

C. W. Campbell Heads Local Planning, Coordinating Organizations

"Some people will pick up a newspaper and immediately start criticizing the 'city fathers' for some local program. To me, the expression 'city fathers' should mean every citizen of Albuquerque. There are many critics, but few doers. Numerous local organizations and activities require the help of volunteers. If people want improvement, they've got to work for it."

These thoughts were among Vice President Charles W. Campbell's remarks about community service.

Currently president of the Albuquerque Community Council, he has been especially active in community organizations since 1964 when the Council undertook an extensive survey of Albuquerque's total social welfare needs and services. He was also chairman of a Health Facilities and Service Planning Committee and a member of the advisory committee for the New Mexico Regional Program for Heart Disease, Cancer and Stroke.

Mr. Campbell started working for the Community Council three years ago as chairman of the Group Services and Recreation Task Force, one of 12 task forces of volunteers formed to study local health, welfare and recreation needs and resources as part of the community survey.

"I was a member of the Council's board of directors before I realized it," Mr. Campbell comments. He then served as treasurer, and last year he was elected president.

The Council's primary purpose is to make certain the community has a coordinated and efficient program of health,

welfare and recreation services to meet the residents' needs. Eliminating duplication and overlapping of services among health and welfare agencies is another important goal of the Council.

Council membership is composed of representative community leaders with no particular vested interest other than in the community as a whole. The 21-member board of directors meets monthly and the eight-member executive committee, also chaired by Mr. Campbell, usually meets weekly.

There is a five-member staff including an executive director. One staff employee, an agency referral coordinator, is sponsored by the Junior League of Albuquerque and another, the coordinator of neighborhood centers, is sponsored by the Economic Opportunity Board.

The Council derives its operating funds from three sources — United Community Fund, federal funds through Economic Opportunity Board, and the Junior League, which has funded the information referral service.

Mr. Campbell estimates that there are about 100 to 150 volunteers working with different task forces at any one time.

The community survey of available resources and needs was the Council's first major project. It took 18 months and hundreds of volunteers to gather information which was then published as a bound report in May 1965. After it was completed, the board reviewed numerous recommendations of the task forces and established priorities.

One of the recommendations was that the Community Council establish a Health Facilities and Service Planning Committee. Mr. Campbell was asked to serve as chairman of the group, which is composed of representatives of hospitals, health facilities and related agencies.

"Some cities have built too many health facilities. In other cities, like Albuquerque, there is a shortage," Mr. Campbell comments. "Residents should plan and implement a local health facilities program. If they don't do it for their own area, the state or federal government will do it for them. But I believe it should be done locally."

Starting to work under a two-year grant, the health facilities group is currently looking for an executive director who will probably spend the first year gathering data. Mr. Campbell hopes that the stature of the Committee will increase until any proposed new health facility in the community would have to be approved by the group.

"Albuquerque, with its climate, its geography and such facilities as Lovelace Clinic and the University of New Mexico School of Medicine, is an ideal site for a health center," Mr. Campbell says. "With proper planning and coordination, it could become a national health center for research and treatment."

He is also a member of the advisory committee for the New Mexico Regional Program for Heart Disease, Cancer and Stroke, which is one of 51 similar programs throughout the country coordinated by the



Charles W. Campbell, Vice President 4000

U.S. Department of Health, Education and Welfare. The local program is under the direction of the UNM School of Medicine.

The statewide program is well underway with various task forces exploring numerous facets of the program. Currently the volunteers are studying existing medical facilities and equipment throughout the state. This will be followed with recommendations as to the type and location of facilities to best serve New Mexico.



GUIDING VISITORS to the Tonopah Test Range is this unique vehicle perched atop a sign on U. S. Highway 6 some 19 miles from the entrance to the Range.

Sandia to Open Tonopah Test Range To Visitors Tomorrow

More than 500 persons are expected to tour Tonopah Test Range tomorrow. Invitations to visit the Range have been mailed to landowners and residents in the extended impact area, local community leaders, Nevada state and county officials, and families of Range personnel.

Guests will be welcomed by S. A. Moore, manager, Tonopah Test Range Department 7230, at this occasion—which marks the Range's tenth year of operation.

During the 9 a.m. to 2 p.m. "open house," visitors will see radar and telemetry facilities, tracking telescopes and high speed cameras, rocket vehicles and launchers, drop-test targets, and a film on Range operations.

Tonopah Test Range is used primarily to drop-test non-nuclear components and systems designed and developed by Sandia Laboratories. In addition, developmental tests are conducted on instrumentation rockets, cratering studies are performed with non-nuclear high explosives, and various tracking and target-acquisition exercises are performed for the military.

Personnel at the Range include some 38 Sandians, 55 employees of Reynolds Electrical & Engineering Co. (REECo), and 22 security guards of Wackenhut Services, Inc.

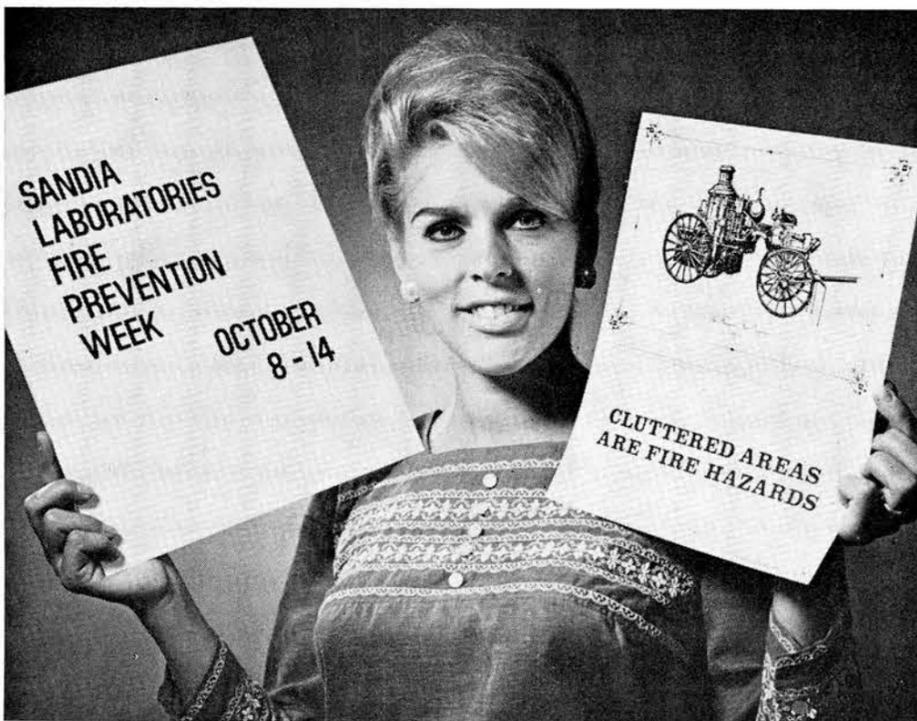
SANDIA LAB NEWS

VOL. 19, NO. 20, OCTOBER 6, 1967

SANDIA LABORATORIES

ALBUQUERQUE, NEW MEXICO; LIVERMORE, CALIFORNIA

OPERATED BY SANDIA CORPORATION FOR
THE U. S. ATOMIC ENERGY COMMISSION



REMINDING ALL EMPLOYEES to observe Fire Prevention Week Oct. 8-14 is Archie Pearlman (4333). Special fire prevention activities are scheduled during the week.

Fire Prevention Week Set Oct. 8-14

Demonstrations, films and displays will highlight Fire Prevention Week activities at Sandia Laboratories Oct. 8-14. The program is being coordinated by Field and Plant Operations Engineering Division 4544.

Demonstrations of fire fighting techniques will be held for fire team captains, safety meetings with fire prevention films will be scheduled, posters and displays will be abundant throughout the Laboratories, and a fire prevention booklet will be distributed. Fire drills and building inspections will also be held during the week.

Two small fires since Jan. 1 this year point to the need for continuous awareness of the hazards of fire. Although the loss (\$58) was small, a fire anywhere can be disastrous.

In March, a new thermostat installed in

the air conditioning system of one of the trailer buildings did not function correctly (a factory defect) and firemen chopped a hole in the ceiling of the trailer to locate the source of the smoke.

The second fire occurred on a transformer on a pole in Area II. An alert security inspector noticed it smoking and called the Base fire department. Since the transformer was part of a construction project still underway, the contractor absorbed the \$430 loss.

"In an operation as large and as complex as Sandia," Ward Hunnicut, Division 4544 supervisor, says, "we must face the fact that fire is a constant threat. All employees share the responsibility for fire prevention. This is the message of Fire Prevention Week."

Early Results Show \$70,462 Pledged To ECP Campaign

Preliminary tabulation of the results of the current Employee Contribution Plan Drive show a total of \$70,462 pledged by 1800 employees. This represents 25 per cent of Sandia Laboratory employees. (It is expected that most employees will not submit cards—indicating no change in their contributions.) The remaining cards, from vacationing, ill, or employees traveling on company business, should increase the total, the ECP committee reports.

Last year, Sandians pledged a total of \$261,757 to ECP. The average gift of those who contributed was \$42.

ECP benefits a total of 37 agencies, 29 of which are members of the Albuquerque United Community Fund.

A. J. Fuller Appointed To Rehabilitation Group



A. J. Fuller (3251) is currently serving in Task Force I of a joint state-federal committee charged with developing a plan for comprehensive services to disabled people.

Comprehensive Planning for Vocational Rehabilitation Services, as the program is called, has already been underway one year in New Mexico and the needs have been surveyed. With the start of Phase II, Mr. Fuller's group is to develop an organization plan of administrative services to carry the program through a 15-year period. Task Force I is holding monthly meetings to fulfill these responsibilities.

Mr. Fuller's qualifications for appointment to the group include 10 years with the California Department of Education working in the field of rehabilitation. During 10 years at Sandia, he set up the Skill Trades Training Program and for the past three years has coordinated recruiting of PhD's from schools throughout the country.

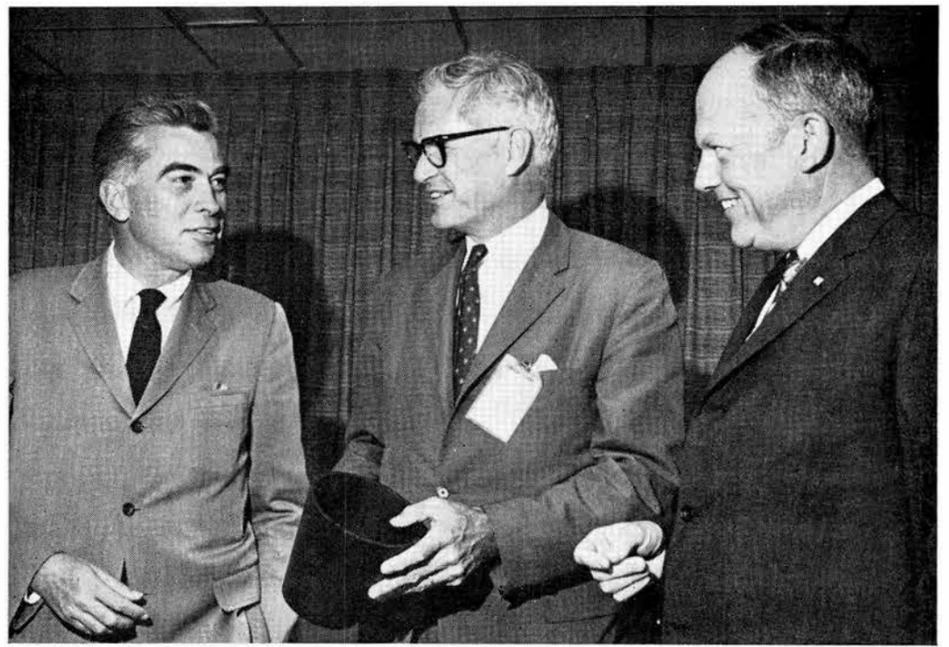
Editorial Comment

Every evening at 5:30 p.m., an official retreat ceremony is staged at the parade grounds on Sandia Base. The ceremony consists of lowering the American flag at the end of the day with traditional music and respect by civilian as well as military personnel.

The ceremony starts with the playing of "Retreat," on the last note of which a gun is fired and "To the Color" is played. As this music comes over the loudspeakers on the parade grounds and at other locations on the Base, the flag is lowered.

Civilian personnel on Sandia Base, who are outside a building and within sight of the Base flagpole or within hearing distance of the retreat ceremony music, render the proper respect by facing the flag or music, standing at attention and placing the right hand over the heart during the playing of "To The Color." Civilian attired men wearing a hat should hold it over their heart with the right hand. These positions should be maintained until the last note of music.

