



Sandia Corporation Employees Earn 'Minuteman' U.S. Savings Bond Flag

Sandia Corporation employees were presented with the U. S. Treasury Department's "Minuteman" flag for outstanding participation in the U. S. Savings Bond payroll deduction plan. The flag was presented by Eva Adams, Director of the U. S. Mint, Tuesday morning, May 31.

S. P. Schwartz, Sandia Corporation President, accepted the flag on behalf of Company employees during a brief ceremony on the steps of Administration

Bldg. 800. Afterwards, the Minuteman flag was hoisted aloft on the Company flagpole atop Bldg. 800.

The flag presentation climaxed a successful drive for participation in the payroll deduction U. S. Savings Bond program. Some 7297 are now enrolled in the plan—91 percent of Corporation employees—and their annual purchase of U. S. Savings Bonds will amount to \$1,122,000.

Miss Adams indicated that Sandia em-

ployees could be proud of their achievement. "The hallmark of industrial payroll savings program over the years has been the solid support of American industry. Thus it is only fitting that you receive the most deserved thanks of this nation for the very substantial contribution that you have made to the financial stability of the country," she said.

Mr. Schwartz spoke briefly about the
(Continued on Page Four)



SANDIA CORPORATION

PRIME CONTRACTOR TO THE ATOMIC ENERGY COMMISSION

ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

LAB NEWS

VOL. 18, NO. 11, JUNE 3, 1966

MINUTEMAN FLAG joins Old Glory on Sandia's flagpole atop Bldg. 800. The flag was awarded by the U.S. Treasury Dept. in recognition of 91 percent participation by Sandia employees in the U.S. Savings Bond payroll deduction program.

Continued Active Pace Is Predicted for Local Atomic Energy Groups

Some future prospects for Sandia and the atomic energy program in New Mexico were reported by Senator Clinton P. Anderson in recent announcements from Washington.

"All indications point to continued requirements into the 1970's for nuclear research development devoted not only to weapons but to space and other peaceful applications as well," the Senator stated.

Reporting that, as a member of the Joint Committee on Atomic Energy, he has watched closely the progress of the atomic energy program in New Mexico. There has been some shift of emphasis since the ratification of the nuclear test ban in 1963, he said, but nuclear activities in the State have continued at an active pace.

AEC and Congress have initiated and supported new and challenging programs in atomic research to retain outstanding capabilities in nuclear weapons technology developed at Sandia, Los Alamos Scientific Laboratory, and ACF Industries.

In another announcement, Sen. Anderson cited the 1967 Atomic Energy Commission authorization bill which went to President Johnson the first part of May.

"Sandia Corporation," the Senator reported, "is expected to receive between \$1 and \$1.4 million to carry out its responsibilities in the SNAP (Systems for Nuclear Auxiliary Power) program."

"At the first of the year Sandia took over contract administration for technical and certain development work on these isotopic power sources . . ." he added. About \$4 million will be used for Sandia's Aerospace Nuclear Safety Program.

Atmosphere Research Rockets Will Be Fired From Barking Sands

Another series of upper atmosphere research rockets, part of a continuing study by Aerospace Sciences Division 5232, will be fired from Barking Sands Launch Site on Kauai in the Hawaiian Islands starting June 7.

Three series of four to five rockets each will be fired shortly before sunrise on June 7, and soon after sunset on the following two days. Nike Apache and Nike Cajun rocket systems will be used to carry nose cones containing trimethylaluminum, called TMA, which will produce luminous trails between 50 and 100 miles above the ocean.

Sandia camera stations on Kauai, Oahu, Maui, and Hawaii will photograph the trails to obtain data on the high altitude winds and temperatures. Launches will be rescheduled in the event of clouds at some camera stations.

Test operations will be under the direction of K. F. Crowder, supervisor of Carrier Development Division 9224. L. B. Smith of Division 5232 is the scientific director. B. L. Barth of Division 9224 will be in charge of rocket assembly operations, and R. L. Johnson of Photometrics Division 7226 will be in charge of the camera stations.

Aerospace Isotopic Power Program

Seventeen Contracts Under Lab's Technical Direction

Transfer of contract administration and technical direction of the Atomic Energy Commission's program to develop radioisotope-fueled power sources for space missions from AEC New York Operations Office (NYOO) to Albuquerque was completed last month.

Sandia Laboratory was assigned the technical responsibility for the Aerospace Isotopic Power Program on Feb. 1, 1966. At that time a logical transition of contracts from NYOO to AEC Albuquerque Operations Office (ALOO) was authorized.

Eleven contracts have been transferred from NYOO to ALOO and six new contracts are in the process of being initiated in Albuquerque. All 17 contracts are or will be technically directed by Sandia for the AEC.

Included in the transferred contracts are one for a SNAP-27 isotopic generator and another for a SNAP-19B. SNAP-27, a 50-watt generator fueled with plutonium-238, came under Sandia direction in May. Being developed by General Electric's Missile and Space Division, the unit will provide power for the Apollo Lunar Surface Experiment Package.

Technical responsibility for the SNAP-19B, two 30-watt generators to provide partial power for a NASA Nimbus satellite, was transferred to Sandia in April.

New Contracts

In addition to the transferred contracts, SNAP-29 was one of the first isotopic systems for which the ALOO-Sandia team initiated the contract and over which Sandia has technical direction responsibilities for the full period of design, development, and production. Martin-Marietta's Baltimore Division will develop the SNAP-29, a 400-pound, polonium-210 fueled generator with a 400-watt output.

Among the new contracts being initiated in Albuquerque is one with General Elec-

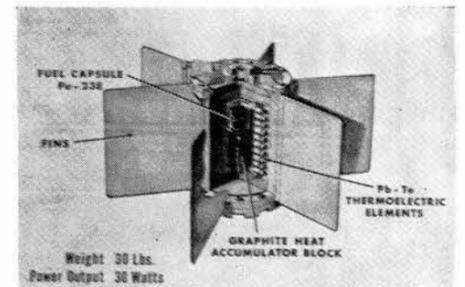
tric's Missile and Space Division for the first phase of a development program for thermionic power modules that are adaptable to various power-level demands for space missions.

Under the isotopic thermionic module development program, the AEC plans to conduct a four-phase effort leading to the development of a 100-watt isotopic thermionic module for use in space. The first-phase program to be carried out by GE will include design and safety studies. One design will be based on plutonium-210 and another on curium-244 isotope fuels. The work is expected to be completed within six months.

Radioisotope-fuel auxiliary power systems presently being developed by the AEC use the thermoelectric principle to convert heat into electricity. With this principle, electricity is produced as a result of heating one junction of two dissimilar materials and cooling the other. In thermionic conversion, on the other hand, two metals of different energy levels are placed in close proximity with a vacuum or an ionized medium between. The high-energy material is heated and the electrons which "boil off" its surface are collected by the cooler low-energy material, creating a flow of electricity.

Overall responsibility for the space isotopic power program remains with the AEC's Space Nuclear Systems Division (SNS), headed by Harold B. Finger. SNS's isotopic power program has grown from about \$3 million that was spent in fiscal year 1965 to more than \$8 million in the FY 1966 budget. Field direction for the program is provided jointly by ALOO and Sandia. ALOO is responsible for all administrative matters, and Sandia for all technical matters.

In its role of providing technical direction for the program, Sandia is responsible to the AEC, and works directly under Robert T. Carpenter, Chief, Isotope Power Systems



SNAP-19B will be used to provide power for NASA Nimbus satellite.

Branch, SNS. Laboratory responsibilities in the program are centered in the relatively new Space Isotope Power Department 9330 under A. J. Clark.

Sandia's Responsibilities

The Department's responsibilities are threefold: (1) technical direction and support of specific programs (SNAP-27, SNAP-29, SNAP-19, etc.); (2) technical direction of component technology contracts; and (3) a modest in-house advanced concepts and technology effort.

Technical direction and support of specific isotopic projects, Sandia's major effort in the program, provides project management and control procedures for aerospace isotopic power systems developed by the AEC to assure on-time delivery of efficient reliable systems. This responsibility is centered in SNAP Projects Division 9331 under J. W. McKiernan.

This division provides technical direction of AEC contracts with American industry for the design and development of isotopic power systems to be used in satellites being developed by other agencies, such as NASA. Sandia project engineers monitor the contractor's work to insure that the job is being done as outlined in the contract and to recommend changes when necessary.

Isotopic power units for space must meet rigid reliability standards. To review the contractor's quality standards and reliability requirements, Sandia uses its in-house statistical, reliability, quality control, and systems analysis groups to determine if the standards and requirements are sufficient to produce a system which will meet the mission objectives.

When problems arise which cannot be readily solved by the contractor because of personnel or facility limitations, appropriate Sandia resources are used. The Laboratory's capabilities in stress analysis, aerodynamics, materials, and environmental testing are typical of those which may be used in special problem-solving situations.

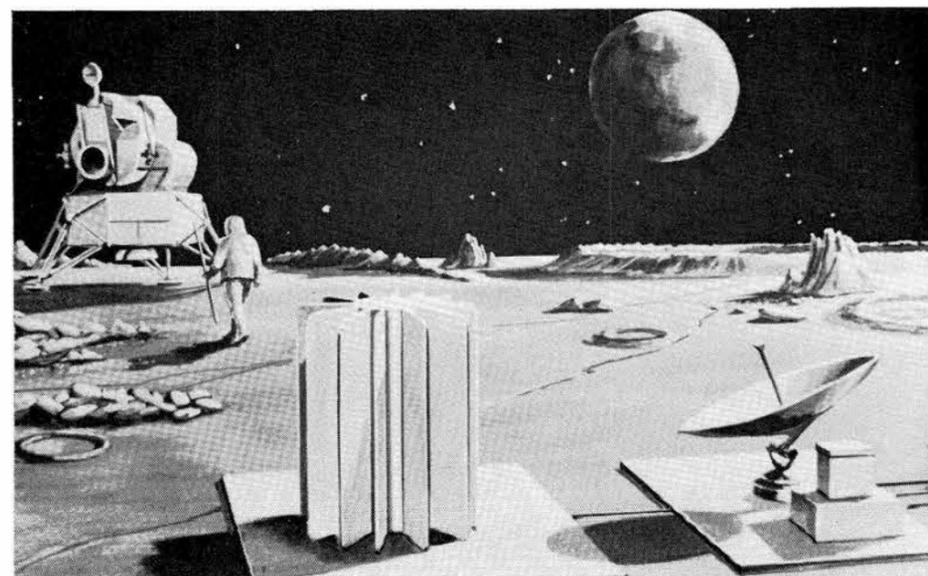
Sandia will conduct environmental and field tests only when the contractor does not have the appropriate capability. Sandia will also conduct proof or acceptance tests of the units.

Component Technology

Technical direction of component technology contracts, the second portion of Sandia's part in the program, is the responsibility of the Advanced Development Division 9333 under R. P. Stromberg.

