

CHECKING FIRING CIRCUITS are Roger Gelder and Jim Malloch. The Nike-Cajun rocket is assembled with the payload on the launcher and almost ready for firing. The launcher can be raised to any angle and aimed for the proper rocket trajectory.

High Winds Delay Research Rockets Scheduled for Firing at Barking Sands

A series of high altitude research rockets scheduled for firing from Barking Sands Launch Site on the Hawaiian island of Kauai is currently being held up by high velocity jet stream winds around 30,000 feet altitude.

The series, originally scheduled Jan. 24-29, is part of a continuing high altitude research study conducted by Atomic Particle Physics Division 5241. Lawrence B. Smith (5241) is scientific director for the project.

Larry and the other 40 Sandians in the Islands have had their rockets, instrumentation, and cameras readied for three weeks now but have been able to fire only three rockets. These were the Nike-Cajun rockets carrying small basketball-size spheres whose reflective surfaces are easily

tracked by radar. The spheres are ejected at various altitudes and then follow the trajectory of the rocket to apogee. After apogee, the spheres are carried by the prevailing winds and their rate of descent indicates the wind movements and density of the atmosphere—measurements which Larry uses in his high altitude study.

The rocketeers at Barking Sands are professionals. They have been at Pacific ranges for several other operations. The long wait to fire the remainder of the rockets in the series is frustrating but hasn't dimmed their enthusiasm. Theirs is a rare profession and continually challenging.

Reynolds R. Moore, supervisor of Projects Division 9221 and test director for the first part of the operation, described the current situation, "We have a narrow path to the impact area. The rockets are launched from the Kauai beach; travel southwest between Kauai and Niihau, an island which lies about 17 miles southwest of our site; and impact some 50 to 70 miles away. Range safety, which is the responsibility of the Navy's Pacific Missile Range (PMR) facility adjacent to Sandia's Barking Sands, requires that neither the payload or the booster rockets fall back onto the Kauai beach or endanger Niihau. Strong, high winds are enough to create hazards. We can compensate for the drift of the booster but in doing so, problems arise with the fall of the payload. The jet stream has been hitting about 100 mph for two weeks now."

Computing the trajectories for each rocket fired is the responsibility of R. E. Gardner and M. T. Kane of Rocket and Recovery Systems Division 9324. These two aerodynamicists use the wind data collected by PMR meteorological balloons and other factors of the rocket system and launcher positioning to compute the trajectory of the payload and fall of the booster. Time after time they have had to cancel scheduled launches.

Another problem involves ships and aircraft in the impact area. The area is patrolled by Navy radar planes. Other radar installations at the PMR facility and the NASA manned satellite tracking station high on the mountain behind the range sweep the impact area. Occasionally small



WEATHER REPORTS show continuing high jet-stream winds over Kauai. Larry Smith (left), scientific director for Sandia's high altitude research project, and Ren Moore, test director, get the word from Pacific Missile Range meteorologists.

(Continued on Page Five)

Little Things Add Up . . .

A. C. Wilken Uses Polaroid Prints In New Way for Cost Improvement

Value Engineering and Cost Improvement Division 2563 is interested in any idea which saves time, money, and effort at Sandia Corporation—ideas such as the one suggested recently by Andrew C. Wilken of Techniques Development Division, Advanced Data Systems Department 2420.

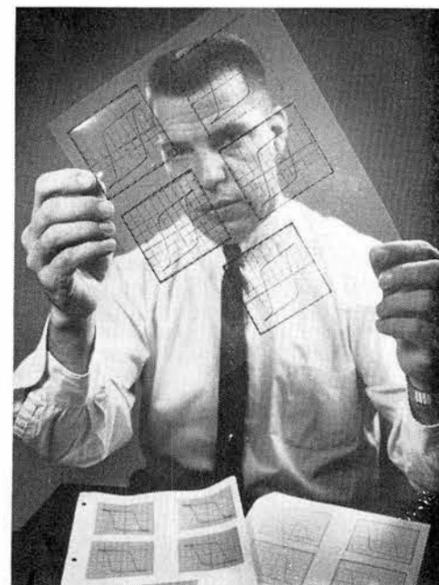
Although not financially spectacular, Andy's idea does add up to significant savings—an estimated \$500 in the next few months—and it also provides a way for engineers and technicians to perform the reporting function of their work in a more convenient, rapid way.

In Andy's work of evaluating memory core materials for automated test equipment, much of the performance data comes from the curves displayed on oscilloscopes. These data are usually photographed by a standard oscilloscope camera using Polaroid film. The prints show a white curve across the reference scale of the oscilloscope. The background is black. It is a very satisfactory way to immediately obtain data and a permanent record.

The Polaroid print serves well if only one print is needed. Usually, however, more are needed and reproducing the predominantly black print poses a problem. If only a half dozen reports are needed of the engineer's work, Xerox reproduction would seem the most rapid way, but the Xerox machine is not capable of reproducing a solid black area and retaining sharp resolution of the white curve and calibration scale. Also, if a Vu-Graph is needed for an oral presentation with visual aids, the black Polaroid print must be accurately traced by an artist in Technical Art Division 3464 or reproduced photographically by Industrial Photographics Division 3465 to make a transparency for projection.

Andy's idea bypasses these operations. Rather than use the black Polaroid print for Xerox reproduction, Andy fixes the paper negative, the part usually tossed away after development of the print. This negative is a reverse of the print—black lines on a light background—and reproduces satisfactorily by Xerox machines. It must be noted, however, that the scale is inverted. In most instances, however, with this notation, the data are satisfactory.

And a Vu-Graph can be made directly from the Polaroid negative in any of the Thermofax machines located in the Tech Area, a process which takes only a minute



ANDY WILKEN displays a Vu-Graph transparency made from the negative backing from a Polaroid print. Andy's technique, described in the accompanying article, saves engineers time in preparing material for oral presentations, informal reports.

or so—no tech art and no photographic service is needed.

Andy figures he needs reproductions of oscilloscope data about 10 times a week. The reproductions are used in correspondence, in informal internal reports, and in information circulated within his organization. For an occasional organizational meeting, he needs the Vu-Graphs to support his oral presentations. For these purposes, the method of reproduction discussed here works adequately.

For publication or for important presentation to representatives of outside organizations, Andy recommends conventional reproduction using the facilities of Industrial Photographs Division 3465 and Technical Art Division 3464. Much better quality is obtained and the results are professional. Enlargement or reduction of the data is also possible through these services.

In the meantime, other engineers might try Andy's method. Projecting his cost improvement for the next two-year period, Andy was credited with a \$2000 cost improvement action by the Cost Improvement Committee.

John H. Findlay Elected to Grade Of Fellow, IEEE Announces

International headquarters for the Institute of Electrical and Electronics Engineers has announced the election of John H. Findlay, Director of Electronic Component Development 1400, to the grade of Fellow.

This is IEEE's highest grade of membership and only scientists and engineers making outstanding contributions in the fields of management, engineering, or education are elected to receive this honor. The award for Mr. Findlay was based on "outstanding contributions to the development of electron tubes and devices for atomic weapons."

The Albuquerque Section of IEEE will



hold a dinner meeting in April at which Bruce Angwin, Director of Region 6, will present the Fellow award to Mr. Findlay.

Mr. Findlay has been with Sandia since 1953 in both component development and quality assurance organizations. Prior to coming here, he was with Westinghouse Electric Corporation for 17 years working in development of electronic tubes, and spent two years with Union Switch and Signal Company as a research physicist. He received his BS and MS degrees in physics from Queen's University in Kingston, Canada, and his PhD degree from Princeton University.

He has been active in IEEE (and its predecessor, the Institute of Radio Engineers) for many years and is also a Fellow of the American Association for Advancement of Science and a member of the American Physical Society.

Editorial Comment

Sooner or later everybody dies. Not a pleasant thought, nor one to dwell on, but nonetheless true and inescapable.

However, premature death is both tragic and needless. Traffic deaths are needless. But an even greater killer stalks this land of ours. A killer that each of us has heard of and knows of, but still tends to ignore — until we have an attack that may be fatal.

A heart attack.

An attack resulting from heart or blood vessel diseases.

Until we have a twinge, a pain, or an uncomfortable feeling, most of us ignore that strongest and most vital muscle in our body — our heart.

Yet it's seldom that a heart attack occurs without warning—warnings that we can recognize and should report to our physician.

To succumb to a heart attack is almost as lamentable as a traffic death — for both can usually be avoided by exercising care and taking defensive measures.

Heart and blood vessel diseases are the leading cause of death in the United States—about 900,000 lives annually. At least 10 million Americans, including a half-million school-age children, have some form of heart or blood vessel disease.

Doctors can help almost all kinds of heart and blood vessel diseases—especially if diagnosed in early stages. So it's vital that we have regular medical check-ups by those trained to recognize symptoms of heart and blood vessel ailments.

Here in the midst of National Heart Month, let's pay heed to a few simple things we must give attention to in order to protect ourselves. These are things that only we—you and I individually—can do. No one else can do them for us, we must initiate and follow through on these rules ourselves. Our lives depend on it.

1. Forget extremes. Don't work or play as if you were a youngster. Exercise moderately and regularly.

2. Control your weight. If you are more than 10 pounds overweight, reduce. Carrying extra weight around makes your heart work that much more. You will feel better, look better, and doubtless live longer with normal weight.

