



DISCUSSING experiment results at Sandia Pulsed Reactor Facility in Area III are Willis Dworzak, Army Research and Development Lab, Ft. Monmouth, New Jersey, and Jennings Conant, Sandia Laboratory Reactor Operator (5311-3). Martin Long, and Richard Saelens, from the U. S.

## SPRF Reactor Gets Full Use From Sandia, DOD Labs, Contractors

Since last June, when the Sandia Pulsed Reactor Facility (SPRF) "went critical," more than 450 intense bursts of fast neutron and gamma rays have been created. Sandia Corporation and Department of Defense laboratories and their contractors have used the unique facility for a wide variety of radiation effects experiments.

Items undergoing bombardment have ranged in size from tiny transistors to missiles. As many as 25 items have been crowded into the "igloo" (the dome-shaped concrete building housing the pulsed reactor) for simultaneous irradiation.

Los Alamos Scientific Laboratory previously made available to Defense Atomic Support Agency (DASA) and Air Force Special Weapons Center (AFSWC) contractors its Godiva II reactor for two days a month. But Godiva II has now been diverted to another use. SPRF has a bare, highly-enriched uranium fuel assembly similar to that of Godiva II.

"During a typical month," reports Paul O'Brien, supervisor of SPRF Operations Section 5311-3, "SPRF might be used by Sandia Laboratory 41 per cent of the time and by outside organizations 42 per cent. The remainder of the period is used by the operations section for development, calibration, and maintenance."

### Full SPRF Schedule

Non-Sandia use of SPRF was nominal at the start but is increasing at a rapid pace. H. E. Harling (3425), administrative assistant for the Director of Radiation Physics, 5300, handles the programming for these users. He reports a full schedule into May, "but it's hard to get a firm con-

tract until the last minute — all dates are subject to change." Some tentative requests have been made for time as far in advance as next October. "Many outside requests for SPRF use are channeled through Field Command, DASA," he says. "One day it may be necessary for that office to recommend priorities."

The size of a SPRF burst can be varied from a low limit of about  $1 \times 10^{15}$  to  $2 \times 10^{16}$  fissions. "Almost everyone feels 'the more intensity the better,'" Mr. O'Brien adds. During large bursts the reactor achieves a peak power of about 5000 megawatts; the pulse width at the half-power point is approximately 40 microseconds.

After the burst, the critical assembly is hydraulically lowered into a lead-covered pit. A health physicist from Health Physics Section 3311-2 is the first person to re-enter the igloo to make a radiation survey. He has responsibility for determining when others may enter the igloo and how long they may remain inside. As an additional safety measure, the health physicist keeps the operational keys for the reactor console in his pocket when anyone is in the igloo.

### Sandia Cooperates

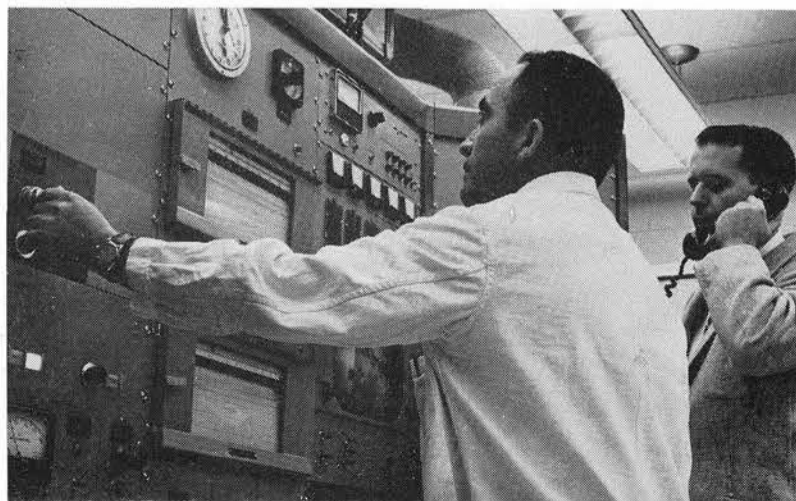
Sandia Corporation also provides for the safety of any non-Sandia user—in fact, the technical feasibility of the proposed experiment and safety factors are discussed before permission to use SPRF is granted. After a contract is executed with the using agency, Mr. Harling notifies technical support areas, plant security, health physics, and shipping and receiving offices of the forthcoming experiment. Field Command, DASA,

provides two trailers at the SPRF site for use by DOD contractors and also arranges for any other special equipment that those contractors may need. Sandia provides operating and supervisory personnel at all times.

Contractors using SPRF for experiments have included Bell Telephone Laboratories, Goodyear Atomic, IBM, Chance-Vought, and the Signal Corps research and development laboratory (whose operating personnel were from RCA and General Electric).

Among Sandia Corporation organizations, unclassified tests have been primarily of a fundamental nature. Wynn Grace (4631-3) used SPRF in conducting both static and dynamic tests on semiconductors. Asher Kantz (5314) has been making a study of the manner in which the damage produced by a

(Continued on Page Five)



COUNTDOWN: Leo Flores (5311-3) prepares to initiate burst in Sandia Pulsed Reactor as Ken Haynes, Reactor Supervisor (5311-3), gives countdown to experimentors in instrumentation trailers.



NEW ASSIGNMENTS have been announced for two AEC officials. Charles C. Campbell, left, is now Deputy Assistant Manager, ALO, and W. Lee Hancock is Manager of Sandia Area Office, ALO.

## C. C. Campbell Given New ALO Post; Succeeded in SAO by W. L. Hancock

Reassignment of two key executives of the Albuquerque Operations Office of the AEC was effective Feb. 5.

Charles C. Campbell, Manager of ALO's Sandia Area Office since April 1958, was appointed to a newly-established second Deputy Assistant Manager position in the Office of Administration. Frank D. Peel was appointed to the other post of Deputy Assistant Manager for Administration in May 1961. Ralph P. Johnson is Assistant Manager for Administration in ALO.

W. Lee Hancock, Assistant Manager for Storage Operations and Security since October 1959, was appointed to succeed Mr. Campbell as Manager of the Sandia Area Office.

Charles C. Campbell has been associated with the nation's atomic energy program since 1944, transferring to the AEC when the Commission was created to take over the atomic energy program. He served at Los Alamos, N. M., and Albuquerque until 1952, when he was named Deputy Manager of ALO's Rocky Flats (Colo.) Area

Office. He was named Sandia Area Manager in 1958. A native of Mullen, Neb., he was educated there, at the University of Nebraska, at Colorado A&M, and was graduated from the School of Business, University of Colorado.

W. Lee Hancock was born in Herman, Neb., attended schools there, and was graduated from the Law School of Creighton University. He served as a special agent with the Federal Bureau of Investigation until 1946, at which time he resigned to become an executive assistant to the General Manager of Trans World Airlines. He operated his own business in Denver, Colo., from 1949 to 1952, when he was employed by the AEC. After Commission service in Washington, D.C., he came to Albuquerque in 1956 as Director of Security. He held that position until 1959, when he was named Assistant Manager for Storage Operations and Security.

## A. D. Thornbrough Telling Story of Gnome Experiments

A. D. Thornbrough (7251-1), project leader of Sandia Corporation's part of the recent Project Gnome experiment held near Carlsbad, N. M., has delivered talks to several local groups on the experiment. He has spoken to the Heights Optimist Club, the Toastmaster's Club, the Sandia Corporation Science Youth Day, and the Sandia Kiwanis Club.

The speeches included commentary on objectives of the Gnome experiment; events and phenomena preceding and following the shot, results of the power production program, neutron wheel experiments, and analysis of isotope samples; and gathering and analysis of other data.

## F. P. Hudson Appears As U of New Mexico Colloquium Speaker

Frank P. Hudson, Manager of Sandia's Physical Science Research Department 5150, will participate in a colloquium entitled "Science, Religion, and Human Destiny," sponsored by the Inter-Religious Council of the University of New Mexico, Feb. 19-20. Mr. Hudson will also participate in a panel discussion of "The Thermo-Nuclear Threat" during the two-day session.

The first part of the colloquium, entitled "Moral Tensions Resulting from Scientific Discoveries," during which Mr. Hudson will speak, will begin at 8 p.m. in the University Student Union Theater. The panel discussion on "The Thermo-Nuclear Threat" will begin at 10 a.m., Feb. 20, to be followed at 2 p.m. by a panel entitled "Science and/or Religion." The colloquium will conclude Tuesday evening, Feb. 20, with a speech entitled "Science and the Future of Religion" by Dr. James H. Jauncey, minister of the First Christian Church, El Paso, Tex.

## Sandia Technical Papers to Be Given At Chicago Symposium

Five technical papers by Sandia Laboratory personnel will be presented at the annual Symposium of the Institute of Environmental Sciences in Chicago, Apr. 11-13, 1962.

Papers to be presented include "Two-Phase Shock Tests With the Spike Phase Oblique to the Vehicle Axis Followed by a Longitudinal Drag Phase" by Robert I. Butler, Billy W. Duggin, and John F. Damke (all of 7352-2); "Environmental Analysis" by J. T. Foley (7185); "Environmental Engineering Information Problem" by Robert S. Hooper (7321-5); "Techniques and Equipment for Simulating High Speed Passage of a Vehicle Through Rain" by Marcel C. Reynolds (7311-1); and "Most Methods Used to Measure Acceleration Levels of Sinusoidal Vibration Tests Are Improper" by Clifford T. Schafer and Donald R. Kuehl (both 7324-1).

Editorial Comment

Brotherhood Week

"Underlying the fundamental problems of our time is the fateful fact that science and technology have narrowed the world to a neighborhood before man has broadened it to a brotherhood."—David Sarnoff.

Each year since 1934, the National Conference of Christians and Jews has sponsored the observance of Brotherhood Week during the week of George Washington's birthday. The dates this year are Feb. 18-25.

It's appropriate that this week is observed the week of Washington's birthday. The principles of freedom, liberty, and equality which Washington and his compatriots defended are the basic principles which we rededicate during Brotherhood Week.

This country has become a haven of liberty to men and women of every race, creed, and nationality. All of these people have contributed their strengths and differences to the growth of this country. Our problems have not been few or small, but the United States is almost the only country in the world where so many people of all races and nationalities are living and working together in freedom.

The lessons being taught during Brotherhood Week will be useless if they end with the week. Forces of bigotry and hatred should be fought every day until they no longer divide the people of this country.

L. L. Moorhead Died February 3

Laurance L. Moorhead, a Sandia Corporation employee since November 1948, died in a local hospital Feb. 3 after a short illness. He was 58.



L. L. Moorhead

Mr. Moorhead was employed in Component Evaluation Division 7524. He had resided in Albuquerque 25 years at 1624 Stanford Dr. SE.

He is survived by his wife Elizabeth, and daughter Elizabeth Mae. He has a brother in Pittsburgh, Pa., and a sister in Sewickley, Pa.

Amadeo Aragon, Sr. Died January 29

Amadeo Aragon, Sr., a retired Sandia Laboratory employee, died Jan. 29. He was 73.

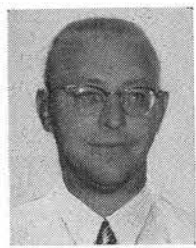


Mr. Aragon was employed in Division 4574 for three years. He retired from the Corporation in 1955.