The general purpose is to advance the state of the art of isotopic power systems. Advanced development activities are conducted on specific components or subsystems to provide the technologies necessary for integration into future designs. This work is conducted primarily under contracts with

(Continued on Page Seven)



SNAP-27 ISOTOPIC GENERATOR is shown in the left foreground of this artist's conception of how it will be placed on the surface of the moon to provide power for the Apollo Lunar Surface Experiment Package. SNAP-27 is under Sandia's technical direction.

Editorial Comment

The kids are out of school. The weather's warm. Vacation time is here. It's time to "get away from it all," relax, take a breather, and finally return to work refreshed and ready to face new challenges.

All of us have our own ideas of what to do with our vacation time. Take a trip, get to those chores around the house, go camping, spend more time on our hobbies, or simply do some reading. Whatever we do, the odds are that our activities will be different from those at work.

But hold on a minute.

Although the activities will be different, will we be relaxing? Will we break the routine of working hard at what we're doing? Will we leave work's problems at work, or will we take them with us and struggle with them during our vacation?

The value of a vacation is not simply in the change of activities—the value is in a full change of pace.

Do what you will, but enjoy doing it. Leave work's problems at the office. Break the routines. Push away the pressures. Loaf a little.

Relax!

Training Dogs Is Snap; Teaching Owners Is Harder

Professional dog trainers have long maintained that it's not difficult to work with a dog, but it is hard to discipline the owner at the other end of the leash.

Marcia Simon (1414) and Howard Tessler (7344) are becoming adept at both dog and human psychology in their roles as trainers for the Sandia Dog Obedience Club.

The organization was founded in 1950 and since that time some 2000 Albuquerque dogs have gone through the training classes. The Club sponsors two AKC trials each year and helps with arrangements for two other obedience trials.

It takes nearly three years to become a trainer. First the individual must take his own dog through the novice (companion) dog degree and the 12-week intermediate course. Then an apprentice trainer must complete a number of training sessions under an established trainer. Finally, the prospective trainer must be approved by the board of directors and training director of the club.

Marcia has taken her own dachshund and great Dane through the course and has been the club's training director for the past two years. Howard's initial course was with his German shorthaired pointer, "Baroque."

At the present time there are 60 dogs enrolled in the club's courses. These include sessions for novices (or beginners) based around seven exercises (such as sit stay, heel on and off leash, stand, down stay, etc.); intermediate (or high school), which is perfection of the novice exercises; and open and utility (college), including jumps, hand signals, scent discrimination, etc. Owners are requested to work with their dog a minimum of 30 minutes a day.

Only about 20 percent of the dogs attending the classes are being trained for "show" purposes. The rest are house pets whose owners feel that obedience in a dog is equivalent to good manners in a person.

"We have only a few 'dropouts' and even those dogs show a marked improvement with what little training they have received," Marcia said.

Dogs must be at least six months old and have their permanent shots before entering the school. Mixed breed mutts are just as welcome as pedigreed dogs—in fact during the last "graduation," a mixed breed dog finished top in the class. Between one and two years old is considered the ideal age for most dogs to begin their training, but dogs as old as eight years have successfully completed the courses.

The first session is usually marked by growling, barking, and snapping, but it isn't long before the dogs settle down. "We have the most trouble with dogs that have never been out of their own backyard and are not accustomed to being around people or other dogs," Howard said. "These dogs develop a shy manner and once they are away from their own environment, they have a tendency to fight. For this reason, we encourage owners to walk their dogs on a leash through shopping centers and other busy areas to get the pets accustomed to noise and confusion."

After the trainers have taught the owners how to hold the leash and make corrections, training the dogs is a snap.



THERE'S THE JUMP, over he goes. "Baroque," a German shorthaired pointer owned and trained by Howard Tessler (7344), shows how he clears the 36-inch-high jump—maximum height for retrievers.



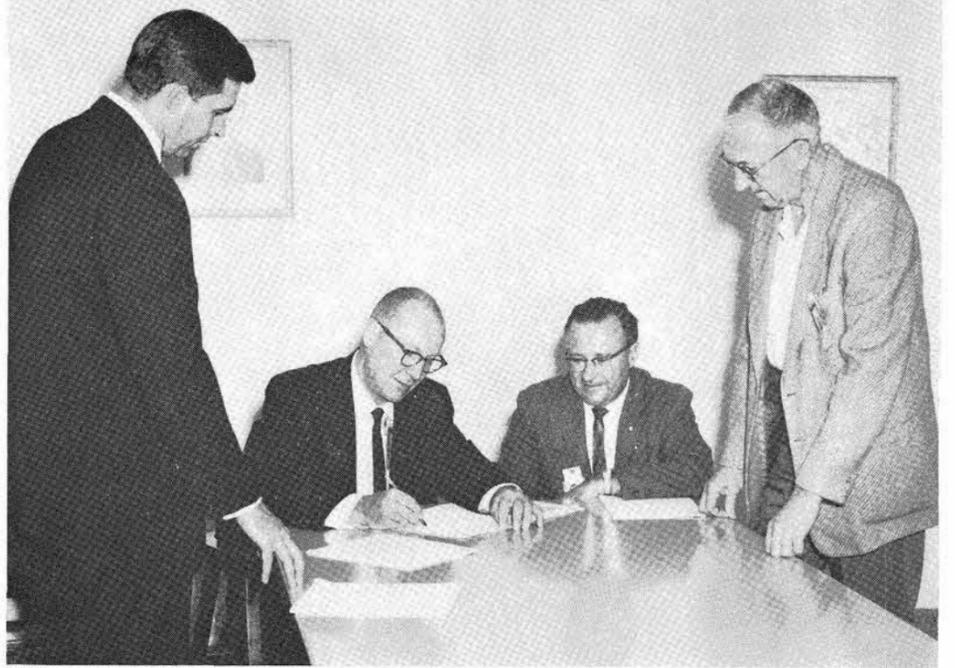
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NEW UNION CONTRACT — C. H. DeSelm, Director of Staff Services at Livermore 8200, signs new contract between SCLL and the Sheet Metal Workers International Association, Local 216, AFL-CIO. Others from left are M. A. Pound of Wage and Labor Relations Division 8211; R. N. Cooper, union business representative; and O. E. Parrish (8223), union steward. The new contract will be in effect through May 1, 1967.

Sandia Offers Health Plan-Medicare Combination to Eligible Retirees

A health insurance "Special Plan" to supplement benefits offered under Medicare Parts A and B is being offered Sandia Corporation retirees and the husbands or wives of both on-roll employees and retirees, if age 65 or over.

Since the majority of the Company's retired employees continue to live in the Albuquerque area, a meeting was held for them at the Coronado Club last night at which time the Special Plan was presented in detail by D. E. Irvin, supervisor of Employee Benefits Division 3122. Eleven Sandia directors were present to assist at the occasion, including K. A. Smith, Director of Personnel, who chaired the meeting and welcomed the attendees. Representatives of both the Equitable Life Assurance Society and the local Social Security office answered questions concerning medical coverage.

A similar meeting will be held June 9 in Livermore for Sandia retirees living in the San Francisco area. Those residing at other locations have been mailed full information concerning the Special Plan and enrollment cards.

Mr. Irvin noted, "The Company's aim in offering this new plan is to eliminate for Medicare participants the duplication of coverage which exists under the present Health Care Plan. We feel the combination of Medicare and the Special Plan is equal

to the current Health Care Plan, but the cost is lower." Premium for the Special Plan will be \$3.52 per month for each individual covered.

Eligible retirees already covered by Health Care Plan have the option of continuing that coverage should they have some individual reason for doing so, or converting to the lower-priced Special Plan. Eligible retirees who are not now enrolled in the present Health Care Plan have until July 1, 1966, to sign up (without medical examination) for the new Special Plan if they so desire. The Plan becomes effective July 1, 1966.

Additionally, retirees under 65 or who have dependents under 65 have the continuing opportunity for coverage under the Health Care Plan. Reduced premium rates have been established to cover all dependent combinations possible under Health Care and the Special Plan.

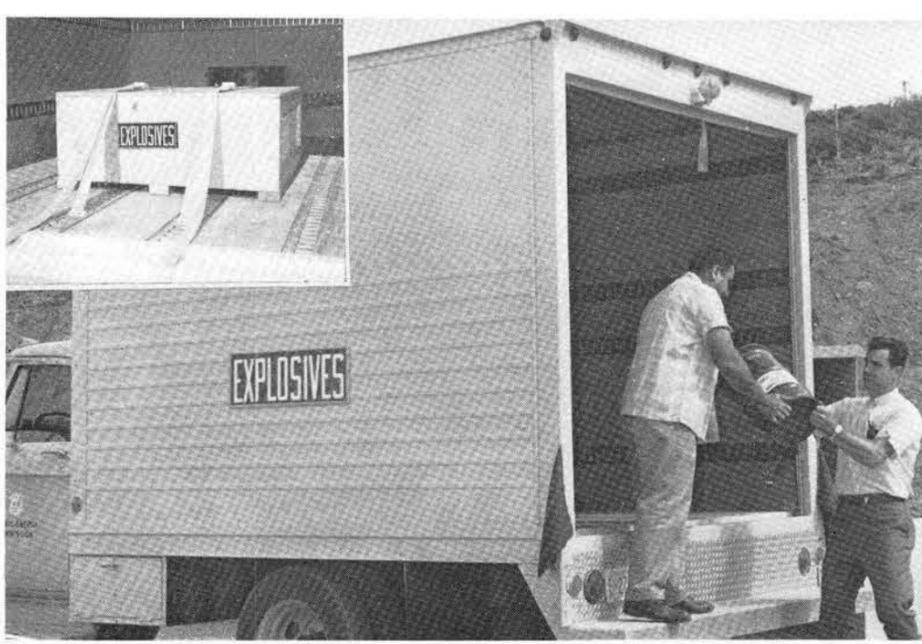
In the case of an employee with husband or wife who qualifies for Medicare, the Special Plan is limited to that individual with the balance of the family covered under Health Care Plan.

Any questions concerning either Special Plan or Health Care Plan should be referred to Employee Benefits Division 3122, Bldg. 832, at Sandia Laboratory or Health, Medical, Safety and Industrial Accident Insurance Division 8215 at Livermore Laboratory.

SPECIAL HEALTH insurance plan, to supplement Medicare, is explained by Bruce Strausberg, right, (3122) to retirees (l to r) Matt Ungerman, Dorothy Harrington, and Stan McCammon. Details of the new medical coverage were presented during a meeting for retired Sandians last night at the Coronado Club.



LIVERMORE NEWS



HIGH EXPLOSIVES TRANSPORTATION VEHICLE, acquired recently by Livermore Laboratory, is loaded by J. Rogers (left) and A. M. Celoni, both of Safety Division 8215. The vehicle consists of a one-ton truck chassis with an aluminum van body, and meets federal, state and local codes. Designed by L. R. Sweetin of Plant Engineering Design Division 8254 according to Sandia specifications and drawings, the van was fabricated by Thatcher Body Company, Brisbane, Calif. It has a unique cargo tie down system of horizontal tracks on the floor, sides, and front. Nylon strap assemblies are used to secure the cargo.