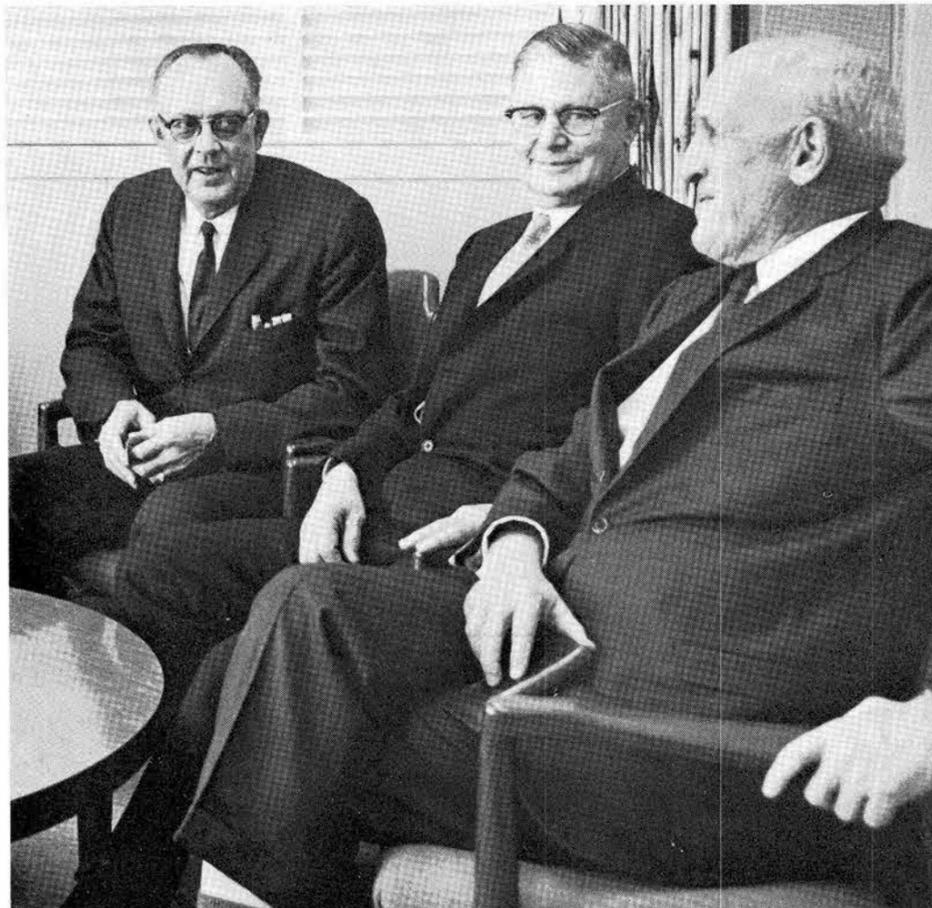
3. Be careful of what you eat. Maintain a healthy nutritional diet. Go slow on fatty foods.

4. Take it easy. Don't blow your top at every little thing. Keep your blood pressure down before it gets you down. Don't worry needlessly about "symptoms." If you have doubts, see your physician.

5. If you have a family background in heart or blood vessel diseases (parents or grandparents), be more careful. Records show these often run in the family.

6. Ease up as you grow older. Be your age. Don't let tensions and anxieties wear you down. Learn to relax both mentally and physically.

You and I can't afford to put these things off. Our heart needs our help just as much as we need our heart.



PURCHASING ACTIVITIES were reviewed and discussed at Sandia recently by (l to r) H. G. Mehlhouse, Western Electric Co. Group Vice President (includes finance, purchasing, and personnel), H. G. Ross, WE Vice President of Purchasing and Transportation, and K. S. Spoon, Sandia's Purchasing Agent. In 1949 when WE assumed management of Sandia Laboratory, Mr. Mehlhouse became Sandia's first Superintendent (Director) of Manufacturing Development, and Mr. Ross was Sandia's first Purchasing Agent.

Credit Union Elects A. Y. Pope, J. W. Pearce To Board of Directors

A. Y. Pope (9300) and J. W. Pearce (7330) were elected to serve three year terms as directors during the annual meeting of the Sandia Laboratory Federal Credit Union on Jan. 27.

The men succeed D. S. Tarbox (3200) and M. E. Grothe (4150), who chose not to run for another term of office. J. S. Miller (4122) was re-elected to the board of directors and R. A. Quelle (3122) was re-elected to a three year term on the credit committee.

The credit union officers are R. L. Kollman (4136), president; J. J. Michnovicz (2555), vice president; Dale Bellamy, treasurer and manager; and D. W. Ballard (2564), secretary.

Sandia Represented on VP's Task Force on Youth Motivation



Kathryn E. Lawson (5155) has been invited to represent Sandia Corporation on Vice President Hubert Humphrey's Task Force on Youth Motivation. The recently-expanded group is meeting in Washington, D. C., today.

The program is sponsored by "Plans for Progress," the framework under which business firms across the nation are furthering the objectives of the Equal Employment Opportunity Program. (Sandia Corporation has been a member of Plans for Progress since September 1964.)

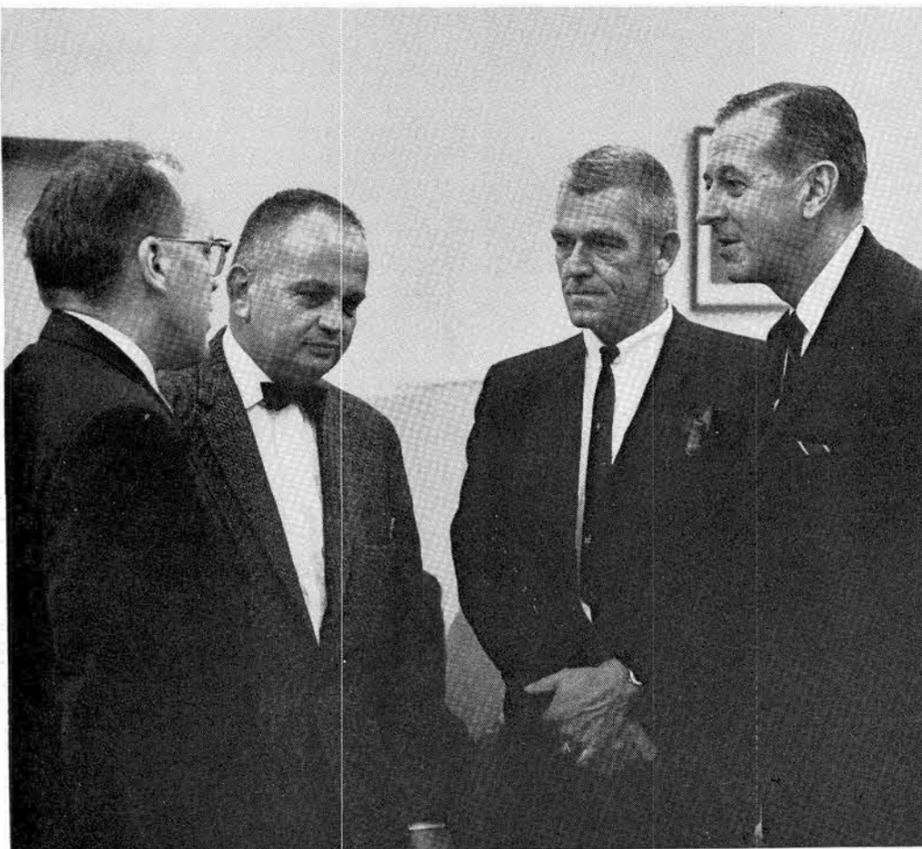
The Task Force, which was formed a year ago, includes 200 industry representatives, all with minority backgrounds. During the meeting, they will discuss plans to present programs at colleges and high schools with large numbers of minority students. The programs will be designed to motivate the students to prepare themselves for the expanding opportunities in industry. Vice President Humphrey has described the Task Force members as "living witnesses that equal opportunity does work."

Pacific Planning Board Met Last Week at Sandia Laboratory

A group of 150 scientists, government, and military representatives convened at Sandia Laboratory last week for a meeting of the Pacific Planning Board. The Board is involved in the operational planning for the nation's nuclear testing readiness. Agenda items included a critique of the recent readiness exercises in the Pacific and discussion of future plans.

Sandia members of the board are D. B. Shuster, Director of Special Projects 9200; L. E. Hollingsworth, Director of Field Testing 7200; and C. D. Broyles, manager of High-Altitude Nuclear Burst Physics Department 5240. Other participants in the meeting were M. L. Kramm, manager of Upper Atmosphere Projects Department 9220; A. F. Hutters, supervisor of Diagnostic Aircraft Operations Division 7225; A. B. Cole, supervisor of Test Vehicle Operations Division 7256; R. S. Millican, supervisor of Diagnostic Instrumentation Division 7252; J. E. Stiegler, supervisor of Systems Engineering and Coordination Division 7251; and W. W. Parker and A. C. Lamb of Field Test Staff Division 7261.

Represented at the meeting were the Atomic Energy Commission, Joint Task Force 8, Sandia Corporation, Los Alamos Scientific Laboratory, Lawrence Radiation Laboratory, U. S. Air Force, U. S. Navy, Pacific Missile Range, Holmes and Narver, and Edgerton, Germeshausen, and Grier, Inc.



MEMBERS of the Pacific Planning Board, meeting at Sandia Laboratory last week, discuss recent test readiness exercises held in the Pacific. From left are Robert H. Goeckermann, Lawrence Radiation Laboratory, Joint Task Force 8 Scientific Deputy; D. B. Shuster, Director of Special Projects 9200; L. E. Hollingsworth, Director of Field Testing 7200; and Maj. Gen. John D. Stevenson, USAF, Joint Task Force 8 Commander.

PAGE TWO

LAB NEWS

FEBRUARY 11, 1966

SANDIA CORPORATION

LAB NEWS



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7



SQUAD LEADERS (l to r) Bob Johnsen (8143) and Lurl Ostrander (8231) turn in pledge cards and reports for the Valley Memorial Hospital Expansion Fund drive to Sandia campaign treasurer Ray Falcon and auditor Cathy Banks (both 8213). Contributions by Sandia Livermore employees should exceed \$58,000.

Valley Memorial Hospital Pledges by Sandia Employees Expected to Exceed \$58,000

Near-final results from the Valley Memorial Hospital Expansion Fund drive conducted at Livermore Laboratory, Jan. 17-21, show a total of \$57,356. This amount was pledged by some 530 of the 820 eligible employees at Sandia. (Employees living outside the hospital area were not canvassed during the fund drive.)

Indications are that the drive will go over \$58,000 when 11 employees, absent during solicitation, are contacted.

An additional \$10,000 was pledged to the fund by Sandia Corporation.

A large number of contributions came from employees who pledged a week's pay over a three-year period through payroll deduction. The average pledge per contributor exceeded \$100.

"I am gratified by the continuing community spirit of Livermore Laboratory employees in responding to the needs of this drive," says R. L. Peurifoy (8120), chairman of the Sandia solicitation campaign. "Much of the success is also due to hard work on the part of the squad leaders and solicitors."

