



Tribute to
James Wilson McRae
1910 - 1960

We of Sandia pay tribute to James Wilson McRae, President of the Corporation in the years 1953 to 1958. He came from Bell Laboratories with a distinguished record of achievement in communications technology, both as an original contributor and as an executive directing major programs of research and development. At Sandia he applied his broad talents wholeheartedly and with all his boundless energy to the building and strengthening of the Corporation. Under his leadership Sandia met fully the challenge of its increasing responsibilities in the nation's defense.

Jim's deep interest in education, civic affairs, and youth activities and his contributions in these fields are remembered gratefully by the Albuquerque community. But more than all, we who worked with him at Sandia will cherish the memory of his warm friendly manner, his infectious smile, and his capacity for human understanding. This spirit, which he engendered in the Sandia organization, remains as a lasting tribute to his name.

Adopted unanimously by the Board of Directors of Sandia Corporation
April 15, 1960

Russian Gadget Converting Heat Into Electricity Being Studied at Sandia

A unique Russian device is currently undergoing intensive study at Sandia Laboratory.

It's a little gadget that provides light, heat and enough electricity to run a vacuum tube radio by burning kerosene and converting the heat directly into electricity. There are no moving parts. It is this thermoelectric property that interests Sandia's Battery Development Division of the Electrochemical Development Department 1310.

Thermoelectricity is nothing new in technology. The phenomenon that heating one end of a circuit made of two different conductors produces a small current was first noticed in 1821.

Until the last few years few applications had been made using thermoelectric devices. With the advent of expanding technology in semiconductors, it now seems possible that it will be commercially feasible to generate electricity directly using the thermoelectric effect.

Some scientists are visualizing generating plants using solar energy as a heat source to con-

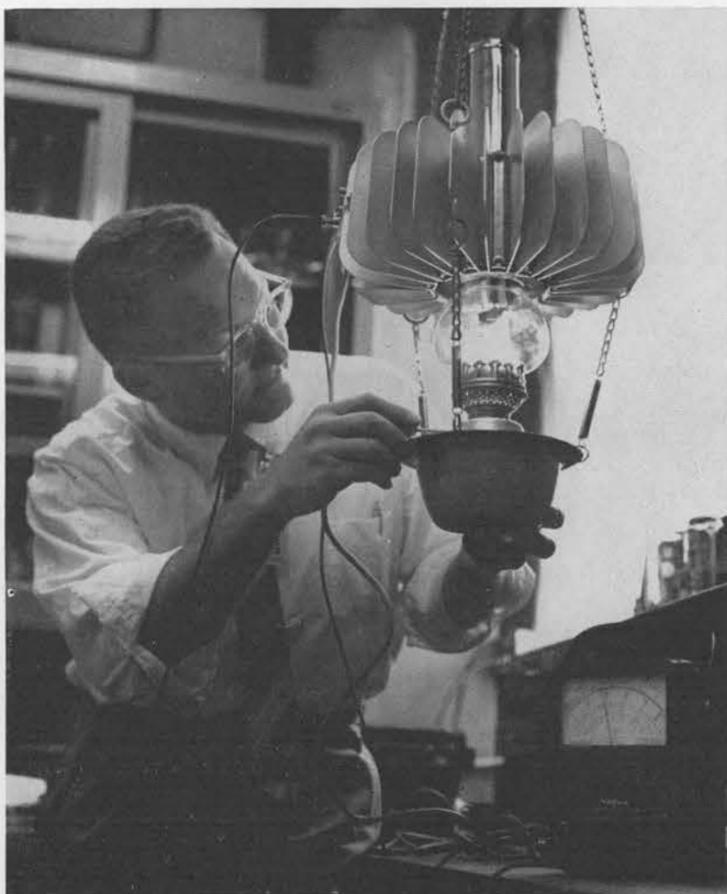
vert directly into electricity with thermoelectrics.

The little Russian gadget is currently being used in many remote regions of the USSR along with another similar device that rests on a wood burning stove and uses this heat to produce electricity. Thermoelectrics also produce a reverse effect. Electricity introduced into a thermoelectric circuit produces cold on one end of the circuit. Scientists throughout the world are investigating the possibilities of commercially producing household refrigerators utilizing this principle.

A U. S. company has several prototype models including one hostess cart that has both hot and cold storage.

Division 1311 procured the Russian device from a local source which ordered it from International Technical Developments Ltd., Colnbrook, England.

Sandia's interest is primarily in the thermoelectric materials used. Norman Rosenberg who is performing the evaluation for 1311 says, "We like to see what the competition is doing."



RUSSIAN THERMOELECTRIC DEVICE is shown here undergoing evaluation by Norman Rosenberg (1311). The small unit provides light, heat and enough electricity to power a radio receiver. It uses kerosene for fuel and contains no moving parts.

Sandia Corporation LAB NEWS

ALBUQUERQUE, N. MEX. • LIVERMORE, CALIF.

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SATELLITE TRACKING radar makes an imposing installation in Coyote Canyon area south of Sandia Laboratory. Personnel of Naval Ordnance Test Station, China Lake, Calif., set up and operated the station here for several days recently. Transit I-B was launched April 13 as a navigation aid experi-

ment of the U.S. Navy. The tracking station here was one of several set up to monitor the 265-pound sphere's path as it circled the earth and to record information transmitted by it. Beneath the radar screen are NOTS personnel Carroll Evans, physicist, and Al Cles, electronic technician, for the group.

AEC Seeks Bids For Modification Of Bldg. 880

Bids will be invited next week for modifications to Bldg. 880 to house a new vibration test facility for the quality evaluation laboratory of Quality Engineering Department 5520, the AEC has announced.

Two large and one small vibration tables will be installed. The facility will be administered by personnel of the Test Laboratory 1610.

Construction will primarily consist of soundproofing a 300 sq. ft. area and installation of a concrete block partitioning. It will include installation of the government furnished vibration system and an outdoor power center.

Work is to be completed within 75 days after the contractor receives notice to proceed.

Preliminary layout for the project was prepared by Plant Engineering Department 4540. D. R. Lorenzen is Plant Engineering project engineer. Plant Engineering coordinated preparation of the plans and specifications with the architect-engineering firm employed by the AEC.

New Sphere of Science Exhibits Will Be Shown on Armed Forces Day

Work is progressing at Sandia's "Sphere of Science" which will open with new exhibits and displays for Armed Forces Day May 21.

The geodesic dome, now located north of the Motor Pool area, was a popular attraction at New Mexico's State Fair last fall and drew more than 110,000 visitors.

Featured for Armed Forces Day will be Project Mercury space capsule. This is the unit now being tested to carry the first man into space.

Other new exhibits, located on an expanded mezzanine floor of the dome, will include a model of Sandia's new hypersonic wind tunnel, and three dimensional scenes of "Great Moments in Science and Engineering."

From the ceiling will hang a giant Foucault Pendulum, a device which gives visible proof of the rotation of the earth.

Sandia's participation in Armed Forces Day will be in cooperation with Sandia Base. The military will feature displays similar to last year — another simulated atomic explosion and military weaponry exhibits. Both Sandia Base and Sandia Corporation activities will be held in the afternoon following Kirtland Air Force Base activities during the morning hours.

Some 40,000 visitors are expected. The public is invited.

The "Sphere of Science" will be open from 11 a.m. to 5 p.m. Administration of the dome is a responsibility of the Public Relations Division 3431. Preparation of the exhibits and installation in the dome is being performed by Plant Maintenance Department 4510.

Sen. Anderson to Speak to Members Of IRE May 11

Senator Clinton P. Anderson, chairman of the joint committee on atomic energy, will discuss activities and programs for atomic energy at the annual meeting of the Albuquerque-Los Alamos Section of the Institute of Radio Engineers May 11.

Election of new officers and a social hour will follow the senator's talk.

Sandia Corporation employees and wives as well as other military and contractor personnel associated with atomic projects in Albuquerque are invited to attend the meeting, according to Robert C. Spence, IRE chairman.

The meeting will begin at 8 p.m. at the Coronado Club.

Editorial Comment

When It's Round-Up Time in Taxes

(Or What's Wrong With Being Economical?)

April 18, 1960, is now history, but a date well remembered. The saddle bags have a little less in them now that the W-2 forms have departed. Taxpayers (that's us) have parted with that annual stipend and sent the money off to the people who will spend it (that's us too).

This annual separation of the taxpayer from his taxes is a ripe moment to cast a critical eye on how our dollars are used in the interests of this nation.

All this is no news to Sandia employees. And it's no news that Sandia Corporation management is taking an even harder look at how the Corporation is spending its portion of this gigantic kitty which rests in Washington.

As the President of the Corporation has informed employees, increased cost of operation has caught up with our business and the dollar of today just won't yield the research and development mileage it did two years ago. Thus the continued careful look at the costs of operation. Thus the continued frequent appearance of the word "budget" in our discussions.

Just about the only way Sandia Corporation will have more money to spend without taking it away from some other agency is for Congress to revise the tax structure so that more cash enters the U. S. Treasury. The appealing features of this move are indeed infinitesimal.

The best solution for Sandia is the one being undertaken—making the available funds reach further. That's known as economy.

And what's wrong with being economical?

Mountain Hide-a-Way

Always had a desire for a mountain hide-a-way? Here's the answer. The U.S. Forest Service is leasing a number of lots near the Pecos River about a mile south of Cowles. These lots are about 3/4 acre and suitable for cabins.

Keith Weir (3111) reports that about half of the original 65 lots are still available. The land in this Grass Mountain summer home area is let under a 10 year lease at a cost of \$30 per year. Most lots are surrounded by two or three acres of timber or meadowland.

Further information may be obtained from the Ranger at Pecos, N. Mex. The land is about 100 miles from Albuquerque and the highway is paved except for the last 20 miles north of Pecos.

Welcome Back

Kelly, leader dog of Berenice Henry (3423), is back on the job after undergoing a recent tonsillectomy. He was confined in St. Francis Animal Shelter for several days last week.

