SANDIA CORPORATION

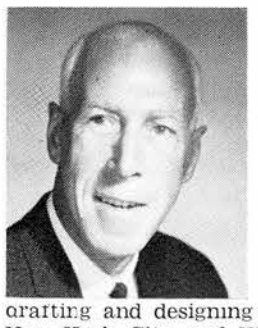
PRIME CONTRACTOR TO THE ATOMIC ENERGY COMMISSION

ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

LAB NEWS

VOL. 18, NO. 6, MARCH 25, 1966

30th BTL Anniversary Marked by T. T. Robertson



T. T. Robertson, Director of Design Information Center, will observe his 30th anniversary with Bell Telephone Laboratories on Mar. 30. He has been on loan to Sandia since February 1950.

He worked in drafting and designing at BTL locations in New York City and Whippany, N. J., and during World War II was assigned to a highly classified radar equipment project. He was supervisor of drafting in BTL Military Development Department immediately before coming to Sandia as a consultant to make recommendations on drafting specifications and standards.

VISITS SANDIA—Dr. Lennert Sandholm (center), Quality Control Manager of Electrolux, Sweden, visited Sandia recently to discuss the Company's quality control and reliability accomplishments. He is shown with R. W. DeVore (2110), left, and A. F. Cone (2510), right, during the briefing.

Utah Scientists to Use Sandia Rocket for Airglow Research Study

Sandia will launch a rocket carrying experiments of several Utah scientists as part of Sandia's program of cooperation with the Rocky Mountain Science Council. The launch will be made from the Barking Sands complex on Kauai in the Hawaiian Islands on June 7.

Atmospheric experiments are add-ons to a Sandia experiment aboard the Nitehawk 12 rocket, which was recently developed by Carrier Development Division 9224. Primary objective of the flight is to measure bending moments, or stresses, at the base of the payload and in the interstage structure of the rocket during flight. Data obtained from strain gages will be used to refine the design of future rockets.

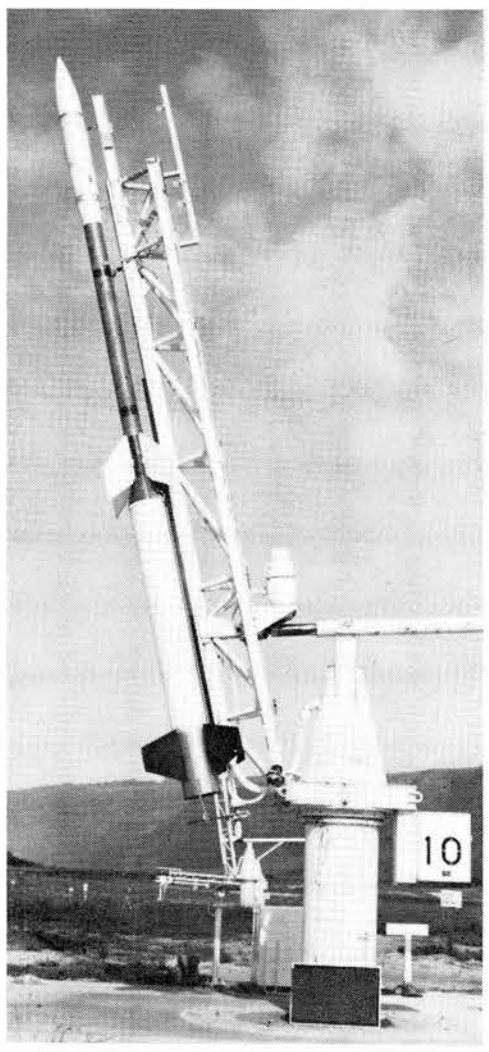
The June 7 flight will be the seventh launch of the Nitehawk 12, a two-stage vehicle developed by Sandia during the past 20 months. The Nitehawk 12 has a maximum altitude capability of about 100 miles. It consists of a 12-foot-long Nike booster, or first stage, and a Tomahawk second stage, also 12 feet long, topped by a 90-inch, 220-pound payload. The system, including payload, weighs about 2000 pounds.

The Nitehawk 12 was created specifically for use in Sandia's upper atmosphere research program. It follows development of the Nitehawk 9, which has an altitude capability of about 200 miles, but carries a payload of 125 pounds.

Dr. D. J. Baker, head of the Electro-Dynamics Laboratory at Utah State University, is investigating air-glow, a faint light that exists at high altitudes and persists throughout the night. Special radiometers, designed and constructed in Dr. Baker's laboratory, will measure luminescence from particular chemical radicals (groups of atoms) known to contribute to the air glow.

Professor K. D. Baker of the Upper Air Laboratory, University of Utah, will test an energetic electron counter which will be subsequently used in auroral zone experiments.

Another experiment aboard the rocket payload section will be an instrument which is designed to measure ion bulk motions in the D region (a layer about 30 miles from earth) and above. R. G. Billings of Thiokol Chemical Corporation's Astro-Met Division will evaluate the performance of the instrument.



NITEHAWK 12 rocket vehicle, on its launcher at Barking Sands in Kauai, can carry a 220-lb. payload 100 miles above earth. The vehicle was developed at Sandia.

L. B. Smith (5241) will conduct an experiment to measure neutral particle motions, or wind, by photographing a luminescent trail produced by a second rocket.

Rocky Mountain Science Council is an organization of 19 universities and 14 allied groups (AEC laboratories, White Sands Missile Range, Holloman AFB, and industrial firms with basic research interests), which was formed in 1958 to strengthen scientific research in the Rocky Mountain region. Richard S. Claassen, Director of Physical Research 5100, is chairman of the Council.

Gilbert Moore, chairman of Rocky Mountain Science Council committee on upper-atmosphere research and general manager of Thiokol's Astro-Met Division, coordinated the joint research effort. K. F. Crowder, supervisor of Carrier Development Division 9224, is a member of the committee.

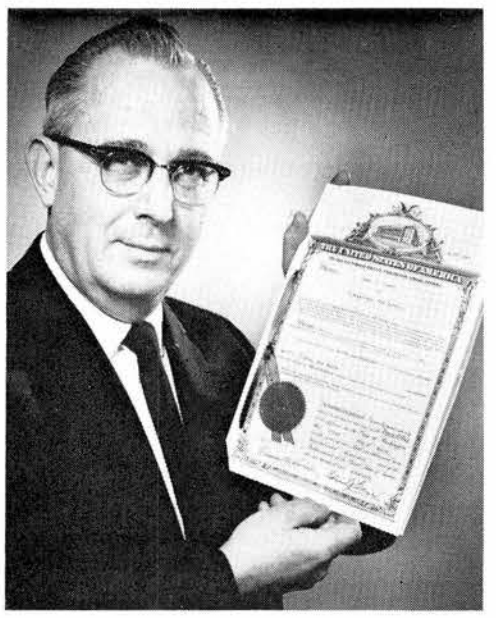
SAFETY RECORD RECOGNIZED—D. P. Dickason (right), Assistant Area Manager for Administration and Security, AEC, Sandia Area Office, recently presented a safety award to Sandia Laboratory for achieving a total of 5,678,680 man hours worked without a lost time accident. The period involved was from June 26, 1965, to Dec. 1, 1965. Shown receiving the award for the Laboratory are R. A. Bice (center), Vice President 7000, and L. M. Jercinovic, manager Safety Engineering Department 3210.

E. H. Beckner Presents Technical Paper in England

E. H. Beckner, supervisor of Electro Physics Research Division 5142, will make an oral presentation during the Conference on Ultra-Violet and X-Ray Spectroscopy of Laboratory and Astrophysical Plasmas to held Mar. 29-Apr. 1 in Abingdon, England.

His subject will be "Diagnostic Measurements on High Density, Z 1, Kilovolt Plasmas," and is based on research work he has been engaged in.

The meeting will be held at Culham Laboratory, which is operated by the British government. About 50 technical papers will be presented during the meeting including 10-15 by U. S. scientists.



PATENT for a dynamic pressure generator was recently issued to inventor Neal L. Vinson (7513).

Patent on Dynamic Pressure Generator Issued Neal Vinson

A patent was issued Mar. 16 to Neal L. Vinson (7513) for a dynamic pressure generator he invented four years ago while assigned to Sandia's Environmental Testing organization.

The generator was designed to create a repeatable sharp change in pressure (up to 8000 psi) within a brief period of time (up to .4 millisecond). To accomplish this, Mr. Vinson applied the principle that pressure on a fluid confined in a container will increase if the volume it occupies is reduced.

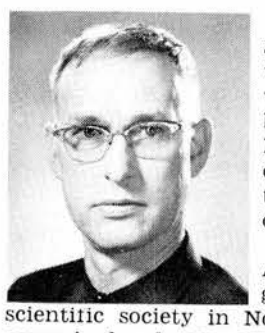
At Sandia the device was used to test the outputs of transducers and to analyze their characteristics under rapid pressure changes. More than one transducer could be installed in multiports for comparison purposes, and through the use of strain gages, the pressure history of a tube could be recorded over a period of time.

The testing device consists of a thick-walled column filled with a fluid and fitted at one end with a plunger. A .38 caliber cartridge case and charges of pistol powder energize the plunger, forcing it into the fluid. The time factor is altered by changing the amount and type of powder and a wide range of pressure gradients is achieved through choice and proportions of non-mixable liquids.

With alterations, the basic design serves as a liquid spring for shock testing, and a latching system can be added to hold the pressure at its pulse peak until mechanically released. The size of the device and the pressure which can be achieved are limited by the structural strength of the container which holds the fluid.

Mr. Vinson applied for and was granted a release under which he was allowed to file a private patent application. The release reserves to the Government and Western Electric Company royalty-free licenses under any resulting patent.

G. P. Steck Elected Fellow of AAAS



George P. Steck, supervisor of Statistical Research Division 5263, has been elected a Fellow of the American Association for the Advancement of Science.

Organized in 1848, AAAS is the oldest general national scientific society in North America. It is comprised of 18 sections covering all the principal fields of science.

The association's purposes are to further the work of scientists, facilitate co-operation among scientists, improve the effectiveness of science in promotion of human welfare, and increase public understanding and appreciation of the importance and promise of methods of science in human progress.

