

HEAD FRAME OF 1200-FT. SHAFT at Project Gnome drilling site is the tower at left center in photo. Ground zero for the five-kt blast is 1100 ft. NE from bottom of shaft in Salado Salt formation.

Sandia Corporation LAB NEWS

ALBUQUERQUE, N. MEX. • LIVERMORE, CALIF.

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NOVEMBER 10, 1961

Christmas Card Money Put to Deserving Use By Sandia Departments

A stack of gaily-colored Christmas greeting cards is pleasing to thumb through once, but consider the more lasting enjoyment clothing, toys, or household items could give to a needy family.

For this reason Sandia Corporation employees are again urged to give to charity rather than go to the expense of exchanging Christmas cards with fellow workers.

This activity has been carried on by many Sandia organizations for a sufficient number of years that it has become somewhat of a December tradition.

The individual projects have been varied. One organization usually collects money to be used for buying shoes for needy children; other groups "adopt" a family for the holiday season; still another department purchases hot lunches for school children otherwise not able to afford this necessity.

The Albuquerque Council of Social Agencies and the Council of Social Welfare in Livermore in past years have served as "clearing houses" for donors and recipients. The Salvation Army, Department of Public Welfare, Catholic Charities, and Elks Club in Albuquerque also cooperate in locating families needing help.

As the Lab News learns of these activities, the charity projects in lieu of exchanging Christmas cards will be reported.

Three Groups Hear C. J. McGarr Talk on Work Measurement

C. J. McGarr, Director of Service Operations 4600, presented a technical paper entitled "Statistical Work Measurement, Theory and Application" to three groups in October.

His first talk was given to members of the AEC's Albuquerque Operations Office on Oct. 16. He then spoke at a conference sponsored by the National Archives which was held in Washington, D.C., on Oct. 19. Conferees included representatives from government agencies such as the Department of Agriculture, Bureau of Census, and Defense Department. The following day he addressed a session of the National Archives Management Conference.



DR. GLENN T. SEABORG, Chairman, Atomic Energy Commission, center, visited Sandia Laboratory recently to attend technical briefings. He is shown with S. P. Schwartz, Sandia President, left, and K. F. Hertford, Manager, AEC Albuquerque Operations Office. Dr. Seaborg was formerly Associate Director of Lawrence Radiation Laboratory and Chancellor of the University of California.

Livermore Lab Using Unique Probe to 'See Around Corners'

A bundle of tiny glass fibers is enabling engineers at Livermore Laboratory to peer into areas inaccessible to the eye.

Known as a fiber-optic probe, the instrument can help "see" around corners and let the operator view areas not visible with conventional viewing instruments.

The probe was developed for Livermore Laboratory's use by the Armour Research Foundation as a means of observing the operation of moving parts inside assembled weapons. The instrument also has applications in internal medicine and other areas where direct vision is not possible.

The probe works like this: The outer fibers in the sheaf transmit light to the object being viewed. The fibers in the core of the probe, in turn, transmit an image of the lighted object to the viewer. Lenses at either end of the probe can be changed to increase or decrease the depth field, magnification, and viewing angle.

The viewing image appears in a mosaic pattern, almost like that on a TV screen, due to the arrangement of the glass fibers in the sheath. The probe contains approximately 2000 fibers, each .002-in. in diameter. Each fiber is coated with a glass shielding of a higher refractive index to prevent

the dissipation of the light.

A light source for the instrument is built into the pistol-grip handle which attaches to one end of the probe. Small light bulbs, powered by a standard battery, illuminate the object to be viewed. When fully assembled, the probe is three-ft. long and three-eighths-in. in diameter.

The probe was developed according to specifications established by Livermore Laboratory. According to Ed Litzaw (8142-2), consultant on the project, "The device has several advantages in some areas where simple viewing devices cannot be used."

Hardly any heat is generated by the light in the probe, giving it an application in internal medicine where heat could cause tissue damage. Dr. M. W. Biggs, consulting physician at Livermore Laboratory, commented that the fiber-optic system "has opened great possibilities for viewing body cavities of all sorts, even the inside of the human heart."

It also has applications in viewing the interiors of nuclear reactors, combustion engines, and other areas where accessibility is limited, Ed said. Since the device has its own light source, a variety of unlighted areas can be examined.

Project Gnome Okay Gives Sandia Projects Green Light

Sandia Lab's Seismic and Test Effects Division 7251 and Underground Physics Division 5112 are completing preparations for Sandia Lab's part in Project Gnome, an experiment to be conducted as part of the AEC's Plowshare Program. On Oct. 25, President Kennedy approved the five-kiloton nuclear detonation involved in the project.

The date for the shot will be fixed at a later time; however, it is presently scheduled to occur during December.

Sandia Lab's part in the experiment consists of instrumentation and measurement of subsurface earth motion within 1600 ft. of the detonation, which will take place in a salt deposit 25 miles southeast of Carlsbad, N. Mex. A nuclear device will be fired in a chamber at the end of a 1100-ft. horizontal tunnel located 1200 ft. below the earth's surface.

Project leader for Sandia Lab's part is A. D. Thornbrough (7251-1), assistant project leader is T. J. Flanagan (7251-1), and scientific advisors are W. D. Weart and W. R. Perret (both 5112). Sandia Lab technicians will make particle-motion measurements and measurements of temperature and pressure in the cavity formed by the blast at shot-time and at specified times thereafter.

Sandia Lab is also responsible for making micro-barograph measurements during the Gnome ex-

periment. Project leader for this phase of the experiment is J. A. Maxim (7254-1). Scientific advisor is J. W. Reed (5114). A third aspect of the experiment, involving electromagnetic radiation measurements, is under the project leadership of R. W. Frame (7251-1), with P. R. Kintzinger (5112) as scientific advisor.

Project Gnome is a multiple-purpose experiment designed to provide information on: (1) the possibility of recovering useful power from heat generated by a nuclear explosion, (2) the feasibility of recovering commercially- or scientifically-valuable isotopes produced by such underground explosions, (3) neutron physics and other scientific theory, (4) effects of a nuclear explosion on salt, and (5) design principles useful in developing nuclear explosive devices specifically for peaceful purposes.

The U. S. has announced it will welcome observers from interested United Nations countries.

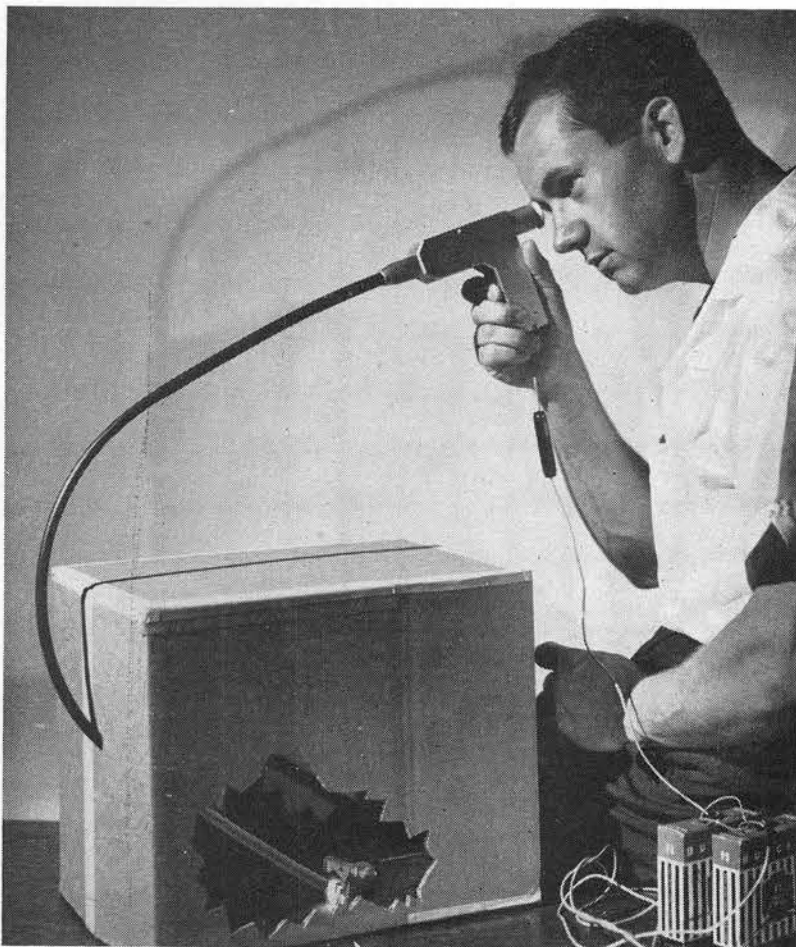
Final ECP Total Tops \$141,455 In Recent Drive