Organization 3466-1 welcomes Dora Dyer back to work after a lengthy absence due to illness.



Angela Granger (4332)

Take a Memo, Please

Everyone should learn to recognize and avoid hazardous acts and conditions which might cause injury to himself or others.



GARNET CRYSTALS held by Murr Graham (8223-1) are among the many gemstones and minerals the Livermore Laboratory machinist will exhibit at 22nd annual show of East Bay Mineral Society, held May 14-15.

Murr Graham Gathers Specimens for Show At Oakland May 14-15

If you don't know a geode from a schist, you might ask Murr Graham, a machinist in the Model Shop and Inspection Division 8222 at Livermore Laboratory.

An amateur rock hound for the past 20 years, he has devoted serious study to the subject for the past three years at Oakland Technical Adult School where he is taking an evening course in Mineral Identification.

Murr and his wife have just returned from a trip to Death Valley, loaded down with samples of borate and copper minerals. They hope to find suitable samples in the batch to include in their exhibit at the forthcoming gem and mineral festival to be held in Oakland May 14 and 15.

The festival, which is free to the public, is the 22nd annual show sponsored by the East Bay Mineral Society, an organization devoted to the study of geological sciences.

Headquarters for the festival will be the Scottish Rite Temple, 1547 Oak St., Oakland. It will be open from 10 a.m. to 10 p.m. Saturday, May 14, and 10 a.m. to 6 p.m., Sunday, May 15. All Sandia employees are invited to attend.

Earns Art Awards

Robert L. Burgess (5213) made virtually a clean sweep in various categories during the recent city-wide art exhibit held at the State Fairground Gallery.

Bob took first in mosaics, first in jewelry, second prize for his non-objective oil painting "A Hint of a Hill" and honorable mention for a piece of sculpture.

Entries will remain on exhibit until May 10 daily from 2-5 p.m. except Monday.



MODERN AND GAY NINETIES songs will be featured at the annual Barbershop Follies May 7 at the Civic Auditorium. Sandians who will participate in the evening's entertainment include (l to r, front row) Betty Radwanski (3130), Evelyn McCoy (1431), and Ramona Grandstaff (4422), all members of the local chapter of Sweet Adelines, and (l to r, back row) Charlie Jackson (1217), Bob Harley (2534), Allen Robnett (1411) and Ray Arvidson (5521).

Sandia Barbershoppers Will Sing Of 'Good Old Days' at May 7 Follies

"The good old days" will be recalled briefly on May 7 when the local chapters of SPEBSQSA (barbershop quartets) and Sweet Adelines combine for an evening of gay 90's songs.

The annual spring Barbershop Follies will be held at the Civic Auditorium at 8 p.m. Several local quartets will be featured in the first half of the program.

Members of both groups will don costumes for a chorus production number, including "Heart of My Heart," "In the Good Old Summertime" and songs from the stage play, "The Music Man."

Special attractions will be two nationally-known groups, the Evans Quartet and the Redheads, both from Salt Lake City.

Sandians who are members of SPEBSQSA include Ray Arvidson

(5521), Stan Clayton (5257), Bill Clement (2544), Bob Harley (2534), Charles Jackson (1217), Horace Moore (2534), Allen Robnett (1411), Bob Vokes (3453) and Gil Wallace (2555).

Betty Radwanski (3130), Evelyn McCoy (1431) and Ramona Grandstaff (4422) will represent the Sweet Adelines on the program.

Tickets for the evening of entertainment may be purchased from members of the two chapters, from music stores or at the auditorium.

New Homes

Ron Puckett (8114-3) has moved into his new home at 1343 El Dorado, Livermore. Another new home owner there is David K. Dean (8141-2), whose address is 1413 Columbus Ave.

Barney Goncher (8231-1), who recently transferred from Albuquerque to Livermore, has moved into his new home at 1197 Dublin Ave.

Sympathy

To R. M. Betz (6010) for the death of his father recently in Columbia, Mo.

To Ralph J. Edaburn (4252-5) for the death of his mother-in-law April 15 in Iowa.

To Donald J. Bunten (4253-1) for the death of his father-in-law recently in Kansas.

To J. W. Pinkerton (2721-3) for the death of his mother April 10 in Elk City, Okla.

To Robert Weaver (8115-2) for the death of his mother March 31 in Washington.

To Joseph P. Darginis (8115-1) for the death of his father-in-law March 27 in Centralia, Ill.

To Martin Dieter (4423-2) for the death of his father March 27 in Brooklyn, N. Y.

Congratulations

Born to:

Mr. and Mrs. J. J. Michnovicz (3465) a daughter, Paula, on Apr. 11.

Mr. and Mrs. Leo C. Naumann (5261 Tonopah, Nev.) a daughter on Apr. 1.

Mr. and Mrs. Don Grab (1432-4) a daughter, Nancy, on Apr. 14.

Mr. and Mrs. R. J. Gevirtzman (5111-1) a daughter, Tracy Marcelle, on Apr. 12.

Mr. and Mrs. Adolfo Martinez (5251) a son, Ernest, on Mar. 28.

Mr. and Mrs. R. V. Tullar (5251) a son, Steven James, on Mar. 28.

Mr. and Mrs. S. D. Brooks (4573) a son on Apr. 14.

Mr. and Mrs. Denzil Rogers (2442) a son on Apr. 13.

Mr. and Mrs. Ben Bader (1283) a daughter, Beth, Apr. 21.

Mr. and Mrs. Joe Ward (8232-4) a son, Kevin Dale, on Mar. 15.

Mr. and Mrs. George R. Dunbar (8115-2) a daughter, Claire Lorraine, on Mar. 29.

Mr. and Mrs. H. G. Short (8123-1) a son, Daniel Grant, on Apr. 13.

Mr. and Mrs. G. W. Cosden (2713-1) a son on Apr. 20.

Secretary's Week Banquet MC'ed by R. E. Hepplewhite

One of the highlights of National Secretary's Week was the "Boss' Night" dinner which was held at the Western Skies this past Wednesday.

R. E. Hepplewhite (4210) served as master of ceremonies, and F. C. DiLuzio (AEC) was guest speaker for the event.

Sandia secretaries who attended with their bosses were Edith Blum (4200), Joanne Boyd (4250), Jo Hanna (2630), Elizabeth Rainey (4220) and Peg Taylor (1322).

Local observance of National Secretary's Week will end tomorrow when Albuquerque's "Secretary of the Year" will be honored at the Western Skies.

Hawaii Bound

Hawaii, jewel of the Pacific, is the vacation spot this week for a number of Sandians. While the wives are lolling on the beach and spending money in the shops, the husbands will be attending the Western Shriners Convention — and spending money.

Included in the convention-goers will be Mary (5513) and George Pasko (2641), Margaret (3362) and Howard Reese (4232), J. M. Ralls (5524), Ruth Kresge (4130) and her husband Terry, and Harry Pastorius (4540).



ARTIST BEN AIKEN (8114-5) puts the finishing touches on the latest security poster to be displayed at Livermore Laboratory. Ben, an illustrator for the past 30 years and a technical illustrator for the past year at Livermore, originated all of the security and safety posters in use at the Laboratory.

Engagement

The engagement of Merlene Medina and Ernie Dominguez of El Paso was announced recently. A late summer wedding is planned.

Merlene has worked for the Corporation three years and is in Division 4316.



THIS TELEPHONE is temporarily out of order until Mama Sparrow hatches the five eggs in the nest she built in a telephone hook-up box back of Bldg. 802.

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LUBRICATION and checking connections are necessary steps in yearly maintenance of evaporative coolers. Billie Rogers (left) and Charley Mills (both 4511) are readying this cooler for use on hot days.

Cool Comfort Comes Only With Planning, Work, Horsepower

Flip a switch and you have cool air; that's all there is to air conditioning according to many people. Any person working with air conditioning wishes it were that simple.

At Sandia Laboratory it takes more than 2300 hp to operate refrigeration equipment cooling larger buildings. Many of the smaller, temporary-type buildings are served by evaporative or "swamp" coolers—385 in all.

During the spring and fall, when daily there may be as much as 30-40 degree variation in air temperature, it is necessary to operate heating and cooling systems simultaneously.

"Maintenance of the units is a big problem and when warm weather arrives two weeks earlier than normal—such as this year—the telephones almost ring off the walls with employees wondering why their building isn't cool," so reports W. C. Elskes, supervisor of Electrical, Refrigeration and Air Conditioning Division 4511.

Two Months for Overhaul

It takes two months to give the systems their annual overhauls. It even takes three man-hours to put each evaporative cooler in operating condition (cleaning out a winter's accumulation of dust, lubricating, checking and connecting the water line, checking the pump and electrical connections and installing new pads). Mr. Elskes has 18 men available for these jobs, and in the summer 12 of them are needed to operate the larger systems.

Building 802 is cooled by a chilled water system. In passing through refrigerated coils, the water temperature is dropped to 41 degrees. Before being cooled, air from outdoors and from return

vents in the building is mixed. This air passes through a series of chambers where dirt is removed, cigarette smoke and other minute particles are taken out and air borne bacteria is destroyed by germicidal lamps. The super clean air finally passes through four banks of coils containing the chilled water before being sucked

into the main air vent by an 8 ft. fan at the rate of 70,000 cu. ft. per minute.