Mr. Steck has been at Sandia 11 years and has worked in the field of statistical research. He has a BA degree in general curriculum from the University of California, an MS in physics from California Institute of Technology, and a PhD in statistics from the University of California in Berkeley.

Editorial Comment

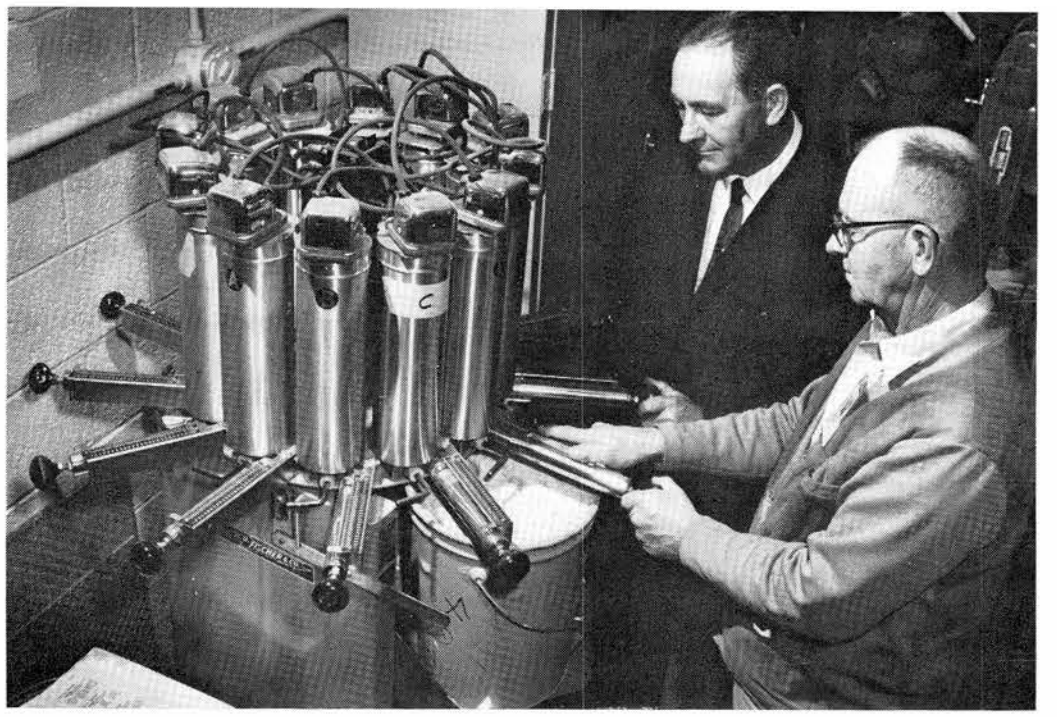
Spring is here.

Torn between the lethargy of spring fever and the desire to begin life anew (a fresh start at least), it might be opportune to do a few mundane chores to launch fresh goals and purposes.

Cleaning out one's desk seems apropos. The moments would be well spent reviewing the myriad items contained in those routinely opened drawers, discarding, rearranging, and refreshing ourselves of its contents.

Having cleared the possible clutter which accumulates so easily over the months, we might then turn inward and unclutter our minds. Drawing a freshness from nature's rebirth to reflect, redefine, and create anew.

Both activities, uncluttering the desk and uncluttering the mind, seem to us to be fitting rites of Spring.



MONEYSAVER—This precision paint blending machine is saving Sandia about $22,400. The Company now stocks only three kinds of paint instead of 82, mixes any color or base of paint in any quantity required. Jay Hughes (4362), left, and Ron George (4513-4) are responsible for the cost improvement action.

For Persons Age 65, Deadline Is March 31 for Medicare Sign Up

Sandia Corporation employees whose spouses are 65 or over are reminded that the deadline for signing up for Medicare is March 31. Even though the employee is under 65, the spouse who is 65 or over is eligible to participate in the new government plan and should make application promptly for both the basic Plan A and voluntary Plan B. If the spouse is not now covered by Social Security, he or she is still eligible for Medicare and application will result in coverage for this portion of Social Security.

This is good advice to pass along to parents and friends in the same age group, if they have never applied for benefits.

For persons aged 65 and over, there are important advantages in filing before the Mar. 31 deadline as a result of new amendments to the Social Security law.

Such an application will establish eligibility for hospital insurance under the new Medicare Program. The application also gives a person the opportunity to enroll in the voluntary medical insurance plan, which helps pay doctor bills and certain other medical services.

C. W. Dickinson, Jr., manager of Employee Benefits and Services Department 3120, reminds Sandia retirees that they will not be enrolled automatically in this supplementary medical insurance program, even though they may be receiving Social Security Benefits.

He strongly recommends that retirees enroll immediately if they have not already done so. In letters to retirees in recent months, Mr. Dickinson has pointed out that delay could result in a loss of very valuable benefits.

Medicare will be financed out of $6 a month premiums shared half-and-half by the people who enroll and the Federal Government.

Another change in the Social Security law enables a person to earn more—if he continues to work after age 65—and still receive benefits. Starting this year, the amount one can earn and still receive all benefits for the year increases from $1200 to $1500.

New amendments also have increased Social Security cash benefits by at least seven percent. The maximum monthly benefit to retirees, based on earnings reported in 1966, is now $135.90. Since January, wages up to $6600 count toward Social Security. When benefits are based wholly on these higher earnings in years to come, monthly payments will be as high as $168.

In Albuquerque, the Social Security Administration is located at 500 Gold Ave. SW, telephone 247-0311.

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Gene Ives Has Featured Role in Comic Opera Show

Gene Ives, supervisor of Division I, Advanced Systems Development Department III, 5620, will have a featured role in the boffo opera production, "The Triumph of Honor," opening tomorrow night at Menaul High School Auditorium. Other performances are scheduled Mar. 27, 31, and Apr. 2. Curtain time is 8:15 p.m.

Gene's most recent stage appearance was in the Albuquerque Little Theatre's production of "Kiss Me Kate." He was a member of the chorus. He has participated in various musical productions in Albuquerque in the past two years including "The Student Prince" in October 1965. He performs with the choir of the Asbury Methodist Church.

"The Triumph of Honor," written by Scarlatti in 1679, is considered the first of the "boffo" or comic operas. The production in Albuquerque will be an American premiere and will be performed in English.

The companion opera, "The Apothecary," written by Haydn, will also be presented in America for the first time. It will play tonight, Apr. 1, 3, and 6. Both shows are produced by the recently organized Performing Arts Opera Company and translated by Bruce Bullock, general director of the organization.

Tickets to the productions, with admission prices starting at $1.50, are available by mail, address 2709 Hermosa NE.

Construction to Start This Fall on Bldg. 880 Addition for Computer

Construction of a 20,000-square-foot addition to Bldg. 880 for additional computer facilities is scheduled to start this fall with a proposed completion date of early next year.

The total project cost for the one-story addition on the northeast corner of Bldg. 880 is expected to be between $900,000 and $950,000. It will be built of clay tile and reinforced concrete to match the existing building.

The new facility will have a separate air conditioning system and a raised, or false, floor for the installation and maintenance of air conditioning ducts and electrical conduits.

Project engineers are T. W. Eglinton, mechanical engineering; C. M. Morrisett, structural engineering; and B. R. Lorenzen, electrical engineering; all three are members of Division 4543.

New Paint Blending Machine Makes Possible $22,400 Cost Improvement

A cooperative effort of Jay Hughes, Senior Buyer, Contract and Purchase Service 4362, and Ron George, supervisor of Painting Section 4513-4, has resulted in a cost improvement of $22,400 in the purchase of paint for Sandia Laboratory.

The savings, projected over a two-year period, were computed after deducting the purchase price and a year's labor operating cost of a new paint blending machine—some $2078.

The figures are based on the cost of paint purchased under the old system. Prior to the purchase of the paint blending machine six months ago, Sandia stocked 82 items of paint in General Stores. These were the various colors and package sizes of paint required for Laboratory use. In 1964, cost of paint required to maintain the 176 buildings (some 1,747,000 square feet of space) occupied by Sandia Laboratory was $28,356.

At the time the cost improvement action started, Jay Hughes was responsible for General Stores purchasing. Buying paint was a particular problem. A variety of paint colors and bases were stocked in pints, quarts, and gallon sizes. In many cases, specific brand names of paint were required to match existing areas needing repairs.

Confronted with the diversity of requirements, Jay could not buy paint in large-packaged quantities and the brand name requirement somewhat reduced competitive quotations.

A possible solution occurred to him while he was buying paint for personal use at a local department store. The store had recently installed a paint blending machine which mixed colors to the customer's requirements.

Jay contacted Ron George and discussed the possibility of buying a machine for Sandia use.

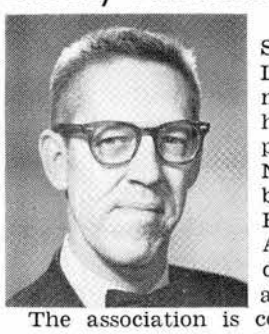
Ron was enthusiastic and launched a feasibility study. He determined that a precision blending machine and three basic paints—low gloss white enamel, high gloss white enamel, and white acrylic made specifically to Sandia's requirements—would meet the Company's needs. Color pigments could be purchased in large quantities, enough for 10,000 gallons or a two-year supply.

Now Sandia buys large quantities of paint in five-gallon containers which are 97 percent filled to allow addition of color pigments. The supplier must provide certificates of quality for each container. Ron prepared the paint specifications based on Federal specifications.

In addition to the savings made possible by bulk purchasing, the larger containers are easier to store, require less space, and ease of handling has increased. Also, less waste occurs. The paint blending machine can match any color of paint required for repairs and can mix any quantity needed.

The new paint, with its rigid quality control, will provide better, longer lasting coatings and more future savings.