If in a car, you should pull over, stop the vehicle, get out, and render the courtesies.



SANDIA VISITOR—Dr. Robert C. Seamans, Jr., (center) deputy administrator of the National Aeronautics and Space Administration, visited the Laboratory last week before delivering a speech at University of New Mexico Concert Hall. Discussing an experimental nose cone frustum with Dr. Seamans after a technical briefing are President John A. Hornbeck (left) and Vice President Glenn A. Fowler (9000).

Standards Subcommittee Meets Here

P. A. Nicovich (2212) will be chairman and F. F. Eichert (2210) will be an attending member when the U.S.A. Standards Institute's Y14.5 subcommittee meets for the first time in Albuquerque, Oct. 10-12.

The 18-member group is comprised of representatives of major industry, universities and the military services. Four years of work by the committee members resulted in publication in December 1966 of a U.S. drafting standard for dimensioning and tolerancing of engineering drawings which consolidated existing standards of the Society of Automotive Engineers, ASA, and the military services.

At next week's meeting, delegates will determine how the standard should be improved and which new items should be considered.

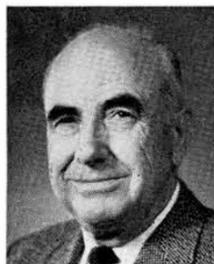
S. H. Watson of Radio Corporation of

America will give a report on the US/UK meeting in London and the International Standards Organization meeting in Moscow last summer. Mr. Watson headed the U.S. delegation which included Mr. Eichert.

Other members of the Y14.5 subcommittee include P.W.E. Gehris of Pennsylvania State University who has been a Sandia employee for two summers, and F. L. Spalding of the University of Illinois who was here one summer.

On Oct. 12 the group will visit the Sandia Sphere of Science and be taken on an escorted tour of the precision graphics area (Bldg. 892) where delegates will see an automatic drafting machine and digitizer in operation. One of the items for discussion during the meeting is dimensioning for numeric definition, which is not included in the present standard.

Retiring



Howard E. Montgomery of Materials & Process Engineering Division 1124, retires from Sandia Oct. 31. He has been with the materials group, doing metallurgical work, since he joined the Company in December 1954.

Mr. and Mrs. Montgomery have two children and two grandsons. They will continue to reside at 959 Avenida Manana NE.

Howard's future plans are indefinite; however, he does plan to devote more time to his extensive clock collection.



Gladys M. Collins will retire from Sandia at the end of October. She joined the Company in July 1957 as a division secretary. She worked as a division secretary and then as department secretary in the quality assurance organization. In June 1962 she transferred to her current position as secretary to the Information Systems Department 9230.

Mr. and Mrs. Collins plan a number of trips around the country to visit with family and friends. "My most significant future plans are to enjoy myself and just be a housewife," Gladys says. "I have enjoyed my years with Sandia very much because I have had such interesting work and have made so many friends. I think the Company has done a wonderful thing in working out an early retirement program. I've been a career woman all my life and now I'm looking forward to my new role."

Patent Awarded for Reefing Line Cutter

A small explosive-activated device for cutting the reefing line around a parachute shortly after deployment has been patented in the name of James P. Gallagher (9323) and assigned to the Atomic Energy Commission.

The sudden shock of air pressure against the relatively large area of parachute material causes chutes with heavy loads to rupture when released at high speeds. To lessen this initial shock load of up to 4500 pounds per square foot, Sandia has been using a reefing line around the chute's skirt to keep it from opening to its full diameter, eliminating the shock load.

Within seconds after deployment, the reefing line must be released so the chute

can billow out to its full diameter and slow the descent of the load. This created the need for the reefing line cutter.

The device must be small, light weight, reliable and rugged. Other design requirements include a smooth, compact exterior surface to prevent damage to the parachute material during and after packing, and upon deployment. It must also remain secured to the chute regardless of the forces, which may exceed 500 times the force of gravity.

The reefing line cutter developed by Jim Gallagher has an anodized aluminum housing about five inches long, two inches wide and one inch deep. It is secured to nylon support webs near the base of the chute's canopy with six bolts. The heavy

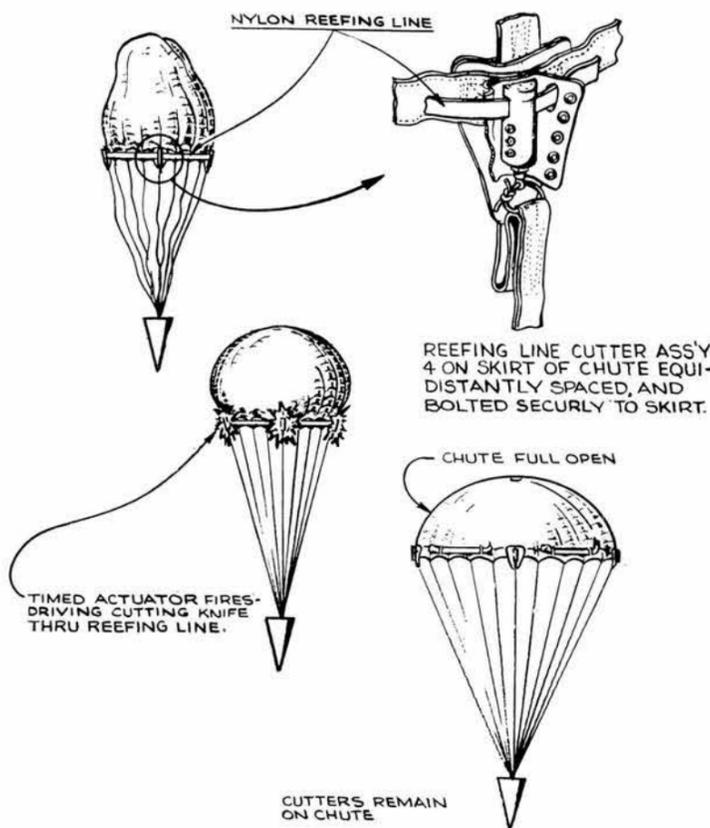
nylon reefing line (one inch by one-quarter inch) rides freely through small steel rings strategically placed around the chute's skirt and passes through a channel near the top of the device.

Within the device, a knife cuts the heavy nylon line. The knife is driven upward through the line by a small explosive charge detonated by a spring-activated firing pin. A flat anvil atop the device keeps the knife from going farther and damaging the parachute and also provides a cutting surface for the knife.

Usually four of the devices are attached to each parachute equipped with a reefing line. They have been used on chutes with diameters ranging from 8 to 130 feet.



REEFING LINE CUTTER on a 20-foot diameter ribbon parachute is displayed by James P. Gallagher (9323), inventor of the device.



ARTIST'S sketch shows placement and function of reefing line cutter.



Fred A. Collatz, Sr., an expeditor in Integrated Contractor Section I 2523-1, will retire from Sandia Oct. 31. He came to Sandia in September 1952 and has worked with the expediting group the entire time.

Fred has made lots of retirement plans — he and his wife plan a vacation immediately following his retirement. They will visit friends and family in Denver, Chicago and Minneapolis. They like to travel and own a camping trailer. They are considering a camping trip into Mexico about Christmas time. "I like to putter around the house and yard," Fred says. "I like to read, and I like to come and go when I feel like it." Mr. and Mrs. Collatz have a son in Albuquerque and a daughter in Illinois, six grandchildren and two great-grandchildren.

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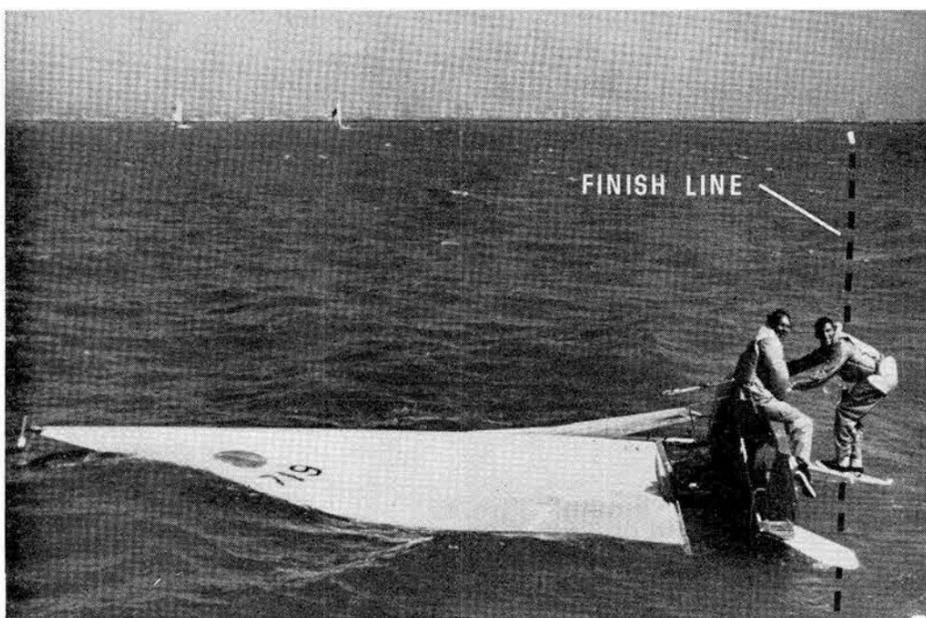
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FINISH LINE

CAPSIZING AT THE FINISH LINE still wins third place for skipper Glen Brandvold (left) and Bob Schaefer (both 8158) in a "heavy weather" sailing regatta on San Francisco Bay. The Sandians, photographed from the committee boat, were awarded third-place trophy in their division for overall performance during the four-day competition. The dotted line, superimposed on the picture, shows their margin of victory in the second race.

Sandians' Craft Slides Into Third Place Win in National Meet

There is nothing unusual in horse racing when a horse wins by a nose, but you might wonder what's up when a sailboat wins by a centerboard and rudder. After all, they extend below the bottom of the boat.

This is the way skipper Glen Brandvold and crewman Bob Schaefer (both 8158) won third place in a recent "heavy weather" sailing regatta on San Francisco Bay.

Heavy weather racing is a natural for San Francisco Bay. Winds of 30-40 miles per hour often blow through the Golden Gate Bridge, creating a cold and choppy sea. Sailing in this environment is a test of crew endurance and gear strength.

The regatta attracted 59 boats from all parts of the United States. Separated into six divisions, each boat within a division represented a particular design class. Boats ranged from Division I's 12-foot single-handers to Division VI's keel craft over 30 feet long.

Glen's boat—in Division II—was in the Fireball class. English-designed and assembled at home by Glen, it is a 16-foot sloop-rigged trapeze centerboarder.

The "Joaquin" (named after a California bandit who headquartered in the Livermore area 100 years ago) did not start the first of its four scheduled races. The day before the competition started, rough weather on the Bay stove-in the boat's hull during a tune-up race. The first day of the race found Glen making boat repairs in his garage instead of making way on the water. Fortunately, the first day's races were not counted in the overall scoring due to the light wind conditions.

The second race was a different matter.

Approaching the finish line after two and one-half hours of hard sailing, Glen's boat was in a dead heat with two other boats. He tacked hard to port, hoping to finish ahead of the other two. The sharp tack, in winds of 20-30 miles per hour, was too much for the Joaquin and she capsized with her centerboard, rudder, and part of crewman Schaefer extending over the finish line. In the racing regulations, it states that a boat may win if any portion of the boat or crew is over the finish line. "How we finished didn't matter at that stage," says Bob. "Taking third place after 2 hours 38 minutes and 56 seconds of sailing over the course was its own exhilarating reward."

During the fourth and last race of the regatta, the weather lived up to every expectation of the regatta committee when they scheduled the heavy weather contest. Wind hit the sails at 40 miles per hour. The bay was a mass of heaving white caps. But three days of racing had taxed the Joaquin's hardware to the limit and finally caused a jam cleat to fail. This failure contributed to capsizing four times during the race. Each time, however, they righted the Joaquin and sailed her back into competition and another very rewarding third-place finish.

Looking over the trophy presented to him by the Richmond Yacht Club, Glen mused, "It may sound as if we had unique problems, but we didn't. I think the sharp tack that capsized us over the finish line was the high point of the regatta."

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RECENT APPOINTEES to civic posts in the City of Livermore include (l to r) F. J. (Jerry) Maloney (8128), a member of the Livermore Housing Authority; Leo Gutierrez (8100), a director of the newly-established Downtown Development Commission (DDC) and chairman of the Railroad Relocation Committee; and G. R. (Gib) Marguth (8127), also a DDC director and liaison between the Commission and the City Council. The three Sandians discuss one of the proposals for the redevelopment of Livermore's downtown business district.

Sandians Appointed to Livermore Housing and Development Posts

Three Laboratory employees were recently appointed to housing and development agencies in Livermore.

