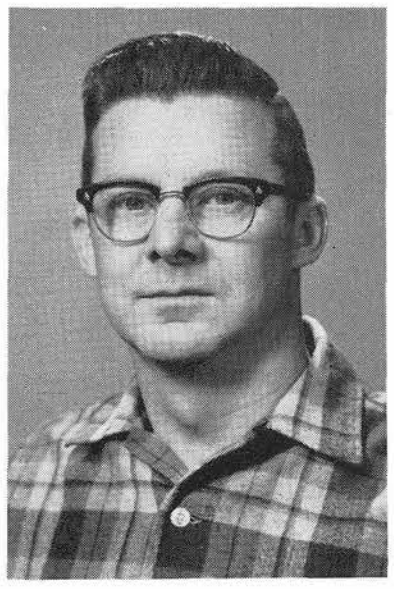
Sen. John O. Pastore of Rhode Island has been elected chairman of the Joint Committee on Atomic Energy for the 88th Congress. Rep. Chet Holifield of California will serve as vice chairman.

Membership in the Joint Committee includes Sen. Clinton P. Anderson of New Mexico, who is a former chairman of the group, and Rep. Thomas G. Morris, also of New Mexico.

Two Finish Plastics Study



— Robert Stewart —



— Robert Knight —

Two men, Robert F. Knight and Robert A. Stewart, both 4224-2, have completed training designed to acquaint Sandia personnel with the dozen plastics processes used by Sandia Lab.

C. E. Runyan, manager of Specialties Department 4220, stated, "They've received concentrated training and shop experience in most of the plastic processes, including elastomers, foams, laminates, and molding processes. Most industry specializes in only one or two of these processes; competent people with the diversified experience offered in the plastics training course are relatively rare."

Bob Knight has been with Sandia Corporation since November 1956, and has been associated with Section 4224-2 since May 1958. Bob Stewart has been with Sandia Corporation since August 1955, and with Section 4224-2 since June 1958.

Congratulations

Born to:

Mr. and Mrs. J. A. Allensworth (7242) a son, Andrew Joseph Thomas, on Dec. 13.

Mr. and Mrs. David W. Berst (7244) a son, David Christopher, on Dec. 30.

Mr. and Mrs. John R. Rosborough (2452-3) a son, Mark Allen, on Jan. 15.

Mr. and Mrs. Luciano Gurule (3462-3) a son, Matthew, on Jan. 12.

Mr. and Mrs. Raymond Garcia (3462-3) a daughter, Matilda Ray, on Jan. 16.

Mr. and Mrs. D. D. Sheldon (2561-2) a daughter, Brenda Anne, on Jan. 15.

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PROCEDURE FOR PERFORMING calibration of equipment at secondary standards laboratories in the Field Inspection Area Offices is explained by Mark Elich and others of Technical Training Section 2313-1 during a three week orientation for employees newly-assigned to this work. Recent attendees included (l to r) C. A. Hickman of New York area office, Mr. Elich, R. C. Wahlberg of Chicago, and A. F. Kiriluk of New England.

Sandia's Field Office Standards Labs Help Maintain Quality in Suppliers' Products

Field representatives for some time have had the responsibility of checking the quality of products manufactured for Sandia Corporation by suppliers scattered across the country. During the past year, secondary standards laboratories have been added to the five field offices to further assure the accuracy of inspections.

In determining if products are acceptable, the field representative must inspect the item in final form to make sure specifications are met. A number of Product Testers (PTs) are used for these examinations. A large part of the effectiveness of these checks depends upon the calibration and condition of the PTs.

"Our job is to establish and maintain secondary standards labs, and to perform calibration and maintenance of test equipment at supplier locations," explained H. G. Jeblick, supervisor of Field Inspection Division 2341. The secondary standards labs are located at the Chicago, New York, Los Angeles, St. Louis, and New England area offices.

Each secondary standards lab in the field has reference standards and transfer standards to service test equipment of all sizes and shapes at scattered supplier locations.

Transfer Standards

The transfer standards are hauled from supplier to supplier in small buses, called "Calmobiles" by the field men. At each location PTs are calibrated against the transfer standard and are certified. This may involve anywhere from one to a dozen testers.

Upon completion of a trip, the transfer standard is calibrated to reference standards kept in the field laboratory. Every eight months to a year these reference standards are returned to Sandia's Primary Standards Laboratory for recertification. This schedule meets AEC requirements that equipment be cross checked at secondary standards labs as well as referenced back to a central point.

"This is a whole new responsibility for our field offices," Mr. Jeblick said, "but without this function, we can't be sure of the accuracy of our other work."

Creation of the laboratories turned out to be a big problem. In the New York office it was possible to enlarge existing quarters, but the New England (Hartford, Conn.) and Chicago field offices had to be relocated where more space was available.

Temperature controls had to be installed at all locations. The electrical reference standards must be kept at temperatures between 70 and 80°F.; the mechanical reference standards in the Chicago office must be kept at 68°F., plus or minus one degree. Personnel with specific knowledge and ability to do the job had to be found.

Technical advisement on operating the secondary standards labs was given by R. L. Schneider, supervisor of Secondary Standards Division 2413.

Electrical Standards

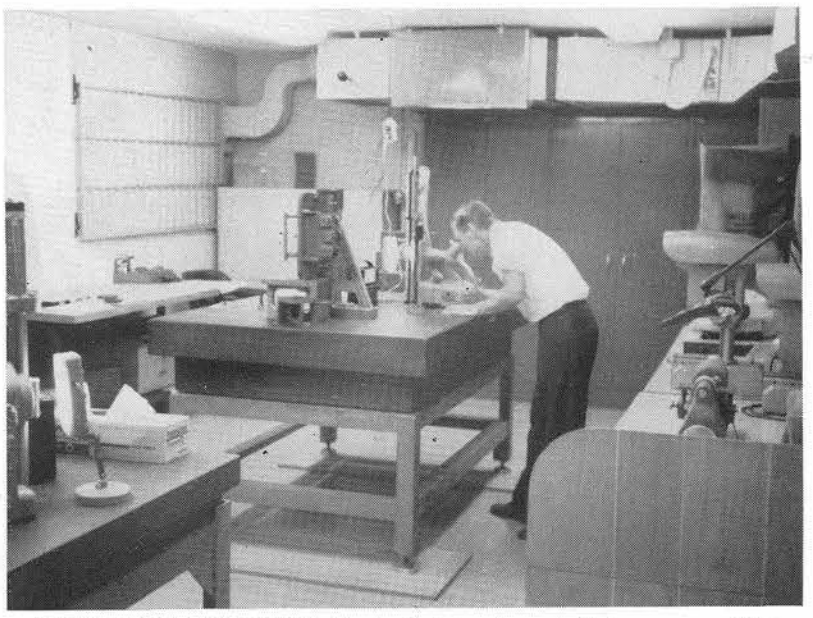
The electrical standards labs are responsible for about 230 PTs of all types; the mechanical lab in Chicago certifies between 600-700 mechanical gauges and inspection equipment. If the items are small, they are sent to Chicago; if they are large, a man must go to the supplier's plant.

Each man in the lab is required to take a three-week orientation course at Sandia Laboratory to become familiar with procedures to be followed and proper techniques for calibration and cross checks against both transfer and reference standards. The final week is actually on-the-job training using product testers.

The course is conducted by members of Technical Training Division 2313.

The men operating secondary standards laboratories at field inspection offices are: New York area (2341-1), C. A. Hickman, H. G. Neues, and H. H. Pike; Chicago area (2341-2), R. E. Pedersen, F. C. Spaulding, R. C. Wahlberg, C. F. Eckler, and N. C. Rasmussen; St. Louis area (2341-5), K. P. Conrad, C. D. Hall, and K. R. Tuma; Los Angeles area (2341-6), F. K. Harrison and C. S. Lane; and New England area (2341-7), N. C. Brown, A. F. Kiriluk, and J. O. Wheeler.

CROSS CHECK of secondary reference standards at the Los Angeles field office (2341-6) is one of the jobs of F. K. Harrison in this lab.



MECHANICAL SECONDARY standards laboratory at Chicago area office (2341-2) certifies between 600 and 700 mechanical gauges and inspection equipment. N. C. Rasmussen is one of two employees in this lab.

Plan Observance of 1963 National Engineers' Week

The New Mexico Council of Technical and Scientific Societies will join with engineers throughout the country Feb. 17-23 in observance of National Engineers' Week.

The 13 member societies of the Council will contribute to a fund to bring high school science students of the state to Albuquerque to attend an Engineering Open House sponsored by the University of New Mexiso on Feb. 22-23. The Council funds provided transportation for about 500 students last year, according to Dale K. Buchanan (7331), Council president.

The Council will also cooperate with the New Mexico Society of Professional Engineers in promoting Engineers' Week.

Jack A. Barber (7323) is the NMSPE chairman for Engineers Week. Plans call for a general publicity campaign around the theme, "America's Engineers Build for the Future." A Speakers' Bureau is being organized to provide speakers for programs of various civic and social organizations. Displays are planned for several downtown locations.

"National Engineers' Week is annually sponsored by the National Society of Professional Engineers to call attention to the role of the engineer in society and his function in furthering safety, technical progress, and public welfare," Jack said.

The week of George Washington's birthday is traditionally chosen for the observance since the first President of the United States was a notable civil and military engineer.

George Smiths Are 'Folks' To Thirteen Foster Children

Seventeen children call George Smith "Daddy,"—four of his own and 13 youngsters he and his wife have taken into their home since 1955.

