

Sandia Corporation LAB NEWS

ALBUQUERQUE, N. MEX. • LIVERMORE, CALIF.

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MARCH 17, 1961



GRADUATING MACHINIST APPRENTICES are presented certificates by C. W. Campbell, Vice President, Administration, left. The new journey- men machinists (1 to r) Larry Bowen, Glenn Bridgeman, Gibson Guernsey, Thomas Tormey. The class had completed 8000 hours of training.

Sandians Will Tell Of Career Fields to High School Groups

When Sandia High School holds its Career Day on April 7, 12 Sandia Laboratory employees will speak to groups of students about scientific, technical and skilled job opportunities.

Information to be covered will include educational requirements, job advantages and disadvantages, job satisfaction, pay, type of work and quality of applicants desired.

Speakers and their subject areas are: T. S. Church (1410), electrical engineer; W. H. Kingsley (3311), biologist; A. C. Taylor (4254), machinist; W. C. Elskes (4511), electrician; G. P. Steck (5425), mathematician.

R. S. Lemm (4230), metallurgy and mining; R. E. Tate (7134), aeronautical engineer; F. F. Norris (4541), civil engineer; A. Troum (1112), chemical engineer; T. B. Cook (5110), physicist; R. E. Fisher (1122), chemist; and E. C. Rightley (7133), mechanical engineer.

Hollingsworth, Rowe Elected to Civic Posts at Livermore

Two Sandians have been elected to important civic posts at Livermore. Lee Hollingsworth (8120) has been re-elected to the Valley Memorial Hospital Board of Directors and Les Rowe (8220) was elected second vice president of the Livermore Chamber of Commerce.

Lee is manager of the Test Department 8120 at Livermore Laboratory. He will begin his second three-year term this month on the hospital's nine-member board.

Les is manager of Plant Services Department 8220. He has represented Sandia for the past year on the Livermore Chamber of Commerce as a member of the Industrial Committee.

Third Class of Sandia Apprentices Completes Journeyman Training

The third class in Sandia Laboratory's Apprenticeship Program graduated Feb. 28. Receiving journeyman machinist status in a ceremony in the Development Shops were Larry Bowen (4252-3), Glenn Bridgeman (4252-1), Gibson Guernsey (4252-1) and Tom Tormey (4253-2).

The class had completed 8000 hours of training since the apprenticeship program started at Sandia Laboratory in March 1958. Training includes 7100 hours of machine shop assignments and 900 hours of related classroom instruction.

C. W. Campbell, Vice President, Administration 4000, presented the certificates of completion. R. J. Hansen, Director of Development Shops 4200, presented to the men copies of Machinery's Handbook.

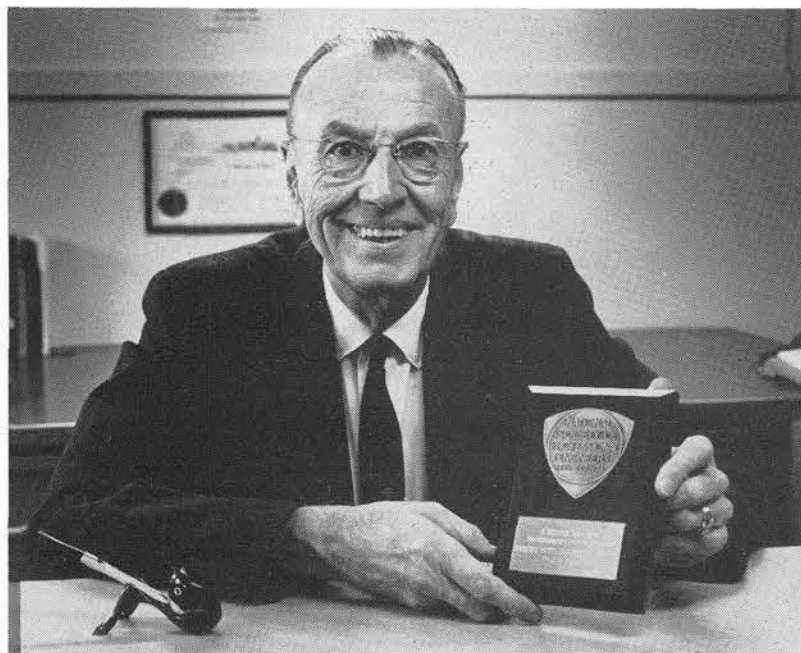
Representing the Joint Appren-

ticeship committee at the ceremony were A. C. Taylor (4254), chairman, and A. J. Fisher (4254), secretary. Also present were F. H. Dausses (3132), administrator of apprentices, and Development Shops supervisors.

L. E. Snodgrass Speaks To Dayton ASQC Group

Members of the Dayton (Ohio) Section of the American Society for Quality Control heard a talk recently by L. E. Snodgrass (2561).

Title of his speech was "Integrating the Quality Control Contribution in Research and Development Operations." More than 250 persons attended the fifth annual meeting of the Dayton group.



A. B. METZGER, manager of Safety Engineering Department 3210, was awarded this plaque by the New Mexico Society of Professional Engineers for outstanding services to the Society and engineering.



NAVY CERTIFICATE OF MERIT, one of the Navy's highest awards, was presented to S. P. Schwartz, Deputy Commander, by Rear Admiral Joseph D. Black, Deputy Commander, Field Command, Defense Atomic Support Agency, Sandia Base. Award was presented to Sandia Corporation in recognition of outstanding work performed on the Polaris missile warhead.



E. W. HENDERSON, Vice President, Weapon Programs, accepted this certificate for Sandia Corporation. It was awarded by the New Mexico Society of Professional Engineers for Sandia's engineering employment practices in accord with professional standards.

NMSPE Honors Sandia Corporation, A. B. Metzger at State Convention

Sandia Corporation and one of its well known employees were recently honored by the New Mexico Society of Professional Engineers at the group's 15th annual convention in Santa Fe.

R. W. Henderson, Vice President, Weapon Programs, accepted a certificate presented to Sandia Corporation "in recognition of an outstanding record in the development and use of engineering employment practices in accord with professional standards."

A. B. Metzger, manager of Safety Engineering Department 3210, was honored by the Society with a plaque presented for "outstanding service to the New Mexico Society of Professional Engineers in connection with the promotion of professionalism and registration of engineers in New Mexico."

This was the second time Mr. Metzger had been honored by NMSPE. In 1959 he received a certificate of commendation in recognition of his service to the engineering profession. He is a past national director of the American Society of Professional Engineers and has held several other offices in both the state and national organizations.

Sandia Corporation is the first company honored by NMSPE in

the state. The Society continually promotes professionalism and recognition of engineering, and strives to improve the status and standards of engineering. Sandia was honored as the outstanding corporate activity in helping to achieve the goals of the Society. NMSPE was organized in 1936. Currently its 660 members are engaged in 16 statewide projects which range from a continual drive for registration of engineers and promotion of National Engineers' Week to assisting student engineers.

Applications for registration in New Mexico as a professional engineer are available from Rex. N. Tynes, secretary, State Board of Registration for Professional Engineers, Box 2074, Santa Fe, New Mexico.

Presents Tonopah Paper

John C. Eckhart, manager of Instrumentation Projects Department 7250, presented a technical paper before the Las Vegas, Nev., Section of the Institute of Radio Engineers during a meeting held March 10 at Tonopah, Nev.

The paper was entitled, "Instrumentation of the Tonopah Test Range."

Editorial Comment**The Freedom Academy Bill**

A quite unique, truly pioneering bill is now in Congress and if it passes, and the prospects are good, this country will fill in a major gap in our defense.

This bill would create a Freedom Commission and a Freedom Academy. Purpose of the bill in proposing to establish this commission and academy is to "research and develop an integrated, operational science to win the nonmilitary part of the global struggle between freedom and communism and to train government personnel, private citizens and foreign students in this science."

Like bills have been introduced into both the Senate and the House of Representatives.

This bill has little similarity to other bills in this Congress in that it is not a Democratic bill nor a Republican bill. It is, as Life magazine points out, a bill persons of all shades of opinion, save one, should be able to unite behind.

The Freedom Academy will provide this country with professionals to resist the attacks of the highly trained professional Communists in ideological and diplomatic areas.

Here's what the bill proposes: That the President appoint a commission of seven members, approved by the Senate, which would establish an advanced training and development center to educate qualified leaders about communism.

They would be given know-how that leaders in Russia now have. These leaders would be able to develop a concentrated, systematic effort which could effectively meet the entire Soviet attack and work toward our long-range national objective. Nowhere today can government personnel or private citizens receive broad and adequate training in proper techniques of conducting the cold war, especially in the highly complex field of political and economic warfare.

The lesson we have learned in Iraq, Japan, Cuba and Guinea have demonstrated the Communists' impressive political warfare capabilities. Likewise, these lessons have pointed up our inadequacies.

In Iraq, Communists successfully penetrated and manipulated a Middle Eastern National Movement, in the very heart of Islam. In Japan, Communists have successfully penetrated and manipulated secondary schools, universities, student groups, labor unions and one of the two major political parties.

In Cuba, Communism has captured a popular revolution in a Catholic country which has traditional ties with United States and lies on our very doorstep. In Guinea, Communism has moved in on a primitive society and taken it over at the very moment that its people were supposed to gain freedom.

We no longer can console ourselves, according to Senator Thomas J. Dodd of Connecticut, with the thought that if we spend enough money on guns and missiles and foreign aid we can make the Free World secure against Communism.

With every day's news it becomes clearer that old methods of defense are not enough. This country either masters these new dimensions of warfare the Soviets are employing against us and goes on the offensive or we face the certain prospect of increasing isolation in a world which is swinging evermore toward the Soviet sphere.

Senator Dodd, in making an eloquent plea to the Senate for passage of the bill, pointed out that "time is running out for the Free World."

He concluded his remarks saying, "Let all of us unite behind this measure, as a declaration to men of good will everywhere that we have only begun to fight."

Local IRE Officers To Attend International Conference in N. Y.

Three Sandians, officers of the Albuquerque-Los Alamos Section of the Institute of Radio Engineers, will attend the international IRE conference in New York City March 20-24.

Robert Craveling (1413), section chairman, and P. H. Bircher (7512), section magazine coordinator, will attend the IRE executive meeting as Seventh Region representatives. Gene Newlin (6011) will be attending the executive meeting of the IRE Professional Group on Nuclear Science and also the national meeting of the Electronics Achievement Awards committee.

Happy Occasion

Burl Alsup (4573) was in Matador, Tex., for a week last month for an unusual event: his parents celebrated their 65th wedding anniversary on Feb. 23.

Wedding

Jim Etherton and the former Joyce Hemsing were married Feb. 10 in Parrottsville, Tenn., and are now at home at 506½ Eleventh NW, Albuquerque.

During their honeymoon the couple was in New Orleans during Mardi Gras and visited several fishing ports along the Gulf Coast.

Jim (3111-1) has been with the Corporation nearly three years and Joyce (2423/5110) has been at Sandia since 1957.

Choral Arts Society To Present Program 'Brahms Requiem'

Chosen as soprano soloist for the "Brahms Requiem" to be performed Sunday, March 19, is Peggy Howe of Minnesota Mutual Life Insurance Co.'s Sandia Laboratory Office.