Leo Gutierrez, director of Systems Development 8100, and G. R. (Gib) Marguth of Telemetry and Instrumentation Systems Division 8127 have been named directors of Livermore's newly-established Downtown Development Commission (DDC). F. J. (Jerry) Maloney, supervisor of Environmental Test Division 8128, has been appointed to the Livermore Housing Authority.

The six-director DDC reports directly to both the City Council and the Chamber of Commerce. As a DDC director and City Councilman, Gib will act as liaison between the Commission and the City Council.

The prime responsibility of the Commission will be the revamping of Livermore's central business district to bring back those consumers who now shop out of town. DDC hopes to make downtown Livermore a modern convenient area which offers people in the community complete, competitive shopping facilities.

Formation of the Commission was prompted by the report of a research firm which indicated that steps must be taken to prevent the "general decline" of Livermore's downtown retail district. The report emphasized that the entire redevelopment effort was dependent upon a proposed relocation of the Southern Pacific Railroad tracks. Leo is chairman of a committee established to study this problem. Marv Beckett, Product Control Division 8161, is a member of the committee.

Leo feels his appointment is a great opportunity to participate in the redevelopment of a downtown area. "The additional land if made available by relocating the railroad might be put to use by the community, providing Livermore a means to develop its downtown area — something which just doesn't happen to a city very often," he said.

At one of the initial meetings of the Commission, a symbol and letterhead, designed by Ed Watchempino of Technical Art Section 8233-1, were approved for use by the DDC.

Jerry is one of five appointees to the Livermore Housing Authority and will serve until January 1969. As an agency of Livermore's city government, the Authority sets policy and provides advance planning for the city's low-income public housing program. It also administers the present housing project.

All three Sandians have been active in community affairs since coming to Livermore.

Leo is a member of the board of direc-

tors of the Guarantee Savings and Loan Association in Livermore and of the Livermore Student Educational Loan Fund (SELF). Last year he was president of the Parish Council of St. Michael's Catholic Church and this year is chairman of the Finance Committee. He was a director and past president of the board of the Livermore Area and Park Recreation District from 1960-64 and has served on a committee of the City Planning Commission on the question of preserving the downtown area in Livermore as the central business district.

Before his election as a Livermore City Councilman in 1966, Gib was trustee of the Livermore Elementary School District. He has been active in the First Presbyterian Church and in Joe Mitchell School affairs, including Landscape Chairman for two years, and technical advisor to the Livermore chapter of JETS (Junior Engineering Technical Society).

Jerry is this year's president of the Student Educational Loan Fund (SELF), a member of the Building Committee of St. Bartholomew's Episcopal Church, and belongs to a church committee working on low-cost housing for the elderly. In 1966 he was chairman of SCLL's United Bay Area Crusade, and in 1964 served on a committee which studied Livermore's elementary school budget.

Sandians Serve as Local ASME Officers



New officers for the 1967-68 season of the Mt. Diablo Subsection of the San Francisco American Society of Mechanical Engineers (ASME) include several engineers from Livermore Laboratory. Elected to the executive committee are Alec R. Willis, supervisor of Applied Mechanics Division I, 8146, chairman; Louie N. Tallerico, Mechanical Sub-Systems Division 8152, secretary; and Roger A. Baroody, manager, Product Engineering Department 8160, director.

Two other Sandians, Burnell W. Grange, Applied Mechanics Division I, 8146, and Marvin J. Beckett, Product Control Division 8161, have been appointed to committee chairman posts. Burnie will head the Program Committee and Marv will head the Publicity Committee.

Take Note

D. E. Gregson, manager of Preliminary Design Department 8130, was guest speaker at the regular luncheon of the Rotary Club in Concord on Sept. 29. His presentation was entitled "Sandia's History and Role in the Atomic Weapons Program" and included a showing of the film, "The Sandia Story."

P. K. Lovell, supervisor of Environmental Health and Medical Services Division 8215, was co-author of an article, "A Study to Determine the Effects of Increasing the Exchange Interval for Personnel Dosimetry Films," which appeared in the July-August issue of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION JOURNAL. R. O. Campbell, a former Sandian, was the other author.

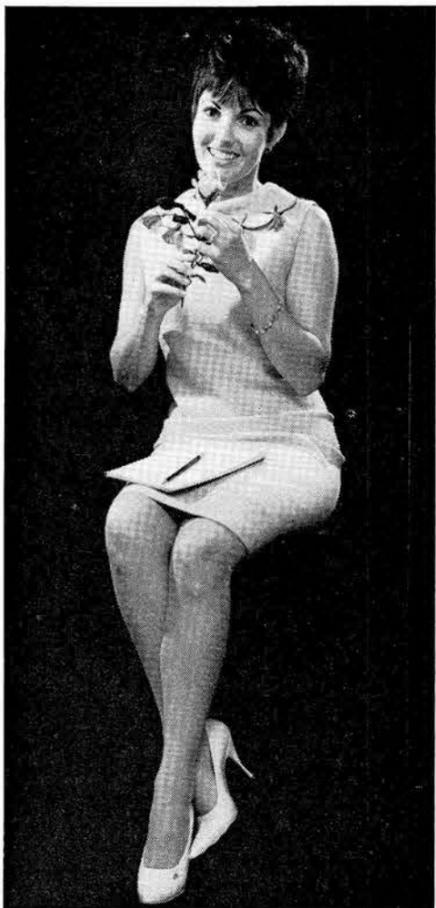
Thirty-five players, divided into two flights, participated in the Sandia Employee Golf Club tournament at the Pasatiempo Golf Course in Santa Cruz, Aug. 5.

John Barnhouse (8226) won the trophy in the first flight with a net low score of 71. Winner of the trophy in the second flight was Jesse Floyd with a score of 73.

Ralph Morrison shot a net low of 87 to win the playoff for the first place 8100 individual trophy in the 8100 vs. 8200 golf tournament played previously at the Las Positas Golf Course in Livermore. Al Skirwood (8155) tied with Ralph, but lost the playoff on a hole-by-hole comparison of scores.

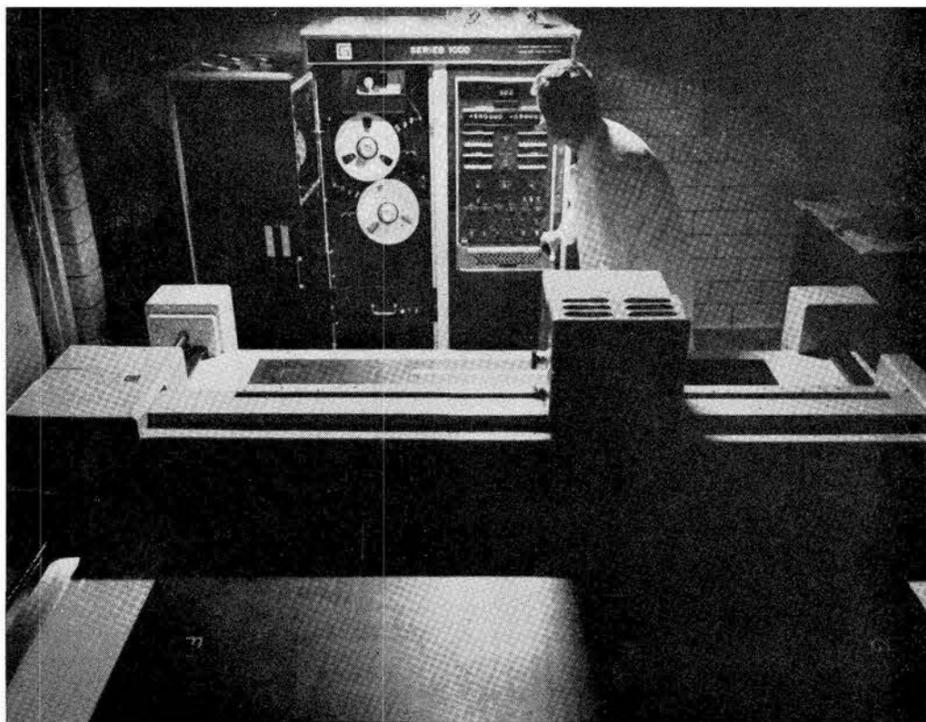
Sympathy

To Walt Muncy (8138) for the death of his mother-in-law in Riverside, Calif., Sept. 5.



Carol Jacobs (8255)

Take a Memo, Please
For a rosy future, think safety first!



EIGHT-FOOT auto-drafting machine, precision light head and control system are operated by Ronald G. Cheek. Unexposed film is positioned on plotting board, the computer program directs the light head to create the circuit drawing on film. The system is faster than the old manual methods, and a more precise product results.

Computer Created Circuit Drawings

Numerically-Controlled Graphics Saving Sandia \$152,000 Annually

A Sandia-pioneered Precision Numerically-Controlled Drafting System is saving the Company \$152,000 annually in the production of precision graphic drawings plus providing data for engineering analysis.

For printed circuits, the system produces a more precise master drawing of a circuit faster and at less cost than the manual drawing methods previously used.

Two years ago, the master drawings for printed circuits were prepared by draftsmen. It was a time-consuming and meticulous job requiring the utmost care in positioning pinholes for connectors, dimensioning length and width of lines, and registering one side of the circuit board with its other side.

Now, with Sandia's automated system operated by Design Definition Section 2211-5, a draftsman prepares a design layout drawing from the schematic supplied by the circuit designer and this information is "digitized" or programmed for production by the numerically controlled drafting machine (plotter).

When the circuit is digitized, an operator traces the drawing with the stylus of a digitizer, marks the pertinent positions by pressing a button, and the information is converted directly into instructions for the plotter.

Or, the control information for the plotter can be written instructions prepared by the programmers of Section 2211-5. Selection of the programmed method is made on the basis of the number of repetitive patterns on the particular circuit. Programming in this case becomes the more rapid method for converting the information to the control tape.

The tape is used by another computer to control the movements of the plotter. This machine directs a moving light across an eight-foot plotting board. The light exposes lines, circles and other patterns onto film which is then developed and used as the master negative for production of printed circuits.

The negative is actual size, needing no further reductions or manipulations as required by older methods.

In addition, the control tape can be used by numerically controlled machine tools to control drilling processes—another valuable time saving feature. A circuit design can be changed quickly by adding new instructions to the control program.

The system became operational in December 1965 after a development period starting in early 1963. At that time the drafting organization could see the need to automate preparation of printed circuit drawings and launched a feasibility study.

The systems engineering for an automated system was accomplished by the Numerical System Engineering Group 2223.

The system was built under Sandia contract and delivered in June 1965. The

digitizer, light head and plotting board were the components of the original system. Since installation, other peripheral equipment has been added. It is an "open end" system which can incorporate additional devices as the need for the system's output increases.

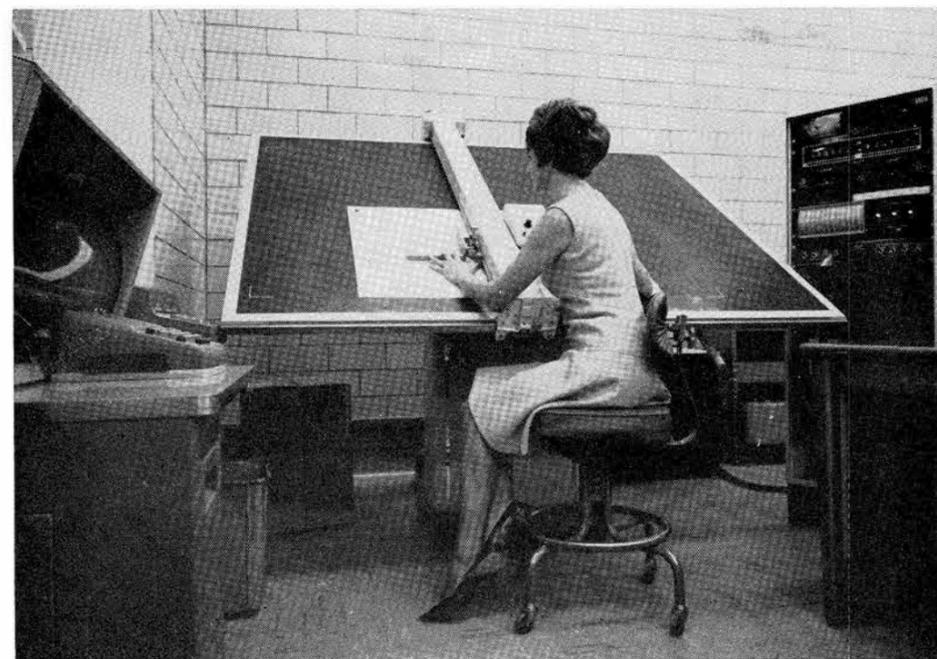
Since becoming operational, new uses for the system have been developed. From a printed circuit graphics operation, Section 2211-5 has expanded to provide an engineering analysis service and other service functions for engineering groups and the drafting organization.

