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

Since last June, when the Sandia Pulsed Reactor Facility (SPRF) "went critical," more than 400 intense bursts of fast neutrons 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 35 items have been crowded into the "igloo" (the dome-shaped concrete building housing the pulsed reactor) for simultaneous (simultaneous) irradiation.

Las Alamos Scientific Laboratory previously made available to Defense Atomic Support Agency (DASA) and Air Force Special Weapons Office (AFSWO) irradiations to Godiva II, reactor for use for commercial companies.

The SPRF burst can be varied from a low level of about 1x10^14 to 5x10^15 fissions. "Almost everyone feels the more intensity the better," Mr. O'Brien adds. The burst time of the reactor achieves a peak of about 300 megawatts; the pulse width at the half-power point is approximately 45 microseconds.

After the burst, the critical assembly is hydraulically lowered into a lead-covered pit. A health physicist keeps the operational safety measure, the health survey. He has responsibility for determining when others may re-enter the igloo to make radiation surveys. He has responsibility for determining when others may re-enter the igloo to make radiation surveys.

Sandia Cooperation Sandia Corporation also provides for the safety of any non-Sandia users—in fact, the technical feasibility of the proposed experiment and safety factors are discussed before permission to use the SPRF is granted. After a contract is executed with the using agency, Mr. Harting notifies technical support areas, plant security, health physicists, 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 these 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 Groce (621-3) used SPRF in conducting both static and dynamic tests on semiconductors. Ascher Khadis (514-3) has been making a study of the manner in which the damage produced by a gamma ray may be related to the light output from a scintillation crystal.

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 Operations, since April 1958, was appointed to a newly-created post of Deputy Assistant Manager for Administration in the Office of Administration. Frank D. Peet was appointed to the other post of Deputy Assistant Manager for Administration in May 1960.

Ralph P. Johnson is Assistant Manager for Administration in ALO.

W. Lee Hancock is Assistant Manager for Storage Operations and Security since October 1959, was appointed to succeed Mr. Campbell as Manager of the Sandia Area Operations 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 atom bomb program. 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 Texas Water Utilities. He operated his own business in Denver, Colo., from 1948 to 1952, when he was employed by the ABC. After seven years in Washington, D.C., he came to Albuquerque in 1966 as Director of Security. He held that position until 1969, when he was named Assistant Manager for Storage Operations and Security.

A. D. Thornbrough Telling Story of Gnome Experiments

A. D. Thornbrough (7261-1), project leader of Sandia Corporation's part of the recent Project Gnome experiment held near Curridah, N. M., has delivered talks to a number of groups on the experiment. He has spoken to the Holy Family School's Boy Scout Troop 132, to the Toastmasters Club, the Sandia Cooperatives Club, and the Sandia Kiwanis Club.

The speeches included comment on his talking trip to the Gnome experiment; events and phenomena associated with the shot, results of the power profile tests and tests of the shot, results of the power profile tests and tests of the shot, results of the power profile tests and tests of the shot, results of the power profile tests and tests of the shot, results of the power profile tests and tests of the shot.

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

Frank P. Hudson, manager of Sandia's Physical Sciences Research Department (SPRF), will participate in a colloquium titled "Science, Religion, and Man" on February 19, sponsored by the Inter-Religious Council of the University of New Mexico, Feb. 18-19. Mr. Hudson will also participate in a panel discussion of "The Thermo-Nuclear Threat" during the colloquium.

The first panel 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 Theatre. The panel discussion on "The Thermo-Nuclear Threat" will begin at 10 a.m. and be followed at 2 p.m. by a panel entitled "Science and the Future of Religion." The colloquium will conclude Thursday evening, Feb. 20, with a speech entitled "Science and the Future of Religion" by Dr. James H. Jaquins, president of the First Christian Church, El Paso, Tex.
Editorial Comment
Brotherhood Week

"Underlying the fundamental problems of our time is the fateful fact that science and technology have now given the few the power 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 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 they are problems that 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 are useless if they end with the week. Forces of bigotry and hatred will go on working in the future, unless and until they are stopped. The lessons being taught will be meaningful only if they are repeated day by day until they no longer divide the people of this country.

L. L. Moorhead

Died February 3

Laurence L. Moorhead, a Bandia Corporation employee since November 1944, died in a local hos-

pital Feb. 3 after a short illness. He was 58.