Peggy Howe

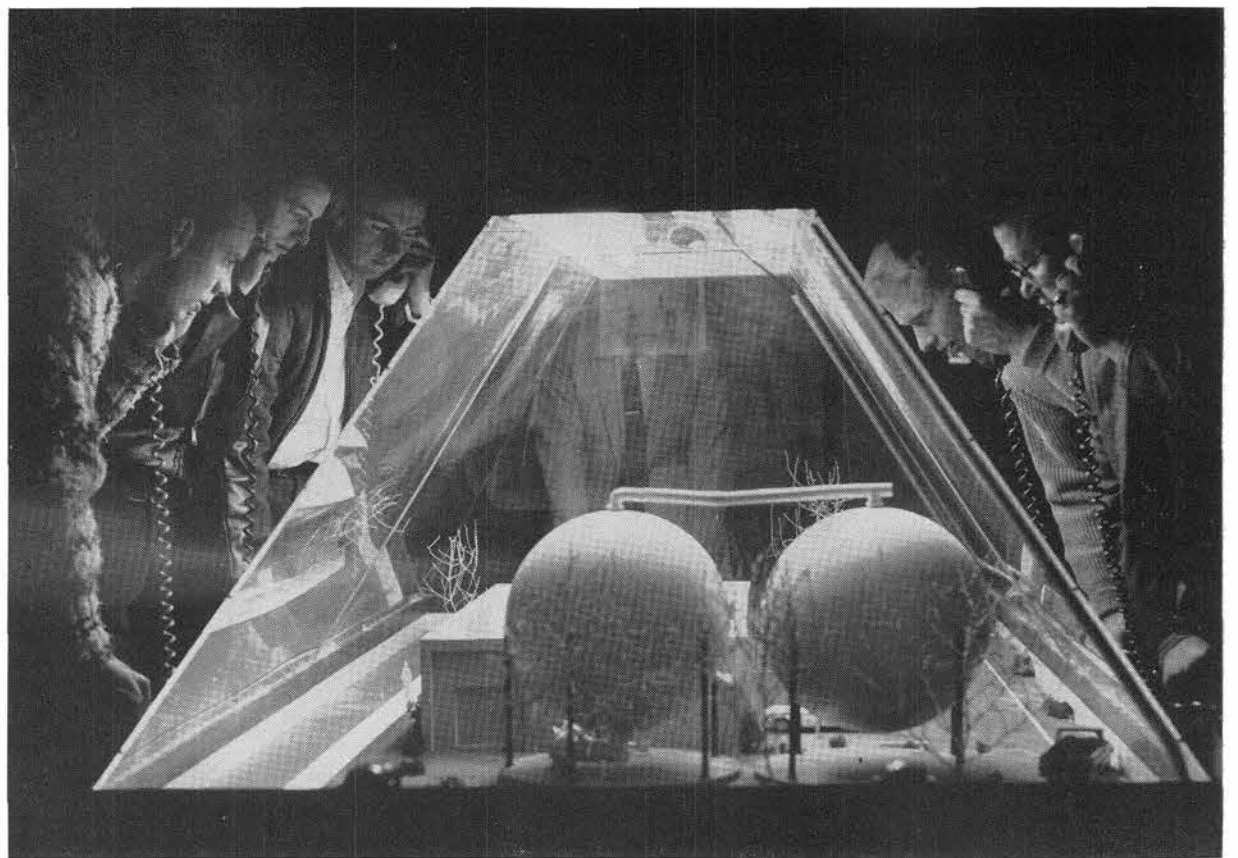
The concert will be presented by the Albuquerque Choral Arts Society (formerly Albuquerque Civic Chorus) and is part of the Albuquerque Theater Arts Center's current series.

Included in the all Brahms program will be the "Rhapsody for Alto" and "Male Chorus." Third selection will be "Nanie," a lesser known work of Brahms.

Under the direction of Norman Russell Bell, the concert is scheduled to begin at 2:30 p.m. in the Civic Auditorium. Tickets are priced at \$1.50 for adults and \$1 for children. They are available from Peggy Howe, Bldg. 829, or at the box office.

Naval Reserve Talk

Henry C. Rumm (2544-2) spoke to members of the Naval Reserve Ordnance Company 8-11, Naval Training Center, recently. His talk was entitled "Combination Locking Devices for Weapon Safing."



TOURING SANDIA'S SPHERE OF SCIENCE recently was a group of students from New Mexico Institute of Mining and Technology. Members of the Physics Club above were photographed as they

intently studied the model wind tunnel display. A tour is available to any organized group if arrangements are made through John Leslie, supervisor of Community Relations Section 3431-2.

Club Buffet-Dance Tomorrow Will Feature Fashions; Calendar Set

Coronado Club's monthly buffet-dinner dance will be held tomorrow. Tickets are still available from the club office at \$2.60 for members, \$3.60 for guests.

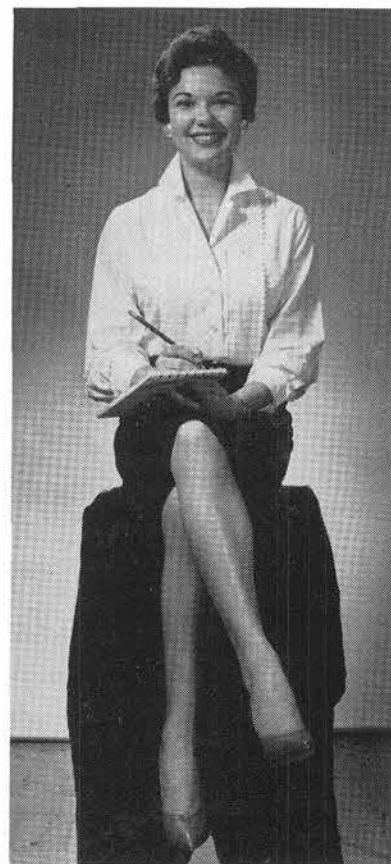
A style show, featuring Easter fashions from a local department store, will be presented by Flair models from 8:15 to 9. Dancing is from 9 to 1 to the music of Lee Sprague's orchestra.

The club's annual mixed-pair bridge tournament and dinner will be held Thursday, March 23. Dinner will be served at 6:15 p.m. and play begins at 7. Reservations for the tournament, which is open to club members only, may be obtained from R. M. Fegan (AEC), ext. 40297, by March 21.

Members of the present dance instruction classes will hold their graduation ball on Saturday, March 25, from 9 to 1. All club members are invited to this free recorded music dance.

"Yes Sir, That's My Baby" is the featured film for this month's Family Nite on Sunday, March 26, at 6 p.m. Free cokes and popcorn are served during the movie.

The movie, "Operation Abolition," which was scheduled for showing Wednesday, March 22, has been cancelled.



Rita Rayburn (2541)

Take a Memo, Please

Many a building used to stand where a lighted match got out of hand.

Radio Amateurs Meet

All Albuquerque radio amateurs are invited to attend a meeting Wednesday, March 22, at 7:30 p.m. at Lovelace Clinic Radiation Lab, reports E. H. Morterud (7523).

Speaker will be John H. Sampson, vice director of the Rocky Mountain Division of the American Radio Relay League.



CERTIFICATE OF MERIT, awarded Sandia Laboratory for placing eleventh in a national fire prevention contest, is displayed by Ward Hunnicutt (4342-1). The section has responsibility for Sandia's overall fire prevention activities. The contest was sponsored by the National Fire Protection Assn.

Sympathy

To Orlando Ulivarri, Jr., (2641-2344) for the death of his mother Feb. 11 in Albuquerque.

To Mary A. Vincent (8223-2) for the death of her father March 7 in Livermore.

To James P. Brock (8224) for the death of his father-in-law Feb. 28 in Albuquerque.

To R. C. Smelich (3466-1) for the death of his mother-in-law March 8 in Pueblo, Colo.

3 Livermore Women Visit State Capitol During BPW Tour

Three Livermore Laboratory employees joined 225 other members of the Business and Professional Women's (BPW) society on a recent tour of the California State Capitol.

Pearl Johnston, Barbara Bruton and Gerry Nerton (all of 8213-3) visited the executive offices, Capitol Building and Supreme Court room in Sacramento at the invitation of the state government. They attended sessions of both the State Assembly and Senate, where they heard speeches on mental health, narcotics, budget procedures for schools and others.

The group received personal introductions to California's Governor Brown and attended a luncheon with the governor, state assemblymen and senators.

The BPW, open to women employed in business or professions, sponsors many similar events throughout the year. Livermore Laboratory employees wishing to join the group may get details from Pearl Johnston.

Congratulations

Born to:

Mr. and Mrs. John Snowden (4543) twins, Joanne Celest and Joseph Carson, on Feb. 19.

Mr. and Mrs. John C. L. Leslie (3431-2) a daughter, Jennifer Mary, on March 8.

Mr. and Mrs. Joseph W. Zanetti (8233-1) a daughter, Regina Marie, on Feb. 23.

Mr. and Mrs. Warren A. Robertson (4224-5) a daughter, Melissa Anne, on Feb. 28.

Mr. and Mrs. Neil B. Botsford (5131) a son, Lawrence Bradley, on March 7.

Mr. and Mrs. Don G. Mueller (5432 on loan to 5132) a son, Donald Gene, Jr., on March 3.

Mr. and Mrs. Charles Westmark (1431) a daughter, Erica Jean, on Feb. 25. Cleo is on leave from 3466-1.

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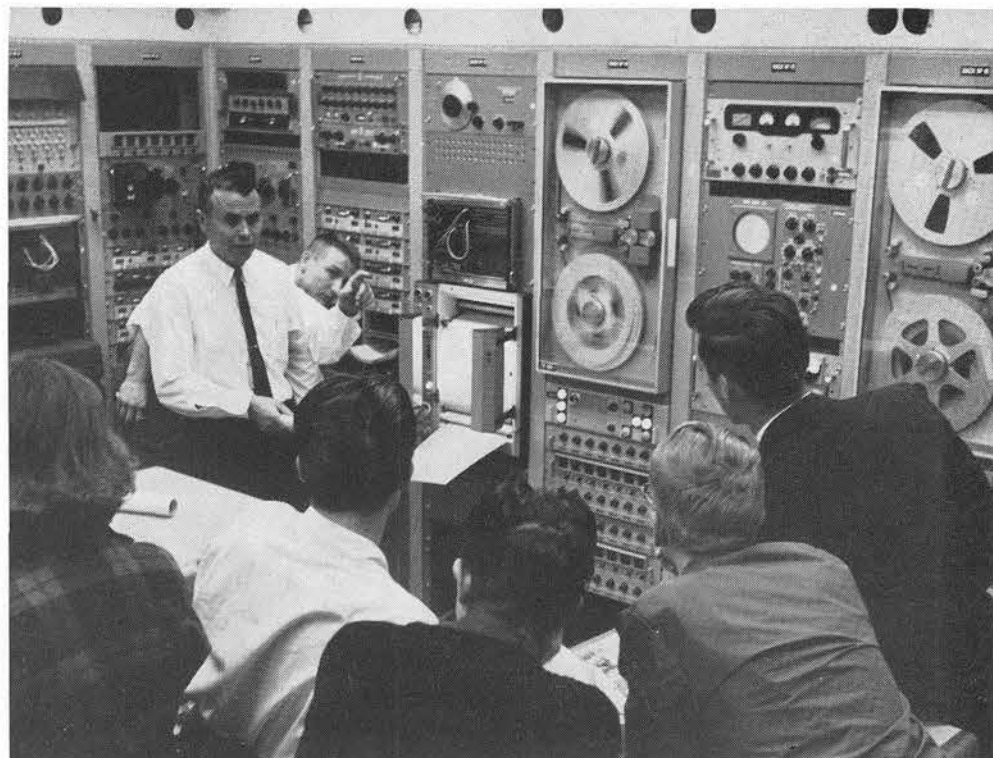
LIVERMORE LABORATORY employees turned out to watch the Polaris award ceremony in front of the Laboratory's administration building. Host for the ceremony was Vice President R. E. Poole.



POLARIS PROJECT LEADERS were among the guests on platform during the Polaris award ceremony held at Livermore Laboratory March 3. Examining model of missile-carrying submarine are (left to right) Doug Macmillan (8124-2), Lee Davies (8110), George Steinhauer (8163-1), Ray Sheppard (8151), Frank Maloney (8163) and John Anderson (8163-2), all of Livermore Laboratory.



WELCOMING ADDRESS was given by W. J. Howard (8100) to science students on their recent visit to Livermore Laboratory during the Edison Day program held at Livermore Laboratory. Fourteen students from Livermore and Amador Valley high schools took part in the interesting and instructive program.



DATA CENTER was one of the high points of the Livermore Laboratory Edison Day tour. Here Jess Burns, supervisor of the Data Center Section (8123-1), explains the center's operation to a group of students from Livermore and Amador High Schools. Assisting him in answering students questions is J. A. Shindelar (8123-1).

Sandia Providing Assistance to N. Mex. Regional Science Fair

Sandia Corporation is providing professional assistance for the Northwestern New Mexico Regional Science Fair to be held at the University of New Mexico March 24-26.

The Regional Fair consists of 325 scientific exhibits entered by junior and senior high school students from the counties of Bernalillo, Catron, McKinley, Sandoval, San Juan, Socorro, Torrance and Valencia. Number of exhibits from each participating school is determined on a proportionate basis.

Sandia representatives will assist with decorations, several exhibits and provide a closed circuit TV set-up.

A Nike-Cajun rocket, with a special nose cone developed by Sandia for upper atmosphere research studies, will be spotlighted in the center of the Union ballroom. Large murals representing the five exhibit categories entered in competition will be placed throughout the room. The five areas are biology, chemistry, geology, mathematics and physics.

On the stage will be a large, backlit color transparency of a rocket sled test firing at Sandia. The head table centerpiece is a bust of Archimedes, tying in the

theme of science from the classical age to present day.

Exhibits

In the art gallery adjacent to the ballroom and in the lobby, development of scientific thinking through the ages will be further exemplified by other exhibits.