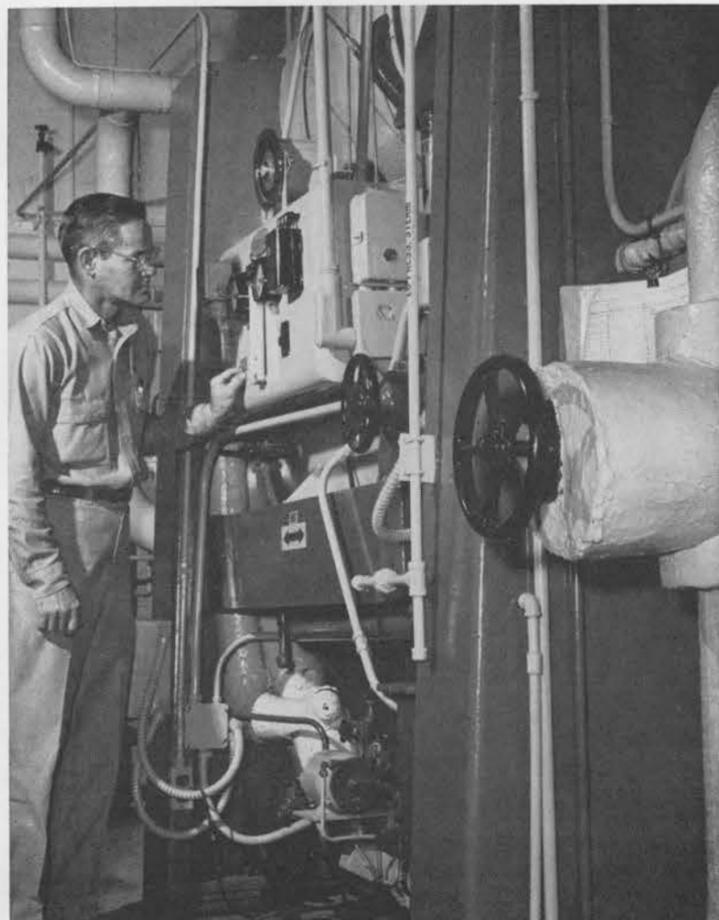
Similar "centrifuge" type systems, employing steam driven turbines, cool Bldgs. 840 and 892.

Unique Cooling System

Building 880 is unique in that it contains three different types of cooling systems. The main work



CONTROL BOARD for operation of steam turbine and chilled water refrigeration system, which cools Bldg. 802, requires close scrutiny by George W. McClure (4511). During summer months three shifts of men are required to keep system at top efficiency.



ABSORPTION REFRIGERATION unit for controlling humidity, temperature in IBM 705 area is checked by James Skidmore (4511).

area is cooled by a 480 ton evaporative system, which is considerably less expensive to operate than a refrigerated system and is satisfactory in a dry climate such as Albuquerque's.

The sensitive IBM 704 and 705 units located in this building require close control over both temperature and humidity. A refrigeration system, similar to that found in ordinary food refrigerators, cools the 704 area. The 705 area is cooled by an absorption type system which uses a solution of lithium bromide as a refrigerant.

Absorption type systems—the latest thing in air conditioning—are also installed in Bldgs. 836, 861, 865 and 894.

"A contractor installs the air conditioning systems initially, but it is up to my men to maintain them afterwards and handle any modifications," Mr. Elskes explained.

W. E. Kingsley Speaks To IRE Group on Nuclear Science

W. H. Kingsley (3361) will be guest speaker at a meeting of the IRE Professional Group on Nuclear Science on Tuesday, May 17, at 7:30 p.m. at the East Central Branch of the Albuquerque National Bank.

Mr. Kingsley's topic is "Radiation and Nuclear Fallout As It Affects Man." New PGNS officers will be elected and refreshments will be served.

For further information contact W. A. Scranton (1411-2), ext. 45138.

American Airlines Official Speaks to ASME Section

Annual meeting and installation of new officers for the New



Mexico Section of the American Society of Mechanical Engineers will be held Tuesday, May 10, at the Coronado Club. Speaker for the event will be William Littlewood, vice president of equipment research for American Airlines. Mr. Littlewood is internationally known as a leading engineer of the air transport industry. Among other aeronautical accomplishments, he has been recognized for basic contributions in the development of many widely-used American commercial air transports, including the Convair series, Douglas DC-3, DC-4, DC-6, DC-6B, DC-7 as well as in the specification and selection of the Lockheed Electra and Boeing 707.

Master of ceremonies will be E. K. Gardner (2541), retiring chairman of the section. New officers to be installed include Art Clark (1633), chairman; Don Williams (5131), vice chairman; Lowell Martin (ACF), treasurer; E. H. Copeland (1611), secretary, and Don Spatz (1285), director.

Reception begins at 6 p.m. with dinner following at 6:30. Some 200 persons are expected, according to Harold Maciolek (2533), ASME publicity chairman.

Cost is \$3 per person and reservations can be made by contacting W. C. Monday (1321), ext. 24244.

W.E.-Developed System Guides Weather Satellite

The Tiros I satellite, launched April 1 and now observing global weather conditions, was directed into a nearly circular orbit by a Command Guidance System produced by Western Electric at its North Carolina Works.

Pictures of cloud formations over many parts of the world are being taken by two television cameras in the National Aeronautics and Space Administration's satellite, stored briefly, then relayed to two ground stations. For comparative analysis, it is advantageous to make photographs from as nearly equal distances above earth as possible; in other words, a circular orbit is required.

NASA reports the satellite's near point to earth is 435.5 miles, and its far point, 468.28 miles. This is said to be an orbit closer to the ideal circle than any achieved by previous artificial satellites, American or Russian.

Command Guidance System

The Command Guidance System used for Tiros I is the same as that developed by Western Electric and Bell Telephone Laboratories for the Titan Intercontinental Ballistic Missile—successfully tested earlier this year and for Thor-Able re-entry test vehicles last year.

In the System, ground-based

radar continuously determines the position of the missile or satellite during powered flight. A computer on the ground accepts the data and issues appropriate orders to establish the proper flight path. The corrective orders then are transmitted by radio to the satellite.

Because the principal guidance control equipment is kept on the ground, it can be used over and over again for firing many ICBM's or launching many space vehicles. The expendable portion of the guidance system, the units placed in the missile itself, is kept to a minimum to promote reliability in

an environment that is far more rugged than that on the ground.

Among the advantages of the Command Guidance System is a reduction in cost and weight of air-borne equipment. Each pound of weight in the second stage and in the "payload" or satellite requires hundreds of pounds of fuel to launch it. A reduction in weight of the guidance system means additional instrumentation can be placed inside the satellite without requiring a greater amount of fuel for launching.

"Pinpoint Accuracy"

Capable of achieving what Bell Laboratories engineers describe as

"pinpoint accuracy," the guidance system is well suited for space experiments, such as Tiros, where very precise control is required to obtain the desired orbit.

The placing of the Tiros satellite in its circular orbit is the first use of the W. E. Command Guidance System in a NASA project. The three-stage Delta space vehicle, now under development for NASA, will also use the W. E. system. The Delta is planned for a series of satellite launchings, including Project Echo, which is intended to establish communications by signals reflected from a satellite.

Kudos to Working Mothers



A BEDTIME STORY engrosses the children of Chris Widger (8212-5), one of the many working mothers at Livermore Laboratory who combine family living with the rewards of working. With Chris are (top, l to r) Stephanie, Niki, and Larry, and (below, l to r) Tommy and Billie. "I don't think I'll ever get used to being away from my children every day," says Chris, "but I try to make the best of the time I am with them. I do enjoy my work, however, and that helps."

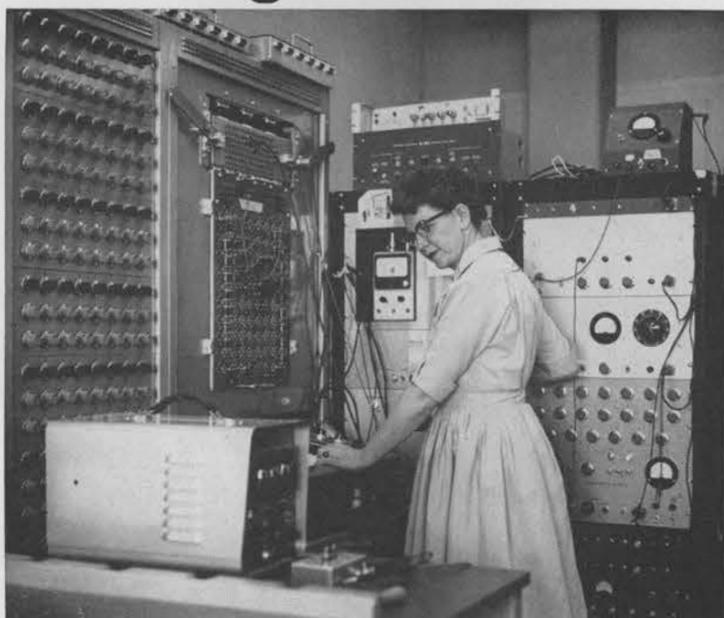
Forthcoming Mother's Day might be an appropriate time to praise the women who successfully play the combination role of career girl, homemaker and mother.

Some married women work outside their homes because they enjoy the business world, others have a profession or special skill needed by industry. The security or luxuries that a double pay check allows is important to others. Death or illness may cause still other wives and mothers to take on the breadwinner's role.

No matter what the reason, it takes a great deal of energy, patience and organization to keep husband, children and boss happy over the arrangement.

"If there were only more hours in a day" rates high among their wishes.

The Lab News presents here four mothers who are symbolic of the many mothers who are employed by Sandia Corporation.



"HARD WORK and running a taxi service for church, Brownie's, Job's Daughters and band practice activities" are Betty Brake's secrets for combining work and family. A widow for five years, Betty must support her four children, ranging in age from five to 15. As the only woman Staff Member in organization 1200, she uses a special Sandia designed thermalog to study aerodynamic and environmental effects on weapons in her work in Division 1283.



RESEARCH IN MOLECULAR structure of materials before and after irradiation is being carried out by Kathryn Lawson (5150). She obtained a PhD in physical chemistry at UNM before coming to work at Sandia Laboratory. At home her sons will celebrate their first and third birthdays on May 4. Her combined careers are made possible by "an understanding husband and a good baby sitter."



MOTHER'S PRIDE are these six children of Virginia Epps (8213-1). Drying dishes (l to r) are Jim, Rick, Mary, Kathy, Virginia, and Susie. Away from home Virginia works as a teller-financial clerk in Livermore's Accounting and Financial Division. "I really look forward to our family gatherings in the evening when I get home from work," she says. "It makes the whole day complete for me."