Mr. Moorhead was employed in Component Evaluation Division 7394. He had resided in Albuquerque 25 years at 1424 Stanford Dr. SE.

He is survived by his wife Eliza-
hett, and daughter, Wilma, both of Albuquerque. He has a brother in Pittsburgh, Pa., and a sister in Winningly, Pa.

Amadeo Aragon, Sr.

Died January 29

Amadeo Aragon, Sr., a retired Sandwich Laboratory employee since Jan. 29. He was T.I.

Mr. Aragon was employed in Division 6574 for three years. He retired from the Corporation in 1958.

He is survived by his wife, four daughters, four broth-
ers, and 18 grandchildren. A son, Amadeo, Jr., employed in 497b, and his daughter, Ronnie A. Galeana, works in 2444.

L. H. Malkowski

Died February 8

Leonard H. Malkowski, a Bandia employee since March 1, 1945, died Feb. 8 in Albuquerque. He was 60 years old. He was employed in Printed Circuitry Section 4233-3.

Mr. Malkowski is survived by his wife, f.i.e. Caroline, a 6½-year-old daughter, Ellen. They reside at 2719 Sansepolcro NE.

Virginia B. Chavez

Died Last Week

Virginia B. Chavez, a Corpora-
tion employee since November 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 sons, 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 Ad-

ministration Division 4382, plays Priscilla Black, the dull but lovely wife of millionaire Sidney Black. Metz directed the recent Little Theatre production of "Ro-

mino".

Gaynor Atkinson has the role of Tyler Rayburn, stockbroker and husband of actress Irene Livingston, played by Shannon Scott. Scott is the wife of Field En-

gineering Division 2331 in his first film. She is also employed in "Roman Candle.

Jack Anderson has the part of the knowing and well-established playwright, Owen Turner. Jack is a recent graduate of Sandia's Operations Division 3403.

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 Wel-

ley works as an illustrator in Technical Art Division 4693. 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 min-

ister for some time. Regular serv-

ices 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 doubt about my ability, I decided to try."

"To me it was a matter of need. Here was a fine old church build-

ing and the congregation once numbered somewhere around 40 members. With regular services, the members might become inter-

ested again. I determined to do what I can."

"I believe everyone has a capac-

ity to serve," John says. "This might be developed by a number of activities such as civic organi-

zations or local politics. I 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 de-

scribe or measure."

After a few months, John's

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Disabling Injuries
Mar Safety Record
During Past Weeks

Two disabling injuries in recent weeks ended Sandia Laboratory's safety record. This brings the total to 12 since the injury rate declined more than 50% in two years. The two recent 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 288,000 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 forearm 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 at Physical Society

Technical papers written by several Sandians will be presented at the 1962 annual meeting of the American Physical Society in Austin, Tex., Feb. 23-24. R. A. Graham (5133) will present his paper, "Alpha Quanta by Liquid Scintillation in Copper." Ed. D. Strome (3463), R. K. Sturges (3463), and C. C. Kinnear (5463) will present a paper co-authored by W. B. Jones, E. Jones, and F. W. McNabney, fire marshal.

Chamber Elects Rowe

J. L. Rowe (6230), newly elected to the board of directors of the Livermore Chamber of Commerce, will be installed at the Chamber's annual meeting March 14 at Castilewood 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.

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Economic Growth: Theme for National Engineers' Week

An Open House at the University of New Mexico will be the centerpiece of the NM Section of Engineers' Week activities, with a special emphasis on economic growth.

"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 been a driving force, 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.""

He has also prepared an address entitled "The Impact of Technology Upon Man." He will call attention to the role of engineers in helping to meet the nation's need for economic growth through professional engineering.

"It is the duty of the professional engineer to keep his engineers informed as to what is going on, how to do things better, and what the goals are," Mr. Young says. He will ask for suggestions on whose specific problems should concern engineers and what they can do to help.

Jack Barber (1322) is helping with an Engineers' Week Speakers Bureau. Any group or organization wishing to use one may contact him at 209-4837.