He is survived by his wife, four sons, a daughter, four brothers, and 18 grandchildren. A son, Amadeo, Jr., is employed in 4575, and his daughter, Rosalee A. Gallegos, works in 3444.

L. H. Malkowski Died February 8

Leonard H. Malkowski, a Sandia employee since June 1954, died Feb. 8 in Albuquerque. He was 40 years old.



He was employed in Printed Circuitry Section 4233-3.

Mr. Malkowski is survived by his wife, Caroline, and nine-year-old daughter Ellen. They reside at 2712 Espanola NE.

Virginia B. Chavez Died Last Week

Virginia B. Chavez, a Corporation employee since December 1951, died last Saturday after a lengthy illness.

Mrs. Chavez was a personnel clerk in Employee Records and Processing Division.

Survivors include her husband, Manuel, and son, Michael.

Three Sandians to Appear in Comedy 'Light Up the Sky'

Three Sandia Laboratory employees will step out of their normal roles into the comedy world of Moss Hart's "Light Up the Sky" this evening. The presentation will run four weeks at the Robin Hood Theater, 9000 Fourth NW, with Friday and Saturday performances at 8:30 p.m.

Maxine Metz, of Purchasing Administration Division 4332, plays Francis Black, the dull but lovable wife of millionaire Sidney Black. Maxine appeared in the recent Little Theater production of "Roman Candle."

Gaynor Atkinson has the role of Tyler Rayburn, stockbroker and fawning husband of actress Irene Livingston, played by Shannon Scott. Gaynor is with Field Engineering Division 2331 in his "other" life. He also appeared in "Roman Candle."

Jack Anderson has the part of the knowing and well-established playwright, Owen Turner. Jack is employed at Sandia's Operations Division 3452.



FEATURED in Robin Hood Players' production of Moss Hart's comedy, "Light Up the Sky" are Gaynor Atkinson (2331), left, who plays Tyler Rayburn, and Shannon Scott, who plays his wife.



Sandian who serves

Work of Lay Preacher Gives Church Congregation A New Lease on Life

This is another in a series of articles describing the community activities of Sandia Corporation employees.

Five days each week John Jolley works as an illustrator in Technical Art Division 3463. On weekends, he is the pastor of the Methodist Church in Bernalillo.

"I'm not an ordained minister," John says, "but I have completed courses that qualify me as a 'local preacher,' a term that means a layman who has a license to preach."

John's present work is the result of a desire to learn and willingness to serve. The church in Bernalillo had been without a regular minister for some time. Regular services were no longer being held and the attendance had decreased.

"For about a year I had been a volunteer assistant to the minister of St. John's Methodist Church in Albuquerque," John says, "when the District Superintendent asked me to take the Bernalillo Church. With some doubts about my ability, I decided to try."

"To me it was a matter of need. Here was a fine old church building and the congregation once numbered somewhere around 40 members. With regular services, the members might become interested again. I'm determined to do what I can.

"I believe everyone has a capacity to serve," John says. "This might be developed by a number of activities such as civic organizations or local politics. I chose to serve the church.

"And as I do this, I realize that my knowledge is increasing, my capacity is greater, and I have a satisfaction that is difficult to describe or measure."

After a few months, John's

church is growing. Attendance is up, the Sunday School is active, and the old building once again resounds with singing.

"We have no great plans for the future," John says. "We'll just keep working at it. Success is something you can't judge until your work is finished. Success in this field can only be judged by its effect on other people."

Two Employees Pass CPA Examinations

Two brand-new Certified Public Accountants are showing their hard-earned certificates at Sandia Laboratory this week. J. M. Kaufman (4152) and W. W. Hollis (4122) passed the examination administered by the American Institute of Certified Public Accountants. Both are graduates of Oklahoma State University and have been at Sandia since last August.

G. L. Morrisroe Author Of Magazine Article

An article by G. L. Morrisroe of Tester and Facilities Administration Division 2634 has been accepted for publication in the March issue of *The Tool and Manufacturing Engineer*. It will be presented as the lead article of the publication.

Entitled "Tools On the Government Contract," the article presents a digest of information of interest to engineers on the control, uses, and disposition of tools on United States Government orders.

Welcome Newcomers

Jan. 29-31

Albuquerque	
Evelyn E. Ratcliff	3241
Betty J. Watson	3126
Ira B. Wysocki	3126
New Mexico	
*Robert L. Johnson, Socorro	7244
North Carolina	
*Richard R. Prairie, Raleigh	1442
Oklahoma	
Lester W. Lathrop, Oklahoma City...	7184

\* Denotes rehired

Wedding

Linda Shaifer (3151) and Donald Pitts (2543) exchanged marriage vows in Albuquerque on Jan. 22. Linda has been at Sandia a year and Don has been with Sandia Laboratory 10 years. The couple is at home at 1027 Columbia NE.

Congratulations

- To: Mr. and Mrs. Robert C. Cranfill (2344) a daughter, Karen Lee, on Jan. 24.  
 Mr. and Mrs. Robert D. Scebold (2412-2) a daughter, Sandra Lynn, on Jan. 21.  
 Mr. and Mrs. E. C. Peterson (3220) a daughter, Lisa Kae, on Jan. 30.  
 Mr. and Mrs. Richard M. Kear (3462-3) a daughter, Cindy Dawn, on Jan. 17. Annie formerly worked in 4321.  
 Mr. and Mrs. David M. Morrison (2451) a son, Duane Christopher, on Jan. 26.  
 Mr. and Mrs. James C. Mason (2452) a daughter, Susan Gail, on Jan. 27.  
 Mr. and Mrs. Reynel Garcia (4513-2) a son, Phillip Christopher, recently.

Sympathy

- To Jim Drake (2412-2) for the death of his father in Albuquerque, Jan. 26.  
 To Amadeo Aragon, Jr. (4575) and Rosalee A. Gallegos (3444) for the death of their father Amadeo Aragon, Sr., a retired Corporation employee who died Jan. 29 in Albuquerque.  
 To Joe M. and Elias Benavidez (4513-4) for the death of their brother in Colorado, Feb. 1.  
 To Owen H. Schutt (4513-4) for the death of his brother in Nebraska, Jan. 26.



Helen Lee (8212-5)

Take a Memo, Please  
 Safety on the job and at home is a combination that can't be beat. Heed all safety warnings, and stay alive!



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AIR FORCE Commendation Medal was pinned to the lapel of Richard G. Illing (7147), center, at ceremonies recently by Maj. Gen. H. C. Donnelly, USAF, Commander Field Command, DASA. Mr. Illing retired as a Lt. Col. from the Air Force last June and joined Sandia. Right is G. A. Fowler, Vice-President, Development.

### Disabling Injuries Mar Safety Record During Past Weeks

Two disabling injuries in recent weeks downed Sandia Laboratory's safety record. This brings the total to four lost-time accidents suffered by Sandia employees since the beginning of 1962. As the Lab News went to press, the record had climbed to eight days or 280,000 employee-hours worked without a disabling injury.

An employee coming to work during the recent cold spell slipped and fell while crossing an icy intersection in the Tech Area. He proceeded to work and reported the accident. His left shoulder was severely bruised. He was sent to Medical Department 3320 and examined.

There was a possibility of serious injury and, after preliminary examination, the employee was taken to a local hospital. He received treatment for a week. The employee is now recovering at home.

The second accident occurred when an employee suffered cuts and lacerations to his right upper and fore-arm from broken glass after a laboratory chemical mishap. He was taken by ambulance to a local hospital and received treatment. He remained in the hospital for several days. He is now recovering at home.

### Sandia Lab Papers To Be Presented to Physical Society

Technical papers written by several Sandians will be presented during the 1962 Southwestern Meeting of the American Physical Society in Austin, Tex., Feb. 23-24.

R. A. Graham (5133) will present his paper, "Alpha Quartz Piezoelectric Constant for High Transient Stress."

"Dynamic Yield Behavior of Explosively-Loaded Metals Determined with Quartz Transducers," a paper co-authored by W. B. Benedick, O. E. Jones, and F. W. Neilson (all 5133) will be given orally by Mr. Jones.

R. I. Ewing (5152) has submitted his technical paper for presentation at both the American Physical Society meeting and the Eighth Scintillation and Semiconductor Counter Symposium, Washington, D. C., March 1-3. His article is entitled "Response of Silicon Surface Barrier Detectors to Hydrogen Tons of Energies 25 to 250 kev."

Papers accepted for the American Physical Society receive prior publication in the society's **Bulletin**.

### Chamber Elects Rowe

J. L. Rowe (8220), newly elected to the board of directors of the Livermore Chamber of Commerce, will be installed at the Chamber's annual meeting Mar. 14 at Castlewood Country Club.

Les, manager of the Plant Services Department, served the Livermore Chamber of Commerce as second vice president this past year. Before that, he represented Sandia for a year on the Chamber's industrial committee.

### Findings of Geophysical Year Are Reported in Films to be Shown Here

"Planet Earth," a film series covering world-wide activities of the International Geophysical Year, began yesterday evening in the Sandia Laboratory Theater Bldg. 815. Sponsored by the New Mexico Chapter of the Institute of Aerospace Sciences, the series of geophysical research films will be presented weekly through Mar. 22. Two 27-min. color films will be shown each Thursday at 7:30 p.m. in Bldg. 815.

"Sandia families are invited," W. N. Caudle (7131), Section Chairman, said. "Admission is free. The Section members felt this series provides a significant learning opportunity. More than 200 of the nation's leading geophysicists cooperated in the production of the outstanding films."

Scheduled for Feb. 22 are "The Force of Gravity" and "The Inconstant Air." The first deals with present efforts to increase man's understanding of the force of gravity and illustrates the historical discoveries of Copernicus, Kepler, Galileo, and Newton. The second film presents a discussion of forces affecting weather and climatic changes. The film is climaxed with a view of the earth from space taken by the Tiros I satellite.

On Mar. 1, the two films to be presented are "Secrets of the Ice" and "Challenge of the Oceans." The first shows glacialists' study of ice found on the earth and affords an increased comprehension of man's past and future. The second presents the scope and objectives of present-day oceanographic exploration and a discussion of the equipment and techniques used.

### G. C. Dacey Earns International Award For 'Outstanding Paper'

An award was presented to G. C. Dacey, Vice President, 5000, on Wednesday during the 1962 International Solid-State Circuit Conference for an outstanding paper given in 1961.

The award is given annually to persons who have given outstanding papers the previous year. The plaque carries the following inscription: "1961 International Solid-State Circuits Conference outstanding paper award to G. C. Dacey for his paper on optical masers, a vivid presentation of a highly topical development."

The actual presentation was during a press luncheon at the University of Pennsylvania. The awards were also announced during the opening session of the conference that afternoon.

### Supervisory Appointments

KENNETH G. FOSTER to supervisor of Shipping, Packaging, and Storage Section 8225-3, Livermore Laboratory.



Ken has been with Sandia Corporation since 1948, starting in the Packaging and Storage Group. He was named section supervisor in the Materials Control Organization in 1952, and was assigned to the Production Liaison Organization as a section supervisor in 1957. He transferred to Livermore Laboratory in 1959 and worked in the Product Control Division 8161-2.

Before joining Sandia, Ken spent three years as a coal mining operator in Utah. During World War II he served in the Navy Submarine Service, and participated in six war patrols in the Pacific Theatre.