The valley-wide campaign is aiming at \$800,000 to be collected in contributions or pledges before Apr. 17 to qualify for \$1,411,462 of Federal-State matching grants, allocated to Valley Memorial Hospital under the Hill-Harris Act.

Livermore Notes

Current membership identification cards for Disneyland are now available to Sandians and their immediate families. The card entitles members to purchase admission ticket books at considerable savings.

Those who return the control file stub attached to the card are eligible for selection as one of the three "Families of the Month" and a free royal weekend visit to Disneyland.

The membership cards may be obtained from Jim Henderson in Employee Benefits 8211.

Joe Buchler (8244) won the first place trophy in the Jan. 29 Sandia Employee Golf Club tournament with a net low score of 61. The straight handicap tourney was played at Hillview Golf Course in San Jose. John Barnhouse (8226) and A. C. Skinrood (8142) tied for second place with net scores of 68.

In the "match play" feature, 20 players took awards for winning their respective matches.

The next SEGC tournament will be held at Concord Municipal Golf Course Feb. 26. Those interested in participating may contact Elmer Smith (8162), ext. 2738; Tom Dadian (8114), ext. 2318; or Joe Genoni (8235), ext. 2433.

LIVERMORE NEWS



DISCUSSING PRELIMINARY GOALS AND OBJECTIVES of the newly-formed Technical Panel for Community Service are (seated) G. W. Anderson (8140), organizer of the volunteer group; (l to r) W. N. Lorentz, General Electric Company, Vallecitos Atomic Laboratory; D. W. Ballard (2564), guest speaker; W. F. McNaughton, Control Data Corporation; J. F. Sladky, Coast Manufacturing and Supply Company; and W. J. Frank, LRL.

Technical Panel Organized To Serve Livermore Valley

The formation of a Technical Panel for Community Service organized by G. W. Anderson (8140), was announced recently at a meeting of the Valley Memorial Hospital medical staff.

The Technical Panel is a team of Livermore Valley volunteers from science, engineering, mathematics, and other technical fields who have offered to contribute their professional skills to community service.

Other initial members who will form a steering committee with Mr. Anderson for the panel are W. J. Frank, R. W. Ashworth, and A. L. Austin, Lawrence Radiation Laboratory; W. V. Cummings and W. N. Lorentz,

General Electric Company, Vallecitos Atomic Laboratory; J. F. Sladky, Coast Manufacturing and Supply Company; and C. W. Breckenridge and W. F. McNaughton, Control Data Corporation. Dr. Fenn Davis, anesthesiologist at Veterans Hospital in Livermore, will be a consultant to the panel.

Originally formed to provide assistance to the Valley Memorial Hospital expansion program, the panel invited D. W. Ballard (2564) to address the medical group on the latest developments in contamination control. Mr. Ballard presented the Sandia-produced film "Clean Air is a Breeze" and discussed the use of the laminar-air-flow principle in designing ultra-clean surgical facilities. As part of his presentation, Mr. Ballard showed slides of the laminar-flow clean room which was recently installed and used for the first time in a medical operation at Bataan Memorial Hospital in Albuquerque.

"I believe the panel will be able to assist in many community projects as well as provide additional outlets for the technical creativity of the members," Mr. Anderson said. "The spectrum of possible contributions to the community range from simple device design, through consultation in technical specialties, to the design of complex electronic systems," he added.

Mr. Anderson said, "The first goal of the panel would be to make a detailed survey of potential projects. Preliminary discussions with the Valley Memorial Hospital staff indicated several areas in which the panel could assist. For example, contributions appear possible in isotope tracer technology, instrumentation, design of surgical tools and accessories, hospital information retrieval, adhesive technology, and the design of a surgical clean room."

Since its introduction, the panel has generated interest in other areas such as the school system. The Livermore Elementary School District recently asked the panel to lend its technical talents to the design and layout of two mobile classrooms which will provide remedial services throughout the Valley.

SCLL Orthomat Demonstrated for Contra Costa College Educators

E. Frank Butler, Dean of Technical Education, and two instructors of engineering, Carlos A. Arroyo and William H. Lawrence, from Contra Costa College, San Pablo, Calif., visited the Livermore Laboratory Orthomat facility recently. The visit was in connection with establishing a Manufacturing Engineering Technology program which is being proposed as part of the college curriculum to begin with the 1966 fall semester.

This program will provide an education in machine tools and related technology, and assist students in securing initial employment or advancing in their present jobs.

The Orthomat, a numerically-controlled plotting machine, officially known as the Orthomat Engineering Drafting Machine, is used primarily at SCLL to verify design criteria. By using the machine to draw tape programs of the cutting paths to be followed by production tools such as the automatic milling machine and lathe, errors in design or programming can be recognized and corrected before the part is made.

The Orthomat is of particular interest to the educators because of numerical control courses being planned under the new Manufacturing Engineering Technology program. The machine also has wide application in the College's present drafting program curriculum.

A. A. Alford, supervisor of Manufacturing and Shop Liaison Section 8223-5, coordinated arrangements for the visit. Al is Educational Committee Chairman for the Golden Gate Chapter of the American Society of Tool and Manufacturing Engineers (East Bay), and a member of a five-man advisory com-

mittee to the Contra Costa College Manufacturing Engineering Technology program.

The advisory committee is responsible for assisting the college in such areas as facility and equipment planning, equipment acquisition cost, curriculum formulation, student recruitment and placement, and other matters which may develop with the offering of the new program. It is one of several occupational committees which have been established to promote closer relationships between the college and the community.



EDUCATORS from Contra Costa College viewed the operation of the Orthomat Engineering Drafting Machine recently at Livermore Laboratory. From left are A. A. Alford (8223), member of the Engineering Technology program; Carlos A. Arroyo and William H. Lawrence, instructors of engineering; J. D. Gilson, supervisor, Numerical Systems Engineering Division 8151, who explained and demonstrated the Orthomat Machine; and E. Frank Butler, Dean of Technical Education.

Time at Premium in Retiree's Life; Volunteer Activities Keep Her Young

The last time Anne Barrett was asked to volunteer her time, she replied, "When? I don't have many free days left!" Although Miss Barrett has been retired from Sandia for a little more than a year, her "leisure" time is rapidly disappearing.

She does volunteer work in the psychiatric ward at Bernalillo County-Indian Hospital, tutors two children in reading under the Albuquerque Tutoring Council, and assists at the day care center of the Albuquerque Association for Retarded Children. "I've also had several calls from the Veterans Hospital to help in their recently-opened psychiatric care wing," she adds.

To appreciate her interest in these activities, one should first realize that they are alien to her previous way of life. They are retirement-borne interests. "They are the type of things that any retired person with free time could do," she explains.

For 25 years Anne worked in City Hall in Gary, Ind., part of the time as the mayor's secretary. "I lasted through both Democrats and Republicans," she said, "but finally when one mayor said he wasn't going to run again, I decided I wasn't going to stay either. I wanted to go someplace else while I was still young enough to find work. Preferably some place where the weather was warmer. One of the men I worked with had a son at Sandia. I hadn't heard much about New Mexico, but he made it sound pleasant. I came here for a three-week vacation and during the time interviewed for a job at Sandia."

She was hired in February 1951 and two years later became secretary to W. T. Mofat, manager of Test Range Department, where she remained until her retirement.

Her work at BC-I Hospital was the first of her volunteer activities. She had taken a course in child development and behaviour at the University of New Mexico and volunteered through the Albuquerque Mental Health Association for work in the psychiatric ward. In mid-November she finished a six-week training course which is given by members of the hospital's staff for persons assisting in this area.

"The first time I went in the ward I had a funny feeling, but I wasn't frightened," Anne says. "There is always an aide with me. The doors to the individual rooms are not locked, only the outside ward door. Sometimes I'll just sit with one of the patients on a hallway bench and listen as they talk. The knowledge that someone is inter-

ested in them helps, and you find they start looking forward to your coming. Most of the patients seem to be living in another world."

Attendants at the ward have found that playing games has a therapeutic effect on the patients. It's a happy way for them to spend their time, and they like to receive prizes when they win. Anne fills this continuing need with prizes contributed by friends at Sandia—jewelry, billfolds, fancy perfume bottles (which she fills with cologne and decorates with ribbon), etc. Mrs. E. J. Gilbert, who is chairman of the volunteers, says about Anne, "I've never met anyone like her; she's fantastic! The gifts she brings are always in lovely taste—the type of things you would give each other. The condition of gifts or prizes is important. If they're broken or otherwise damaged, they have a depressing effect on the mentally ill. These people get the feeling that others don't think they're important enough to care whether a prize is shabby." Another volunteer worker described Anne as "a very enthusiastic worker."

Occasionally there is a need for clothing for a patient being released. Such was the case of a 17-year-old girl who was well enough to re-enter school. She didn't have any clothes except those she was wearing when admitted to the hospital. Anne, through her many friends, completely outfitted the teenager—purse, shoes, coat, dresses, the works.

Until recently she had also helped in the pediatrics ward.

About the time Anne got squared away in this venture, Dr. E. M. McKee, school-community coordinator for the Albuquerque Tutoring Council, asked her to do secretarial work for him. "Well, I'd had my fill of typing and shorthand," the ex-secretary said, "but I had always wanted to teach. I told him I'd rather tutor but it would have to be something other than math. I don't understand the new method."

(The tutoring program started last year as a community action project on a purely volunteer basis to assist public school children who are falling behind in their studies and who may be future drop-outs. High school and college students plus some 25 persons over college age have been tutoring 357 students at John Marshall, Lowell, and Riverview elementary schools; and Ernie Pyle and Washington junior high schools. In late December the U.S. Office of Economic Opportunity approved a grant of



JOHN MARSHALL school principal Lenton Malry sits in on a tutoring session as Anne Barrett helps fourth-grader Janet Hodge read "Little Bear's Friend." Charlene Hill waits her turn for specialized reading instruction.

\$21,118 to be used in connection with the tutorial program.)

Anne was selected as one of 34 tutors to aid students at the John Marshall school. Once a week she spends an hour and a half helping two little fourth graders with their reading (45 minutes each). The children practice reading aloud, and now and then Anne will interrupt them with a question to determine their understanding of the words. The dialogue goes something like this: Anne—"What is the bear doing, sleeping or thinking?" Pupil—"I think he's thinking." Anne—"Why?" Pupil—"Because he's not lying down."