When the four Smith children grew up and left home, things got pretty lonely around the house for George and his wife, Leona. "So we decided to become foster parents," said George, who works in plant maintenance (8222-1).

After a careful investigation by the Alameda County Welfare Department, the Smiths were granted a license in 1955 to care for foster children.

"The children come to us through the Alameda County Probation Department—an organization which places children from broken homes, as well as children who need strict supervision," George said.

The Welfare Department contributes funds to provide the children with food, clothing, and some spending money, and the Smiths devote their time to the proper upbringing of the children. "It's not much different from being a regular father and mother," said George. "All of the kids need love and understanding, proper discipline, and a good home life."

Emotional Problems

Many of the children the Smiths have taken care of have come to them with severe emotional problems. Some had never had any discipline at home; others had no family of their own, or had mothers and fathers who were unable to support them. "These kids needed all the help we could give them to adjust and become good citizens," George said.

Of the 13 foster children the Smiths have had, most have stayed with them for about two years. When things improve at home they usually go back to their own families. "We've had a few bad eggs in the past, but most of them have been fairly well behaved," George said. Four foster children, all boys, are living with the Smiths now. Their ages range from 10 to 18. "We've never had more than four in the house at one time," George said.

"The oldest boy works part time in a food market in Livermore to earn spending money. When he graduates from Livermore High School this year he hopes to go on to college and eventually become a recreation director," George said proudly.

Hear From Youngsters

The second oldest has been with the Smiths longer than any of the others. "He came to us when he was only six and he's 14 now. He considers us to be his real mother and father and he'll fight anyone who says it isn't so," says his "mother," Mrs. Smith.

To all of the children, the Smiths are "Mom" and "Dad," as far as they're concerned. "We still get Christmas cards from youngsters who stayed with us years ago. Most of them are now in high school and all are credits to their community," George said.

On occasional weekends, the Smiths have taken their four children to a ranch they recently acquired in Mariposa, Calif., near Yosemite Park. "There's some pretty good hunting up there," says George, "and the boys enjoy getting out in the country."

Having a house full of youngsters is one way to stay young, according to George, who is a fit 54, "but if the day ever comes when we give up the foster parents program, we can still look forward to visits with our 12 grandchildren."

T. B. Sherwin Heads '63 Cancer Crusade In Bernalillo County

T. B. Sherwin (3431) has been named Bernalillo County Chairman for the 1963 Cancer Crusade. The crusade will be conducted by the Bernalillo County Unit of the American Cancer Society.

The annual fund-raising and educational campaign is conducted during the month of April.

This year's crusade theme will stress the role of the volunteer in supporting the research, educational and service programs in the fight against cancer.

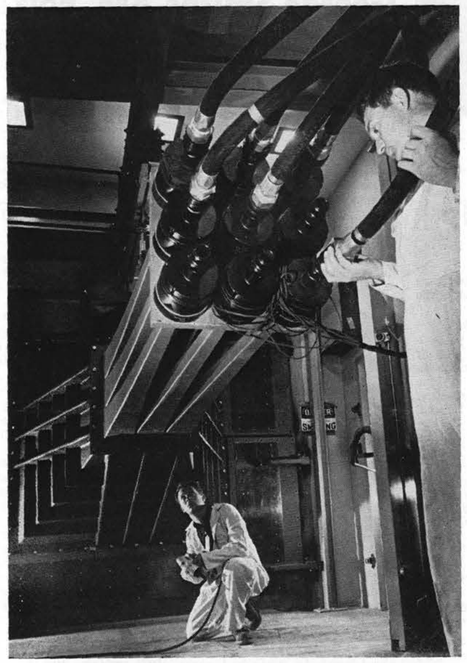
Sandia Lab employees who are members of ECP contribute to the cancer fund. Their contributions will amount to more than $8000 this year.

Another Sandian serving on the Crusade committee is Richard Meyer (5153), who is heading the special events sub-committee. Wrenn Timberlake (AEC-ALO Office of Information) is publicity chairman for the drive.

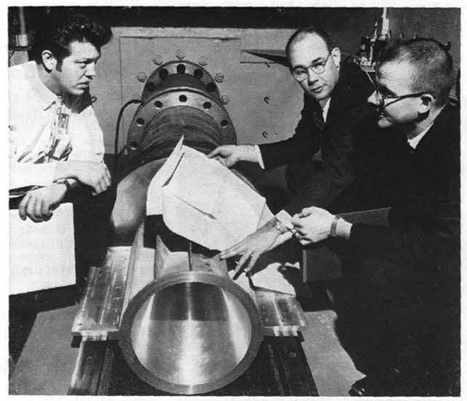
DIRECTOR of Environmental Testing Organization 7300 is W. A. Gardner, shown above at 7300's 185-ft. tower in Area III test lab.

An engineering specialty

Environmental Testing--A New World of Simulation



SOUND can cripple components or systems not designed to withstand acoustic stresses. The giant horn above, located in 7300's Area III Acoustic Facility, can produce vibrations that will seriously damage material. John Windsor, center, checks maintenance and John Colburn, right, attaches hoses to supply compressed air to driver during operation. Both are members of Sandia Laboratory's Vibration Division 7324.



TEAMWORK is a large part of 7300's activities. John G. Koehler of Project Division 7145, left, confers with Dale Buchanan of Test Project Engineers 7331-1, and Bill Kampfe of Track, Explosives, and Guns Section 7323-1, about new sled assembly for 7300's 18-inch actuator.

"When one faces the problem of building reliability into a product which may be called on to function under a wide range of stresses, he is obliged to use all of the tools of engineering at his disposal. Environmental testing is one of these tools," W. A. Gardner, Director of Sandia's Environmental Testing Organization 7300, commented recently.

Environmental testing is a major design and development tool, but the laboratory is also a small world wherein the effects of temperature, humidity, shock, vibration, static stress, altitude, and radiation are created under careful control for the sake of studying the effect of each phenomenon on Sandia's products: nuclear armament and other space-age equipment.

The controlled creation of the effects of environments a weapon is expected to meet gives design engineers the knowledge that when a weapon enters the manufacture-to-stockpile-to-target phase of its life, it can be trusted to do its job, if necessary.

Its reliability won't be jeopardized if its temperature falls below or rises above certain points, or if it is accidentally banged about while being moved, or if it endures many other stresses. Such stresses are an anticipated part of a weapon's life.

As a development tool, environmental testing tells engineers what areas must be "beefed up" or modified to cope with the environments the weapon will endure in stockpile or in the field.

"A decade ago, environmental testing wasn't nearly as complex as it is today," Mr. Gardner continued. "In its infancy, environmental engineering wasn't as sophisticated; anyone could perform the simpler tests . . . or thought he could. Today, in contrast, environmental testing is recognized as an engineering specialty."

Early-Day Tests

In the "early days" — eight or ten years ago — environmental tests were made with relatively simple equipment and instruments by the design engineers themselves. As the need for complicated tests grew, environmental testing became separate from design; facilities and instrumentation were perfected; and the environmental engineer—a specialist in creating environmental stresses, with a finely-tuned sense of the effects that can be expected from a given test—came into being.

"We realized early that environmental testing must be systematically applied," R. S. Hooper, of Test Project Engineers Section 7331-1, explained. "We discovered that in some types of testing, machinery and instrumentation can't always be counted on to produce the same test time after time. The need for calibration and duplication of conditions for tests which were necessary to repeat became important."

In the mid-1950's, management realized the benefit of having environmental tests, including the associated functional tests, made for them by a centralized testing group. Such centralization reduced the need to duplicate expensive equipment. It made possible the development of a specialized staff of test personnel; it made possible consistent and repeatable tests; and it made possible the application of experience gained in one program to subsequent programs.

Further, test personnel realized that even a simple environment like temperature had to be carefully and correctly measured and its effect properly understood. Environmental effects couldn't always be easily interpreted. In the face of these complications, two types of test experts emerged. Specialists in component evaluation testing were assigned to test planning and component evaluation; specialists in providing environments became consultants on special problems, test standardization, instrumentation, and facilities.

Major Improvements

The performance of testing functions by a single organization has resulted in major improvements in service and standardization. Under ideal conditions, an environmental engineer joins a weapon project group before planning begins. He advises on a probable sequence of tests needed for the new component or system, and he provides assistance in drawing up a test program. Through him, the entire environmental testing complex provides its services to design engineers during the development of a new weapon.

Under ideal conditions, his first job would be to obtain information about the operational use and expected environmental levels the item is expected to encounter. After obtaining such information, he would write a general test plan. His third step would be to expand this plan into details concerning the purpose, level, and method of each test to be run. Then, following these detailed plans, he would complete the fourth step: evaluation of the results of the test, culminating in a report written by the testing specialist, and reviewed, edited, and issued by the environmental project engineer.

For example, following these guidelines, D. L. Krenz is the test project engineer working with Aerospace Nuclear Safety Department 7110. The Aerospace Nuclear Safety program has progressed rapidly, with Mr. Krenz contributing heavily to the detailed test planning. "Department 7110 has been kept informed as the tests are scheduled and performed; the preliminary results have been available to us promptly," V. E. Blake, manager of Department 7110, commented. "We feel that the test project engineer is really working for us, and that they provide a much needed service to any project group."

Testing With Judgment

Today, Organization 7300 emphasizes testing with judgment. "Environmental engineers throughout the country are realizing the importance of establishing standard testing methods," E. H. Copeland, supervisor of System Test Division 7331, said. "It used to be difficult even to talk coherently about test techniques and results, because everyone used a different approach, and test results, naturally, varied from laboratory to laboratory. Many groups still ask for tests on similar components to similar specifications, and differences in interpretation and procedures still create problems. But we realize the necessity of good judgment in testing."