He attended Birmingham Southern College, in Birmingham, Ala.



SANDIA LABORATORY Fire Prevention Scrapbook is examined by (l to r) R. K. Strome (3463), T. A. Rosenwald (4542), and C. C. Kinney (3463). The entry in national competition secured 13th place for Sandia Laboratory's fire prevention program in 1961.

## 'Economic Growth' Theme for National Engineers' Week

An Open House at the University of New Mexico, a state convention of the New Mexico Society of Professional Engineers, and a Speakers' Bureau are planned in the Albuquerque area in observance of National Engineers' Week Feb. 18-24.

As in past years, many Sandians will be participating as members of various Engineering organizations.

The New Mexico Council of Scientific and Technical Societies, headed by president J. A. McCutcheon (1322-1), will cooperate with the University of New Mexico in presenting the Open House. The group will provide transportation for approximately 100 out-of-town high school science students to attend the program planned by the four UNM engineering departments.

The Open House is scheduled for Thursday, Feb. 22, and Friday, Feb. 23. Richard Vaughan, UNM engineering faculty member and chairman of Albuquerque Engineers' Week committee, issued an invitation to Sandia employees and their families to visit the displays and student exhibits in the UNM engineering buildings Thursday evening, Feb. 22. The buildings will be open from 2 until 9 p.m.

Community Relations Division 3433 has prepared an exhibit for

use in the mechanical engineering building.

M. G. Young (7523) is helping with the arrangements for the state NMSPE convention. He will participate in a panel discussion on the convention program Saturday, Feb. 24. Topic is "The American Institute of Electrical Engineering Functional Plan for Unity in the Engineering Profession."

He has also prepared an address entitled "The Impact of Technology Upon Man."

"Since the theme of National Engineers' Week this year is 'Economic Growth Through Professional Engineering,'" Mr. Young says, "it seems appropriate to point out what engineers have contributed to our life. Technology has progressed only as far as engineers have been able to use scientific knowledge for practical economic devices. Engineers have helped make possible our tremendous communications, transportation, agriculture, manufacturing, architecture, power, and space exploration. In addition, all of us enjoy a way of life in material comfort that was undreamed of 50 years ago. All of this, engineers helped make possible."

Jack Barber (7323) is helping with an Engineers' Week Speakers Bureau. Any group or organization wishing a speaker may contact him at 299-4287.

## Corporation's Laboratories Earn Fire Control Honors

Sandia Corporation fire prevention programs took high honors in the 1961 fire prevention contest conducted by the National Fire Protection Association. Livermore Laboratory ranked seventh among 175 North American entries in the Industrial category. Sandia Laboratory placed 13th.

Judging was based on detailed entry blanks and scrapbooks describing fire prevention activities undertaken during the year.

The scrapbooks included clippings, illustrations, photographs, and forms describing fire prevention equipment, inspections, employee education and training, and special Fire Prevention Week activities. The period covered by the contest was from November 1960 to October 1961.

This was the first year Livermore Laboratory was entered in

the contest. Last year Sandia Laboratory placed 11th among 113 entries.

At Livermore Laboratory, fire prevention activities are handled by Safety Section 8241-3 under the direction of Fire Marshal Verne McNabney. At Sandia Laboratory, Inspection Section 4542 under R. W. Hunnicutt performs the fire prevention program. Sandia fire inspectors are T. A. Rosenwald and W. L. Smith.

The Livermore scrapbook was prepared by Mr. McNabney assisted by technical illustrator Ben Aiken (8233-3) and editorial assistant Coralyn McGregor (8233-1). The Sandia book was prepared by Mr. Rosenwald with technical artists R. K. Strome and C. C. Kinney (both 3463-3).

Fire loss at Livermore Laboratory in 1961 was \$57. Sandia Lab had a \$40 fire loss for the year.



REVIEWING Livermore Laboratory scrapbook on fire prevention activities are Gil Rhodes, supervisor of the Safety Section (8241-3) right, and Verne McNabney, fire marshal. Scrapbook helped Livermore Laboratory win seventh place among 175 entries.

## First Great Decisions Discussion — Vietnam — Proves to be Timely

On the heels of the first week of Great Decisions discussions last week, the United States announced increased military support with supplies, equipment, and advisory services to South Vietnam.

"Vietnam was the Great Decisions topic last week," Max Linn (3420), Great Decisions chairman, in Albuquerque, said, "but the two facts are not related. The significant fact is this: Great Decisions is a program that studies subjects that are making headlines every day. The world-wide issues of survival are discussed. Participants gain a great understanding of current world events."

"Red China — Third Greatest Power?" was the topic this week. Next week the Great Decisions

Group will explore "Brazil—Which Way Half a Continent?"

It is not too late for those interested in forming discussion groups, Max reports. Great Decisions fact sheets are still available to Sandia Lab employees at the Technical Library, Bldg. 804. Noon-hour discussion groups in the office areas of Sandia Laboratory are still possible.

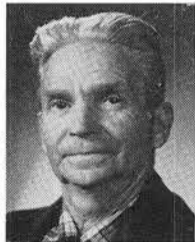
Anyone interested may call Max at ext. 25162.

## H. J. Franklin to Retire from Sandia With 10 Years Service

Hubert J. Franklin, who works in Tester Fabrication Division 4234, will retire Feb. 28.

Mr. Franklin marked his 10th anniversary with Sandia Corporation last November. As to future plans he says, "I'll wait until I come to that bridge."

For the present Mr. and Mrs. Franklin will continue to live at 9617 Salem Rd. NE. They have five children, four of whom live in Pennsylvania.



## Boy Scouts Need Men As Volunteer Leaders

The Boy Scouts of America need men for leadership. In the Albuquerque area are three giant Scouting districts serving the needs of more than 6000 boys active in the Scout program of outdoor recreation and educational studies.

From the position of Den Mother (the Scouts need women, too!) to member of the board of directors of the Kit Carson Council, the talents, energies, and knowledge of adults make the Boy Scout program possible.

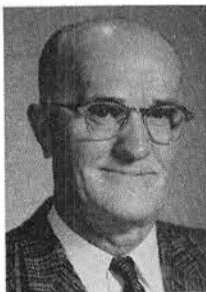
Sandians have long generously contributed their efforts to the Scouting program. However, according to H. Frank Sowers, District Executive, more are needed. Committeemen for health and safety, activities, organization, leadership training, finance, camping, and advancement are needed. Also merit badge counselors, assistants and scoutmasters to work directly with the Scout troops can be utilized.

"Many administrative jobs need good men," Mr. Sowers said, "as well as men to fill other positions to work directly with the Scouts in their many activities."

Anyone with an evening or so a week open who would like to invest it in satisfying, effective, contributions to young boys of all ages is urged to contact Boy Scout Headquarters, telephone AL 5-1671.

## Service Awards

### 15 Year Awards



Dewey L. Cochran  
8121  
Feb. 26, 1947



Harold J. Trautman  
2341  
Feb. 26, 1947

### 10 Year Pins

Feb. 18-28

Jerry Coal 4251, Elvira M. Antuna 2540, Bernice D. Beeson 3321, John W. Hinson, Jr. 4221, Franklin I. Martin 6021, Joanne G. Boyd 4600, Richard A. Poe 2332, Ralph W. Griffin 4251.

Clifford J. Ruttle 7234, Alvie A. Barrett 3311, Samuel L. Smith 4513, Charles J. Skaloud 4231, E. H. Baber, Jr. 4251, Henry J. Przystas 8232, William B. Minser 4253, Thomas W. Moody 1432.

Richard S. Jacobson 8121, Juan B. Pedroncelli 4575, James J. Clemons 5134, Calimero J. Lucci 4511, Walter L. Kurlfink 4252, John G. Peterson, Jr. 2644, Thomas B. Heaphy 3423, John D. Grenko 4422, Elmer White 7323, Julian C. Baca 4611, Robert J. Brown, Jr. 7117, Jay A. Andrews 4631, Donato R. Lovato 4512, Felix Almaraz 7513, and Henry C. Baisdon 4232.



BEAUTIFULLY RESTORED Piper Coupe J4 is months of spare-time hours completely rebuilding the work of G. R. "Bill" Guernsey who spent 18 the plane. Presently he plans rebuilding another.

## 'Pile of Junk' Carefully Built Into Plane -- Trim, Safe, Beauty

The Piper Coupe J4 was the Cadillac of light planes back in 1939 when it was first built. G. R. "Bill" Guernsey (4252-1) flies one today that will hold its own with the 1962 models.

Completely restored, Bill's J4 is a trim beauty in deep green with cream striping. Its 75-hp engine will take it to 14,500 ft. at a rate of climb averaging 400 ft. per minute. Top speed is right at 100 mph while landing speed is an easy 40 mph.

Eighteen months ago, this beautiful plane was a pile of junk stored in a Lamesa, Tex., barn. Bill estimates that he has put in almost 1500 hours rebuilding the plane in his garage workshop.

"I wanted to fly," he says, "and the only way I could afford an airplane was to build one. I had a pilot's license but I had never worked on an airplane. I just used the theory that it was a big model and went on from there."

Going "from there" meant searching for drawings and specifications, advertising for parts, working and reworking, and using infinite patience and skill of a machinist.

"Even the manufacturer didn't have drawings," Bill says. "I had to build many of the parts. I located a J4 down in Magdalena where a rancher had been flying one for years. This helped, although this old plane had received so many modifications and repairs during the years that it was almost impossible to tell the original structure of the plane."

"I did manage to buy a pair of wheel pants from the rancher," Bill says.

Bill's work had to be certified at points during the rebuilding by authorized aircraft mechanics. It underwent an exhaustive inspection by the Federal Aeronautics Administration prior to flight.

"The FAA regulations required me to completely rebuild the wings," Bill said. "It seems that the design of this aircraft was later modified with additional ribs in the wing structure. I didn't know this and went ahead and used the old wings as a pattern. That's the way you learn, I guess."

Bill learned well. After certification, the plane flew beautifully on its first flight last November. It has required no rework or repair.

Bill is so enthusiastic about the project that he is in the process of rebuilding a second airplane, a 1941 Aeronca "Chief."

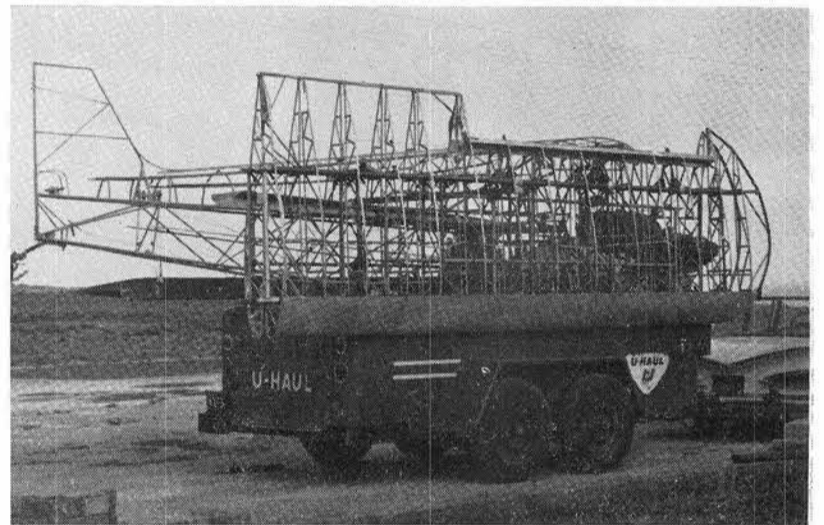
"This will be a little easier than the Piper," Bill says. "In the first place, I have all the parts to use as patterns and the structural members are mostly wood. Wood is a lot easier to shape and work than metal. The plane was

wrecked when I acquired it and so I have completely disassembled it and stripped it of all fabric. Everything that can come off is off. Now I'm checking each piece for wear or weakness. My standards are high, and all of the formers, bulkheads, stringers, and

ribs are new. If all goes well, this one should be ready to fly in about six more months."