SANDIA LABORATORY Fire Prevention Scrapbook

"The Fire Prevention Scrapbook" is a compilation of the following:

1. Fire prevention activities for the period January 1st to October 1st, 1961.
2. Fire prevention activities for the period November 1st to December 31st, 1961.
3. A history of fire prevention activities at Sandia Laboratory.
4. A list of fire prevention activities at Sandia Laboratory for the year 1962.
5. A list of fire prevention activities at Sandia Laboratory for the year 1963.
6. A list of fire prevention activities at Sandia Laboratory for the year 1964.
7. A list of fire prevention activities at Sandia Laboratory for the year 1965.
8. A list of fire prevention activities at Sandia Laboratory for the year 1966.
9. A list of fire prevention activities at Sandia Laboratory for the year 1967.
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37. A list of fire prevention activities at Sandia Laboratory for the year 1995.
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43. A list of fire prevention activities at Sandia Laboratory for the year 2001.
44. A list of fire prevention activities at Sandia Laboratory for the year 2002.
45. A list of fire prevention activities at Sandia Laboratory for the year 2003.
46. A list of fire prevention activities at Sandia Laboratory for the year 2004.
47. A list of fire prevention activities at Sandia Laboratory for the year 2005.
48. A list of fire prevention activities at Sandia Laboratory for the year 2006.
49. A list of fire prevention activities at Sandia Laboratory for the year 2007.
50. A list of fire prevention activities at Sandia Laboratory for the year 2008.
51. A list of fire prevention activities at Sandia Laboratory for the year 2009.
52. A list of fire prevention activities at Sandia Laboratory for the year 2010.
**First Great Decisions Discussion**

**— Vietnam — Proves to Be Timely**

On the heels of the first week of Great Decisions discussions last week, the program now is urging interested military support with supplies, equipment, and advisory services to South Vietnamese pro-

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

"Red China — Third Greatest Power," the Great Decisions discussion for next 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 Deci-
ditions fast sheets are still available to Sandia Lab employees at the Technical Library. Bldg. 804. Noon-hour discussion groups in the office areas of Sandia Labor-
atory are still possible."

Accompanying the Great Decisions program is a series of free lectures each week by prominent Albuquerque speakers on subjects that are making headlines every day. Discussions and lectures are free to the public. There is no charge for the materials. Mature discussions are planned on following subjects:

- July 20: "Brazil — Which Way Half a Continent?"
- July 27: "South Vietnam — Proves to Be Timely"
- August 3: "China — Third Greatest Power"
- August 10: "Red China and the U.S."
- August 17: "World War II and Our Involvement"
- August 24: "The Future of the Western Hemisphere"
- September 7: "The U.S. and the Future of the Western Hemisphere"
- September 14: "The Future of the Middle East"
- September 21: "The Future of the Far East"
- September 28: "The Future of the Near East"
- October 5: "The Future of the Western Hemisphere"
- October 12: "The Future of the Middle East"
- October 19: "The Future of the Far East"
- October 26: "The Future of the Near East"
- November 2: "The Future of the Western Hemisphere"
- November 9: "The Future of the Middle East"
- November 16: "The Future of the Far East"
- November 23: "The Future of the Near East"
- December 7: "The Future of the Western Hemisphere"
- December 14: "The Future of the Middle East"
- December 21: "The Future of the Far East"
- December 28: "The Future of the Near East"

The Great Decisions program is administered by the Western Regional Council of the A. Phi C. A. and is sponsored by the Western Regional Council of the A. Phi C. A. and the Sandia Laboratory. The program is open to all who are interested in world affairs and is conducted in the spirit of free, open discussion.

**Boy Scouts Need Men As Volunteer Leaders**

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

From the position of Den Mother (the Scout's need women), too) to member of the board of directors of the BSA, the Boy Scouts are open to all interested men.

Medal recipients have long generously contributed their efforts to the Scouting program. However, according to H. Frank Bowers, District Executive, there are many boys who need leaders.

Albuquerque Community Awards, Inc., sponsors the Scouting program in the Albuquerque area. The Auxiliary will be interested in recruiting new leaders for the Boy Scouts.

**BEAUTIFULLY RESTORED Piper**

Coupé J4 Months of spare-time hours completely rebuilding the work of G. E. "Bill" Guernsey who spent 18 months of intensive work later became the beautiful Piper Coupé J4 in accompanying photo. Bill Guernsey (3432-1) is the owner-builder.

**Pile of Junk Carefully Built into Plane — Trim, Safe, Beauty**

"I'll never fly again," said Bill Guernsey of Albuquerque. "With a plane like this, I can fly again."

Bill Guernsey, a carpenter by trade, has been building an airplane for the past two years. The airplane is a 1941 Aeronca J4, which was once a pile of junk. Bill Guernsey (4252-1) bought the plane for $10 at a garage sale and spent the past two years rebuilding it.