Organization 7300 has published a guide to testing, Sandia Corporation Standard Test Methods, for use internally and at outside laboratories that may be doing testing for Sandia. "Environmental testing is an art, and we've developed quite a knowledgeable approach to the field," Mr. Copeland continued.

The test laboratory is functionally organized with a Planning and Functional Test Department, 7330; an Environmental Research and Operations Department, 7320; and a Facilities and Instrumentation Department, 7310.

"Department 7310 serves the entire organiaztion," W. O. McCord, manager of Department 7310, said. "Its services include initial planning, design, procurement of facilities, and modification of existing facilities. The department also searches for new ways to test before a critical need for them arises, and is researching and developing new techniques of instrumentation.

"Another major function of De partment 7310," Mr. McCord continued, "is to provide the instruments to gather data on the nature of the testing environment as well as to instrument the test item to gather data on its behavior during the test. The department also calibrates test instruments, an activity—along with the others performed by the department—which illustrates a continuing concern with accuracy.

Environmental Effects

Department 7320 personnel perform the environmental tests and carry on testing research. "To effectively produce the environmental effects which could be expected in stockpile or in the field, 7310 and 7320 people must know which effects are expected, which are most important, and which are probable, along with the fine points of simulating environments, the capacities and limitations of equipment, and how meaningful measurements of test parameters can be made," R. H. Schultz, manager of Department 7320, explained.

The environmental lab is divided into two parts; one located in Area III, the other in Area I. The equipment in the Area I lab is utilized for component testing, while the size and location of the facilities in Area III make them especially useful for system testing.

PLOTTING TABLE prepares graph sheet from data cards. The table typifies equipment which speeds up acquisition, increases accuracy of test results. Martha Bullock, of Data Processing Division 7333, adjusts pen assembly on table.

"Area III was established to provide the AEC with the capability of performing environmental tests on weapon systems (not including nuclear components). This capability, together with the size and variety of the facilities, is unique in the United States," P. H. Adams, supervisor of the Area III Laboratory, pointed out. "For example, other government contractors frequently request the use of our 35-ft.-radius centrifuge to run tests to failure, or to fire rockets being exposed to high accelerations—say, 100 to 200 G's."

The environmental laboratory in Area I is located in several buildings. Building 860 houses vibrational and climatic equipment, radiography equipment, centrifuges, and office space. Other buildings in Area I required to house environmental laboratory equipment are 882 (shock testing), 864 (static testing), a branch laboratory in 880, and, for explosive components, another branch laboratory in Area II.

"In addition to performing tests, Department 7320 is involved in environmental testing research," Mr. Schultz said. "It's a continuing effort to keep ahead of newly-developed requirements for test environments and instrumentation."

Front Door

Planning and Functional Test Department 7330 serves as the "front door" to the entire testing organization. Personnel of Department 7330 are familiar with the resources available within the test lab, and, through their close working relationship within the lab, they're especially aware of problems presented by the programs brought to them.

"This organization provides a central contact point for test customers and one group responsible for all phases of test planning, execution, and reporting," J. W. Pearce, manager of Department 7330, stated. "The division of responsibility enables a high level of specialization in the remainder of the testing population. And constant liaison between Departments 7310, 7320, 7330, and test laboratories throughout the nation helps us to keep up with advancements."

Department 7330 functionally tests components which go together to make up systems, as well as the systems themselves. The department is also responsible for data reduction for the entire 7300 organization.

"Data, after all, is an important product of testing," T. E. Smart, supervisor of Data Handling Section 7331-1, said. "But it must be acquired, presented in an intelligible form, interpreted, and, finally, stored for rapid and orderly accessibility."

In data retrieval and handling, advances are being made which are characteristic of progress being made throughout 7300. The history of data handling typifies, in capsule form, the history of 7300.

"In the past, data from environmental tests was manually gathered," Mr. Pearce added. "A pen recorder might trace a graph of temperature fluctuations within a test item, and a technician with a clipboard would record the information by hand. Such a situation could be used in the early days of testing, but it presented problems even then; today, it's an archaic method at best."

Disadvantages Obvious

The disadvantages of this type of data handling are obvious. Records were bulky and impermanent. Interpretations of data were subject to errors made by the recording technician, and the whole process was time-consuming. A test "customer" often had to wait days or even weeks for retrieval of useful information. Today, the time scale has been drastically reduced. Test information is often available within a few hours after the tests are run.

"Although we still use the manual method, the current trend is to two other types of data handling, both of which offer improvements in speed, accuracy, and simplicity," Mr. Pearce said.

The first method involves automated systems which record information on punched tape and Flexowriter. Such information is processed for handling by conventional IBM equipment.

"This method lends itself well to the gathering of digital information—say, the automatic logging of periodic temperature readings," Mr. Smart explained.

"The second type of data handling involves use of magnetic tape," Mr. Pearce pointed out. "The system involves gathering data in analog form which can be later 'replayed' into, say, a vibration setup for a continuous duplication of an actual vibration sequence."

The magnetic tape can be used for preparation of a digitized record, if it is needed. The two systems — digital and analog — complement each other, and provide a strong hope for future testing techniques.

"Many of our suppliers must carry out specified tests during production," Mr. Gardner, Director of 7300, explained. "Organization 7300, working with Organization 2500, has provided as much service as possible to the suppliers in the area of standardizing testing methods and performing accurate tests. We think we're in a position to be of real help in disseminating information about the latest test techniques. Many 7330 personnel also contribute to seminars for the suppliers by serving as instructors."

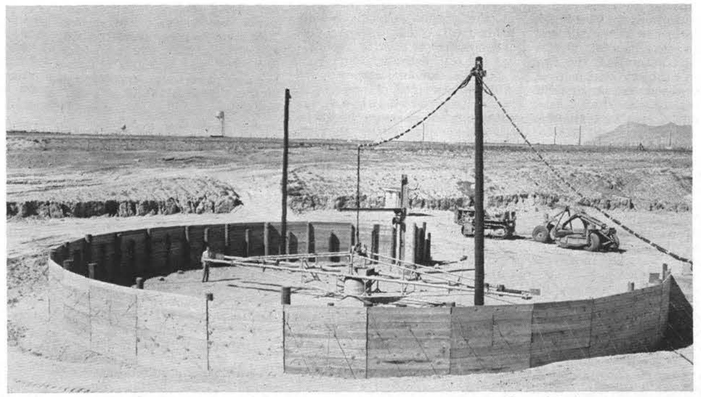
Testing Information

Information about testing is a vital concern within 7300. Personnel consider part of their job to be a vigorous contribution to technical journals, lectures, and symposia concerning environmental testing. Articles of interest are extracted from technical literature and become part of a growing library of information on environmental testing.

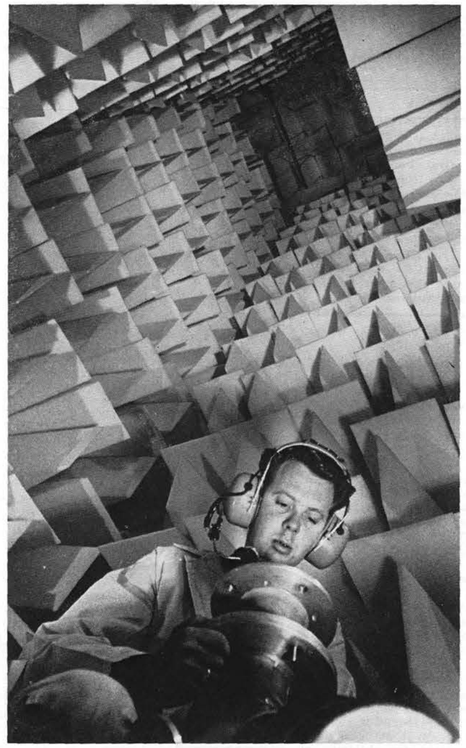
"We want to be continually aware of current developments, in hopes of 'getting the jump' on the future," Mr. Gardner said. "As weapon technology becomes more complex, so does our job in environmental testing. Even before we fully understand our terrestrial environments, we're suddenly reaching out into deep space. The point is that we're still learning important things about the so-called 'familiar' phenomena on earth. These things will shape our techniques in the future."

The hyperenvironments of space —extremely high or low temperatures, extreme vacuum, high-density radiation, zero gravity, meteoritic bombardment, and ionized gases—are currently challenging the ingenuity of the test engineers.

"Our philosophy is to provide the capability for simulation, instrumentation, and accurate environmental testing, and to have this capability ready when needed," Mr. Gardner concluded. "Our job is to provide an environmental testing service, hopefully not only a service people find satisfactory, but one they seek."



ROCKET-POWERED centrifuge — 1952 vintage — was an early test device in 7300's Area III. Although still technically operational, its use has been curtailed by rapid advances in technology and new equipment.



WEDGE-SHAPED batts of foam damp the terrific sound produced by horns at 7300's Acoustic Facility. John Windsor (7324-2) wears headset for protection from ear damage. He can communicate via microphone, earphones with others in building. During test, personnel observe events in this chamber through a multi-pane window from which air has been evacuated. Vacuum kills excess vibrations in window.

Sandia Authors

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

L. H. Koopmans (5425), "Harmonic Analysis of Varve Time Series," February issue, **Journal of Geophysical Research.**

R. E. Hughs (5421), "Length for Discontinuous Curves," current issue, **Archive for Rational Mechanics and Analysis.**

C. J. McGarr (4600), "Statistical Work Measurement," American Management Association's Manufacturing Division Bulletin #23.

