



ECP'NUTS AT SANDIA: Diana Freshman (3421) holds a sketch of poster which will be displayed at key Laboratory locations next week.



SANDIA LAB NEWS

VOL. 18, NO. 19, SEPTEMBER 23, 1966

SANDIA LABORATORIES

ALBUQUERQUE, NEW MEXICO; LIVERMORE, CALIFORNIA

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

Annual Workshop for Material Managers Slated for Next Week

Representatives from eleven Atomic Energy Commission laboratories are expected to attend the eleventh annual Material Management Workshop which will be held at White Winrock Hotel Sept. 27-29.

The first of the annual conferences to be sponsored by Sandia, the workshop sessions will be conducted from 8 a.m. to 5 p.m. daily during the three-day meeting.

Along with sharing information on managing materials during the workshop sessions, the group will tour general stores, reclamation, instrument services, and the Sphere of Science at the Laboratory next Tuesday.

C. J. McGarr, Director of Service Operations 4600, is general chairman of the workshop.

Sandia speakers and their topics are H. C. McIlroy (4622), "Disposal of Non-Reportable Excess Property"; C. N. Giles (4615), "Central Instruments Control by Computer"; and E. E. Alford (8245) will be a member of a panel discussing "A Review of the Material Management Concept."

Flash Suppressor Patent Issued to Neal Vinson

A patent has been issued to Neal L. Vinson (7513) for a muzzle flash suppressor which is now being evaluated by the Department of Navy, Naval Ordnance Systems Command, Washington, D.C.

The tactical problem of hiding the tell-tale flash, especially in guerilla warfare, led Mr. Vinson to theorize that this light could be controlled by rapidly reducing the temperature of the muzzle powder gases below their point of luminosity.

Mr. Vinson utilized a small amount of the energy contained in the muzzle gases to operate an injection mechanism which would force a limited amount of water into the stream of muzzle gas. This injected water would be vaporized by the hot gases and the temperature of the gases would be reduced.

The design problem was how to seal the flow of water between firings yet force an adequate flow into the gas stream at the proper time.

Jesse Mitchell (4253) constructed the prototype in his home workshop and the device was test fired at the Sandia Base indoor small arms firing range.

Because the invention was unrelated to Mr. Vinson's work at Sandia, and because its design and development was on his own time and expense, a "request for release of invention" was granted by Sandia Corporation with the concurrence of the AEC and Western Electric Company.

Employees Schedule ECP Meetings To Encourage Fair Share Giving

Needs exist in the form of providing shelter for homeless children, caring for the elderly, and teaching retarded children self-help. Some 6000 Laboratory employees share in meeting these and many more community needs by contributing to the Sandia Employees Contribution Plan through regular payroll deductions. About 2400 of these employees are giving their "fair share" of one hour's pay a month or more.

Starting next Monday, employees will conduct meetings throughout the Laboratory for the purpose of encouraging more fellow workers to become members of the ECP Fair Share club by contributing a little less than six-tenths of one percent of their wages.

Spearheading each organization's efforts to increase fair-share giving will be directorate coordinators. They will schedule the meetings which will feature speakers and a film strip entitled "Magic Pin." Payroll deduction cards will be distributed during the meetings.

Administered by a committee of employees with the full support of management and the unions, ECP supports 37 agencies — 29 Albuquerque United Community Fund agencies plus eight national health agencies.

ECP was formed by employees to provide an easy method for Sandians to meet their community responsibilities. The payroll deduction method of giving allows a small gift each month to add up to a

significant contribution by the end of the year.

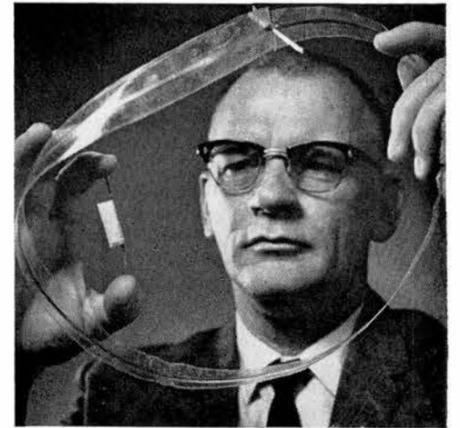
Members of Sandia's ECP committee determine which agencies will participate and the percentage of collected funds which will be apportioned to each agency. All expenses for the administration of ECP are borne by the Laboratory. Allocations are based on the total amount of funds raised in Bernalillo County and the percentage of this total achieved by each agency.