Bill Guernsey said, "I wanted to build an airplane, but I didn't have much money. I decided to build one from a kit."

Bill Guernsey said he never had flown before, but he was able to learn to fly after spending the past two years rebuilding the plane.

Bill Guernsey said he plans to fly the plane in a race next month.

**Service Awards**

**15 Year Awards**

**Douglas A. Cochran**

Feb. 1, 1941

**Service Awards**

**10 Year Pins**

**Jerry Gerlach**

Feb. 15, 1941

**Bill Barrett**

Feb. 15, 1941

**William A. Linn**

Feb. 15, 1941

**Richard R. D. Skaloud**

Feb. 15, 1941

**Carl W. Jakten**

Feb. 15, 1941

**James R. Hurst**

Feb. 15, 1941

**Robert J. Tevlin**

Feb. 15, 1941

**CURRENT PROJECT in Bill Guernsey's garage workshop is the total renovation of a 1941 Aeronca Coupe J4.**
In 35 years of marriage," Al Banks (3232-2) was saying, "we have lived in 32 houses. This is number 39.

Number 33 is a completely renovated, remodeled, and revitalized old adobe barn on Main Street in Bernalillo. As far as I can tell, it is one of 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), Belle of the Ball, commented recently. "We received the results of a detonation in a new medium. The area in which the Gnome shot took place has been used by many workers from the Savannah (SPRF) Test Site."

Barn Renovation

Mr. Russell (5314) is using his Barn-Construction Corporation's activities at the site have been completed, and the future of the area is now being made. Meanwhile, work by Lawrence Radiation Laboratory continues on the site.

Upward Ground Shot

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

Isotope filters, gas samples, and equipment that have been shot are analyzed. Scientists have obtained valuable information from two neutron wheels used in an experiment to study the spectra of fast neutrons resulting from the reaction.

On the site, some 300 x 250 ft. of two distinct holes penetrated the top of a cavity 10 ft. deep. These holes were set at the same point. The cavity ceiling is believed to be about 1800 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 55 ft. deep was created below the rim of the depression. This area contains salt and the roof line has been filled with all these materials. Temperatures in the cavity are estimated to be about 400 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 Semi-Recovery Phase of the Gnome Project is under way at Lawrence Radiation Laboratory. Beam pressures, created by pumping water into the evacuated shot cavern, were too low for the planned heat-recovery program. Measurements showed that pressure pumped into the cavity leached into the tunnel, probably through the same path followed by vapor which seeped from the cavity immediately after the detonation.

Preparations are being made to re-enter into the detonation cavity by mining into within 300 ft. of ground zero and drilling from that point. This procedure will enable veterinarians to establish in detail the physical and chemical effects of the detonation on the earth. 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 4012-S, plans to retire. He has been with Sandia Laboratory since October 1920 and is looking forward to his retirement. But not so far into the future of history of the project which is due to Mr. Russell, as for many other retiring Sandians, it promises to be a very active and interesting time.

"Since November 1960, I've been teaching a course in mechanical drafting to a group of 19 students," Mr. Russell commented recently, "and the teaching has proved fascinating. Now, P. 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 course offers complete coverage of mechanical and architectural drafting. The course, to be given seven times during the regular semester, will require some 280 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 9:00 a.m. on Feb. 21 at 7 a.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.

Books Home No. 33 is Delightfully Renovated Barn

Mr. Russell commented recently, "We have worked with the children's school and the area has been held together by the parents. We feel that the children are learning a lot during their changing schoolings 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 reports of other "old houses" 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 cannon were positioned. Oldtimers 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 adding an addition between the two for a large bathroom and hall. The winery has a basement about 22 x 35 ft., the latter to be the site 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 home is new to me and the place we want is here. There will be plenty of room for our friends to come and visit and enough work for a lifetime."
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 jokingly remarked. "At Sandia Laboratorie's forecasting service, we make every effort to predict the weather accurately.

The forecasting service, part of Engineering and Meteorology Section 7423.1, 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 Tresiseh Test Range and we're often called upon for information on conditions at Coyote Canyon, Holloman AFB, Livermore, and sometimes as far away as Dalco Bay, Wash., and Cape Canaveral, Fla."

Sandia's security features 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 Laboratories.