Lenton Malry, principal of John Marshall school, said the tutors were helping children at his school mainly in reading and mathematics. "I feel that reading is the key," he said. "If you can't read, there can be no understanding of math, social studies, or other subjects. Some of these children fall behind in reading as early as the first or second grades. They receive no encouragement at home, in fact I'm sure that many of their parents can't read effectively; they recognize the words but don't understand the meanings." Discipline isn't a problem in this age group. "It's mainly a problem of counseling the students," Mr. Malry explains. Anne adds, "Empathy is vital, and the principal has the children's confidence."

The school dates back to 1923 and is characterized by the large rooms, wide hallways, and wooden floors typical of that period. Anne works with her small students in a room used as an auditorium. "The girls are so anxious to learn. When I finished with the first one, she has asked, 'When you're through with the other girl, will you come back to help me?'" Anne recalls.

Dr. McKee noted, "We can use more older people and those with special interests in the program. The program is expanding and there is a continual need for replacements. In February we will start providing tutors for the Cañoncito Indian reservation, 38 miles west of Albuquerque, and next year the program will be extended to Old Town elementary school. We also need assistant guides for a cultural enrichment program in the public schools."

One afternoon a week Anne helps at the day care center for retarded children (located at the First Presbyterian Church). The center, operated by the Albuquerque Association for Retarded Children on monies from the United Community Fund, is for pre-school children and those through eight years who are not mentally capable of entering special education classes at the Albuquerque public schools. There are presently 47 children enrolled and 20 on a waiting list. The three teachers give simple academic instruction and teach daily living habits, personality and social development, speech, listening, games and sports, arts and crafts, and the motor skills. Anne helps one of the teachers in whatever program is underway. Or she may be asked to help the entire class while the teacher gives individual instruction to one child. "It's rewarding when a child who can't speak a word before entering the day center finally is able to recognize colors and animals and call them by name," Anne said.

This is how Anne Barrett spends her leisure time. It's generally accepted that a retired person is in better physical and mental health when stimulated by new challenges to which he or she must respond. If this is the case, Miss Barrett will live to be 100 or more.

Events Calendar

- Feb. 11—Hans Richter Haaser, pianist. Community Concert Series, Civic Auditorium.
- Feb. 11-13—"A Streetcar Named Desire," Old Town Studio, 1208 Rio Grande NW, 8 p.m., reservations at tel. 242-4602.
- Feb. 11-13—"Kiss Me Kate," Albuquerque Little Theatre, 224 San Pasquale SW, 8 p.m.
- Feb. 12—Hiking on the volcanic plugs west of Albuquerque. N. M. Mountain Club, leader Ethel Ringer, tel. 256-2038.
- Feb. 12-13—Snowshoe trip to Williams Lake and Mount Wheeler. N. M. Mountain Club, leader Don Mattox, tel. 268-5554.
- Feb. 13—Organ recital, 7:30 p.m., Immanuel Presbyterian Church. Public invited.
- Feb. 15—Indian dances, San Juan Pueblo.
- Feb. 17—Albuquerque Civic Symphony, harp soloist Nicanor Zabaleta. Civic Auditorium.
- Feb. 19—Geologic dykes and petroglyphs north of Moriarty. N. M. Mountain Club, leader LaDonna Kutz, tel. 255-9781.
- Feb. 24—UNM Cultural Series, John Peer Nugent, chief African correspondent for NEWSWEEK, "Africa in Revolt," 8:15 p.m., Student Union.

Sandia Authors

G. H. Haertling (1132), "Grain Growth and Densification of Hot Pressed Lead Zirconate-Lead Titanate Ceramics Containing Bismuth," March issue, JOURNAL OF THE AMERICAN CERAMIC SOCIETY.

Harry Gelman (5122), "Generalized Conversion of Electromagnetic Units, Measures, and Equations," March issue, AMERICAN JOURNAL OF PHYSICS.

G. A. Samara (5132), "Discussion: Pressure Dependence of the Curie Points of the Hexagonal Manganese Compound," Proceedings of the First International Conference on the Physics of Solids at High Pressures; G. A. Samara (5132), A. A. Giardini, E. H. Poindexter, and J. D. Barnett, all U. S. Army Electronics Laboratories, "Compressibility Measurements at High Pressures by the Inductance Coil Method," December issue, REVIEW OF SCIENTIFIC INSTRUMENTS.

K. L. Shipley (9321), "Some Spectroscopic Measurements of a Supersonic Plasmajet," January-February issue, APPLIED SPECTROSCOPY.

C. W. Harrison, Jr., C. S. Williams, Jr., (both 1425), and H. J. Schmitt, Phillips Laboratory, Hamburg, Germany, "Calculated and Experimental Response of Thin Cylindrical Antennas to Pulse Excitation," March issue, IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION.



RETIREE ANNE BARRETT usually arrives at Bernalillo County-Indian Hospital loaded down with gifts used as game prizes in the psychiatric ward, where she is a volunteer worker.

Supervisory Appointments



ARTHUR J. CLARK, JR., to manager of Isotope Power Department 9330, effective Feb. 1.

Art joined Sandia Oct. 1, 1951, and worked on weapons systems until he was promoted to division supervisor in electro-mechanical component development in April 1953. After six years he transferred to reactor design work. In March 1962 he was named to head a division in the newly created Aerospace Nuclear Safety Department.

Before coming to Albuquerque, Art was a senior structures engineer for the Propeller Division of Curtis-Wright from July 1946 to October 1951. From February 1943 to July 1946, he was a senior stress analyst with the Ranger Aircraft Engine Division of Fairchild Aircraft and Engine Corporation.

Art received his BS degree in administrative mechanical engineering from Cornell University in January 1943, a Master's in mechanical engineering from Polytechnic Institute of Brooklyn in June 1948, and an MS in electrical engineering from the University of New Mexico in June 1955.

Art is a registered professional engineer in New Mexico. He is a member and past chairman of the New Mexico Section of American Society of Mechanical Engineers and served on several regional and national committees. He is also a member of the Institute of Electrical and Electronics Engineers.



S. GAYLE CAIN to supervisor of Environmental Test II Division 8113, Engineering Evaluation Department, effective Feb. 1.

Gayle started work at Sandia Laboratory in December 1952 in a project engineering group. In October 1955 he transferred to Livermore Laboratory where he has been assigned primarily to the Test Department in such areas as telemetry development, field test, transducer development, and the data center.

Before joining Sandia, Gayle worked for the Louis Allis Company in Milwaukee as a designer of rotating electrical equipment.

He received his BS degree in electrical engineering from Oklahoma State University in 1949 and his MS degree the following year. He is a member of Eta Kappa Nu, electrical honorary society, and the American Ordnance Association, and is a senior member of the Instrument Society of America.

During World War II, Gayle served two and a half years with the 8th Air Force in England.



RALPH F. JAEGER to supervisor of Composition and Printing Section 8231-1, Publications Division, effective Feb. 1.

Ralph has worked as an operations analyst in the reproduction organization at Livermore Laboratory since he joined Sandia in July 1964.

Before coming to Sandia, he managed a plant in Wilmington, N. C., which developed and manufactured a particle board he invented. He was manager of a photo engraving firm in Richmond, Va., for 10 years and owned his own photo engraving plant near Chicago for several years.

Ralph received his basic knowledge in the graphic arts field while employed for 15 years with the R. R. Donnelley and Sons Printing and Publishing Company, Chicago. During most of this period he also attended classes in management, administration, and supervision at a company-sponsored school.

In World War II, he served with the U. S. Army at the Ft. Sill, Okla., photo engraving plant.



ROBERT G. CLEM to manager of Engineering Evaluation Department 8110, effective Feb. 1.

Bob joined Sandia at Livermore Laboratory in June 1959, immediately following his graduation from Washington State College, Pullman, where he received his BS degree in mechanical engineering. He was assigned to a project group and in October 1960 was promoted to section supervisor in a Project Engineering Division. In January 1965 he was promoted to division supervisor of the Advanced Design Division, Preliminary Design Department.

He is a member of Sigma Tau and Tau Beta Pi, engineering societies. From 1953-55 Bob served in the U. S. Army.



GLEN E. BRANDVOLD to supervisor of Advanced Design Division 8132, Preliminary Design Department, effective Feb. 1.

Since joining Sandia at Livermore Laboratory in June 1959, Glen has been assigned to the Preliminary Design Division, a Project Engineering Division, and most recently the Special Projects Division.

From 1950-55 he worked as an engineer for the U. S. Geological Survey, Boise, Ida.

Glen received his BS degree in mechanical engineering from the University of Idaho in 1958 and his MS degree from the same university the following year.

He is a member of Sigma Tau engineering honorary society and Sigma Xi professional scientific fraternity.



BERYL L. HEFLEY to supervisor of Library Division 8232, effective Feb. 1.

Beryl joined Sandia at Livermore in January 1962 as a librarian engaged in reference work.

Before coming to Sandia, he was employed for 12 years by the Kansas City (Mo.) Public Library, where he was in charge of technical processing, cataloging, and ordering.

Beryl received his BA degree in geology and geography from the University of Kansas City in 1950, and was awarded his MS degree in library science from Western Reserve University, Cleveland, in 1951. During World War II, he served three years in the Air Force.

He is a member of the American Documentation Institute and Special Libraries Association.



PETER S. SCHROEDER to supervisor of Nevada Test Site Staff Section 7261-1, effective Feb. 1.

Pete joined Sandia in September 1962 in product tester design and entered the University of New Mexico that fall under Sandia's Technical Development Program. Rotational assignments during the two-year program included manufacturing development and field test. In the spring of 1964 he was transferred to field test and worked on instrumentation development in Coyote Field Test. In February 1965 he was made technical project leader of Pacific construction activities for the readiness exercise.

He received a BS degree in engineering from Princeton University in June 1962 and an MS degree in electrical engineering from UNM in June 1964.

Pete is a member of the Institute of Electrical and Electronics Engineers.



ROCKET PAYLOAD, containing the deflated spheres which will be ejected at high altitudes, inflated, and tracked by radar, is readied at the "screen room" at Barking Sands. From left are Jim Strascina, Bruce Barth, and Lee Stone.

Continued from Page One . . .

Research Rockets

ships and airliners to or from the Far East enter the area and delay the shot. Officials of PMR (who check with the Federal Aviation Agency) are consulted before each firing.