Welcome Newcomers

Jan. 1-25

Albuquerque
Chester C. Balok 4253
Vicki Bigelow 4333
Charles H. Boston 4231
Lois M. Easton 4361
Catherine L. Fifield 4361
Endalecio Gurule 4574
Dorothy J. Hickman 3126
*F. LaVerne Hunter 4333
Donna K. Jackson 4212
Mildred F. Kinney 2341
John E. Lowery 4574
John R. Lyle 2624
Adron B. Prichard 3441
S. Saen Robertson 3421
Barbara A. Rothwell 3126
Gloria B. Sais 4211
Joe E. Tapia 3444
Patricia J. Underwood 4333
M. Eunice Vleck 3126
M. Gayle Young 3126
*Carol J. Welborn 3126

Idaho
David R. Begeal, Idaho Falls 5313

Indiana
James A. Young, Griffith 5132
Juan Yguerabide, Notre Dame 5152

Maryland
Raymond S. Clark, Hyattesville 5321
Thomas R. Fewell, Rockville 2411

Massachusetts
Paul E. Waltman, North Billerica 5422

Missouri
Alan E. Stephenson, Rolla 7111

Nebraska
Gary D. Broz, Campbell 2544

New York
Marvin Moss, Ithaca 2624

Oklahoma
Gerald L. McCoach, Altus 2544

Returned from Leave
Emma Gonzales 3126
J. Herbert Pitts 3121
JoAnn G. Romero 3126
L. Faye Schultheis 3126

* Denotes rehired

Promotions

Paul Dubois (4574) to Janitor
Mary K. Dunn (3126) to Teletypewriter Operator
Frank Duggin, Jr. (4310) to *Staff Member—Administrative*
Rodger I. Gelder (7147) to Staff Associate—Technical
R. J. Brousseau (8126) to Staff Associate—Technical
Tom H. Takahashi (8126) to Staff Associate—Technical
Marlin C. Klemm (3444) to File Clerk
Audrey A. Simpson (3126) to Secretarial Stenographer
Catherine C. Cofer (3126) to Typist
Zona Mae Hamm (3126) to Secretarial Stenographer
Marilyn A. Krause (3446) to Reproduction Service Clerk
Donald E. Bates (4135) to Invoice Clerk
Betty H. Wolf (4613) to Service Clerk
L. Virginia Glass (3126) to Staff Assistant—Administrative
Bernice T. Umland (3423) to Typist
Hermann L. Reis (8223) to Staff Assistant—Technical
Joan E. Maffey (8212) to Stenographer Clerk
Patricia R. Leigh (8212) to Stenographer Clerk
Sylvia J. Lopez (8213) to Senior Clerk
D. Diane Dearing (3153) to Service Clerk
Lillian G. Hayes (3153) to Typist Clerk
Wanda S. Bishop (3341) to Senior Clerk
Richard E. Holben (4412) to Staff Assistant—Senior Draftsman
L. J. Fitzmorris (7322) to Laboratory Assistant
Clarence W. Green (7322) to Laboratory Assistant
Clarencio L. Lucero (7332) to Laboratory Assistant
A. Villescas, Jr. (4575) to Laborer
Walter F. Scott (3465) to Photographic Printer
Milton J. Lew, Jr. (2624) to Staff Assistant—Administrative
Amadeo S. Ortiz (4252) to Shop Clerk
Rudolph A. Martinez (3465) to Photographic Printer
K. E. Scranton (3462) to Schedule Clerk
Melba A. Purvis (8234) to Record Clerk
Jean A. Langston (5000) to Secretary
Jose M. Gutierrez (4613) to Stockkeeper
Robert P. Williams (4613) to Stockkeeper
Albert A. Rodriguez (4613) to Stockkeeper
Howard E. Peacock (4613) to Stockkeeper
B. O. Sandoval (4575) to Laborer
Arsenio B. Baca (4613) to Stockkeeper
Willie M. Sisneros (2343) to Record Clerk
Geneva E. Wiseman (3446) to Reproduction Service Clerk
F. J. Krommenhock (7241) to Data Reduction Clerk
Hector Delgado (7325) to Laboratory Assistant
Mildred A. Austin (7140) to Secretary
E. Genese Shieler (7311) to Laboratory Assistant

Supervisory Lateral Transfers
J. Arnold from 7324-3 to 7332-4
R. S. Cox from 4113 to 4152
W. C. Colborne from 4152 to 4113
K. H. Lloyd from 4411-5 to assignment in 4410
L. P. Baudoin from 4411-3 to 4411-5
K. L. Gillespie from 1332 to 1324
R. S. Pinkham, Jr. from 1321-2 to 1324-1
R. F. Ashmore from 1332-3 to 1324-2
C. C. Fornero from 3153 to 2642
F. A. Leckman from 2642 to 3153
H. C. Walker from 8126 to 8121
R. S. Jacobson from 8124-1 to 8121-4
R. K. Petersen from 8126-1 to 8122-3
S. G. Cain from 8122-3 to 8123-1
J. D. Benton from 8125 to 8124
J. H. Burns from 8123-1 to 8124-1
W. R. Guntrum from 8125-2 to 8124-3
F. J. Maloney from 8124 to 8126
W. A. Maupin from 8125-1 to 8126-1
C. M. Pothoff from 8151-2 to 8127-2
R. A. Baroody from 8121 to 8144
R. J. Tockey from 8141-3 to 8144-1
A. J. Wiemken from 8141-1 to 8144-2
R. M. Tidwell from 8127-2 to 8151-2

Public Health Service Urges Use of All 3 Sabin Vaccines

by S. P. Bliss, M. D.
Sandia Corporation Medical Director

A special advisory committee on oral polio vaccine to the Surgeon General of the U. S. Public Health Service, met in December 1962 to review all cases of polio-like illness associated with the three types of oral vaccine. The following summary is intended to answer questions Sandia employees may have about vaccination and the small risk involved.

The committee emphasized that it doesn't consider an individual case can be proved to be caused by the vaccine, and that no laboratory test has given a final answer about a possible relationship between the vaccine and certain cases of polio-like illness that have appeared.

It attempted to decide for each case whether or not it's "compatible" with the possibility of having been caused by the vaccine. Illness must meet three requirements to be suspect: (1) onset within 4-30 days after feeding of vaccine, (2) illness is clearly paralytic polio, and (3) laboratory findings which don't exclude a relationship between disease and vaccine.

On the basis of current data, 11 cases are associated with Type III vaccine, and are judged "compatible" by the committee. Eight of these people are over age 30. Four cases were excluded because they're clearly unrelated to Type III vaccination; seven cases were considered inconclusive as to possible relationship.

S O S
Sabin Oral Sunday

Albuquerque residents will be able to complete their Sabin Oral Polio Vaccine series with the third and final dose on Sunday, Feb. 3.

Livermore area residents will be offered Type III vaccine in March.

The Type III vaccine may be secured at the same clinics where the other types were administered.

Seven cases are associated with vaccination of Type I vaccine and are judged suspect, of which four of the individuals are over age 30. Ten cases were excluded; four were inconclusive. None of the three Type II cases were judged "compatible."

The total doses given in non-epidemic areas during 1962 numbered about 31 million Type I, 19 million Type II, and 15 million Type III. Thus, the maximum potential risk for Types I and III is about 1 per million, but higher for those over 30 years old. For Type II, there's no indication of risk. Further, the committee says that spread of the disease by contact with a person recently vaccinated presents no significant hazard.

In light of their findings, the committee recommends: (1) that community plans for immunization be encouraged, using all three types; and (2) that vaccination be emphasized for children, in whom the danger of polio is greatest, and who serve as the natural source of polio infection in the community.

Because the need for immunization decreases with advancing age, and because potential risks of vaccine are believed to exist in adults, especially over age 30, vaccination should be used for adults only with full recognition of its very small risk. Vaccination is especially recommended for adults with high natural disease risk: parents of young children, pregnant women, people in epidemic areas, and those planning foreign travel.

Of greatest importance, the committee concludes, is continuing vaccination of oncoming generations.

Dorothy C. Crocker Died Jan. 7

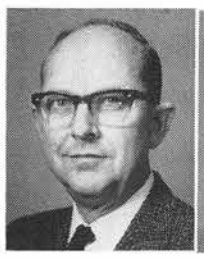
Funeral services were held recently for Dorothy C. Crocker, 52, who died Jan. 7 after a short illness.

Mrs. Crocker had been at Sandia Laboratory four and a half years and was a keypunch operator in Section 3452-5. Her home was originally Big Spring, Tex.

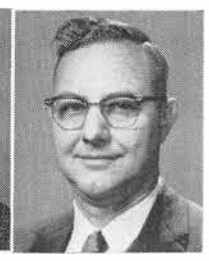
Survivors include her husband, Louis, her mother, and three brothers.