At Carlisle Gym, main attraction will be a replica of the Vanguard satellite, surrounded by murals and panels again carrying out the idea of advances in technology.

Climax of the weekend is announcing winners of best exhibits. For two days 65 judges and assistants evaluate each display on a point basis, and then compile results to select winners in each category. Judges from Sandia are C. E. Abraham (5422), John Banister (5153), L. M. Berry (1124), W. H. Bradford (5422), R. G. Elsbrock (3311), R. C. Hildner (5422) and Gordon McClure (5152).

Cash prizes and scholarships are awarded at the banquet on Saturday evening, March 25. Names of persons eligible to compete in the state and national science fairs are also announced at this time.

To Provide TV

Sandia will provide a closed circuit TV with five monitors located on the mezzanine of the

Union so that relatives and friends of the exhibitors may witness the awards banquet.

Several technical movies will be loaned by Sandia for showings on Friday and Saturday as part of the scheduled activities. Administrative assistance during the two days will also be provided by Sandia personnel.

Other Exhibitors

Most of the schools hold local or area fairs to choose delegates of the four regional fairs in New Mexico. At the request of high schools in Grants and Farmington, Sandia sent exhibits for their fairs, both held last weekend.

The displays revolved around the same theme which will be used at the regional fair. At Farmington, Burt Dieruf (3431-2) manned an exhibit which showed engineers on various test programs and featured a Vanguard satellite.

Another Vanguard satellite and the murals and panels depicting advances in technological thinking were used in the Grants exhibit, which Marv Sektan (3431-2) handled.

Community Relations Section 3431-2, headed by John C. L. Leslie, is coordinating all arrangements for Sandia participation in the Science Fairs.

Welcome Newcomers

Feb. 27-Mar. 10

Albuquerque	
Letitia A. Asche	4413
Thomas L. Cleveland	3464
Agnes G. Coombs	4321
Emma Gonzales	3126
Cecil M. Lang	7212
Bruce L. Larson	7212
Jerrel R. Lochner	7223
Robert B. West	7212
*Barbara M. Wood	3126
Missouri	
Helen M. Walsh, Trenton	3126
Nebraska	
Robert G. Meier, Lincoln	2561
New Mexico	
Leslie J. Hubbard, Santa Fe	5426
Robert H. Wagner, Roswell	6000
New York	
Michael J. Barbaro, Jr., Olean	1124
David L. Hanson, Putnam Valley	5425
Ohio	
Richard C. Heckman, Yellow Springs	1124
Pennsylvania	
Charles G. Culver, Bethlehem	7182
Texas	
Thomas S. Edrington, II, Austin	7147
Returned from Leave	
Estella B. Chavez	3126
John C. Kanode	7312
* Denotes rehired	

MP's to Provide Speedometer Check For Base Motorists

A chance to check the reading of your automobile's speedometer against the reading of the Military Police radar device will be provided Sandia Corporation employees Saturday, March 18.

Weather permitting, the MP's will have the radar unit on Ordnance Road between Pennsylvania Avenue and Ordnance Road Gate (this is the access road to Kirtland). Anyone interested in checking their speedometer may do so between 1 and 4 p.m.

Apparent Low Bid Received by AEC For Bldg. 863 Project

Brown - Olds Plumbing and Heating Company of Albuquerque is apparent low bidder for modifications to Bldg. 863, according to an announcement by the Atomic Energy Commission. The firm's bid of \$62,000 was the lowest of four received.

The project will include modifications to an existing refrigerative air conditioning system, installing air cooled condensers, filter and exhaust systems, and modifications to film processing and cooling tower facilities.

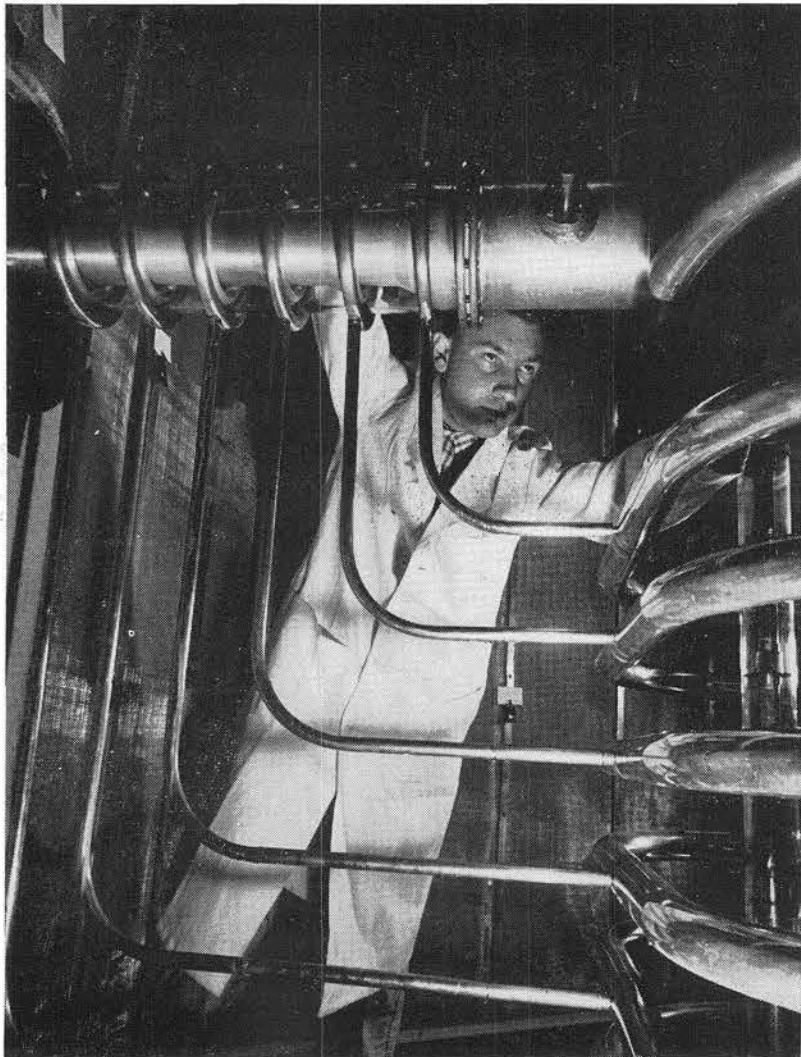
The building houses Motion Picture Division 3465, Records Depository and Micro Reproduction Section of Division 3464.

Plant Engineering Department project engineer is M. O. Hunsucker (4543-2).

Livermore Thunderbirds Take Bowling Honors

Livermore Laboratory's "Thunderbirds," quintet from the Sandia Mixed Handicap League, have made bowling news by scoring a new record in a nearby Hayward tournament.

The team won the Class B handicap title with a score of 2822. Individual scores making up the total were 630 by Jim Lovell (8122-3), 541 by Don Knaple (8232-4), 520 by Paul Dominguez (8213-2), 485 by Nick Truitt (8232-4), 488 by Nick's brother Mike, and a 158-pin spot.



ION BEAM passes from high voltage stack of Cockcroft-Walton accelerator through horizontal accelerating tube (above R. E. Ewing) to work area outside of screened room where any of seven portholes may be used at different experiment locations.



HIGH VOLTAGE STACK of Cockcroft-Walton accelerator is contained in temperature and humidity controlled room. Aluminum domes on either side of R. I. Ewing (5150) close during operation.

Van de Graaff Companion . . .

New Cockcroft-Walton Accelerator Will Go Into Use During This Month

Base Traffic Can Flow Smoothly; Thoughtless Drivers Cause Snarls

Imagine being in an airplane flying over Sandia Base during rush hours. You have an unobstructed view of bumper-to-bumper traffic streaming in every direction, stopping and starting at the direction of Military Police.

From the air it takes on a pattern—yellow and white lines and signs clearly mark traffic lanes, and it's easy to see where the cars should go.

But from the ground, many motorists obviously do not heed the signs and lane markers. Traffic flow problems have been carefully studied on Sandia Base and the most efficient, fastest and safest controls are set up.

During the morning rush hour, for example, vehicles coming east on Gibson can enter the Base using three traffic lanes. For incoming drivers, this means that one lane of cars goes to the left of the center guard shack and the other two lanes go to the right. Vehicles have been observed weaving from one lane to the other with collisions being narrowly avoided. A little less haste and observance of the normal courtesies would make it easier for all.

Since morning traffic in the extreme right lane turns onto Pennsylvania, the traffic merges into two lines east of that intersection.

A matter of particular concern has been the failure of drivers to

observe the traffic regulations regarding the fact that normally left or right turns may be made only from a right or left turn lane. Making a turn from any other than the designated lane is a violation of the law and subject to penalty.

Several persons have been cited by city police at the intersection of Eubank and Central NE where there are three lanes for eastbound traffic and the extreme right lane is the only one from which vehicles may turn right onto Eubank.

Out of state drivers, in particular, unfamiliar with the traffic flow and in the right turn lane, often go straight ahead and an accident could result. Traveling the same route each day, Sandia employees know the traffic situation and should plan ahead so that they are in the proper lane at the proper time.

Experiments will get underway this month using Sandia's new Cockcroft-Walton accelerator, which has been installed in the north end of Bldg. 884.

The machine, installed primarily for use by Physical Sciences Research Department 5150 and Nuclear Radiation Standards Section 2411-3, is capable of creating positively charged ions at low energy levels and can produce neutrons by charged particle reaction. Other organizations also will utilize the instrument.

The Cockcroft-Walton accelerator is a suitable companion for the Van de Graaff accelerator already at Sandia Laboratory since it produces ions with energies from 30,000 to 250,000 electron volts as compared with a range of 70,000 to 2,000,000 electron volts for the Van de Graaff.

The high voltage stack is contained in an air conditioned, humidity controlled, screened room. Aluminum coils around the instrument and aluminum domes covering the entire unit are de-

signed to prevent voltage breakdown due to arcing.

Accelerating Tube

The ion beam passes through an accelerating tube in a high vacuum system with 70 per cent of the beam focused inside a hole two millimeters in diameter. The beam may be bent to pass through any of seven portholes for use at different experiment locations.

When the accelerator is used to produce neutrons, the ion beam is conducted through a 25 ft. drift tube in a vacuum envelope to the neutron target. The number of neutrons produced (from 10^7 to 10^{10} per second) and also the energies (from 3.9 mev to 14 mev) are determined by the ion beam, and the thickness and type of target.

Although this accelerator does not require as much shielding as the Van de Graaff accelerator, since it will be operated at lower flux levels, an extensive continuous monitoring system has been set up which gives readings on gamma rays, X-rays and neu-

trons wherever personnel would be located near the instrument.

A continuing experiment by R. I. Ewing (5152) will be a study of the emission of secondary electrons from metals under ion bombardment. Various metals will be irradiated with ions of different energies. Ions of hydrogen and deuterium as well as helium will be accelerated by the Cockcroft-Walton for use in experiments.

G. W. McClure, supervisor of Physical Electronics Division 5152, will be primarily responsible for a study of ion atom cross-sections. This will include investigations of numerous processes which occur in gaseous discharges.