The digitizer is now used to provide engineering analysis for prototype design. From early design information and drawings, the machine can produce a listing of material weights, centers of gravity, moments of inertia, component weights plus static and dynamic stress analysis data.

Other applications of the system include precision graphics for fluidic component design, reticle lens designs, radiation and lens patterns, optical comparator charts, gage overlay charts and masks, tolerance boundary plots, gearing profiles, routing masks, drafting aids, layout profiles, distribution grids and information for various studies of aircraft compatibility, mechanism tolerances, packaging studies, and explosive patterns.

Section 2211-5 supervisor A. D. Bridegam expects additional applications of the system as its capabilities are further explored and become more generally known by the Sandia staff.

"It is interesting to note that less than a year ago, the output of this group was almost 100 percent for printed circuits. During the past three months, only 43 percent of the output was for printed circuits, the rest was for applications that were previously non-existent," he says.



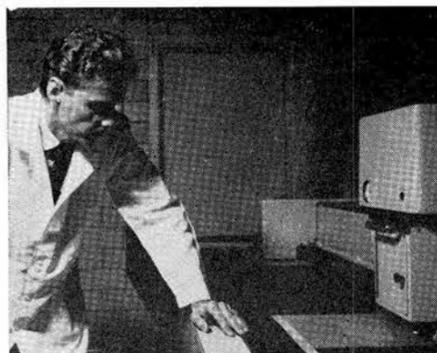
"DIGITIZER," part of the Precision Numerically Controlled Drafting System operated by Section 2211-5, converts information on a layout of a circuit into a control tape for use by the system's plotter. The digitizer can also provide engineering analysis data from early design information and drawings. Operator is Cindy Harris.



FROM LAYOUT provided by a draftsman, Section 2211-5 programmers write control programs for computer created master printed circuit drawings. A. R. Kennedy studies the drawing with T. I. Ristine. Programming requires knowledge of printed circuit production, drafting techniques and computer requirements.



FINISHED PRODUCT of the Precision Numerically Controlled Drafting System, in this case a master drawing for a printed circuit, is displayed by A. D. Bridegam, 2211-5 supervisor. The system can also produce precision graphics for tiny micro-circuits and other applications.



OPERATOR Ron Cheek watches the light head project beam of light on film (white dot under the light head at right). The beam is computer controlled to "draw" the circuit on film.

Speakers

E. S. Roth (2565), "Drawing Standards and Interpretations," CIRP International Conference on Manufacturing Technology, Sept. 25-28, Dearborn, Mich.

R. B. Powell (3000), panel speaker at the Council of State Governments' conference on "The Planning, Programming, Budgeting System," Sept. 29, San Antonio, Texas.

E. L. Emerson (2223), "Applications and the Future Developments of APT." Course 644-APT Concepts, Western Electric Engineering Graduate Training Center, Aug. 30-31, Winston-Salem, N. C.

N. C. Anderholm (5637), "Explosive Pumping of Lasers," American Physical Society, Aug. 31, Seattle, Wash.

D. M. Mattox (1123), "Tungsten CVD in a Gas Discharge," Conference on Chemical Vapor Deposition of Refractory Metals, Alloys and Compounds, Sept. 12-14, Gatlinburg, Tenn.

Albert Narath (5150), "Nuclear Magnetic Resonance in Palladium Silver Alloys," International Congress on Magnetism, Sept. 11-16, Boston, Mass.

J. E. Schirber (5151) and D. H. Anderson (5132), "Effect of Hydrostatic Pressure on the Mn, As and Sb NMR in Ferromagnetic MnAs and MnSb at 4° K.," International Congress on Magnetism, Sept. 11-16, Boston, Mass.

E. D. Jones (5151), "Temperature Dependence on the Eu^{3+} Spin $\langle S(T) \rangle$ in EuP ," International Congress on Magnetism, Sept. 11-16, Boston, Mass.

R. A. Graham (5133), "Pressure Dependence of the Magnetization of Invar and Silectron from 30 to 450 kbar," International Congress on Magnetism, Sept. 11-16, Boston, Mass.

L. S. Nelson (5234), "Extreme Temperature Studies with Droplets or Molten Refractory Materials," Third International Symposium on High Temperature Technology, Sept. 17-20, Asilomar, Calif.; "Use of Recalescence to Estimate Temperatures of Burning Metal Droplets," Fourth ICRPG Combustion Conference, Oct. 2-13, Menlo Park, Calif.

E. H. Beckner (5142), "Detailed Measurement of the X-Ray Emission Spectra of High Density Kilovolt Plasmas," APS Topical Conference on Pulsed, High-Density Plasmas, Sept. 19-22, Los Alamos, N. M.

J. C. Crawford (5143) and R. A. Damerow (5141), "An Explosive Generator-Powered Omega-Pinch," APS Topical Conference on Pulsed, High-Density Plasmas, Sept. 19-22, Los Alamos, N. M.

R. W. Harris (5235), "Direct Measurement of Mass Pickup in a Low Energy Theta Pinch," APS Topical Conference on Pulsed, High-Density Plasmas, Sept. 19-22, Los Alamos, N. M.

A. R. Sattler and D. K. Brice (both 5211), "Channeling in Quartz," International Conference on Solid State Physics Research with Accelerators, Sept. 21-28, Upton, N. Y.

J. A. Halbleib (7113), "Theoretical Neutron Production from Positive Ion Induced Reactions," International Conference on Solid State Physics Research with Generators, Sept. 21-28, Upton, N. Y.

A. C. Bustamante (9314), "Autorotation Characteristics of Flat Plates and Right Circular Cylinders at Subsonic Speeds," Conference on Dynamics and Aerodynamics of Bomblets, Sept. 26-28, Eglin AFB.

Percy Wyly II (3212), "Safety Education Program," AEC and Contractors Safety Meeting, Sept. 19-20, Argonne National Laboratory, Ill., and WE Safety Seminar, Oct. 26-27, Chicago.

N. J. DeLollis (1133), "Mode of Fracture of Structural Adhesive Bonds," Gordon Research Conference on Adhesion, Aug. 31, New Hampton, N.H.

R. M. Jefferson (5224), "Nuclear Power," Downtown Lions Club, Sept. 5.

M. I. Weinreich (3421), "Languages and Education in Europe and America," Sandia School for Girls, Sept. 12.

J. K. Merillat (3151), "Motivation to Work," Albuquerque Board of Realtors, Multiple Listing Service, Sept. 13.

Albert Goodman (5637), "Some Things That the Future May Bring," Northeast Optimist Club, Sept. 19.

D. W. Ballard (2564), "Contamination Control," Heights Optimist Club, Sept. 13; "First Hand Impressions of Life Behind the Iron Curtain," Downtown Lions Club, Sept. 19, and Heights Lions Club, Sept. 21.

R. S. Claassen (5100), "Research at Sandia," South Valley Optimist Club, Sept. 20.

D. R. Morrison (5256), "Artificial Intelligence," Kappa Mu Epsilon, UNM math honorary, Sept. 20.

Shakespeare Showcase

'Serpents and Sentinels' Adapted by John Gardner on Stage in Old Town

Shakespeare's plays have been presented in a variety of ways throughout the years; however, the approach used by John L. Gardner (3421-1) in "Serpents and Sentinels" is unique.

The presentation is a compilation of scenes from Shakespearian tragedies, comedies and histories based on the theme of youth versus maturity. The title is composed of two quotations: "How sharper than a serpent's tooth it is to have a

thankless child!" and "Grim-visaged sentinels, guardians of our flocks."

Old Town Studio is presenting "Serpents and Sentinels" Oct. 6-8 and 12-15. John is directing and acting. Other Sandia actors include Nigel Hey (3431), Bill Carstens (3410), and Louise Laval, wife of Joe Laval (3465-1). Bruce R. Hawkinson (4112) is handling lights.

John was already familiar with important scenes in the Shakespearian works, but selecting the particular scenes to fit the requirements required considerable re-reading of the plays. "The most difficult part was cutting and editing. Initially my 'non-play' ran three hours. It is now down to 2 hours 20 minutes including two 10-minute intermissions," John says.

Dr. Franklin Dickey of the UNM English Department was an adviser to John and also suggested new concepts on characterizations. For example, as John explains, "He visualizes Hamlet as a kind of dropout and Lady Anne in Richard III as a very young schoolgirlish type."

In addition to a formal prologue and epilogue, John has written a brief explanation of each situation which a narrator gives to link the various scenes.

"I like to maintain a constant pace in any production," John says. To make this possible, while the narrator is still talking, a faint light illuminates the next scene and the actors begin to move about and silently mouth their words. There also will be recorded background Elizabethan music played on instruments typical of that period. UNM Fine Arts Librarian Don Roberts assisted in selection of the music.

The anthology-type evening will include selections from "Hamlet," "Othello," "Romeo and Juliet," "Henry IV," "Henry VI," "Twelfth Night," "King Lear," and "Richard III."

How will it all sound? "We've pretty well eradicated all Americanisms," John says, "and a Middle Atlantic accent will prevail among the other seven actors except for Nigel, who will use a different British accent for each role."



SCENES from Shakespeare depicting the struggle between youth and maturity have been compiled by John Gardner (3421-1) for his production of "Serpents and Sentinels." Rubbings of early English brass plaques help set the proper atmosphere.

Wait for Notification Before Reporting for Diabetes Detection Test

Many employees are reporting for diabetes detection tests prior to receiving their notification questionnaire cards, the Medical organization reports.

The schedule calls for approximately one-twelfth of the Laboratory employees to be tested each month so that Medical can properly handle the extra work load created by the diabetes detection program.

If you have not received your notice to report for a test, please be patient. You will be scheduled sometime before July 31, 1968.

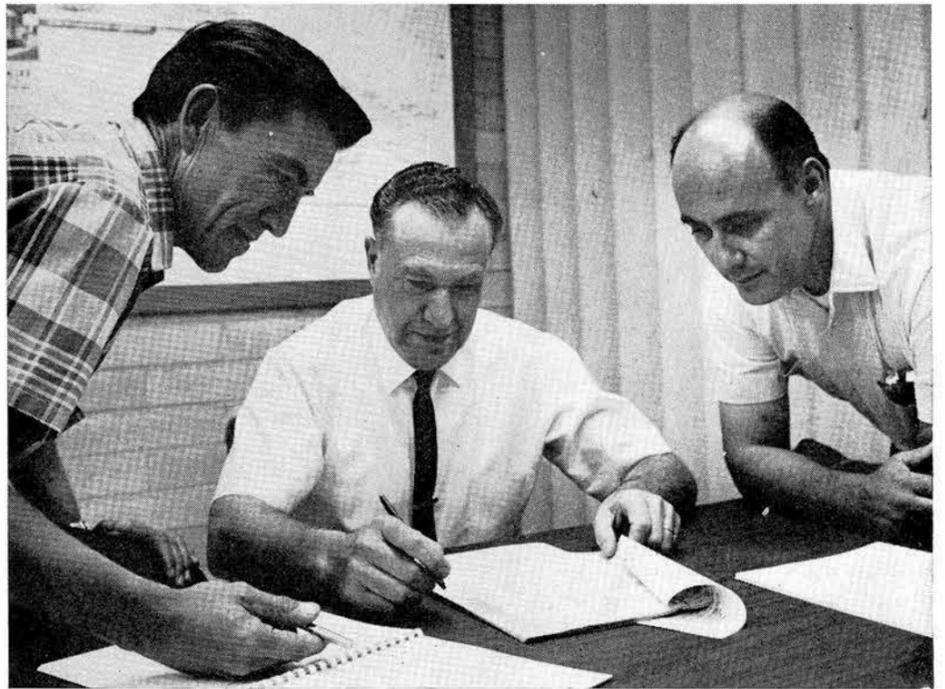
Employees who come to Bldg. 831 without a notification card will be asked to return after they receive their notice in accordance with the schedule. Detection tests will be performed immediately for persons having diabetic symptoms such as increase of thirst, constant hunger, loss of weight, intense itching, etc.

Sandia Papers Given At ISA Conference

A number of Sandia technical papers were presented last month in Chicago during the 22nd Annual Instrument Society of America Conference and Exhibit.

The authors and their contributions included: N. F. Hunter and J. V. Otts (both 7324), "Electronic Simulation of Apparent Weight in Force Controlled Vibration Tests"; R. O. Brooks (7341), "Distortions of Controlled Transients by Shock Monitoring Systems"; J. D. Tebbs (7335), "In-Place Crystal Accelerometer Voltage Calibration System"; R. W. Kelley (7334), "Calibration of Shock Pickups."