Welcome Newcomers

April 11-22	
Albuquerque	
Catherine Tinsmith	4132
*William F. Stamm	4541
California	
Liveo Olivotti, Fairfield	8143-1
Georgia	
C. Ray DeLong, Chamblee	1432
Maxwell F. Wilson, Smyrna	1626
Illinois	
Richard Corn, Jr., Arlington Heights	1285
Missouri	
James W. Langenhorst, Kansas City	1411
Pennsylvania	
John M. Gallagher, Philadelphia	2544
Texas	
Stanley S. Horn, Pampa	4112
Washington	
Miles H. Nelson, Vancouver	8142-1
* Denotes rehired	
Returned from Leave	
Cecil D. Crawley, Irvington, Calif.	8222-1

AEC Offers College Graduates Training with Nuclear Reactors

The Atomic Energy Commission is offering an 18-month training program in nuclear engineering for recent college graduates interested in career opportunities in the Commission's nuclear reactor programs.

Interested eligible college graduates can send applications, with a transcript of their academic work, to Judson Ford, Director, Organization and Personnel Division, U.S. Atomic Energy Commission, P.O. Box 5400, Albuquerque, N. M.

Appointments are open to recent graduates with B. S. degrees in nuclear, mechanical, chemical, or electrical engineering, or in metallurgy or physics, preferably with specialized training or experience in hydraulics, heat transfer, and power plant design and operation. A sound background in mathematics and physics is essential.

Successful candidates will be trained at an AEC Operations Office (two months), be enrolled for academic and laboratory instruction at the Oak Ridge, Tenn., National Laboratory or the Ar-

gonne National Laboratory near Chicago (nine months), and be assigned to Oak Ridge, Argonne or other AEC installations for on-the-job experience in reactor engineering (seven months).

The training program will be held on a continuing basis. The first successful candidates will be advised of their selection in May. Candidates must agree to remain in the employment of the AEC for at least two and one-half years after completing training.

R. M. Allan Represents Sandia at Operations Research Symposium

Sandia Corporation was represented by R. M. Allan (3451-1) at an Operations Research symposium for Western Electric and associated companies, held in New York City last month.

Plans were discussed for establishing a program to teach operational research approaches and techniques to Systems, Methods, Data Processing and other related personnel.

Judges Science Fair

Glenn A. Fowler, vice president, research, was one of the judges at the Tonopah (Nev.) high school science fair held last week in Tonopah.

Arrangements for his participation were made through A. P. Gruer, manager of Test Range Department 5260.

Travelers Win Livermore Lab Bowling Tourney

A 21-pin victory over the San Souci's won the championship for the Travelers in the Livermore Laboratory Thunderbird Bowling League. Playoff games were held at Livermore Lanes last week.

The San Souci's dropped to second place in the 14-game league. On the winning team were E. F. Ingledue (8161), Lee Hollingsworth (8120), R. C. Coates (8122-1), W. A. Little (8122), W. R. Guntrum (8153), H. D. Sorenson (8122-1), and V. J. Curran (8234-2).

Playing with the San Souci's were D. D. Hurley, L. S. Ostrander, Jr., Irv Troyke, R. L. Durham, M. J. Connors, and H. J. Henry (all of 8231), E. E. Smith (8152) and M. S. Taylor (8114-5).

The high game title was awarded to Phil Gallagher (8232-4) for his handicap score of 284. The high series trophy went to Walt Dzagan (8212) for his handicap score of 718.



BOWLING CHAMPS of Livermore Laboratory's Thunderbird League are the Travelers. They are (l to r) E. F. Ingledue (8161), Lee Hollingsworth (8120), R. C. Coates (8122-1), W. A. Little (8122), W. R. Guntrum (8153-1), H. D. Sorenson (8122), V. J. Curran (8234).

L. B. Smith Reads Paper in Washington

L. B. Smith (5111) presented a technical paper at a meeting of the American Meteorological Society in Washington, D. C. last week. Title of the paper was "Monthly Observations of Winds Between 150,000 and 300,000 Feet Over a One Year Period."

AEC Seeks Bid For Building to House Reactor

Bids to construct Sandia Corporation's pulse reactor facility were called for last week by the Atomic Energy Commission.

Construction will include a concrete hemisphere, 15 ft. in diameter and 20 ft. high; a block-masonry building, 32x100 ft.; and a prefabricated steel building, 16x31 ft. Surfaced road work, fencing and support construction are included.

Bids will be opened about May 16, the AEC announced.

The facility will be used to investigate the effects of short, high intensity pulses of neutrons on various materials. It will be located near the Sandia Engineering Reactor Facility now under construction in Area III.

Both reactors will be operated by Radiation Effects Department 1630 with facilities provided for programs of the Research 5100 organization.

Plant Engineering Department 4540 prepared preliminary layout and coordinated the preparation of plans and specifications with the architect-engineering firm employed by the AEC. Kruger, Lake and Henderson of Albuquerque was the architect-engineering firm.

Vernon E. Kerr (4543-3) is the Plant Engineering project engineer.

ISA Sets Seminar On Measurements At UNM May 13

The Albuquerque Section of the Instrument Society of America will hold its first series of seminars on measurements and related subjects Friday, May 13, at the UNM Student Union Bldg.

The seminar, arranged and scheduled by John Patrick (1614), will include an hour-long lecture followed by an hour of open discussion on each of the following topics: "Definition of Accuracy," "Temperature," "Pressure" and "Digital Data and Computers."

The session on "Temperature" will be divided into "Industrial Temperature Measurements" and "Airborne Temperature Measurements." Chairman for the latter presentation will be Loyt Lathrop (5213).

For further information contact John Patrick at ext. 37154 or James McCutchen (1322-1) at ext. 37167.

Mountain Club to Hike to Jemez

A mystery trip and a hike in the Jemez Mountains will be enjoyed by New Mexico Mountain Club members and guests during the next two weeks.

A visit to an out-of-the-way spot, offering new sights and some interesting hiking is promised for tomorrow.

Livermore Maintenance Gets Fast Word



CONSTANT COMPANION to George Mincks, supervisor of the Maintenance Division (8222), while on calls in Tech Area is tiny transceiver worn on pocket.



MAINTENANCE TROUBLE calls are transmitted to George Mincks by his secretary, Esther D. Rickert, who operates the transceiver in the office.



SPRING CERTAINLY does make a difference. These pictures, taken about a month apart, illustrate one of the wonders of nature



as bare, bleak trees are transformed into lush, green foliage. Rows of trees such as these have been planted throughout the Tech Area.

Practical and Attractive

Southwest Landscaping for 892



RAKES, SHOVELS, MACHINES and Manpower.—All are contributing toward making the front of Bldg. 892 a desert garden. With planting complete, next step was to spread the two sizes of gravel over chalk-defined areas to create an interesting pattern.

The exterior of Bldg. 892 has a new look, keeping right in style with the current trend toward southwestern landscaping.

Crooked pinon, pine trees, yucca, century plants, barrel cactus and huge red boulders have been placed in pleasing arrangements, and two sizes of gravel, 3/8 and 1 1/2 inches, form an interesting design weaving in and out of the various groupings.

"This type of landscaping is very attractive, and it's also practical because it requires little maintenance," says E. J. Whitmore, supervisor of Labor Support and Grounds Maintenance Division 4575.

"We obtained permission from the County Commission and the District Attorney to get our red rocks free from the county right-of-way in Tijeras Canyon," says Whit. "Only cost to us was labor to move them to the Base."

Forty-five new trees, secured without cost from Sandia Base nursery, have been planted throughout the Tech Area; many of them around Bldg. 836. In addition, rose bushes and shrubs have been planted to fill in bare spots around buildings.

All labor required for landscaping Bldg. 892 and planting trees and flowers has been done by employees in Division 4575.

H. W. Nunez Elected Head of Albuquerque Elks Organization

Howard W. Nunez (1613) was installed recently as Exalted Ruler of the Albuquerque Lodge No. 461 of the Benevolent and Protective Order of Elks. Last year he held the position of Leading Knight. He has been a member of the Elks since 1954.

After five years with the State Highway Department Materials Testing Laboratory, Howard joined Sandia Corporation in 1957, and has worked in the Test Laboratory 1610 organization since that time.

He holds a Bachelor's degree in civil engineering from Auburn University awarded in 1949 and a Master's degree in the same subject from Mississippi School of Mines awarded in 1952.

Sandia Employee Softball Play Starts Monday

League play for the Sandia Employees Softball Association begins Monday, May 2, at 6:45 p.m. R. B. Powell, vice president, personnel (3000), opens the season by throwing out the first ball.

Two leagues, American and National, have been organized with almost 200 employees participating. The American league has seven teams; National, eight.

First game will be played between 1200-II and 1600. At 8:15 2400 will battle with 2600. American league games will be played Monday through Thursday evenings on Diamond D. National league games will be played Tuesday through Thursday on Diamond C. Both diamonds are located southwest of the Sandia Base gym. In both leagues games will start at 6:45 and 8:15 p.m. each evening games are scheduled.

Spectator seating is provided at both diamonds.

Dinner Dance Honors Officers Of Sanado Club

Sanado Club will honor its new officers at a formal dinner-dance Saturday, May 7 at the Coronado Club.

Mrs. Robert Hopper, president, will present the incoming officers: Mrs. W. S. Sharp, president; Mrs. R. S. Lemm, first vice president; Mrs. J. J. Flanigan, second vice president; Mrs. W. B. Howerton, third vice president; Mrs. R. P. Johnson, fourth vice president; Mrs. A. F. Hurford, fifth vice president; Mrs. P. H. Dailey, secretary; and Mrs. M. A. McCutchan, treasurer.

Mrs. R. E. Butler is general chairman of the decorations committee for the dance.

The evening will begin with a social hour from 6-7 p.m., followed by dinner. Dancing will begin at 9 p.m.