Every weekend, Bill faces a tough decision.

"I can't decide whether to fly the J4 or work on the Chief. I enjoy both."



"PILE OF JUNK" hauled from a barn in Lamesa, Tex., 18 months of intensive work later became the beautiful Piper Coupe J4 in accompanying photo. Bill Guernsey (4252-1) is the owner-builder.



CURRENT PROJECT in Bill Guernsey's garage workshop is the total renovation of a 1941 Aeronca "Chief." Framework was completely disassembled and rebuilt with new parts made by using the old ones as patterns. Some of the metal structure was salvaged.

# Banks Home No. 33 Is Delightfully Renovated Barn

"In 25 years of marriage," Al Banks (3232-2) was saying, "we had lived in 32 houses. This is number 33."

Number 33 is a completely renovated, remodeled, and redesigned old adobe barn on Main Street in north Bernalillo. On his 25 acres of partially irrigated land are several other adobe buildings, including a former winery, and an orchard.

Trees were important to Al and his wife, Connie. "We wanted a place with big trees," he says. "We didn't have enough time to plant

them and wait. We've been waiting a long time already."

Al and Connie both graduated with degrees in horticulture from Colorado A&M in 1935 but Al chose to make the Army his career. He retired from the U.S. Army as a Lt. Col. in 1958 and joined Sandia Corporation three days later.

The "barn" is a charming, comfortable place to live. "It suits us," Connie says. "In our years in the Army, we never really had enough room. Now there's plenty."

"We just tore into the place,"

Al says, "and cleaned up about a half-century of accumulated junk. Part of the barn had a dirt floor and the roof was a sorry sight. Still, the thick adobe walls and timbers were good. We poured concrete floors and had a new roof built. Then I built the adobe addition down the entire south side. In this area we put the kitchen, bathroom, and utility room. The plumbing, wiring, fireplace, and heaters went in about the same time. We had a lot of things going at once. Many of our friends helped. Larry Platt (2442) designed and helped install the wiring. His wife, Margaret (4112) also helped lay adobe bricks."

Al bought the property in October 1960 and started work on it in January. The family moved in during July. By this time Al had built a sturdy staircase up to the old loft. This area was converted into three pine-paneled bedrooms. The stairs on the lower floor form an attractive divider between the dining area and the large book-lined living room. Upstairs, the landing is a showcase for photographs and mementos of Army days.

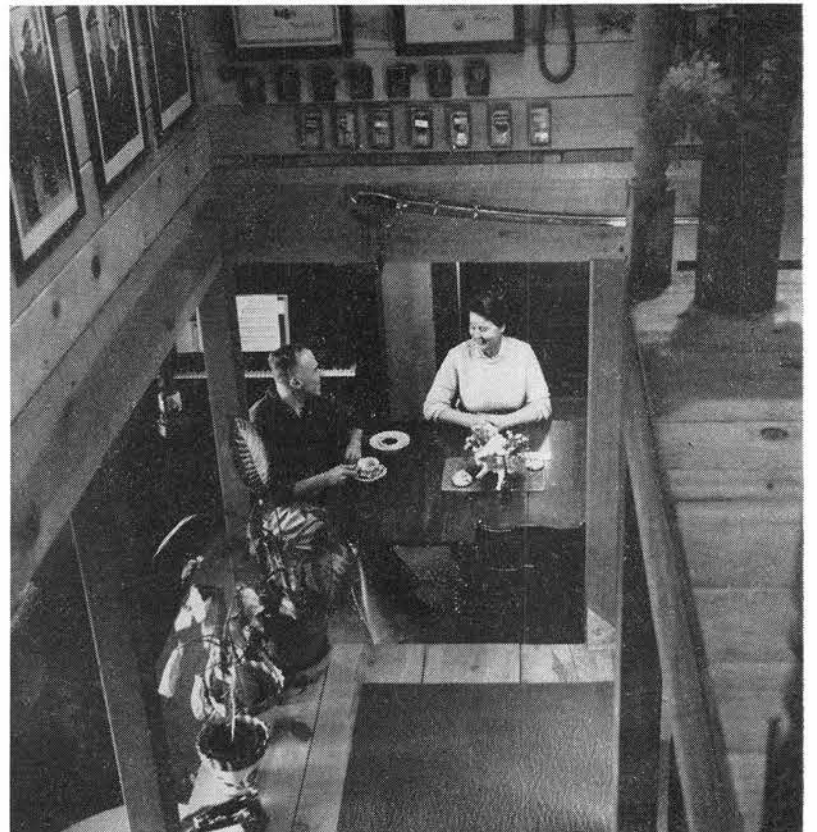
"Our children—Paula, 14, and Bruce, 17—are enthusiastic about the project and worked with us on it," Al says. "We were worried about their changing schools and the life in the country, but these kids have lived all over the world and they're pretty adaptable."

The land was originally part of a Spanish land grant. There are no records of when the "old house" was built. The three-ft.-thick adobe walls and the design of the house indicate it is probably 200-300 years old.

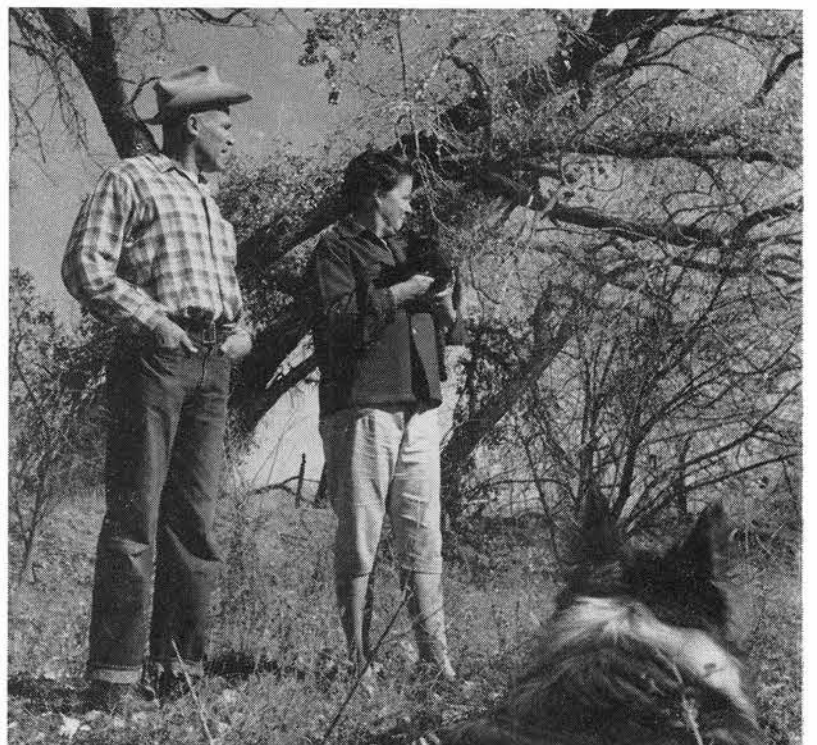
"On the roof of the old house," Al says, "you can see where cannons were positioned. Old timers remember some brass cannons up there but they've long disappeared and the roof line has been filled in."

Al plans to completely modernize the old house and join it with the winery by building an addition between the two for a large bathroom and hall. The winery has a basement about 22 x 35 ft., the basic size of the building.

"We've lived in England, France, Germany, and Japan as well as a number of places in the States," Al says. "But this is home now; this is the place we want to live. There will be plenty of room for our friends to come and visit and enough work for a lifetime."



ARMY MEMENTOS are displayed on the landing upstairs in the Al Banks residence. Downstairs, Al and Connie take coffee break.



GIANT COTTONWOOD TREES at the edge of the orchard will mark a planned picnic area. Here, Al and Connie survey work that needs to be done to make the extensive orchard productive.

## Sandia Project Gnome Work Ends; Other Tests Continue

Since the five-kiloton nuclear detonation at the Project Gnome site near Carlsbad, N. M., last Dec. 10, some phases of the Gnome experiment have been completed and several new phases are underway.

"We feel that Sandia's part in the Gnome project was highly successful," W. D. Weart (5112), Scientific Advisor for Sandia's activities, commented recently. "We recorded a wealth of information on the results of a detonation in a new medium. The rock salt in which the Gnome shot took place is different in many respects from the volcanic tuff at the Nevada Test Site."

Sandia Corporation's activities at the site have been completed, reduction of data recorded during the detonation is taking place, and interpretations are now being made. Meanwhile, work by Lawrence Radiation Laboratory continues at the site.

### Upward Ground Shot

Shortly after the detonation, surveys made in the vicinity of the surface ground-zero area indicated an upward shift of nearly 18 in. directly over the surface zero point.

Isotope filters, gas samples, and core samples collected after the shot have been analyzed. Scientists have also gained valuable information from two neutron wheels used in an experiment to gather spectra of fast neutrons resulting from the nuclear explosion.

On Dec. 28, one of two drill holes penetrated the top of a cavity above the Gnome detonation point. The cavity ceiling is believed to be about 1090 ft. below

the surface level. The cavity is estimated to be about 120 ft. in diameter and 110 ft. high.

The exact shape of the cavity has not, as yet, been determined. Scientists believe a depression about 50 ft. deep was created below the point of the nuclear detonation. This area contains salt and rubble which fell from the cavity ceiling. Temperatures in the cavity are estimated to be about 600 degrees Centigrade.

### Heavy Vapor

The presence of heavy vapor in the cavity has made photography of the interior impossible. The cavity may be emptied of vapor later to enable scientists to make a photographic survey. The cavity has remained intact for the longest period reported for any underground nuclear detonation.

Analysis of the heat-recovery phase of the Gnome project is under way at Lawrence Radiation Laboratory. Steam pressures, created by pumping water into the shot chamber, were too low for the planned heat-recovery program. Measurements showed that pressure pumped into the cavity leaked into the tunnel, probably through the same path followed by vapor which seeped from the cavity immediately after the detonation.

Preparations are being made for re-entry into the detonation area by mining to within 200 ft. of ground zero and drilling from that point. This procedure will enable scientists to establish in detail the physical and chemical effects of the detonation. The work will take about three months, and is expected to start late in February.

## Little Spare Time in Prospect for Arthur Russell's Retirement Days

In October of this year, Arthur Russell, of Design Definition Section 4412-5, plans to retire. He has been with Sandia Laboratory since October 1952 and is looking forward to his retirement. But not for the leisure it will provide. For Mr. Russell, as for many other retiring Sandians, it promises to be

a very active and invigorating time.

"Since November 1960, I've been teaching a course in mechanical drafting to a group of 10 students," Mr. Russell commented recently, "and the teaching has proved fascinating. Now, F. F. Norris (4541-1) is working with me on plans for a new course in architectural drafting. We've opened a school of drafting and design which will offer the course in architectural drafting."