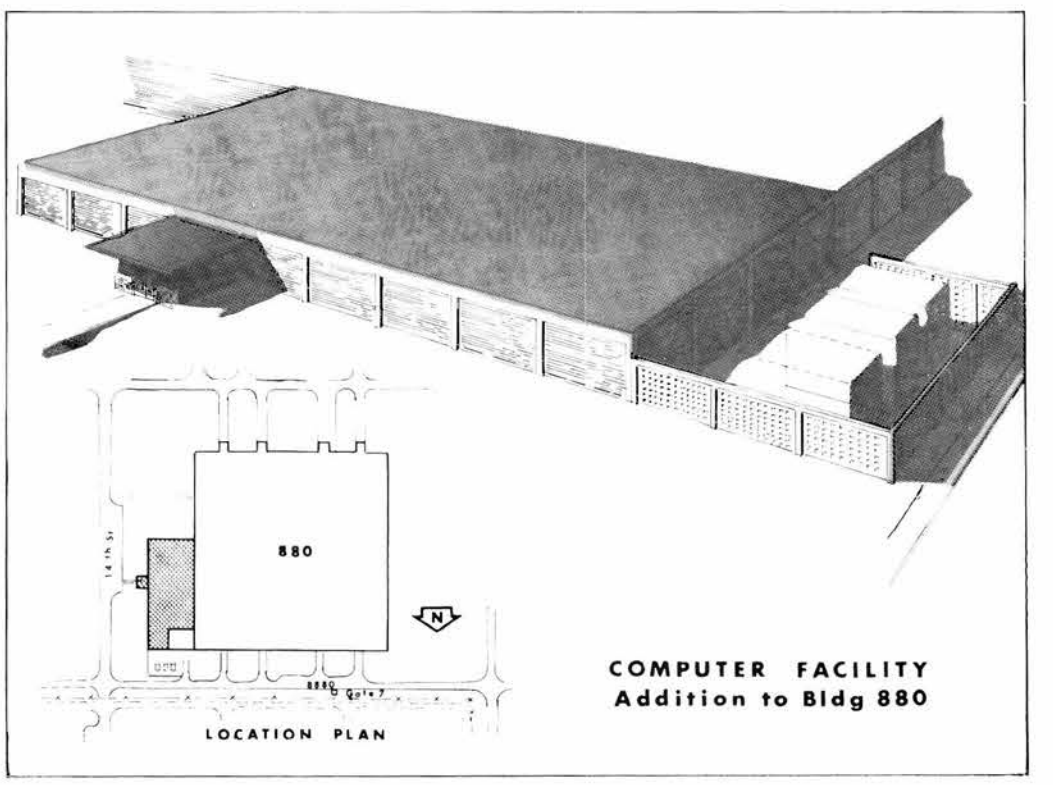
L. F. Parman Elected President of N. Mex. Library Association



The manager of Sandia's Technical Libraries Department, L. F. Parman, has been elected president of the New Mexico Library Association. He will be installed Apr. 1 in Carlsbad during the group's annual meeting.

The association is comprised of representatives of public libraries, school and university libraries, and library trustees. The president's office is rotated among the different interest groups.

Mr. Parman was president last year of the Rio Grande Chapter of Special Libraries Association.



ARTIST'S CONCEPTION of the new addition to Bldg. 880. Enclosed in the screen block wall on the right are cooling towers for the air conditioning system. Inset on the lower left shows the location of the new structure.

New 3600 Computer Centralizes Data Processing at Livermore

With the recent installation of a new Control Data Corporation 3600 computer, engineers at Livermore Laboratory will soon be able to fill most of their computer needs in-house. The new central computer facility located in the southeast corner of Bldg. 912 will triple SCLL's present computer capacity and provide more efficient and effective service to Sandia's research scientists, engineers, and support personnel.

The recent installation culminated a three-year project to bring all of SCLL's computer needs under one roof. In the past, Livermore Laboratory has used many different computers for its data processing, including four in-house computers, three computers at LRL, one at CEIR in San Francisco, and two at Sandia Laboratory.

"We have been waiting a long time for this computer facility," said A. W. McKinney (8144). "It took a lot of hard work and extra effort by many people to get it. Our next job is to convert all of our present programs to the 3600 language as quickly as possible." Mr. McKinney led the team of Livermore Laboratory computer experts who made the initial study of the laboratory's computer needs, and designed and planned the ultimate configuration of the newly installed system.

The 3600 is a large scale, multipurpose computer which can be used to process scientific as well as administrative data. It has a present memory core of 32,768 words which will be increased to 65,536 words in the near future.

The new computer is similar but not identical to the 3600 currently in use at Sandia Laboratory. Two noteworthy features of the Livermore system are its disk storage units and the drum operating system.

Disk storage units have a random access feature which shortens search time for the computer. It allows quick access to update and retrieve information in active files that require updating frequently. The disk files will have particular application in the maintenance of the important Product Record and Materiel Lists programs at SCLL. The new computer can now store 132 million characters of information and early in 1967 the capacity will be increased to 450 million characters (a character is a numeral, alphabet letter, or symbol).

The drum operating system, which is to be installed by May 1966, will act as a buffer to the input/output system. With this feature, the computer has the capability of performing several jobs at one time. For example, a complicated re-entry simulation problem or the calculation of a center of gravity may require many complex mathematical computations that take a great deal of computer time to perform. However, during the time the computer is calculating the re-entry problem, the drum file can be storing information received from the card reader or magnetic tapes concerning the next program that will be fed into the computer after it finishes its present program. In this way the drum file can more quickly input data for processing since it can release its information faster than magnetic tapes or the card reader.

In addition, the drum file will collect data the computer has finished processing and feed it to one or both of two 1250 lines-per minute printers while the computer is working on another job. The drum file, properly programmed, can feed two different jobs to the printers at the same time. Since the printer operates more slowly than the computer, the drum file acts as a middleman and relieves the main computer for other processing.

The result of the random access disk files and the drum file operating system in the new computer is increased flexibility and more efficient use of computer time.

According to G. W. Anderson (8140), some of the planned uses for the new computer will capitalize on this increased flexibility and efficiency to implement new programs such as computer-aided design, library information retrieval, and remote access systems.

While discussing the new computer and its future uses, Mr. Anderson also had high praise for everyone connected with the planning, acquisition, and installation of the new computer. "We received excellent assistance from Purchasing, Plant Engineering, and other support groups at Livermore Laboratory," said Mr. Anderson. "Plant Engineering did a fine job in planning and designing the computer room and the special air conditioning system for the 3600 computer."

L. R. Sweetin (8254) was the project engineer on the computer facility's design. He and four other plant engineers J. R. Adams, J. P. Lennon, W. A. McWhorter, and R. L. Siglock (all of 8254) were responsible for designing the room and auxiliary systems such as power and air conditioning.

W. G. Branson (8143) was the senior buyer assigned to the computer project.

OPERATING Control Data 3600 Computer recently installed in Bldg. 912 is Mrs. A. E. Crow (8144-3). The new facility will centralize all of Livermore Laboratory's computer needs.

OPERATION OF DISK FILE UNITS in the new SCLL computer system is discussed by (l to r) L. R. Sweetin (8254), plant engineering project leader who designed the computer installation; A. W. McKinney (8144), computer study task force leader; and W. G. Branson (8243), senior buyer for the project. The new system will use four random-access disk file units to store frequently updated information.

LIVERMORE NEWS

A NEW ONE-YEAR CONTRACT, effective March 2, 1966, has been signed between SCLL and the International Association of Machinists and Aerospace Workers (IAMAW), District Lodge No. 115, AFL-CIO. Shown shaking hands after the signing are C. H. DeSelm (right), Director of Staff Services at Livermore Laboratory 8200 and Sandia representative in the negotiations; and W. Stadnisky, IAMAW Senior Business Representative. Others (l to r) are M. A. Pound of Wage and Labor Relations Division 8211; E. E. Padgett (8223-2), union steward; D. D. Wagner, supervisor, Wage and Labor Relations Division 8211; and W. L. Miller (8212), SCLL training specialist.

Livermore Notes

An article by J. W. Dini (8133) and A. D. Andrade (8223) on "Experiences With Photosensitive Resists" appeared in the February issue of METAL FINISHING. The article was from a paper first presented at the California Circuits Association Conference, Mar. 25, 1965.

* * *

John Turk (8252) shot a net low score of 66 to win the first place trophy in the Sandia Employee Golf Club tournament on Feb. 26. The straight handicap tourney was played at the Concord Municipal Golf Course.

Gene Springer (8143) and Mike Rogers (8162) tied for second place with net scores of 71. A special award was also won by Gene Springer for coming closest to the pin at the eighth hole.

* * *

The LRL Recreation Association art club has expanded its display facilities to include the LRL west cafeteria, Bldg. 199. Members who are interested in displaying work may obtain further information from Al Wisgardie, LRL ext. 8188.

* * *

An orientation program for new supervisors at Livermore Laboratory is scheduled to be held Apr. 4-8 from 7:30 a.m. to 4:30 p.m.

Various topics will be presented during the week-long conference, including "The Role of a Sandia Supervisor" by C. H. DeSelm, Director of Staff Services 8200, and "8100 Organizational Philosophy" by L. Gutierrez, Director of Systems Development 8100. The final afternoon will be devoted primarily to an open discussion led by B. S. Biggs, Vice President 8000.

Dr. Samuel G. Trull of the industrial management consulting firm, Control Engineers, Berkeley, Calif., has been invited as guest speaker for the orientation program. He will discuss "Supervisory Practice."

Welcome Newcomers

Feb. 14-28

California

Martin M. Balaban, Berkeley	8147
Hermann Folkendt, Stockton	8111
Georgette M. Grogan, Castro Valley	8243
*Robert M. Jacob, Pleasanton	8143
Ray E. Johnson, Richmond	8121
Vera M. McPherson, Livermore	8215
*Joseph A. Portolese, Tracy	8253
Viola Y. Rael, Livermore	8235
William J. Shaffer, Concord	8222
*Robert E. Snapp, Livermore	8252
Ken Urabe, Oakland	8252

Alabama

*Donald R. Chenoweth, Huntsville	8149

*Denotes rehire

Sympathy

To Murr Graham (8223) for the death of his brother in Los Angeles, Feb. 15.

To Pearl (8244) and Paul Stewart (8162) for the death of Paul's father in El Paso, Tex. Feb. 12.

T. F. Meagher Receives MS Degree In Applied Science

Sandian Thomas F. Meagher received an MS degree in applied science recently from the University of California's Department of Applied Science at Davis/Livermore. The first semester of his graduate work was under Sandia's Educational Aids Program and the balance was completed under the SCLL Technical Development Program.