INSPECTING SITE of new Valley Memorial Hospital are the Livermore Laboratory team captains and solicitation chairman who will take part in the valley-wide supplementary hospital fund campaign. They are (1 to r) Bill Guntrum (8153-1); Clyde Walker (8121), chairman; Gene Helz (8161-3); Gayle Cain (8122-3); Arnie Schuknecht (8213-2); Ray Gott (8115-2); Ernie Alford (8223-3); Ed Daugs (8143-1); Gene Beierlein (8213-1), treasurer.

\$22,500 Goal Set for New Livermore Hospital Drive

A \$22,500 goal has been set for Livermore Laboratory's part in the valley-wide supplementary hospital fund campaign to provide additional funds to cover increased construction costs of the \$1,744,000 Valley Memorial Hospital, scheduled for completion in July 1961.

The drive will get underway at the Laboratory May 9 and will conclude May 13, according to Clyde Walker (8121), chairman of the Laboratory's solicitation campaign.

A previous valley-wide drive, held in 1958, raised \$742,000 for the hospital. Livermore Laboratory employees contributed \$37,700 for a delivery room in the new hospital. Eighty nine per cent of the eligible employees on the roll at that time contributed an average gift of \$103 each. In addition to the employee pledges, a \$10,000 gift was donated by the Corporation.

The May campaign will be aimed at all new employees who were not in Livermore during the 1958 fund drive and those who did not contribute during the last campaign who may now wish to participate. It will also provide an opportunity for those who are contributing to extend their pledges if they desire.

Those contributing \$100 or more to the hospital will become eligible to vote in annual elections of hospital board members. Through payroll deduction, a \$100 contri-

E. S. Roth to Be On Quality Control Conference Program

E. S. Roth (2562-4) will be one of four Sandia Corporation participants in the May 3, 4 and 5 Second Western Electric Interworks Conference on Statistical Quality Control.

Mr. Roth will conduct a workshop session on "The Positional Tolerancing Technology," a subject he has presented to many Sandia, AEC Integrated Contractor and Supplier personnel.

Other Sandians included on the program are L. E. Snodgrass (2561), E. L. Devor (2561-2) and J. A. Larson (2561-3).

The Statistical Quality Control Conference, which will be held at the Allentown Works, is expected to be attended by over 100 key quality control personnel from all the Western Electric plants.

but ion may be paid off at \$3 a month for three years. However, other payroll deduction amounts may be chosen.

"With the hospital so near to actuality, I believe that Sandia employees will meet this new goal with the same civic-mindedness they showed in the last campaign," Clyde said. He pointed out that the only alternative to the fund drive would be to finance additional costs through a mortgage loan. "This would result in higher costs to the users of the hospital and a long term loan to pay off," he said.

Team captains for the new drive and the organizations they represent will be: Ray Gott (8110); Gayle Cain (8120); Ed Daugs (8140); Bill Guntrum (8150); Gene Helz (8160); Arnie Schuknecht (8210); Ernie Alford (8220), and Skip Baca (8230). Treasurer for the Laboratory drive will be Gene Beierlein (8213-1), Carter House (8213-2) will act as auditor.

AEC Receives Bids For Water Treatment In Sandia Area III

Bids for construction of a new water treatment and distribution system for Sandia Laboratory's Area III environmental testing and research facilities were received this month, according to an announcement by the AEC.

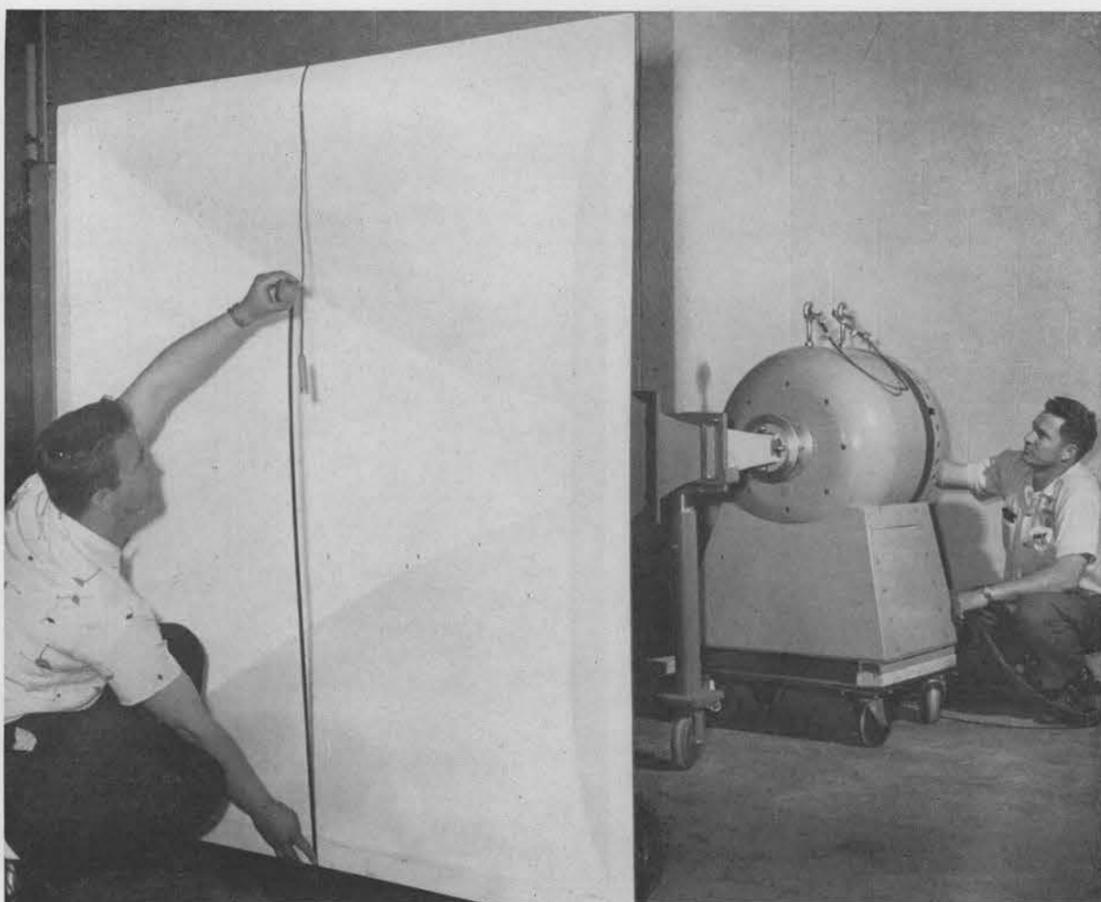
Universal Grading Company of Albuquerque submitted the apparent low bid of \$116,700. Work is to be completed within 150 days after the contractor receives notice to proceed from the AEC.

The project includes approximately 6,146 linear ft. of eight inch asbestos cement water line, including four fire hydrants; a water treatment plant, including one 40x40 ft. prefabricated metal building; one 100,000 gallon steel reservoir, with pumps; 540 linear ft. of eight ft. fence; and miscellaneous valves and fittings.

E. L. Drake (4543-2) is the Plant Engineering Department project engineer.

Bowling Success

Add to the list of experienced bowlers the name of Marian Dixon (1300/1400), who rolled a 230 game in the Sunday night Mixed League on April 17.



LARGE HORN AND DRIVER for the Acoustic Facility is checked out by Ed Buksa, left, and John Colburn prior to installation for a test. Microphone is positioned to check the sound intensity level pro-

duced by the horn. Large driver unit is mounted on wheeled carriage to facilitate flexible operation. It can be rigged to the plane tubes or both testing chambers along with combinations of other drivers.

Like a thousand hi-fi's

Violent Sound Vibrations Used In Torture Tests at Sandia Lab

Inside a 40 cu. ft. chamber is released the screaming noise of 1000 hi-fi sets at full power. According to W. H. "Bill" Cross, environmental test engineer for the Acoustic Facility, this is "about 148 db (decibels), enough to instantly cause deafness."

The facility duplicates sound vibration environment of rockets, missiles and jet aircraft and tests ability of Sandia-designed components to withstand this environment.

The chamber is designed for flexible operation. The test set-up described above is achieved by using eight low frequency drivers (comparable to giant public address speakers). In addition, any combination of these eight drivers or 35 high frequency drivers can be used to give a range of 136 db to 148 db at 40 to 9600 cycles per second. (Middle C on a piano is 256 cycles per second).

These vibrations at varying intensities will literally disintegrate material. For instance, fiberglass will be reduced to dust after a session in the chamber.

More flexibility is achieved at the facility with an additional 200 cu. ft. reverberant chamber. This chamber can utilize any combination of 36 low frequency drivers and 36 high frequency drivers.

Also several "plane wave tubes" can be used instead of the reverberant chambers for testing. These metal tubes, resembling pipes of an organ, can project up to 164 db from 100 to 9600 cycles per second in a flat front of sound waves. The vibration moves through the test units mounted inside the tube in a straight line.

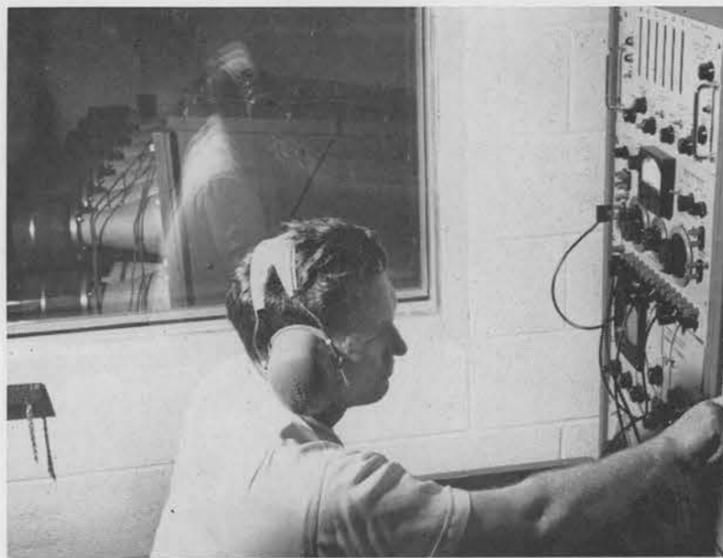
The facility located in Area III has been in operation for the past two months. In the series of tests so far conducted, only two Sandia-designed components "failed" the test. One failure occurred after a continuous 96 hour test in the reverberant chamber.