Livermore Photographer Recalls Early Days of Freelance Adventure

Currently performing photography duties for Livermore Laboratory's section of the LAB NEWS is Ray Foster (8233-3). Ray is a newcomer to Sandia, having joined the Company last August. However, he is not a newcomer to photography or atomic energy. He worked two years before coming to SCLL as the motion picture film producer for Reynolds Electrical and Engineering Company at the Nevada Test Site.

Ray became interested in taking pictures and processing film when he was 14. While in the U.S. Navy during World War II, he decided to take up photography professionally. Following his discharge in 1944, he started looking for a job in the San Francisco Bay area as a commercial photographer.

"My first job was with a postcard production company in Berkeley," Ray says. He helped set up the original color engraving plant in Berkeley to manufacture the first color postcards. "The company was a pioneer in the field. We wanted to produce a color postcard that would sell for five cents," Ray explains. Once the color engraving plant was installed and operating, Ray took to the outdoors to gather color pictures for postcards. His task was to capture on film all points of interest that any tourist might want to see or remember. To accomplish this, Ray and his family toured all the continental states, Canada, Mexico, and Hawaii for 11 years.

"One of the most interesting assignments I ever had occurred in New York in 1951," Ray says. "I had become friendly with the manager of the Observatory of the Empire State Building and he asked if I would like to take construction progress pictures of the new TV tower that was to be installed atop the massive building. The manager explained that another photographer had been commissioned for the job but had backed out after one trip to the top of the steel dome. Believing the job would be interesting, I accepted and for the next several months I made two or three trips a week to the top of the tower to take pictures."

When asked if he was frightened working at those dizzy heights, Ray jokingly said, "No, I could walk around up there on those girders all day, but if you put me in a submarine I would be scared to death."

The TV tower atop the Empire State Building is 222 feet tall and brings the total height of the building to 1472 feet above the street.

Following his 11-year picture-taking tour, Ray went into business for himself in Reno, Nev., as a commercial photographer. In Reno, he was often hired to take promotional pictures of leading entertainment personalities who were appearing at local casinos and hotels, and frequently took action news photos for the local television station.

"It was an interesting, but hectic business," Ray says. "I never had time to get away and take scenic pictures of the great outdoors—something I really enjoy doing. After six years, I decided to sell the business and go to work for someone else."

Ray and his wife Irene, who accompanies him on most of his trips, still take off on picture-taking excursions every chance they get. "I really haven't had a 'vacation' in 22 years," Ray says. "All of my spare



ADJUSTING HIS CAMERA for a comparatively "tame" construction progress picture at SCLL is Ray Foster (8233-3).

time is spent looking for scenic spots to record on film."

Ray's long-range goal is to take pictures of the New Zealand and Australian countryside. "Something I may do after I retire," he says.

Judging by the number of his pictures which have been made into postcards and calendars and distributed throughout the world, it is quite probable that many Sandians have unknowingly appreciated his talent.

Congratulations

Mr. and Mrs. Su Chiu (8147), a son, Lee Ping, May 8.

Mr. and Mrs. Gary Miller (8252), a daughter, Wendy Ann, May 2.

Mr. and Mrs. Marvin Loll (8153), a son, John Michael, May 11.

Wedding

Sallie Robertson and John Fadda were married May 1 in a private evening ceremony at the Congregation Church chapel in Reno, Nev. Following a wedding dinner and reception the couple spent a week in the Reno and Lake Tahoe area. They are now residing in Hayward. Sallie, a secretary in Environmental Test Division I, 8112, joined Sandia in May 1959.

Winter League Competition Bowling Trophies Awarded

Sandia winter bowling leagues finished the 1965-66 season recently with trophies awarded to the winners.

The top spot in the ten-team Sandia Mixed Handicap League was taken by the "Gringos," captained by Gary Loucks (8252). Others on the championship team were Hal Becker (8166) and his wife Lilah, Karen James (8146), Bill Little (8250) and his wife Helen, and Bob Milby (8166) and his wife Wilma. The "Who Zits" team, Tabo Hisaoka (8252) captain, placed second in the league.

For the men, individual awards were presented to John Barnhouse, Jr. (8245) for his high handicap game score of 282 and to Gary Loucks for a high handicap series of 704. Dot Chappell, wife of Ken Chappell (8122), took honors for the women with a high handicap series of 682.

In the eight-team Sandia Men's Thunderbird League the top spot was won by the "Meddle-Larks" team. Members were Don Knaple (8253) captain, John Barnhouse, Sr. (8226), Roger Busbee (8121), John Leeper (8111), and Clyde Seibel (8252). The "Spare-Os" team, captained by Heso Yano (8252), came in second.

Individual honors in this league went to Bob St. Hilaire (8154) with a high scratch game of 267 and to Ted Petersen (8252) for a high scratch series of 652.

Teams are forming for the summer Sandia bowling season. Those interested should contact Bob Bailey, ext. 2811.

Sympathy

To Harold Brumfield (8134) for the death of his mother-in-law in Oakland, May 9.

To Roberta (8161) and Tim Cody (8253) for the death of Roberta's mother (Tim's grandmother) in Castro Valley, April 30.

To Sue Matthews (8244) for the death of her father-in-law in Fresno, May 6.

To Gayl Tschritter (5510) for the death of her grandmother in Lodi, May 21.

Sandians Participate in Relay Conference; A. F. Baker Is Named Fellow

A number of Sandians participated in the recent 14th Annual National Relay Conference held at Oklahoma State University.

Alvin F. Baker of Project Engineering Division 8154 was named a Fellow of the organization. He presented a technical paper, co-authored with R. L. Lowery, OSU associate professor, entitled "Chatter Characteristics of a Linear Viscous Damped Contact System."

R. C. Sadler (1334) presented "A Design Procedure for Rotary Solenoids," and W. E. Bergsten (2565), N. L. Knudsen (2564), and J. F. McDowell (2564), presented "The Internal Atmosphere of Hermetically Sealed Components."



A. F. Baker

Livermore Notes

Reduced admission tickets on a first-come, first-served basis are available from Employee Benefits for the June 17 evening performance of the Shipstads and Johnson "Ice Follies of 1966" scheduled at Winterland, San Francisco, at 8:30 p.m.

F. J. (Jerry) Maloney, supervisor of Hazardous Test Division 8112, was the guest speaker recently at the monthly meeting of the Stockton Engineers Club in Stockton.

Jerry spoke to the group on the role of testing at Sandia Corporation and showed the Sandia-produced film, "Environmental Testing," as part of his talk.



DISNEYLAND "FAMILY OF THE MONTH." Ginger Common (8135-2), her husband Ken, and children (l to r) Scott, Shelly, and Sheryl enjoy a free holiday weekend as "Family of the Month" at Disneyland Park and Hotel. Ginger won the trip recently when the stub from her Disneyland membership identification card, obtained from Employee Benefits 8211, was selected in one of the monthly drawings.



AWARD CEREMONY — Miss Eva Adams, Director of the U.S. Mint (fourth from left), awarded the Treasury Department's Minuteman Flag to Corporation employees, Tuesday, May 31. Participating in the ceremony were, from left, Joseph Maldonado, Vice President, Metal Trades Council; Robert L. Byrd, President of Local 27, International Guards Union; S. P. Schwartz, Sandia Corporation President; Miss

Adams; Edwin G. Hobbs, New Mexico Director, Savings Bond Division; Earl E. Louthan, New Mexico Vice President, Mountain States Telephone, and Bernalillo County chairman, 1966 Savings Bond Drive; Paul J. Cruz, President of Local 251, Office and Professional Employees International; and Don R. Morrison (5256), chairman of the Sandia Savings Bond Committee.

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Minuteman Flag Awarded

record of Sandia employees' participation in community service activities, support of the Employees Contribution Plan, and the excellent citizenship and responsibility demonstrated by employees.

"In this time of conflict in Vietnam and the threat of inflation in our economy, Sandians responded as patriotic Americans to the appeal of the Savings Bond drive," he said. "As an organization primarily engaged in defense activities, we could not do less. However, in the long run, we realize that, personally, we gain from the purchase of Savings Bonds. I am extremely proud of Sandia employees and appreciate their response in this effort."

Also participating in the ceremony were Paul J. Cruz, President of Local 251, Office and Professional Employees International; Robert L. Byrd, President of Local 27, International Guards Union; Joseph Maldonado, Vice President of the Metal Trades Council; Edwin G. Hobbs, New Mexico Director of the U. S. Treasury Department's Savings Bond Division; and members of the Sandia Savings Bond Committee.

A number of Sandia departments achieved 100 percent participation in the plan. Among those not previously reported in the LAB NEWS are 2130, 2220, 2540, 4120, 4130, 4380, 5510, and 7320.

Organization 7500 achieved 100 percent participation two years in a row.

The 3000 Organization achieved the goal of 90 percent participation (which was not reported in the last tabulation) and the 3400 and 7200 directorates also achieved 90 percent participation in the Savings Bond plan.

Bellringer awards, which will be presented to organizations achieving 90 percent or better, will be awarded to 117 departments, directorates, and vice presidencies.



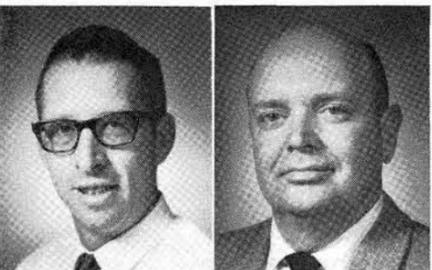
J. L. Colp

H. A. Mackay

Earn Master's Degrees



J. M. McIntire



W. A. Nelson

H. L. Crumley

Local Universities Confer Degrees On Sandia Employee-Students

Bachelor's and Master's degrees will be conferred upon a number of Sandians during commencement exercises at the University of New Mexico and the University of Albuquerque (St. Joseph's).

In most cases, the scholastic work has been taken under the Company's Educational Aids Plan.

Those receiving Master's degrees include:

UNM Confers PhD On J. K. Cole

J. K. Cole (9325) will receive his PhD degree in engineering from the University of New Mexico during commencement exercises next week.

His doctoral dissertation was on "Numerical Analysis of the Interaction of an Oblique Shockwave and a Laminar Boundary Layer."

He received a BS degree in mechanical engineering from the University of Kentucky and an MS in ME from the University of New Mexico.

A Sandia employee for nine years, he was on educational leave of absence from September 1964-65 to fulfill requirements for his doctorate.

H. W. Schmitt Receives Doctorate at OSU



Heinz W. Schmitt (1541) was awarded a PhD degree in mechanical engineering during commencement exercises at Oklahoma State University May 22.

His dissertation was entitled "Dynamic Analysis of Contact Separation Due to Impact in a Continuous Redundant Contact System." He received his BS degree in mechanical engineering from Brooklyn Polytechnic Institute and his MS in ME from the University of New Mexico.