The radar installations also cooperate with Sandia by providing tracking data for each rocket trajectory and the important tracking data from the falling spheres.

Still waiting favorable conditions for firing are the 12 TMA rockets which will spread a glowing cloud of trimethylaluminum between 50 to 100 miles through the upper atmosphere. These trails will be recorded by special plate cameras located at Port Allen on Kauai, at 11,000 feet on the slope of Mauna Loa volcano on the island of Hawaii, and at 10,000 feet on the lip of the crater of Haleakala volcano on the island of Maui, and at about 3000 feet on the slope of the mountain behind Barber's Point on the island of Oahu.

Ren Moore has returned to Albuquerque and Richard L. Eno, supervisor of Ground Systems Division 9222, has taken over the test director's position on Kauai. Department 9220 was recently reorganized and Dick will be responsible for range operations in the Pacific. Ren will concentrate on instrumentation and payload design.

On Kauai, R. I. Gelder, J. E. Malloch, and R. L. Hostetler are responsible for firing and control activities. L. M. Stone, A. J. Canute, C. M. Long, and R. J. Rudolph handle payload assemblies. Rocket assembly is the responsibility of V. T. Strascina, B. L. Barth, and J. A. Engeland.

As the LAB NEWS went to press, a long range weather forecast was being made. If the forecast shows the high winds might continue for some time, the Sandians will fire only three TMA-temperature rockets in the series. These could be fired in a northerly direction and not endanger range safety. Other TMA rockets, which must spread their clouds on a southwest line for proper triangulation with the camera stations, may be postponed.

Camera operations, spectroscopy, and other activities of the high altitude research studies will be discussed further in forthcoming issues of the LAB NEWS.

Sandia Speakers

H. O. Pierson (1122), "Ablation of Pyrolyzed Carbon Structures," 11th Refractory Composites Working Group, Jan. 26, Los Angeles.

A. R. Sattler (5211), "Channeling of Energetic Ions in Diamond Type and Zinc Blend Semiconductors," University of Arizona Colloquium, Feb. 9, Tucson.



PAYLOAD is mated with the second stage and Nike booster on the rocket launcher by Jim Strascina (in helmet) and Bruce Barth.

Eileen Young Plays Role in 'Streetcar'

The Old Town Studio's current production of "A Streetcar Named Desire" marks the stage debut of Eileen Young, 4610 department secretary.

Eileen is playing the role of Stella, the second female lead. She's been using a tape recorder to help develop the Southern accent required for the role. The Tennessee Williams drama will continue through Feb. 13.

Her plunge into the world of play acting was a surprise to Eileen. "I went to the studio during tryouts just to watch, and ended up reading two parts. I really had in mind volunteering to help backstage," she added.

Another Sandian, Crawford MacCallum (5231), is the producer.

PAGE FIVE

LAB NEWS

FEBRUARY 11, 1966



TENSE MOMENT in the melodrama scheduled for presentation at the Coronado Club Feb. 26 is created by the heroine, Becky Luker, and the villain, Chuck Newcomb. The 45-minute drama will be played for laughs during the Club's "Night at the Theatre." The menu will feature roast prime rib and music for dancing will be provided by the Phil Grahame combo.

Formal Ball Tomorrow at Club; 'Night At Theater' Set Feb. 26

The annual Black and White Formal Ball of the Coronado Club will be held tomorrow night beginning with a sirloin dinner at 7 p.m. Reservations are still being accepted for the gala affair which promises to be one of the outstanding events on the Club's calendar this year.

The Kenny Allen orchestra will provide music for dancing starting at 9 p.m. Cost for members is \$3.50, \$4 for guests. Call 264-4561 for reservations.

The Sandia Showmakers will provide en-

tertainment Saturday, Feb. 26, for the Club's "Night at the Theater." The dramatic group will present an ancient melodrama, "He Ain't Done Right by Nell," in high style. The performance is scheduled from 8:45 to 9:45 p.m.

The menu for the evening will feature prime rib and will be served from 7 to 8:30. The Phil Grahame combo will provide music for dancing after the show.

Make reservations early for this one by calling the Club office. Cost to members is \$3.50, guests \$4.

Other Club Activities

Social Hour

A chuckwagon roast beef and shrimp buffet will be featured at today's Social Hour. The Lamplighters will play. Standard social hour prices will prevail and the buffet costs \$1.75 for adults, \$1.50 for children.

Ski Club

The Coronado Ski Club will meet at 7:30 p.m., Monday, Feb. 14, in the Club's dining room. Two movies, "Technique of Powder Skiing" and "The Freshness of Skiing," will be shown. Members will discuss final plans for the group's trip to Red River Feb. 19-22 and a trip to Crested Butte in March.

Bridge

The ACBL Charity Game is scheduled Monday, Feb. 14, and Duplicate Bridge will be played Monday, Feb. 21. Ladies Bridge meets at 1:15 p.m. Thursday, Feb. 17.

Congratulations

Mr. and Mrs. Tony Lopez, Jr. (4212-2), a son, John Raymond, Jan. 31.

Mr. and Mrs. W. L. Van Horn (2542), a daughter, Kathleen Ann, Feb. 1.

Welcome Newcomers

Jan. 24 - Feb. 4

Albuquerque	
Norma J. Adams	3126
Kathryn C. Barbour	3126
Maria L. Barla	3126
Roque R. Gallegos	3415
Alveo C. Gendreau	3474
Ernest M. Harper	2422
Mildred W. Kraemer	3126
Ray Larribas	4574
Eloy S. Montoya	4574
Helen H. Moseley	4135
Manuel G. Vigil	7342
Indiana	
Leon C. Walters, West Lafayette	5154
Maryland	
*Richard L. Coughenour, Bowie	4115
Michigan	
Gerald Van Slambrook, Pinckney	9212
New Mexico	
Mack L. Milner, Las Cruces	4544
Oklahoma	
*Sharon L. Daniel	5263
Tennessee	
Edward L. Clark, Jr., Tullahoma	9322
Texas	
Thomas C. Witherspoon, Arlington	7343

*Denotes rehire

Foreign Policy Discussions Moderated by Sandian on KNME-TV

The Great Decisions program, a series of eight weekly discussions on United States foreign policy, is underway again in New Mexico and throughout the nation.

Discussions in New Mexico are supplemented by a Great Decisions TV series presented by the educational TV station, KNME-TV. The eight-program series is produced and moderated by Robert Colgan, supervisor of Employee Publications Division 3432. Bob, who has moderated the TV series since its inception in 1960, says, "Guests on the program express their opinions (based on facts) rather than simply recount factual data on the topic under discussion. Great Decisions fact sheets supply factual background which is supplemented by normal exposure to local and national news media.

"The TV discussions are usually lively," Bob says, "and we find that our audience is quite large and not limited to partici-

pants in local discussion groups."

This year's topics are Vietnam, Israel, Western Europe, Africa, Russia, Japan, Latin America, and Making Foreign Policy. Fact Sheet kits (containing about nine pages of data on each topic) are available for \$1.50 at Albuquerque Public Libraries.

Other Sandians appearing on the TV series are Harvey Frauenglass (3411), Vietnam; C. A. Ashby (3121), Western Europe; M. K. Linn (3400), Africa; and J. E. Mitchell (3431), Japan.

The programs are telecast live at 6:30 p.m., Thursdays, KNME-TV, Channel 5; and via video tape on Fridays, 10:30 a.m., KNME-TV; Sundays, 8 a.m. KOB-TV; and Sundays, 9:30 a.m., KROD-TV, El Paso. In addition a tape of the program is aired Sunday nights at 8 p.m. on KGIW radio in Alamosa, Colo. The series began on Feb. 3; the last program is on Mar. 24.

Work of Two Divisions Depicted in 804 Exhibit

Processes and products developed by Manufacturing Research Division 2564 and Manufacturing Process Division 2565 are featured this month in the display case at the entrance to Technical Library Bldg. 804.

Included are photographs, explanations, and items depicting: flash deburring of plastic parts, laminar flow clean room, infrared heating techniques, small hole fabrication process; sealing of small components, oscilloscope graticules, and epoxy microballoon molding (a production technique).

The exhibit was arranged by John Gardner (3421).



PROMOTING SPECIAL WEEK—Lee J. Seligman (9211) places a National Engineers' Week poster on a bulletin board to call attention to the annual observance. Lee is assistant chairman of the committee arranging local events. Theme of this year's activities is "engineering—creative resource for progress."

Archery Club Offers Instruction, Shoots

The Sandia Archers have a full schedule of activities planned for coming months.

The club meets the second Tuesday of each month at 7:30 p.m., usually at the Coronado Club. Registered shoots are scheduled for the second Sunday of each month, from March through December, and there will be a novelty shoot every fourth Sunday. Instruction will be scheduled for new archers.

Membership is open to any person (either military or civilian) employed on any of the local Bases. Further information may be obtained from club secretary Bertha L. Grant (2563), home tel. 255-0576.



"RECENT DEVELOPMENTS in Integrated Circuits" was the title of a talk given Feb. 1 before a group of Sandians by Morris Tanenbaum (left), Director of Research and Development, Western Electric Engineering Research Center, Princeton, N.J., and W. C. Hittinger (center), Executive Director, Semiconductor Device and Electron Tube Division, Bell Telephone Laboratories, Murray Hill, N.J. With them is R. C. Fletcher, Vice President 5000.

Engineers' Week Highlighted by Luncheon and Award

National Engineers' Week will be observed Feb. 20-26 with such local highlights as a luncheon, award presentation, and displays in the Albuquerque area.

Dr. Stirling Colgate, president of New Mexico Institute of Mining and Technology, will speak on "The Underground Challenge" at a noon luncheon on Monday, Feb. 21, at Western Skies.

The luncheon program will include the presentation of an award to an outstanding foreign engineering student attending the University of New Mexico. Representatives of the Junior Engineering Technical Society, composed of high school students interested in engineering careers, will attend the luncheon as guests of the sponsoring technical organizations.

Six Sandians are serving on the 11-man Engineers' Week committee composed of representatives from five technical organizations that are spearheading the local activities.

Lee J. Seligman (9211) is assistant chairman of the committee. Other Sandians serving on the committee are Harry E. Kinney (5622), John M. Michaels (1513), Dean K. Yearout (1422), A. E. Kaping (4332), and Dave L. Poll (2545).