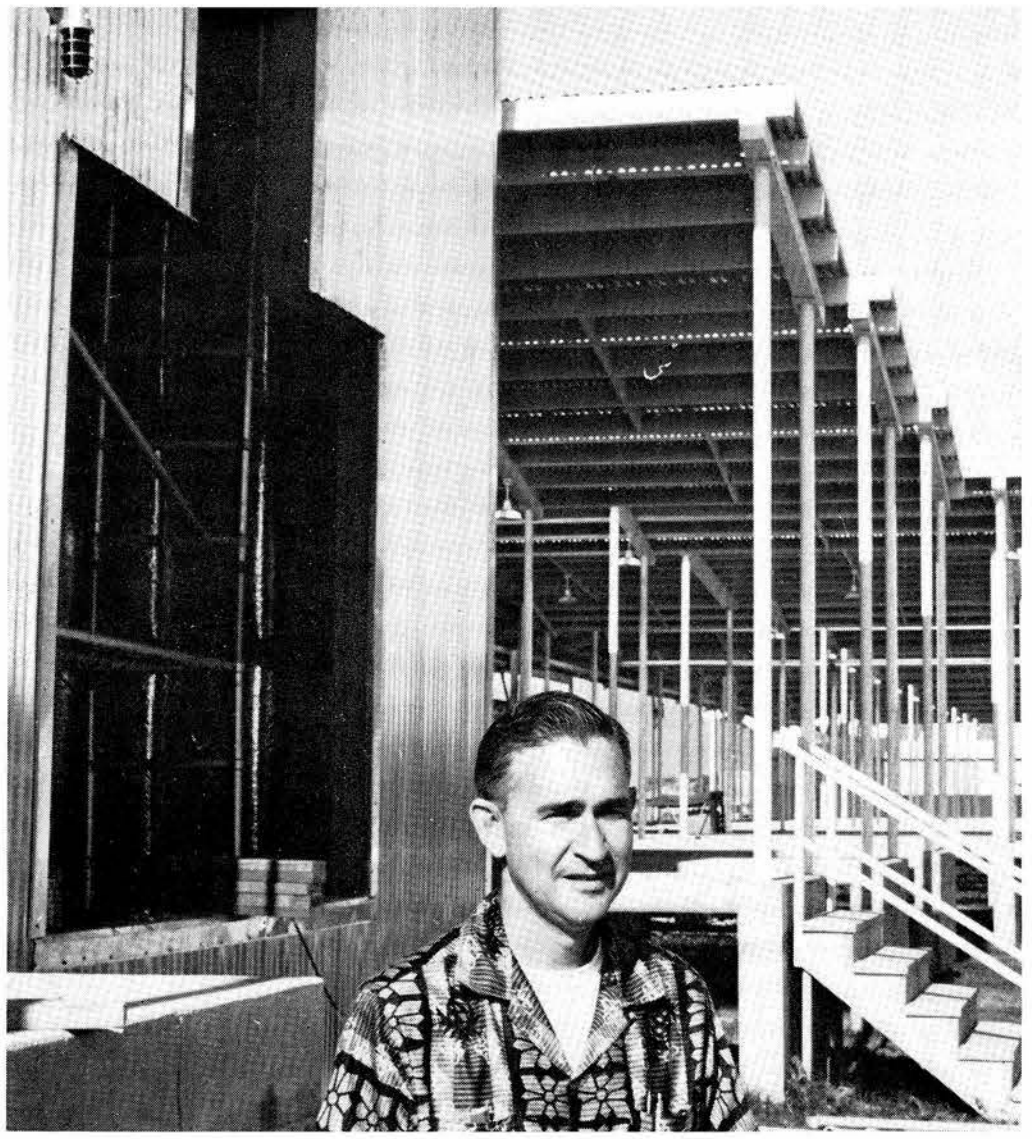
Tom is an engineer in Systems Hardening Division 8148. He joined Livermore Laboratory in June 1960, immediately following his graduation from the University of Washington where he received his BS degree in electrical engineering. At Sandia, he has worked primarily in the environmental test organization, engaged in the development of a magnetic shock testing facility.

Weddings

Phyllis Earthman and Jim Tash were married March 5 in a private afternoon ceremony at Zephyr Cove, Nev. Following the ceremony, the couple spent several days in the Lake Tahoe area. Phyllis, a typist/compositor in Publications Division 8231, joined Livermore Laboratory in July 1959. Jim has been employed as a chemist at LRL for the past nine years. The couple is residing in Livermore.

* * * * *

Ginger Swire and Kenneth Common were married Feb. 26 at 1 p.m. at the First Presbyterian Church in Livermore. After a reception at the Pleasanton Hotel, Pleasanton, Calif., the couple left for a week's wedding trip to Lake Tahoe. They are now residing in Livermore. Ginger has worked in Secretarial Services Section 8235-2 since she joined Sandia in October, and her husband is employed by the Pacific Motor Trucking Company in Oakland, Calif.



BRUCE ERCOLE (9221) is resident manager of Sandia's Barking Sands Launch Site on the island of Kauai. In the background at left is a new building which will house a vertical balancing machine and to the right, a portion of the high-roofed ramp area where the instrumentation trailers are parked.

Assignment: Barking Sands

Bruce Ercole Enjoys Hawaiian Life But Albuquerque is Still Home

Bruce Ercole is Sandia's man on Kauai. A sign, some 3500 miles from Tech Area I in Albuquerque, reads, "Sandia Corporation—Barking Sands Launch Site." Bruce is resident range manager for Projects Division, Upper Atmosphere Projects Department 9220.

Kauai is the northernmost of the five large islands of the Hawaiian chain. It's called the "Garden Island" because of its lush vegetation, its four navigable rivers, the irrigated sugar cane fields, and the pineapple plantations. High on the mountain spine of the island is an area called "the valley of the rainbows" where the rainfall averages over 300 inches annually. Also tucked inside the mountains is a deep gorge, called the "grand canyon of the islands" which is some 3000 feet deep.

The western side of the 555-square-mile island, where Barking Sands is located, is a desert just a little greener than the mesa land surrounding Albuquerque. Cactus grows and cattle graze. These conditions result from the constant trade winds blowing warm moist air west across the Pacific at about eight miles per hour. The air strikes the Islands, is forced up against the mountains, condenses into clouds, and spills rain on the eastern side. All of the islands of Hawaii have their wet and dry sides.

Bruce's job is to see that the Barking Sands range and the Sandia equipment located there is kept shipshape and operable at all times. He directs four Holmes and Narver contractor personnel assigned to the range for maintenance and minor construction projects.

Six rocket launchers and associated control, firing, and instrumentation trailers make up the technical facilities of the range. The trailers are parked in a high-roofed ramp area which provides cover over the walkways between the vans and over central storage and work areas. The ramp facility has additional parking spaces for more instrumentation trailers if they are ever needed. Currently, a metal building to house a vertical balancing machine for aligning rockets and payloads is under construction.

Closer to the launch area are two screen rooms, small buildings which are used for rocket assembly during test operations.

Several miles from the launch site, in caves in the mountain which housed WW II long range artillery for the protection of the island, are bunkers where the Nike boosters, Cajuns, Tomahawks, and other Sandia rocket motors are stored.

Between the mountain and the launch site, in a small mowed meadow, is the "antenna field" where the 16 antennas of the AME (Angle Measuring Equipment) are positioned. They are connected by underground cables to the power and instrumentation trailers at the central ramp area.

Bruce regularly checks technical equipment at the range, humidity and temperature control equipment in the trailers, launcher performance, and supervises general maintenance of the range. He is also the Sandia contact with the Pacific Missile Range facility on Kauai and with the local community.

Bruce will be leaving Kauai in April. He is the third Sandian to hold the assignment. Dick Tullar was at residence at Kauai last year following Jack Canute who was the first resident manager after the range became operational.

Jack was the first to rent the large, old-fashioned house at Kakaha where each of the Sandians have made their home while on the island.

Bruce's family is enjoying its stay on Kauai and small-town life. His two preschool daughters have learned to swim and have fine sun tans.

Bruce enjoys the assignment, but he says, "Albuquerque is home. When the year is up, I'll be glad to return."

Bruce will return to Albuquerque in April. Roger Gelder (9222) will be taking over the assignment at Barking Sands.

No stranger to Kauai, Roger has participated in five test operations in the Pacific since joining the Upper Atmosphere Projects Department. Previously, he had worked a year in Aerospace Nuclear Safety and five and a half years in a weapons project group.

Roger's four sons are excited about moving to Hawaii and they are looking forward to school there and summer vacation on the beach.

Congratulations

Mr. and Mrs. Roger D. Aden (5132) a son, David Roger, Mar. 4.

Mr. and Mrs. Donald R. Adolphson (1131) a daughter, Annette, Feb. 22.

Mr. and Mrs. Gordon Snidow (3463-3), a son, Steven Bryan, Mar. 15.

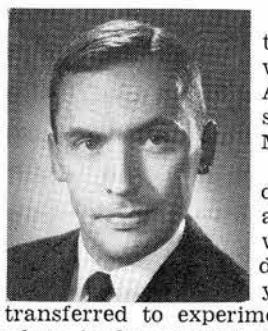
Mr. and Mrs. B. D. James (2411), a daughter, Tresa Ann, Mar. 4.

Sympathy

To Emma Benderman (3415-3) for the death of her father, March 8.

To Bennie Chavira (4574) for the death of his brother, Mar. 12.

Supervisory Appointments



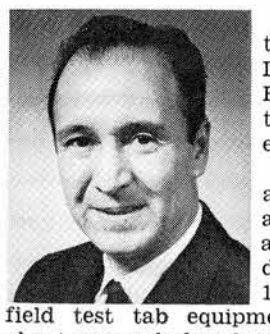
JAMES K. COLE to supervisor of Advanced Weapon Aerodynamics Division 9325, effective March 16.

"Ken" joined Sandia in May 1957 and worked in advanced component development for five years. He then transferred to experimental aerodynamics where he has worked since that time with the exception of one year leave of absence.