A Sandia employee since 1960, he was granted an educational leave of absence in September 1963 to work on his doctorate and returned to the Laboratory last March.

John L. Colp (9327), MS in civil engineering. He received his BS degree in mechanical engineering from the University of Illinois.

Harold A. MacKay (1112), MS in chemistry. His undergraduate work was at Rutgers University where he earned a BS in chemistry.

James M. McIntire (7513), MS in electrical engineering. His Bachelor's degree with the same major was from the University of Texas.

W. A. Nelson (4137), Master's in business administration. He also received his BBA from the University of New Mexico.

H. L. Crumley (4362), Master's in business administration. His BBA was also from the University of New Mexico.

Those receiving Bachelor's degrees include: Arthur A. York (2152), BS in mathematics, and K. E. Nowotny (5222), BS in electrical engineering, both University of New Mexico; William C. Purchase (4362), BS in business administration, and John A. Deveneau (4362), BS in business administration, both University of Albuquerque.

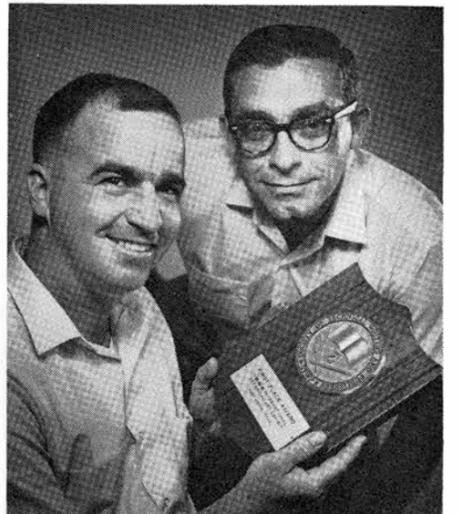
Doctorate Awarded To Richard Braasch



A PhD degree in electrical engineering will be conferred upon Richard Braasch during commencement exercises at the University of New Mexico next week.

Title of his dissertation was "Sequences from Non-linear Feedback Shift Registers." His BS and MS degrees were also from the University of New Mexico.

Mr. Braasch came to work at Sandia in 1960 and was assigned to Technique Development Division 2423 before taking an educational leave of absence last September. Upon his return to the Laboratory in late June, he will report to Division 5216 in Advanced Systems Development Department I.



FIRST PLACE AWARD at the 1966 International Technical Art Exhibit, sponsored by the Society of Technical Writers and Publishers in Fort Worth, is displayed by winners Gordon Snidow (left) and Bill Wagoner, both of Technical Art Division 3463.

Fort Worth STWP Gives Artists Awards

A number of Sandia's technical illustrators were honored May 13 during the awards banquet of the Fort Worth chapter of the Society of Technical Writers and Publishers.

A first place award in the competition went to a joint entry by Gordon Snidow and W. J. Wagoner. Second place awards went to Gene Lloyd, Joe Mickey, George Marks, and Gordon Snidow. L. P. Ortiz and Gordon Snidow received third place awards.

All are members of Sandia's Technical Art Division 3463 and the entries were examples of their regular work.

D. J. Jenkins Appointed

D. J. Jenkins (3130) was appointed to the Relations with Industry Committee during the 30th annual meeting of the Southwest Section of the American Society for Engineering Education, held recently in Austin, Tex.

The committee is comprised of five representatives from industry and five university representatives. Mr. Jenkins' term will expire in 1968.

Welcome Newcomers

May 16-27

Albuquerque	
Charles H. Brown	4574
Vincent Cordova	4574
Vera A. Coriz	4312
George C. Easley	4574
Robert L. Hatcher	4574
Jose M. Jaramillo	4574
Richard J. Orzel	3415
Ruben Romero	4574
*Marilyn J. Taylor	3126
Oklahoma	
Michael C. Moore, Stillwater	9213
Texas	
C. Herndon Williams, Houston	1134
Temporary Summer Hires	
*Curtis Greer, University Park, N.M.	5222
*Larry Z. Kennedy, Tucson, Ariz.	5155
John F. Linder, Tucson, Ariz.	1315
Ronald R. Mohler, Albuquerque	5590
Darrell G. Harden, Norman, Okla.	9321
James R. Whitney, Albuquerque	9422

Certificate Awarded

Sverre Johannesen (2514) recently was awarded a certificate on his retirement from the U.S. Naval Reserve with the rank of commander after 23 years of service. "Joe," who was on active duty for seven years during World War II and the Korean conflict, was a member of the local USNR Research Company.

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LAB NEWS

JUNE 3, 1966

Albert Einstein -

THE SCIENTIST AND THE MAN

By

C. C. Hudson (5590)

Part II

Between graduation and joining of the Patent Office in Bern in the fall of 1902, Albert Einstein passed two years as a vagabond—teaching where he could, studying, and starving. At Zurich, he had met a mathematics student, Mileva Maria, who was later to become his first wife. But then they were too poor to marry. He wrote a paper on the kinetic theory of gases in 1901 which he gave to Prof. Kleiner at Zurich University for his doctor's thesis. The essay criticized Boltzmann, a colleague of Kleiner, and it was rejected.

In 1903, economically secure in his position at the Patent Office, Einstein married Mileva Maria and they later had two sons. His work was simple and routine, leaving him much time for study. Although he had to hide his notes in his desk to avoid detection, he was able to work out in detail the explanation of the Michelson-Morley experiment which now forms the basis of the special theory of relativity. At last, in June 1905, he submitted a 30-page handwritten manuscript to the Zurich editor of ANNELEM DER PHYSIK with the comment, "Perhaps you can find room for this." Within a six months period he had written three additional papers on fundamental atomic physics and radiation, making this perhaps the most creative period for a single man in the history of science. Einstein threw away the original draft of his manuscript on relativity, but in 1944 in the United States he recopied it in longhand. This second manuscript was sold at an auction for six million dollars in war bonds and was placed in the Library of Congress.

Obtains PhD

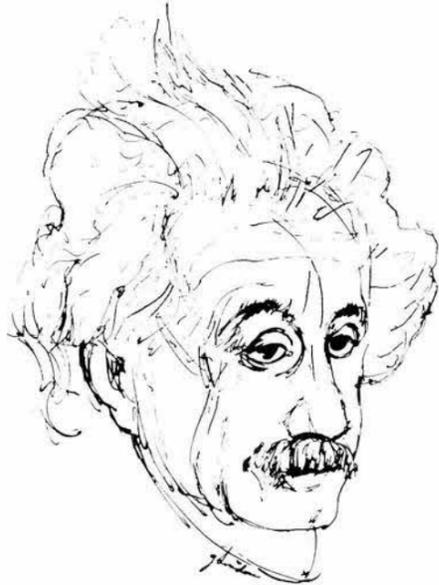
With the fame earned by these papers and with a second dissertation, "A New Determination of Molecular Dimensions," Einstein obtained his PhD under Professor Kleiner at the University of Zurich. The year was 1906, and Einstein was 25 years old. Professor Kleiner persuaded him to leave the Patent Office and go into teaching. He finally became professor of physics at Zurich in 1909, but his first classes were not very inspiring. He had just two students who were both his close friends. Teaching was not what he wanted. He longed for the old freedom of the Patent Office; he wanted to be alone. However, the teaching position did bring compensations: prestige, which humble Einstein disdained, and eventually many friends—Planck, Born, Von Laue in Germany; Lorentz in Holland, Mme Curie and Poincaré in France—and these he cherished. He moved to Prague for a year and then back to the Academy at Zurich, where his lectures now became very popular. Now more than ever his time was not his own, and the general theory of relativity developed slowly.

In 1914, two famous Berlin scientists, Planck and Nernst, secured a professorship for Einstein at the Berlin Academy, the oldest scientific institution in Germany. He was also to direct the Kaiser Wilhelm Institute for Theoretical Physics. These positions pleased him very much, allowing him a great deal of free time, and he remained there until Hitler's persecution forced him to flee to the United States in 1933. The period at Berlin was in many respects the peak of his life, but, scientifically speaking, he was already on the decline.

Before leaving Switzerland, Albert and Mileva were divorced, and when he left for Germany she kept the two boys with her. These were Einstein's only children, and they lived quiet, unnoteworthy lives. After a brief period, he married his cousin Elsa in Berlin. She had two daughters by a previous marriage. Einstein adopted the girls and became very fond of them. Mileva had been a cool person, and they had never been able to make marriage a very satisfying relationship. Elsa, on the other hand, was warm and, if not overly bright, at least was devoted to making a home around the sanctum of his study, which she rarely entered. Albert and Elsa became closely attached, not so much by affection as by mutual respect and cooperation.

Always Aloof

In fact, Einstein, even though warm in his relations with people, and never bitter



Albert Einstein probably most closely fits the public image of a scientific genius. A versatile and profound scientist, his most famous theories relate to relativity, gravitation, and light.

This is the second of a four-part series about Einstein—As a Man—and His Works.

or vindictive, was always aloof. He never became emotionally involved. This is perhaps one of his most significant traits. He placed the freedom for logical thought above all else, above family ties, above friendships, above religious or secular affiliations, above love and affection, and certainly above social amenities. This led to a rather uncommon personality. He refused steadfastly to have anything to do with money. He set his living standard at the lowest possible level and led the life of an ascetic, even when plenty abounded in his household. He was honest to a fault, and a bit childlike. He was almost unconscious of dress, and this feature resulted in the many stories about his preference for old baggy trousers, an old sweater, going barefoot, or in shoes without stockings, even when entertaining guests. Elsa struggled against these habits, but was unable to change them. His mind was occupied much of the time in dreaming in its methodical way of cosmological things, and it was no pretense that he ignored his immediate surroundings. When studying or relaxing, he was often unkempt, his hair wild, his clothing worn and disheveled. Nonetheless, in these famous years at Berlin, and later in New York, Einstein loved to go to concerts and operas, where he did dress properly. He enjoyed travel. During the 1920's he traveled throughout Europe, Japan, and North and South America, lecturing on relativity theory and cosmology.

Earns Nobel Prize

In 1921 Albert Einstein received the Nobel Prize for physics which recognized the research he had done 15 years earlier. He gave half the prize money to Mileva for the boys and the other half to a charity. In typical style, he delivered his acceptance speech in a worn old informal suit, surrounded at the Nobel function by the sparkle and formality of the Swedish court.

Shortly before his fiftieth birthday, Einstein suffered a heart attack which cost him a year in semiretirement, and for the rest of his life he had to be cautious of fatigue. On his birthday he received hundreds of letters from all over the world, many who knew him only by name as a mysterious, benign genius. However, the birthday was also the occasion of a tragicomic occurrence now little remembered. The city council of Berlin wished to honor him in some special way. Since he loved to sail (it was his only sport), they decided to offer him a lovely park with a charming cottage at the edge of a lake. The gift was made public and the Einsteins were pleased.