Final statistics indicate that Sandia Laboratory employees have contributed a total of \$141,455 to the 1961 ECP Drive. Sandia Corporation's gift to the drive was \$13,500, and the Sandia Laboratory Federal Credit Union contributed \$667. The grand total—Sandia's total contribution to the drive—amounts to \$155,622, an increase of \$19,000 over last year.

This year's drive has seen the biggest increase in contributions of any year since the plan was established. Approximately 76 per cent of Sandia Lab employees now belong to the plan through payroll deduction or through cash contribution. Statistics indicate that 86 per cent of Sandia employees have made contributions to the plan during the drive. The average contribution of plan members was \$26.83 and the average contribution of all contributors was \$24.46.

A recent Albuquerque United Community Fund Newsletter noted that "Sandia Corporation has always given the UCF campaign a big lift in 'quota busting' fashion."

The UCF organization also expressed its appreciation to the many Sandians who volunteered their services to UCF and the member agencies during the recent drive and throughout the year.



READING DIAL inside unlighted "closed" container is now possible with the aid of this fiber-optic probe developed for Livermore Laboratory use. Ed Litzaw (8142-2) demonstrates the probe's flexibility, using a cut-away box to show its present application.

Editorial Comment

The Call for Courage

Henry J. Taylor, former U. S. Ambassador to Switzerland, writes that a nation which doubts itself enlists in the ranks of the enemy and bears arms against itself, guaranteeing its own defeat by being the first to be convinced of it.

We are hearing these days the words: "I'd rather be Red than dead." This is the cry of the man who is fundamentally a coward, and civilization will not be saved by cowards. To these cowards, Ex-Ambassador Taylor said that any choice is just a little better than death. He further said that there are many things worse than death, and one of them is slavery.

There are various ways to demonstrate courage and we are being called upon to show our courage by not retreating. Berlin, South Viet Nam, Korea — these are only a few of the places where the Free World has chosen to stand fast. Probably later a call will be made for the courage necessary to advance.

We are not going to be Red and we are not going to be dead. But it is going to take courage.



Bernice Snider (4361)

Take a Memo, Please

Remove the hazard and you prevent an accident.

Weddings

Loris Fox will be married to Norman A. Smith on Nov. 22 in an evening ceremony at the Chapel of the Congregational Church.

Loris (3153-2) has been at Sandia four and a half years and Norman (3451) has been with the Corporation four years.

The couple will be at home at 10109 Maya Court NE.

Welcome Newcomers

Oct. 23-Nov. 3

Albuquerque	
Elliot S. Airmet, Jr.	2332
Bobby R. Collins	3444
Robert L. Gabaldon	3444
Nadine N. Kemble	4623
Lawrence L. Kiefer	3444
Mildred A. Kostedt	3441
Martha V. Martinez	4623
Jo Ann S. Ortega	3441
*Julia M. Polito	3151
Daniel F. Trujillo	3441
Illinois	
Lynn N. Ernst, Claremont	1424
Ohio	
Wanda L. Myers, Dayton	3126
Oklahoma	
James E. Mitchell, Stillwater	3431
* Denotes rehired	
Returned from Leave	
Jeanne M. Luhn	4542
D. D. Stewart	4254
New Hires at Livermore Laboratory—Oct. 2-23	
Anna Mae Carli, Hayward, Calif.	8212-5
Karen C. Gartside, Livermore	8212-3
Robert L. Graham, Cedar Rapids, Ia.	8114-4
Robert L. Hall, Corvallis, Ore.	8122-2
Coral J. Meek, Hayward, Calif.	8212-5
Eleanor M. Mick, Pleasanton, Calif.	8212-5
James B. Riedy, Chicago, Ill.	8211-2
Madison L. Sharp, Livermore	8232-3
Donald E. Smith,
Albuquerque, N. M.	8116-1
E. Jean Stuart, Livermore	8212-5
Marie E. True, Fremont, Calif.	8212-3
Returned from Leave	
Kathleen A. Baldwin, Livermore	8233-2
Carlene M. Mohr,
Castro Valey, Calif.	8212-5

Congratulations

Born to:

Mr. and Mrs. Cliff W. Erickson (5113) a daughter, Anna Lisa, on Oct. 12.

Mr. and Mrs. H. E. Bradley (2344/7145) a daughter, Rhea Lynne, on Oct. 20.

Mr. and Mrs. W. D. Connelley (2544) a son, Peri, on Oct. 20.

Mr. and Mrs. W. C. Womack (7183-1) a daughter, Kathleen, on Oct. 31.

Mr. and Mrs. A. C. Arthur (1332) a son, James Thomas, on Nov. 30.

Sympathy

To L. A. Dunn (7122) for the death of his brother recently in Washington, D.C.

To Charles Westmark (1431) for the recent death of his mother in Iowa.

Families Invited to Attend Thanksgiving Dinner Dance

Coronado Club's annual Thanksgiving Day (Nov. 23) buffet and dance is an event designed for family participation. The traditional turkey dinner with all the trimmings will be served from 5 to 7 p.m. Paul Muench's band will play for dancing and listening from 6 to 10. Tickets cost \$2.60 for members, \$3.60 for guests, and \$1.25 for children.

Leigh Sprague's combo will play for the Saturday night dance on Nov. 11. Tickets for the dance, which lasts from 9 to 1, are \$1 for members, \$1.50 for guests.

A Thanksgiving bridge party for club members only will be held on Thursday, Nov. 16. Dinner will begin at 6:15, followed by bridge. Cost for the dinner and open-pairs bridge is only \$1. Trophies will be awarded to the winning couple. Reservations should be made with R. M. Fegan (AEC), ext. 40297, or AL 5-7192.

Children of club members can bowl at the club on Saturday mornings from 8:30 to 12, at 25 cents a line. Instructors are present to help the youngsters (average age is 10 to 14) with their bowling. For further information contact the club office, ext. 37276.

Research Colloquium; Joint UNM-Sandia Tech Meet Slated

The Sandia Research Colloquium on Nov. 16 will feature a talk by Dr. W. J. Youden of the National Bureau of Standards on "Systematic Errors in Standards of Measurement." The lecture at 2:30 p.m. will be unclassified and tickets are not required.

A joint University of New Mexico-Sandia Laboratory colloquium will be held Nov. 22 at 3:30 p.m. in Room 101 of the UNM Chemistry building. The speaker, Professor M. A. Melvin of Florida State University, will discuss "Symmetries of Elementary Particles" with particular emphasis on recent developments in the field.