H. D. Arlowe and G. W. Holmes (both 7335), "On-Board Signal Conditioning for Piezoelectric Accelerometers"; T. S. Rathke (7334), "A System for the Dynamic Calibration of Pressure Transducers" and R. W. Mottern (7322), "Isodensitometer Applications."



ANNUAL BUDGET for Bernalillo Public Schools is reviewed by Reuben Montoya (center), Sandia security lieutenant, with (l to r) Justin Rinaldi, business manager of Bernalillo Public Schools, and Pete Santistevan, superintendent of the school system. Reuben is serving his third term as school budget commissioner of Sandoval County.

Reuben Montoya Has Key Role in Developing \$3.5 Million Budget

Equitable distribution of over \$3.5 million among three school districts involving 10 schools and more than 5000 students has occupied the free time of Sandia Security Lieutenant Reuben J. Montoya (3240) for the past several months.

The voluntary task of trying to match the schools' needs with available funds has been an annual challenge for Reuben, who is serving his third two-year term as school budget commissioner of Sandoval County. Each odd-numbered year, the Sandoval County commissioners appoint two school budget commissioners — one democrat and one republican.

Reuben and the other budget commissioner start working on the school district budgets early in the summer. Each of the budgets for the three districts contains 14 major expenditure classifications with over 100 subcategories. Income to meet the expenses is derived from local sources (such as the district school tax), three county sources, seven state and 10 federal programs. Federal government sources, for example, include industry and vocational funds, Johnson-O'Malley funds for needy Indian students, and forest reserve income.

Schools within the three districts are All Indian Tribes School, Jemez Valley, San Diego Mission, Cuba, La Jara, Bernalillo, Placitas, Algodones, Santo Domingo and Peña Blanca.

The two commissioners meet first with the Cuba, Bernalillo and Jemez Springs five-member school boards and school superintendents to draft their budget needs. Next they meet twice with the chief of the state Public School Finance Division to go over the anticipated expenditures and estimated revenue for each district. The second meeting is a combined budget hearing with the state director, Department of Finance and Administration; Department of Education personnel and representatives of federal agencies, such as Bureau of Indian Affairs, in attendance.

The chief of Public School Finance then

calls a public hearing in Bernalillo, the county seat, to present the proposed budgets for the three districts. This meeting gives the public and corporations an opportunity to express their views on individual budget items as they are brought up for review, discussion and approval.

After the budgets are approved, the tax rates are certified by the chief tax commissioner, State Tax Commission, and the budgets are finalized.

In spite of the hours devoted to studying numerous budget items and figures alone at home, with the other commissioner and throughout the various meetings, Reuben enjoys fulfilling his responsibilities to the Sandoval County public schools.

He first became actively interested in education when he had four children attending classes. Now he has one in high school and two in grade school. His oldest daughter, Rita, worked in Sandia's badge office until she accepted a job in Senator Anderson's Washington office last January.

Before serving as budget commissioner, Reuben had been active in the Bernalillo PTA. His wife, Lucy, served as president, secretary and a member of the Bernalillo School Board for eight years. A life-long resident of Sandoval County, Reuben is a former Bernalillo businessman and chief deputy county clerk. He joined Sandia's security force in May 1951 and was promoted to security lieutenant last June.

He believes our school systems need considerable assistance in keeping pace with the expanding requirements of our economy.

"I get a lot of satisfaction from serving the people of Sandoval County," Reuben comments, "especially working to improve our schools. After studying numerous budget items, it's always a pleasure to see these items develop into such realities as increased facilities, new construction and a generally better school environment for our children."

Those Crazy Clowns Are Really Sandians with Serious Purpose

Dozens of clowns cavorted in the recent Shrine convention parade in Albuquerque. There were big ones, little ones, red ones, blue ones and polka-dotted ones riding everything from a pogo stick to a tiny car going in both directions.

Among these were a half a dozen Sandians — unrecognizable to fellow Sandians and sometimes even to their wives. Underneath the makeup, costumes, false hair and fake noses were Charles Stoner (2452), Gerald Van Gundy (4615), Bob Findlay (4570), Bill Davis (4153), Leroy Foster (retired Sandian) and Robert Dean (AEC). Illness prevented another retired Sandian, Francis Scott, from making the parade. He was a charter member of the local Shrine Clown Unit and has been active for many years.

The Shrine clowns do more than create a few laughs and a spectacle during a parade. Although being a Shrine clown is a humorous business, theirs is a serious purpose.

Throughout the year they perform at orphanages, hospitals and schools for handicapped children throughout the state. They are on call to entertain children at community centers, scout meetings,

and other public and civic events where children are involved.

Each year the clowns perform at Carrie Tingley hospital for crippled children at T. or C. They stage an enthusiastic baseball game playing in wheelchairs against a team fielded by the Multiple Sclerosis Society. The proceeds benefit the organization.

At Halloween time, the clowns provide programs for the various school carnivals in the area.

"We have more fun than the kids," Bob Findlay says.

The Shrine clown serves a six-month apprentice period. He learns the art of make-up and perfects his costume. Most of the garish get-ups are homemade. Before a performance, the clown spends up to two hours getting into costume.

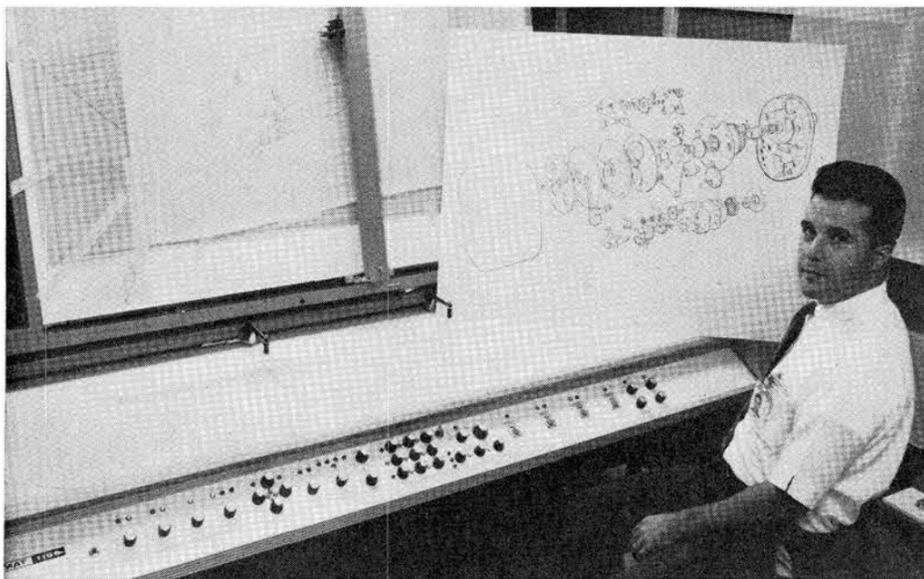
"For a few laughs from kids confined in a hospital, it's worth it," Gerald Van Gundy says. He has been a member of the clown unit since 1959.

All of the Sandians have been members of the unit for a number of years. The jokers agree that the satisfactions are worth the hours of time they spend entertaining children.

"We'll go on forever," Francis Scott says.



GUESS WHO—Underneath the clown suits are (l to r) Robert Dean (AEC), Bill Davis (4153), Bob Findlay (4570), Gerald Van Gundy (4615), Leroy Foster (retired), and Charles Stoner (2452). As Shrine clowns, the group spends many hours entertaining children in hospitals and institutions throughout the state.



ILLUSTROMAT 1100 is operated by Ray Chavez of Technical Art Division 3463. The analog computing machine produces three dimensional perspective drawings when the stylus arms trace front and side views from an engineering blueprint. The drawing at right is an "exploded" view of an interval timer produced by the machine and inked for reproduction.

New Computer Drawing Machine Produces Three-Dimension Graphics

The technical illustrator's job is one of the most demanding in industry. It requires artistic creativity while maintaining rigid technical precision. End product of the tech illustrator's art is a full color illustration of a device, frequently "cut away" to expose the complete mechanism. In addition to being a beautiful illustration, it must be technically accurate in detail and dimension.

As much as 400 hours go into one of these illustrations. At Sandia, they are used in weaponry training and weapon manuals. Since the installation of a computer-like machine, called the Illustromat 1100, in Technical Art Division 3463, the preparation time for the illustrations has been cut from 30 to 50 percent.

In addition to significant savings in hours, the machine has taken the drudgery out of technical illustrating. To obtain a perspective drawing, the operator moves two of the machine's stylus arms over the front and side views of a blueprint. The machine's third stylus produces a precision three-dimensional drawing.

Formerly, the artist had to compute the perspective from the blueprints with the aid of a "master grid" which governed the perspective dimensions. This was a tedious, time-consuming job.

"The machine produces a layout," operator Ray Chavez says. "It is accurate and a great aid to the illustrator, but it does not in any way replace artistic talent. It enables us to produce more work in less time."

An illustrator himself, Ray's judgment and control are important factors in the successful use of the machine. In setting up the machine, Ray controls the way the three dimensional view is constructed. He

is concerned with rotation and tilt, the scale of the perspective drawing and the "station point distance" which relates the precision of the drawing.

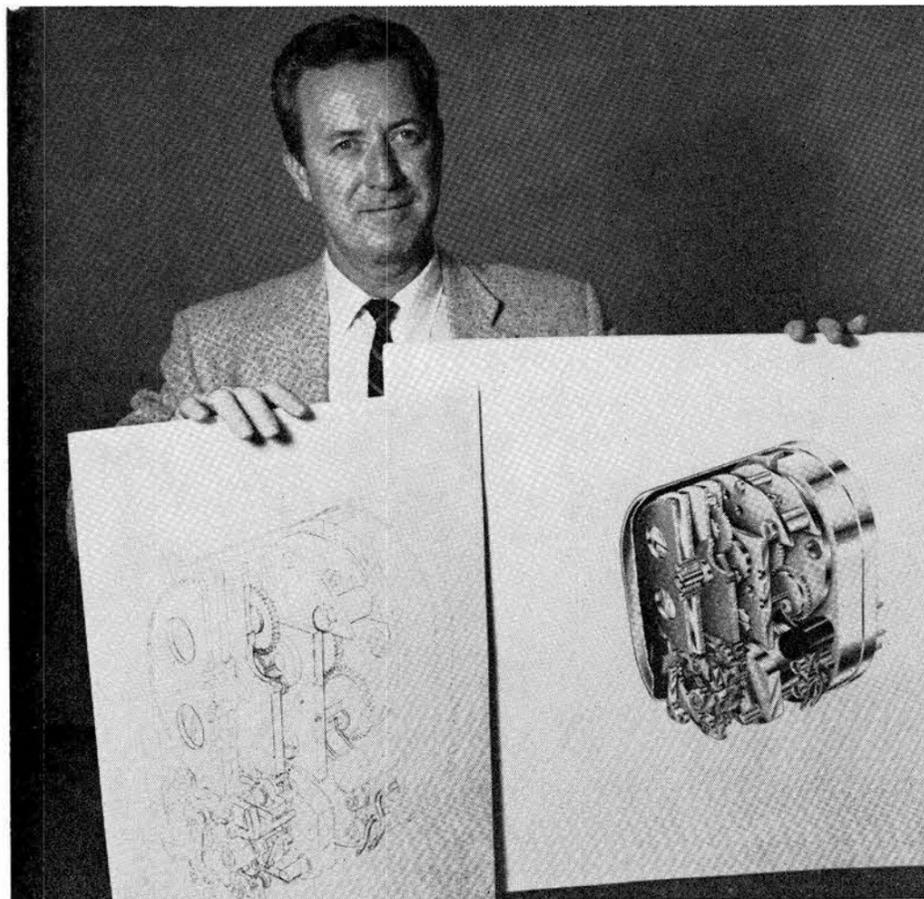
The machine can also produce "exploded" views from a standard blueprint, again saving many manual computations by the technical illustrator. Some technical layouts produced by the Illustromat go directly to the technical illustrators for inking and reproduction in technical publications.

Other uses include the first "visualizing" of a new design, a service for design engineers who want to "see" mechanical features of design before prototype production. In many cases, Ray can work from the first rough drawings produced by the engineer. The three dimensional preview of the design has proved worthwhile. In some cases, it has helped to refine the design and to save valuable time before prototype production.

Many of the drawings produced by the machine are assigned to five of Sandia's technical illustrators—Buzz Babcock, Frank Ewing, Leo Ortiz, Joe Mickey and Oreste Ganzerla. These five are among the top illustrators or "air brush" artists in the country and have earned the highest awards in national competitions.

In describing the advantages of the Illustromat, Leo Ortiz admitted his initial skepticism of the machine's capability but now appreciates the help.