Sponsoring organizations are National Society of Professional Engineers, American Institute of Industrial Engineers, American Society of Mechanical Engineers, American Society for Civil Engineers, and Institute of Electrical and Electronics Engineers.

Tickets for the luncheon can be obtained from members of the committee.

Service Awards

20 Years

15 Years



C. M. Abernathy
2553

P. H. Dailey
2551



I. D. Hamilton
7264

W. C. Kraft
2440



Ramon Armijo
4221

T. R. Arrington
7326

Gilbert Atencio
4611

S. F. Boyden
4235

H. G. Cherb
4211

E. G. Coffe
1322

J. R. Coleman
4131

J. W. Coughlin
7523

G. H. Davies
3242

F. J. Dawkins, Jr.
4212

E. C. Domme
2225

Dorothy Evans
4213

Eufemiano Garza
4212

J. F. Gordon
2513

D. M. Hansen
4512

J. B. Hobart
4232

J. R. Holliday
4221

O. L. Howard
9222

Viola Jackle
2234

J. D. Jojola
4252

T. A. Kelly
2441

J. H. Kimbrough
3242

G. A. Lucero
4631

J. R. McAchran
4632

F. A. Sanchez
4631

D. W. Savage
9211

R. G. Scharrer
7252

H. A. Schultz, Jr.
2225

P. A. Stickler
2126

D. L. Tyson
4622

A. M. Watson
3242

G. H. Weaver
4573

L. J. Wehby
4545

W. T. Welkenback
4234

B. D. Yoder
2511

10 Years

Feb. 11-24

H. W. Loemker 9211, D. J. Breehl 1432, G. C. Beatrice 2213, W. L. Dodd 3152, J. G. Martinez 4574, P. D. Leiserson 8212, W. H. Suter 9225, J. D. Edde 2126, G. E. Power 2126, A. C. Finlayson 2553, Alice M. Stephenson 2234,

Gertrude H. Finley 2513, L. G. Davis 3241, Bernice A. Cannon 3415, A. J. Landis 4234, Anna B. Pearce 5200, G. N. Hunt 7266, R. H. Cleveland 2212, Roque Feliciano, Jr. 7232, H. J. Filusch 7256, J. A. Leonard 9319, R. C. Wahlberg 2511, B. B. Asher 4545.

Retiring . . .

Millard S. Taylor, a technical illustrator with Sandia for more than 14½ years, will retire the end of February. He transferred from Albuquerque to Livermore in 1958 and is presently assigned to Graphic Arts Division 8233.



Millard intends to work as a free lance commercial artist after his retirement. He is converting the garage of a home he owns in Baywood Park, Calif. (near Morro Bay), into an art studio. Mr. and Mrs. Taylor are planning to move there in the immediate future. They sold their Livermore home some months ago and are currently living with their daughter, son-in-law, and six grandchildren.

Although Millard enjoys fishing and golf, his favorite hobbies are still and motion picture photography. He also finds much pleasure in his art library which consists of more than 5000 books, many of which are collector's items.

Mary Agnes Van Brocklin, a document investigator in Security Administration and Operations Division 8241, will retire the end of February.



"Aggie" joined Sandia in Albuquerque in February 1952 and transferred to Livermore in January 1956. She worked the entire time in the documents area at both laboratories.

Her plans after retirement are indefinite. For the immediate future she will remain in Livermore where she has been active in volunteer church work. "Now," Aggie says, "I'll be able to devote even more time to my church activities and have more time for visiting with my friends here. I also plan to do some hospital work." An avid traveler, Aggie is looking forward to trips to Mexico City and Australia.

Originally from New York State, Aggie may eventually return to live near her two brothers in Utica. She also has three nieces and three nephews.