For further information on these colloquia contact Diane Martin (5132) at ext. 27155.

Important Event

Edith (4624) and Floyd Irwin (4231) will observe their 25th wedding anniversary on Nov. 13. This year Edith's birthday on the 14th will be overshadowed by the earlier celebration.

Deer, Deer

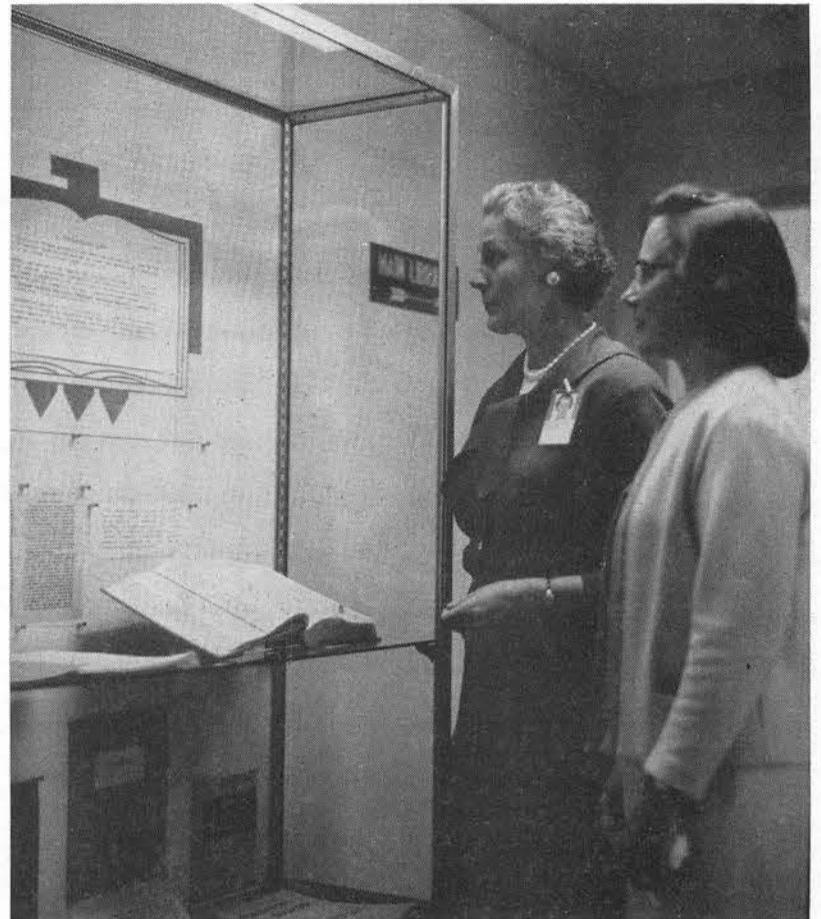
William R. Moore (7212), hunting in the four-mile area northeast of Tonopah, Nev., shot once and got two deer.

Bill aimed at a buck sticking his head from behind a tree, killing it with a shot through the head. He then discovered that his shot had gone through the buck and hit a doe in the heart. Fortunately Bill had permits for both a buck and a doe.

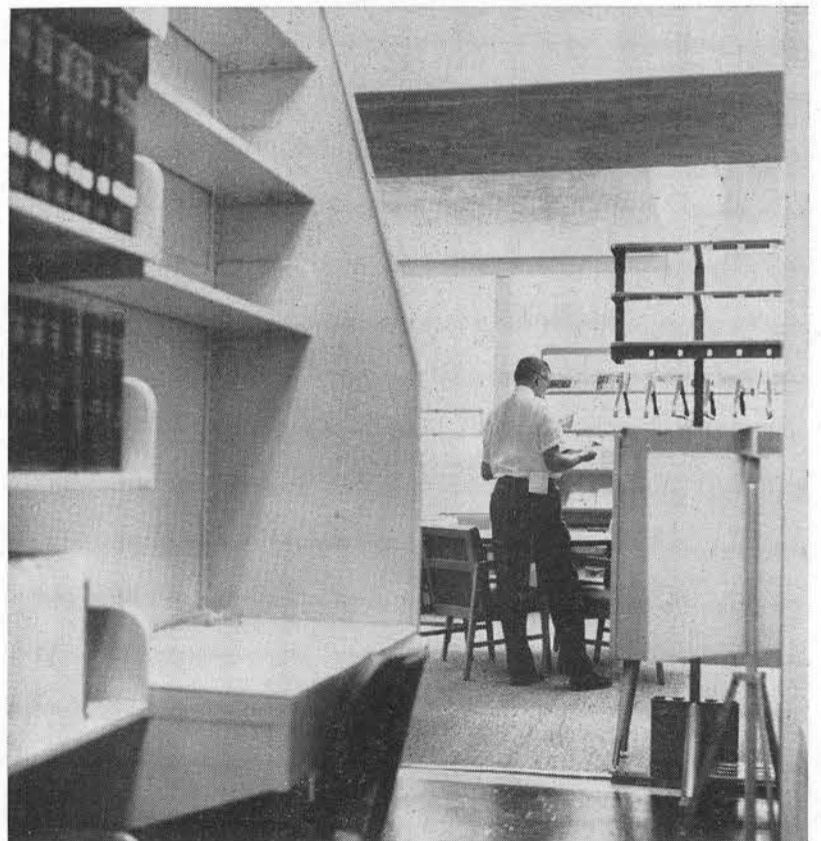
7100 Christmas Party Set For December 1

Tickets will go on sale Monday, Nov. 13, for the 7100 Christmas party, according to chairman Bob Reed (7183). The party will be held at the Coronado Club on Friday, Dec. 1, from 6 p.m. until 1 a.m.

Tickets, which may be obtained at the division level, cost \$6 per couple. This includes social hours, a buffet dinner, and dancing to the music of Leigh Sprague's orchestra. Couples planning to attend the dance only will be charged \$2.



TRANSLATION DISPLAY at library entrance receives admiring glance from Florence Macpherson (left) and Ida Mae Gutierrez (both 3421-1). Open book is 1846 German report on original discovery of a derivative of picric acid. Sandia made first English translation after substance became important in current research.



SANDIA EMPLOYEE browses through technical periodicals located in ground floor reading room. In foreground is one of the study carrels found throughout the technical library on both floors.



TECHNICAL LIBRARY SUPERVISOR Lee Parman (3421) escorted many members of Sandia's large staff through the new library facilities in Bldg. 804 during the recent opening. Inspecting the mezzanine are (l to r) R. E. Hopper (4500), A. B. Machen (2300), and R. J. Hansen (4200).

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1963 Science Fair to Attract 400 Students to Albuquerque

Although May 1963 sounds a long way off, arrangements are already being formulated for the National Science Fair-International to be held in Albuquerque at that time.

The event is dedicated to inspiring greater interest among students in the fields of pure and applied science. Sponsored by Science Service, Washington, D.C., a non-profit organization, the fair attracts more than 400 students from throughout the United States and some foreign countries in addition to about 1000 members of the official party.

In preparation for the 1963 fair a 28-member advisory committee has been appointed. This group is comprised of leaders from New Mexico scientific and military installations, universities, business, and industry. S. P. Schwartz,

President, and R. B. Powell, Vice President, Personnel, will represent Sandia Corporation on this important committee.

J. W. Galbreath, manager of Public Relations and Employee Publications Department, has been named chairman of the Exhibits Committee. He has appointed J. C. L. Leslie (3433-1) as his assistant. The Exhibits Committee will be handling the 400 student exhibits at the State Fair Coliseum, providing facilities, and installing decorations at the Coliseum and banquet halls.