The courses offer complete coverage of mechanical and architectural drafting. The architectural course, to be given evenings, will require some 260 classroom hours devoted to such subjects as geometric construction, architectural construction features, making working drawings, materials of construction, and building codes and specifications. Mr. Norris will teach the class. An organizational meeting for those interested in taking the architectural course is scheduled to be held at 8200 1/2 Menaul Blvd. NE on Feb. 21 at 7 p.m.

"The course will keep us occupied for quite a while," Mr. Russell continued. "If we find the time, we plan to expand our activities to include other courses and instructors. We'll also be able to offer courses during the day beginning in October."

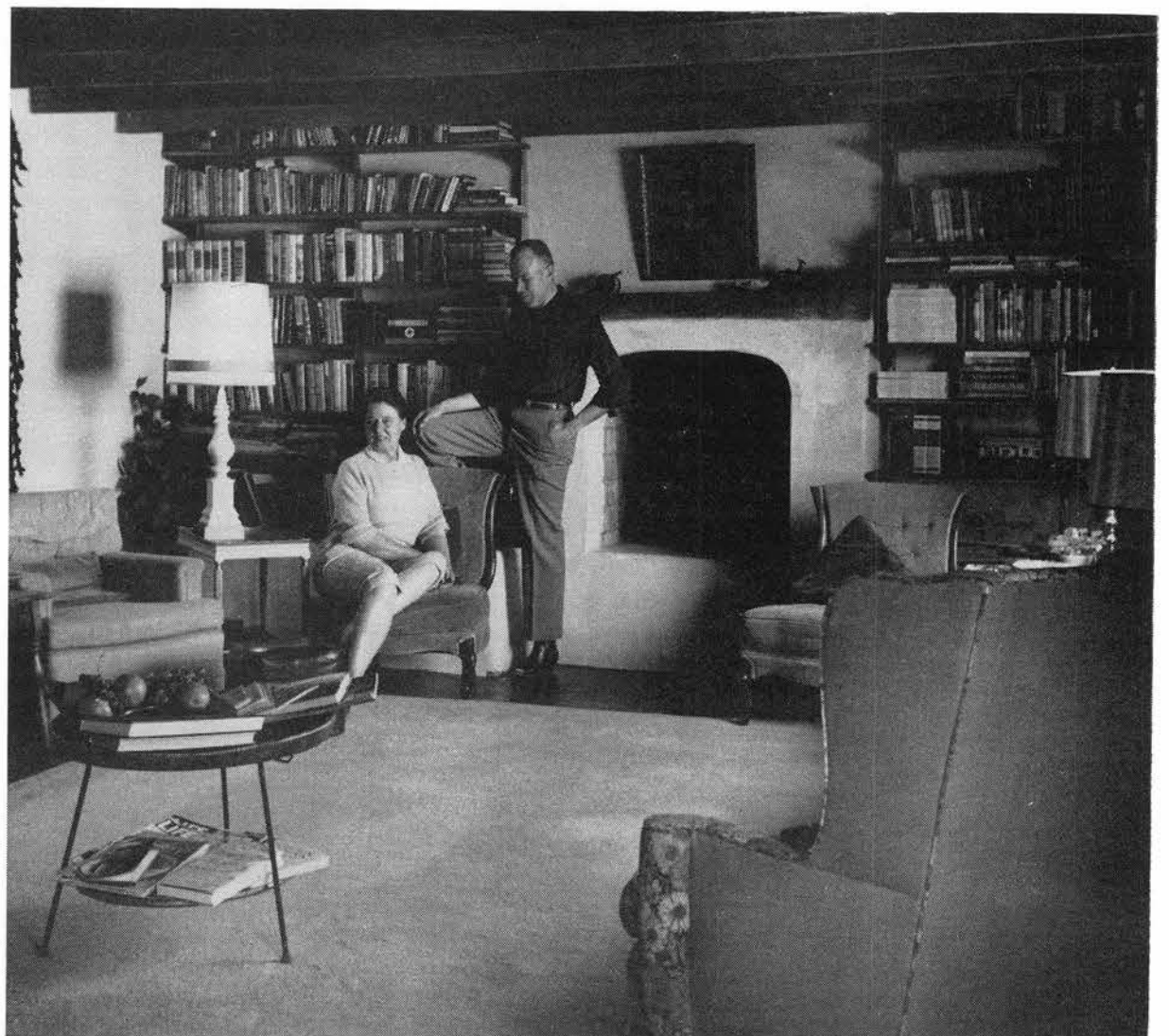
"In the meantime, our evenings are busy ones," Mr. Russell concluded.

Continued from Page One . . .

## SPRF Getting Good Workout

given number of neutrons depends on the energy spectrum of these neutrons. W. H. Buckalew (5313-1) is running calibration experiments for determining radiation levels.

In still other experiments: F. N. Coppage (5313-2) is studying photoconductivity of organic dielectric materials as a function of the dose rate; Herman Stein (5314) is using SPRF in a program to examine the nature and thermal stability of neutron-produced defects in semiconducting material; and E. C. Gooden (5313-1), whose work is in radiation detection development, is studying the time history of the neutron pulse — an important detail for all users of SPRF.



BOOK-LINED LIVINGROOM was formerly one comfortable dwelling by Al and Connie Banks. It is located in Bernalillo north of Albuquerque.

# Forecasting Weather Serious Lab Concern

"About the only occupational hazard a weather man faces is the possibility of an inaccurate prediction," C. A. "Cliff" Olson joked recently. "At Sandia Laboratory's forecasting service, we make every effort to predict the weather accurately."

The forecasting service, part of Engineering and Meteorology Section 7243-1, provides forecasting for many Sandia organizations. "One of our biggest customers is the Field Testing Organization," Cliff commented. "We provide information that has a vital bearing on field testing. Daily forecasts are made for the Tonopah Test Range and we're often called upon for information on conditions at Coyote Canyon, Holloman AFB, Livermore, and sometimes as far away as Dabob Bay, Wash., and Cape Canaveral, Fla."

Sandia's security forces also use the forecasters' services. Security guards must be aware of forthcoming weather to prepare themselves with special equipment, clothing, and transportation. Likewise, Sandia's Plant Engineering organization requires information on conditions affecting the heating or air-conditioning needs of Sandia Laboratory.

## Assorted Information

Requests for information from individuals performing tests or experiments throughout Sandia Laboratory are constant. To answer such requests quickly, forecasting personnel use one of their simplest and most useful tools.

"It's called 'The Odd-Ball Book,' and it's made up of an assortment of information we've found is most often called for," R. F. "Bob" Gentzler explained. The book enables forecasters to answer many unusual questions about the weather. It contains such information as "Elevations and Height Differentials," "Holloman AFB Five-Year Temperature Records," "Albuquerque Temperature Variations," "Dew Points," and even a chapter entitled "Teletype Repair." The book is kept close at hand in the forecasting office.

"The 'Odd-Ball Book' is a relatively simple tool, but many of our other tools are quite complex," Cliff Olson continued. "The SMILE network is a good example."

The forecasting service's Surface Meteorological Instrumentation Logging Equipment (SMILE) network consists of seven weather towers in the Albuquerque area which automatically gather weather data and transmit it to a readout system in the forecasting office.

"Each tower gathers temperature, wind speed, and humidity information at 12-ft. and 100-ft. lev-

els," Cliff commented. "The readout system gathers the information from the towers, prints a numerical record of the information, and at the same time, records it in the form of punched paper tape. The tape can be used with Sandia's computers to prepare long-range weather trend studies for the Albuquerque area."

Initial research and design work for the SMILE net was done by Cliff Olson and other forecasting service personnel. Other Sandia organizations were consulted to help designers increase the versatility of the new tool. "We hope to expand both the number of SMILE stations and the types of data gathered at each station," Cliff commented. "Such expansion will increase the accuracy and versatility of our predictions."

## Teletype Data

Forecasters also use a facsimile-map recorder which produces weather maps of conditions across the United States. Two teletype-writers record information on weather maps in case the facsimile-map recorder needs repair. "We take pride in the fact that, if we need to, we can use data from the teletype to plot a weather map in less than an hour," Mary Hall, Meteorological Assistant commented.

In addition to barographs, a precision aneroid barometer, thermometers, direction indicators, and anemometers, the forecasting service maintains an instrument which measures lightning potential.

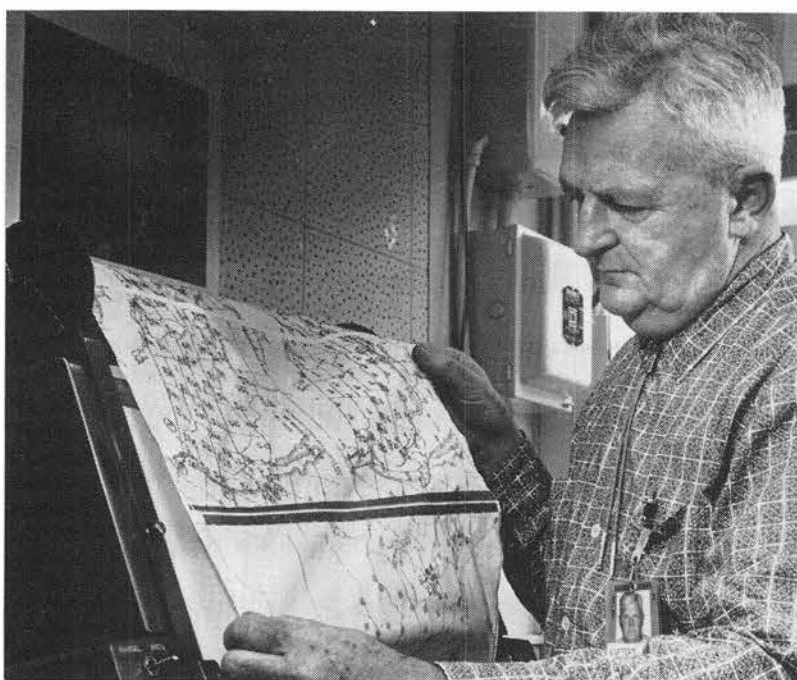
"Lightning is a severe hazard to those handling high explosives, and we feel that the information on atmospheric electrical potential we're able to provide is vital to their safety," Bob Gentzler commented. "We're also planning an atmospheric potential monitoring network. The expanded net will provide information in the same way that the SMILE network operates."

In addition to the weather station activities, the forecasters spend considerable time doing specialized studies, meteorological instrumentation problems, and providing an internal consulting service which covers a wide range of activities involving the atmospheric sciences.

Personnel of the forecasting service are deeply interested in their work. "Meteorology is a growing science, and it's expanding its techniques," T. J. "Tim" Raftery said. "We're constantly working for more accuracy and versatility in our predictions. And we have the satisfaction of knowing that people listen to what we have to say about the weather."



HUMIDITY sensor at 12-ft. level of 100-ft. SMILE tower is checked by Al Brazda (7243-2). Network of seven towers provides weather information for the Albuquerque Area.



WEATHER maps received from Washington, D. C. by forecasting service's facsimile map recorder are examined by Tim Raftery.



TELETYPED synoptic data for use in plotting is placed on clipboard at plotting table in forecasting service office by Mary Hall (7243-1).