Assorted Information

Reports and information come from individuals performing tests or experiments throughout Sandia Laboratories. It is 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 in most often called for," E. P. "Bud" Geatzer commented. The book enables forecasters to answer many unusual questions about the weather. It contains such information as wind direction and temperature at 100-ft. levels. "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 relative treasure trove. But too many of our other tools are quite complex," Cliff Olson concluded. "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 monitors temperature, wind speed, and humidity information at 14-ft. and 100-ft. levels. "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 computer 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 teleprinters 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 anemometer, barometers, thermometers, direction indicators, and anemometers, the forecasting service provides the instruments on which measures lightning potential.

"Lightning is a severe hazard to those handling high explosives, and we feel that the information on atmospheric electrical potential will prove of vital importance to their safety," Bob Geatzer commented. "We also plan to apply an atmospheric potential monitoring system which 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, fast changing in its techniques," T. J. "Tim" Rafferty said. "We're constantly wanting 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 Brandz (7423-2). Network of seven towers provides weather information for the Albuquerque area.

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 the 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 Schools of Journalism.

Tickets are $8.50 per person. Ticket information can be had through Mrs. Gresel Richardson at AL 5-1416.

L. J. Paddock Speaks To Bay Area Sections

Institute Radio Engineers

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

Mr. Paddock will speak at a joint meeting of Bay Area sections of the Institute of Radio Engineers to be held at the Red Shaff Hoffher, 4065 El Camino Way. The talk will be given at 8 p.m., preceded by dinner at 6:30 p.m. Reservations for dinner may be made by calling Barbara Deiter (61256), ext. 2068.

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

Livermore Authors Propose Common Engineer Language

A language barrier existing today among engineers, manufacturing, and inspection groups throughout the industry is hindering an ever-mounting grasp heap of research and development. So says C. B. Wolowicz, C. P. Rindone, and H. J. Wilson (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 the authors, is not aimed at solving specific problems; rather, it suggests that an early use is one of an engineering study, "technological 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 detailed intent in drawings, manuals, etc., to engineering, manufacturing, and verification of Technical Services, Washington, D. C.

"Because there has been no effective 'language'; grammar or 'composition' — essential elements of any language — those groups — have been forced to proceed by so-called 'standard' practices. These too often are composed simply of the individual's experience, habit, and prejudice, modified by the traditional procedures of his particular company which he learned to overcome these problems, the writers offer a basis for a new field of study, that takes it for engineering and technical schools and individuals.

"But by engineers, — in engineering and technical schools — trained personnel would enter implicitly!" The book with the knowledge needed to interpret engineering drawings originated by other companies, even those which are hundreds, of miles away.

Published as Sandia Corporation Monograph No. 300, it is distributed to several schools, industries, and technical organizations at both Sandia and Livermore Laboratories.

"Most important, it is being made available to the general public through the Sandia Corporation Information Extension, Oak Ridge, Tenn., and the Office of Technical Services, Washington, D. C.

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

C. B. Wolowicz, supervisor of Drafting Division 8114, has served with Sandia Corporation for 12 years. He has been a drafter 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 1960.

He co-authored a publication on "True Positioning, 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 1957. He transferred to Livermore Laboratory in 1956 and was promoted to his present position in 1957. A draftsman for more than 20 years, he became interested in problems of dimensioning while working as a checker in the drafting organization at Redstone Arsenal, Huntsville, Ala.

R. T. Wilson started work at Sandia Corporation in 1953 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 1958. He was co-author, with Messrs. Wolowicz and Rindone, of a Technical Memorandum describing a new method of preparing indented-type flow charts on a magnetic board.

Before joining Sandia, he served as chief draftsman at Edlum Manufacturing Company, Albuquerque, N. M., and at Briner Rustproofing Company, both in Albuquerque and in El Paso, Tex. He also worked eight years a radiographic designer for Parker Pen Company in Janesville, Wis.
Scottish War Pipes Being Mastered by Strong-willed Students

Colorful in bright Buchanan tartan, military in appearance and bearing, belligerent in the shell of its bagpipes and roll of the drums, the Battalion Pipe Band sounded off with "Scotland the Brave."

Eight of the 20-member band are Sandy Laboratory employees. Mack Ralls (7526) is the pipe major.

"We organized about two-and-one-half years ago," Mack says. "Only George Miller (4412) and Bob Williams (4203) had any previous experience playing the pipes. The rest of us were rank beginners or novices at best—even the pipe major," Mack laughs.