Mr. Galbreath is also a member of the Steering Committee, which is comprised of 10 committee chairmen.

Philadelphia was the site of the first National Science Fair-International in 1950. The New Mexico Institute of Mining and Technology and the Albuquerque Journal are chiefly responsible for bringing the 1963 Fair to New Mexico. Both organizations have been active in science education at the high school level since New Mexico's first State Science Fair in 1953.

Four Sandia Scientists Present Papers Before Academy of Science

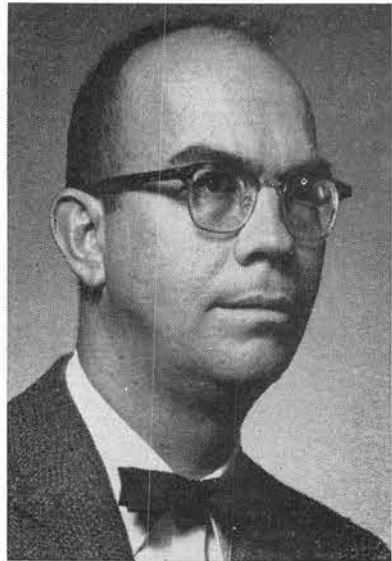
Four Sandians presented technical papers at the 43rd annual meeting of the New Mexico Academy of Science which was held at the University of New Mexico recently.

Katheryn E. Lawson (5151) was co-author of a paper entitled "Irreducible Representations of Line Groups and Their Application to the Vibrational Dynamics of Polymer Chains." The other author of the paper was G. A. Crosby of the University of New Mexico.

"Kinetics and Mechanism of Free Radical Formation in Irradiated Polyethylene" was the title of the paper presented by Irving Auerbach (5151).

Richard T. Meyer (5153) read two papers he authored. One was "A Flash Photolysis-Mass Spectrometric Method for Gas Phase Chemical Kinetic Studies" and the other was "The Kinetics of the Hydroxyl Radical in the Low Pressure Reaction of Atomic Hydrogen and Molecular Oxygen."

The final Sandia paper, "Quadrupole Coupling in $LiNO_3$," was presented by David H. Anderson (5132).



D. W. Ballard Named National Officer of Technical Organization

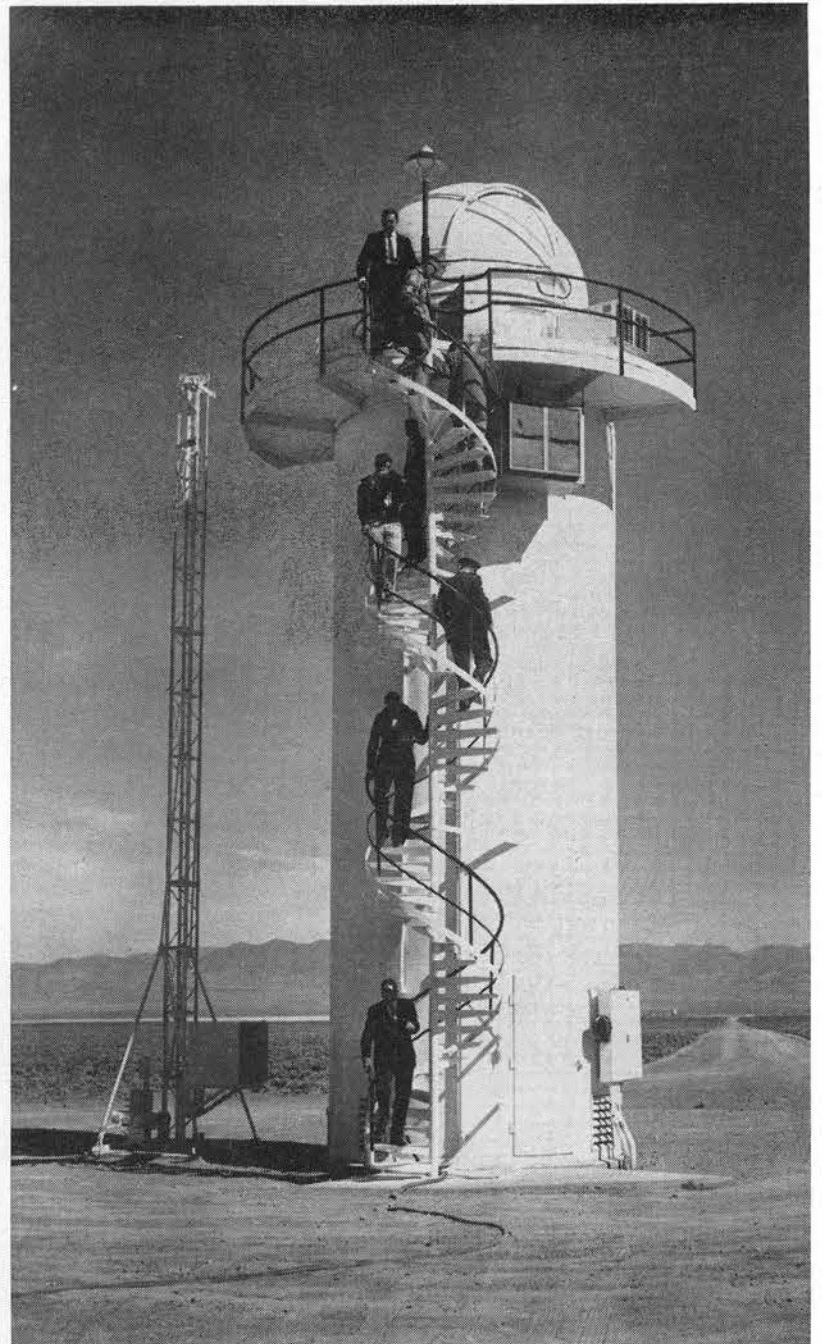
D. W. Ballard (2564) was installed as national treasurer of the Society for Nondestructive Testing at its annual meeting in Detroit, Mich., last month. He had previously served as one of the national directors for three years.

While at the meeting, Mr. Ballard spoke at the educational clinic sponsored by the Society. His topic was "Scope of the Present Nondestructive Testing Field."

The Society for Nondestructive Testing was founded in 1941 and now has more than 3000 members in 38 Sections throughout the country.



SEN. ALAN BIBLE, Nevada's senior senator, receives a first-hand look at an ME-16 camera at Tonopah Test Range. G. A. Fowler, Vice President, Development (right), explained operation of the device.



TOWER HOUSING CONTRAVES cinetheodolite was visited during tour of Tonopah Test Range by Sandia officials, Tonopah businessmen and civic leaders, and Sen. Alan Bible and his entourage.