Classified Work

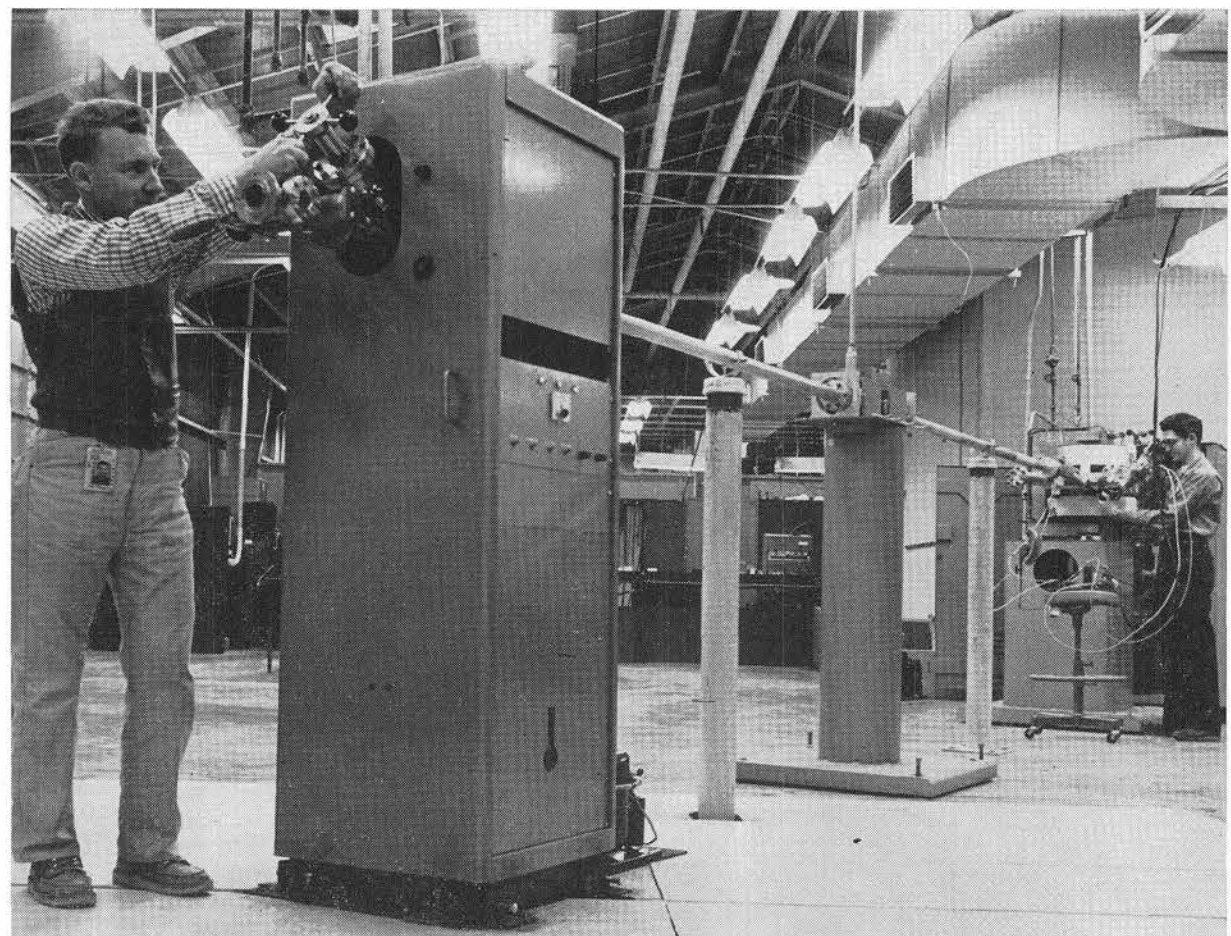
Work to be carried out on the accelerator by Section 2411-3 is mainly of classified nature; however, the group will calibrate neutron detectors of various types, meters for health physics applications, and neutron foils for the SERF (Sandia Engineering Reactor Facility).

"With this instrument we have accurate knowledge of the source energy and flux values, so it will be possible to apply this information to various calibration problems," said M. C. Jones, section supervisor.

Neutron transmission and moderation studies as related to detector calibration will also be carried out.

"One of our big problems now—and one that may be a continuing problem—is the response of a detector when there is material between the detector and the energy source," he explained.

The Cockcroft-Walton accelerator was manufactured and installed at Sandia by the Applied Radiation Corporation of Walnut Creek, Calif.



NEUTRON TARGET of Cockcroft-Walton accelerator is shown in foreground with R. I. Ewing (5150). At other end of 25-foot drift tube D. G. Schreiner (5150) stands beside experiment area for ion study.

Sandia Lab Golf League Organizing

Applications are now being taken for the 1961 Sandia Lab golf league, according to Jim Arnold (7322), president.

There will be an evening league and a weekend league with play starting the first week in May. Teams in both leagues are divided into four flights, based on handicaps, Jim said.

Employees interested in participating should send the following information to Fred Romero (3122): Name, organization, building, room number, phone, team members, team captain and league preference.

Any employee who is not a member of a team should contact Fred, ext. 29157, who will place him on a team. Deadline for joining is April 1.

Livermore Career Day Featured Talks By Five Sandians

Career-minded students at Livermore High School heard talks by five Sandians during a Career Day Program held March 15 at the school.

Taking part in the discussions were Lee Davies (8110), who spoke on opportunities in mechanical engineering; Betty Vineyard (8212-1), secretarial and office work; E. A. "Skip" Baca (8232-2), photography; Roy Wilcox (8114-1) and Marlin Pound (8212-1), drafting.

Supervisory Appointments

RONALD A. HAYENGA to supervisor of System Test Development Division I, 2441, System Test Equipment Development Department.



Since coming to Sandia in June 1951 Ron has worked mainly in Test Equipment Development; however, the past three years he has been in weapon development activity.

He was promoted to section supervisor in June 1953.

Before joining Sandia Ron had been an electrical engineering instructor at the University of Kansas for two years and had worked a similar period in Maracaibo, Venezuela, for Creole Petroleum Company.

Ron received his BS degree in electrical engineering at the University of Kansas and took one year of graduate work at Iowa State University.

He is a registered professional engineer in New Mexico and is a member of Tau Beta Pi, Sigma Tau and Kappa Eta Kappa, honorary societies.

During World War II he served in the Navy under the V-12 program.

WALTER A. MAUPIN to supervisor of Test Project Section 8126-1, Test Projects Division III, Livermore Laboratory.



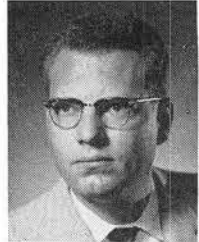
Walt joined Sandia Laboratory in January 1949 as a staff member in the surveillance organization, later becoming an assistant project engineer in the Engineering Department. He transferred to Livermore Laboratory in April 1957 working at first in design engineering and since then in the test organization as a test engineer. Walt participated in the 1958 "Hardtack" test series.

Before coming to Sandia Walt worked a year and a half as a transmission engineer for the American Telephone and Telegraph Company, Long Lines Division, in St. Louis.

He received his BS degree in electrical engineering in 1947 from the University of Oklahoma at Norman.

Walt served three years with the Army during World War II, assigned to a special engineering detachment working on the Manhattan Project at Oak Ridge, Tenn., and Dayton, Ohio.

HAROLD A. BECKER to supervisor of Test Project Section 8125-2, Test Projects Division II, Livermore Laboratory.



"Hal" joined Sandia Laboratory in 1955, working as a systems engineer in the Manufacturing Engineering Department. He transferred to Livermore in February 1959 as an engineer in project group work. For the past five months he has been a test project engineer.

Before coming to Sandia Hal was employed for three and one half years as a metallurgical engineer for the General Motors Corporation, Buick Division, at Flint, Mich.

Hal graduated in 1951 from Michigan State University at East Lansing, receiving a BS degree in electrical engineering.

During World War II he served two years with the Army in the European theater.

J. DONALD BENTON to supervisor of Test Projects Division II, 8125, Livermore Laboratory.

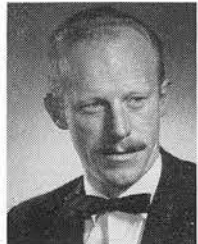


Don joined Sandia in 1953 as a field test engineer. His work since then has dealt chiefly with telemetry applications. He was transferred to Livermore Laboratory in July 1957.

A graduate of Texas Technological College, Don received his BS degree in electrical engineering in 1953.

He is a member of Tau Beta Pi and Alpha Chi, honorary engineering societies.

DOUGLAS C. MACMILLAN to supervisor of Section 8124-2, Test Projects Division I, Livermore Laboratory.



Doug joined Sandia Corporation in July 1958, as a test project engineer. Previously, he worked at the San Francisco Naval Shipyard, leaving there to enter the Army where he served from 1953 to 1955 in the Ordnance Corps. Following his discharge, he enrolled in the University of California at Berkeley where he received his BS degree in electrical engineering in 1958.

During and after World War II, Doug served six years in the merchant marine. He was chief electrician on the hospital ship Benevolence in 1950 when it collided with another ship and sank off the coast of San Francisco. He is a member of the American Institute of Electrical Engineers.

RICHARD K. PETERSEN to supervisor of Test Section B, 8126-2, Test Projects Division III, Livermore Laboratory.



Dick has been in preliminary design work since he joined Sandia Corporation in Albuquerque in 1956. He transferred to Livermore Laboratory in July 1958.

Before coming to Sandia, Dick worked for the DuPont Corporation in Richmond, Va., where he held various posts as an efficiency expert, power engineer, and engineering maintenance foreman.

A graduate of Illinois Institute of Technology, Dick received his BS degree in electrical engineering in 1952. He is a member of Eta Kappa Nu, honorary society.

During World War II Dick served two years in the U. S. Navy.

HERSCHEL W. ROGERS to supervisor of Section 2452-3, Automated Product Tester Division.



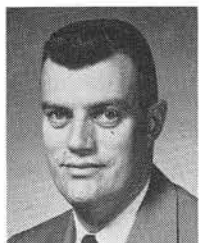
Herschel has been working with product testers since he came to Sandia in May 1951. An added function of this newly-created section will be to integrate automated data systems with production testers.

Before employment here, Herschel worked a year as a radar engineer for Boeing Aircraft in Wichita, Kan.

He received a BS degree in electrical engineering from Oklahoma State University where he was a member of Eta Kappa Nu, honorary society. He is a registered professional engineer in New Mexico.

During World War II, Herschel served 15 months in the Navy.

ALLAN M. SCHONBERG to Assistant Buyer 4343-1, Subcontracting Department II.

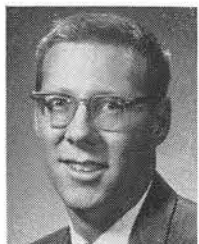


During his eight years at Sandia Al has worked as a personnel interviewer, a planning and scheduling coordinator, a TDSR, and the past few years as a buyers assistant.

Before coming to Sandia Al just completed two years service in the Army.

He graduated from Purdue University with a BS degree in business administration.

R. A. LINCOLN to supervisor of Explosives, Instrumentation and Test Section 1312-3, Explosive Development Division.

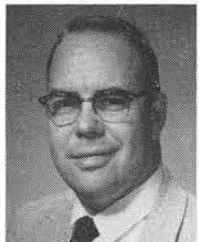


Al has been working in the Electrical Standards organization since he was hired at Sandia in July 1955.

Immediately prior he was attending Cornell University, where he received his BS degree in electrical engineering. Al also has completed his graduate work at the University of New Mexico and will receive a Master's degree in June.

He is a member of the Institute of Radio Engineers and Sigma Xi, honorary society.

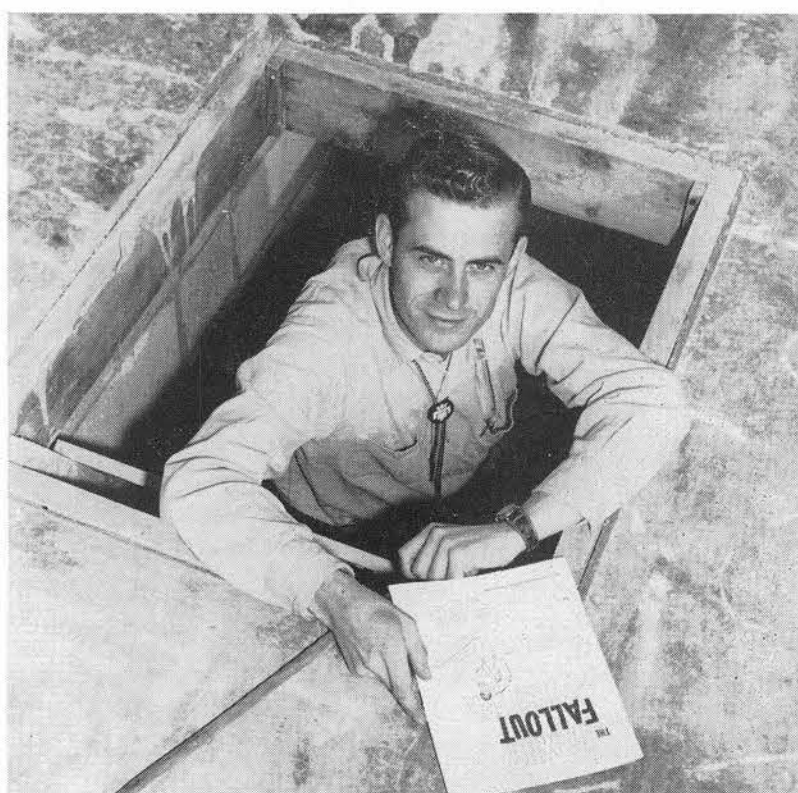
RUDOLPH S. STEFOIN to supervisor of Alternating Current and Radio Frequency Standards Section 2412-1, Electrical Standards Division.



During the 10 years Rudy has been with the Corporation, he has worked mainly in the System Test Equipment Development organization.

Before coming to Albuquerque he was at the University of Wyoming, where he received his BS degree in electrical engineering. Rudy is a member of Sigma Tau, honorary society, and the American Institute of Electrical Engineers.

He served 14 months in the Army.