However, when Elsa tried to take possession, the occupants refused to vacate. The council found to its chagrin that it could not dislodge them; the property had not been its to give. So the council solicited another site adjacent to the first and was planning the construction of a cottage when a process was served against them. To be denied twice was very embarrassing to the council, and Einstein was becoming uneasy because the related publicity was beginning to involve his Jewish background. The council became the butt of ridicule, and a scandal was growing. Einstein with good humor forgave both mistakes, and the Mayor asked him to select his own site. This was done and plans were carefully laid for a beautiful cottage to be built at Caputh. By now, however, some anti-Semitic feeling had arisen and the Municipal Assembly refused to appropriate the necessary funds.

To ease the acute embarrassment of the council, Einstein tried to deny the gift; but was unable to do so because of contracts in force for purchase of the property. To stop the scandal and to avoid his name being used politically, he bought the land and built the cottage with his own money at a great personal sacrifice. The episode is more than an anecdote since it describes the political struggle going on in Germany at that time between the old guard, the educated elite of the Council, and the popular movement of the Assembly, with the Jew as the scapegoat. During Einstein's life in Berlin this struggle was resolved by the rise of Hitler with the Nazi party and the expulsion of most of the top scientists. Einstein's books and papers were eventually burned by the Nazis, and the house with its contents at Caputh was appropriated. When Einstein left Germany, he was almost without resources.

Defends Jews

During the later years in Berlin, Einstein became more and more of a political figure. He actively defended the Jews, although he was not at ease with their religion, and he was friendly with many of their leaders. He had been an associate of Rathenau, Minister of Foreign Affairs, who was murdered by rightist students in June of 1922. The event deeply affected Einstein who saw then the eventual demise of constitutional government in Germany.

Einstein himself was linked to Rathenau and his name was on a list for future murder. For some time he was afraid to appear in public. Thereafter, his travels in Europe were often marked by a certain amount of cloak and dagger activity.

While visiting America in late 1932, Einstein accepted a position at the Institute for Advanced Studies at Princeton. In the spring of 1933 he returned to Europe, but did not enter Germany. He was kept in great secrecy in Belgium and England because Hitler had taken over Germany and openly threatened Einstein's life. Finally in the fall he assumed his new position at Princeton. There he worked in peace to the end of his days, a beloved and revered member of the community. The most exciting event of this period came in 1939 when he signed the famous letter to President Roosevelt, which informed the President of the potential energy source in the nucleus. Einstein had in the 1930's predicted that energy could not be obtained from the atomic nucleus in a practical way; now, based on his theories in part, younger scientists were to initiate the grim work which was to open the Nuclear Age.

Elsa Einstein died in 1936 at Princeton. In typical fashion, Einstein appeared nearly unmoved at her passing. Albert Einstein died in April 1955. Obviously, he was a man of superior intelligence, but it was not intelligence alone that gave him eminence. What is genius? If Einstein was a genius, then it must be measured in terms of coolheadedness, of perception and introspection, of singlemindedness, perseverance, and remoteness from emotional conflict, as well as in terms of pure brain power.

Parts III and IV will discuss Einstein's scientific contributions.

Retiring . . .



Edgar Cary, a Sandia employee for more than 15½ years, will retire today.

He has been a painter in Plant Maintenance since he came to the Laboratory in September 1950.

Edgar plans to devote full time to his 13-acre farm on Bosque Farms Loop Rd., where he has an apiary of over 60 colonies, each with about 40,000 bees. A bee-keeper for some 30 years, his bees produce part clover, sage, and alfalfa honey from June through the first of August.

Mrs. Cary helps maintain the apiary. They have a married son and two grandchildren who also live in Bosque Farms.



John H. Richey will retire the end of the month after 15½ years at Sandia Laboratory.

After joining the Laboratory in December 1950, John worked as a model and instrument maker for six years. He was then promoted to layout operator, the job he now leaves. He was with the Santa Fe Railroad for 34 years before coming to the Laboratory.

John, who has been a rock hound for seven years, intends to devote more time to lapidary work and perhaps to fishing.

Mr. and Mrs. Richey live at 8219 San Juan Rd., NE. They have a single son living with them and a daughter-in-law and four grandchildren living in Albuquerque.

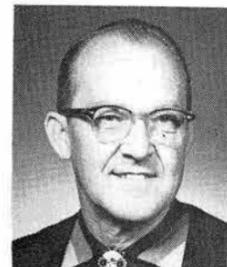


Charles Rettinger retired today after more than 16½ years at the Laboratory.

Before coming to Sandia in September 1949, Charles was a machinist at Los Alamos Scientific Laboratory for a year. He worked in the tool crib section at Sandia for about a year before he was made a machinist in the machine shop.

Charles is a member of a coin club and a horseshoe club. He also plans on doing a lot of camping and hiking in New Mexico and Arizona.

Mr. and Mrs. Rettinger and their four children live at 821 Palomas Dr. SE.

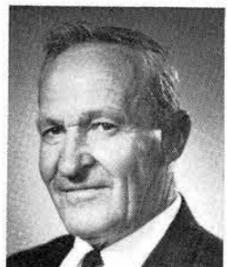


W. Vern Sawyer will retire the end of this month after 13 years at Sandia.

"Buzz" joined the Laboratory in June 1953 as a pipefitter. In March 1960 he was promoted to a section supervisor in maintenance and in August 1964 he transferred to supervisor of Projects Section 4517-2.

Before coming to the Laboratory, Buzz worked for various building contractors, including five years in refrigeration work for the Zia Company at Los Alamos Scientific Laboratory.

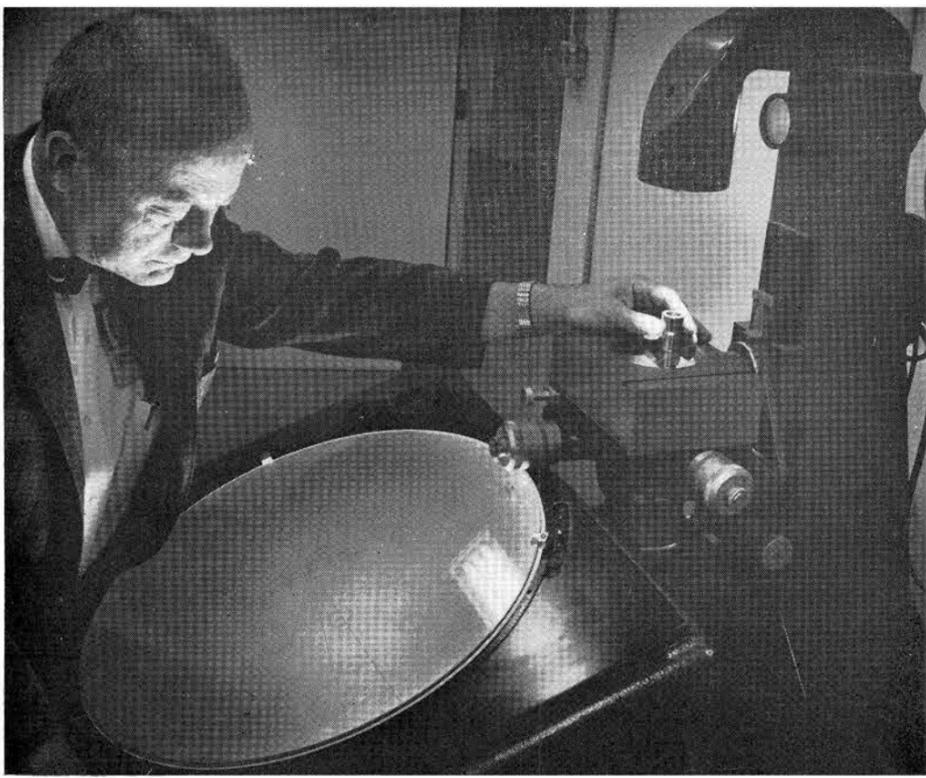
Buzz plans to continue bowling and to pursue his hobby of restoring antique furniture. Mr. and Mrs. Sawyer live at 3524 Eastern Ave., SE.



Juan B. Galdon, a Sandia Laboratory employee for 13½ years, will retire the end of the month.

Juan, who has worked as a lamp maintenance man since joining Sandia in December 1952, has no definite plans after retirement except to care for his 30-acre farm near Belen where he raises alfalfa. He also owns more land in Belen and Bernalillo.

Juan lives at 1006 W. Reinken, Belen. He has 11 children and 36 grandchildren. Aside from a single son in California and a married daughter in Florida, his children reside in Belen.



C. L. STONER (2452) demonstrates how an optical comparator can be used to recertify connector gages. Image of the connector pins is projected onto the overlay for precision positioning check. The new method has been accepted as a cost improvement action of \$113,000 for the next two years.

Method Created by C. L. Stoner Will Save Sandia \$113,000 in Two Years

By changing equipment and procedures in the recertification of product acceptance gages used in component production, Sandia Laboratory will reduce costs by \$113,374 in the next two years.

The new method developed by C. L. Stoner of Product Tester and Gage Design Division 2452 has been accepted by the Sandia Cost Improvement Policy Committee.

The cost improvement accrues essentially because a specially-fitted optical comparator is faster to use in the inspection of connector gages than a coordinate measuring machine.

Previously, the connector gages (which have a number of solid pins ranging from three to 61) required as much as 30 minutes of set up time on the coordinate measuring machine. An additional five minutes

were required for measuring the location of each pin. Other recertification procedures required 30 minutes more.

Using the optical comparator, a precision device which projects a magnified image of the gage undergoing inspection, and a set of overlay charts, an operator requires only 10 minutes of set up time and eight pins per minute can be inspected. Other inspection procedures were not changed.

Inspection of the gages is performed under contract by Union Carbide Corporation, Nuclear Division, Y-12 Plant, under the direction of Division 2413, Sandia-Albuquerque Measurement Standards Laboratory.

The time costs are not the only savings involved in switching inspection machines. An optical comparator costs about \$3500 while a coordinate measuring machine costs \$35,000. The more expensive machines will be released for other work.

New Tape-Controlled Lathe Installed in Development Shops

A new tape-controlled lathe went into operation last week in Sandia's Development Shops. Installed at a cost of \$138,000, the new machine brings a superior production capacity and unique capabilities to the shops, according to L. W. Stouder, supervisor of Machine Tool Programming Division 4251.

One of the outstanding features of the new lathe is its ability to cut a continuous variable curve without the use of a previously manufactured template.

"We can produce a bullet shape, for instance," Mr. Stouder says, "by programming the curve for computation on the 7090 computer. This shape can be produced directly from the tape without first cutting a precision template, an expensive process. In addition, tolerances held by the new lathe approach plus or minus .0001 of an inch. The machine is capable of this kind of precision using special tools and techniques."

The capability of the new machine will reduce lead time. It will be possible on high-priority items to receive a request one day, to program the machine, and to deliver the finished part the next day, Mr. Stouder says.