"The machine provides a basic layout and eliminates much of this time-consuming chore," he says. "It doesn't provide the complete cutaway view or all of the layout. Still, it allows the artist to concentrate on the art of the job—emphasis, color, and rendering detail."



FINISHED PAINTING of an interval timer is displayed by technical illustrator Joe Mickey. Perspective layout created by the Illustromat was used as a basis for the painting. The machine is saving the time-consuming computations formerly required of the artist and reducing production time from 30 to 50 percent.

R. M. Hawk Serves as Volunteer For Mental Health Programs

Formulating policies on the care and treatment of the mentally ill and retarded was a major activity of Robert M. Hawk (2223) as a member of the board of directors of the New Mexico State Hospital from 1963 to June of '67.

In 1964 he was elected to the board of the Albuquerque Association for Mental Health and assumed the additional responsibilities of helping former mental patients get reestablished in the community and educating the public regarding mental illness.

The Association, a United Community Fund agency, informs the public about mental health and provides many useful voluntary services. Two volunteer groups within the organization devote considerable time to recreational therapy for former patients of state mental hospitals and patients in the psychiatric ward at Bernalillo County-Indian Hospital.

Some 45 volunteers participate in the program for psychiatric ward patients at BCI. Conducted under the direction of a hospital staff member, the volunteers teach arts and crafts, play games and sometimes just chat with the mental patients.

Mrs. Josephine Norwood, a former Sandian and one of the volunteers, reports that the group is currently soliciting contributions of unwanted costume jewelry, toiletries and other similar items to be given as prizes for bingo and other games at BCI. Those wishing to make contributions can contact Mrs. Norwood at the Association office (tel. 265-7721) week-day mornings, or at her home (tel. 255-4639) evenings, or Bob Hawk (tel. 255-7752) evenings.

Mental Health Service Corps is the second large group of Association volunteers. These workers arrange social activities for former mental patients who are either on convalescent leave or dismissed from state hospitals. The program is designed to aid the patients in getting reestablished in the community. Local facilities, such as the YMCA, are used about two mornings each week for social activities and constructive training.

The University of New Mexico School of Medicine conducts a training course for the Mental Health Association volunteer workers to provide them with information on mental health and rehabilitation of patients.

Special seminars on mental health are

MENTAL HEALTH ASSOCIATION OF ALBUQUERQUE



ROBERT M. HAWK (2223) has been a member of the Mental Health Association's board since 1964.

conducted each year by the Association as part of its educational program. About 100 law enforcement officers, psychiatrists and psychologists attend an annual seminar co-sponsored with the police academy. Last year, the first mental health seminar conducted in conjunction with the UNM medical school attracted about 600 teachers who received credit for the course.

Bob is particularly enthusiastic about the new County Comprehensive Mental Health-Mental Retardation Center. The Center is scheduled to be constructed on BCI grounds within a year. To be operated by UNM School of Medicine for Bernalillo County, the Center will have 48 beds for inpatient care and complete diagnostic facilities as well as rooms for outpatients, treatment and activities.

"One of the big mental health problems has been diagnosis," Bob comments. "The new Center will provide a complete diagnostic and treatment facility for the people living in the Albuquerque area. Now many of the convalescing or discharged mental patients must travel to Las Vegas or Los Lunas for treatment."

Secretaries to Hold NSA Regional Meeting, Oct. 13-15

Secretaries from throughout California, Arizona, Nevada, Texas and New Mexico have been invited to attend the regional meeting of the National Secretaries Association (International) in Albuquerque Oct. 13-15.

Jo Hanna (4000) is chairman of the regional convention. Jean Langston (5100) is invitations committee chairman and Jean Cates (4518) is publicity chairman. Other Sandia women serving on committees are Mavis Bowland (5132), Helen Walsh (5140), Ann Michele (4510/4570), Betty Sterling (2561) and Edith Blum (4200).

During the Sunday morning business session, Esther M. Coffman (4373) will be presented her certificate as a Certified Professional Secretary.

The main speakers on Saturday will be Helen White, Southwest District vice president, and Gen. Hugh Milton, bank executive of Las Cruces, N. M., who will speak on "Difficulties Mastered."

On Sunday, the main speaker will be Arthur Gaeth, management member of the National Institute for Certifying Secretaries, who will discuss "CPS in the World of Tomorrow."

The sessions will be held at White Winrock Hotel.

Welcome . . . Newcomers

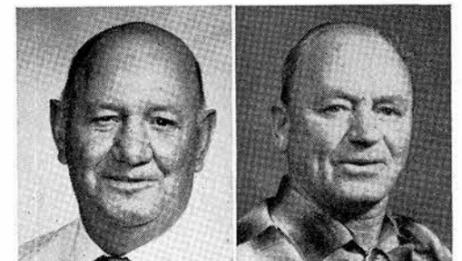
Sept. 18-29

Albuquerque	
*Ralph Coon, Jr.	2213
Sharon L. Gorman	3421
V. Camille Rexroad	3321
*Jerome L. Sheyka	2213
Nettie B. Schrock	3126
Richard T. Sparks	4213
*Kenneth S. Varga	2212
L. Elizabeth Van Nieuwenborg	2232
California	
Herman A. Watts, Santa Clara	9422
Tennessee	
Van D. Gillum, Oak Ridge	4224
Larry W. McCollum, Lenior City	4224
Washington	
James N. Johnson, Pullman	1141
* Denotes temporary	

Deaths



W. M. Hicks



J. A. Saavedra

D. M. Reid

Wilson M. Hicks, a retired Sandia Laboratory employee, died Sept. 20 after a short illness. He was 67.

He retired from Sandia in November 1965 after working 17 years as a mechanical inspector.

He is survived by his widow and a son.

* * *

Jose A. Saavedra, who retired from Sandia in September 1961, died Sept. 22 after a long illness. He was 71.

He had worked at Sandia as a janitor from April 1951 until he retired.

He is survived by a son, two daughters and 12 grandchildren.

* * *

David M. Reid, a retired Sandia employee, died Sept. 23 after an illness. He was 69.

He was a supervisor in Janitorial Services Division from February 1951 through December 1962 when he retired.

He is survived by his widow, two daughters and four grandchildren.

Service Awards

20 Years



C. E. Anderson
8243



G. H. Dance
3240



R. C. Holland
7233



W. L. Paxton
4614



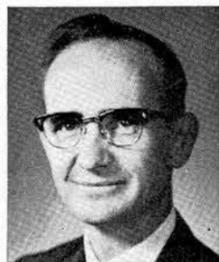
W. C. Scrivner
9400



L. D. Smith
5500



D. B. Sparger
8245



W. M. Sundt
2152

15 Years



G. K. Carmichael
4135



Doris Cole
3126



Stanley Eastman
4212



Marion Ewald
3241



L. B. Flores
7332



R. P. Hall
3243



H. F. Howard
1525



H. A. Krieger
1545



H. E. Miller
2551



R. E. Minter
2563



John Olson
2225



F. A. Philgreen
4214



N. T. Radman
7133



E. C. Sanchez
4623



E. C. Saxton
7226

10 Years

Oct. 6-19

Charlotte J. Gilmer 4131, Salvatore Mattina 1622, J. A. Guzman 7341, Alice M. Rodriguez 2234, G. W. Robinson 1522, W. L. Bierly 7255, K. R. Anderson 7321.

W. E. Slade 8159, F. A. Maestas 8245, G. L. Rhodes 8255, and J. B. Flanagan 3465.

Sandia Will Host Inter-Base Table Tennis Tournament

Sandia Laboratory will host an Inter-Base Invitational Table Tennis Tournament Saturday, Oct. 21. Entries by employees are invited and should be reported to Division 3126 by Friday, Oct. 13. The Sandia Laboratory team will face Sandia Base, Manzano Base and Kirtland during the tourney.

Trophies will be provided for both singles and doubles events. Consolation awards will be provided for runners-up in the singles event.

The tourney will be played in the Sandia Base Gym starting at 9 a.m. Spectators are welcome.

Events Calendar

Oct. 6-8, 12-15—"Serpents and Sentinels" (Shakespearean dialogues between youth and maturity). Old Town Studio, 1208 Rio Grande NW, tel. 242-4602.

Oct. 9—Opening of major Indian pottery exhibit, UNM Anthropology Bldg. Continues Tuesdays through Saturdays, 9 a.m.-4 p.m.

Oct. 9—Mezzo-soprano Betty Allen, Community Concert series, Civic Auditorium.

Oct. 13-21—"Barefoot in the Park," Albuquerque Little Theatre, 224 San Pasquale SW.

Oct. 13-14—UNM Homecoming parade, house decorations, other special events.

Oct. 14—Herb Alpert and the Tijuana Brass, UNM Field House, tel. 277-4906.

Oct. 16—Phyllis Kirk in "Wait Until Dark," UNM Concert Hall, tel. 277-3121.

Oct. 18—Albuquerque Symphony Orchestra, piano soloist Jorge Bolet. UNM Concert Hall, tel. 277-3121.

Congratulations

Mr. and Mrs. Willis Rappleyea, Jr. (4254-2), a daughter, Perre' Ann, Sept. 1. Mr. and Mrs. Keith Brower (5211), a daughter, Rebecca Jill, Sept. 15.



INSTRUMENTATION TECHNOLOGY AWARD was presented to (l to r) H. Duane Arlowe (7335) and Richard C. Dove, head of Mechanical Engineering Department at University of New Mexico, at the annual Instrument Society of America conference in Chicago recently. They both received a plaque and certificate for co-authoring a technical paper which tied for first place as the best paper published in the ISA journal.

Promotions

Alfonso Lujan (4631) to Staff Assistant Technical Robert D. Eiler (4632) to Staff Assistant Technical Louise S. Converse (8121) to Staff Assistant Technical Edsel L. Gunn (4615) to Staff Assistant Administrative Martha Levenez (8253) to Staff Assistant Administrative Endalecio Gurule (4614) to Utility Operator Janet A. Pappas (3126) to Typist Clerk Alice F. Lucero (4211) to Typist Clerk Marie E. Garcia (4622) to Typist Clerk Rosemary Kilmer (3416) to Teletypewriter Operator Cecil P. Tafuya (3415) to Mail Clerk Patricia A. Gerety (3126) to Secretary Steno Carolyn S. Van Hauen (3416) to Teletypewriter Operator Mary Ellen England (2232) to Reproduction Service Clerk Frankie J. Potts (2232) to Reproduction Service Clerk Margaret C. Craig (3412) to Service Clerk General Jane A. Cooper (2523) to Service Clerk Sandra L. Barela (3421) to Library Assistant John Sandoval (9411) to Tabulating Equipment Operator Karen M. Porn (4363) to Travel Clerk Margaret A. Rico (2234) to Service Clerk S. D. Carrillo (4615) to Control Analyst Marcella C. Nobel (8232) to Library Assistant Bivens Lovest (8253) to Service Clerk

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. 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
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

FOR SALE CARS & TRUCKS

- '55 STUDEBAKER, V8 engine, 2-dr. club coupe, R&H, \$110. Rodeman, 256-1889.
 - '64 EL CAMINO, R&H, 327 engine, 4-spd., 3:08 rear axle ratio, low mileage. Romesberg, 255-1177.
 - '57 TR-3, hard and soft tops, wire wheels, \$450. Tidwell, 298-5086.
 - '59 PARKWOOD station wagon, AC, PS, PB, 3706 Chapala Ct. NE. Rodriguez, 298-9962.
 - '58 CHEV. BEL AIR, 4-dr., PS, w/w, floor shift. Sherwood, 299-2169.
 - '57 CHEV. BEL AIR, stick, tack, 327 cu. in., new paint. Howard, 255-7846.
 - '62 CHEV. IMPALA wagon, R&H, PS, factory air, radial ply tires rear, 327 engine, AT, airlift shocks. Hughes, 299-6674.
 - '58 CHEV. VS, LWB, custom cab w/sportsliner camper, one owner, \$580. Harker, 282-3435.
 - '60 OPEL 2-dr. sedan, std. trans., \$150 or best offer. Rex, 299-6264.
 - '66 VOLKSWAGEN sunroof sedan, 35,000 miles, w/w tires, radio, \$50 to \$75 under list. Doppelhammer, 265-1303.
 - '61 FORD GALAXIE, 4-dr., R&H, AT, factory air, PB, PS, \$625. Butler, 299-2059.
 - '60 VALIANT, std. trans., R&H, \$350 or best offer. Cooke, 296-4073, 3931 Ortiz Ct. NE, Apt. C.
 - '66 MERCURY COMET, 4-dr., air, power, low mileage, \$2150. Avery, 298-7005.
- TAKE OVER PAYMENTS:** '66 Fairlane 500/XL, AC. Estlinger, 268-1209.
- '55 FORD pickup 4-spd., 6 cyl., \$200; Anderson, 1541 Parsifal St. NE, 299-3775 after 5.
 - '65 OLDS HT coupe, full power and air, sell below NADA book price. Conley, 268-2714.
 - '65 VW sedan, one owner, 30,000 miles, below book value for \$1150, financing easily arranged. Robertson, 298-1048.
 - '62 FORD GALAXIE, R&H, AC, w/w, AT, \$600. Wetherholt, 299-5736.
 - '60 CHEVY 1/2-ton pickup, Fleetside LWB, w/ weatherlight cover and innerspring mattress. Zimmerman, 299-8469.
 - '55 WILLYS JEEP, 4wd, make offer. Gilbert, 1211 Betts NE, 299-8029.
 - '67 CHEV. BEL AIR 3-seat station wagon, AT, AC, PS, PB, 327 engine. Hart, 299-8832.