FALLOUT SHELTER is a "necessity" believes Paul Sikkel (4511-3), who has built one in his backyard. Many of the ideas and specifications for the shelter were obtained from a booklet entitled "The Family Fallout Shelter," available from Section 3232-1.

'In case of atomic attack . . .'

Paul Sikkel Prepared With Backyard Fallout Shelter

Why build a fallout shelter?

Paul Sikkel (4511-3) built one because he's convinced it's the best hope for survival should the ugly specter of an atomic attack arise.

"The idea of constructing a fallout shelter had been in my mind for some time," Paul said. "When I decided to do some construction work around the house, I investigated the possibility of building a shelter at the same time."

"A local contractor said he would pour a concrete driveway and garage pad, and build my shelter to specified requirements for about \$900," he continued. "The final figure was \$928, almost \$600 under other estimates I had received."

Entrance to the underground shelter is located at one corner of the concrete pad. Eventually Paul plans to build a garage over the shelter.

The shelter itself is eight by eight ft., and is made out of eight-inch solid concrete blocks. The ceiling is of corrugated steel with six inches of reinforced concrete above it. A flash wall separates the steps leading into the shelter from the "living" quarters.

All furniture inside the shelter is collapsible. An army cot occu-

pies most of the floor space, and another bed is folded up against the wall. Wall shelves hold canned goods, first aid supplies, bottled water and a transistor radio. A simple pipe with filtered vent provides necessary air.

An extension cord is the only source of light now, but Paul hopes to install a portable generator at a later date. There is also provision for a connection to the city sewage system.

Paul has other uses for the fallout shelter right now. He plans to use it as a fruit cellar and, if he's successful during deer season, he'll dry his venison in it.

Many of the ideas and plans for the fallout shelter came from the booklet, "The Family Fallout Shelter," which is available from Security Special Studies Section 3232-1.

Paul will be happy to give additional information or show his shelter to interested employees. They may make arrangements by calling him at AX 9-3966.

'Mikado' Production To Feature Livermore Employees in Cast

The Gilbert and Sullivan operetta "Mikado" opens tonight in Livermore with Mike Gregory (8155) and Phyllis Bell (8212) in the production. Phyllis, who understudies one of the leading female roles, also played piano for rehearsals. Mike is in the chorus.

Mike and Phyllis have been active in the Little Theater Group, the Cask and Mask Players, for the past several years. Mike's most recent acting role was Mr. Kirby, a Wall Street financier, in the 1959 production of "You Can't Take It With You." Phyllis helped direct a workshop production of "H.M.S. Pinafore" in 1960.

The operetta will mark the first presentation by the organization in their new playhouse, the converted May School. Performances of the "Mikado" will be held the weekends of March 17-18, March 24-25 and March 31-April 1.

Clam Diggers

A clam digging outing along the California coast at Tomales Bay State Park, north of San Francisco, was planned for March 12 by members of Division 8155 and their families. Arrangements were made by George Sage, Jim Wright (both of 8155), and Bob Ware (8161-2).

PROMOTIONS

Tess K. Reis (3121) to Staff Associate
Benita A. Gonzales (3466) to Document Clerk
Virginia I. Mohr (8212) to Stenographer Clerk
Janet H. Lovell (8123) to Data Reduction Clerk
Britt-Marie Manrow (8123) to Data Reduction Clerk
Bert A. Ball (1112) to Staff Assistant
Bruce T. Bauer (7322) to Staff Assistant
R. C. Schreiner (4151) to Staff Member
Betty J. Ingram (4233) to Wireman
J. Berman Sanchez (3462) to Bindery Operator
Leta M. Hoffer (3462) to Bindery Operator
William E. Farrar (4233) to Assembler
Glenn O. Bridgeman (4254) to Machinist
Janie A. Bryan (3126) to Typist Clerk
J. E. Cappuccilli (3126) to Secretarial Typist
Catherine L. Anesi (4151) to Accountant
George Baldonado (4152) to Accountant
Lillian P. Bowers (4152) to Accountant
Richard A. Lassen (8232) to Photo Lithographer
Celso Valquez (8225) to Shipping and Receiving Clerk
Gerald L. Williams (3462) to Plate Maker
Carl D. Holmes (8223) to Technician
Jay J. Jost (8223) to Model and Instrument Maker
Paula O. Asturias (3153) to Employment Clerk
B. M. Netherton (8212) to Secretarial Stenographer
Ruth C. Powers (8212) to Secretary
Marilyn C. Lorenson (8212) to Service Clerk
Bessie Mae Roach (8232) to Senior Clerk
Robert E. Wolfe (1112) to Laboratory Assistant
Ernie Gurule (7321) to Laboratory Assistant
Charles E. Simpson (7321) to Laboratory Assistant
L. J. Fitzmorris (3464) to Document Clerk
Kenneth A. Peters (3462) to Bindery Operator
Jay Arnold Andrews (4631) to Technician
Gilbert J. Lovato (4231) to Technician
Larry E. Bowen (4251) to Machinist
Gibson R. Gornsey (4253) to Machinist
Thomas V. Torney (4253) to Machinist
Nancy M. Sanchez (3462) to Schedule Clerk
Marcial Valdez (4151) to Accountant
David E. Arnett (8225) to Metal Stock Handler and Cutter
Roger W. Thorp (4135) to Staff Assistant
R. J. Siebenforcher (4113) to Staff Member
Orton W. Benson, Jr. (4171) to Staff Member
Ralph G. Carnichael (4233) to Shop Clerk
William E. Scott, Jr. (8225) to Material Handler

Carol M. Johnson (8212) to Stenographer Clerk
Lorene A. Terrill (8211) to Message Center Equipment Operator
John A. Caldwell (4153) to Investigator
Bobby J. Little (2452) to Staff Assistant
Orton K. Chappell (8123) to Staff Assistant
Norman C. Lucas (5431) to Staff Assistant
Secundino Baca (4233) to Plate Maker
James L. Davis (2642) to Messenger
C. June Bass (2644) to Record Clerk
Betty Jo Morrow (7241) to Data Reduction Clerk
David A. Rice (7323) to Laboratory Assistant
J. E. Breitenbach (7323) to Laboratory Assistant
Mary A. Fergesen (2632) to Chartist
Maximo Martinez (7322) to Laboratory Assistant
G. June Williams (5430) to Secretary
Dorothy B. Hoeke (7110) to Secretary
David L. Schafer, Jr. (7212) to Field Test Technician
Merry C. Campbell (7311) to Laboratory Assistant
Lateral Supervisory Appointments
J. C. Connell from 7512-1 to 7511-2
A. E. Clamp, Jr., from 7511-2 to 7511-1
V. G. Redmond from 7185-1 to 2532-3
W. A. Smith from 3423-3 to 3422-1
B. G. Prentice from 7182-3 to 7164-2
S. L. McCammon from 2724 to 4213
H. V. Riley from 2724-1 to 4213-1
C. Crider, Jr., from 2724-2 to 4213-2
J. N. Ballentine from 2724-3 to 4213-3
R. C. Holland from assignment as Section Supervisor in 7532 to 7212-6
B. E. Hickerson from 3466-3 to 3466-2
P. D. Welker from 2543-3 to 4212-4
A. I. Redlinger from 2342-1 to 4212-3
C. P. Rindone from 8114-2 to 8114-3
R. L. Siglock from 8114-3 to 8114-2
W. E. Bosken from 7321-3 to 7311-4
R. A. Baroddy from 8152 to 8121
H. C. Walker from 8121 to 8126
J. S. Anderson from 8163-2 to 8145-2
V. M. Field from 8152-2 to 8141-3
W. B. Pafford from 8122-4 to 8124-1
E. L. Paine from 8152-1 to 8164-2
C. M. Pothoff from 8164-2 to 8151-2
R. M. Tidwell from 8121-3 to 8125-1
R. E. Herbert from 4254-1 to 4252-6
R. J. Gornsey from 4252-6 to 4254-1

Summer Almost Here; Sandians Talking Vacations



"UP ANCHOR," says skipper Carroll Russell (8213-3) as he prepares to take his crew on another voyage on the sea scout ship "Seawolf." With Sandia's vacation plan Carroll has time to

take the boys on week-long cruises on California Rivers. Carroll also spent some of his vacation time helping the scouts finish the superstructure on the 40-ft. boat and adding other improvements.

Carroll Russell Spends Vacation Sailing with Sea Scout Group

When vacation time rolls around for Carroll Russell (8213-3), he can be found sailing the waters of Northern California with 15 young sailors in tow.

Carroll, skipper of the Sea Scout ship "Seawolf," is one of the many Sandians at Livermore who use their annual vacation time to pursue civic activities and family pleasure as well.

"I take one week for a cruise

with the boys every spring when school is out," Carroll said, "and a couple of extra days during the year for Coast Guard inspections and work on the boat. I still have ample time left over to go traveling or sightseeing with my family."

During previous vacations and weekends Carroll and his Sea Scouts changed engines and built the superstructure on the 40-ft. liberty launch given them by the Navy. "It took us about 13 months to bring the ship to where it is today," Carroll said, "and we still have to add a galley, lockers, refrigerator, permanent bunks and other items."

Carroll has been a Sandia employee for two and a half of the eight years he has skippered the

Sea Scout group. He spends much of his spare time during the year planning for the boys' cruises, tours, and fund raising events. Since the senior scout group does not get financial help from anywhere other than their own initiative, it takes paper drives and other means to provide working capital.

Carroll was a Sea Scout as a boy in Erie, Pa., and is glad to help other youngsters in this healthy character-building organization.

"We're proud to be a part of one of the largest Sea Scout Councils in the country," Carroll said. "We're one of 18 ships in the Mount Diablo Council, with combined equipment valued in excess of half a million dollars!"

Hong Kong Is Highlight of Helen Batchelor's Orient Tour

A six-week cruise of the Orient was the recent vacation experience of Helen Batchelor (3463). "I've never enjoyed anything so much in my life," Helen says. "From the moment we went aboard the S. S. President Wilson, we were lavishly entertained. The ship had marvelous facilities, luxurious."

Helen flew from Albuquerque to San Francisco where she joined a friend. Both women had planned the trip for months and Helen had saved her vacation accrual for more than a year.

"It was beyond our expectations," Helen said. "We left San Francisco, and made stops at Honolulu, Yokohama, Tokyo, Kobe, Hong Kong and Manila and then visited Yokohama and Honolulu again on the return trip."

Helen had two days in Japan where she took an overland train to Kyoto. She visited Buddhist shrines, saw Mt. Fuji and explored Tokyo, a thriving modern city contrasting greatly with the pastoral countryside.

"Manila was the same way," Helen says. "Here again is a bustling modern city. However, a few miles away, agriculture is performed by primitive methods."

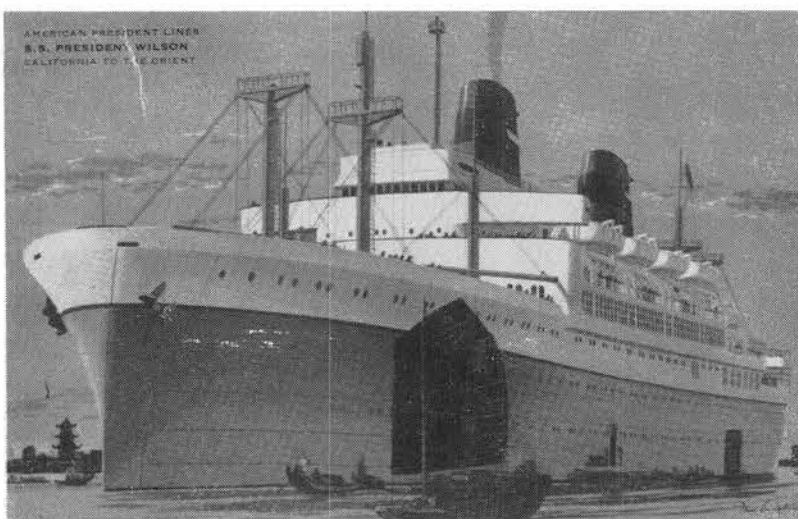
Hong Kong was the highlight of the trip, Helen reports. "This is a fabulous city," she says, "a shopper's paradise. I bought two custom silk dresses, a beaded sweater, a strand of pearls, Chinese brocade silk and Japanese dolls, and wished I had more money. Traveling around in a rickshaw was great fun, too. It is a colorful and exotic city containing great contrasts in luxury and poverty."

On the President Wilson Helen enjoyed holiday parties and special activities. "We all helped decorate."

"The entire trip," she says, "was like Christmas every day."



HELEN BATCHELOR enjoys deck chair aboard the S. S. President Wilson during her recent six-week Orient cruise.



S. S. PRESIDENT WILSON, American President Lines, provided luxurious living for Helen Batchelor during six-week Orient Cruise.