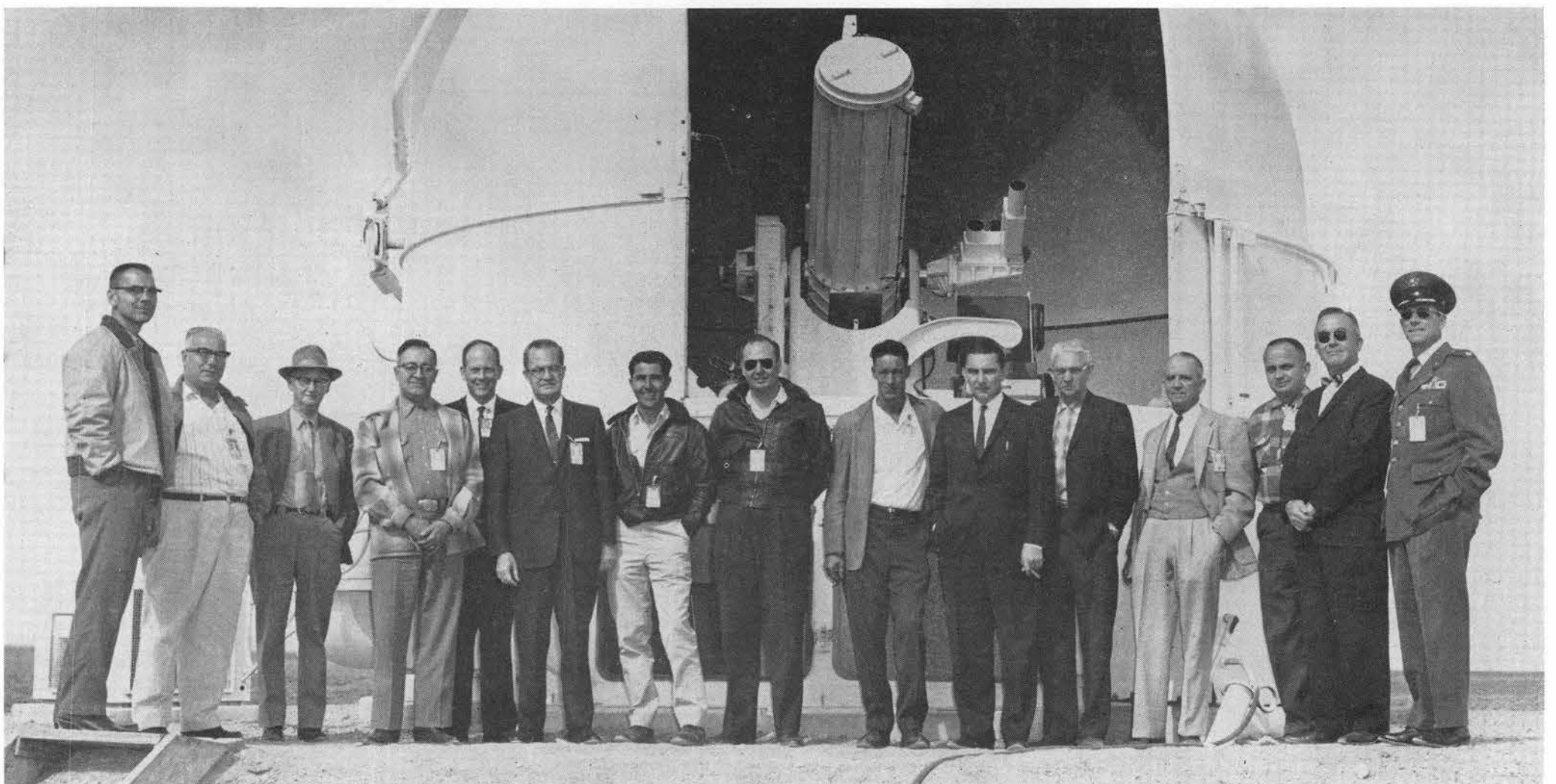
Nevada's Sen. Bible Declares Tonopah Range 'Impressive'

"Impressive! Certainly requires a lot of engineering know-how to conduct an operation of this kind," was a comment made by Sen. Alan Bible after viewing facilities at the Tonopah Test Range operated by Sandia Corporation for the AEC.

The senior senator from Nevada

was in Tonopah for one day last month and included the visit to the Test Range on his itinerary in order to see the latest in test equipment and developments, and to survey the work done at the range.

The facilities were also shown to Tonopah businessmen and civic leaders.



LATEST IN TEST EQUIPMENT and developments at Tonopah Test Range were shown to special visitors by Sandia Corporation personnel last month. (L to R) Robert D. Statler (7212), range manager; LeRoy David, Tonopah businessman; Glenn Jones, state assemblyman

from Nye County; Nick Banovich, County Commissioner; G. A. Fowler, Sandia Vice President, Development; Sen. Alan Bible; Richard Blakemore, county airport manager; Thomas R. Johnson, Senator Bible's pilot; Ralph Lisle, County Commissioner; Jack Carpenter, Senator Bible's

administrative aide; Ira N. Jacobson, editor, Tonopah Times Bonanza; Thomas McCullough, Justice of the Peace; D. B. Shuster, Sandia Director of Field Testing; C. C. Campbell, Manager, AEC-Sandia Area Office; and Col. Alan Meridith, commander, 866th Radar Squadron.

Sandia Study Indicates Revision of Electron Ionization Theories Needed

The first of a lengthy two-part article on "High Voltage Glow Discharges in Deuterium Gas," written by G. W. McClure, supervisor of Research Division II, 5152, will appear in the Nov. 15 issue of *Physical Review*. Part II will be printed in January 1962.

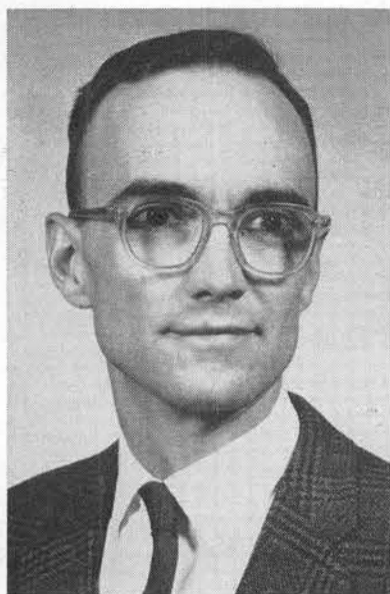
The technical article is based on experiments performed at Sandia Laboratory by Mr. McClure and his assistants over a period of three or four years.

The pulsed glow discharges were studied in deuterium gas under currents of about one ampere and voltages in the 40-80 kilovolt range. Information obtained indicates the need for a complete revision of the usual theories on electron ionization in the cathode region of the discharge and in the plasma which develops in the anode region.

In Part I, experimental results are discussed together with available cross section data to establish the relative importance of the various collision processes which contribute to the sustainment of the discharge.

Part II deals with a one-dimensional theoretical treatment of the cathode fall region of 40-100 kilovolt glow discharges in deuterium gas. The theoretical results are in agreement with the experimental results of Part I.

Mr. McClure has been with Sandia Corporation since June 1955



G. W. McClure

and has been a division supervisor in the Physical Sciences Research Department nearly four years. He holds a PhD degree in physics from the University of Chicago and a Bachelor's degree from the University of Illinois.

Supervisory Appointments

DUANE J. HILLARD to supervisor of Supplier Audits Division 4122, Auditing Department.

During his 11 and a half years at Sandia, Duane has worked in all departments of the 4100 organization. He has been a section supervisor since February 1958.



He came to Sandia direct from the University of New Mexico where he received a Bachelor's degree in business administration. Duane is a member of Alpha Kappa Psi, business honorary society, and Beta Alpha, accounting honorary.

He served a year and a half in the Air Force.

C. RICHARD ANDES to supervisor of Cost Analysis Section 4152-2, Cost Division.

Dick has been at Sandia three and a half years and has worked in both Auditing Department 4120 and Budget Department 4170.



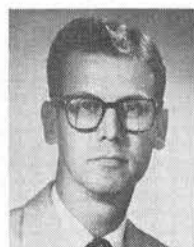
Previously he was with the U. S. Army Audit Agency for three years — two years while in the Army and one year as a Civil Service employee. His headquarters was in San Antonio, Tex.

Dick worked for the Auditing Department at the University of Oklahoma for two years. He received both his Bachelor's and Master's degrees in business administration from this school.

He is a Certified Public Accountant.