John S. Colburn, Jr. and Edward J. Buksa (both 1615-1) conduct the tests. They wear heavy "silencer" headsets and communicate via the two-way phones built into the sets. In addition, earplugs are sometimes worn with the headsets during high intensity tests for

added protection.

The test chamber is heavily shielded and separated from the rest of the building by heavy steel

doors. Although vibration can be felt inside the building, the headsets provide more than adequate protection.



CONTROL PANEL of Sandia's Acoustic Facility in Area III is operated here by John Colburn. Through the plate glass window can be seen the 40 cubic foot test chamber and the drivers injecting sound into it. Blurred reflection is a combination of resulting vibration and the three thick plate glass windows that comprise the viewing panel. Center pane of glass rests on rubber mounts.



SOUPED UP CAR of Bob Cozzo's (8152-1), recently won for him the Vaca Valley Standing Quarter Mile Race, attaining a speed of 94.6 miles per hour in an elapsed time of 15.17 seconds.



CURRENT MONTHLY THEME being emphasized by Security Operations and Information Division is "Travel with Security." Employees who travel on Corporation business are reminded that security procedures and regulations should travel with them, and that loose talk is one of the easiest ways to "lose" classified information. Ann Whipple (5241) shows poster now on bulletin boards.

'Kiver to Kiver' Reader of Lab News Has Sandia Interest Though Retired

Does interest in an employer wane when an employee retires? Certainly not in the case of A. R. Charlton, who retired from Sandia Corporation in September 1957. Mr. Charlton writes from Hemet, Calif., "My retirement did not terminate my interest in the activities and progress of Sandia Lab and of the fellow-employees I was fortunate enough to know as friends." The offerings on the Corporation booklet racks have long interested him. He saved the ones most useful to him and took 40 or 50

of them along when he moved to California. "I consider them concise, clearly written basic reference material, covering many subjects," Mr. Charlton explained. In addition to his own enjoyment of the booklets, Mr. Charlton said that the neighborhood boys and girls of high school age frequently borrow from the collection when preparing for classroom discussions or written reports. As to the Lab News, Mr. Charlton said, "I read the Lab News 'kiver to kiver'."

Patent Issued in Name of AEC for John Watterberg

A patent in the name of the AEC has been awarded to John Watterberg (1215) for his invention, "rotary switch." The device is a high voltage switch, motor driven, which incorporates its own monitor and control functions. It allows switching of high voltages using a relatively small device. It was developed as part of the inventor's work in the Electrical Section of Project Division 1224 of the Systems Development organization. Mr. Watterberg has been employed at Sandia almost eight years. Prior to coming here he was a transmitter engineer for a radio station in Minneapolis, Minn. During World War II he served in the Signal Corps and participated in the African and Italian campaigns. He earned his BS degree in electrical engineering from the University of Minnesota in 1939.

Curtis W. Senn Died In Hospital April 19

Funeral services were held April 23 for Curtis W. Senn, a Sandia Corporation employee for nearly 12 years. Mr. Senn had been ill for six months recently, but had returned to work on March 22. On April 19 he was taken to the hospital and died the same day. He was 47. Mr. Senn was a staff assistant in Scheduling Section, Engineering and Research Support Division I, 2641. Survivors include his widow, mother, five brothers and three sisters.



Pre-Registration at Base Kindergarten To Be Held in May

Pre-registration will be held at Sandia Base kindergarten the first two weeks in May for the regular fall session and for a possible summer class. According to Mrs. Alicia Dittberner, kindergarten supervisor, if enough parents are interested, a summer session from 9-11:30 a.m. will be held June 6-Aug. 12 primarily for children who will be entering first grade in September.

To be eligible for the regular fall classes the youngster must be the dependent of military, Sandia Corporation or AEC employee, be five years old by the end of December 1960 and be eligible to attend first grade by September 1961.

Registration will be conducted at Bldg. 1851 from 9 a.m. to 4 p.m. Monday through Friday.

New Tennis Courts Ready for Use at Livermore Lab

Work has been completed on a new tennis court and basketball court at Livermore Laboratory and they are now open for employee off-hour recreation. The black-topped courts, located west of the Sandia parking lot, will be open for use during noon hours, after hours, and on week-ends. Employees using the tennis court must supply their own rackets and balls, but basketballs may be obtained from Employee Services (8212-2). Reservations for use of athletic facilities during evenings and week-ends should be made through Employee Services.

Sandia Service Awards Ten Year Pins



Woodrow W. Littrell 3242 May 2, 1950



Frank E. Anderson 2751 May 4, 1950



Kenneth W. Campbell 4232 May 4, 1950



Raymond H. Opperman 1411 May 5, 1950



Ray M. Hooper 3242 May 9, 1950

Five Year Pins

April 30-May 13

Richard C. Angell 5323, John L. Colp 1626, Rudolph W. Herrmann 5216, Grant M. Johnson 4611, Ralph H. Richards 8141, George A. Wank, Jr. 4412, Betty Lou Myers 3121. Harvey Schwartz 2713, Melvin H. Brock 5222, Albert E. Long 2641, Virginia T. Sims 4631, Diane M. Martin 5132, Avelina G. DuBois 3126, J. Lloyd Williams 2715.

SHOPPING CENTER

CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday.

RULES

1. Limit: 20 words
2. One ad per issue per person
3. Must be submitted in writing
4. Use home telephone numbers
5. For Sandia Corporation and AEC employees only
6. No commercial ads, please
7. Include name and organization.

FOR SALE

RADIO-TV-PHONO CONSOLE, GE, mahogany finish, \$80. Zeller, DI 4-9000.
 FISH AQUARIUM, full of guppies, w/light and heater, \$10; new Heath citizen's band transceiver; Karlson Hi-fi cabinet. Stueber, AX 9-2414.
 '60 MG 1600, black w/cream leather interior, wire wheels, R&H, extras, recently undercoated. Conklin, CH 3-1651.
 ALTO SAXAPHONE, Buescher, silver-plated, gold bell, \$100 or equivalent in electronic test instruments. Slesinger, AX 9-4626.
 3 BRM HOME, 1 1/2 baths, AC, attached garage, landscaped, corner lot, walled yard, established car pool. Busby, AX 9-6450.
 UTILITY TRAILER, one wheel, all metal, \$35. Lincoln, ext. 39143.
 '54 "TF" MG, black, \$1295 or best offer. Chavez, AL 5-9996 after 5:30 p.m.
 MISCELLANEOUS from sold home; step tables; desk; custom planter; wall plaques; radios; Ottoman; garden hoses. Hole, 3518 Crest SE (at Carlisle).
 '59 VOLVO, red, 2-dr. series 544, 10,000 mi. Belden, AX 9-3867 after 6 p.m.
 MAYTAG WRINGER washer, two single tubs, \$40. Carter, AL 5-7745.
 BAND SAW TILTING TABLE, 12 in. 3 wheel, \$65; metal lathe w/set of threading and speed gears tool bits, 1/4 HP motor, \$75. Smythe, 1603 Yakima Rd., SW.
 CHROME DINETTE SET w/4 matching chairs, \$15; small solid oak chest, natural finish, \$10. Erickson, AX 9-6824.
 EVAPORATIVE COOLER, 4500 CFM, deluxe grill, variable control, steel wall hanger, copper tubing, best offer. Catt, AX 8-1632 after 5 p.m.
 MOTOR SCOOTER, Cushman Highlander, buddy seat, new brakes, reasonable. Spatz, AX 9-0410, 2002 Inez NE.
 ASPHALT ROOF SHINGLES, 140 sq. ft., new, green, \$5. Nelson, AL 5-2364.
 '58 CORVETTE, removable hardtop, w/w tires (new), 3 speed, dual quads, high performance cam, canary yellow. Cornwell, ext. 28243.
 AIR CONDITIONER, 3500 CFM, \$40. Mof-fat, AX 9-9024.
 LEICA III G, meter and case, best offer. Coughlin, AX 9-9215.
 '55 FORD Victoria hardtop, white and black, Ford-o-matic, R&H, \$795. Davis, AL 6-4962, 1108 Alcazar NE.