This year's allocations, as announced by the ECP committee, will be as follows:

United Community Fund	82.1%
American Cancer Society	5.0
Bernalillo County Heart Association	3.5
Arthritis Foundation	1.7
N. Mex. Society for Crippled Children	3.0
National Multiple Sclerosis Society	1.4
Cerebral Palsy Association	1.0
Muscular Dystrophy Association	1.2
Cystic Fibrosis Association	0.6
Reserve Fund	0.5

100.0%

Members of the ECP committee are F. F. Eichert (2210), chairman; W. L. Stevens (5530), deputy chairman; J. M. Wiesen (2150), past chairman; R. H. Austin (3433), executive secretary; J. P. Cavanaugh (4131), treasurer; Mrs. Janice Sharp (2234), OEIU representative; M. A. Martegane (3242), IGUA representative; A. N. Chaves (4631), MTC representative; F. A. Leckman (3153), new hire coordinator; D. M. Fuller (9423), programming coordinator; R. I. Ewing (5241); L. C. Jeffers (7245); R. K. Vokes (9423); and R. S. Nelson (1432).



MOBIUS LOOP, a mathematical novelty, inspired this low-reactance resistor invented by Richard L. Davis (1433). The smaller item is the wound or folded version.

Mobius Loop Resistor Granted U.S. Patent

A U.S. patent for a Non-inductive Electrical Resistor has been issued to the Atomic Energy Commission in the name of Richard L. Davis (1433).

The invention employs the Mobius loop, a mathematical novelty, into a new low-reactance resistor which has applications in radar and other pulsed energy circuits. It provides a resistor function with negligible residual reactance.

The basic loop is made of a ribbon of non-conductive material having opposite surfaces defining a continuous uniform surface. A single uniform layer of restrictive material is attached to both sides the length of the loop, and a pair of electrical current leads are placed opposite to each other.

The mobius resistor can be made to fit almost any space by folding or winding.

The patent is number 3,267,406, issued Aug. 16, 1966.

ECP Members Give \$183,668 to Agencies

With three months remaining in this year's pledge period, donations by Sandians to the Employees Contribution Plan amount to \$183,668. As the August checks — totaling \$19,444 — were mailed to the United Community Fund and eight other agencies, the following distribution had been made:

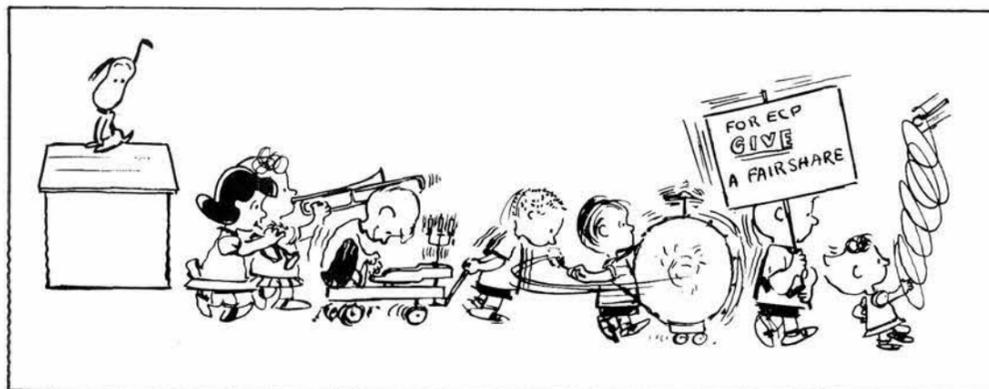
	August	Year-to-Date
United Community Fund	\$16,041	\$151,137
American Cancer Society	952	9,047
Bern. County Heart Ass'n.	680	6,427
Arthritis Foundation	330	3,137
Crippled Children	544	5,167
Multiple Sclerosis	272	2,579
Cerebral Palsy	194	1,832
Muscular Dystrophy	233	2,213
Cystic Fibrosis	97	925
Reserve	97	915
Specific Gifts to UCF Agencies		284

Totals \$19,444 \$183,668*
*This total includes the cash contribution and specific donations made at the beginning of this year's ECP drive. During 1965, Sandia Laboratory employees contributed \$220,084 to ECP agencies.