PAGE SEVEN

LAB NEWS

FEBRUARY 11, 1966

SHOPPING CENTER	SHOPPING CENTER	SHOPPING CENTER	SHOPPING CENTER	SHOPPING CENTER
<p>CLASSIFIED ADVERTISING Deadline: Friday noon prior to week of publication unless changed by holiday. A maximum of 125 ads will be accepted for each issue.</p> <p>RULES</p> <ol style="list-style-type: none"> 1. Limit: 20 words 2. One ad per issue per person 3. Must be submitted in writing 4. Use home telephone numbers 5. For Sandia Corporation and AEC employees only 6. No commercial ads, please 7. Include name and organization 8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin. <p>FOR SALE</p> <p>ORIGINAL OWNER, 3-bdr., separate DR, good room size, near bases, schools; garage, extras, 712 Kentucky SE. Ricker, 256-2678.</p> <p>OVER ONE ACRE of cleared and level Colorado land, in close proximity to hot mineral springs and major highway, \$895. Akin, 299-4242.</p> <p>FRIGIDAIRE electric range, 1964, 30-inch deluxe model, used nine months 1/3 off. Switendick, 265-0345.</p> <p>TWO 100% down parkas, men's medium, ladies medium, blue, \$50/pr. Claassen, 255-4347.</p> <p>8-INCH table saw w/motor and stand, \$30. Henneke, 298-4232.</p> <p>3-BDR., den, 1 1/2 bath, fully carpeted, utility, garage, patio, \$500 down, payments \$89. Raney, 299-0170.</p> <p>AUTOMATIC Rolleiflex, f2.8 lens, built-in meter, case, \$195. Rechner, 344-6148.</p> <p>'60 AUSTIN 850, \$225. Shaw, 255-5653.</p> <p>HORSE: bay gelding, seasoned, gentle, recommended for children and beginners, \$135; black brood mare, excellent foal in '65, \$175. Bassett, 898-1840.</p> <p>4-BDR. MOSSMAN Sacramento, 1800 sq. ft. living area, den, landscaped, 1 1/2 bath, 3506 Florida NE. Mattox, 268-5554.</p> <p>ORGAN, electronic, 37-note keyboards, 10 voices, repeat, percussion, vibrato, 13 pedals, transistor 50-watt peak power, \$450. Pierce, 255-7923.</p> <p>'57 OLDS station wagon, R&H. Todd, 268-4486.</p> <p>HONDA MOTORCYCLE, 4000 miles, 150cc, \$375; '58 Chev. Biscayne 4-dr. w/damaged fender, \$190; 3-bdr. home, \$20,000. Chandler, 298-1114.</p> <p>\$500 St. Johns Methodist Church bond, pays 6% interest; Welsh Corgi puppy, AKC registered. Day, 256-6360.</p> <p>DINETTE SET, table w/4 chairs, chrome w/gray plastic, \$50. Jacot, 299-4990 after 5:30.</p> <p>3-BDR., den, 1 1/2 bath, dbl. garage, carpet, drapes, AC, sprinklers, \$17,800 or assume. 3225 Britt NE. Cnare, 299-3604.</p> <p>BRICK 3-bdr., den, extra large lot, next to Winrock and Plus, all extras, \$17,900 to 4 1/2% loan balance \$10,000. Halpin, 299-7710</p> <p>'60 Falcon 4-dr., 6-cyl., ST, white w/black interior, snow tires, \$500. Eggert, 256-7845.</p>	<p>PAGODA BIRD CAGE, large, w/stand, cage paper, gravel, misc., all for \$10. Kochman, 299-5133.</p> <p>SCHOOL BUS, '54 Chev., new engine (less than 1000 miles), 36-passenger, \$650. Trujillo, 299-9351.</p> <p>'53 CHRYSLER New Yorker, 331 cubic inch hemi-head, pyromatic transmission, new brakes, PS, \$150. Colter, 265-1446.</p> <p>VIOLIN, bow, and case, suitable for beginner, \$25. Daniel, 268-8335.</p> <p>'47 JEEP 1/4-ton, tow bar, 4 new tires, hand winch, warn hubs, \$500; antique maple cradle, \$25. Vasquez, 243-3664.</p> <p>CHILD'S SKI BOOTS, size 1, St. Moritz brand, full double boots, \$5. Muench, 264-5137.</p> <p>'60 PORSCHE roadster, 247-1711, ext. 3405 weekdays, 2323 Kathryn SE, Bldg. 10, #158 weekends and evenings. Hitchcock.</p> <p>RED LEATHER SEATS, front, rear for Mercedes 220 or 190, 1960-66 sedans, O'Connor, 255-6959.</p> <p>'56 CHEVY WAGON, 9-pass. V-8 standard, \$280. Konnick, 268-6409.</p> <p>MOUTON LAMB FUR COAT, size 16, New-\$175, sell for \$50. Goodman, 299-3652.</p> <p>VACUUM PUMP w/1hp 110v motor; Kenmore automatic washer; two ventilating fans. Schiess, 255-3252.</p> <p>17 CUBE Gym-Dandy jungle gym, 2-seated merry-go-round; 34"x16" child's wagon. Marrs, 299-3865.</p> <p>KENMORE AUTOMATIC electric range; 2 ea. recapped tires, size 7.50x14. Pitti, 256-1629.</p> <p>'50 DESOTO, heater, \$35 or trade. Harris, 299-6664.</p> <p>BASSET PUPPIES, AKC, born Christmas day. Price, 2932 Madera NE days or evenings.</p> <p>3-BDR., 1 1/2 bath, den w/fireplace, carpeting, AC, covered patio, appraisal \$17,150, payments under \$100, camp trailer or real estate contract as part down. Gerber, 298-6132.</p> <p>BRICK 3-bdr., 1 1/2 bath, family rm., w/ fireplace, covered patio, AC, walled yard, sprinklers, 5707 Bell. Cole, 255-7921.</p> <p>'58 OLDS 2-dr. HT, low mileage, \$400. Smith, 296-1049.</p> <p>'58 PICKUP TRUCK, snow tires, camper shell. Sanchez, 268-2179.</p> <p>3-WHEEL Lambretta scooter, enclosed cab and trunk, \$250. Bailey, 298-4678.</p> <p>'357 MAGNUM COLT Python and holster. Oravec, 282-3667.</p> <p>TWO SOFAS, \$25 and \$40; chair, \$10; dining table and chairs, \$50; full-size mattress and springs, \$20. McLroy, 299-4977.</p> <p>TENT, Sear's umbrella, 9x9, \$20. Arning, 256-9229.</p> <p>'60 CHEVROLET 3/4-ton w/tear drop camper. Ferris, 344-7820.</p> <p>'65 MUSTANG, 4-speed 289 engine, will sell less than book value. Abernathy, 298-2461.</p> <p>ALUMINUM CAMPER, 9' w/stove and oven, \$200. Breenen, 877-9703.</p> <p>2709 JUNE NE, 3-bdr., 1 1/2 bath, dbl. garage, large patio, bar-b-q, carpet, drapes, built-ins, extras, \$15,500. Walker, 299-6039.</p> <p>'56 4-dr. CHEVROLET, AT, Walsh, 298-3173.</p>	<p>MALE Collie-Shepherd puppies, both parents pedigreed, \$10 ea. Roth, 877-4997.</p> <p>SCOTT RADIO; 2 ceramic table lamps, 2 crystal lamps, dressing table w/padded bench. Nichols, 247-2564.</p> <p>'61 FORD station wagon, 4-dr., V-8, PS, auto., below NADA book, \$825. Wagoner, 296-2464.</p> <p>VOIGTLANDER 35mm Prontor SVS 2.8 lens, light meter, Norwood director, model C, cases for both, \$50. Ghion, 298-9514 after 4.</p> <p>CRAFTSMAN 10" tilting arbor table saw, 1 1/2 HP motor, 110 or 220 single phase, \$155. Davis, 265-7838.</p> <p>TWO LOTS, Sunset Memorial Park. Ludeke, 268-5265.</p> <p>ELECTRONIC ORGAN, fully transistorized, 2 61-note manuals, 17 pedals, 22 independent stops, coupler, 5-voice percussion, make offer. Pollett, 298-6534.</p> <p>NE, 3-bdr., den, Mossman brick, large lot, completely landscaped, carpet, custom drapes throughout, near schools, FHA appr. \$24,525. Romero, 299-8451.</p> <p>4x8 POOL TABLE, \$70; Danish modern walnut living room set, make offer; Polycom 2-meter transceiver, \$125 or will trade. Martin, 298-2064.</p> <p>WHITE sewing machine w/attachments, maple cabinet, \$45. Wakeland, 299-2519.</p> <p>LIVING ROOM SUITES: new, gold divan and chair; newly upholstered dark green divan and chair. Shane, 255-5673.</p> <p>PIANO, Cable-Nelson upright, \$135. Wilken, 299-7515.</p> <p>'65 FORD pickup 1/2-ton, take over payments, \$66 monthly. Flower, 255-3371 after 5:30.</p> <p>LADIES SUITS, dresses, 2 pc. outfits, size 12 and couple size 7; men's overcoats, raincoat. Flury, 299-7473.</p> <p>'54 CHEVY station wagon, ST, snow tires, R&H. Gutschers, 298-6563.</p> <p>POINTER PUPPIES, AKC registered, good hunting background, large selection, \$40. Matthews, 4317 Isleta Blvd. SW, 877-3393.</p> <p>STEREO SPEAKER SYSTEM w/18 speakers in walnut cabinet, \$50. Ryerson, 265-6260.</p> <p>TWO 8.45x15 Seiberling 150 black tubeless tires, less than 300 miles use, \$35 for both; '56 Chrysler 4-dr. sedan, \$100. O'Boyle, 256-1528.</p> <p>LARGE LOT Glenwood Hills, all assessments paid. Randall, 256-1853.</p> <p>4-BDR., den, 3 baths, brick, fully carpeted, landscaped, NE Heights, \$27,500 or FHA appraisal. Minor, 299-2267.</p> <p>DEEP WELL PUMP, 1/2 hp elect. w/20 gal tank; 20 six-inch dia. eight-foot long fence posts. S70 takes all. Cooper, Beck Rd. SW, 877-4674.</p> <p>PIANO, George Steck, studio size, walnut, Ferguson, 299-1501 after 5.</p> <p>OXY-ACETYLENE welding and cutting outfit, \$50. Flowers, 282-3458.</p> <p>3-BDR. BRICK, 1 1/2 baths, custom drapes, w/w carpet, large patio, walled yard, water softener, breakfast bar, new tile. Wilson, 298-0049.</p> <p>'59 ENGLISH FORD ANGLIA, \$225. R&H, 3300 Montreal NE in Holiday Park. Monson, 298-7969.</p>	<p>COLEMAN 2-burner camp stove, never used, model 425B, \$9. Atkisson, 299-7536.</p> <p>AKC reg. Wire-Haired Terriers and pure bred Collie pups; AKC reg. Pomeranians. Naumann, 296-3214.</p> <p>BABY CRIB, complete. Smith, 299-9187.</p> <p>DRESS FORM (Acme), adjustable; Hollywood bed frame; twin-size head boards; Mercury II 35mm camera. Wheeler, 256-6230.</p> <p>CRAFT CUSTOM COUCH, attached marble end tables; red-orange king-size bedspread; walnut Danish dinette set. Norton, 255-5932.</p> <p>FENDER AMPLIFIER, 2-channel, 18 tube w/twin reverb and vibrato, two 12-in. heavy duty speakers, \$375. Shreve, 898-3407.</p> <p>'61 TERRY TRAVEL TRAILER, '61, sleeps five, equalizer hitch, electric brakes, two butane tanks, stove, light, Bag, 898-2539.</p> <p>CONN ORGAN, 2 61-note manuals, 25-note pedal, light walnut; separate Leslie 50-watt 4-speaker tone cabinet; cost \$2800 3 yrs. ago. Bircher, 268-0726.</p> <p>TOY POODLE, silver, male, AKC reg., excellent pedigree, 7 wks. old. Shipley, 298-2433.</p> <p>MATCHING YELLOW GE electric range and refrigerator; Philco console TV, mahogany finish. Shieler, 255-3256.</p> <p>BOLEX 8mm movie camera, variable framing speed, Pailard f2.5 lens, daylight filter, wrist strap, \$40. Bader, 299-9459.</p> <p>KITCHEN SINK, double w/faucets and all fittings; fireplace cover. Calvery, 255-9545.</p> <p>COLT WOODSMAN .22 pistol, \$45; cap and ball pistol, \$18; trade for old hunting knives. Smitha, 299-1096.</p> <p>'53 98 OLDS 4-dr., full power, new brakes, battery and windshield, \$200 or consider trade on piano, boat, or camper trailer. Robertson, 298-2388.</p> <p>3-BDR. BRICK, electric kitchen, fireplace, h-w carpeted floors, AC, humidity heating, patio, landscaped, sprinklers, appraisal \$20,500, 2721 Utah NE. Rogers, 299-7365.</p> <p>STUDIO COUCH, Simmons, \$40. Reidy, 268-4447.</p> <p>'58 STUDEBAKER 4-dr. Scotsman, has relatively new tires, shocks, generator, and battery. Mangan, 256-0645.</p> <p>16 cu. ft. upright freezer, \$90. Jarvis, 298-0949.</p> <p>GE portable dishwasher, copper-tone w/light top. Kopp, 296-3350.</p> <p>ROBSON 3-bdr., 1 1/2 bath, dbl. garage, den w/fp, h-w/floors, corner lot, sprinklers, AC, many extras, will take \$19,250. Duvall, 299-8744.</p> <p>APT. SIZE refrigerator w/freezer across top, \$25; baby buggy, \$5; large pool table, 3'x4', \$30. Browne, 344-9675.</p> <p>'62 FORD 3/4-ton pickup; '62 10 1/2" Airfile camper, \$2000. John 255-3898 after 6.</p> <p>BELL & HOWELL automatic 35mm slide projector, model 303, \$35; want not running motor cycles and motor scooters. Ernst, 344-8694.</p> <p>'63 CADILLAC sedan Deville, to settle an estate, dual 90's, under book. Ketter, 298-6286.</p> <p>ALASKAN MALAMUTE puppies, champion sired, AKC registered. Devaney, 282-3961.</p> <p>'58 CHEV. station wagon V-8, AT, one owner. Harvey, 256-2666.</p>	<p>L-SHAPED Texelite kitchen countertop, 118" by 45", \$30. Truex, 3624 Mary Ellen NE, 299-5162.</p> <p>PAIR of camper jacks, used three times, cost \$70, sell for \$50. Sealer, 344-0179.</p> <p>'17 HOFFMAN combination TV-radio-phonograph in large console, needs picture tube, \$25. Ballard, 299-4530.</p>
<p>FOR RENT</p> <p>2-RM furnished apt. Washington near Lomas, 1/2 block bus, no pets, \$55, married couple or single person. Steinig, 614 Washington NE.</p> <p>UNFURNISHED two-bdr. house w/water and lights, \$45/mo. Schiess, 255-3252.</p> <p>3-BDR., 1 1/2 baths, garage, private backyard, carpets, drapes, water paid, \$90/mo. for SC employee, 6105 Aztec Rd. NE. Bradford, 268-0980.</p> <p>1-BDR. HOUSE, newly remodeled, garage, water and garbage paid, \$65/mo., close in to downtown in North Valley. Amador, 242-2080 or 242-7728.</p> <p>FURNISHED 3-room apt., carpeted, tile bath, TV, \$60. Candelaria-Arno. Browne, 344-9675.</p> <p>2-BDR. HOUSE, 529 California SE. Pitti, 256-1629.</p> <p>MOUNTAIN HOME in the pines, 2-bdrs., stove, refrig., piano, fireplace, dbl. garage, \$115/mo. Linn, 282-3986.</p>				
<p>WANTED</p> <p>SCUBA equipment in excellent condition, what have you? Wilson, 282-3225.</p> <p>FULL-SIZE VIOLIN w/case. Smith, 243-7086.</p> <p>RIDERS 14th ST. SW, could take Coal, Central or Lomas to Sandia. Huston, 243-0589 after 6.</p> <p>WOMAN for occasional child care, school holidays, evenings, for 8-yr.-old girl. SE Heights preferred. Miller, 266-6020 after 6.</p> <p>FLYING GROUP, private pilots interested in forming a group of 5 or 6 on a Cessna 182. Parsons, 299-0400.</p> <p>AR-2 SPEAKER, finished or unfinished, in good operating condition. Ross, 867-2413.</p> <p>BUNK BEDS, dark wood w/link springs and mattresses preferred, must have safety rail top bed. Paul, 256-6228.</p> <p>SCOUTMASTER needed, training provided, boys, meeting place, and a willing committee ready to go. Wood, 299-4078.</p> <p>USED REFRIGERATOR, left-hand door, reasonable condition. Elder, 265-1322.</p> <p>OUTBOARD MOTOR, 45-50 hp, prefer Johnson, Evinrude, or Mercury. Little, 255-7864.</p> <p>UNFURNISHED HOUSE, rent or lease, 3-bdrs. and separate study or den, by Feb. 28, NE or SE. Goshorn, 298-6548.</p> <p>TWO PLATE GLASS mirrors w/major dimensions about three ft., round or rectangular. Baxter, 344-7601.</p>				
<p>LOST AND FOUND</p> <p>LOST—Lady's sunglasses, tan ski cap, brown tobacco pouch, pr. man's brown gloves, plastic change purse, man's lit. blue cardigan, man's Omega wrist watch. LOST AND FOUND, tel. 264-2757, Bldg. 610.</p> <p>FOUND—Gold bracelet, tie clasp, pr. man's black gloves. LOST AND FOUND, tel. 264-2757, Bldg. 610.</p>				