Service Awards

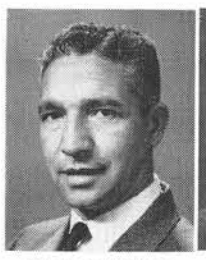
15 Year Pins



Leonard A. Smoll
2441
Jan. 20, 1948

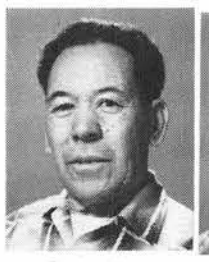


Warren G. Merritt
2543
Feb. 2, 1948

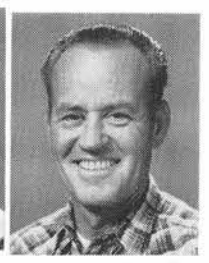


Bernardo Gallegos
4212
Feb. 3, 1948

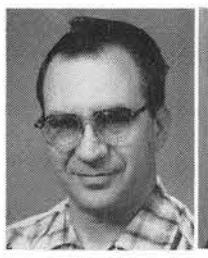
Paul H. Adams
7323
Feb. 4, 1948



Benino Jinzo
4573
Feb. 4, 1948



Monroe J. Blaylock
4614
Feb. 6, 1948



Leroy D. Shoemaker
4254
Feb. 6, 1948

John S. Cundy
4621
Feb. 9, 1948

Dwight L. Russell
4423
Feb. 11, 1948

Esquipulo A. Baca
8232
Feb. 13, 1948

10 Year Pins

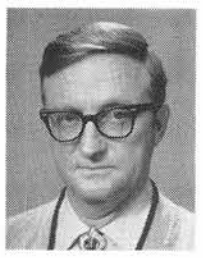
Feb. 1-15

Harry B. Evans, Jr. 2331, C. Jerry King 2544, Marilyn C. Pilkington 4413, Hyacinth M. Walker 3452, Owen R. Thomas 8213, Evelyn Lois Ricard 3133, Herbert L. Webster 2411.

Ira B. Ward 8121, Howard J. Henry 8241, C. F. Magnuson 7144, Laurence W. Platt 2441, Robert W. Roberts 2422, Richard M. Dayhoff 7134, W. G. Sandusky 6000, Mabel L. Sylvester 3421.

Supervisory Appointments

CHARLES S. WILLIAMS, JR., to supervisor of Statistics and Components Evaluation Division 1442.



Chuck has been with Sandia Corporation full time since 1957 and had previously worked summers or part-time since 1952. Three years ago he was promoted to supervisor of Systems Studies and Proposals Section 1424-1.

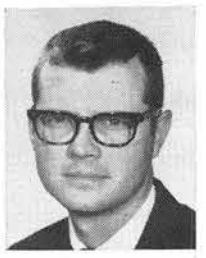
Prior to employment here, he taught electrical engineering for three and a half years at the University of New Mexico.

Chuck has a BS degree in electrical engineering and an MA in mathematics from the University of Oklahoma. He later received an MS degree in electrical engineering at the University of New Mexico.

He is a member of the Institute of Electrical and Electronic Engineers, and the following honorary societies: Sigma Xi, Phi Kappa Phi, Pi Mu Epsilon, and Tau Beta Pi.

Chuck was in military service for six years during both World War II and the Korean conflict.

JOHN E. MARION to supervisor of Section 8141-1, Preliminary Analysis Division, Livermore Laboratory.



John, a mechanical engineer, joined Sandia at Livermore in July 1958, and was assigned to work with a project group. He has since worked in preliminary analysis, and for a brief time in field test.

Before coming to Sandia, John served three years in the Marine Corps, stationed at Twentynine Palms, Calif. He was battery commander in an anti-aircraft battalion and achieved the rank of first lieutenant before his discharge.

John received his BS degree in general engineering from the University of California at Los Angeles in 1954. He was awarded his MS degree in mechanical engineering a year later from the same school.

He is a member of the California Society of Professional Engineers.

GEORGE W. DYCKES to supervisor of Elastomers and Foams Section 1112-2, Structural Plastics Division.

George has been assigned to the Materials and Process Development organization since he came to Sandia in 1957.

Peviously he worked two years at Peninsular Chem Research Inc., Gainesville, Fla., as a project leader in development of new silicone elastomers. He holds patents on two of these new materials, which are now marketed by Dow Corning Corp.

George also was a group leader in the Applied Research Section of Lord Manufacturing Co., Erie, Pa., for five years. His group was responsible for the design of special polymers and adhesive systems used in vibration control mountings.

He received a BS degree in chemistry from Gannon College, Erie, Pa., and did graduate work at Western Reserve University, Cleveland, O.

George is a member of the American Chemical Society and Rubber Division of ACS.

JOSEPH W. WEIHE to manager of Mathematical Research Department 5420.

Joe has been at Sandia Laboratory since October 1954 and has been supervisor of Systems Analysis Division 5422 for nearly six years.

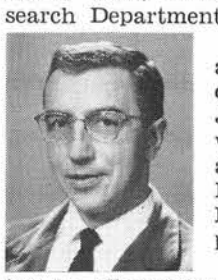
Prior to coming here, he was a National Science Fellow at the University of California.

He has BS and MS degrees in mathematics from the University of Nevada and a PhD degree from the University of California. He was a teaching assistant for three years and a lecturer in mathematics for two years at the University of California, and also taught math for two years at the University of Nevada.

During World War II, Joe served three years in the Army Air Corps, part of the time as a pilot in the China-India Theater.

He is a member of the American Mathematical Society, the American Mathematical Association, Sigma Xi, and Phi Kappa Phi, honorary societies.

WILLIAM F. ROHERTY to supervisor of Systems Analysis Division 5422, Mathematical Research Department.



He has been at Sandia Laboratory since June 1952 and was originally assigned to Physical Research Department 5130.

Prior to coming to Albuquerque, William was a student at Marquette University, where he received both his Bachelor's and Master's degrees in physics.

He served in the Army in 1946 and 1947.

The AEC Takes Over — 1947

Weapons Program Put on Permanent Basis

In 1945 President Truman outlined a national program for control of the nuclear energy program. In 1946 there was an historic debate before Congress passed the Atomic Energy Act which gave control of the program to a civilian commission. The law became effective Aug. 1. Argonne and Oak Ridge were established as national laboratories and authorization was given for construction of Brookhaven.

* * * *

At midnight on Dec. 31, 1946, the newly-created civilian U. S. Atomic Energy Commission assumed responsibility for the national nuclear energy program. Then began the takeover of the huge complex of plants and laboratories in which more than $2 billion had been invested.

There were eight reactors in operation, three for plutonium production at Hanford, four research reactors—two each at Los Alamos and Argonne Forest—and the radioisotope producer at Oak Ridge.

The first years of AEC management were devoted primarily to rehabilitation and improvement of the hastily-built wartime facilities. Manufacture of fissionable material and development of weapons were put on a permanent basis. Serious trouble with the Hanford plutonium reactors, due to expansion of the graphite blocks used as the moderator, was overcome and plutonium production was increased.

Reactor Advances

The foundations for steady advances in reactor technology were laid. The experimental breeder reactor was authorized, the ship propulsion project (submarine) expanded, need for a material testing reactor was studied, and a large desert area in Idaho was selected for the National Reactor Testing Station (NRTS).

In the 1950-1953 period, following U. S. detonation of a Soviet nuclear test in 1949, the entire national program gained momentum. The Congress authorized more than $3 billion for new installations and facilities. Reactor development was an important part of this expansion.

In December 1951, the world's first useful nuclear electricity was produced at NRTS when a small generator hooked up with the newly-completed breeder reactor lighted four 200-watt bulbs and supplied power for shop machines. The powerful materials testing reactor started operating in Idaho in 1952.

The "submarine in the desert" became a reality as the land-based prototype thermal reactor for the first nuclear-powered ship, the USS NAUTILUS, was completed in Idaho. Several experimental reactor projects were authorized, including development of the sodium cooled graphite moderated concept. The Oak Ridge School of Reactor Technology was established in 1950.

Reactor Importance

The importance of reactors in radioisotope production was shown in the increase in quantity and variety available. By 1948, the X-10 reactor at Oak Ridge could make substantial quantities of carbon-14 in a few weeks—many, many times more than previously available. The cost was about $10,000 per millicurie. It was calculated then that it would require hundreds of cyclotrons to turn out a similar amount of carbon-14 and the cost would run into millions of dollars.

A surge of industrial and popular interest in nuclear power resulted in inauguration in 1951 of the Commission's industrial participation program. Utility companies in large numbers teamed up with reactor and component manufacturers in study groups that eventually totaled 25, with 81 companies participating. Some $8 million in private funds was spent on these studies. First reports of these teams were termed "cautiously optimistic."

In 1953, the breeding principle was established in the Idaho experimental reactor. The homogeneous reactor was tested at Oak Ridge and its heat operated a 150-kilowatt generator. The submarine prototype was brought to substantial power and construction of the USS NAUTILUS was well underway.

That same year, the JCAE held extended hearings on nuclear power development, which laid the foundation for revision of the original Atomic Energy Act of 1946.

* * * *

The next installment of this series starts discussion of AEC programs. The Atomic Energy Act of 1946 and its 1954 revision require that all AEC activities shall have the paramount objective of making maximum contribution to the "common defense and security." Currently about 70 per cent of AEC expenditures are for the national defense. Next: "For the National Defense."

Seeking Recruits For Membership in Sweet Adelines, Inc.

Like to sing? Sweet Adelines, Inc., welcomes new members whether or not they have talent or previous musical training.

The only requisite is that you like close harmony as in barbershop quartets. The group is nonsectarian and is open to women of all ages.

The singing group meets every Wednesday at 7:30 p.m. at the First Unitarian Church, 3701 Carlisle NE. For further information contact Betty Jo Parker (3452).

Christmas Season Journey Is Almost An Annual Elwell Family Event

Nearly every year about Christmas, wanderlust comes to A. R. "Al" Elwell (7322-2) and his wife. They visited Mexico in 1957, Europe in 1960, Hawaii in 1961. This year, it was Central America.

"Mrs. Elwell teaches in Albuquerque, so we wait until the Christmas recess to make our trips," Al explains. "This year, we found a lot of people were flying, but there were few tourists in the places we visited."