ENDORSE FAIR SHARE—Three union presidents endorsed this year's Employees Contribution Plan goal of enrolling more fair share contributors. A fair share, as originally defined by the AFL/CIO for its members, is one hour's pay per month. Shown (l to r) are Fred F. Eichert (2210), chairman of the Sandia ECP committee; W. D. James, Albuquerque United Community Fund campaign chairman; and Union Presidents R. L. Byrd, International Guards Union; J. A. Maldonado, Metal Trades Council; and P. J. Cruz, Office and Professional Employees International Union.

ECP' NUTS



Thanks to Schulz and The Albuquerque Tribune

Editorial Comment

What's "fair" about A Fair Share?

Surely we all agree that it's fair to help those who are struck down by disease or other misfortunes. And we recognize that to be fair we must share the support of agencies that prevent crime and delinquency while building the character of the children in our community.

The "fair" is also a vital factor in determining how much each of us should give to support the many agencies of ECP. Regardless of our income, we can contribute our share fairly by giving just one hour's pay per month. The amount varies from person to person, but the percentage is the same—what could be fairer?

There's still another "fair" with ECP at Sandia. That's the fairness of the distribution of our contributions. A committee of employees determines the allocation of these funds so that each agency receives a fair share of the total.

Morally, economically, and logically, what could be fairer than a Fair Share?

Key ECP Workers Plan Meetings Throughout Laboratory Next Week

Key Sandians in the forthcoming Employee Contribution Plan drive are the directorate coordinators, assistants, and speakers who will schedule and conduct meetings for employees in all Laboratory organizations.

The key workers will explain the needs of community agencies and how ECP is designed to meet those needs. In addition, they will handle arrangements for conducting the meetings throughout the Laboratory.

Directorate coordinators (designated with an asterisk), assistants, and speakers are:

- 1100—J. J. Ledman*
- 1300—R. F. Rieden*, R. A. Adams, J. E. Leeman, R. P. Clark, R. W. Crain
- 1400—D. M. Bevins*, D. L. Mangan, R. L. O'Nan, T. J. Williams
- 1500—M. B. Gens*, R. F. Casper, D. Doak
- 2100—J. B. Losinski*, T. M. Bozone, P. A. Longmire
- 2200—L. L. Strawderman*, W. N. Adkins, J. A. Caudell, H. J. Rouckus, Nadine Shepard
- 2400—F. A. Ross*, M. C. Jones, G. J. Lombardi, L. W. Platt, T. D. Donhan
- 2500—D. W. Bushmire*, J. R. Lyle, K. A. Sarason, J. W. McDowell, C. W. Appel
- 3100—Mary Harrison*, Kay Walter, Edna Harper, Wilma Salisbury, Joetta Miller, R. E. Day, J. H. Kelly, Helen Kluver
- 3200—C. L. Hines*, C. R. King
- 3300—J. P. Grillo*
- 3400—J. L. Gardner*, W. R. Roose, F. E. Halaz, W. W. Smith, Ruth Chapman, W. J. Wagoner
- 4100—F. J. Graham*, R. G. Jones
- 4200—K. D. Boultinghouse*, S. C. Waldorf, J. M. Bedeaux, R. L. Dalby, F. D. Chavez, Henry DeRuyver
- 4300—J. A. Bedingfield*
- 4500—F. F. Norris*, J. H. Hall, C. E. Alderman

- 4600—R. E. Hendrix*, G. Gatlin, E. Lewis, C. M. Fitzgerald
- 5100—M. K. Parsons*, R. L. Park, G. A. Samara, E. L. Patterson, D. A. Buckner
- 5200—Dorris M. Hankins*, M. A. Palmer, G. L. Brown, A. C. Switendick
- 5500—H. M. Poteet*
- 5600—R. L. Wilde*, E. S. Summons
- 6000—G. C. Newlin*, E. W. Swanson
- 7200—T. J. Hoban*, F. R. Sweet (NTS)*, S. J. Thomas (Honolulu)*, E. E. Wood, J. C. Reynolds, L. L. Lathrop, P. G. Schmiedeburg
- 7300—C. W. Cook*, R. O. Brooks, R. E. Howell, G. V. Lemmon, R. R. Reynolds, A. F. Witte
- 7500—J. D. McClure*
- 9200—T. T. Shishman*, L. J. Seligman, O. L. Howard, D. E. Gladow
- 9300—J. K. Cole*, K. L. Shipley, Irving Auerbach, R. E. Berry, D. L. Krenz
- 9400—D. M. Fuller*, R. E. Esterly, T. L. Werner, A. A. Key, Mildred Johnson, D. H. Davis, A. J. Arenholz

Historic X-10 Reactor is Named National Landmark

Built in secrecy as a crash effort of the famed Manhattan Project, the world-famous X-10 Reactor at Oak Ridge National Laboratory was recently dedicated as a Registered National Historic Landmark by the National Park Service.