Before coming to Albuquerque, Ken was an engineering officer at the Air Force Cambridge Research Center at Hascomb Field in Mass.

He is currently working on a doctor's degree in engineering at the University of New Mexico. He received an MS in mechanical engineering from UNM in 1961 and a BS in mechanical engineering from the University of Kentucky in 1955.

Ken is a member of the American Institute of Aeronautics and Astronautics, Pi Tau Sigma, and Tau Beta Pi.

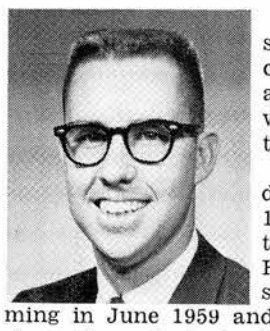


E. K. MONTOYA to supervisor of Data Reduction and Real-Time Computing Division 9425, effective March 16.

"Kelly" worked as an assembler for about six months after he joined Sandia in September 1952. He worked on field test tab equipment processing for about a year before he transferred to analog and telemetry reading installations maintenance where he worked for four years. After serving as an analog programmer, he transferred to digital programming in 1958.

Kelly received a BS degree in mathematics from the University of New Mexico in 1957. He served with the U. S. Navy from March 1944 to May 1946, mostly in the South Pacific, and then for 16 months during the Korean conflict.

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



B. TOM FOX to supervisor of Applications, Systems and Training Division 9427, effective March 16.

Tom joined Sandia in February 1957 as an applications programmer. He transferred to systems programming in June 1959 and has worked there since then. Early in 1964, Massachusetts Institute of Technology invited a number of research and development companies to participate in a research effort directed toward the development of a general, machine-independent, computer-aided design system. Tom was selected as the Sandia visiting staff member and spent about a year at M.I.T. as a member of the team.

Before coming to Albuquerque, he was a computer programmer and systems analyst at Tinker Air Force Base for about a year.

Tom received his BS degree in mathematics from Oklahoma City University in June 1956 and did some graduate work at the University of New Mexico from 1957-59.

He is a member of the Association for Computing Machinery.

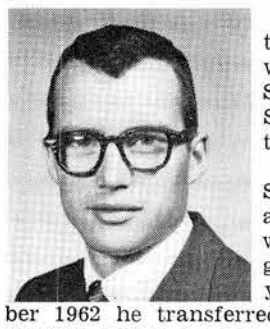
Take Note

Did you graduate from Albuquerque High School in 1941? The class of '41 is planning a 25-year reunion in Albuquerque on June 18. For further information call Sandians Bob Garcia, home tel. 256-6609, or Bill McKinney, home tel. 299-2481.

* * *

The Albuquerque Whitewater Club has arranged for pre-season practice in kayaking or canoeing at the Los Altos Pool on Mar. 31, Apr. 14, and Apr. 28. The pool is reserved from 9 to 11 p.m. on these dates, and kayaks will be available. A fee of 65 cents per person will be charged.

River practice for beginners is planned for May 1 or 15 depending on the river's water level. For further information contact Sandians P. J. Komen, Jr. or Hugh W. Church.



GORDON O. MOE to division supervisor in Advanced Systems Studies Staff (5590), effective March 16.

Gordon joined Sandia in June 1960 and worked in a weapon project group for about two years. In December 1962 he transferred to systems engineering where he has worked since that time.

He received a BS degree in electrical engineering from North Dakota State University in May 1960. From 1960-62 he did graduate work in electrical engineering at the University of New Mexico as part of Sandia's TDP program.

Gordon is a member of the Institute of Electrical and Electronics Engineers, Eta Kappa Nu, Tau Beta Pi, and Phi Kappa Phi.

EDWARD G. THUMAN to supervisor of Administrative Systems Division II, 9426, effective March 16.

Ed has worked in computer analysis since joining Sandia in January 1957. In 1956 he owned and operated a service bureau using IBM computers. From 1954-55, he was an IBM computer salesman in Albuquerque. He was in production and material control in a paint factory from 1947 to 1952.

Ed received his BA degree in business administration from the University of Minnesota in June 1954. Before that he did some undergraduate work in engineering at the University of Illinois.

Events Calendar

Mar. 26, 27, 31, and Apr. 2 — American premiere of Scarlatti's "The Triumph of Honor"; Mar. 25, Apr. 1, 3, and 6, Haydn's "The Apothecary." Performing Arts Opera Company, Menaul School Auditorium, 301 Menaul NE.

Mar. 26-May 1—"20th Century Sculpture," UNM Arts Center.

Mar. 27—Special Indian dances, Jemez Pueblo.

Mar. 26-27—Cabresto Peak area campout. N.M. Mountain Club, leader Milo Conrad, tel. 298-2989.

Mar. 20 — Albuquerque Civic Symphony, Thomas Schumacher, piano soloist. Civic Auditorium.

Mar. 31, Apr. 2-3—"Der Get," a family comedy in Yiddish (English synopsis provided). Old Town Studio, 1208 Rio Grande NW. For reservations call 242-4602.

Apr. 1-10 (except Apr. 4)—World premiere of John Patrick's play "It's Been Wonderful," Albuquerque Little Theatre, 224 San Pasquale SW.

Apr. 3—Enchanted Mesa. N.M. Mountain Club, leader Bob Kyrlach, tel. 344-3083.

Apr. 3—Rene Clement film "Forbidden Games" followed by discussion, 7:30 p.m., Newman Center, 1815 Las Lomas Rd. NE. Tickets at the door 50 cents.

Sandia Authors

G. J. Simmons (5612), "A Factorization Technique for Binary Autocorrelation Functions," April issue, PROCEEDINGS OF THE IEEE.

J. G. Eberhart (1123), "The Surface Tension of Binary Liquid Mixtures," April issue, JOURNAL OF PHYSICAL CHEMISTRY.

K. L. Shipley (9321), "Some Spectroscopic Measurements of a Supersonic Plasma-jet," March issue, APPLIED SPECTROSCOPY.

R. J. Venti (5261), "Linear Normal Forms of Differential Equations," April issue, JOURNAL OF DIFFERENTIAL EQUATIONS.

Welcome
Newcomers

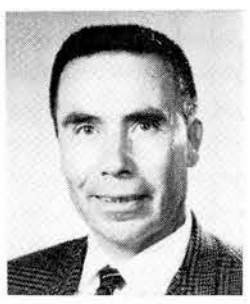
March 7-18

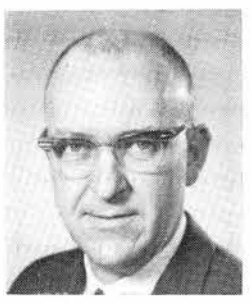
Albuquerque

Esther A. Baca	2552
Bennis Chavira	4574
David E. Cordova	3416
Yvonne G. Gomez	3153
Barney E. Hatchfield	7226
Keva L. Williams	3126
Roscoe T. Williams	3154

Service Awards

20 Years


G. A. Abeyta
9232


W. E. Boyes
2140


L. M. Jercinovic
3210


J. J. Michnovicz
2555


C. G. Sproul
9224


A. A. Young
9221

15 Years


Violet N. Barela
7521


F. E. Berry
4253


L. E. Colson
3242


M. Cowan, Jr.
5141


H. L. Davis
7332


J. I. Garcia
4573


N. A. Gruenoch
2111


J. M. Hart
4371


J. A. Hay
4252


Berenice Henry
3412


T. J. Hoban, Jr.
7212


M. O. Jones
8123


Mildred Knight
7500


J. A. Maldonado
4624


G. W. McClendon
2522


Edith M. Moya
3126


C. H. Nylander
2212


J. M. Sanchez
2522


M. C. Schiess
7532


W. E. Shafer
2525


J. B. Sweatman
4232


Frances Voorhies
3321


H. R. Welch
4514


T. L. Wilson
1541


Geraldine Wright
2420

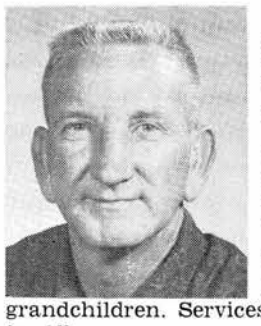
10 Years

March 25-April 7

Esther M. Allen 3151, H. J. Rouckus 2211, A. V. Robnett 1413, A. L. Elsea 2211, Lucille C. Smith 3411, Dorothy M. Kirk 3462, Annabelle E. Fink 3463.

D. C. Eaton 4254, A. J. Graff 4611, J. A. Snyder 5224, L. E. Baker 5632, M. P. Lucero 4513, E. C. Johnson 4574, and Dana A. Wray 4613.

Death



Ivan W. Marshall of Ordnance Test Projects Division I 7212 died suddenly Mar. 16. He was 52.

Mr. Marshall had been employed at Sandia since October 1950.

Survivors include his widow, four daughters, and 11 grandchildren. Services were held Mar. 19 in Albuquerque.

Sandia Programmed Text To Teach Typing Skill Lauded in New Book

An innovation in the physical presentation of a programmed learning text devised by R. F. Utter of Employee Training and Education Division 3132 was recently acknowledged in a new book, "Teaching Machines and Programmed Learning, II" edited by Robert Glaser and published by the Department of Audiovisual Instruction, National Education Association of the United States.

The reference to Mr. Utter reads in part:

"It was also rather surprising to discover that the technique developed by Utter for using the typewriter as a teaching machine at the Sandia Corporation has not been more widely adopted for use elsewhere. He uses this technique to teach girls with general typing skills how to type complicated formulas from handwritten notes. The formulas involve many superscripts and subscripts and require skills not normally developed in regular typing classes.

"Utter prepared a straightforward program which presents a handwritten expression to be converted into type. The handwritten formula appears on the left-hand side of a page inserted in a typewriter. The trainee types the formula, or part of it as directed, on the right-hand side of the page. She then advances the paper in the typewriter so as to expose the 'correct' answer.

The construction of the typewriter itself prevents the typist from seeing the correct answer until she has advanced the paper. Of course, it is also possible to present explanatory information along with the feedback term to provide further assistance to the trainee if desired. Since the programs may be inexpensively reproduced and typewriters are plentiful, it is somewhat disappointing that this clever technique has not enjoyed greater popularity."