The Elwells touched down in all of the Central American countries except British Honduras. They saw native ceremonies in many of the villages they visited, including a Saint's Day celebration in Chichicastenango, and a mass marriage in the village of Santiago Atilan.

"We were impressed by the coffee and banana plantations—called **fincas**—in Honduras," Al says. "The banana trees on terraced hillsides provide proper shade for the coffee bushes growing beneath them. All of the work on the plantations is done by native laborers."

The Elwells won't commit themselves about where they plan to go next year. "We're still enjoying the Central America trip," Al concludes.

Golden Nugget Night Planned for Coronado Club

Saturday night, Feb. 9, will be "Golden Nugget" night at the Coronado Club. Members and their guests will be able to enjoy various games of chance without monetary risk; scrip will be issued to everyone. Prizes will be given to the luckiest or most skillful players.

The "Vegas Varieties," fresh from Nevada, will present two floor shows, and will furnish dance music until 1 a.m. A "Silver Dollar" Breakfast will be available at midnight. Admission will be $1.50 per person. Guest fees are waived.

A special Sea Food Buffet will be offered after Social Hour, Feb. 15. Price is $1.50 per person.

On Feb. 7, George Arnot will begin a series of ten bridge lessons for intermediate players. Fee is $6 for the course.

Activities for Feb. 16 feature a Sports Smoker with a ski theme, guest speaker, and complimentary snacks.

Amy Kahoiwai at Inaugural Ball Honoring Brother

Amy Kahoiwai (3421-1) is proudly displaying copies of the Honolulu newspapers. Her younger brother, William S. Richardson, was recently installed as Lieutenant Governor of Hawaii.

Amy was called home last month by the illness of her father. While there, she attended the inauguration and the inaugural ball.

The inauguration was held on the grounds of Iolani Palace, where King Kalahaua was crowned in 1883. "There were about 7000 persons on hand for the ceremony," Amy said. "It was very colorful with the band-stand area lined with luau torches and kahilis, the large, bright feather emblems of Hawaiian royalty."

The inaugural ball that evening was at the Royal Hawaiian Hotel. "There was not a muu-muu in sight," she said. The affair was formal. Amy wore a Chinese dress of brown with gold trim.

Lt. Gov. Richardson will serve a four-year term. He was previously Executive Secretary for the Territorial Committee.

Hunters, Fishermen Sought for Club

Sandia Lab employees interested in forming a hunting and fishing club are invited to contact Benefits and Services Division 3122. Plans are now underway to organize such a group to share information and recreation activities. Call O. J. Foster, ext. 29157 for more details.

Bowling Tourneys Being Scheduled

The first Women's Handicap Bowling Tournament for Sandia Laboratory and AEC/SAO employees is scheduled April 20-21 and April 27-28, according to Benefits and Services Division 3122. The tourney will be held at the Coronado Club and will include singles, doubles, and all events competition.

Interested women bowlers are urged to contact Division 3122, ext. 29157, by Friday, Feb. 15, if they wish to participate.

Another forthcoming bowling event is the 4410 department tournament on Sunday at 1 p.m. at Lomas Bowl. John Puhara, 4413-2 supervisor, issued a challenge to bowlers in the other drafting sections. Twenty-four teams are entered.

Meet Your Reporter

Patte MacPherson Has Five Years Experience As Lab News Reporter

Reporter Patte MacPherson

Patte MacPherson has been a volunteer **Lab News** reporter for five of her seven years at Sandia. She has been assigned mainly to Division 2624 in Component Programming and Administration Department.

Patte's husband Herb has worked a graveyard shift as a Sandia security inspector for the past six years, but they have sufficient time together to bowl and camp. Both enjoy hunting with bow and arrow but have yet to kill big game. Last year they helped construct a covered patio at their home, and have just finished converting their garage into a den. "We had some professional assistance, but there was plenty of work left for us to do," Patte said.

R. G. Luckey Named SAR President

Robert G. Luckey, Comptroller, 4100, was recently elected and installed as president of the Albuquerque chapter of the Sons of the American Revolution.

Sympathy

To Antonio Garcia (4574) for the death of his daughter, Evangeline Marie, age three, on Jan. 14.

To L. E. Lamkin (7500) for the death of his father in Albuquerque Jan. 15.

To Conroe Wyman (4514-3) for the death of his father-in-law in Indiana on Jan. 22.

coronado club

Feb. 1 to Feb. 16

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 Social Hour 5:15-7:30 The Ming Trio Buffet 6:30-8 p.m.	2 Youngsters Dance Class 1-3 p.m.
3	4 Bridge Tourney Open Team of 4 7:30 p.m. Ski Club Meeting	5 Adult Dance Instruction Basic — 7 p.m. Advanced — 8:30	6 Game Night 8 p.m.	7 Intermediate Bridge Lessons 8 p.m. First Session Geo. Arnot	8 Social Hour 5:15-7:30 p.m. T. Kelly Buffet 6:30-8 p.m.	9 Golden Nugget Nite 9 p.m. Dance Classes 1-3 p.m.
10	11 Duplicate Bridge 7:30 p.m.	12 Adult Dance Instruction Basic — 7 p.m. Advanced — 8:30	13 Ladies Bridge 1:15 p.m. ACF Bridge 7:30 p.m.	14 Bridge Lessons 8 p.m.	15 Social Hour 5:15-7:30 p.m. M. Engler Special Sea Food Buffet	16 Men's Sports Smoker 7:30 p.m. Dance Classes 1-3 p.m.

EVENTS

SHOPPING CENTER • SHOPPING CENTER • SHOPPING CENTER • SHOPPING CENTER • SHOPPING CENTER

CLASSIFIED ADVERTISING

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

RULES

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

FOR SALE

21" TV, console, in working order, $20. Schneider, AX 9-6243.

3-BDR, 1¾ baths, separate den, 1600 sq. ft.; finance $15,000 w/new FHA loan, total price, $15,950. 11017 Phoenix NE. Ray, AX 8-0408.

ELECTRIC RANGE, 40", $45 or best offer; Dachshund, male, red, 2 yrs., pedigreed, registered, all shots, $65. Durgin, 298-3581.

AKC registered Welsh Corgi (Pembroke) puppies; home made camper for 1949 Chev. ½-ton pickup. Garrison, DI 4-2023 after 6 p.m.

3-BDR, 1¾ baths, family room w/fireplace, w/w carpeting, landscaped, 1 yr. old, Paradise Hills, $15,350. Neubauer, 898-2289.

FOUR new jumbo rubber pillows, $2 each. Moery, AX 9-3630.

GAS RANGE, 36", $20. Polly, AL 6-0223.

MACHINIST TOOL BOX, 91¼x15¾x26, H. Gerstner, mahogany w/precision tools; smaller metal box w/tools. Sullivan, AL 6-6373.

THE GOLDEN BOOK dictionary—6 vol., Atlas—6 vol., and encyclopedia—16 vol., sell or trade for aquarium. Bauer, AM 8-9735.

ANTIQUE 1905 automobile lap robe, $12; Standardyne 1925 radio, $20; old cartridge board, $65; want spool cabinet. Smitha, AX 9-1096.

GE automatic washer, 1958 model, make offer. Cast, 298-3909.

CORNER LOT, North Valley, 24'x24' unfinished building, water well, $1800 cash. Silva, 344-0638.

THREE CEMETERY LOTS, Sunset Memorial, make offer, will swap; Garage door, single, $20, double steel, $100; steel windows. Villella, 299-6261.

KENMORE automatic dishwasher, needs work on motor, $30. Ezell, 268-4845.

HOTPOINT automatic dishwasher, not a portable model, $65; twin mattresses, both for $35. Piraino, 616 Madison, NE.

'56 CHEVY 4-dr., Powerglide, $350; chair, davenport, $100; bicycle, 26", 3-speed, English racer, $25; gasoline lawn mower, $15. Dahl, AL 6-1067.

WESTINGHOUSE washer and dryer, stacked, small load, $75. Hawley, CH 2-3104.

'62 T-BIRD, 10,000 miles, all power accessories, electric windows, a/c, etc. Chandler, AX 8-5069.

MAHOGANY BED-STEAD, $10; office desk, $30; grand piano. $550; file cabinet, $10. McFall, AX 8-1552.

WESTINGHOUSE WASHER; Rancho electric stove; kitchen cabinets, complete set; 85,000 BTU gas heater, make offer. Riggs, DI 4-2791.

STEREO SYSTEM, Fisher X101B, Garrard turntable, two 12" 3-way speakers, Sony ¼TK deck, 262-D, all for $260. Browning, AX 9-6384.

2-BDR HOUSE, attached garage, hw/floors, carpeting, drapes, near bases, $10,800. McAlpin, AL 5-6498 after 5 p.m.

MEDIUM SIZE upright piano, mahogany finish, new felts and recently tuned, $175. Calvery, 255-9545.

16-FOOT FIBERGLASS BOAT and trailer, steering wheel and running lights, $300. Meikle, AX 9-4640.

'55 CADILLAC—model 62, 4-dr. sedan, new tires, original owner, $825. Watt, AX 8-0595.

NEW matching box springs and innerspring mattress, Foamex Firestone, tuftless construction, 1300 sq. in., inner roll and quilt and frame. Conklin, AM 8-6050.

A-H SPRITE, white, 1959, 2-seat roadster. Randle, Placitas.

GE white push button range, $75; white double sink w/faucets; kitchen cabinets; screen door. Willers, CH 3-7494.

WOODEN TABLE w/2 chairs, $10; '56 Chrysler Windsor radiator, $25; swing set, $10; youth chair, $5. Windham, 256-9455.