Whether choosing to take "dream" vacations or give community service as described in articles on this page, Sandia Corporation employees are not lacking in imaginative vacation pursuits.

In issue after issue the Lab News reports on unusual vacations. Some employees add to their houses during their vacations. Others complete patios, while still others explore caves, hunt in Alaska, or journey to Hawaii.

The paper has reported exciting vacations when Sandians shot the rapids of the Colorado river, sailed in the Gulf of Baja California, or went skin diving in Yucatan.

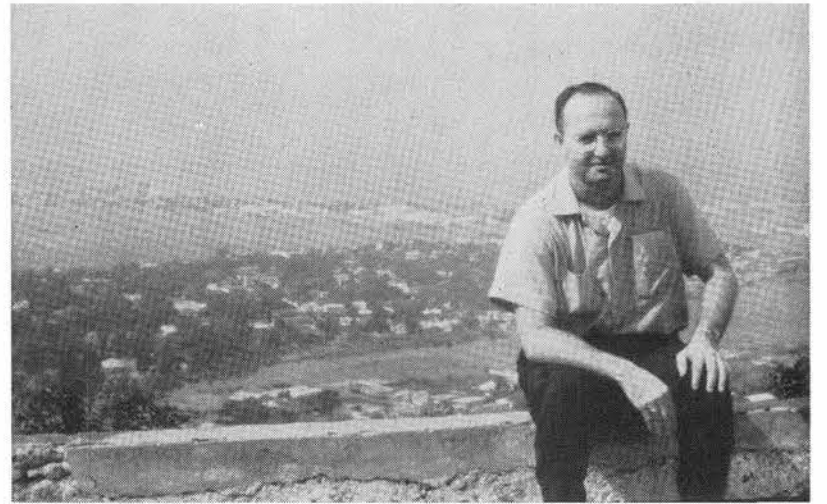
From camping, skiing, mountain climbing, hunting, fishing, golf-

ing, sightseeing or loafing, Sandians choose their own kind of recreation.

There is no "vacation season" at Sandia, since many employees do find fun during winter months. However, most of us wait for the warm days of summer and those days are almost here.

From now through September most Sandians will take their annual two weeks' vacation. Medical experts have long agreed that vacations are important to your health, both mental and physical.

Remember one more very important thing is safety. Have a good time, relax, enjoy your leisure but drive carefully and don't take chances. See you when you get back!



ELWIN SCHAEFER above the harbor at Cartagena, Colombia.

West Indies Cruise is 'Dream' Vacation for Two Sandians

"This was the kind of vacation you dream about," Elwin Schaefer (4543) was saying, "but when it happened, it was better than the dream."

Phil Bircher (7512) agreed. Both Sandians teamed up last winter to take a two-week West Indies cruise aboard the M.S. Kungsholm, Swedish American Lines. Leaving from New York City, the ship's itinerary included Port au Prince, Haiti; Kingston, Jamaica; Cartagena, Colombia; San Blas Islands, off the coast of Panama; Cristobal, Panama Canal Zone; Georgetown, Grand Cayman Islands; and Nassau, Bahamas.

"After the first day out," Phil says, "everybody on board seemed like old friends. All of us had the same idea—to relax and have fun. After a few days away from TV, radio, newspapers and telephones you don't know what day it is or what time it is and you don't care. Perfect relaxation."

Both men commented on the excellence of the service aboard ship and about the fine food. In addition to regular meals and afternoon tea, the Kungsholm served a midnight smorgasbord "out of this world," according to Elwin.

"There were always activities going on," he continues, "deck tennis, card games, swimming in two pools, skeet shooting off the fantail deck . . ."

"And in the evening," Phil says, "more social activities. Dancing to two orchestras, special folk dancing entertainment, masquerade parties . . ."

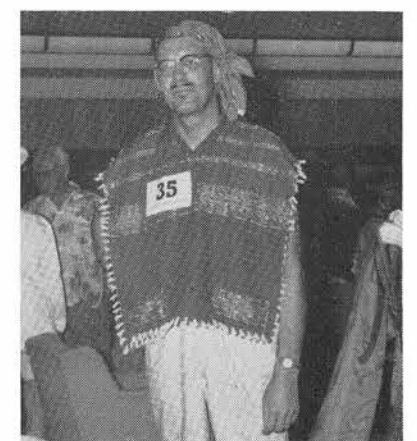
Among the interesting side trips from the ports of call was a day spent in Haiti. In addition to touring the island the Sandians saw a voodoo spectacle during the evening. Also the merengue, national Haitian dance, was very impressive.

"I took a few lessons," Phil says, "and brought back some records."

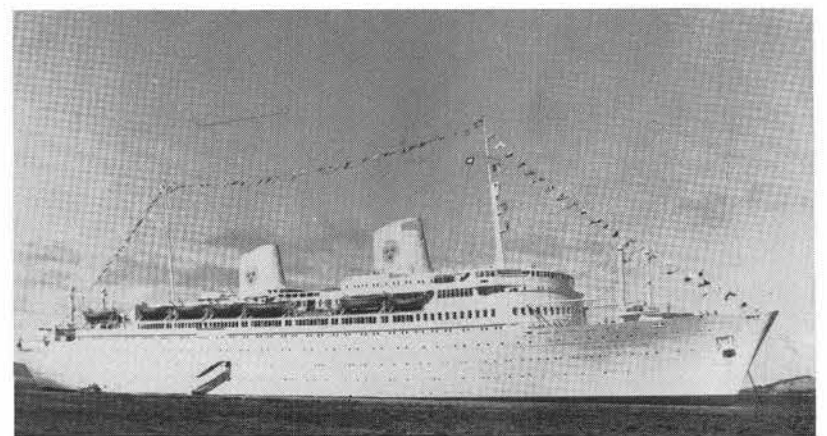
"Coming into New York on the last day of the cruise," Elwin reports, "was like attending a wake. All the passengers had become such good friends, we hated to see it end."

Both men spent a week in New York as part of their vacations. And both are making plans for similar vacations sometime in the near future.

"The sooner the better," they say.



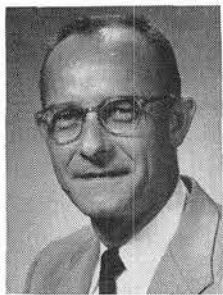
PHIL BIRCHER masquerading as "Poncho the Pirate" during a party on board the ship.



M. S. KUNGS HOLM, Swedish American Lines, took Sandians on two-week "dream" vacation cruise of the West Indies.

Sandia Service Awards

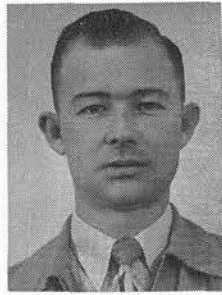
15 Years



James W. Jones
7120
Mar. 18, 1946



Billy E. Hickerson
3466
Mar. 19, 1946



Paul R. Taylor
7535
Mar. 22, 1946



Leo M. Jercinovic
2640
Mar. 25, 1946



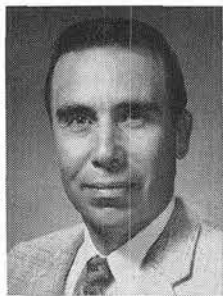
John J. Michnovicz
3465
Mar. 25, 1946



Clarence G. Sproul
7133
Mar. 26, 1946

10 Years

Mar. 18-31



Greg A. Mabeita
7211
Mar. 27, 1946

James M. Mesnard 8124, Allen C. Dale 4424, Leroy W. Ramsey 7532, Daniel J. Yarbrough 4420, Bruce M. Langford 4231, Naomi E. Bennett 2724, Ora L. Case 4512, Richard Claassen 5100, Ruby B. Groll 3462, Eugene P. Monahan 4624, Mary F. Schwartz 6021, Retha I. Kay 4131.
Allen J. Williams 4512, Solomon L. Apodaca 4221, Carmen M. Gabriel 2542, John J. Colwell, Jr. 7184, Fred T. Crocher 4511, C. M. Guelenzoph 4251, Violet M. Barela 2321, Noble A. Gruenoch 7513, James A. Hay 4253, Eloy C. Pena 2643, Henry R. Welch 4512.
Leonidas T. Wilson 7182, Francis E. Berry 4253, Lawrence E. Colson 3242, Jose I. Garcia 4573, Leonard G. Thompson 2722, Joseph A. Maldonado 4624, Herminio Baros 7243, Edith Mary Moya 3126.

'Arms and Survival' Topic for TV Great Decisions Tonight

"Arms and Survival" will be discussed—1961" TV program tonight at 8 on KNME-TV. Guests will be Ben C. Hernandez, attorney; Don Jenkins (3130); William Dabney, University of New Mexico history professor; and Mrs. Beverly Murphy, Junior League. Moderator will be Jim Fife (3431-1).

The final program in the eight-week TV series will be held next Friday night, March 24, at 8. Topic for discussion is "Blueprints for the World Economy." Panel members will be Dr. Leroy Miller, neuro-surgeon; Melvin Jaschke, stockbroker; Roger Gilbert, businessman; and Robert Robertson, University of New Mexico economics professor. Bob Colgan (3431-1) will moderate the program.

Both shows will be retecast at 11:30 a.m. Saturday on KGGM-TV; 12 noon Sunday on KOB-TV, and again on KNME-TV at 11 a.m. Monday.

Softball Umpires Needed

Employees interested in serving as umpires or scorekeepers for the Sandia Laboratory Softball Association are asked to contact Fred Romero (3122), ext. 29157. League play will begin about May 1.

MARCH 17, 1961

LAB NEWS

PAGE SEVEN

Sandia Displays Will Be Shown at KAFB During Armed Forces Day

Sandia Corporation and Sandia Base exhibits for Armed Forces Day, May 20, will move to Kirtland Air Force Base this year.

The decision to exhibit jointly with Kirtland was made because it was felt that two separate shows diluted efforts of both groups and also that two shows created competition for hardware from outside sources.

For the first time this year, exhibits will be grouped by theme, rather than having separate displays by each service.

Sandia Corporation will support Sandia Base exhibits with the following items: full-sized Mercury capsule, Mercury capsule model, Nike-Cajun rocket, rocket sled, Jupiter nose cone and Vanguard satellite. The Corporation has also arranged for the loan of the State Fair "Tenderfoot Express" train for use on the Kirtland flight line to help move visitors from point to point.

Arrangements are being made through Community Relations Section 3431-2.



NEW OFFICERS of the Sandia Toastmasters Club 765 will over the program for coming weeks. From left are Nate Wineberg, historian; John Mitchell (3121), educational vice president; M. J. Madlener (1332), secretary; Lt. Col. Ben Marshall, president; Harold Goddard (1443), executive vice president; and Al Hall (4221), sgt.-at-arms. Ninety per cent of members are Sandians.

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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

AQUARIUM, 5 gal., complete w/heater, aerator, filters, light, cover, thermometer, plants, fish. Maple stand included. Make offer. Jewett, AX 9-1008.

CLUB CHAIR, Flexsteel, w/ottoman, black vinyl, \$65; two matching wing back chairs, loose down cushions, \$60 pair. Miller, AL 5-7187.

QUICK-KAMP camping trailer, \$2057; 1958 Fiat, \$575. Everett, AX 6-6057.

AUTOMATIC WASHER, Kenmore, \$25. Keepsats, 3608 Florida NE, AX 9-9217.

'60 AUSTIN Healey, Sprite sports car, take over payments plus \$300; 1957 Dodge Sierra, 9-pass. station wagon, all powered, \$875. Katzenstein, DI 4-1931 after 6 p.m.

'41 FORD 1/2 ton pick up, 4 speed box, new brakes. Hewitt, AL 6-6483 after 5:30 p.m.

BABY BED w/mattress, \$15; bottle warmer, \$1; sterilizer, \$1. Arning, AL 6-9229.

STUDIO COUCH, Simmons, makes into double bed, brown tapestry covering, \$50. Weber, AX 9-1389.

TAPE RECORDER, Webcor 2-speed, dual head, \$45; 24" TV, \$15. Weber, DI 4-5183.

CAMPING TRAILER, 16 ft., 1 1/2 years old, sleeps six, butane stove, ice box, 16 gal. water tank, \$950. Wyer, AL 5-8190.

ONE ACRE near Corrales, irrigated, restricted, ideal home site. Manteufel, AX 9-4584 after 5:30 p.m.

'58 LAMBRETTA, \$150. Stinebaugh, AM 8-6228.

GAS RANGE, 30" Kenmore, with griddle, used 8 months, \$150. Amos, telephone 298-4470 after 6 p.m.

21" TV, Silvertone, table model, \$70. Wyant, AX 8-0371.