The Sandia program, "Training Aid in Equation Typing" has been in use at Sandia for about three years as part of training for typists and secretaries. An additional advantage of the program is that it can be used at the typist's desk during periods of off-peak workloads. No formal instruction or classroom is required.

Content of the program was based on material developed at Sandia Laboratory and Bell Telephone Laboratories.

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

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

FOR SALE

TWO 4'x8' ping pong tables w/folding legs; one 15-lb. rustproof, cast, boat anchor. Littell, 255-2716.

'55 JEEP, Universal, 4-wd, canvas half cab, heater, Warn hubs, $795. Varnado, 298-7334.

MOUNTAIN LOTS near Tres Ritos, access to Rio Pueblo, near Sipapu ski lodge, $1000. Scranton, 299-5720 after Sunday.

HOFFMANTOWN BRICK, 3 lg. bdrs., DR, 1¾ baths, carpets, drapes throughout, AC, FA heating low equity. Estess, 298-3294.

'60 VOLVO 122S, 4-dr., black w/white top, R&H, w/w tires, 4-speed stick, low mileage. Browning, 299-6384.

CEDAR CREST, two to four acres w/60-year-old adobe and rock home, has shallow well. Aaron, 282-3803.

'65 PONTIAC GTO, 3-speed transmission, 12,000 miles, AC, $2400. Jackson, 268-9251.

PALOMINO GELDING, mature horse ideal for small children, guaranteed gentle, in N. Valley, $125. Mecklenburg, 344-6793.

MEN'S 6'9" laminated hickory steel-edge skis, 8½ boots, both $15; 18" reel mower w/2½hp gas engine, $15; '56 Ford V-8 station wagon. Martin, 256-6785.

'57 PONTIAC Starchief 2-dr., HT, PS, PB, Hydra-matic, new tires, new battery, new muffler, $375. Kohut, 298-0695.

'61 ALPINE Conv., 20,000 miles, one owner, R&H, wire wheels, new top, $900. Devers, 299-8421, 9012 Haines NE.

OVERSTUFFED easy chair, $5; single bed springs, $5; small tricycle needing repair, $2. Van Deusen, 299-4328.

'60 ½-TON CHEV. pickup, 6-cyl, 4-speed, limited slip differential, $800 or best offer. Windle, 344-6958.

'60 DODGE DART Phoenix convertible V-8 Automatic, PS, PB, first $500. Kennedy, 299-8938.

'60 FIAT, 1200, 4-dr. sedan, rebuilt engine, $350 cash. Herrera, 247-2604.

SELL OR LEASE: 3-bdr., den, pitched roof, hw/floors, AC, FHA app., landscaped, near schools, shopping, Coonce, 296-1089.

'65 MUSTANG V-8, radio, back-up lights, ST, $2050. Brannon, 265-0988.

AMBASSADOR TRUMPET, make offer. Vleck, 298-5397.

'64 CHEVY II, NOVA, R&H, w/w, AT, 18,000 miles, $1200 or offer. Cassidy, 500 Kentucky SE, 255-5940.

'54 CHEV., $60, need cement mixer, doesn't have to be in working condition. Gonzales, 877-3632 after 6.

OAK DINING SET, $39; Flexsteel sectionals, $49; oak coffee table, $10; guitar, $19; oak cabinet, $14. Winblad, 344-3109.

VOICE OF MUSIC Hi-Fi, blond; 6 folding chairs. Lang, 344-9028.

'63 FALCON wagon, air, toprack, big six engine, $1050. Whitney, 298-2809.

MOSSMAN SACRAMENTO, enlarged to 1800 sq. ft. living area, 4-bdr., den, 1¾ bath, below FHA, 3506 Florida NE. Mattox, 268-5554.

3-BDR. CHAPMAN home, ½ block Los Altos-Grant school, walled yard hw/floors, 4½% GI, AC, terms. Harper, 298-0146 after 5.

MOBILE GENERAL ELECTRIC dishwasher, $40. Luna, 299-2488.

'57 FORD stationwagon, $195. Scott, 298-7133.

COLT WOODSMAN .22 pistol, trade pistol or pay cash for old hunting knives or Bowie knives. Smitha, 299-1096.

'57 PONTIAC 2-dr. HT, R&H, AT. Sayers, 344-8597.

'60 GERMAN DKW, 2 new tires, $250. Pierson, 282-3229.

McINTOSH TYPE MC-30 basic amplifier. Solomon or Becht, 898-2095 after 5:30.

LAWNMOWER, Sear's Craftsman reel type, Briggs and Stratton engine. Crass, 299-1418.

GIRL'S 24" bike, $15; 3 Samsonite suitcases, $8 ea.; electric fan, $3. Leslie, 299-2040.

DINETTE, chrome, 5 pieces, gray on white, 36" x 48", extends to 60", $30. Oglesby, 344-6331.

17 FT. trailer frame w/new tires, best offer. Westman, 255-6048.

'63 CORVAIR MONZA convertible, 4-speed, positraction, below book. Bush, 1008 Kentucky SE, 265-7087.

LARGE LOT on cul de sac, Glenwood Hills, all assessments paid. Randall, 256-1853.

3-BDR. MOSSMAN, den, fireplace, DR, hw/floors, 1¾ bath, dbl. garage, AC, sprinklers, near schools, $20,200, 5701 Madeira Pl. NE, Truby, 299-0577.

HOSPITAL BONDS, 6½% int. payable semi-annually by coupon, maturity date 8 yrs. Brown, 299-3189.

'65 YAMAHA 80-cc motorcycle. Wagner, 299-5100 after 5.

FIVE-ACRE tract of mountain land, adjoins Sandia Knolls off Frost Road, view, electricity, water available. Berry, 298-6996.

3-BURNER COLEMAN camp stove, $10; 10x13 umbrella tent, $25. Anderson, 344-8919.

2 BLOCKS FROM BASE, solid brick 3-bdr., 1¾ baths, FHA app., $16,500 or best offer. Schatz, 299-4585.

'64 AUSTIN-HEALEY SPRITE, 16,000 miles, R&H, light blue, $200 under book price. Carlson, 255-3128.

COMPLETE COLOR SLIDE OUTFIT, 35mm, Kodak pony camera, leather camera case, blower cooled projector, spare lamp, $40. Stark, 299-5953.

BIRD CAGES: circular black cage w/stand, $5; gold cage for Mynah or small parrott, $15. Roeske, 256-2940.

WOODEN HIGH CHAIR; "Swing-A-Matic" baby swing; stroller w/piggy-back seat; walnut veneer chest of drawers. Johnson, 256-3473.

FERTILIZER SPEADER, $3. Hauer, 298-3624.

14 ROLLS hog or sheep fence, $12/roll. Hiser, 299-1660 after 4.

HOLLYWOOD BED complete; '60-'61 GMC shop manual; root feeder w/cartridges. Fisher, 299-9235.

TIRES, misc. sizes, 4 and 6 ply, $5 ea.; one-man pup tent w/floor, heavy, $8.50. Geibel, 299-0275.

WINCHESTER deer rifle, model 88, cal. 308 lever action, $75, cost $144.95. Kirtley, 256-0637 after 5:30.

10" DEWALT SAW, 1 hp motor, metal stand, 110/220 vac. Magruder, 255-2078 after 5.

'61 VW, new paint and tires, overhauled engine, R&H, $750 or best offer. Salazar, 255-1310.

'49 CHEVROLET ½-ton pickup, new tires, 6-ply on back, $200. Hurt, 282-3675.

FORD TRUCK, ¾-ton, 4-speed, V-8, Styleside box w/aluminum Sportsliner camper, $800. Benson, 268-3586.

'64 LAND ROVER, 4-wd, reg. station wagon model 88, desert roof, extra gauges, steps, $1900. Adams, 247-9688.

MICROPHONE-Shurg Sonodyne I, dynamic element, impedance selector, cable, desk stand, $25; turntable, AR 2-speed w/Empire 880 P mannetic cartridge, diamond stylus, $65. Kobs, 298-9133.

L-SHAPED TEXTOLITE kitchen countertop, beige w/gold flake, 118" x 46¼", standard 26" depth, $30; Draperies, pleated and lined, green print, 80" wide, 38" long 2 pr. $12. Trump, 299-5162.

2 WROUGHT IRON TWIN BEDS, complete w/mattresses, $15 ea. or both $25. Stathis, 268-4037.

'57 DODGE CORONET 2-dr. V-8, R&H, AT, '66 tags. Joseph, 268-5414 or 299-6989.

'58 PLYMOUTH station wagon, rebuilt engine, $150. Caldwell, 299-6480.

CRIB, six-year, fold up crib 27 x 48", jump chair, infantseat, etc. Schwoebel, 268-6440.

'49 STUDEBAKER PICKUP, make offer. DeZeeuw, 12512 Loyola NE, 296-1003.

3-BDR., 1¾ bath, 1400 sq. ft., plus 2-car garage, many extras, FHA $17,400, sell for $16,800 w/low down to existing 5¼% GI. Kambourelis, 2914 June Ct. NE, 298-2148.

'56 FORD Country Squire station wagon, V-8, 9-passenger, ST, $150. Piraino, 255-5126.

AKC Alaskan Malamute puppies, show quality, gentle temperament. Palmer, 898-3632.

DRESSING TABLE w/mirror and bench, cost $80, sell $27.50; table and floor lamps. Nichols, 247-2564.

SELL OR TRADE one-wheel trailer w/metal box and frame; new tire and tube; canvas cover; universal hitch. Nelson, 298-9290.

ELECTRIC RANGE, Frigidaire, white Dutch door oven. Schmitt, 296-3267.

BOY'S WHITE COAT, new, size 20; black sharkskin trousers, 28" waist. Devor, 298-9743.

'62 PONTIAC Grand Prix, AC, power, $1500; electric range, 40", $25; 2 mud tires, wheels 670x15, 6-lug, fit Chev. pickup, $12 ea. McDonald, 1340 Princeton NE, 268-5041.

3-BDR., crapet, drapes, 2-decker rear patio, $13,000. Rutledge, 709 Valencia SE, 265-0933 or 282-3151.

AUTO AIR CONDITIONER used one season, $100; swingset, $5. Dauphinee, 255-6367.