'50 CHEVROLET, $150 or best offer; 6-yr. crib and mattress, $10. Rychnovsky, AX 9-2850.

'55 GE FILTER-FLO automatic washer, pink, $40. Souza, AX 8-0777.

'55 CHRYSLER New Yorker, power steering, brakes, seats, and windows, $150. Baca, AM 8-2821.

METRONOME, new cost $15, sell for $12; train, .027 diesel freight, extra track, remote control switches, $12. Harlow, AX 9-1495.

'61 CHEVROLET Impala 4-dr. sedan, R&H, factory air, PS, automatic transmission, positraction, seat belts, tinted glass, 32,000 miles. Fortman, 265-2105.

TWO 8.00x15 snow tires w/tubes, wheels, $10 each set. Boling, 282-3256.

3-BDR, den, separate dining room, built-in kitchen, double garage, landscaped, carpets, drapes, near schools. Syme, AX 9-4100.

TWO 6:00x6 nylon tube type aircraft tires, new, ACI, $12 ea.; altimeter, Kohlmann type 3⅛" face, window barometer setting, $12. Gubbles, 298-3528.

'50 DODGE, $190. Patterson, AX 8-2584.

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, Feb. 8

'59 LARK 6, 2-dr., 42,000 miles, $650 cash. Robnett, AL 5-7329.

SEWING MACHINE w/all attachments; Singer Golden Glyde vacuum cleaner w/all attachments; Olympic portable typewriter. Naumann, 298-6476.

BEAGLE, male, 9 mos. AKC, shots, good w/children, accept reasonble offer. Wardlaw, AX 8-0613.

3-BDR HOME, $100 down, $87/mo., 526 Texas SE, 5 min. from work, to a Base employee. Luna, 299-2488.

4-BDR HOME, den, 1¾ bath, pitched roof, hw/floors, landscaped, sprinklers, near schools, La Salle Grande addition, $21,500, 2908 La Palomita NE. Williams, AX 9-5967.

KENMORE IRONER, $25; Lionel O gauge track, 10c ea., and accessories; playhouse cupboard, formica topped, 4' high, 2' deep, 4' wide, $15. Rayner, AM 8-1705.

HEATH CB-1 citizens band transceiver, $25. Halliday, AL 6-6685.

5-PIECE DINETTE SET, maple slab top w/red plastic chairs, $30; 3-drawer pedestal desk, chair, 2-shelf bookcase, Philippine mahogany, $12.50. Hurt, AL 5-5949 after 5:30 p.m.

TABLE SAW, Walker Turner, 8", 1-HP motor, fine adjustment fence, protractor guide, 2 blades, double belt, $170. Shannon, AL 5-2826.

'54 DODGE, R&H, best offer. Lopez, AX 9-0941.

REFRIGERATOR, 11½ cu. ft.; apt.-sized Kelvinator electric range. George, AX 9-7538 after 4, weekdays.

FIVE w/w nylon tires, 14x7.50, $60; Fascination pool table, $65. Will trade either for typewriter. Hedman, AX 9-2077.

'59 CHEVROLET 4-dr. Belaire V8, OD, R&H, w/w tires, tinted glass, 27,000 miles. Coon, AX 8-0845.

3-BDR MOSSMAN, a/c, fireplace, covered patio, dishwasher, double garage, 3500 Georgia NE. Gardner, 268-5747.

ELECTROLUX vacuum cleaner w/all attachments, $10; General Electric Mixmaster on stand w/2 glass bowls, $7.50. Stricker, 256-3830.

GUNS: Colt Frontier Scout revolver, .22 cal., $40; Winchester Model 12 shotgun, $75; Winchester Model 88 rifle, .308 cal., $115. Kubiak, 256-1513.

'55 PONTIAC 2-dr. HT, Hydramatic, PB, R&H, new seat covers, $295. Miller, AL 5-2577.

'49 DODGE PICKUP, ½-ton. Apodaca, 3130 Barcelona SW.

'60 TRIUMPH motorcycle, Tigercub scrambler, 16 HP, large carburetor, racing cam, mountain and cruising gears, never raced, chrome fenders, $325. Koetter, AM 8-1009.

WINGBACK ROCKER, hard maple, nylon upholstery, $45; refrigerative air conditioner, window installed, $125. Reed, AX 9-7425.

UNDERWOOD typewriter, $25; ham radio components. Kanode, 408½ Cornell Dr. SE, CH 3-0493.

'61 PONTIAC Ventura cp., tri-power, 4-speed stick, 24,000 miles; '63 Falcon station wagon, R&H, w/w snow tires on rear. Demaree, AX 9-0055 after 5.

MAUSOLEUM double crypt, Sunset Memorial Park, will discount equity 25%, take over $38/mo. payments. Rathbun, 298-4745 after 5 p.m.

AKC REGISTERED Dalmation puppies. Elett, AM 8-1419.

'53 STUDEBAKER TRUCK, ½-ton, 4-speed, rebuilt motor, 6-ply tires. Baumann, 635 Chama SE, Apt. B.

GRETSCH TRUMPET w/case, $45 or trade for portable sewing machine. Schildknecht, AX 9-5540 after 6 p.m.

COLUMBIA 3-speed hi-fi, original price $50, sell for $20. Swartz, 243-4228.

4-BDR, 2805 Second SE, take property, or car in trade, $8500; inquire 2809 Second, SW. Chavez, AL 5-5461.

ANTIQUE OAK secretary desk w/shelves and mirror; trade for old guns or coins. Zaluga, 344-1564.

'54 DODGE 4-dr., V-8, auto. trans., tinted glass, $200. Nix, 2813 Virginia NE, 298-4282.

'56 CHEV pickup, $650; 15'-camping trailer, $600; 6v car radio, $12.50; bunk or twin beds, $40; table tennis set, $12; Coleman lantern, $2. Drake, AX 9-0544 after 5 p.m.

'58 JEEP STATION WAGON, 4-wheel drive, R&H, trailer hitch, brake; Vickerman bullet seaters, .25, .27, .30 cal., $6.25 each. Doleshal, BU 2-3237.

ELECTRIC RANGE, 40", fully automatic $125. Magruder, AL 5-2078 after 5 p.m.

USED RED BRICK. Ter Haar, 345-0710.

TRAIL SCOOTER "Burro" two-speed, $135. Chappell, 299-7860.

WALNUT DINING ROOM TABLE, 30x42" w/10" leaf, $25; mahogany plywood utility table 80x28", $15. Smith, AX 9-6873.

17' TRAVEL TRAILER, shower, toilet, floor furnace, electric brakes, 26-gal. pressure water system, sleeps six, $995. Brathovde, AM 5-0783.

SAKO VIXEN .222 heavy barrel, glass beaded Fajen custom stock, w/100 rounds brass (40 loaded), extra magazine, removable swivels, $100. Grace, AL 5-4009.

'62 FORD FALCON 2-dr., $1750. Wilcox, 265-1372.

'59 MIDWEST CUSTOM BUILT, 2-bdr., built-in kitchen, a/c, small down payment, take over payments $75.68/mo. Grossman, 255-8949.

NAVAJO RUG, unusually large native dye, 6'x12', new. Burns, CH 2-2407 after 6 p.m. or all day Sunday.

WANTED

PICKUP TRUCK, Chevrolet or Ford, 1940 to 1954; will swap building materials, labor or both. Call early or late, Villella, 299-6261.

RIDERS for car pool vicinity of Valencia and Los Lunas to Sandia Corp. Norcott, TO 5-7789.

RIDERS from vicinity Candelaria and Eubank NE to gate 6 or 7. Sanchez, AX 9-8722.

SMALL ROCK TUMBLER, buy or trade evaporative cooler. Merritt, AX 9-6630.

PRIVATE PARTY will pay reasonable price for good used Baldwin or Steinway piano, preferably Grand. Sample, AL 6-6968.

RIDE from vicinity 1017 Truman SE to bldg. 800 parking lot, daily. Eaton, 256-7717.

RIDE from 1514 Altez St. NE to bldg. 880, needed badly. Hamblett, AX 9-7755.

DOZER BLADE for Jeep pickup, 1-ton chain hoist, oxy welding/cutting outfit; 16" Jeep wheels; misc. for sale or trade. Aaron, BU 2-3124.

FOR RENT

LARGE 3-bdr. house, convenient location 2 blocks north of Lobo Theatre. Montoya, 204 Bryn Mawr Dr. NE, AL 5-6930.

TRAILER, boat or outside storage space, small monthly charge. Villella, 299-6261 late evenings.

15' TRAVEL TRAILER, sleeps five, reserve now for this summer. Colp, AM 8-8035.

3-BDR, 1½ bath, electric stove, carpeted, drapes, $75, 6105 Aztec Rd. Bradford, AM 8-0980.

1 and 2-BDR APTS., patio, fireplace, furnished and unfurnished, from $95, 2608 Eubank NE. Piper, AX 9-8075 after 6 p.m.

LOST AND FOUND

LOST—Black and white frame plastic glasses, dark blue knit jacket, Imperial and house keys on ring; light brown sweater w/dark brown trim—left on coat rack in 802, 3 rough stones set in gold cuff link, turquoise and silver earring, lady's black cloth stretch gloves, 3" brown pocket knife, Sheaffer fine line pencil, Gruen watch engraved Mary Evalyn, enameled heart earring w/rose, Chrysler lighter w/initial HEC, keys w/ID of Shary D. Holmes, snap type cases. LOST AND FOUND, ext. 29157.