TRAILER, 2-wheel, medium duty, stock rack, \$25; carrier, car top, gutter mounting, heavy duty, \$15. Hensinger, DI 4-1504 after 6 p.m.
 '58 MOBILE HOME, 41 ft. Great Lakes, 2 bedroom, AC, \$2695. Long, AM 8-1047.
 GE DRAIN BOARD and sink; outside heavy door w/hardware. Mebs, AL 5-1350.
 TELESCOPE, 4 1/2 in. objective, erecting assembly, 3 eye pieces, coated lenses, \$255; trade for Hi-fi or stereo equipment. Willers, CH 3-3092.
 '54 MOTOR SCOOTER, Allstate, needs tune up, \$78. DeZeeuw, AL 6-0205, 3526 Thaxton SE.
 REFLEX CAMERA, \$38, 3.5 lens; movie camera, 8mm, \$37.50, 1.9 lens; long car battery, 6 volt, \$4.75; clock radio, \$15.50. Vilella, AX 9-7915; 1600 Maxine NE.
 YARD-STER DRIVEWAY CAR, 4 cycle, 2 HP, for age 6-12. Schafer, AL 6-2662, 3421 Calle Del Sol NE.
 FRENCH POODLE, black, pure-bred, female, 5 mos., shots, \$40. Rechner, DI 4-9776.
 '53 PACKARD 4-dr., R&H, Double Eagle w/w retreats, \$250. Schofield, AM 8-0956.
 '46 HUDSON, runs, needs battery, good second car, \$50. Wilson, CH 7-2122, 1502 Hooper SE.
 3 BRM ROBERSON, den, double garage, fireplace, AC, landscaped, other extras, convenient to base, shopping, schools. Yates, AX 9-7117 after 7 p.m., 1830 Propps St. NE.
 ENLARGER and complete darkroom equipment including ebonite trays, thermometer, easel, adjustable developing tank, ferrotype tins, \$40. Puder, ext. 39165.
 GAS RANGE, apt. size, \$25; Bondex paint, coral color, 100 lbs., \$10; mangle, \$20; Hot Point washer, \$25; car air conditioner, \$20. McCutchan, AL 5-7215.
 '59 AUSTIN HEALY Sprite, 3800 mi., R&H, mirrors, tonneau cover, save \$750. Klein, 607 Carlisle SE.
 GAS RANGE, Anderson. Becker, AX 9-4549.
 SEARS AIR COOLER, 2 yrs. old, two fans, push button speed controls, stand included, \$15. Gonzalez, AM 8-1084.
 BREAKFAST TABLE, formica, w/extension, \$10; 9 x 12 fiber rug, suitable for den or patio, \$5. Kross, AL 6-0223, 323 Grove SE.
 ESTAY ORGANO, \$450; 9 x 11 wall tent, \$30; Venetian blinds, assorted sizes to 80 in., cheap. Scranton, AX 9-5720, 8210 Cutler Ave. NE.
 2-WHEEL TRAILER, 4 x 6 wood bed, seven years old, no springs, \$10. Stephenson, 309 Moon NE.
 GERMAN SHEPHERD, male, 6 mos. old, good blood line, \$35. Whiting, AM 8-9696.
 PUPPY, 4 mos. old, female husky and Alaskan malamute, w/shots, \$25; good children's pet. Aaron, BU 2-3124.
 GE WASHER, wringer type, \$35; trombone w/case, \$85; 5-speed dryer, \$85. Brown, DI 4-6831.
 MATTRESS, innerspring, \$25; dress form, Acme, large, used twice, adjustable from size 42 to 50, \$5. Hall, AL 6-7282.
 POLAROID CAMERA OUTFIT, model 80A, w/print copier, bounce flash, leather case, close-up set, film, etc., \$85. Petrone, AL 5-3633 after 5 p.m.
 '56 DELUXE ZIMMER, 50 ft., step-up kitchen, fireplace and washing machine, \$3995. Dantoni, BU 2-3367.

NEXT DEADLINE

FOR SHOPPING CENTER ADS
 Friday Noon, May 6

2-WHEEL TRAILER and hitch, metal box, \$40; wheel chair. Montoya, CH 2-3197 after 4 p.m.
 REFRIGERATOR, Coldspot, best offer. Zack, AX 9-1831.
 WINDOW FAN, 2500 CFM, \$15 or best offer. Hogue, AX 9-1807, 1435 Espejo NE.
 '56 MOBILE HOME, Westwood, 36 ft., 1 bedroom. Johnson, AM 8-4007.
 3 BRM BRICK Hoffman, 1 1/2 baths, corner lot, sprinklers, landscaped, AC, dishwasher, garbage disposal. Thompson, AX 9-0092.
 ELECTRIC RANGE, 30 in., GE, 1 yr. old, \$105; 140 x 200 lots in North Valley. Padilla, AM 8-7476 or DI 4-0094.
 AIR CONDITIONER, refrigerated, '58 GE Thinline, 9000 BTU, 220 volt, \$140. Martin, AX 8-2098.
 OVERSTUFFED CHAIR and couch, red, \$35; one end table and coffee table, \$10. Kreitler, AL 6-2625.
 GAS RANGE, 36 in., Western-Holly, \$35. Prestby, AX 9-4947.
 3 BRM ROBERSON, den, double garage, large corner lot, assume GI loan or new FHA loan, total \$20,500. Ault, AX 9-3148.
 GAS RANGE, 30 in., Kenmore, full width, 23 in. oven, 2 yrs. old, \$60. Coon, AX 8-0845, 6931 Edwina NE.
 3 BRM MANKIN home w/stove and refrigerator, 5 mos. old, take over payments. Hawkins, AX 8-1755, 304 Glorietta St. NE.
 BOY'S BICYCLE, Schwinn, 24 in., \$25. Houghton, AX 9-3386, 1413 Guaymas Pl. NE.
 SIMMONS STUDIO COUCH, rose, \$25. Guest, DI 4-6554 after 6 p.m.
 BATHING SUIT, turquoise green, size 9-10, never worn, cost \$13, sell for \$6.50. Ankeny, AX 9-5320.
 COMPLETE HAM STATION, TBS-SOD transmitter and Collins 75A4 receiver. Hansen, AM 8-0769.
 KENMORE AUTOMATIC washer, 10 lb., guarantee, \$50. Westman, AL 5-6048.
 '56 CADILLAC, Coupe de Ville, AC, PB, PS, 6-way seat, electric windows, power radio, etc., \$1995. Deveney, ext. 52272.
 SCREEN DOOR, 3'x6'8", varnished, \$5; outside door, 2'8" x 6'8", \$3; 4-lite garage sash, \$2; lawn mower, \$10. Dlouhy, AL 6-7952.
 AFRICAN BERMUDA SOD, \$2 per sq. yd. Keiner, AX 9-7311, 9401 Morrow Rd. NE.
 3 BRM HOME, walled, landscaped, grade school, Jr. high close, high school being built, Princess Jeanne Park. Sikkil, AX 9-3966 after 5:30 p.m.
 '53 STUDEBAKER Club Coupe, R&H, new brake linings, new seat covers. Gallagher, ext. 47255.
 SILVERTONE TV, 21 in., w/stand, \$70; Stromberg Carlson TV, 17 in., \$30. Wyant, AX 8-0371.

GO KART RACER, 2 1/2 hp, Clinton, pneumatic tires, \$125; rotatiller, 3 1/2 hp, \$80. Pennypacker, AX 9-1547.
 '53 FORD six, 2-dr., new brakes and clutch, R&H., \$325. Gustafson, AX 9-3270.
 '51 STUDEBAKER Champ., R&H, overdrive and motor, \$125. Balaban, AX 9-2452.
 '53 WILLYS Aero-Ace, 4-dr., overdrive, R&H, w/w tires, 2-tone. Bewley, AL 5-8024, 1101 Alcazar NE.
 '58 PLYMOUTH Belvedere, 4-dr. hardtop, R&H, O.D., w/w tires, 2-tone white and copper, 21,500 mi., \$1800. Longfellow, AL 5-5334 after 5 p.m.
 '59 PLYMOUTH Custom Suburban, 9 pass., Torque lite, R&H. Burton, AX 9-3509, 9701 Haines NE.
 LAWN MOWER, 21 in., power, reel type, \$35. Rehberg, AL 5-6705, 916 Alvarado Dr. NE.
 REGENCY IV ENCLOSURE, \$25; portable air cooler, \$12; springs and mattress. \$5; bed frame, \$5. Rhodes, AX 9-9387, 430 Mankin St. NE.
 '56 PLYMOUTH Belvedere sedan 207, under list; '56 Oldsmobile Holiday sedan, \$1295; both have autom. trans., PB. Shock, CH 3-8068.
 '56 OLDSMOBILE 88, 2-dr. hardtop, 2-tone green, R&H, PS & PB, w/w tires, \$995; will consider trade, Garcia, CH 3-3473.
 MOHAWK RUG, all wool, 9 x 12, w/pad, \$75; evaporative cooler w/pump, \$30; 9 in. Kit TV, \$10. McCord, CH 7-2774.
 SMALL TRICYCLE, \$4; laundry cart, \$3; 6 x 6 nylon wading pool, \$4; oscillating fan, \$5. Sedgwick, AX 9-9071, 3421 Parsifal NE.
 '56 PONTIAC station wagon, hydramatic, R&H. Wing, AL 6-9575.
 WRAP AROUND BUMPER w/hitch and 4-speed transmission out of '50 Ford pickup, \$20 ea. O'Connell, BU 2-3402.
 STEREO TAPE HEAD, Norelco, half track for direct conversion of Norelco monaural tape recorder to stereo, \$12. Sinnott, AX 9-1300.
 3 BRM MOSSMAN, drapes, carpet, WB fireplace, AC, hw floors, landscaped, walled, near shopping, schools. GI 4 1/2% loan. Baumgarten, AL 6-0037, 2932 Ortiz Dr. NE.
 DOUBLE BED, dark finish, cherry wood, foam rubber mattress, box springs, matching three drawer chest. Fisher, AL 6-2569.
 GAS RANGE, 40 in., Maytag. Roberts, AL 5-2001.
 AIR CONDITIONER for '56 Ford, factory equipment, \$50. Corey, AX 9-5168.
 '47 CHEVROLET, \$75. Martinez, DI 4-6994, 4512 San Andres NE.
 3 BRM HOME, large attached garage, loads of built-in storage, landscaped, no qualifying, vacant, \$11,500, 9197 Leyendecker NE. Dieruf, AX 9-6526.
 ROTARY MOWER, Fulton Deluxe 22 in. self-propelled w/3 hp Briggs Stratton, \$40. Fite, AM 8-1385.
 TENT, 9 x 9 ft., clean and sound, easy to erect, \$20. Sherwin, AL 5-8866.
 ELECTRIC MOTOR; lawn mower; table legs; shoes; men's sport coat, and other miscellaneous items, all very reasonable. Weir, 2117 Martha NE, AX 9-1160.

LOST AND FOUND

LOST—Brown leather wallet on 4/19 containing State and AEC driver's license, plus other papers. Rosalio Silva, ext. 29143.