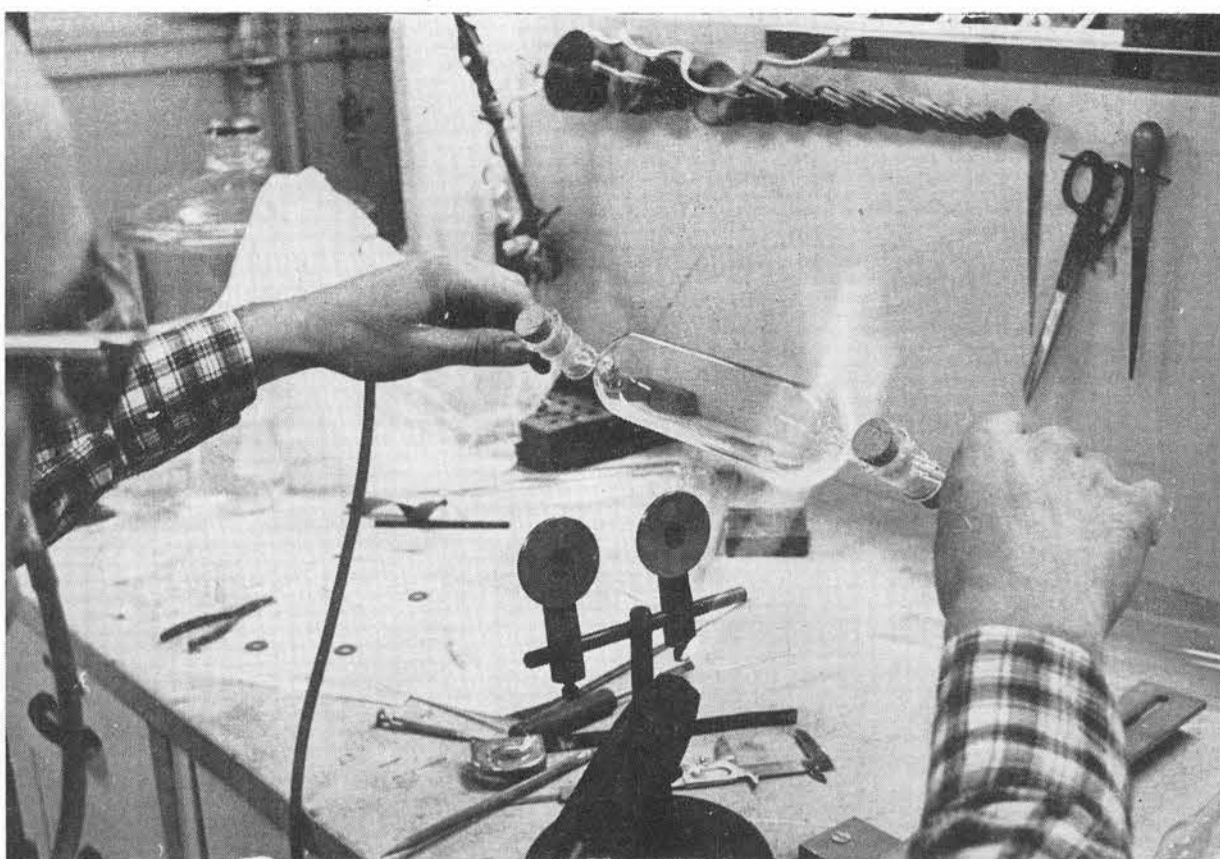
DON L. ROST to supervisor of Safety Engineering Division 3211.

Don has been at Sandia 10 years. The first year he was assigned to the production engineering organization, but he has been in Safety Engineering as a section supervisor since then.



Before coming to Sandia, Don graduated from Georgia Institute of Technology with a Bachelor's degree in industrial engineering. He also attended David Lipscomb College in Nashville, Tenn.

During World War II he served three years in the Army Air Corps. Don is a registered professional engineer in New Mexico.



SEMINAR VISITORS to Sandia glass shop on Nov. 18 will see C. W. DeMoss (4224-5) sealing stopcock to the body of a gas sampling bottle at one of several bench and lathe locations in Bldg. 839.

Symposium Delegates to See Sandia Non-Metallics Shop Facilities

Delegates attending a symposium, "Designing for Non-Metallics," in Albuquerque next week will tour the non-metallics shop facilities at Sandia Laboratory on Nov. 18.

The symposium is jointly sponsored by the New Mexico Section of the American Society of Mechanical Engineers and the University of New Mexico. The formal program will be held at the Student Union Building on the UNM campus and will feature technical papers by recognized experts from many parts of the country.

The main speaker for the banquet on Friday evening at Western Skies will be Morris Tannenbaum, Assistant Metallurgical Director, Bell Telephone Laboratories. Mr. Tannenbaum's subject is "Materials, Science and Motherhood." The banquet will start at 7:30 p.m.

On Saturday delegates will lunch at the Kirtland Officers Club, then board buses for Sandia Laboratory. The entire group will visit the "Sphere of Science"; smaller groups will tour the plastics shop in Bldg. 834, the glass shop in Bldg. 839, and the ceramics shop in Bldg. 840.

The display by Plastics Section 4224-2, headed by C. L. Becker, will include a complete demonstration of Sandia's capability in this field. The examples of the different types of processes will include glass laminate lay-up, encapsulation ("potting"), compression molding, transfer molding, vacuum forming of lucite and similar material, rubber fabrication (e.g., "O" rings, component boots), foamed plastics, and ribbon abrasive material.

Of main interest will be a demonstration of the ribbon abrasive process which is new in the past

few years. Low thermal conductivity and other characteristics of this material make it suitable for use on nose cones where high temperatures are encountered upon re-entry into the atmosphere. "We perform most of the plastic processes now in general use in industry," explains C. E. Runyan, manager of Specialties Department 4220.

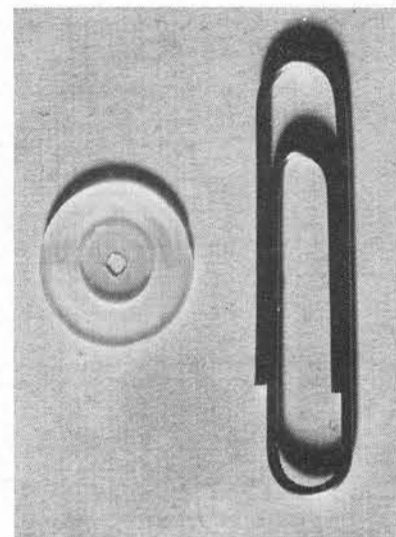
In the ceramics shop, supervisor W. S. Sharp and members of Section 4224-1 will show how barium-titanate, lead-zirconate-titanate and other ferro-electric materials are fabricated.

With ferroelectric material, mechanical energy can be directly converted into electric energy. This principle will be demonstrated by a bulb which lights up as the ferroelectric material is hit.

Scientific Glass Section 4224-5, headed by R. D. Snidow, will display apparatus manufactured in the glass shop which are used for a variety of applications, mainly in the chemistry field and in laboratories requiring vacuum systems. One of the vacuum pumps on display has an ultimate pumping pressure of 10⁻⁹ millimeters of mercury — about the ultimate in vacuums. Another item will be an absolute vacuum gauge featuring a quartz vane suspended on a one mil quartz filament. There will also be a precision voltmeter fabricated from quartz from a design by Jack Barnum (1322).

Employees will be making gas sampling bottles, spiral glass condensers, and Dewar vessels of uncommon sizes at several bench and lathe locations.

Persons interested in attending the complete symposium on Nov. 17 and 18 or only the lectures and tour may register with E. H. Copeland (7321), ext. 22142.