FOUND—Tan to grey polished stone necklace, gold flower earring, silver tie clasp, black cloth covered button, black leather button, Schwinn bike left at bldg. 894, pigskin furlined glove, brown plastic frame glasses, pink pearls, pearl tie tack, brown framed bifocal glasses. LOST AND FOUND, ext. 29157.

Group to Study Manpower Problem In Computer Field

How to select, develop, and evaluate programmers and analysts in the rapidly-growing computer field is a problem that is currently bothering industry. Both aptitude tests and on-the-job evaluations have shown serious faults.

The Computer Personnel Research Group was formed last year to study these problems. The group's third meeting will be held Feb. 7-8 at Sandia Laboratory to establish which areas are to be investigated and to outline specific approaches to be employed.

Arrangements for the meeting will be handled by S. H. Peres (3133) and D. K. Robbins (3454). Sessions will be held at the Coronado Club.

The group is comprised of representatives from the University of Southern California, Johns Hopkins University, Army and Air Force, several research laboratories, and private industry (mainly in the computer manufacturing field).

One of the approaches to the problem of identifying and evaluating the characteristics desirable in a programmer is discussed in an article, "Identifying Programmer Behavior" by Mr. Peres and Phil H. Arnold (3451-1), which appeared in the January issue of **Datamation.** The study was based on essays written by 23 programmers and their six supervisors at Sandia Laboratory. The essays described desirable performance and characteristics of outstanding programmers.

Young Scientists To Visit Sandia On Edison Day

The seventh annual Science Youth Day tour of Sandia Laboratory facilities will be held Friday, Feb. 15, in observance of the birthday of Thomas A. Edison.

The group will consist of about 125 outstanding students and 15 teachers from Albuquerque's high schools and Belen High School.

The afternoon program includes an address of welcome by J. W. Galbreath (3430), and a talk by R. H. Schultz (7320) on "What and Why of Environmental Testing." The students will then be divided into two groups for a visit to Technical Area III to see the centrifuge, drop towers, and sled track facilities, and to the Sphere of Science to see the displays there and view "The Sandia Story."

Tour coordinator is G. C. Wayland (3433).

Stereo Tape Club Gathering Library For Member Use

Bill Johnson (7331) was elected president of the newly-organized Sandia Laboratory Tape Club. Other officers are John P. Suttman (3463), vice president; Frank F. Taylor (3465), secretary-treasurer; and Robert I. Butler (7325), board member.

Membership is open to all Sandia Lab employees with an interest in four-track stereo. A tape library is being assembled for use of club members.

Anyone interested in joining the club may call Roseanne Bascom (3122), ext. 29157, for information.

Jack Shoup Plans Sports Car Gymkhana For Automobile Club

The Rio Grande region of the Sports Car Club of America is sponsoring a "gymkhana" at the southeast corner of the Winrock parking lot on Sunday, Feb. 3.

Registration is from noon to 1 p.m. with a $2 entry fee. All Sandians owning sports cars are invited to participate by Jack Shoup (1430), activities coordinator.

A gymkhana is a form of competition in which each individual sports car runs an obstacle course against time.

PRERETIREMENT COUNSELING group meets weekly in the evening at the Coronado Club to discuss retirement planning. Meetings feature such speakers as James E. Cox, (above) assistant trust officer of an Albuquerque Bank. Program is conducted by Services and Benefits Division 3122.

Counseling Assures 'Best Is Yet to Be'

Attitude and planning make the difference between success or failure of retirement. Helping employees recognize the need for taking positive steps toward successful retirement is the purpose of Sandia Laboratory's Preretirement Counseling Program. Called "A Ten Year Look Forward to Retirement," the program is handled by R. A. Quelle of Services and Benefits Division 3122.

"Growing old and retiring from active employment are sometimes unpleasant thoughts," Mr. Quelle says. "Most people put retirement thoughts in the back of their minds. They have a vague idea that when the time comes they will be ready. Many visualize lazy days of fishing or puttering in the garden. This kind of thinking can cause an early death."

As Sandia's retirement counselor, Mr. Quelle has made a special study of the problems of aging. He is a board member of CASA (Coordinated Action for Senior Adults) and was a representative at the White House Conference on Aging in 1961. He also served as a member of the New Mexico Survey Committee on Aging.

"There have been employees," Mr. Quelle says, "who retire bursting with health and vigor. They take a little trip similar to a vacation and maybe stretch it out a little bit. Then they come home and there is nothing to do. One man went fishing once, then stayed home, sat in a chair, and died eight months after retiring.

"This is a tragedy of the highest order. The old cliche about retirement being your 'golden years' is true. Retirement can mean tremendously productive and pleasureful years. I'm happy to say that most of our retired employees are finding this to be true. Some are starting new careers, part-time or full-time, in teaching or sales. There are those, too, who are in community activities. Some have started their own businesses. Others are using retirement for travel and the fulfillment of long put-off dreams."

Successfully planning finances will help provide a comfortable life and make possible the activity that is vital to retirement. But financial planning alone is not enough.

"Both physical and mental activity are a must in retirement," Mr. Quelle says. "Social activities, friendships, recreation, and worthwhile work can prolong those golden years. This is a fact. People who do things they enjoy and anticipate live longer. Retirement from the job need not mean retirement from life." Sandia's preretirement counseling program places early stress on this fact.

When the program started, there were some 400 Sandia employees between the ages of 55 and 65. To date, some 225 have accepted invitations to attend the series of evening meetings at the Coronado Club. Wives or husbands are also invited. Within two years, the backlog of those who wish to participate should be completed and additional employees reaching age 55 will be invited into a preretirement discussion group.

At Livermore Laboratory retirement counseling is offered on an individual basis through Employee Services & Records Section 8212-2. The number of Livermore Laboratory employees approaching retirement eligibility is still small and no plans have been formulated for group counseling at Livermore.

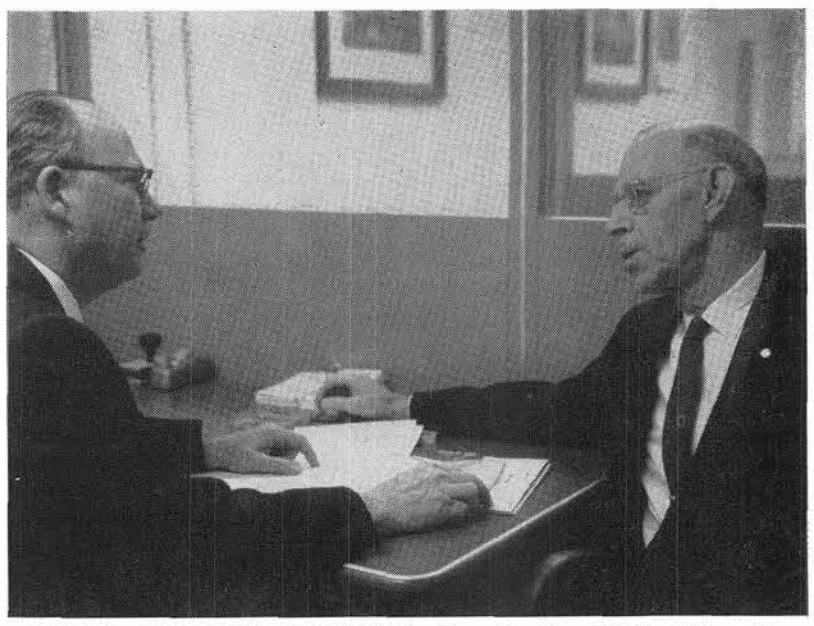
The program explains Sandia Corporation benefits — retirement income, health care, insurance, credit union — as applied to the retired employee. Outside speakers, experts in their fields, discuss social security benefits, avoiding pitfalls in financial planning, trusts and important papers, social adjustment, health and medical problems, free-time activities, and employment opportunities.

"The entire program deals in specifics," Mr. Quelle says. "Individuals are encouraged to seriously consider those preparations that will be necessary to insure financial comfort. The emphasis is on thinking ahead."

In addition to the evening meetings, Mr. Quelle is also available during working hours for retirement counseling. His office is in Bldg. 610, telephone ext. 52136.

At the close of each series, members of the group are asked to comment on the effectiveness of the program and make suggestions for improvements. The returned questionnaires have been overwhelmingly favorable.

One woman wrote, "One of the biggest handicaps an older worker has today is his own sense of inferiority and insecurity . . . The world accepts us usually at our own valuation. If we feel that we're through, then we have nothing to offer . . . We enjoyed every minute of the course and we think it is an extremely fine thing."



SANDIA RETIREMENT COUNSELOR, Bert Quelle (3122), left, talks with Leroy E. Foster (2563) about Sandia benefits. Mr. Foster will retire from the Corporation Feb. 28 after 13 years with the company.

A man said, "One benefit that I think the preretirement counseling program has is this — you know, as people become older they lose confidence in themselves and there is something about the preretirement counseling program that gives them confidence in themselves . . . I expect to move to the coast in the Pacific Northwest and become a beachcomber. I want to find driftwood there and out of this driftwood I will make clock cases. Each one, of course, will be individual and different from all the others. My grandson lives up there, and when I get up there I want to try him out for size on my knees. Then, I have a number of inventions in mind that I will develop that will do people a lot of good. In fact, I have so many things to do that I know I will not get them all done."

* * *

"Grow old along with me! The best is yet to be, the last of life, for which the first was made."— Rabbi Ben Ezra

Sandia's Safety Record

Sandia Laboratory	*Livermore Laboratory*
HAS WORKED	HAS WORKED
525,000 MAN HOURS	779,000 MAN HOURS
OR 15 DAYS	OR 152 DAYS
WITHOUT A	WITHOUT A
DISABLING INJURY	DISABLING INJURY