- '55 WILLYS JEEP 6-cyl. station wagon, 4wd w/hubs, sell or trade for pickup. Zucuskie, 268-3105.
- '64 RENAULT DAUPHINE, black, 4-spd. box, \$500. Randle, 867-2668.
- '57 FORD 2-dr. V8, standard shift, \$150. Erdman, 298-3097.
- '61 CHEVROLET V8, std. trans., R&H, new muffler, carburetor, \$550. Johnson, 255-2846 after 5:30.

REAL ESTATE

- LOT, Chelwood Park Addition, Lot 17, Bk. 17, Pawnee, close to Manzano High School. Gross, 344-4155 after 5.
- \$850 under FHA, near shopping-schools, Roberson 3-bdr., 1 1/4 baths, drapes, hw/floors, carpet in LR-DR, corner lot, sprinklers, garage. Yoakum, 296-1964 after 4.
- 3-BDR., lg. kitchen, AC, built-ins, 1 1/4 baths, carpeting, drapes, near schools. Frankel, 298-6265.
- 3-BDR. ROBERSON, backyard access, 1 1/4 baths, separate den, utility, carpet, drapes, below appraisal \$18,900, 5 1/4% loan, \$14,500 loan. 3501 Pitt NE. Harrison, 299-7907.
- MOSSMAN 3-bdr. & den, 1 1/4 baths, AC, hw floors, carpet, screened patio, sprinklers, dbl. garage, assume 5 1/4 FHA loan or refinance. Allen, 256-3234.
- 3-BDR., garage, hw/floors, carpeted, walled, new roof, near bases-schools-shopping, save \$1000—pay cash to \$3300, 4 1/2% loan. Gallagher, 724 Cagua SE.
- 4-BDR., 1 1/4 baths, year old, lots of extras, one acre, fenced, Bosque Park, make offer, will consider lease. Downs, 296-4710.
- OR TRADE for NE heights; Bosque Farms, 3-bdr., 1 1/4 bath, paneled FR w/fn, built-ins, carpet, dbl. garage, cfa, ac, pitched roof, 1/2 acre. Street, 636-2275.
- 3-ACRES along Rio Grande River NW, all utilities in, large trees lining paved road, secluded, Stein, 242-2967.
- 3-BDR., lg. kitchen, AC, new carpet, fenced front and back, \$10,500, 513 Rhode Island. Lucero, 299-7933.

MISCELLANEOUS

- L. C. SMITH typewriter, standard. Darrah, 877-0790.
- 6 USED CHAIN SAWS, \$40 to \$25; 2 used chain saws, \$100 and \$60. Argus C3, \$15. Ernst, 344-8694.
- SELL or trade used tires: 165x15 Michelin Pirelli and recaps; hand tooled western saddle. Steelman, 255-5763.
- HO GAUGE model train rolling stock and buildings, less than 3 yrs. old, sell as a unit at half of original cost. Butler, 898-2025.
- ELECTRIC RANGE, \$12; new snare drum stand, \$7, girl's ice skates, size 8, worn once, \$7. Chaves, 255-6155.
- NEW BERETTA Silver Hawk 20-gauge dbl.-barrel shotgun w/auto. safety, single trigger, full & modified chokes, \$140. Bennett, 299-7400.
- GYM-Dandy swing set, \$5; Baby-Tenda folding table, \$12; Folda-Rola folding stroller, \$5; play pen w/pad, \$2. Daut, 255-2529.
- OLDS TRUMPET, \$65. Clem, 296-5204.
- '66 SHASTA trailer, completely self-contained, furnace, hot water heater, stove, refrigerator, shower, single axle, new plates, \$1595. Coughenour, 298-2539.

- MINK STOLE, brown, cost \$300, will sell for \$125. Fuller, 256-2066.
- 12 FT. RUNABOUT ski boat, 30HP Mercury motor and trailer, all for \$500. Cox, 510 Espanola St. NE, 256-1977.
- WINTER WHITE full length coat, size 14, worn once. Welch, 299-8764.
- BIRCH console stereo tape & record playback system; AM/FM radio complete w/speakers; main compartment amplifier and tape playback is a Bell, \$125 or best offer. Ream, 299-2076 after 5.
- TRUMPET AND CASE, Reynolds, \$115. Arning, 256-9229.
- GERMAN shorthair pointer puppies, dam present Field Trial Champion, top hunting stock, AKC & FDSB registered. Matthews, Los Lunas, 636-2370.
- POTTED JADE TREE, lg. 4 ft. high, 4 ft. across, \$25. Holloway, 255-6938.
- OVAL mahogany dining table w/leaf, 4 straight and 2 arm chairs, plus spacious sideboard, \$585, replacement value \$960. Hook, 255-1897.
- USED SHEETING, 1/2" plywood, 20 pieces, also 2x4's, make offer. Kindschi, 256-0531.
- SOLID OAK headboard, double bed size w/metal frame, \$14. Harlow, 299-1495.
- STRING BASS w/bow and cover, \$200. Ray, 299-1253.
- HAYWOOD-Wakefield table and chairs; El Toro power mower; two wigs. Macmillan, 296-1253.
- GE REFRIGERATOR, 12 cu. ft., white, \$30. Stump, 898-2546.
- THAYER 6-yr. birch crib and mattress, adjustable springs, \$20; bathinette, \$5. Guzman, 4713 Hilton Ave. NE, 344-9287.
- WINGBACK SOFA, \$35; blond end and coffee tables, \$15; swivel rocker, \$15; lg. baby carriage, \$15; stroller, \$7.50. Gendreau, 268-3436.
- ELECTRONIC ORGAN, combo size, still under warranty, \$375; aluminum awning, 10'x6'; \$70; dishwasher; gas stove; disposal; gas heater, GE, 120,000 BTU. O'Neill, 255-6355.
- BOY'S bicycle, 25", \$15; boxing gloves, \$10; record player, Hi-Fi, \$30. 154 Chama NE, Gallegos, 268-0271.
- 1958 BSA 650cc, \$375; new paint, cables and exhaust pipes. Schuler, 296-3762.
- RCA 23" black and white TV, walnut cabinet, \$50 or will take trade. Morgan, 256-7994.
- '1500" Volkswagen engine parts: cylinders and pistons, \$30 for 4 heads w/valves & springs, \$20 ea.; carburetor and manifold, \$15. Souther, 282-3841.
- SKIS, Yamaha HiFlex epoxy competition giant slalom, Nevada heel and toe, \$100. Syroid, 299-8022.
- FREE KITTEN, long hair, female, 6 wks. old, housebroken, ready to take home. Lynes, 268-0144.
- LARGE GE refrigerator, \$60; round rock maple dining table w/extension, \$35; baby bathinette, new deluxe, \$8. Browne, 344-9675.
- AKC Basset hounds, 10 wks. old, sired by champion, permanent shots, \$70. Gilbert, 898-2288.
- 15' CAMPING TRAILER, 1958, elec./butane lts., stove & oven, heater, cooler, sleeps 4 1/2, \$550. Lassiter, 268-1039.
- 26" GIRLS bike, 3-spd., hand brake, air pump, English style, \$27.50; 26" boy's bike 3-spd., for \$50. Hipsher, 299-0673.
- BLOND baby chiffon, \$30. Greenwood, 298-5268.

- 6:50x16 Atlas 6 ply rating truck & coach tire & tube, both new, \$22; light camper lifting frame w/1500-lb. hand winch, \$45. Bruington, 256-6164.
- WORK BENCH, solid, 8'x2', out of 4x4's and 2x4's, 1 1/2" top w/formica. Hill, 268-1420.
- ERCOUPE 415C, metal wings, rudder peddles, VHT2 radio, 110 SMOH on C85, \$2300 or consider selling 1/2 interest. McGinnis, 898-3170.
- GO-CART, heavy duty frame, Wesbend 2-cycle engine, up to 40 mph, centrifugal clutch; aluminum screen for 1'x3'. Chandler, 296-3323.
- BED; chair, lamp; auto. washer; misc. items. Treon, 256-0515.
- FLOOR POLISHER, suitable for brick or flagstone surfaces, \$8. Burns, 242-2407 evenings.
- RABBITS & cages; 8x40 or 10x53 mobile home. Shoemaker, 1-865-9809.
- EMENEE ORGAN, child's, 3 octaves, \$30; violin w/case, Karl Hofner student model (1963) \$50. Fuller, 264-3341.
- MACHINIST TOOLS, sell or trade for handgrips; tractor hitch for '64-65 Chevrolet all models, \$6. Haines, 299-8683.
- SHOTGUN, Savage 12 ga. auto. 28" modified, recoil pad, case, shells, \$50 or trade for .45 auto. Svensson, 344-7700.
- TV antenna and 30' telescoping mast; evap. cooler, fits window for workshop; tarpolin 5'x8'. Mauer, 255-7201 after 6.
- GAS STOVE, 30", yellow; rangehood, 36", copper-tone, sell or trade for furniture, tuner or what have you. Rose, 298-6238.
- CLOTHES LINE POLES, 1 pr. "T" bar style w/five wire lines 20' long, trade for umbrella type or sell. Bartlett, 299-4861.
- TOY PODDLES, silver, AKC registered, 6 wks. old, choice two litters, also silver beige female puppy. Shipley, 298-2433.
- USED lawn mower, 3 hp B&S engine, 22" cut, coil type starter, \$25. White, 298-3630.
- '67 427 cubic inch Ford cylinder heads (complete). Reif, 265-7264 after 5.
- REVERE MODEL 80 movie camera & 40x40 Da-Lite screen, combination for \$12.50; 2-wheel utility trailer, 4x7x2 1/2, springs. Moyer, 345-0567.
- SET or Great Books of the Western World, including Gateway to the Great Books, Syntopicon, and Great Ideas Program, w/walnut finish bookcase. Moore, 298-0096.
- TRAVELO MOBILE HOME, 45 x 10' w/26x8' ranch room and 40' silver top awning, can be seen at Aloha Village, Lot K-13. Carrier, 242-9745.
- MINIATURE SCHNAUZER PUPPY, AKC registered, best of the litter. Pirkard, 256-9771 after 6.
- SIX-YEAR CRIB w/mattress and spring, \$20. Oelsner, 268-6698.
- 7 HP Wisconsin 4-cycle engine, good for pump, generator, etc. Cave, 299-5066.
- MOLITOR buckle ski boots, 2 pair, men's racers, custom made, size 10-10 1/2, 2 yrs. old, \$50 (\$125 new); ladies size 7 1/2, 1 yr. old, \$75 (\$120 new). Kjeldgaard, 296-2212.
- 650 c.c. BSA motorcycle, \$650. Kennedy, 344-5667 after 6.
- CLARINET, B-flat, Pедler model Pennant, w/case, music stand, music book, \$65. Alvino, 255-6339.
- 11'x5' South Bend lathe, without quick change, extras. Cronk, 299-6401 after 5:30.

- RECORD PLAYER, RCA 3-spd., \$12; ladies western boots, Kangaroo, 5 1/2-6, \$20; bed frame, adjustable twin-dbl., \$5. Siegrist, 299-3088.
- TWO brown couches, newly upholstered, table, \$125; studio couch, \$15; stereo, \$75; new sewing machine in cabinet, \$100. Passmore, 299-5172 after 5:30.
- 10 CU. FT. refrigerator, Frigidaire, freezer space. Kelly, 255-7226.
- 5-PC. walnut dinette, Danish modern w/42" round table; white china, Sango, 8 place setting. Norton, 255-5932.
- PLAYER PIANO; upright freezer; five-gallon butane bottle w/regulator. Ortega, 243-2687.