Initially the X-10 Reactor had a singular purpose: the production of sufficient quantities of fissionable plutonium to permit the development of a chemical process for the separation of large quantities of this man-made element.

After successfully completing its wartime mission, the reactor became the world's leading producer of radioisotopes and served for years as a major training device for many of the nation's nuclear scientists.

Construction began on the system in February of 1943, just two months after the late Enrico Fermi operated the first reactor at the University of Chicago. The X-10, or Graphite Reactor as it has come to be called, was first operated on Nov. 4, 1943. After 20 years of efficient and reliable operation, the old reactor was shut down.

Today the reactor still remains at the geographic nucleus around which Oak Ridge National Laboratory has grown.

Sandia Authors

H. J. Stein (5211), "On the Comparison of Neutron and Gamma Ray Damage in n-Type Silicon," August issue, JOURNAL OF APPLIED PHYSICS.

Ruth E. Wahn (on leave from 5211), "Oxygen-Defect Complexes in Neutron Irradiated Silicon," August issue, JOURNAL OF APPLIED PHYSICS.

F. L. Vook (5211), "Thermal Conductivity of Electron-Irradiated InSb," Sept. 15 issue, PHYSICAL REVIEW.

R. L. Kruse (5256) and R. A. Dean of California Institute of Technology, "A Normality Relation for Lattices," May issue, JOURNAL OF ALGEBRA.

Restoring Model T Brings Back Memories of Early Telephone Lines

One of Louis Baudoin's most vivid memories from boyhood is that of the Model T service truck for the Claremont Telephone Exchange (owned by the family) in southern Minnesota.

When his grandfather made a service call, Lou frequently rode along. The truck was his favorite, and even as an adult, Lou could remember where each tool was kept.

In 1963, Lou's son, Alison, then 14, worked on his uncle's farm in Minnesota during the summer and as part pay he was given the chassis and engine of a Model T Ford. After dismantling and packing, it was transported to Albuquerque in the trunks of three different cars.

The original Claremont telephone service truck became scrap during World War II, but Lou began drawing its plans from memory. Now the complete vehicle has been reproduced from restored parts, even the complete set of tools used for open line maintenance.

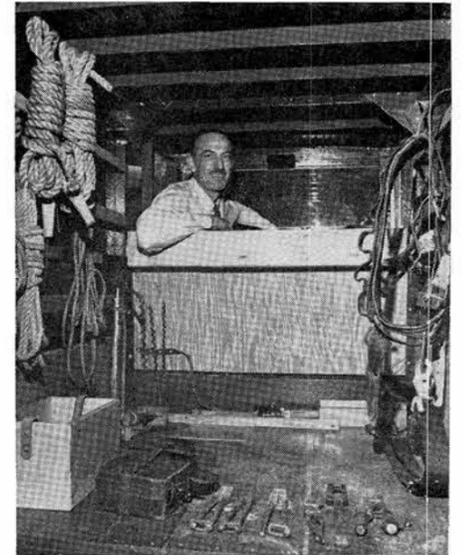
"My granddad, Eugene Gardiner, bought most of his supplies at the Western Electric store in Minneapolis," Lou explained. "At that time WE was a supplier and telephone parts could be ordered by catalog, the same as auto parts nowadays." Lou has one of the 1918-19 vintage catalogs.

The Claremont Telephone Exchange was started by Mr. Gardiner in 1910 and operated by several of Lou's uncles until 1948 when it became part of a telephone co-operative. The boys in the family ran the service trucks and the girls operated the switchboard at home in a room off the dining room.

There were 300 miles of lines, and telephone service cost 75 cents a month (repair service included). "The truck was equipped in the winter with snow drums and skis so it could be driven across open fields without waiting for the roads to be plowed. Because of the truck's reliability, my granddad often drove the local doctor on emergency calls in the country. If conditions were too bad for the truck, we had to rely on horses," Lou said.

Creating a replica of the truck has involved hours and hours of work by Alison, and a lot of searching for parts by his dad.