ONE SET OF TIRES (4) 700x14, $22. Perea, 265-0861.

CESSNA 120, new edge lighted panel, new upholstery, complete electrical system, economical two place, 110 mph transporation at 5 gph, $1650. Cope, 298-5864.

BOY'S 26" bicycle, new tires and puncture proof tubes, $13; light-weight wheelbarrow, $3; Mangle, table model, $8. Vinovich, 299-1979.

'54 FORD ½-ton pickup, 6-cyl., 4-spd., R&H, defroster, 2 new tires, $285. Russell, 299-0159.

FREE: 300 sq. ft. blue grass sod, an easy way to get 600 sq. ft. of good grass fast, I'll dig, you haul away. Doggett, 299-7957.

AMF BOY'S bicycle, $8; '64 Ford pickup, wrap-around bumper, $16. Sumlin, 299-6137.

FREEZER, Norge 15 cu. ft., upright. Bild, 2618 Haines NE, 256-3873.

TENOR BANJO w/resonator, $50. Glover, 298-7302.

30-06 B.S.A. RIFLE w/Redfield variable scope, $160. Maes, 256-7345.

REDWOOD TABLE, 6' w/benches, newly refinished, $20. Calloway, 299-3695.

GE CANISTER vacuum, $12; occasional chair, $10; studio couch, $20; Boston rocker w/pads, $8. Adkins, 299-1859.

ROPER GAS RANGE, 4-burner staggered top, high broiler, $55; Krohler living room suite, grey tweed, $40; Motorola 21" low boy TV console, $55. Clark, 298-3703.

'57 FORD station wagon, 2-dr., V-8, straight shift, OD, AC, R&H, $325 or best offer; Evinrude outboard motor, 18hp. Fjelseth, 1509 Garcia NE, 299-9539.

BOY'S 26" bicycle; small child's bicycle; play stove and refrigerator; dolls. Jennings, 255-5950.

GARAGE SALE, Sat. Mar. 26: typewriter, room AC, large fan, lawn mower, doors, parakeet cage, baby stroller, play pen, infant seat, etc. Jackson, 256-0318.

3-BDR., paneled den, brick fp, DR, AC, central heating, carpeting, drapes, sprinklers, walled, garage w/office and tool shelves, carport, patio, near Nob Hill, $17,500 FHA. Smith, 256-0375.

'58 FORD Ranchwagon 6-cyl, stick shift, original owner, $300. Smatana, 3336 Betts Dr. NE, 299-6278.

'51 CHEVROLET, Powerglide, $50. Ernst, 344-8694.

3-BDR. BRICK, 1½ baths, carpets, drapes, many extras, NE, $14,200; '62 TR-4, all equipment, $1195. Wilson, 298-0049.

'58 FORD V-8 station wagon, AT, PS, PB, factory air, premium tires, new battery, best offer. Carpenter, 299-3519 evenings.

'51 CADILLAC 4-dr., AT, R&H, AC. Ortiz, 2929 Trellis Dr. NW, 344-3791.

POWER LAWNMOWER, Sear's 18" reel type, $20; Hotpoint automatic washer in operating condition, $15. Freyermuth, 299-2053.

'63 RAMBLER 4-dr. wagon, ST, R&H, OD, 38,000 miles, original owner. Ray, 256-6453.

STELLA 12-string guitar w/case, $35; wicker rocker, $5; tea cart, $3; other items. Gelman, 298-5335.

44" ROUND walnut dining table w/2 12" leaves, $45; two 30" couches, 1 shrimp, 1 green, $15 ea., both for $25. Gravlin, 268-6579.

PICKUP CAMPER, 8' Sport King, stove, ice box, boat rack, fully insulated, $200 including butane bottle. Alberts, 282-3704.

THREE SIZE 14 boy's summer coats, $3 ea. Guier, 298-9525.

27" BOY'S Schwinn bike, new, 3-gear, hand brakes, $55 or best offer, Wayne, 255-3849.

15-GAL. aquarium, complete, $15; $2.49 sprinkler heads 25 cents each; silicone waterproofing, cost $4.95, will take $2.50/gal. Flowers, 282-3458.

RABBITS, all sizes, will hold till Easter, $1.50 ea. Browne, 344-8435.

'58 ½-TON INT. pickup, 6-cyl., 3-speed positraction diff. Roh, 299-3749.

3-BDR, 1¾ baths, Marberry-built, corner lot, sprinklers, carpeted, covered patio, 4¾% VA loan, cost $16,900, loan balance $11,850. Gelder, 296-1719.

WANTED

1 PR. metal clothes line poles. Hole, 255-1444.

USED SET of women's golf clubs for beginning golfer. Walter, 265-6829 after 5.

6" TIRE RIMS, small tractor accessories, plows, harrows, etc; used weld burner. Condit, 344-9887.

CAR POOL, 1 or 2 other members, from Desert Terrace or Highlands North to any Tech Area I lot. Abel, 298-5139.

FISHING RIG, camp trailer, load leveler type trailer hitch. Shafer, 898-0132.

RIDE from 10509 Betts Pl. NE, vicinity of Eubank and Lomas, to Bldg. 894. Burd, 298-1639.

BABY SITTING by the week, located near Los Altos Golf Course. Anderson, 298-8837.

LOT IN Los Pinos Addition, Tijeras. Cooke, P. O. Box 5045, Albuquerque.

TRADE: SX62A Hallicrafters general coverage receiver including FM for communications receiver or photographic equipment of equal value. Ross, 264-2101.

GOOD kids horse and young calves, part trade for good hay. Patterson, 877-3158.

USED RADIO for '62 Chevy pickup. Trump, 299-5162.

TENT, wall or umbrella type, 10 x 12 or larger, outside frame preferred. Kershner, 299-6513.

GOOD ELECTRIC shallow well pump w/motor, for 2" irrigation well. Salazar, 877-2944.

RIDER to Indianapolis, Indiana, help pay expenses and drive, leaving Albuquerque May 27. Proffitt, 820 Ortiz Dr. NE.

BABYSITTING: want 4-yr.-old companion for 4-yr.-old boy, near Sandia, 424 Texas NE. Harper, 256-2355.

GERMAN HELMET, cheap. Shunny, 265-1620.

RIDE from vicinity of Hyder and Girard SE. Knapp, 268-0452.

FOR RENT

LARGE HOUSE, Placitas area, country living w/modern conveniences, garage, corral, separate orchard opreation contract available if desired. Illing, 299-7378.

UNFURNISHED HOUSE, 210 Texas NE. Guest, 264-2134.

LOST AND FOUND

LOST—Man's prescription bifocal sunglasses, lady's red leather lighter, man's prescription reading glasses w/black frames and rims, man's prescription glasses in brown leather case, book—"The Future of Man", ½-pint size thermos bottle. LOST AND FOUND, tel. 264-2757, Bldg. 610.

FOUND—Man's gold rimmed sunglasses w/black ear tips. LOST AND FOUND, tel. 264-2757, Bldg. 610.

NO WHALE IN A PAIL, but with much better luck than Simple Simon, Coronado Club chef Rudy Adams will have clam chowder, poached whitefish, steamed clams, shrimp creole, baked salmon, and fried haddock for the "Fisherman's Wharf" event April 2.

Coronado Club Activities

Social Hours

Tonight the seafood buffet will be featured with the Lamplighters on hand for the happy music. The buffet is $1.25 for adults, $1 for children.

On Friday, Apr. 1, Rex Elder will make the music and the chicken buffet will be served.

Jerry Lee's group will be featured Friday, Apr. 8, and the chuckwagon roast beef and shrimp buffet will be served.

Bridge

Monthly Master Point Bridge competition will be held Monday, Mar. 28, at 7 p.m. Duplicate Bridge is scheduled Monday, Apr. 4, at 7 p.m., and the ACF Bridge group will meet Wednesday, Apr. 6 at 7 p.m. Ladies Bridge will meet at 1:15 Thursday, Apr. 7.

Bowling

The Coronado Bowling Club will meet Apr. 7 in the Eldorado room at 7:30 p.m. A film is scheduled and refreshments will be served.

Winners of the Coronado roll-off (to determine which team would be sponsored in the New Mexico State Men's tournament) were the Thunderbirds. Team members are Dick Marmon (4631), Jim Tichenor (4224), Leland Pierce (4224), Paul Spencer (4413), and Frank Chavez (4231). With handicap, the team scored 2937.

The Coronado Club singles handicap tournament will be played Saturday, Apr. 2, starting at 1 p.m. at Lomas Bowl. Entry fee is $2.75 per person and any Coronado Club adult member may participate. Entry blanks are available from C. J. Caspar (4541), tel. 268-9158. Deadline for entry is Monday, Mar. 28.

'Texas Stomp' Tomorrow at Club; Seafood Spectacular Set April 2

Westerners will go for this one. Tomorrow night, it's country music at the Coronado Club. The Texas Stomp stampedes at 7 p.m. with the Club's popular Mexican buffet — enchiladas, tacos, chili rellenos, and hot tamales.

Elton Travis will play for dancing from 9 to 1. For reservations, call the Club office, 264-4561. Cost to members is $2.50, guests $3.

Next Saturday, Apr. 2, the Club will stage a seafood spectacular—"Fisherman's Wharf." Chef Rudy Adams is planning a menu which includes Coney Island clam chowder, poached white fish Mornay style, steamed eastern clams, shrimp creole with rice, baked salmon, deep fried haddock, au gratin potatoes, green peas, and tossed salad.

After the feast, the Lamplighters will provide the dancing music from 9 to 1. Make reservations early for this one. Admission is $3.50 for members, $4 for guests.

Teenagers will go-go Thursday, Apr. 7. Following a spaghetti dinner at 6:30, the Deacons will be on stage for the blastoff. Admission is 50 cents.

The Dixieland All Stars will add to the atmosphere of "The Roaring Twenties" event scheduled Apr. 16. Sirloin steak dinner starts at 7 p.m., a special floor show is planned, and dancing will be from 9 to 1. This one will be a swinger, Chicago style, so make plans early.

Sandia Speakers

R. C. Marsh and F. W. Oswalt (both 2564), "Cleanliness Meter and Its Application to Solvent Cleaning," American Association for Contamination Control, Mar. 29, Houston, Tex.