DYNAMOTORS, 500 VDC 200ma, 1000 VDC 200 ma, 12 volts input, \$9. Cooke, CH 2-3423.

BOYS BIKE, 20", good tires, \$15; one small and one large tricycle, \$1.50 each. Baxter, 1610 Bayita Lane NW, DI 4-7601.

'57 VOLKSWAGEN deluxe sedan, sky blue, leatherette interior, radio, wsw, new battery, 31 mpg in town, \$1045; Cushman motor scooter \$95. Johnson, AX 9-8980.

35mm CAMERA, Bolex B2 Wollensack F 3.2 lens, case, photo attachment, \$25; Sears 8" lifting arbor saw, stand and motor, \$35. Johnson, AL 5-5427.

HOUSE TRAILER, 1956 Manorette, 8' x 39', one bedroom, modern, one owner. Larrick, 6720 Cochiti Rd. SE, AM 8-0203 after 4 p.m.

BASEBALL SHOES, Wilson size 7, \$5. Baca, AL 6-2931 after 6 p.m.

SEWING MACHINE, Sears Zig Zag, hardly used, best offer over \$200; Lyman Tru-line Jr. handloading press, \$25; Dormeyer Mixer. Scranton, AX 9-4902.

WINTER COAT, warm, woman's or girl's size 10-12, beige, just cleaned, \$20; never used infant seat, \$5. Daily, AX 5-0595 after 5:30 p.m.

ACME VISIBLE files, like new, holds 4" x 6" cards. Barker, AX 9-2365.

HI FI 4-speed monaural, portable, \$35; 20" two speed fan, free standing or window mounting, \$10; portable radio, battery or 115 vac, \$10. Zeller, DI 4-9000.

STERLING SILVER flatware, Westmorland "John and Priscilla" pattern, five 6-piece place settings, \$125. Janney, AM 8-8074.

CHIHUAHUA-POMERANIANS, mixed breed, one male, one spayed female, 10 months old, short black hair, \$10 each. Adams, AX 9-0454 after 5 p.m.

ARGUS C-3 camera and case, \$30; electric rotisserie, \$32. Howell, AX 9-6296.

SPRINGER-COCKER spaniel pups, free to a good home. Westman, AL 5-6048.

'59 CHEVROLET Bel-Air, 2-dr. sedan, automatic transmission, 8 cyl., R&H, ww tires, 19,000 miles, new white and beige paint. Gomez, TR 7-2643.

27' TRAILER, Roycraft, with tandem axles, clean and modern. Lockwood, DI 4-5435.

'58 LAMBRETTA 125 motor scooter. Sandgren, AX 9-5007.

SAXAPHONE, E-flat alto, \$75. Edwards, ext. 49272.

ELECTRIC RANGE, 30" Crosley, \$110 or best offer. Newman, AX 8-2323.

STEEL SASH window, 6 ft. wide, glazed w/screens and hardware. Cherb, AL 5-1891.

PLAY GYM, \$7; boy's summer shirts, size 10, 3 for \$1. Hicks, 321 Manzano NE, AM 8-8640.

PRACTICE CLARINET with case, \$25; movie camera with telephoto lens and case, \$60. Hostetter, AL 6-3803.

BOX SPRINGS and mattresses, two, twin bed size. Brown, AL 5-0566.

GARDEN TRACTOR, 5 hp with some or all of 6 attachments, including sprayer. Boyes, BU 2-3174.

'56 MERCURY 9-pass. station wagon, R&H, PE, AT, \$650. Duffield, 2842 Monroe NE, AL 5-1081.

4 DRAWER chest, white enamel, extra large, \$10; vanity with bench, \$8. Brown, CH 3-0717.

'52 IMPERIAL V-8, power steering, brakes, windows, R&H, fluid torque drive, \$625 sell or trade. Slesinger, AX 9-4626.

ROBERSON 3 BDR, den, corner lot, fireplace, double garage, screened porch, walled yard, other extras, \$1000 down. Weir, 2117 Martha NE, AX 9-1160.

24" TV, Muntz, needs picture tube, \$20; tape recorder, Webcor model 50, portable 2-speed dual head, \$45. Weber, DI 4-5183.

'51 BUICK Roadmaster, four door, \$175. Browning, 2616 Virginia NE, AX 9-0169.

TRUNDLE BEDS, maple finish, mattresses, \$25. Passmore, AX 9-5172 after 5:30 p.m.

SECTIONAL, 2 pc.; lamps; coffee table; end tables; limed oak double bed; bookcase; silver blond chest of drawers; dresser; 21" TV's B&W or color. Edwards, 10235 Propps NE.

'53 CHEVROLET sport coupe, new tires, twin pipes, R&H, Chevrolet 6 triple carbs and manifold. Shoemaker, TR 7-2053.

NORTHLAND JOHNS, 7-3", cable bindings, reasonable. Johnson, 114 Pennsylvania NE, Apt. 7, after 5 p.m.

NEXT DEADLINE

FOR SHOPPING CENTER ADS
Friday Noon, March 23

4 3/4% GI 3 bdr., 1 3/4 baths, 2-car garage, large pantry, 2-way fireplace, carpets, some drapes, walled, landscaped, disposal, \$17,000. Treat, AX 9-7182.

HI FI sacrifice, stereo preamplifier, stereo adapter, electronic crossover, wired and tested for kit price, bookshelf and corner speakers. Hendricks, CH 2-0135.

2 BDR. HOUSE, attached garage, utility building, close to bases, landscaped, easy maintenance, \$1000 down, 1100 Jefferson SE. Nelson, AL 5-2364.

CHILD'S IRONING board, pad, cover and iron, \$35.00; two chenille bedspreads, \$3 each. Kochmann, AX 9-5133.

INNERSPRING MATTRESS for double bed. Van Delinder, 3212 Ortiz Dr. NE, AL 5-9324.

DACHSHUND PUPPIES, AKC registered, red, available now. Neel, AX 9-9309, 3617 Espejo NE.

ROLLAWAY BED, large Simmons, \$25, also pillows, sheets and covers at nominal prices. Chandler, telephone 298-1976.

SOFA, maple finish, separate cushions, \$25. Stephenson, AX 9-9114.

PICKET FENCE, white; 3 mahogany living room tables; green carpet 11' x 12'; car bed. Rose, DI 4-8592.

3 BDR HOUSE, 1 3/4 baths, 2-car garage, drapes, carpeting, fireplace, extras, \$2000 down, no qualifying. Brunacini, 4017 Alta Monte NE, DI 4-6831.

DINING ROOM table, 1 arm chair, 5 regular chairs, original one year old, three table pads, original cost \$175 sell for \$125. Padilla 2721 Charleston NE, AX 9-0460.

BINOCULARS, Bushnell, Range Master, 7x35 coated lenses, individual focus, w/case, \$65. Tobey, 229 Cardenas Dr. NE, AM 8-5828.

ALPA 35mm camera, Model 6B w/f1.8 Switar lens. Case, sunshade, filters. Originally \$500, sell for \$225. Goodwin, AL 6-2216 after 5 p.m.

HAMMERLUND RECEIVER, HQ-150, used 150 hours, \$200. Hedman, AX 9-2077 after 6 p.m.

3 BDR HOUSE, 1 3/4 bath, SE location, 2-car garage, fireplace, 2000 sq. ft. Randle, AL 6-1747.

TRANSMITTER, Viking Valiant, \$250; NC-300 receiver with speaker and calibrator, \$210. Johnson, AL 6-0967.

NAVY BLUES for man 5'6 1/2", 135 lbs., 28-30 waist, tailormade: GI dress and unders trousers, neckerchief, pea-coat. Lopez, AX 9-0941.

PICTURE WINDOW, steel 48" x 72" complete with hardware and screens, \$25. Calvery, AM 5-0351.

PORTABLE WASHER, Kenmore, \$20. Dearnley, AM 8-4654.

FORD GALAXIE 4-dr. hardtop, gold and white, loaded, factory air, 16,000 miles, forced to sell. Strawderman, AX 8-0545.

AIR CONDITIONER, refrigerated, 1 hp cools approx. 600 sq. ft., used only 50 hours, ideal for apartment. Belden, AX 9-3867.

'56 OLDSMOBILE Lafayette, 4-dr., R&H. Benton, 435 Lafayette Pl. NE, AL 5-4466.

'52 DODGE 2-dr. sedan, \$200. Schultz, 6208 Natalie NE, telephone 299-5025.

'57 FORD 2-dr. custom 300, Thunde bird V-8 engine, will take \$675 or trade for pickup. Roberts, AX 9-0877.

GOLF CLUBS, K-28, 3 woods, 9 irons, bag boy cart, bag, wood covers, \$75. Brown, AX 9-7124.

OLD NAVAJO Indian bracelets, bow and arrows, reservation pawn, sell or trade for German luger or old knives. Smith, AX 9-1096.

12' BOAT, runabout, 30 hp Mercury motor, homemade trailer, all for \$675. Electric motor, 1/2 hp; portable radio. Cox, 510 Espanola St. NE.

LIMED OAK furniture: desk, \$20; dining table and six chairs, \$75; coffee table and two end tables, \$15; Simmons studio couch, \$20; or best offer. Goen, AL 6-6385.

CRAFTSMAN 10" tilting arbor saw with 1 hp motor, \$100. Bell, AX 9-5254.

'51 CHEVROLET 2-dr., \$100. Langenhorst, 2804 Quincy NE, AL 5-8937.

CAMP TRAILER, 19' Lakewood, 2 bottles, electric brakes, vented gas heat, electric or ice refrigerator. Stixrud, DI 4-7870.

'55 DE SOTO FIREDOME, 4-dr. sedan, automatic transmission, PB, PS, R&H. Keyser, AL 6-1285.

GOLF CLUBS, 8 irons, 3 woods, best offer. Mancuso, AX 9-4279 after 5:30 p.m.

CAMEL'S HAIR sport coat, 38 1/2, never worn, \$25; brown tweed sofabed sectional couch, \$85. Schultz, AX 8-2731.

GAS RANGE, 4 burner, sell or will take \$15 and wall blocks. Lopez, AX 9-0941.

SUBMINIATURE CAMERA, Minolta "16" complete with filters, carrying case, year's supply of film, \$30; Heathkit VTM, \$25; Plainsman pellet pistol, \$5. Singleton, AX 9-1613.

CUSTOM BUILT home, 3 bdr., 1 3/4 bath, utility room, hardwood floors, fireplace, kitchen built-ins, large backyard, available in June, \$17,200. Peterson, AX 9-5921.

'58 TRAILER, 10' x 50', 2 bedroom, Coral appliances, side hall, rent applied to purchase. Organ, 2 manual, make offer. Hannan, BU 2-3462.

3 BDR. HOUSE, bath and half, wall to wall carpeting, landscaped walled yard, \$12,000, low down payment. Locke, 5712 Aztec NE, AL 6-2562.

'58 MERCURY Montclair, shadow rose, sedan, PS, PB, radio, \$1475; 1952 Chrysler sedan, very good second car, \$300. Magee, AL 6-1358.

3 BDR. HOUSE, attached garage, Carlos Rey addition, one year old, \$700 down. Gonzales, CH 2-5084.

357 MAGNUM brass, will trade two .38 special cases for each 357 case. Womels-duff, AX 9-6269.

CARPOOL from Comanche and Dakota NE to Bldg. 892. Miziker, ext. 31236.

TRAILER for 14 ft. aluminum boat. Feliciano, AX 9-0434.

FOR RENT

2 BDR., livingroom, large kitchen, garage, gas range, refrigerator. Water and garbage paid. Newly decorated, SE Heights. Nott, AX 9-2232.

2 BDR. in brick triplex w/stove, refrigerator, Venetian blinds, curtains in kitchen, storage space, AC, water and garbage paid. Reasonable, 528 Cardenas SE, Tillman, AL 5-6292 after 5:30 p.m.

MOUNTAIN CABINS, \$50 per month; trailer space in Sandia mountains, \$20 per month. Souder, BU 2-3274.

1 BDR. APT., close to Sandia, washer-dryer, furnished, utilities paid, \$70; 1 BDR house, furnished, 3 blocks from University, w/g paid, \$72.50. Chavez, AL 5-1585.

1 BDR. APT., 610 11th St. SW, near Coal, \$55 month. Mrs. Coombs, CH 2-9321 after 5 p.m.

UNFURNISHED HOUSE, two bedroom, enclosed garage, \$75 per month, 1717 Wilmoore SE. Cordova, AX 9-3460.

1 BDR HOUSE, furnished, SE near downtown, water paid, \$55 month. Balfour, AL 6-3424.

3 BDR. APT., furnished, walking distance to churches and shopping center, 515 Montclair NE, \$79 month. Batsel, AX 9-4091.