WANTED

- RIDE from 221 Lagayra NE (1 1/2 blks. N. of Central, 2nd blk. W. of San Pedro) to vicinity of Bldg. 800. Burch, 266-6095.
- HI-FIDELITY speakers, 12" or 15", co-axial or woofer, driven-horn system. Fuller, 299-4785.
- RIDE or form car pool to UNM on Mon., Wed., & Fri., for 12:30 class. Tichenor, 298-0192.
- TEXTBOOK "Principles of Accounting" VI Edition, Finney & Miller. Peckum, 256-3363.
- FORM car pool from Holiday Park to 880, 892 parking areas. Acton, 299-0593.
- SMALL used oscilloscope for radio and audio waves, 5 to 50 megacycles. Fincham, 344-1072.
- RIDE from 2619 Gen. Bradley NE to vicinity of Bldg. 894. Walton, 298-8342.
- JIGSAW 12" table 24" throat. Parker, 299-0289.
- RIDE from Candelaria and Juan Tabo to Area 3. Villanueva, 11604 Morenci NE, 299-9219.
- RIDE one way from Bldg. 802 to LaCorrida and San Pedro or LaCorrida and Comanche. Walters, 268-6476.
- 20" BOY'S or girl's bicycle. Sektnan, 296-5396.
- 12' or 14' aluminum boat. Shepherd, 299-9066.
- NEED few people to join climbing party to Popocatepetl in Mexico between Christmas and New Year's. Stamm, 255-2640 after 6.
- ONE NEW MEMBER for car pool, vicinity Candelaria-Morris to Gate 4 or Bldg. 800. Pace, 298-1112.
- ONE car pool member, vicinity Louisiana & Candelaria; soap box wheels and axles. Zucuskie, 268-3105.
- TO TRADE: size 10 for size 8 Jr. Girl Scout uniform. Bentz, 299-3448.
- SPRING HORSE, medium or large size. Long, 265-6360.
- CONGENIAL COUPLE to share driving in leisurely trip West Coast, Old Mexico, 2-3 weeks in November. Gustafson, 299-3270.

FOR RENT

PLACITAS AREA, large reconstructed old adobe house, 120 acres, orchard, grapes, all utilities available, rent all or house. Illing, 298-7189.

LOST AND FOUND

LOST—sunglasses w/black frames, keys, watch, notebook, red leather coin purse, 3-blade pocketknife, bracelet w/5 & 10-yr. pins, tan jacket, man's brushed gold wedding band, woman's ring w/turquoise sets, silver pillbox w/turquoise set. LOST AND FOUND, tel. 264-2757, Bldg. 610.

FOUND—glasses w/gray frames, Scripto Evershard, 10-yr. tie clasp. LOST AND FOUND, tel. 264-2757, Bldg. 610.



SWINGING SOCIAL HOURS are scheduled at the Coronado Club. Tonight, Tommy Kelly (2441), right, will be on the bandstand. Sol Chavez (4514), center, and the Duke City Brass will play Oct. 13. The other swinger is Sue Gum (3151). Lower prices for the social hour buffets are now in effect.

Coronado Club Activities

Catch the Coronado Club Football Bus to Attend Lobo Home Games

Football is the big weekend attraction for the coming two weeks as the Lobos play two home games. The Coronado Club will continue its special bus from the Club to the stadium, and afterwards you can join the party at social hour prices in the main lounge.

Tomorrow night the Lobos face Utah. The bus leaves the Club at 7:30 p.m. On Saturday, Oct. 14, New Mexico will tackle Arizona State. The bus leaves the Club at 6:30 p.m.

Social Hours

Some swingers are scheduled at social hour tonight and in coming weeks.

Tommy Kelly and his combo will be in orbit tonight. The Coronado Club seafood buffet will be served. Prices have been slashed — \$1.25 for adults, \$1 for kids.

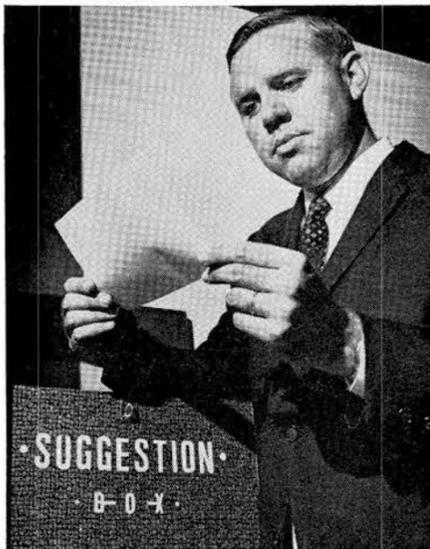
On Friday, Oct. 13, the swinging Sol Chavez and the Duke City Brass will break up the bandstand while the Mexican food buffet is served. Again, the buffet costs \$1.25 for adults, \$1 for children.

Elton Travis and his group will play for social hour Friday, Oct. 20, and the Coronado Club kitchen will spread its famous chuckwagon beef buffet. The buffet costs \$1.75 for adults, \$1.50 for children.

Octoberfest Hofbrau

Mark your calendar now, circle Oct. 21, and plan to make it to the annual Octoberfest Hofbrau. German food, free refreshments during dinner, and dancing to Phil Graham's orchestra are planned. Tab for the blast is only \$3.25 for members, \$3.75 for guests. The buffet starts at 7 p.m.

An added entertainment attraction will be the UNM International Folk Dancers performing German, Polish and Austrian dances from 8:30 to 9:30 p.m.



SUGGESTION BOX in the lobby of the Coronado Club is a source of ideas for the Club's board of directors. President T. A. Sellers (9223) reports that a recent suggestion led to lower prices at social hour buffets. The board carefully considers every suggestion placed in the box.



MODELS for the Oct. 10 Sanado Club fashion show examine one of the evening dresses to be modeled. From top left are Mrs. T. B. Mason, Mrs. H. J. Filusch and Mrs. T. M. Cowles. The event starts at 1:05 p.m. at the Coronado Club.

English Tea, Fashions Scheduled for Sanado Club Meeting Oct. 10

Lavish English tea settings, Twiggy dolls and a fashion show with member models will be part of the Sanado Club's Oct. 10 meeting.

An elaborate setting, including a 24-foot painting of the London skyline and a replica of Big Ben and the Westminster Bridge, will form the background for the fashion show, called "Fashion-Leading London."

Chairman for the event is Mrs. O. B. Tjeltweed. Mrs. R. J. Dye is decorations chairman. The painting is being prepared by Mrs. T. B. Morse assisted by Mrs. C. J. Ricker. Mrs. George Dennis will be commentator for the show.

The event starts at 1:05 at the Coronado Club with sherry, the fashion show begins at 1:30, and will be followed by traditional English tea with crumpets and scones.

Take Note

Attention, deer hunters.

The Sandia Gun Club will sponsor a "sighting-in" shoot open to all Sandians Sunday, Oct. 8. The shoot will be held on the Sandia rifle range from 8 to 12 noon. Additional information available from Dick Vivian (1611), tel. 299-1785.

* * *

Claire Haut (2112) won a State Fair blue ribbon in the professional art show for a portrait of a girl she created in sepia wash. Claire's oil paintings decorate Division 2112 offices in Bldg. 880. She also makes jewelry, and some of her work was exhibited in the State Fair crafts show.

* * *

J. Robert Garcia, manager of Personnel Department 3230, was reappointed recently to serve on the Advisory Council for Personnel Administration. Council members serve as consultants to the State Personnel Board. Bob was first appointed to the council in 1963. He is also a member of the City Personnel Board.

* * *

Tom Towne (5133) is the new Class A horseshoe pitching champion of New Mexico. He won the title during the state tournament played Sept. 24 during the State Fair. He was undefeated in seven matches.

In Class B, Leo Bressan (2412) swept the field. He won 11 matches, lost one.

About 45 contestants entered the tournament, 10 of them from Sandia.

Currently, Tom Towne is undefeated in the Sandia Laboratory tournament. Several matches remain to be played.

Leo is president of the Sandia Laboratory Horseshoe Association and also president of the New Mexico State Horseshoe Association.

Authors

A. R. Sattler (5211), "Channeling in Diamond-Type Lattices and Zinc Blende Lattices (Comparative Effects in Channeling of Protons and Deutrons of Ge and GaAs (and Si))" September issue, PHYSICAL REVIEW.

C. W. Harrison, Jr., C. D. Taylor, E. A. Aronson (all 1425), and E. E. O'Donnell (Kaman Nuclear, Colorado Springs, Colo.), "On Digital Computer Solutions of Fredholm Integral Equations of the First and Second Kind Occurring in Antenna Theory," September issue, RADIO SCIENCE.

E. A. Aronson and C. D. Taylor (both 1425), "Matrix Methods of Solving Antenna Problems," September issue, IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION.

C. D. Taylor and E. A. Aronson (both 1425), "An Iterative Solution of Fredholm Integral Equations of the First Kind," September issue, IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION.

J. P. Myers (4214), "Action for Continuing Education," September issue, ASME MECHANICAL ENGINEER.

R. C. Basinger (5253), "On an Extension of a Theorem of Bernstein to Meromorphic Functions," August issue, JOURNAL OF MATH ANALYSIS AND APPLICATIONS.

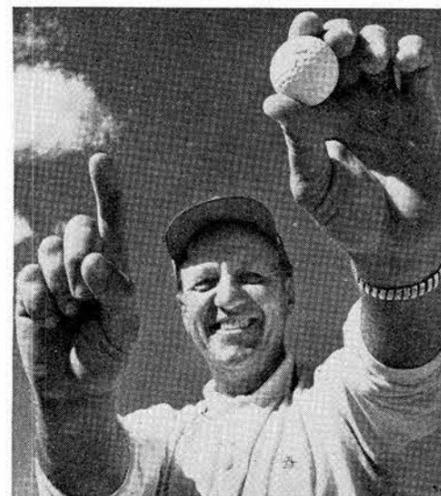
J. E. McDonald (1110) and C. F. Schroeder (2134), "Adherence and Porosity in Ion Plated Gold," September issue, JOURNAL OF THE ELECTROCHEMICAL SOCIETY.

Juan Yguerabide (5121), "Theory of Diffusion Controlled Processes II. Consideration of Conceptual Framework," October issue, JOURNAL OF CHEMICAL PHYSICS.

W. E. Warren (5261), "The End Effect in Semi-Infinite Transversely Isotropic Cylinders" and "A Note on the End Effect in Isotropic Cylinders," both August issue, AIAA JOURNAL.

M. Kent Parsons (5132), "Trapping Independent Asymmetries in the Electroacoustic Amplifier," Vol. SU-14, No. 3, page 142, IEEE TRANSACTIONS ON SONICS AND ULTRASONICS.

Bruno Morosin (5131), "The Crystal Structure of Lithium Sodium Sulfate," Vol. 22, page 906, ACTA CRYSTALLOGRAPHICA; "Crystal Structures of Manganese (II) and Cobalt (II) Bromide Dihydrate," Vol. 47, page 417, JOURNAL OF CHEMICAL PHYSICS.



HOLE-IN-ONE—Ed Vavro (7344) still doesn't quite believe it, but on Sept. 4 he shot a hole-in-one at Los Altos. It was the 140-yard fourth hole and he used an 8-iron. It was his first hole-in-one in 10 years of golfing.

* * *

A recent addition to Sandia's staff has received an award in the ceramographic exhibit print competition sponsored by the American Ceramic Society. Charles Miglionico (1122) received third prize in the replica electron micrographs category for the print of the surface of a weak sapphire whisker.

The sapphire whisker pictured was about two microns in diameter—"a rather large one" according to Mr. Miglionico. Magnification was about 50,000 times actual size.

The work on this project was conducted with Earl Feingold at General Electric's Space Sciences Laboratory in Valley Forge, Pa.

Contest results were announced in the August issue of the AMERICAN CERAMIC SOCIETY BULLETIN.

* * *

A new book, COMPUTER AND INFORMATION SCIENCES—II, published by Academic Press, contains a chapter written by G. J. Simmons (5612), on "Iterative Storage of Multidimensional Functions."

Other contributors include Nils Nilsson, head of the artificial intelligence group at Stanford University, who wrote on "Adaptive Computers," and Frank Rosenblatt, of Cornell University, who discussed "Biological Memory."

Sandia Safety Signals

Help

If you have any "Safety Signals," please pass them on to Safety Education Division 3352, tel. 264-6734. The Division is also available to answer questions or discuss problems.

What to Wear

When hunting, wear clothing which makes the hunter easily visible. Red or orange is generally recommended. White may be mistaken by another hunter for a deer's tail. Shoes with corrugated rubber soles are safest in the woods.

Hunting

Annual studies of hunting accidents by the National Rifle Association show the principal causes of hunting accidents from "intentional discharge" of a gun were: the victim moved into the line of fire without warning, the victim was shot by an excited hunter firing quickly at game, the victim was not seen by the shooter, and the victim was mistaken for game.