Programming for the machine makes use of the APT (Automatic Programmed Tools) language. A nation-wide cooperative effort by users of APT programming makes available a "library" of program developments, many of which will be adaptable for Sandia use. In addition to Mr. Stouder, Oran May, Hugh Sumlin, and Jake Gonzales will program for the new machine.

Final part production, however, requires operator skill. John Malpas, Kyle Williams, and Leroy Gibson received training by factory representatives to operate the new lathe. Automatic controls of the machine can be bypassed by the operator to "over-ride" any operation. In this way, the operator can adjust the feed rate, the "bite" of the tool, or the coolant flow to meet the requirements of the specific job.

Operators can also "dial in" simpler jobs, bypassing the programming step. Using the control panel of the lathe, the neces-

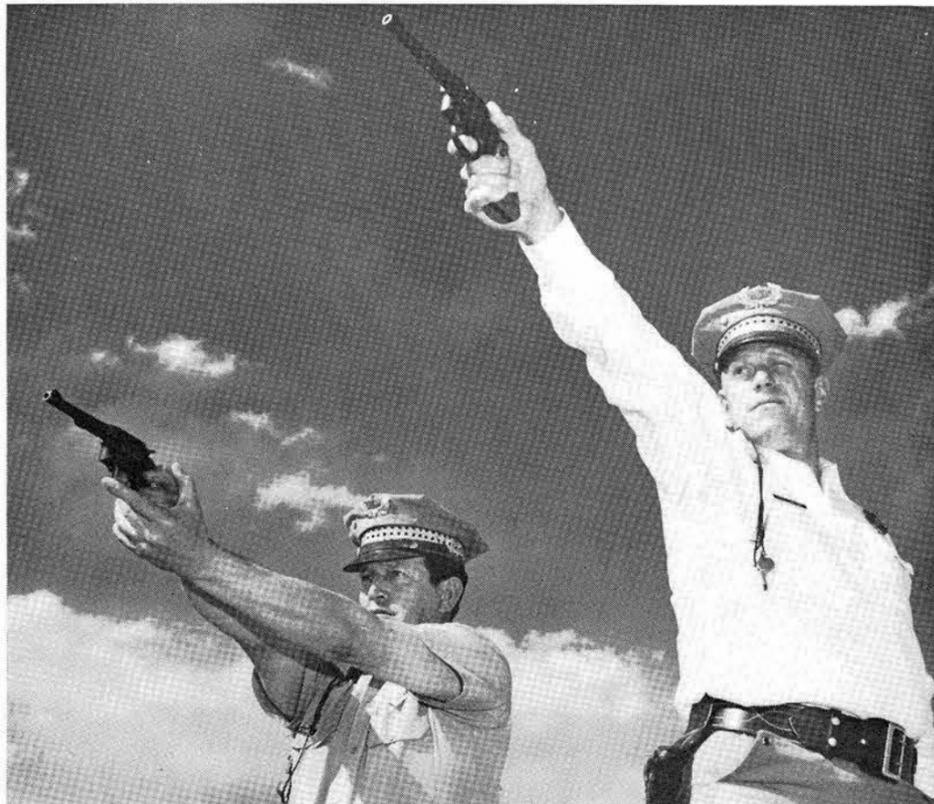
sary machine instructions can be manually programmed directly by the operator.

One unique capability of the lathe is its ability to produce a precision variable pitch lead. An example of this kind of configuration would be a spiral groove cut into a sphere. The spiral could start at a point on the sphere and expand and contract on its way around the sphere, depending on the requirements of the job. This kind of configuration is virtually impossible to produce with any kind of precision by conventional machines.

Sandia designers who have non-routine jobs for the Development Shops are invited to contact Mr. Stouder for additional information or for demonstration of the machine.



TAPE-CONTROLLED LATHE, recently installed in the Development Shops, is operated by John Malpas (4251-2) using the manual over-ride controls. The new machine has superior production capabilities and unique tooling capabilities.



COMBAT AND CONVENTIONAL positions for firing pistols are demonstrated by Security Inspector Hugo Flores (left), who is shown using the two-handed pistol grip, and Sergeant Jim Hinson with the conventional stance for competitive shooting.

Two-handed Grip Ups Accuracy

New Stance with Pistols Adopted

A modified two-handed grip on the pistol is one of the unusual features of Sandia security inspectors' new marksmanship program which eliminates some of the staid shooting exercises and increases most shooters' proficiency.

The rigid stance, one-handed grip, breathing exercises, use of a sighting bar, hours of dry firing, and other traditional training procedures are given secondary roles or eliminated in the fresh combat approach to shooting. The men now are instructed to assume a comfortable stance and shoot with some degree of accuracy in the shortest possible time.

After all, the proponents of the new system argue, the purpose of military and security marksmanship courses is to increase the proficiency of the shooter and not his form. Introduced at the Air Force Academy several years ago, the program saves time and money and it teaches the men to shoot better.

After observing the program in action and checking on the results at the Academy, Walter W. Troy (3243) recommended that it be incorporated in Sandia's security program. Started in February, the new training program has increased the shooting skills of many guards. One, for example, consistently averaged 70 points out of a possible 100 on the regulation practice pistol range. Using the new method, he recently qualified with a score of 92 points.

Except for competitive shooting, there are few real situations in which a security

guard will find it necessary to stand erect and fire with only one hand on the pistol grip. In pistol shooting as in driving a car, two hands are better than one. More positive control is achieved and accuracy is therefore improved.

Under the new system the primary emphasis is placed on firing the weapon with minimum disturbance of sight alignment. The shooter is told that the best way to do this is by keeping his eyes focused on the front sight as he lines it up with the target and squeezes the trigger. He is told to forget about breath control.

The shooter is encouraged to use a natural stance which is comfortable for him. He is also told to make an aggressive, straight to the rear, squeeze on the trigger with as little as possible disturbance of the sight alignment.

Proper eye focus and area aiming are stressed in the program. Most marksmanship training programs fail to point out that the bull's-eye appears merely as a vague, fuzzy blur when the shooter's eyes are focused properly on the front sight. Consequently the shooter's eye constantly shifts its focus as it moves from the front sight to the target and back again. Aside from consuming time, the confusion adds to his uncertainty.

In teaching the proper way to focus on the front sight, the novice is told to point his extended thumb at a fellow student. By focusing on his thumbnail, he sees his friend's face become blurred, and the thumb becomes blurred when he focuses on the face. This demonstrates that the bull's-eye will be a blur if he is properly focused on the front sight and provides a means of recognizing and correcting his own sighting errors.

During the thumbnail exercise, the student is also introduced to area aiming. He is told to observe the size of the area on his friend's face over which the thumb tip moves. Thus he can see that despite the movement caused by normal muscle tremors, he will be able to keep most of his shots within the sight-ring of the standard rapid fire target by concentrating on the front sight and ignoring the movement. By using this method of aiming, his shot groupings will be limited only by the area of his arm wobble. The tendency to jerk the trigger when the sight picture looks good will be largely eliminated.

The new training program, which was developed by Air Force Tech Sergeant William E. Hines, has helped many of the security guards, especially the average shooters, improve their marksmanship proficiency.

To maintain their proficiency, Sandia security guards have at least two pistol practice sessions scheduled each year. Once a year they must score 60 points out of a possible 100 on a regulation pistol range to meet the marksmanship requirements established by the Atomic Energy Commission.

Service Awards

20 Years

Take Note



R. W. Crain
1332



F. C. Ewing
3463



E. L. Harley
9225



C. C. Hunt
4333



C. A. Morterud
1314



B. C. Wemple
4224

15 Years



R. A. Barody
8160



H. F. Burgess
2441



R. L. Calvert
5253



A. V. Chavez
7332



J.A.C. Chavez
2552



C. K. Connolly
7343



E. H. Copeland
7332



J. W. Gumm
8154



R. A. Hayenga
2441



Genevieve Hines
2213



R. S. Howard
7253



F. D. Kite
9312



E. A. Kraft
4253



A. J. Laneville
4253



L. E. Lincoln
4211



Avenancio Lucero
1113



L. W. Luke
4151



R. J. McConkie
2441



Wm. McWhorter
8254



D. E. Neff, Jr.
4361



R. N. Reed
3151



O. L. Rowin
4221



Adolpho Sanchez
4233



J. B. Wade
7224

10 Years

June 3-16

C. A. Sandoval 1324, Cherry Lou Burns 3432, R. H. Austin 3433, M. A. Palmer 5242, M. M. Newsom 5611, G. E. Over-turf 8126, W. W. Burns 9214, J. R. Hoffman 9425, W. L. Lemmon 1414, J. H. Lloyd 1525.

Kathleen R. Summers 2213, J. N. Edgington, Jr. 2542, R. E. Hoffer 8252, R. Gabaldon, Jr. 4614, W. C. Montano 4614, C. S. Johnson 7252, L. W. McEwen, 7253, G. S. Kimball 1422, F. H. Hannah 3131.

H. E. Schildknecht 1324, L. H. Placek 1432, C. W. Moses 1514, B. O. Wood 2126, D. E. Fjelseth 2564, Warren Nilchee 4511, L. J. Keck 9231, S. L. Jeffers 9312, F. A. Duimstra 1333, D. W. Graham 3211, T. O. Taylor 3313, R. E. Taylor 7255, Marilyn H. Little 1300, and C. B. Rogers 9227.

Continued from Page One

Seventeen Contracts

industry, but a modest in-house effort is required to complement the work.

Typical contracts in this area include development of high temperature insulation for thermionic cells, improvement of lead telluride elements, development of silicon-germanium elements, and research in high temperature metallurgy.

Sandia's third responsibility in the program is directed at technical areas which hold promise for future applications in the isotopic power program, but are not currently being adequately explored. SNAP Technology Division 9332 under J. R. Holland heads up this activity. This division will be staffed by a small number of scientists.

The SNAP Technology Division will investigate technological areas which could result in major improvements in the direct conversion of thermal energy to electrical energy as well as associated high temperature materials problems.

Because of the high cost of some isotopes, such as plutonium-238, more efficient conversion equipment is an important goal in the overall program. For this reason, work is currently underway to find more efficient thermoelectric and thermionic conversion systems.

The Space Isotope Power Department now has 18 members, with the initial staff coming from Aerospace Nuclear Safety Department 9310. The department should reach maximum strength of about 40 members during the next 12 months.

Most of the staff members will be mechanical and electrical engineers who will be transferred from other positions within the Laboratory. With the exception of a few PhD's in physics (physical metallurgy, thermoelectrics, etc.) and some nuclear engineers, all other positions are expected to be filled by persons now on roll.

A number of Sandians were elected recently 1966-67 officers of the New Mexico Section, American Society of Mechanical Engineers.

C. E. Runyan (4220) will head the organization as chairman. Vice chairman is J. E. Postlethwaite (1513). L. E. Lamkin (7300) is treasurer. Directors include J. P. Myers (4214) and C. L. Carpenter (1513), retiring chairman.

★ ★ ★

C. J. McGarr, Director of Service Operations 4600, will be co-chairman of a two and a half day seminar of the American Management Association in New York City, June 6-8.