TRAILER SPACE in mountains, hiway 66 east, \$15 per month. Hannan, BU 2-3462.

2 BDR. HOUSE, unfurnished, stove, drapes, carport, storage room, washer rough-in, water paid, near bases, \$70 monthly. Tegard, AL 5-3219.

4 ROOM HOUSE, furnished, 3022 Aaron Ct. SW, near new bridge, schools, transportation, \$70 monthly. Hill, AM 8-8802 after 5:30 p.m.

2 BDR. APT., stove and refrigerator, unfurnished, \$65 per month. Milligan, CH 2-2959.

LOST AND FOUND

LOST: chrome ballpoint pen w/black top; hematite and pearl ring; 5 strand pink pearl necklace; set of keys with rock on chain; Georgia Tech 1947 blue stone ring; Ray Ban type sunglasses. Lost and Found, Ext. 26149.

FOUND: "The Carolinian"; hand purse w/lipstick, comb, etc.; lady's white frame sun glasses; Zippo lighter; lady's black gloves. Lost and Found, Ext. 26149.

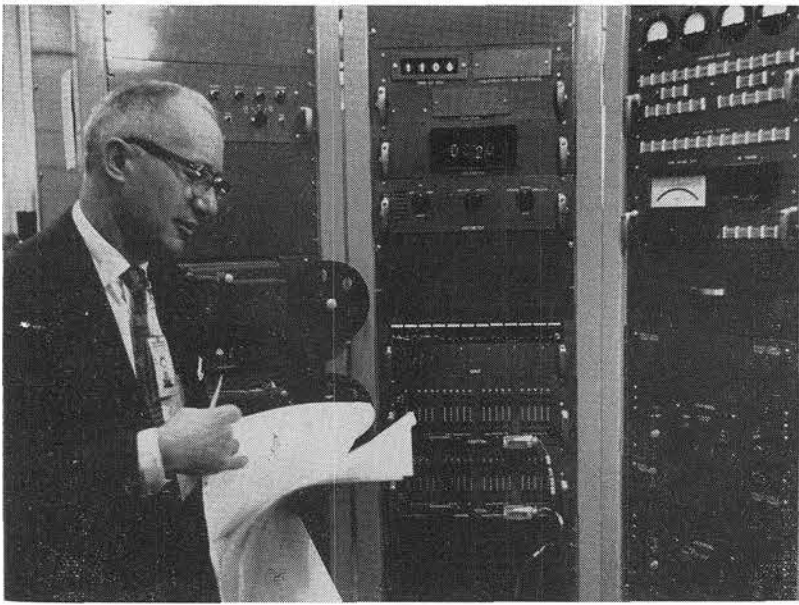
FOR SALE AT LIVERMORE

3 BDR. HOUSE, 2 baths, stove, refrigerator, carpeting, draperies, insulation, 11000 sqd, double garage, fenced yard, \$1000 down, assume 5 1/2% GI loan. Crafts, HI 7-3147.

VESPA Crusaire motor scooter, mounted spare tire, recent complete factory overhaul, \$150 or best offer. Faltings, HI 7-2054.

WEBCO portable phonograph, detachable speaker, \$50; 8mm camera, 3 turret lens, electric eye, case, projector, screen, light bar, splicer, tripod, \$110. Mount, HI 7-6521.

Automatic Testing New Trend in Weapon Production



PRINTED APAR DATA is examined by Ray H. Schultz (7320). Data is recorded on either typewritten sheets or punched paper tape after being automatically gathered from a number of test sequences.

Production Line APARs Point Way to Testing Automation

Some years ago the need was recognized for improving equipment and techniques used in testing nuclear weapon components. A group was set up under Thomas F. Marker, currently Manager of Automated Data Systems Development Department 2420, to work toward fulfillment of this need.

At the time there was little on the commercial market that would satisfy Sandia Corporation and the AEC requirements. Oldtimers such as Gordon R. Bachand (2421), James L. Rogers (2421-2) and Arthur J. Roth (now 2452) were key men in carrying out the mission. Results of their early and forward-looking work is now beginning to pay off.

APAR (Automatic Programmer and Recorder) is a digital testing system designed and developed at Sandia by Automated Data Systems Development Department 2420. Since October an APAR applied to production testing has been in use accepting nuclear weapon components and is proving to be a valuable tool in quality control and reliability activities.

In addition to the APAR mentioned above, two others are in use at Sandia and Livermore Laboratories in advanced component development organizations. Ten more APARs are on order for production testing and the basic concept of APAR has been modified into a somewhat simpler device called "baby APAR," adaptable to many applications.

No Human Error

Chief advantage of APAR is its accuracy and its elimination of human error. This, combined with flexibility, speed and efficiency, multiplies its effectiveness. APAR replaces the manual effort required for production testing of components and eliminates human error in the critical process of "checking out" components for nuclear weapons.

In the not so distant past, testing components required several pieces of apparatus and an operator. He manually operated the equipment to feed a series of voltages into the component and recording the resulting numerical measurements. This recording re-

quired reading the data and then writing them into the proper place on a test report form.

In any manual operation such as this, accuracy of the readings depends upon a number of factors affecting the operator. Fatigue, distractions, even boredom can creep in and cause the operator to err. APAR does the complete job automatically. APAR can be programmed to initiate every function of the test sequence formerly manually performed by an operator, read data, and record them. Test results are given out on punched paper tape which can be converted to magnetic tape for processing by a computer or results are printed by an electric typewriter or by both methods simultaneously.

Evaluate Production

Printed data received can be used immediately by the manufacturer of the component to evaluate his production while the punched tape is processed by the Sandia Data Center for use for Sandia's Quality Control, Reliability and Quality Assurance organizations as part of the information from which the overall status or nuclear weapon quality and reliability can be computed.

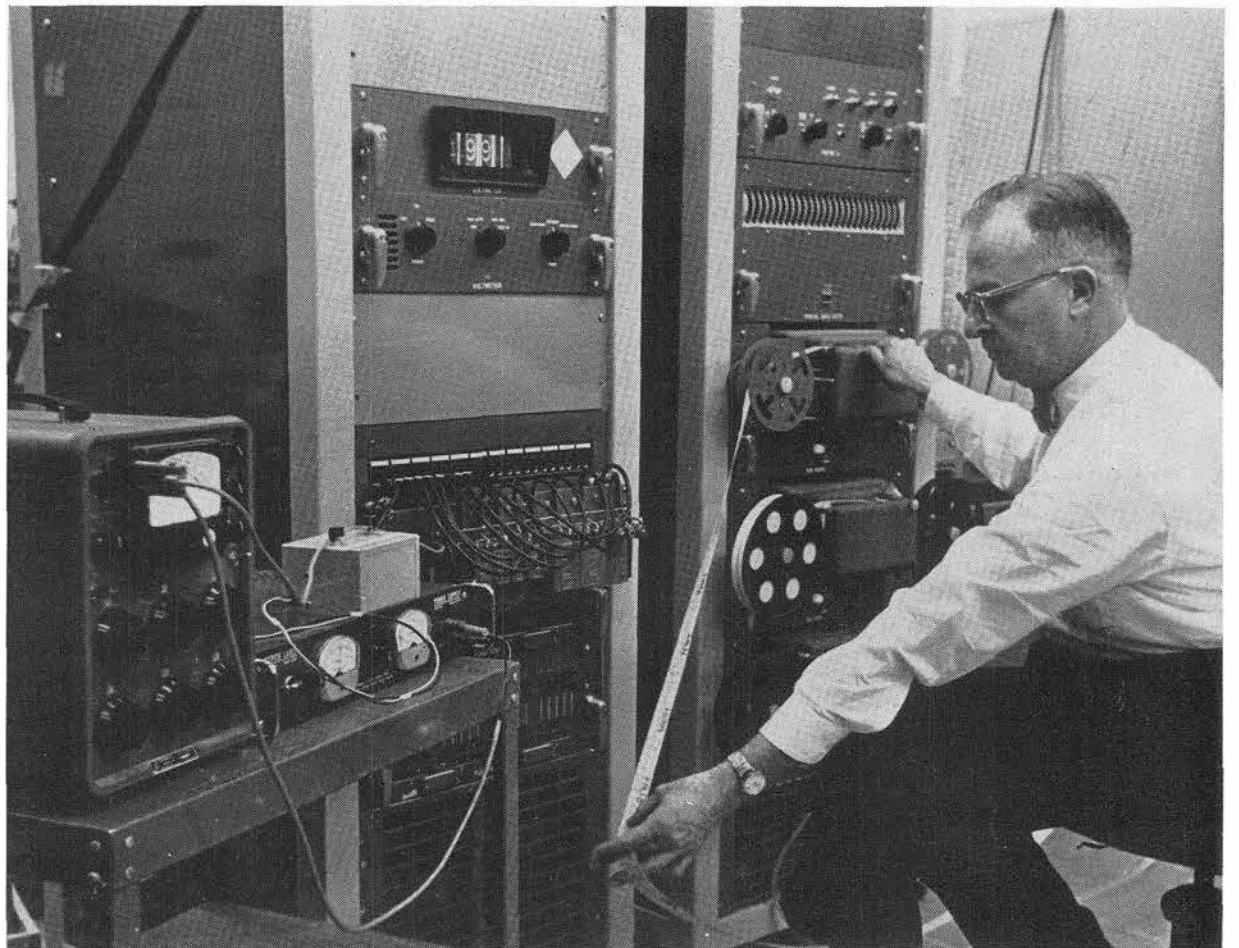
According to W. C. Kraft, manager of Component Test Equipment Department 2450, Sandia has just started down a path toward broader use of automation in test equipment development. Much of Sandia development effort is headed in this direction.

Automatic testing in AEC weapon programs is becoming a reality. This will be a saving in time and money as well as providing superior data.

APAR Confidence

Confidence is brought about by APAR's "built-in" accuracy. Each APAR primarily measures voltages, frequencies and time intervals in any number of combinations required to give performance data on components. Standards for these measurements are built into the machine. Accuracy is maintained through periodic calibration of APAR's internal standards against primary reference standards.

As with any new item, some



APAR PRODUCTION TESTER is given an extensive performance check by Don E. Hurt (2561) to determine orders of accuracy and repeatability prior to placement in a manufacturer's plant.

problems have cropped up in the APAR systems now being utilized. A team of engineers, under section supervisors Gino Carli and George Donaldson in Automated Product Tester Division 2452, answer these trouble calls and take action to get the equipment back into operation. Engineers John Marcon, Glenn Elliott, and Bob Adams have been investing their efforts in this work, feeding back the information gained to the 2420 designers for utilization in newer automated testing devices and techniques yet to come.

Baby APARs

Three "baby APARs" will be delivered to Sandia Laboratory this month. These machines were designed and developed by 2420 and are expected to be used within Sandia for development testing of less complex components. The baby APARs can be easily programmed. A few hours of instruction will enable an operator to write the programs and control the machine to acquire data automatically.

It is envisioned that APARs will not only be used for production

line testing and AEC acceptance testing, but also in Quality Assurance Evaluation work which "takes the pulse" of the nuclear stockpile.

APARs adapted to complete systems are expected by the end of the year. A small general purpose stored program digital computer, compatible with APAR, is under development for production line use. Continual search of the market has never uncovered a commercial low cost computer with the storage capacity necessary. Department 2450 has requests for APARs for many more production line test uses.

L. J. Paddison, Director of Product Test Equipment Development 2400, gives credit for the progress to date to the engineers themselves. Bill Paulus, Clint Purdue, Bill Boettcher and Jim Reed (all of 2420) are among the Sandians who have contributed heavily to advancing automated testing techniques.

Generally this trend to automatic testing and automatic data systems will upgrade the final quality of nuclear weapons and provide a higher acceptance rate of nuclear weapon components from manufacturers.



BABY APAR tester is displayed by George H. Donaldson (2452-2). Utilizing same principles of automatic programming and recording as full-size APAR, the junior machine was developed as a mobile laboratory instrument for automatic testing of components in Sandia advanced development organizations.



REVOLVING TEST HEAD of the APAR tester in use in the Environmental Test Operations Department laboratory accepts up to 10 small Krypton

85 cells. Placing cells in the tester is Ed M. Bauer. APAR is programmed to automatically perform a number of test sequences on the individual cells.

Sandia's Safety Record

Sandia
Laboratory

HAS WORKED
840,000 MAN HOURS
OR 24 DAYS
WITHOUT A
DISABLING INJURY

Livermore
Laboratory

HAS WORKED
4,585,000 MAN HOURS
OR 1853 DAYS
WITHOUT A
DISABLING INJURY