## Livermore Authors Propose Common Engineer Language

A language barrier existing today among engineering, manufacturing, and inspection groups throughout the industry is causing an ever-mounting scrap heap of rejected parts.

So say C. S. Wolowicz, C. P. Rindone, and R. J. Wilcox (all of 8114), in their monograph, "Technical Analysis and Definition: A Field of Engineering Study," just published by Sandia Corporation at Livermore Laboratory.

The monograph, a culmination of several years' study by its authors, is not aimed at solving specific problems; rather it suggests that an entirely new course of engineering study, "technical analysis and definition," will eliminate the reasons for the problems.

The crux of the matter, according to the writers, is properly conveying and interpreting the design intent in engineering drawings to engineering, manufacturing, and verification groups.

"Because there has been no effective 'alphabet,' 'grammar,' or 'composition' — essential elements of any language — these groups have been forced to proceed by so-called 'standard' practices. These too often are composed simply of the individual's experience, habits, and prejudices, modified by the traditional procedures of his particular company," the authors say.

To overcome these problems, the writers offer a basis for a new field of study, to be taught in engineering and technical schools as well, which would provide a "common engineering language."

By starting at the very beginning — in engineering and technical schools — trained personnel would enter industry equipped with the knowledge needed to interpret engineering drawings originated by other companies, even those which are hundreds, even thousands, of miles away.

Published as Sandia Corporation Monograph No. 303, it was distributed to several schools, industries, and individuals, and was made available to the general public through the Office of Technical Information Extension, Oak Ridge, Tenn., and the Office of Technical Services, Washington, D. C.

Excerpts from the monograph have been accepted for publication in the *Journal of Engineering Graphics* and *American Machinist*.

C. S. Wolowicz, supervisor of Drafting Division 8114, has been with Sandia Corporation for 12 years, working in drafting organizations at both Sandia and Livermore Laboratories. He was promoted to section supervisor in 1954 and became a division supervisor in 1956. He transferred to Livermore Laboratory in 1957.

He co-authored a publication on "True Position, Positional Tolerance, and Maximum Material Condition" in 1954 which was used by Sandia Corporation drafting organizations and suppliers. He has been active in the drafting field for 25 years.

C. P. Rindone, supervisor of the Drafting Section 8114-3, has been with Sandia Corporation since 1951. He transferred to Livermore Laboratory in 1956 and was promoted to his present position in 1957. A draftsman for more than 23 years, he became interested in problems of dimensioning while working as a checker in the drafting organization at Redstone Arsenal, Huntsville, Ala.

R. T. Wilcox started work at Sandia Corporation in 1955 as a checker in the drafting organization at Sandia Laboratory. He transferred to Livermore Laboratory in 1956 as a project draftsman, and was promoted to section supervisor in drafting in 1959. He was co-author, with Messrs. Wolowicz and Rindone, of a Technical Memorandum describing a new method of preparing indent-type flow charts on a magnetic board.

Before joining Sandia, he served as chief draftsman at Eidal Manufacturing Company, Albuquerque, N. M., and at Briner Rustproofing Company, both in Albuquerque and in El Paso, Tex. He also worked eight years as a product designer for Parker Pen Company in Janesville, Wis.

## U of Nebraska Alumni to Meet

New Mexico Chapter of the University of Nebraska Alumni Association will hold its annual banquet on Feb. 26 at the Desert Sands Motor Hotel.

Social hour will be at 6:30 p.m. and dinner will be served at 7 p.m. Dinner will be followed by a brief business meeting and a talk by Dr. William E. Hall, Director of the University of Nebraska School of Journalism.

Tickets are \$2.50 per person. Ticket information can be had by contacting Mrs. Grace Richardson at AL 5-1415.

## L. J. Paddison Speaks To Bay Area Sections Institute Radio Engineers

"Automation to Minimize the Human Effects on Reliability" is the title of a talk to be presented by L. J. Paddison on Feb. 21 in Palo Alto, Calif.

Mr. Paddison will speak at a joint meeting of Bay Area subsections of the Institute of Radio Engineers to be held at the Red Shack Hofbrau, 4085 El Camino Way. The talk will be given at 8 p.m., preceded by dinner at 6:30 p.m. Reservations for the dinner may be made by calling Barbara Dolstra (8158), ext. 2588.



Bob Peet (7252), Clyde Northrup (7252), Lloyd Hungate (7513)



Dale Pipher (7521)



Ed McGarvie (7512)



George Miller (4412)



Mack Ralls (7524)

# Scottish War Pipes Being Mastered By Strong-lunged Willing Sandians

Colorful in bright Buchanan Tartans, military in appearance and bearing, belligerent in the shrill of the bagpipes and roll of the drums, the Ballut Abyad Temple Pipe Band sounded off with "Scotland the Brave."

Eight of the 20-member band are Sandia Laboratory employees. Mack Ralls (7524) is the pipe major.

"We organized about two-and-one-half years ago," Mack says. "Only George Miller (4412) and Bob Williams (4325) had any previous experience playing the pipes. The rest of us were rank beginners or novices at best—even the drummers, Lloyd Hungate (7513), Ed McGarvie (7512), and Dale Pipher (7521)."

Other Sandia pipers in the band are Clyde Northrup (7252) and Bob Peet (7252).

The band rehearses once a week and plays for Shrine ceremonies, conventions, and parades. They also perform at various charity benefits.

"When the band organized,"

Mack says, "we were just interested in learning the pipes and maybe a few tunes for a parade. Since then most of us have become pretty serious about it and practice several hours a week."

To save wear and tear on family and neighbors, pipers practice on a "chanter" which gives a subdued oboe sound.

The complete bagpipe includes the large-throated chanter, bag, and three drones. The piper first fills the bag, which rests beneath his arm, with air and then starts his tune. His fingers cover and uncover the nine holes in the chanter to play the melody. In the meantime the drones sound constantly. There are two tenor drones and one bass.

When the piper runs out of breath (Scottish tunes rarely have pauses and it takes a lot of air to blow the pipes), he continues the fingering and exerts pressure on the bag with his arm. This will give him a short second to gasp a breath of air while the tune continues uninterrupted.

"Breathing was one of the most difficult things to learn about the pipes," Mack says. "Just to keep the pipes going and not lose air pressure in the bag is a difficult trick. And on parades, this gets tough. After a few blocks of marching you are literally gasping."

Most of the men are of Scottish descent and are proud of the Scot's heritage. "This is one of the reasons we wanted to learn the pipes," Mack says.

The pipes were originated by the Egyptians about 4000 years ago, adopted by the Greeks and Romans, and carried to Ireland and Scotland during the Roman occupation. The Scots are given credit for perfecting the pipes, adding the drones, and making them their national musical instrument. Officially they're called the Scottish War Pipes.

"It takes about seven years to become a good piper," Mack says. "We're working on it. In the meantime, we have a lot of fun."

## Division 3132 Gives Tech Orientation to 150 Lab Employees

A Sandia Corporation Technical Orientation, sponsored by Technical and Trades Training Division 3132, was held in Bldg. 815, Jan. 29-31. Approximately 150 Sandia employees attended the meetings.

Speakers at the Orientation and their subjects, in order of appearance, included D. R. Fisher (3132), Introduction to the Orientation; G. A. Fowler (7000), Sandia Corporation History; R. S. Wilson (7140), Systems Development; P. F. Jones (7183), Evolution of Stockpile; W. M. Sundt (1443), Reliability Principles; J. E. Haaland (2313), Military Liaison; John McLay (1420), Component Development; L. J. Paddison (2400), Test Equipment Development;

J. C. Russell (1121), Materials Testing; J. J. Miller (7231), Field Testing; W. A. Gardner (7300), Environmental Testing; G. C. McDonald (2530), Manufacturing Development; F. P. Hudson (5150), Research Programs and Physical Research; and J. D. Shreve (5114), Weapon Effects.

The Orientation participants toured the Sandia Corporation Weapon Display, under the direction of J. E. Haaland and staff (2313), and Sandia's Wind Tunnel facilities, under the direction of R. C. Maydew and staff (7132).

## Technical Paper by C. W. Harrison to Be In IRE Transactions

A technical paper by C. W. Harrison, Jr. (1424-1), entitled "On the Impedance of a Base-Driven Vertical Antenna of Finite Dimensions With a Radial Conductor Ground System" has been prepared for publication by the Institute of Radio Engineer Transactions on Antennas and Propagation.

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BEDROOM SUITE, mahogany, bed, dresser, chest, mattress and coil springs, \$50. Martin, AX 8-2098.  
SMITH-CORONA portable typewriter and case, \$25; Kodak Duaflex II camera with flash attachment, \$10. Smith, AX 9-6873.  
BLOCKS OF Commemorative stamps, also single stamps, used and unused. Jones, 255-3390 after 7 p.m.  
2-PIECE KROEHLER living room suite, used 18 months. Pass, AL 6-9663.  
3-BDR HOUSE, attached garage, walled, sprinklers, patio, a/c, GI, \$400 FHA or assumption, 11513 Ralph NE. Letbetter, AX 9-4343.  
PROJECTION SCREEN, Daylite, 60x60", ideal for club use. Walter, CH 7-3207 after 5:30.  
'59 MUSTANG, 4 speed, 12-hp, extras; leather couch, carved wood. Brown, DI 4-6831.  
POOL TABLE, 66x36", \$25; boxing gloves, set of 4, \$3. Kraehling, AM 8-8126.  
GOLF CLUBS, Wilson, Cary Middlecoff autograph, registered matched set, 3 woods w/covers, 8 irons, putter, rough iron, cart and bag, \$100. Fisher, AX 8-0526.  
'50 STUDEBAKER, \$125. Harrison, AX 9-7928.  
'58 DODGE, white, \$595. Doherty, 298-4198.  
WELL PUMP, 3/4HP, w/tank; new round steel windows, also others; tar paper \$1.25/roll; 1935 and '48 Ford engines, \$6 ea. Villella, AX 9-9044.  
SHOTGUN, Winchester model 12, 12-gauge, w/28" modified choke barrel, \$80. Kubiak, AL 6-1513.