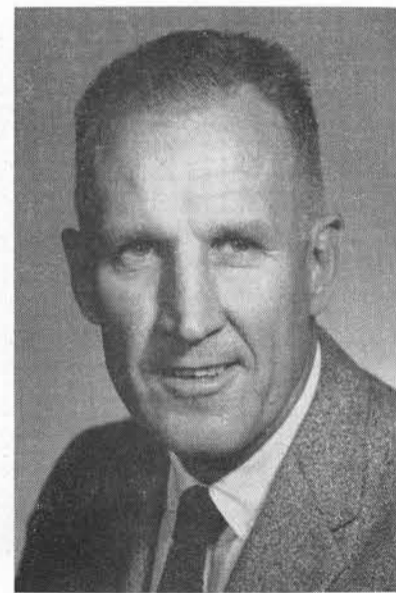


MOLDED GLASS WAFER smaller than normal-size paper clip is one of many items fabricated in Sandia's glass shop. Persons attending Non-Metallics Seminar Nov. 17-18 will visit glass shop, ceramics shop, plastics shop, and Sphere of Science.

Veterans' Day Calls For Flag Display, So Do It Right!

Veterans' Day, one of 19 official "flag holidays" when the American flag is customarily displayed, will be Nov. 11. Here are some things to remember about correct display of the flag:

1. Display the flag outdoors from sunrise to sunset. Do not display it during bad weather.
2. The flag should never touch anything beneath it.
3. Never use the flag as drapery. Never festoon, draw back, or put up the flag in folds. Always allow it to fall free.
4. When displaying the flag from a staff projecting from a building, place the union (field of stars) at the staff peak unless the flag is at half-staff.
5. When displaying the flag other than from a staff, mount it flat or suspend it so that its folds fall free. When displaying it over a street, place the union to face north or east, depending on the street's direction.
6. When displayed with another flag from crossed staffs, the American flag should be on the flag's own right with its staff in front of the other staff.
7. When displaying the flag flat on a wall, place the union at the upper left.
8. During the hoisting or lowering of the flag, or when it is passing in parade, face the flag, stand at attention, and salute. A man should remove his hat and hold it with the right hand over his heart. Women and men without hats salute by placing the right hand over the heart.
9. Never display the flag in such a way that it may be soiled or damaged.
10. When the flag is in such condition that it is no longer fitting as a display, destroy it in a dignified way, preferably by burning, privately.



George Dennis

George Dennis Named Deputy Director of AEC-ALO Information

George Dennis has been promoted to the post of Deputy Director of Information for the AEC's Albuquerque Operations. He succeeds Henry G. Vermillion, who was recently appointed Director of Information for the AEC's new Office of Field Operation in Las Vegas, Nev.

Mr. Dennis has been with the Commission in Albuquerque since September 1957. Before that, he was editor of the *Belen News-Bulletin*, worked for the *El Paso Herald-Post*, and was city editor of the *El Paso Times*.

He was a naval officer 12½ years and served in both World War II and the Korean Conflict. He is a graduate of the University of Texas.

Plane Crash Sets Off Four Hectic Days for Bruce Honey

A frantic four-day search for the wreckage of his father's plane ended happily for Bruce Honey (1961 summer hire in 8121-1) recently when he found his father alive and in good spirits in rugged mountain country near Provo, Utah.

Bruce's father, the pilot of the ill-fated plane, had been on his way to visit his son at Brigham Young University when the plane crashed into the 9200-ft. level of a towering mountain outside Provo.

Following the crash, Bruce's father lay injured in the plane for four days with nothing to eat. He packed his broken hip and jaw with snow, and made streamers from torn clothing to attract attention. When he heard search aircraft he signalled with a flash-

light. It was this light that Bruce spotted while searching the area from the air. A few hours later he arrived at the scene with the first rescue party to find the wreckage.

"I knew you'd be alive," said Bruce when he saw his father. Despite his fatigue, Bruce helped carry his father's stretcher down the mountain to an awaiting ambulance.

Bruce's father later told rescuers he had spotted the peak of a mountain landmark through a blinding snowstorm and was heading for it when his passenger panicked, grabbing the controls and causing the plane to crash. The passenger was killed in the crash.

The reunion with his son gave the story a happy ending, only it was four days later than intended.

Mrs. G. C. Hollowwa Earns 'Mrs. New Mexico' Title

Mrs. G. C. Hollowwa will henceforth be known as "Mrs. New Mexico" to her family and friends even though she will officially hold the title for only one year.

Barbara, whose husband is manager of Military Publications Department 2320, won the title in statewide competition last month and the Hollowwas will leave Monday for the Thanksgiving Day "Mrs. America" finals in Fort Lauderdale, Fla. — with all expenses paid.

Contestants in the state contest were judged on a number of different skills. Each woman had to cook a chicken, fix a school lunch, and bake a cake. Barbara used a favorite orange cake recipe; however for the national bake-off she will switch to a white cake

with lemon filling. "I've sent the recipe to the University of Miami for adjustment to the lower altitude of Florida," she explained.

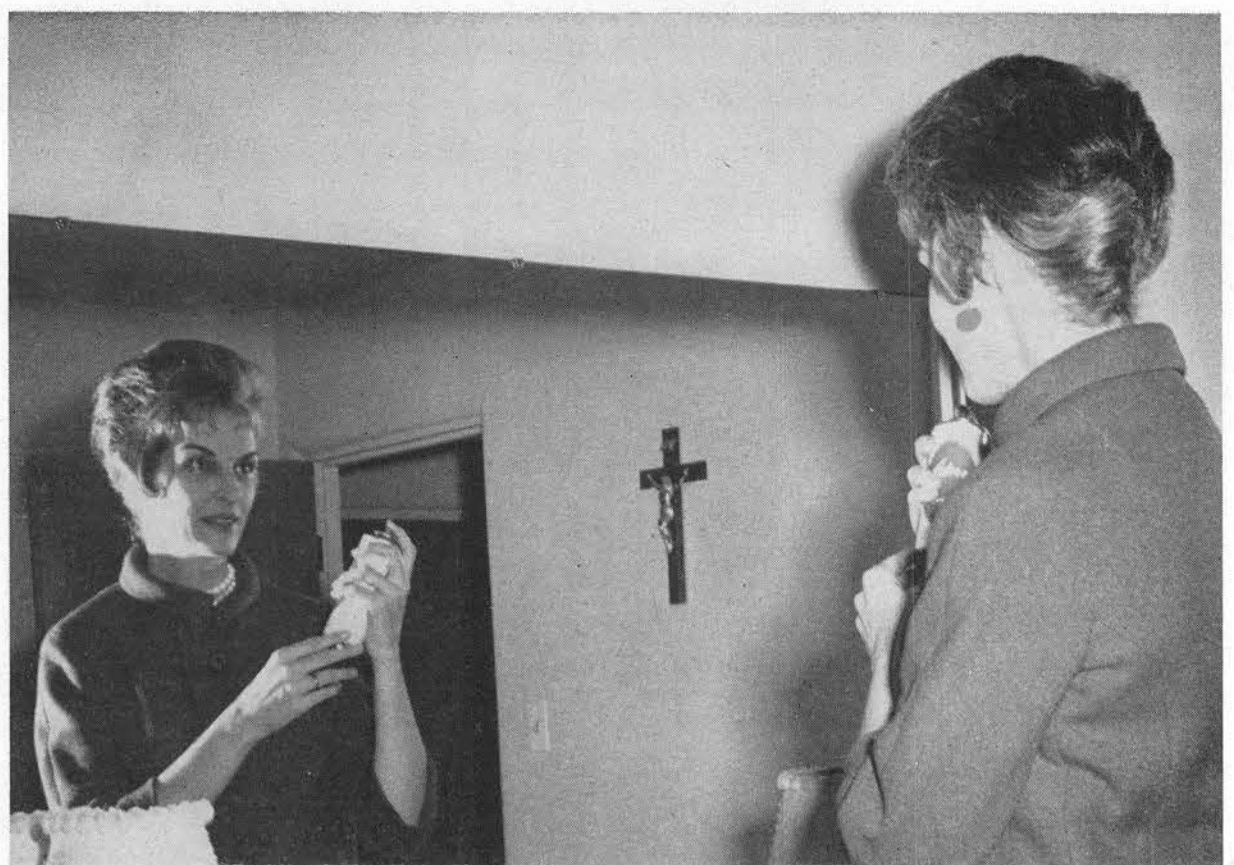
In addition she was quizzed on different aspects of home decorating and had to answer questions on national affairs and home life.