Subject of the seminar is "Electronic Data Processing Systems for Purchasing Operations and Materials Management."

★ ★ ★

The Albuquerque Section of the Institute of Electrical and Electronics Engineers elected three Sandians to top offices during the annual voting last month.

Robert G. Scharrer (7252) was elected chairman; Bob L. Gregory (5212), vice chairman; and Louis J. Frenkel, Jr. (2131), secretary. They will be installed tomorrow during the section's annual picnic at Oak Flats off South Highway 10.

The section has a membership of nearly 800 including the Los Alamos sub-section.

★ ★ ★

Joe Gaynor (2525) emerged champion of the Department 2520/2550 annual golf tournament, scoring 88 with handicap. His net was 60. Twenty-four entries played this year at the Los Altos course. Since the tournament was played more for laughs than sport, Joe felt that his trophy depicting a woman bowler was appropriate for the honor. A trophy also went to the high scorer who shot a magnificent 139. Several "courage" awards were presented to individuals who scored up to 14 on single holes.

Events Calendar

- June 3-5—Shakespeare's "Richard II," Old Town Studio, 1208 Rio Grande NW. For reservations, tel. 242-4602.
- June 4-5—Chaco Canyon. New Mexico Mountain Club, leader Jerry Goldstein, tel. 296-1794.
- June 8—Buffalo dance at Santa Clara Pueblo.
- June 10-12, 17-19, 24-26—Shaw's "Candida," Corrales Adobe Theater, 8:30 p.m.
- June 13—San Antonio corn dance at Taos Pueblo.
- June 16-19—New Mexico Arts and Crafts Fair, Old Town Plaza, Albuquerque.
- June 18-19—All - Arabian Horse Show, Tingley Coliseum.

SHOPPING CENTER

CLASSIFIED ADVERTISING
Deadline: Friday noon prior to week of publication unless changed by holiday.
A maximum of 125 ads will be accepted for each issue.

RULES

1. Limit: 20 words
2. One ad per issue per person
3. Ads to 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
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin

FOR SALE

- NE HEIGHTS, 3-bdr. Mossman, hw/floors, pitched roof, w/fp, attached garage, landscaped, walled back yard. Price, 256-6375.
- '51 JEEP MOTOR recently overhauled, ready to run, also includes clutch w/housing and fly-wheel, \$150. Cash, 242-3345.
- '53 CHEV PICK UP, 1/2-ton, 3-speed, new fuel pump, new seat covers, best offer. Newton, 299-1285 after 5.
- 2 NEW DELUXE Eljer sinks, vanity type; 1 Muntz stereo tape deck for car. Geilenfeldt, 265-0294.
- ANTIQUE Oriental-style rug, 9x12, \$65; restored 18th Century blanket chest, \$50. Cockle-reas, 898-3106.
- '52 KIT 12' camp trailer, sleeps five. Sims, 299-1250.
- REALISTIC TUBE TESTER, checks for leaks, shorts, and emission, 1 yr. old, \$20. Sinerros, 344-4326.
- SIMMS RANCH, Los Poblanos subdivision, 3-acre residential lot w/beautiful old trees, paved roadway, terms. Stein, 242-2967 after 7.
- '65 BUICK 2-dr. HT. Montano, day-265-1536, night-296-4689.
- 3505 PITT NE, 2 fp, electric kitchen, dbl. garage, sprinklers front and back, below appraisal. Sharp, 255-0048 or 298-0402.
- MOSSMAN Sacramento, oversize, landscaped w/large trees, 4-bdr., 1 1/2 bath, den, garage, open house weekends, 3506 Florida NE, Mattox, 268-5554.
- '55 FORD station wagon, one owner, new tires, \$175. Kelsey, 299-2800 after 5.

- TIRES: 8:00 - 8:20 x 15 four-ply nylon wsw, two for \$25 and other two for \$5. Benson, 255-6004.
- MEN'S Hawthorne Medalist golf clubs, new, used once, 2, 4, 5, 7, 9 irons; 1, 3 woods; bag, balls, tees, wood covers, rainhood, \$50. Conrad, 299-5316.
- '65 MALIBU SS 4-speed, \$300 cash, take over payments. Silva, 256-3739 after 5.
- SPEED READING COURSE in 13 volumes, published by Columbia University, w/timer and pacer, \$20. Brown, 255-0566.
- SIX FOOT picnic table w/separate benches, \$10. Armbrust, 7213 Dellwood Rd. NE, 298-3666.
- '56 CHEVROLET 2-dr., 6-cyl. stick, rebuilt motor. Callahan, 299-3273.
- COLEMAN 3-burner camp stove; travel crib. Matsko, 299-2145.
- AKC miniature poodles; portable sewing machine; mangle ironer. Tilley, 299-9611.
- FRIGIKING car air conditioner. Huston, 243-0589 after 7.
- FURNISHED mountain cabin in Brazos country. Parker, 268-5844.
- '55 FORD 2-dr. HT, \$175. McCarty, 298-2919.
- CLOSET DOORS, 27 1/2"x79 1/2" and 23 3/4"x80", \$3 ea.; military ammo, .30-06, cartons of 20, \$1.50 ea.; kitchen clock, \$3. Alvino, 255-6339.
- D.C. GENERATOR, not working; garage door w/hardware; gas floor furnace; trade for .30-06 or acetylene welder. Aaron, 282-3803.
- CHILD'S play table, formica top; boy's 24" bicycle; Hollywood bed frame; used tires 8:00x14, \$1 ea. Wheeler, 256-6230.
- '51 6-CYL. JEEP MOTOR, complete w/starter, gen., carb., clutch, trans., and overdrive, \$100. Frasier, 299-6935.
- '60 MOONEY four place plane, \$1000 for equity, assume loan or refinance. Crosby, 298-7407.
- ENCYCLOPEDIA BRITANNICA; Great Books of the Western World sets; rotary spirit duplicator; accordion; bowling outfit; Polaroid camera. Quinlan, 296-3336.
- CORNER HUTCH CUPBOARD, maple, new, \$85; white oval breakfast set w/leaf, 6 chairs, \$50; 2-dr. HT '61 Chevy Impala, PS, PB, \$1050. John, 344-8435.
- FREE: half Basset, male, 9 mos. old, good w/children. Roberson, 299-8661.
- '65 CHEV. MALIBU sport coupe, R&H, standard trans. Starr, 299-6933.
- SIAMESE KITTENS, 2 mos. old, \$10. Freyermuth, 299-2053.

- FRENCH provincial couch and matching chair, neutral tone, \$100. Sanchez, 298-5330 after 5.
- '65 NORTON TWIN, 1200 miles, 30HP, '66 plates. Granfield, 268-6019.
- SILVER COFFEE SERVICE, 4 pcs., \$12; transistor ignition, \$6; large custom-made solid leather luggage case, \$12; turntables, pre-amps, speakers, 1/3 of cost. Browning, 299-6384.
- COLOR SLIDE OUTFIT, 35mm Kodak Pony camera, leather case, blower cooled tower projector, spare lamp, all for \$43.88. Stark, 299-5953.
- '63 VW CAMPER, white, 29,000 miles, 50HP engine, make offer. Aden, 299-4023.
- BABY BATH TUB, \$1; infa-seat, \$1; crib pads, \$1; mahogany stereo cabinets, \$80. Longfellow, 299-7062.
- '56 BUICK Century, AT, PS, PB, \$125; ham transmitter, 500 watts AM/CW, commercially built, \$180. Grab, 299-0015.
- \$800 DOWN, Roberson 3-bdr., 1 1/2 bath, den w/fp, dbl. garage, hw/floors, corner lot, near Eastdale, \$18,400, 10100 Toltec NE. Duvall, 299-8744.
- BLOND CONSOLE TV; silverware; records; steak knives; semi-formal; stote; shoes; purses; come browse. Carmichael, 299-1570.
- 15 CU. FT. refrigerator, \$40. Martin, 298-6644.
- '62 M.D.S. Super Dart motorcycle, 75 cc's, under 4500 miles, 150 mpg, 4 cycle, no gas-oil mixture, \$450 new, \$195 or offer. Williams, 299-8744.
- 35MM PETRI F1.8 lens, case, meter, \$35; Minolta SLR F2 Rokkor, \$75; B&H 8mm zoom, grip, case, \$50. Butler, 299-5626.
- 2-BDR., 1 bath, large yard and patio, \$500 and assume 4 1/2% VA loan, payments of \$71/mo., near Coronado and Winrock Centers. Swaim, 268-2035.
- '57 TRIUMPH TR-3, yellow, black interior, driving lights, wire wheels, 5000 miles on fresh 87mm engine. Taylor, 256-3774.
- COMPLETE FISHING equipment, \$80. Laskowski, 256-2053, 425 Truman NE.
- DRAPES: 2 pr. white background w/aqua, short; tool or tackle box, hiproof, double-cantilever design, 18"x13". Bartlett, 299-4861.
- BABY BED, mattress, and equipment; 2 prs, 10AA Women's shoes, worn once; mattress-spring set for double bed. Everhart, 268-6943.
- '54 GMC CARRYALL, 3 seats, 4-spd. heavy duty AT, Gels, 298-2059

- MOSSMAN 3-bdr., family rm., 1 1/2 baths, carpeting, drapes, completely landscaped, walk to schools, \$18,900, 3609 Dakota NE. Bader, 299-9459.
- AKC registered silver poodle puppies, make your selection now. Schaffer, 299-4634 after 4:30.
- ROBERSON 3-bdr., 1 1/2 baths, DR, fireplace, carpeting, AC, built-in range, large covered patio, below appraisal, 10909 Elvin NE. Putnam, 299-7142.
- VACUUM CLEANER, Hoover, \$15. Garcia, 255-3201.
- 4-BDR., study, 1 1/2 baths, laundry rm., fruit trees, corals, chicken house, 3 acres, Bosque Farms. Jarrell, 636-2834.
- 3-BDR. and den Roberson, dbl. garage, sprinklers, landscaped, carpeting, drapes, hw/floors, new loan or assume, 3225 Britt NE. Cnare, 299-3604.
- RCA RADIO, record player, walnut, table model, \$25. Flynn, 268-5740.
- TWO LOCKING GAS CAPS, one key, for International Scout, will fit others, \$2 for the pair. Baxter, 344-7601.
- ARGUS M-3 movie camera, projector, screen; 19" television; 4 Jerry cans; new ironing board and pad; men's bowling ball. McGarrie, 298-3364.
- '50 JEEPSTER, 6-cyl. rebuilt motor, R&H, \$450; '60 Volvo, PV 544, 2-dr. sedan, red sport, near NADA. Bradford, 268-0980.
- SELL OR TRADE: '65 Mustang, 289 engine, 3-spd. trans., console, AC, prefer '62 or newer station wagon as trade. Griego, 296-2318.
- NEW ELJER lavatories, \$15; 12-lb. sight-feed acetylene generator, \$75 or trade for guns; check writer, \$3. Flowers, 282-3458.
- '62 OLDS station wagon, 8-passenger, PB, PS, AT, air, top rack, below NADA, \$1575. Fitch, 255-5335 after 5.
- 3 BDR. Roberson near Collet Park elementary school, drapes, AC, fallout shelter, sprinklers front and back. Losinski, 298-4597.
- 5-DRAWER Early American maple chest of drawers, \$37.50; large Gibson refrigerator, \$35. Drake, 299-0544.
- '62 FALCON Squire station wagon, one owner, 46,000 miles, NADA \$840 or make offer. Creveling, 242-3790.
- TRADE for pickup camper, sell or rent, 3-bdr. home, many extras, 4 1/2% mtg., 1609 Cagua, NW, Shaffer 242-6507.