COLT .45 automatic pistol w/ holster, 100 rounds ammo, extra clip, clip carrying case, \$57 or best offer. Millspaugh, AX 8-0678.  
LEICA IIIIf camera w/f2 lens, Leica flash attachment, GE exposure meter, \$150. Hodyke, AL 5-8473.  
'52 PONTIAC 4-dr., R&H, AT, \$175; Halli. S-36 Rcvr., \$65; BC-683 Rcvr. w/12v dyna, \$35. Braffett, 255-1381.  
HOTPOINT WASHER, \$60. Calkins, DI 4-5914.  
PLATINUM RING w/five cut diamonds, original cost, \$250, any reasonable offer considered. Hurley, 298-4440.  
MOUNTAIN CABIN SITE bounded by govt forest and county road, \$400 cash, balance \$349 at \$15 monthly. Young, AL 6-9158.  
SIMMONS bed-divan, \$50; 3-piece sectional divan, \$25. Officer, AL 6-0337.  
'61 RAMBLER WAGON, 4-dr., a/c, R&H, 23 miles gallon, \$2349. Cummings, CH 2-1061 after 5, or Sat. & Sun.  
CORONADO IRONER, open-end type on stand, make offer. Burke, 209 Hermosa SE, AL 5-9169.  
SEWING MACHINE, portable, \$19.95. Cultreri, AX 8-5252.  
ROBERSON PUEBLO, 1750 sq. ft., 3-bdr, den, 2 1/2 baths, hw/f, 2-car garage, negotiate equity, 5 1/4% FHA. Lindsay, AX 9-1648.  
ACCORDION, 120 bass, sell or trade. Heath, AL 5-5418.  
AKC Chihuahua puppies; full-size mattress & springs; man's ski boots; Ladies' new electric razor. Spray, AX 9-0412.  
CUSTOM BUILT Enfield rifle, 30.06 w/ Monte Carlo stock and 4-power scope, \$125. Few, AX 9-8823.  
'60 FORD Ranchwagon 6, new tires, R&H, 21,000 miles, 4-dr., \$1725. Heimer, AX 9-4501.  
CRIB, blue and yellow, w/mattress, \$20; GE dual-control electric blanket, full-size, \$10. Lenz, AL 6-7037.  
'53 FORD Tudor sedan, heater, good tires and battery, new seat covers, \$225. Russell, AX 8-0840.  
'53 OLDSMOBILE 44, 4-dr., R&H, new battery, \$150. Meyer, 298-4825.  
'56 FORD V-8, std. transmission, original owner, new tires and battery. Delker, AX 9-0773.  
ARGUS C-44 camera, 35 mm, w/flash and case, \$75, cost new \$120. Hill, AL 5-6538.  
2-BDR HOUSE, move to your lot, \$500, buyer move at his expense—30 days. Guest, DI 4-3488.  
KITCHEN SET, 5-piece maple, table 32x42" extends to 60". \$40. Sherwood, 2326 Hoffman Dr., NE, AX 9-2169.  
GOLF CART and bag combination, \$17.50; ping pong table, one-piece plywood, \$17.50. Hansen, 3119 Lykes NE, AX 8-0308.

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, Feb. 23

3-BDR, 1 1/2 baths, completely carpeted, a/c, washer, dryer, walled, sprinklers, corner lot, \$12,800, owner. Feliciano, AX 9-0434.  
'60 RAMBLER, American station wagon, OD, 2-dr., tu-tone green, 21,000 miles, mattress included, \$1450 or best offer. Rynders, AX 9-3894.  
'53 FORD, 6 cyl, 2-dr., sedan, R&H, \$250. Blossom, AX 9-6709 after 6 p.m.  
10"-SEARS RADIAL SAW w/stand, accessories, \$175; 8"-Shopsmith, early model, well used, \$50; small air-compressor w/ press controls, homemade, \$25; wheelbarrow, \$10. Stewart, 243-1876.  
FULL-LENGTH COAT, Japanese mink, needs to be re-styled and glazed, best offer; B-flat clarinet, wooden. Hopper, 265-1005.  
'61 VW, sunroof, w/w radio, trip speedometer, seat belts, leatherette, 5300 miles, \$1700. Small, AX 9-0023.  
DRAFTING SET and board; power plant, 4 1/2 HP 110V; Leece-Neville alternator, 12V; oscilloscope; 2 dynamotors; amplifiers; 24" jigsaw and motor. Buchanan, 298-2262.  
'51 PONTIAC 4-dr. sedan. Randall, 256-1853.  
'49 OLDSMOBILE club sedan, one owner, \$150. Sharp, AX 9-3889 after 5:30 p.m.  
PURE-BRED DACHSHUND, \$25. Wistor, AL 5-7969.  
25-WATT, 10 mtr xmtr w/ac supply, \$25; KW GG Lin. amp, PLL 813's, 40-80 mtr, w/ac supply, \$150. Elrod, ext. 22140.  
10 ACRES mountain land, \$500 per acre, all or part. Russo, AX 9-3869.  
PORTABLE TYPEWRITER, Underwood, complete with carrying case and table, \$40. Metzger, 298-5054.  
SHADE TREES, free, all sizes. Burrell, DI 5-0416.  
LYMAN TRU-LINE JR. loading press, no dies, \$8; GE 16" console TV, needs work, \$10. Scranton, AX 9-4902.  
'49 JEEP STATION WAGON, 2-wheel drive with OD, four cylinders, good motor, \$185. Allen, 268-1027.  
MOVIE CAMERA-PROJECTOR combination, Wittnauer 8 mm Cine-Twin w/screen, tripod, bright, and filter set. Karpen, AL 5-7168.  
ROBERSON, 3-bdr, 1 3/4 bath, walled, a/c, pitched roof, inside service room, garage, landscaped, drapes, 4 3/4% GI. Livingston, 11517 Snow Heights Blvd., NE, AX 9-5179.  
DACHSHUND, red male, 3 yr., reg., raised with children. Brown, AX 9-3189.

1903-A3 Springfield rifle w/Herter's stock, \$50; all steel luggage trailer, \$45. Bauder, AX 9-7322.  
RCA Whirlpool gas range, 30", \$50; 40" Roper gas range. Milligan, AM 8-4484.  
RUGER standard model automatic, \$25; Harrington & Richardson model 922 revolver, \$20, both w/holsters; BB gun, \$4. Donaldson, BU 2-3175.  
3-BDR MOSSMAN, hw/f, forced air heat, sliding glass doors, fireplace, landscaped, near schools, shopping, bases; assume 4 1/2% loan or new loan. Birdsell, AL 6-6225.  
'51 NASH RAMBLER, R&H, OD, new battery, \$150. Sutton, AX 9-0384.  
ENGLISH SPRINGER SPANIEL, 1 yr. old, female, will give to person who will provide enclosed area, loving care. Barth, BU 2-3134.  
'56 FORD FAIRLANE fordor sedan, fordomatic, power, \$500; '53 Studebaker Starlite coupe, 6-cyl., OD, SS, \$225. Bergquist, AM 8-6909 or 345-0605.  
ROBERSON 1 1/2 years, country kitchen, raised fireplace, double garage, insulated and paneled, \$17,670. 10209 Arvillita NE. Coalson, AX 9-0717.  
PUPPIES, half Airedale, half fence-jumper; cute and frisky. Mattison, AL 6-3951.  
MAPLE BUNK BEDS, springs, mattresses, and guard rail. Stambaugh, AL 5-5627.  
TWO 7-60-15 w/w tires, tubes and wheels for late model Chevrolet. Wilson, AX 8-0049.  
WESTINGHOUSE upright vacuum cleaner w/ attachments, \$10; Dormeyer 4-speed blender, \$15. Taylor, AX 9-2281.  
EXPANDWAY mahogany 3-drawer desk, expands into dining table up to 40x81 1/2". Hayenga, AL 6-3640.  
'52 PONTIAC hydramatic, rebuilt: front end, valves, carburetor, generator, new: universals, battery, license, tune-up, good rubber, 64,000 miles, \$249. Floyd, AX 9-2419.  
VM Hi-Fi tape recorder, model 720, \$100. Atkinson, AX 9-3250.  
TWO-PIECE SECTIONAL, brown; child's wardrobe chest, \$25; infant's chest, \$15. Foster, AX 9-6240.  
HALLICRAFTER World-Wide portable radio, eight bands from 180 Kc to 3.9 Mc, AC or battery operated, \$30. Mattox, 268-5554.  
'55 CADILLAC, beige, 4-dr. sedan, all power, factory air, \$845; pinball machine, \$75. Chandler, AX 8-1976.  
2-BDR partially furnished, electric stove, refrigerator, walled backyard, landscaped, low down, assume loan, NE Heights. Kimball, AX 9-2015.  
KODAK MODEL B, 500 watt, slide projector and screen, new never used, \$87.50 value for \$57.50. Heckler, AL 6-7192.  
BABY BED, \$6. Langenhorst, AX 8-3595.  
HAMS, look at your I.F. band pass with a panoramic adaptor/oscilloscope, new, \$40 or trade. Stephenson, AX 9-3914.

**FOR RENT**  
FURNISHED APTS, one-bdr, elderly tenants preferred, \$45-\$55 per month, 206-208 Mesclero NW, Beaderstead, AX 8-4590.  
DUPLX APT, garbage and water paid, \$55/mo. 417 1/2 Rhode Island, SE. Saavedra, 268-6945.  
ONE ROOM with or without home privileges for young man, 2 blocks from Nob-Hill shopping center. Lamberson, AL 6-6414 after 6 p.m.  
ROOM in nice home for middle-aged woman, carpeted, with private bath. NE heights. Yurcic, AX 9-9389.  
2-BDR DUPLEX with stove and refrigerator, washer rough-in, water paid, \$65/mo., 401 Grove St. Milligan, CH 2-2959.  
1-BDR house, living, dining, kitchen, bath, \$55, near town, water, garbage paid. Balfour, AL 6-3424.  
**WANTED**  
CAR POOL DRIVERS from vicinity San Pedro and Candelaria to vicinity bldg. 802. Shepherd, DI 6-2059.  
36 COPIES of "What Everyone Should Know About the Constitution of America" for small Alabama school. Groll, AL 5-9638.  
STEEL sidewalk forms, want to rent for extended period. Baxter, DI 4-7601.  
RIDE from 1200 Wilmore SE to vicinity bldg. 802. Davis, 243-2315.  
LARGE TANK, heater, water heater, all for butane gas. Chavez, AL 5-5461.  
FIVE RIDERS from vicinity Menaul-Eubank NE (Snow Heights No. 2) to gate 7. Puder, AX 9-2978.  
CAR POOL MEMBERS, vicinity 2800-2900 Dakota NE to bldg. 802. Richardson, AM 8-0519.  
TO TRADE collection of old coins for Springfield .30-06 musket or Mauser 8 mm musket, or old knives. Smitha, AX 9-1096.  
RIDE OR JOIN car pool originating near 1517 Tomasita NE, going to bldg. 800 parking lot. Yunker, 299-5389.  
RIDE from vicinity of 4828 Southern SE to bldg. 802. Dadian, AM 8-9383.  
USED SET ABC Speedwriting shorthand books. Tilley, 298-3481.  
GRAFLEX 4x5 in good condition. Belden, AX 9-3867.  
USED CAR, year 1952-1954, must be reasonably priced. Johnson, AX 9-8894.  
CABINET FOR 15" Coax speaker; photo enlarger 2 1/2x2 1/2 or larger. Jackson, AL 6-0318 evenings.  
USED SET of Encyclopedia Britannica, Americana, or Compton's. Abrams, DI 4-8252.  
SWING SET with glider and slide. Sullivan, AX 9-1348.  
MACHINIST tool box or roll-away cabinet. Burrell, DI 5-0416.  
CHILD CARE in my home, 920 Kentucky SE. Morris, AL 6-0152.

## Preventive Medicine Helps Maintain Healthy Heart

by Stuart B. Over, M.D.

February has been designated "Heart Month" and the American Heart Association is conducting a national drive for funds. While the Heart Association receives money from the Sandia Laboratory Employees' Contribution Plan, it is deserving of each employee's individual moral support as well. In addition to the satisfaction of contributing to a well-run charitable organization, any one of us could have a sudden unexpected personal need for the vital research conducted by the Association.

The heart observes no special month for its work. It is on a 24-hour-a-day schedule month in and month out. In addition, each period of stress experienced, whether physical or emotional, calls upon the heart for extra exertion. Any illness, injury, or surgery we are subjected to has a definite effect on the function of the heart. This may take the form of a direct damage to the circulatory system or some indirect consequence of systemic disease. In either event the heart is summoned to increased efforts.