Finalists had to arrange their hair in two different ways and were graded on overall appearance and personality. Barbara did some modeling while attending Clark College in Iowa and appeared in a college recruiting film which was shown to high school audiences. During the past few years she has modeled when time permitted.

The Hollowwas have three children, Barbara 11, Kerwin 9, and Christopher 4.



CAKE BAKING PRACTICE by current "Mrs. New Mexico" is heartily approved by four-year-old Chris Hollowwa. Contestants in the national contest in Florida will have to bake a cake, cook a chicken, prepare a picnic lunch, and demonstrate other household skills.



HAIR STYLING is important skill required of "Mrs. America" contestants. Barbara Hollowwa uses hair spray to help preserve bouffant effect. General appearance and personality count, too.

Sandia Lab Hosts Computing Group Here November 17

Sandia Laboratory will host a meeting of the Association of Computing Machinery, Rio Grande Chapter, on Nov. 17. Several Sandians will participate as speakers.

S. P. Schwartz, President of Sandia Corporation, will give the welcoming address at the Corporation Theater at 9 a.m. G. C. Dacey, Vice President, Research, will speak on "The Future of Man and Machines" at a Coronado Club banquet at 6:30 p.m.

Addresses on the following subjects will be given at the technical program held at the Corporation Theater from 9 a.m. to 5 p.m.: C. M. Williams (5426), "The Sandia Fortran Monitor for the CDC 1604"; L. T. Ritchie and D. A. Young (both 5426), "Scheduling and Sequencing of Production on the CDC 1604"; M. D. Fimple (3454), "A Weighted Regression Analysis (WRAP) Program"; L. E. West (3454), "QUIDOD—A General Utility Program System for the IBM 7090"; D. R. Morrison (5426), "Application of Matrix Group Theory to Pattern Recognition"; and B. H. Van Domelen (7223), "Mickey Mouse, A Simulation of a Self-Organizing System."



BIG DECISION on hats for November trip is made by Barbara Hollowwa with husband, "G. C.," concurring. The couple will leave Monday. The "Mrs. America" contest is in Fort Lauderdale, Fla.

Well-Balanced Meals Give All Vitamins Well Persons Need

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

Someone has said that self-medication, like self-indulgence, usually costs more than it is worth. This is especially true in the case of the present attitude of the public toward vitamins.

Vitamin pills are NOT a food substitute, nor will they give the healthy person any extra nutritional benefits when taken in addition to an already adequate diet. Well-balanced meals provide all the vitamins and other nutrients the body needs or can use.

Clement A. Smith, M.D., Associate Professor of Pediatrics, Harvard Medical School, states that "Healthy children fed adequate amounts of wholesome foods need no supplemental vitamins except vitamin D, which should be supplied throughout the growth period." The AMA's Council on Foods and Nutrition further adds that the vitamin D requirement can be met with one and one-half to two pints daily of vitamin D-fortified homogenized milk.

There is little if any proof that vitamin pills give any extra health to children or anyone else. In fact, overdoses of vitamin A and vitamin D can cause serious trouble.

William B. Bean, M.D., Professor of Medicine and head of Department of Internal Medicine, State University of Iowa, says about vitamins: "There is not one iota of scientific information which suggests that people who have an adequately balanced diet and have no diseases that interfere with digestion gain any bene-

fit from self-prescribed vitamin or mineral supplements." A study he conducted on 1000 healthy men showed no difference in performance, fitness or health in two groups of soldiers, one of which had a daily vitamin supplement and the other a sugar pill without any vitamins which appeared identical. The only difference noted was that an analysis of those soldiers getting the vitamin supplement indicated the presence of large amounts of vitamins.

There is good evidence that the average American's diet contains adequate supplies of all vitamins and other essential nutrients. Extensive studies in such areas as Philadelphia, Denver, and Nashville have shown that the health records of those who took vitamins were no better than the records of those who did not.

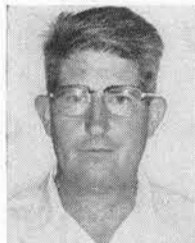
Sandia Papers Read At Western Electric Chemical Conference

Technical papers were read by S. L. Erickson and Ishmael Ortega (both 1122-1) at the Western Electric Company Interworks Chemical Analysis Conference held in Allentown, Pa., Nov. 1-2.

Mr. Erickson's paper was entitled "Flame Spectrophotometric Analysis for Impurities in Barium Titanate and Barium Carbonate," and Mr. Ortega presented "Qualitative Identification of Organics by IMB Sorting of Infrared Spectra."

Robert G. Higley Died October 30

Robert G. Higley, a Staff Assistant in Printed Circuitry Section 4233-3, died suddenly Oct. 30. He was 47.



R. G. Higley

Mr. Higley had been with Sandia Corporation 10 years.

Funeral services were held last Thursday afternoon.

Survivors include his widow, a daughter Ruth Ann, and his parents.

Presents Paper to Phoenix ASQC

"Pre-Production Planning and Supplier Development Efforts as Elements of the Quality Program" is the title of a paper co-authored by L. E. Snodgrass (2561) and L. K. McPhail (2561-3).

Mr. McPhail will give a talk based on the paper at a meeting of the Phoenix (Ariz.) Section of the American Society for Quality Control on Nov. 21.

M. A. McCutchan Helps Dedicate New Highlands 'U' Tech Institute

A six-man delegation from Sandia Laboratory attended dedication ceremonies for the new Electronics Technology building at Highlands University on Sunday, Oct. 22.

This fall Highlands University inaugurated a two-year, college-level technical institute program, the first one in New Mexico. Associate of Science degrees are offered in both electronic and electrical training.

Sandia Corporation helped set up the new technical institute program by advising University personnel regarding equipment, educational materials, and curriculum planning.

M. A. McCutchan, supervisor of Technical and Trades Training Division 3132, gave the dedicatory address at the ceremonies. His

topic was "The Place of the Technical Institute in the Educational Scheme."

In his talk Mr. McCutchan cited statistics from the State Educational Board of Finance on the number of school drop-outs in New Mexico. He said that out of 1000 students who begin the fifth grade, only 517 will finish high school. Out of that number 257 will enter college, although 45% will drop out the first year. He queried the audience, "What can we do about the 86% that never get to college?", and then said he thought the technical institute program was one solution to this problem.

Others attending from Sandia were H. R. Shelton, W. H. Bailey, W. L. Miller, Mary Williams, and F. H. Dausses (all 3132).

Sandia's Safety Record

**Sandia
Laboratory
HAS WORKED
1,190,000 MAN HOURS
OR 34 DAYS
WITHOUT A
DISABLING INJURY**

**Livermore
Laboratory
HAS WORKED
490,390 MAN HOURS
OR 65 DAYS
WITHOUT A
DISABLING INJURY**