Other Sandy piper circles in the band are Clyde Northrup (7283) and Bob Peet (7252).

The band rehearse once a week and plans for Spitfire ceremonies, concerts, and orations. They also perform at various charity bazaars.

"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 war and rear on family and neighbors, pipes practice on a "chamber" which gives a subdued oboe sound.

The complete bagpipe includes the large-throated chanter, bag and three drones. The pipe first fills the bag, which resists beneath its air, and then starts his tune. His fingers cover and uncover the pipe holes to chant the melody to play. In the meantime the drones sound constantly. There are ten drone boxes and drones.

When the piper runs out of breath (Scottish tune rarely have pauses and it takes a lot of air to blow the pipes), he continues the same high-pressure pumping on the bag with his arm. This will give him a short second to grasp 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 bag inflated and not lose air pressure in the bag is a difficult trick. And on parade, 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 Scots 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 our national instrument. Officially they're called "Scots pipes".

"It takes about seven years to become a good piper," Mack says. "You don't go through it. In the meantime, we have a lot of fun."

Next Date

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1. One line 10¢.
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For Sale

Furniture - Used

4014 BROADWAY, SOUTH SHORE

3-bdr, full bath, completely carpeted, $150. Call Ruth Fein, 1-6923.

2017 SHERIDAN SUITE, near downtown, 2 bdrm, 1 bath, $75. Call John Curry, 1-1767.

9637 N. ELLIS, 3 bdr, 2 bath, $110. Call Bill Polley, 1-6623.

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3620 S. WELLS, 2 bdrm, 1 bath, $100. Call Bill Polley, 1-6623.

2017 SHERIDAN SUITE, 2 bdrm, 1 bath, $75. Call John Curry, 1-1767.

1767 SHERIDAN SUITE, 1 bdrm, $50. Call Bill Polley, 1-6623.

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320 S. WELLS, 2 bdrm, 1 bath, $90. Call Bill Polley, 1-6623.

320 S. WELLS, 2 bdrm, 1 bath, $90. Call Bill Polley, 1-6623.

3620 S. WELLS, 2 bdrm, 1 bath, $100. Call Bill Polley, 1-6623.

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Preventive Medicine Helps Maintain Healthy Heart

by Stuart B. Over, M.D.
Manager, Clinical Medical Dept. of Sandia Laboratories. The following text 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 Laboratories Employees' Contribution Plan, it is devoting to each employee's individual moral support as well. In addition, participation in the contribution 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 efforts. 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 subjected to increased efforts.

The American Heart Association is interested in preventive medicine as a basis for the treatment of actual disease, and has formulated policies advocating 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 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 from hypertensive patients active and comfortable long past the age they had 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 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, chest x-ray, liver function test), 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, 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 to the best of our ability.

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 1953. 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 Stilwell, 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 employed by the Bureau of Reclamation, New Mexico, and the War Claims Commission, Washington, D. C.

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. 26-27.

Named to the All-Star team were Jerry Leachner (7223); John Crante (3413); Lee Chavez (3644); Bob Hedges (7122); Jim Hudson (4515); Phil Looper (4412); John Smatana (1111); Dale McLaughlin (3133); Lew Sanders (5151).

Bob Martin (4131); Don Dekker (3511); Bill Pella (3511); Gary Connell (1122); Paul Waluko (4411); Gene Licott (4412); Jay Hermsm (3321); Keith Christan (1322); Bob Gardner (3446); Jack Thompson (AXC), and Bill Drozd (4411).

Head Coach for the All-Star team is Don Smith (1244). Assistant are Lew Kraemer (4513) and Jim Proce (5158).

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

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) Lake J. Vortman (3222); Merit E. White, University of Massachusetts; James O. Buchanan, Office of Emergency Planning; Lyn- don Welch, Eberle M. Smith Associates, Inc., Detroit; George A. Young, Structures Division, AFSC; Richard Park, Technical Director, Advisory Committee on Civil Defense, National Academy of Sciences; and Paul A. Adams (2833), guide.

BAKED TURKEY being served here by Elisa Gahaldon, center, are actualy a tree root found by the men during a job in Area III. Victor Padilla is the skeptical gentleman with the unique bird who turned the treat down because he insisted on stuffing and gravy. All work in Labor Support Section 4575-2.