### Heart Association

The American Heart Association is as interested in preventive medicine as it is in the treatment of actual disease, and has formulated advice for maintaining a healthy heart. The principal methods advocated are first, dietary

measures; avoiding obesity (which greatly increases one's likelihood of having heart trouble); eating an adequate, well-balanced diet; and shunning excess fats. Second, a program of proper daily exercise arranged to take into consideration the health and physical condition of the individual, and refraining from over-exertion. Third, preventive medical care; regular periodic examinations, electrocardiograms, X-rays, and other medical tests as advised by the family physician or specialist.

Modern medical science has greatly increased the chances for a victim of heart disease to survive and return to useful active life. One of the most drastic and feared heart diseases is the coronary occlusion or the traditional "heart attack." Today, thanks to research, improved diagnosis and care, the great majority of these patients survive, and most of them are able to return to work.

### Hypertension

Hypertension or "high blood pressure" is another condition that has responded to drugs and treatment resulting from modern research. Medication combined with proper rest and other measures keeps hypertensive patients active and comfortable long past the age they could have expected to live just a few years ago. Finally, anyone who reads newspapers or magazines or watches television knows of the dramatic advances that have been made in cardiac surgery.

In cooperation with the work of the American Heart Association, the medical department here at Sandia Corporation is doing all it can to further the prevention and treatment of heart diseases. Each prospective employee is given a thorough physical examination including an electrocardiogram if indicated. If evidence of heart disease is found, the applicant is so advised and proper restrictions are written to protect him from further damage.

### Examinations

Periodic examinations are offered all supervisors as well as other employees with five years of service who have attained the age of 40. These examinations include a detailed history, laboratory work (blood count, urine analysis, cholesterol determination), chest X-ray, and electrocardiogram. The employee is advised of the results of the examination and referred to his family physician if indicated.

Finally, when an employee returns to work following any illness, and especially a cardiac illness, the medical department examines him, reviews his personal physician's diagnosis and recommendations (through the physician's certificate), and releases him for work with restrictions as necessary. Follow-up visits are made, and the employee is supervised medically until he has made a complete recovery.

In summary, the prevention and treatment of heart disease requires close cooperation among the employee himself, his personal physician, the medical department, and his supervisor. With these principles in mind we at Sandia Corporation can feel that we are supporting the American Heart Association in deed as well as in financial aid.



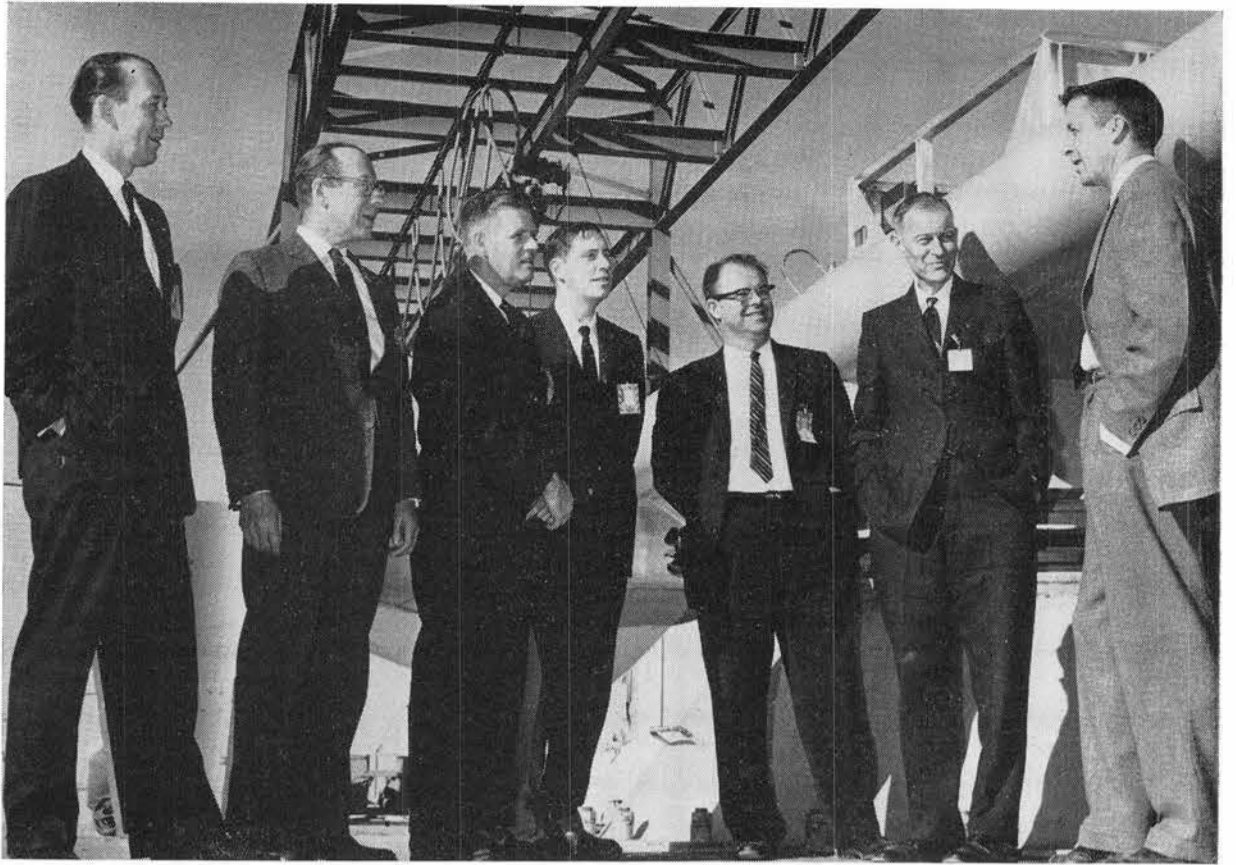
Mr. Malone

### R. R. Malone Named New Branch Chief of Administration ALO

Richard R. Malone has been promoted to the position of Chief, Administrative Branch, in the Atomic Energy Commission's Sandia Area Office.

Mr. Malone has been employed with the AEC in the Area Office since June 1952. He has held progressively more responsible positions and has been the Area Office Procurement and Contracts Specialist since July 1960. Prior to that he was Financial Management Analyst and Chief, Budget and Accounting Section.

A native of Enid, Okla., Mr. Malone is a World War II veteran of U. S. Army Service. He attended the University of New Mexico. Prior to joining the Commission, he was with the Bureau of Revenue, New Mexico, and the War Claims Commission, Washington, D. C.



MEETING AT SANDIA LABORATORY recently were members of the Subcommittee on Protective Structures, National Academy of Sciences Advisory Committee on Civil Defense. Shown during a tour of Area III are (l to r) Luke J. Vortman (5112); Merit P. White, University of Massachusetts; James

O. Buchanan, Office of Emergency Planning; Lyndon Welch, Eberle M. Smith Associates, Inc., Detroit; George A. Young, Structures Division, AFSSWC; Richard Park, Technical Director, Advisory Committee on Civil Defense, National Academy of Sciences; and Paul A. Adams (7323), guide.

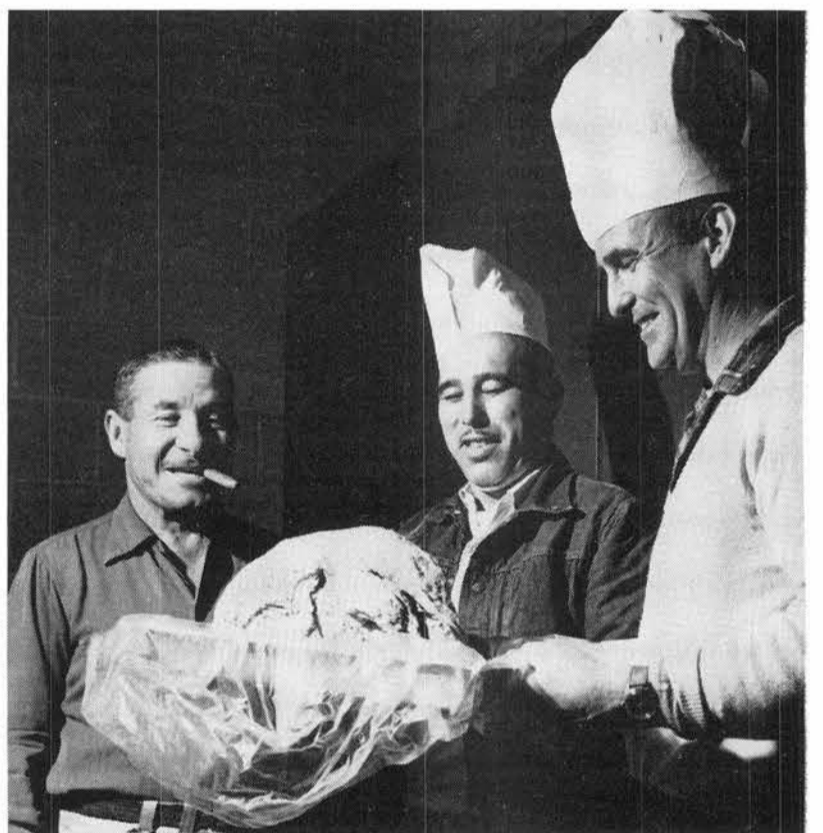
### All-Star Basketball Players Selected to Enter Tournament

Sandia Laboratory All-Star basketball players were selected last week by a committee of managers and coaches of the Lab Basketball League. The annual tournament between teams of Sandia Laboratory, Sandia Base, Manzano Base, and Kirtland Air Force Base will be played Feb. 20-23.

Named to the All-Star team were Jerry Lockner (7223), John Brane (4413), Leo Chavez (3444), Ken Flynn (7164), Bob Hedges (7122), Jim Hudson (5151), Phil Loeper (4412), John Smatana (1111), Dale McLaughlin (5133), Lew Sanders (5151).

Bob Martin (1431), Don Dekker (2531), Bill Peila (2531), Gary Connell (7132), Paul Walkup (4411), Gene Lisotto (4412), Jay Horstman (1321), Keith Christian (1323), Bob Gardner (3446), Jack Thompson (AEC), and Bill Drozdick (4411).

Head Coach for the All-Star team is Don Smith (1124). Assistants are Len Kracko (2412) and Jim Freese (5153).



BAKED TURKEY being served here by Elias Gabaldon, center, and Bill Sedillo is actually a tree root found by the men during a job in Area III. Victor Padilla is the skeptical gentleman with the cigar who turned down the treat because he insisted on stuffing and gravy. All work in Labor Support Section 4575-2.



MEMBERS of the Franklin Junior High School Science Club of Grants, N. Mex., toured Sandia Corporation's Sphere of Science, Van de Graaff facility, and chemistry facilities on Jan. 26. Their

tour included a talk by F. P. Hudson (5150), Manager of Sandia's Physical Sciences Research Department, and a viewing of the film, "The Sandia Story." Twenty-seven persons made tour.

## Sandia's Safety Record

**Sandia  
Laboratory  
HAS WORKED  
280,000 MAN HOURS  
OR 8 DAYS  
WITHOUT A  
DISABLING INJURY**

**Livermore  
Laboratory  
HAS WORKED  
450,000 MAN HOURS  
OR 83 DAYS  
WITHOUT A  
DISABLING INJURY**