LOST—Four keys on family day chain; 5 in. slide rule in case w/name D. G. Nelson; 5 year SC pin; clear plastic ballpoint pen w/red bands; magnetic pink flower earring; Air Force green sunglasses; Ray Ban glasses w/chip. Lost and Found, ext. 26149.
 FOUND—Ten keys on triangle ring found before Christmas; red cardigan sweater; black leather cigarette case w/Pall Malls; glasses w/brown and gold frames; gold tie clip w/black corner; steel holder w/nail file, bottle opener and knife; pierced ruby earring. Lost and Found, ext. 26149.
WANTED
 HOME FOR FIVE PUPPIES, 5 wks. old, latest styles. Myers, AX 9-8727 after 6 p.m.
 TO RENT furnished houses and apartments, from June until Sept. for Sandia Corporation summer employees. Galbreath, Ext. 26149.
 GOLD BOND STAMPS, have six books Green Stamps. Matlack, AL 6-7371.
 DRAPES, 8 pair, and 3 bedroom sets for rental apartment. Brown, DI 4-6831.
 HOMES FOR KITTENS, no charge, too much competition. Tatum, CH 2-9021.
 NICE HOMES FOR KITTENS, long-haired, domestic, 7 wks. old, black or black and white, will give away. Edgar, AL 5-9070.
 TRADE American bumper jack for Volkswagen jack. MacCallum, AL 5-6363.
 BEAGLE or other pup for children. Lindsay, AX 9-7454.
 TO TRADE 13 cu. ft. chest freezer for 18 cu. ft. or larger. Westman, AL 5-6048.
 NIKOR REELS, all sizes, must be in good condition. Dlouhy, AL 6-7952.
 HOMES FOR KITTENS, two tricolor and one black, to give away. Hayes, ext. 25170.
FOR RENT
 FURNISHED APARTMENT, \$55. Glory, CH 2-1586.
 2 BRM DUPLEX apartment, new, AC, storage room, extra large parking area, refrig., stove and drapes, 3518 Crest SE (at Carlisle). Hole.
 DEVILLE TRAILER, 15 ft. Shurter, CH 2-5677.
 1 BRM APARTMENT, furnished, suitable for couple or bachelor, AC, telephone, close to bases. Kross, AL 6-0223, 323 Grove SE.
 2 BRM HOME, HW floors, walled yard, 1/4 acre land, close to school and bus, \$65 mo. plus utilities. Gallegos, CH 2-7664, 2316 Esqueil Rd.
 2 BRM UNFURNISHED, water and garbage paid, \$75. Caldez, CH 7-3145.
FOR SALE AT LIVERMORE
 POWER MOWER, 21 in. reel type, powerful motor, \$35. Richards, HI 7-4389.
 SEWING MACHINE, Premier, standard size in carrying case, sews forward, reverse in stationary position for mending, \$50. Cutts, SY 7-0915.
 PATIO UPRIGHTS, two 2 in. dia. pipes, 10 x 1/4 in. bases, braces to support 3 in. timbers, cost \$20 ea., make offer. Hinrichsen, VI 6-2251.
WANTED AT LIVERMORE
 HOME for Labrador Retriever, black, 2 yrs. old, good watch dog, fine w/children, has license and shots, needs large yard. Byars, ext. 2436.

New Building Now Houses Sandia Materials and Standards Laboratories

The move into the new Bldg. 861 is about 70 per cent complete. The laboratories upstairs on the third floor are essentially complete and operating.

The second floor is almost complete and the first floor about 40 per cent complete. The Physical and Electrical Standards 2750 Department began its move into the building March 8. Temperature and Climatically Controlled Physical Standards Labs of 2750 will occupy the north side of the east end of the first floor. Other 2750 labs will be located on the second floor. These facilities are not installed as yet.

Heading the complex job of moving the Materials Standards 1620 organizations from Bldg. 860 and various other buildings in Area I into Bldg. 861 is Jim Reid (4543-3).

Huge units of test equipment, control panels, tiny laboratory tubes and glass apparatus, chemi-

cal, temperature and climatic chambers had to be moved. Office equipment and files were moved. Timing was a prime consideration.

To keep test programs and projects operating, the equipment had to be quickly shuffled from one area to another and put in operation.

Plant Engineering Department 4540 and Plant Maintenance Department 4510 are devoting a large portion of their personnel to accomplishing the move and readying the work areas in the building. Electrical connections, air conditioning, ducts, high pressure air lines, water lines, steam systems, gas and chemical distribution and chemical storage tanks have to be connected and checked while hooking up the many items of lab apparatus.

When the move is finished, about 200 Sandia employees will work in the building.



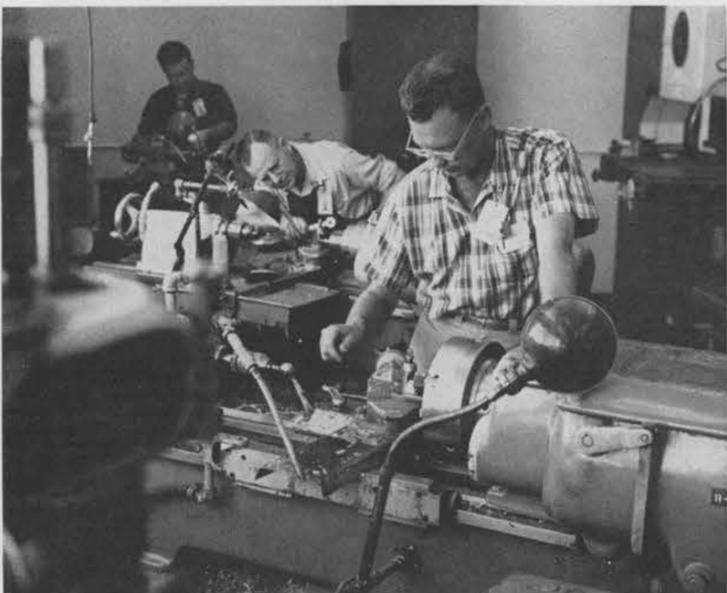
MATERIALS AND STANDARDS Bldg. 861 stands impressively inside the tech area. The move of occupying organizations is about 70 per cent complete. Top floor is complete and operating.



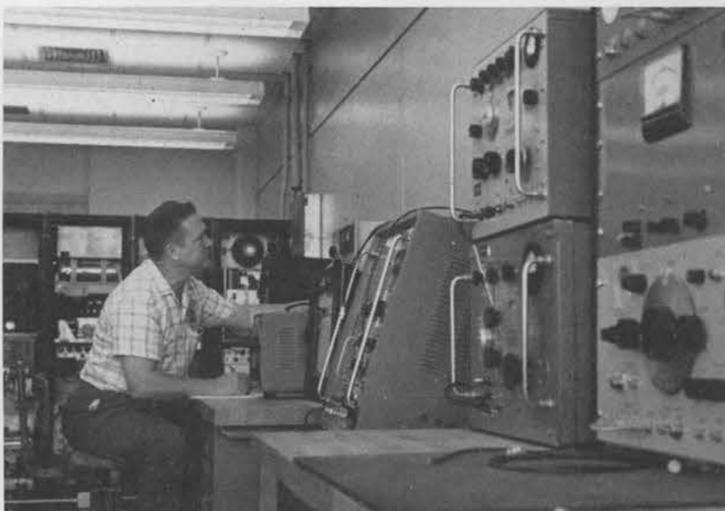
WAITING CHAIR occupies one of the few remaining rooms on the second floor of Bldg. 861 where installation of equipment has not started. Small objects protruding from floor house electric plug-ins.



CHEMICAL LAB of Materials Analysis and Test Division 1622 is one of the largest labs in the Materials and Standards Laboratory Bldg. 861. It occupies space in the top floor of building. Installation is almost complete here. At left is a ladder used by workmen installing connectors to lab apparatus.



MECHANICAL BRANCH SHOP 4252-6 in Bldg. 861 has been in operation several weeks. From front are Charles R. Johnson, Jeme Wolintz, Ernest C. Cordova. Shop supports activities in the building.



FREQUENCY STANDARDS LABORATORY 2751-1 was one of first installations complete and operating in Bldg. 861. Here James B. Gibbons is measuring frequencies for comparison with standards.

Infuriated Sparrow Hawk Declares Hostilities on Scientific Intruders

"He came screeching out of the sun like a dive bomber. He made one run a day like this for the first few days and then changed his tactics," Ken Cole (1322) said. "Then he caught me alone up on the tower," Jack Burkhart continued, "and got braver. He came in low and quiet every few minutes and made about ten very close passes. I could see his black beady eyes."

War had been declared by a determined little sparrow hawk on the two men. They were working on a series of drop tests on a 54 ft. tower on the north side of Tech Area I, for Advanced Development Division 1322. It seems that the hawk had

used the tower for a resting place while he surveyed the terrain for unsuspecting prey. When the men started their tests using the tower, he considered it an invasion.

"He's a winged fury," Jack Burkhart, who caught the worst of his attacks, said. "I tried to clobber him with the data book I was using but I wasn't fast enough. He was very maneuverable."

For the moment the bird has won the war. The men have temporarily retired from the tower to prepare for more tests which are scheduled to start next week.

"When we go back," Jack said, "we'll be better armed."

Noon Movie Schedule Released for First Half of May

Sandia Laboratory's noon hour movie schedule for the coming two weeks is as follows:

May 2, 3, 4

"Twilight for the Gods" with Rock Hudson, Cyd Charisse (color)

May 5

"Sabotage" (Prudential's award winning TV series, Twentieth Century) (B&W)

May 6

"Toward the Unexplored" (Prudential's TV series) (B&W)

May 9, 10, 11

"Reach for the Sky" with Kenneth More, Muriel Pavlow (B&W)

May 12, 13

"The Golden Blade" with Rock Hudson, Piper Laurie (color)

All movies begin at 12:10 p.m. in the Sandia Base Little Theater which is located south of the military cafeteria on Main St. Showings last about 35 minutes.

Lobball League Play Starts for Livermore Lab

Livermore Laboratory lobball league play will kick off May 2 with a game between 8110 and 8230.

All games during the season will begin at 5:30 p.m. at the recently completed softball field west of the Sandia parking lot.

All departments at Sandia's Livermore Laboratory and the contractor guard force are represented in the league.

Sandia's Safety Record

Sandia Laboratory HAS WORKED 10,225,000 MAN HOURS OR 285 DAYS WITHOUT A DISABLING INJURY

Livermore Laboratory HAS WORKED 3,055,000 MAN HOURS OR 1531 DAYS WITHOUT A DISABLING INJURY