- '55 PACKARD Clipper deluxe, load leveler, new tires, battery, \$400; portable oxygen kit w/cylinder, regulator, cart, \$75. Coberly, 268-5320 after 5.
- BEDROOM SET, \$75; picnic set, \$15; freezer, \$125; desk, \$3; chest, \$5; tractor, \$5; TV, \$15; other misc. Dubbins, 299-5562.
- UPRIGHT FREEZER, \$150; workbench w/electrical strip, \$20; baseboard heater, \$10; birch plywood; steel window; other items. Wagoner, 299-6801.
- ANNUNCIATION or Yucca School, brick, hw/floors, landscaped, 3-bdr., den, studio, apt./study, patio w/bbq, assume GI loan. Brautigam, 299-9407 after 5.
- '60 RENAULT 4-dr., \$225. Brautigam, 299-9407 after 5.
- '56 CHEV. station wagon, \$325; Ford factory AC, \$50. Denny, 268-0004.

WANTED

- STANDARD 8mm movie projector. Matsko, 299-2145.
- PROJECTOR for 35mm slides, reasonably priced and in good operating condition. Adams, 256-7265.
- EXACTA LENSES and equipment. Rolleiflex; Travel Queen Camper. Butler, 299-5626.
- TRANSPORTATION from 2016 Lakeview Rd. SW to Bldg. 880, will share expenses. Geister, 264-8531.

FOR RENT

- 15' TRAVEL TRAILER, sleeps five, some time still open for this summer. Colp, 268-8035.
- 3-BDR. HOME, carpet and drapes, large walled yard, near Bases, schools and shopping, \$115/mo. Erne, 299-0565.
- 3-BDR., 1 1/2 baths, AC, unfurn., built-in stove, water paid, walled yard, patio, sprinklers, no pets, 8811 Claremont, July 1, \$145/mo. Finley, 299-0739.

LOST AND FOUND

- LOST—Prescription sunglasses, sunglasses w/silver rims, small Westinghouse transistor radio, keys on screwdriver type key ring, Rogers silver butane lighter, Lady Elgin white gold watch w/mesh band, slide rule in clear vinyl cover. LOST AND FOUND, tel. 264-2757, Bldg. 610.
- FOUND—Key w/inscription "Weiser," sunglasses w/black plastic rims. LOST AND FOUND, tel. 264-2757, Bldg. 610.



HOFBRAU MENU gets top approval from John Rohrer (2565), member of the German-American Club. "A Night in Milwaukee" will be held at the Coronado Club tomorrow night starting at 7 p.m. Dancing with the Lamplighters starts at 9 p.m.

Hofbrau, Go-Go, Swim Meet on Club Calendar During Next Two Weeks

Tomorrow at the Coronado Club, it's a "Night in Milwaukee," billed as a German-American night of revelry. Festivities start at 7 p.m. with a hofbrau menu featuring sauerbraten, bratwurst, white fish, a variety of salads, and apple strudel.

At 9 p.m. the Lamplighters will swing for dancing until 1 a.m. Reservations needed for this one. Call the Club office, tel. 264-4561. Cost to members is \$3, guests \$3.50.

On Thursday, June 9, teenagers will go-go starting at 7:30 p.m. Adding to the usual confusion will be a new kind of band—an all-girl rock n' roll group called the Feebeez. Admission is 25 cents each.

Adults, who know a good thing when they see it, will hold their own go-go party on Friday, June 17, following social hour. The go-go group has survived for a number of months now and its ranks continue to grow. Don't knock it until you've tried it. The mayhem starts at 8:30 and admission is free.

Tenth Annual Coronado Club swim meet is scheduled Friday evening, June 17, and Saturday, June 18. Nine teams, some 485 swimmers, will be competing, according to C. B. O'Keefe (3126), meet director.

The twin pools will be closed for recreational swimming during the meet, but spectators are welcome. The swimmers will compete by age groups in the AAU-sanctioned meet.

Sanado Woman's Club Sherry Luncheon Scheduled June 14

Featured speaker for the Sanado Women's Club sherry luncheon June 14 will be George R. Fischbeck. Title of his talk is "What New Mexicans Think the Rest of the Country Thinks About New Mexico." Mr. Fischbeck is a noted Albuquerque science teacher. He conducts a weekly television program, "Elementary Science Five," which has won national acclaim.

The event starts at 1:30 p.m., at the Coronado Club.

Spring flowers, plants, and ferns will be the theme for the decorations. Mrs. H. J. Filusch is chairman and is being assisted by Mmes. C. G. Fornero, G. W. Treadwell, W. B. Lewis, and Mrs. W. P. Leikam. Greeting guests at the door will be Mrs. A. G. Carter and Mrs. H. L. Crumley. Mrs. Jack N. Colquitt, president, will conduct the business meeting.

Sherry hostesses will be Mrs. J. C. Eckhart, Mrs. George Kinoshita, and Mrs. K. C. Goettsche.

Reservations should be made by card to Mrs. E. E. Bylander, 3303 Tiley Dr. NE, by Friday, June 10.

Other Club Activities

Social Hours

Tonight, Don Lesman's combo will play for social hour. The seafood buffet will be served. Admission is \$1.25 for adults, \$1 for children.

On Friday, June 10, Rex Elder will play for social hour and the popular Mexican buffet will be served.

On June 17, preceding the Adult Go-Go, the chuckwagon roast beef and shrimp buffet will be on the menu and Tommy Kelly's group will provide the music.

Bridge

Four sessions of bridge are scheduled at the Club during the next two weeks:

Duplicate bridge will be played Monday, June 6, beginning at 7 p.m.

The summer ACBL charity game is scheduled Monday, June 13, at 7 p.m.

ACF bridge will be played Wednesday, June 15, at 7 p.m.

The Ladies Bridge group will meet Thursday, June 16, at 1:15 p.m.

Sandia Speakers

M. E. Daniel (2442), "Some t-Domain Realizability Criteria," Ninth Midwest Symposium on Circuit Theory, Oklahoma State University, May 9-10, Stillwater.

E. P. Eer Nisse (5142), "Coupled Mode Approach to Elastic Vibration Analysis," Acoustical Society of America meeting, June 1-4, Boston.

W. C. Lyons (1116), "The Existence of Transverse Vibration of Thermoelastic Plates Due to Heating," and with T. Mura of Northwestern University, "Continuous Distribution of Dislocations and Energy Dissipation in Metals," Acoustical Society of America Meeting, June 1-4, Boston.

J. G. Eberhart (1123), "The Structures of Benzene," Rio Grande High School, May 19, Albuquerque.

M. L. Slater (5262), "Differential Inequalities in Linear Programming," 29th National Meeting of the Operations Research Society of America, May 20, Los Angeles.

J. R. Holpp (2432), "Data System Planning," 20th Annual Technical Conference of the American Society for Quality Control, June 1-3, New York City.

A. F. Cone (2430) and D. L. Field (2433), "A Study of Vendor-Vendee Programs," 20th Annual Technical Conference of the American Society for Quality Control, June 1-3, New York City.

J. B. O'Meara, O. D. Belden, and G. O. Hawley (all 2433), "A Proposed Vendor Evaluation Profile," 20th Annual Technical Conference of the American Society for Quality Control, June 1-3, New York City.

Supervisory Appointments



JOHN W. CARROLL to Senior Buyer 4315 in Purchasing Department I, effective June 1.

"Jake" joined Sandia as an auditor in the auditing department in October 1958. He was promoted to senior auditor in July 1960.

In May 1962, he transferred to the purchasing organization as a senior price and cost analyst.

Before coming to Albuquerque, Jake was on the auditing staff and held various supervisory positions with Shell Oil Company for 12 years.

He received a BS degree in accounting from the University of Houston in June 1945. He attended Emory University in Atlanta for three years before that.

Jake is treasurer of the Coronado Club.



JOHN W. JUSTUS to Senior Buyer, Commercial Supplies, Mechanical 4364, newly created, effective June 1.

John joined the contracts and purchase service group in Sandia's purchasing organization in January 1959. In August 1962 he was promoted buyer in subcontract.

Before coming to the Laboratory, he attended law school at the University of New Mexico for a year and a half. He received his BA degree in business administration from New Mexico Western College.

John served two years in the U. S. Air Force.

Sympathy

To Helen Melancon (4153) for the death of her mother in El Paso, May 18.

To Ben F. Blythe (4332) for the death of his wife on May 19.

To J. B. Sweatman (4213-5) for the death of his father-in-law in Albuquerque, May 24.



PATRICK D. GILDEA to supervisor of Systems Hardening Division 8148, effective May 16.

Pat joined Sandia's Livermore Laboratory in September 1956. His assignments were primarily in project

engineering divisions for approximately seven years. In 1963 he transferred to Preliminary Design Organization for a year and most recently has been working in Design Analysis Organization.

He received his BS degree in mechanical engineering from the University of California at Berkeley in 1953 and his MS degree from the same university in 1956. From 1953-55 he served with the U.S. Army. Prior to his military service he worked as a mechanical engineer with General Electric Company for four months.

Pat is a member of the American Society of Mechanical Engineers and Alpha Gamma Sigma, science honorary society.



LEON B. HOBBS to supervisor of Engineering and Control Division 1415 in the Nucleonic Devices Department, effective June 1.

Leon joined the engineering and manufacturing development group at Sandia in June 1952.

In January 1957 he was promoted to section supervisor and transferred to Device Engineering Division in 1961.

Leon received a BS in electrical engineering from Purdue University in June 1952. He has also taken business and economic courses at the University of New Mexico.

From 1943 to 1946, he served in the U. S. Navy, mainly in the Pacific area. Before that he attended Central Radio and Television School in Kansas City and worked as a radio engineer at Purdue University and in Atcheson, Kan., for about four years.

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LAB NEWS

JUNE 3, 1966

Sandia's Safety Scoreboard

Sandia Laboratory:

21 DAYS

735,000 MAN HOURS

WITHOUT A

DISABLING INJURY

Livermore Laboratory:

153 DAYS

787,800 MAN HOURS

WITHOUT A

DISABLING INJURY



Anita Whatley (9411)

Take A Memo, Please

Power mowers can be as dangerous as any other tool. Know the approved method of operating such equipment and take safety precautions at all times.