LEGISLATORS LEARN about an autocollimator used to establish angle standards in the length standards laboratory from J. C. Moody, 2411 (second from right). Shown here are (l to r) Sen. I. M. Smally (Luna), Rep. Alfonso Vigil (Taos), Rep. George Blocker (Lea), Rep. B. M. Tabet Valencia, Sen. W. C. Gallagher (Colfax), Mr. Moody, and Sen. Floyd Santistevan (Taos).



A DOME-COVERED DISPLAY of items fabricated by Sandia's Miniature Machine Section 4252-7 is inspected during a recent tour by New Mexico State Legislators. From left to right are E. H. Draper, Vice President 2000, Sen. G. E. Melody (San Miguel), Sen. K. R. Johnston (Sierra), Sen. R. H. Wamel (Hidalgo), Rep. A. E. Roberts (San Juan), and Rep. I. J. Romero (Guadalupe).

State Legislators Attend Briefing And Tour at Sandia

Forty-one members of the New Mexico State Legislature and Lt. Gov. Mack Easley attended a briefing and tour of Sandia Laboratory on Jan. 31.

The tour was part of a continuing program to keep business and civic leaders informed about unclassified activities at Sandia.

S. P. Schwartz, President of Sandia Corporation, briefed the group on Sandia's mission and activities at a Coronado Club luncheon. The session was also attended by AEC officials from Albuquerque Operations and Sandia Area Offices, and military officials from Sandia and Kirtland Bases.

Accompanied by Sandia's vice presidents, the legislators toured the Laboratory's machine and electronic shops, physical and electrical standard laboratories, ceramic shops, and analytical chemistry labs.

The afternoon ended with remarks by Mr. Schwartz, and after a question and answer period, the group viewed the "Environmental Testing at Sandia" film.

Local Shooters Eligible For NRA-NIRA Postal Match

Sandians are eligible to participate on an individual basis or as a team member in the 1966 annual postal competition for .22 caliber rifles and pistols, co-sponsored by the National Rifle Association and the National Industrial Recreation Association.

Registered targets are mailed to each participant, and must be returned by May 1. Scoring is based upon 20 shots slow fire at 50 feet with a pistol, or 10 shots prone and 10 shots standing at 50 feet with a rifle.

For further information contact Dick Vivan (7511), home tel. 299-1785, or Jim Griffing (7333), home tel. 265-0760.

The Sandia Base Women's Club is offering two full-year scholarships to the University of New Mexico. Eligible students include dependents of military, Sandia Corporation, and AEC personnel at Sandia Base.

Application forms are available at the Sandia Base Branch of Bank of New Mexico and must be submitted to the UNM Student Aid Office before May 1.

Selection of candidates is based on academic achievement, financial need, and recommendations of faculty advisors.

Take Note

The 36th annual membership campaign for the Albuquerque Community Concert Association is being conducted through Feb. 12. Among attractions already booked for the 1966-67 season are the Philharmonia Hungarica and the Ruth Page International Ballet. Other artists will be announced later.

Further information about the concert series or regarding memberships may be obtained from Cherry Lou Burns, home tel. 242-2407, or Ednarae Gross, home tel. 255-7327.

A technical paper written by G. H. Haertling (1132) will be read during the annual meeting of the Canadian Ceramic Society, Feb. 13-16 at Niagara Falls, Ontario, Canada.

Subject of the manuscript is "A Semi-Continuous Hot Press Tunnel Kiln."

Elio Cultreri of Sandia's Safety Engineering Division 3211 has been invited to serve on the Albuquerque Chamber of Commerce's Traffic Safety Committee. The group will work with the newly-organized State Traffic Safety office.

A full-color reproduction of a painting by Gordon Snidow (3463-3) is appearing on the cover of the February issue of WESTERN HORSEMAN. The original oil painting measures 30 x 40 inches. It depicts a group of cowboys gathered around a campfire in an early morning drizzle with their horses bunched nearby.

This is the second time the magazine has used one of Gordon's paintings for its cover illustration.

An article on antique dolls, written by Ann E. Culley (4340), is appearing in the February issue of NEW MEXICO MAGAZINE. It describes some of the interesting dolls owned by Ann and other members of the Albuquerque Antique and Modern Doll Club.

This is the first article Ann has sold, although she has had poetry published previously in fraternal magazines. Photos for the article were taken by her daughter, Lou Ann O'Connor, who is on an educational leave of absence from Sandia.

'Surface Seminar' Is Information Medium for Sandia Scientists

Scientists and technicians in many different Sandia organizations are concerned with characteristics of the surface of metals. This basic interest may branch out into specific problems relating to semiconductors, insulators, homogeneous depositions, surface transport, adhesion, catalytic processes, cleanliness, or nucleation of growth.

About two and a half years ago, Richard L. Schwoebel (5123) initiated a Surface Seminar program as a means of exchanging information: to find out what Sandians in other organizations were doing and to pinpoint the real problems.

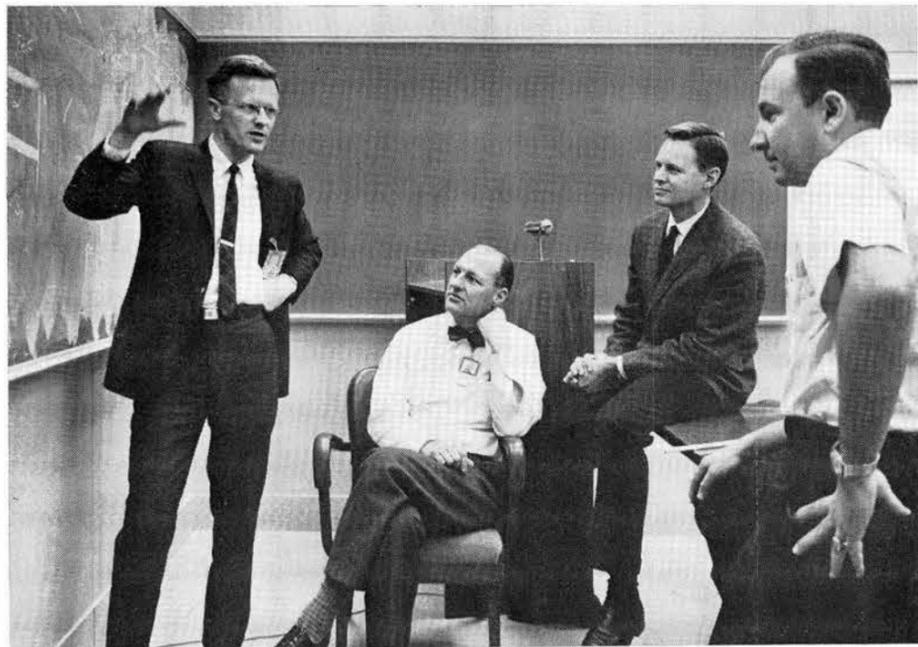
The seminars are now held an average of twice a month and to date about two dozen Sandians have reported about their research in these areas. In addition, "outside" speakers have included professors from Brown University, Cornell University, Washington State University, Syracuse University, University of Chicago, and Carnegie Institute of Technology, and scientists from Los Alamos Scientific Laboratory, General Electric Company, Gen-

eral Dynamics, Litton Industries, and Bell Telephone Laboratories.

"Seminar notices go out to 50 persons and we find that the response varies," Mr. Schwoebel said. "Discussions of the mechanics, equipment, and experimental techniques used for studying surfaces has appealed to many and has had useful applications."

The outside speakers are authorities in their field and while they are here, sufficient time is provided for them to speak with Sandians working or interested in the same activity. "We find this is a good way to establish rapport between members of the scientific community," Mr. Schwoebel said.

The Surface Seminars this month feature Prof. E. E. Donaldson, Department of Physics, Washington State University, who spoke on Feb. 3, on "Adsorption on Metal Surfaces," and Dr. Gert Ehrlich, Metals and Ceramics Laboratory, General Electric Company, whose subject on Feb. 17 will be "An Atomic View of Surface Diffusion."



SURFACE SEMINAR is often followed by informal talk among interested scientists. Professor Paul Shewmon of Carnegie Institute of Technology, a recent speaker, continued his discussion with (l to r) G. H. Miller (5241), R. L. Schwoebel (5123), and R. I. Ewing (5241).

Sandian Appointed To ASEE Committee

Donald J. Jenkins, manager of Organization and Manpower Development Department 3130, has been appointed a member of the Relations with Industry Committee of the American Society for Engineering Education. He is the first New Mexican to serve on the 10-man committee composed of university engineering faculty members and representatives of industry.

Committee objectives include evaluating trends in engineering education; providing adequate support of engineering educational institutions; stimulating broad industrial representation and participation in ASEE; and assisting in studies and projects that benefit engineering education.



Anna Silva (AEC/SAO/QA Br.)

Take A Memo, Please

Unsafe habits are like fine chinaware. All you have to do to break them is just drop them.

Sandia's Safety Scoreboard

Sandia Laboratory:

53 DAYS
1,855,000 MAN HOURS
WITHOUT A
DISABLING INJURY

Livermore Laboratory:

40 DAYS
203,600 MAN HOURS
WITHOUT A
DISABLING INJURY