J. A. Kenagy (4224), "Application of a Laminar Down-Flow Clean Room to Dust and Fume Control in a Development Plastic Facility," American Association for Contamination Control, Mar. 29, Houston, Tex.

W. J. Whitfield (2564), "Monitoring a Class 100 Clean Room," American Association for Contamination Control, Mar. 29, Houston, Tex.

G. L. Rhodes (8215), "A Fundamental of Industrial Safety—Accident Records and Injury Rates," Safety Training Institute, sponsored by the National Safety Council, Mar. 21, Oakland, Calif.

R. P. Baker (2441), "A Reliable Instrument for Detection of Tritium Radioactivity in Air," Instrument Society of America, Panhandle Section, Feb. 28, Amarillo, Tex.

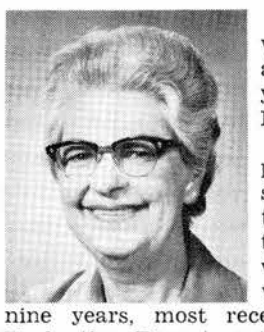
D. W. Sasser and M. L. Slater (both 5262), "A Generalization of the van der Waerden Conjecture," American Mathematical Society meeting, Apr. 4-7, New York City.

E. D. Jones (5151), "Nuclear Magnetic Resonance in Magnetic Materials," General Electric Solid State Seminar, Mar. 25, Schenectady, N. Y.

G. O. Hawley (2513), "Product Phase Related Quality Activities," Portland Section of the American Society for Quality Control, Apr. 2, Portland, Ore.

W. E. Warren (5261) and Bill Bickford (Sandia summer hire), "The Propagation and Reflection of Elastic Waves in Anisotropic Hollow Spheres and Cylinders," Third Southeastern Conference on Theoretical and Applied Mechanics, Mar. 31-Apr. 1, Columbia, S. C.

Retirement



Edna L. Miller will retire March 25 after more than 15 years at Sandia Laboratory.

Edna worked in production for about six years before she transferred to electrical inspection where she has worked for the past nine years, most recently in Test and Evaluation Department 4630.

She now lives at 2823 Bel Air Dr. NE. but plans on moving to Ohio where her brother and sister live.

Promotions

James I. Greenwoll (7261) to Staff Associate Technical
James A. Dyer (1313) to Staff Assistant Technical
Anne E. Crow (8144) to Staff Assistant Administrative
Domingo B. Martinez (4212) to Material Handler
Abelicio Molina (4212) to Material Handler
Lewis Blackman (4224) to Helper
James H. Gallegos (4224) to Helper
Florencio Romero (4614) to Utility Operator
George F. Romero (4614) to Utility Operator
B. O. Sandoval (4614) to Utility Operator
Frank J. Valencic (4221) to Machinist
Dennis C. Lobley (3428) to File Clerk
Betty C. Cordova (4135) to Invoice Clerk
Sharon K. Geister (3126) to Secretarial Stenographer
Elizabeth S. Harvey (3126) to Secretarial Stenographer
Teresa C. Tafoya (3421) to Library Assistant
E. Collene Derrick (4135) to Calculating Machine Operator
Diana Dee Martinez (2553) to Service Clerk
Donna C. Brown (3421) to Library Assistant
Joe P. B. Armijo (7216) to Data Reduction Clerk
Jane L. Hallisey (2232) to Senior Clerk
T. F. Dawkins, Jr. (4622) to Investigator
Shelia G. Signor (8211) to Typist Clerk
Bivens Lovest (8232) to Messenger
Victor S. Dominguez (8235) to Messenger
Annabelle Erickson (8114) to Secretarial Stenographer
Richard H. Campiotti (8235) to Mail Clerk
Joyce E. Blanchard (8211) to Service Clerk
L. Alice Rogers (8122) to Service Clerk
Bobby G. Allen (8253) to Senior Clerk
K. Janet Willis (5590) to Secretary
Florence H. Gossin (9330) to Secretary

Sandians to Present Papers at National Solid State Physics Meet

The annual March meeting of the American Physical Society is always devoted to research in the field of solid state physics. Because of Sandia's interest in this area (particularly radiation damage), it is a meeting of high importance to many of our scientists.

The meeting this year, Mar. 28-31 in Durham, N. C., is expected to set attendance records with 526 contributed papers in solid state physics plus a smaller number in the fields of high polymer physics and chemical physics.

Invited speakers will include R. G. Kepler (5213), who will discuss "Electron and Hole Mobility in Organic Crystals" during the symposium on charge carriers in narrow bands, and A. R. Sattler (5211), who will speak on "Channeling of Light Ions Through Diamond-type Lattices" during the symposium on channeling of charged particles and related effects in single crystals.

Technical papers to be given by members of Radiation Physics Department 5210 include: "Radiative Recommendations in Annealed Electron Irradiated GaAs" by G. W. Arnold; "Axial Channeling of Protons and Deuterons in GaAs and GaSb" by D. K. Brice and A. R. Sattler; "Generation of Electrons and Holes in Anthracene by Ruby Laser Light" by F. N. Coppage;

"Defect Reordering in Co^{60} Irradiated n-Type Silicon at Low Temperatures" by B. L. Gregory; "Triplet Exciton Lifetime in Anthracene" by R. G. Kepler; "Average Ionization Produced in a Silicon Lattice by Monoenergetic Neutrons as a Function of Incident Neutron Energy" by A. R. Sattler and F. L. Vook;

"Electron Damage and Annealing of n-Type Silicon — Influence of Crystal Growth and Irradiation Temperature" by H. J. Stein; "Thermal Conductivity of Electron-Irradiated InSb" by F. L. Vook; and "New Low Temperature Interactions in Irradiated O-Doped Si" by Ruth E. Whan.

Technical papers to be given by members of Solid State Research Department 5150 include: "Pressure Dependence of the Fermi Surface of Lead" by J. R. Anderson, W. J. O'Sullivan, and J. E. Schirber; "P^{31}, As^{75}, Y^{89} and La^{139} NMR in the Paramagnetic State of the fcc Rare-Earth Intermetallic Phosphides and Arsenides" by E. D. Jones; "Nuclear Magnetic Resonance in Titanium Metal" by Albert Narath;

"Theory of Ferroelectric Transition in Strontium Titanate" by R. E. Nettleton; "Pressure Dependence of the Low Frequency de Haas-van Alphen Oscillations in Zinc" and "Pressure Dependence of the Majority Carrier de Haas-van Alphen Oscillations in Single Crystal Graphite" by J. E. Schirber and W. J. O'Sullivan; and "Stress Spectra of F-Aggregate Centers in KCl" by C. B. Pierce. D. H. Anderson of Physics of Solids Division 5132 will present "Nuclear Resonance of Fe^{57} in alpha-Fe_2O_3 at 4°K."

A note of levity will be provided by the banquet speaker—Harry Golden, editor, publisher, and author of the best-seller "For $ .02 Plain."

Many Sandians Help Judge Regional and State Science Fairs

A number of Sandians will be participating as speakers and judges in the regional Science Fairs this month and also in the State Science Fair in April.

C. S. Johnson (7252) will speak on "Science and Religion" during the southeastern regional fair in Roswell. Speakers at the northwest regional fair in Albuquerque will include G. W. Hughes (7224), "Tracking Artificial Satellites,"; C. A. Olson (7261), "The Sandia Weather Man"; and R. M. Jefferson (5224), "Operating Nuclear Reactors."

Sandia judges at the southeastern regional fair will be C. A. Hall (1132), R. G. Elsbrock (3211), and D. C. Jones (9422). Employees who will judge entries at the northwestern fair include W. B. Estill (1122), J. G. Eberhart (1123), B. K. Seely (1121), L. K. Jones (1133), Albert Goodman (5323), G. E. Seay (5130), R. T. Johnson (5132), M. K. Parsons (5132), R. C. Wayne (5132), E. J. Gilbert (5256), B. T. Kenna (1121),

R. G. Dosch (1121), B. E. Van Domelen (5530), D. J. Sasmor (1134), Osborne Milton (1134), C. A. Coonce (9327), J. E. McDonald (1110), R. E. Cuthrell (1133), S. C. Levy (1323), G. W. Stone (9324), R. C. Hildner (5253), P. E. Bailey (5261), K. C. Goettsche (1112), R. D. Driver (5262), Jean Antoine (1315), C. C. Smith (1314), G. A. Samara (5132), and Judy Palm (9423).

In addition, the following Sandians will serve as judges at the State Science Fair: D. R. Anderson (1111), P. E. Cassidy (1111), E. K. Beauchamp (1132), C. R. Blaine (1425), J. D. Shreve (5234), J. R. Banister (5120), R. J. Martin (1322), C. B. Rogers (9227), R. I. Ewing (5241), R. L. Kruse (5256), D. R. Morrison (5256), L. S. Nelson (5234), M. M. Robertson (1122), C. K. Karnes (1115), and D. P. Peterson (5253).

The Albuquerque Section of the American Institute of Aeronautics and Astronautics will present an award at the northwestern regional fair tomorrow. Judges for the award (a plaque with the recipient's name inscribed) will be L. D. Tyler (9321), J. F. Muir (9326), and H. A. Wente (9324).

Sandia Safety Record Back Injury Downs

A Sandia employee was injured Mar. 10 when he struck his back on a coil winding machine in Bldg. 840. He was helping remove a large coil of wire from the machine and when he straightened up he struck his back against the sharp-pointed tailstock of the machine.

The employee experienced an immediate sharp pain in his back but this quickly passed and he continued work. However, during the weekend he developed a "catch" in his back, but he reported to work on Monday. Late Monday, he reported to Medical and had x-rays taken.

The following day the employee was referred to an orthopedist for further treatment. After several days recovering at home, the employee has returned to work.

At the time of the accident, Sandia Laboratory employees had worked 35 days or 735,000 man hours without a disabling injury.

Sandia's Safety Scoreboard

Sandia Laboratory:
12 DAYS
420,000 MAN HOURS
WITHOUT A
DISABLING INJURY

Livermore Laboratory:
83 DAYS
419,300 MAN HOURS
WITHOUT A
DISABLING INJURY