"Some of the tools and equipment were located with the aid of Lynn Allen of the Mountain States Telephone Company and by many of our friends," Lou said. The



COMPLETE SET of tools used for open line maintenance is a feature of Lou Baudoin's restored telephone service truck.

accessories for the truck include Western Electric lineman's test set (patented 1903), safety belt, spikes, ladder, pike poles, pole cant, spoon shovel, splicing tools, block and tackle wire stretcher, pole brackets and cross arm, insulators and tie wires.

In addition to its authenticity, the Model T truck is an eye-catcher and is efficient—relatively speaking. Mr. and Mrs. Baudoin and Alison took a drive to the zoo the other Sunday. The trip downtown was a snap, but chugging back up the hill, they had to stop four times to let the water in the radiator cool so that more water could be added.

The truck weighs 1800 pounds, has a 4-cylinder engine rated at about 20 horsepower. Top speed is about 45 mph. Lou pointed out, "From 1909 to 1927 some 15,700,000 Model T's were built and every part is interchangeable. Our vehicle has a 1923 engine, but it has the 21-inch wheels which were new in 1925, so we call it a '25'."

The father-son team has already moved on to a new project. They're restoring a 1936 Dodge.



RESTORATION of Model T Ford sedan delivery truck was completed by Lou Baudoin (2211-5) and his son Alison. The dark green and black vehicle is a replica of an early-day telephone repair truck used by Lou's grandfather in Claremont, Minn.

Events Calendar

- Sept. 23-25—New Mexico State Fair, Albuquerque Fairgrounds.
- Sept. 23-25, Sept. 28-Oct. 2 — "Who's Afraid of Virginia Woolf?" Old Town Studio, 1208 Rio Grande NW.
- Sept. 23-Oct. 13 — Paintings of Georgia O'Keeffe, UNM Fine Arts Museum.
- Sept. 27—YWCA tour to Chaco Canyon for members and non-members. For reservations, call 247-8841.
- Sept. 30—San Geronimo Fiesta at Taos Pueblo.
- Oct. 1-2 — Utah Symphony Orchestra, UNM Fine Arts Center concert hall.

November Elections

Monday, Oct. 10, is the deadline for registration to vote in the Nov. 8 elections. To be eligible one must have lived 12 months in the state, 90 days in the county, and 30 days in the precinct (by election day, Nov. 8).

Persons may register at the County Clerk's Office, County Court House, or at Employee Services Division 3121, Bldg. 610.

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LAB NEWS

SEPTEMBER 23, 1966

SANDIA LAB NEWS



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ALBUQUERQUE, NEW MEXICO
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CECILLE BROWN (8161) anticipates a "shower" of Fair Share contributions as pledge cards are distributed this week for the 1966 United Bay Area Crusade.

Helping Others Help You

It is one of the most beautiful compensations of life: that no man can help another without helping himself.

The philanthropist who gives millions to worthy causes or the Boy Scout who helps the LOL (little old lady) across the street both savor this superior reward.

But why do people help others anyhow?

— Is it the best in man's subconscious surging to the surface?

— Is it the resultant inner warmth that one feels after the deed?

— Is it love for our fellowman?

— Is it a compelling spirit of duty developed through one's environment?

We could ask the question of fifty people and get fifty different answers.

Man has helped his fellowman down through the ages. Whether it was sympathy, advice, money, or a shoulder to the wheel, man's finest deed has been to help man. This will continue as long as he walks the earth. His greatness will not be measured by his personal gains but rather by his contribution to mankind.

Today through the Bay Area Crusade you can help yourself by helping another.

Visit to Two Crusade Agencies Reassures Employees on Value

A visit to one or more of the member agencies of the United Bay Area Crusade gives the visitor more understanding of the purpose of the annual fund drive than any number of written words. That's why six Livermore Laboratory employees (and photographer George Hosoda, 8233) recently toured the Children's Hospital Medical Center and Goodwill Industries in Oakland.

The Sandians were Elvis Skidgel (8127), Bob Bailey (8252), Bobbie Balanda (8231), Alyce Loveless (8252), Conrad Rogers (8222), and Bob Wall (8111).

At the hospital, the group walked through several wards and talked with the young patients. Several of the visitors noted how calm and content the children appeared. That's partly due to an effort by nurses and other attendants to make the youngsters feel more at ease in this strange environment: the children are called by their nicknames and most have their favorite toy at their bedside.

The hospital treats both mental and physical cases and is conducting research in a wide variety of fields. The Sandia group was shown special equipment which enables physicians to continuously measure the oxygen content of blood within the heart to detect leaks in the heart area. While the measurement is being made, the heart can also be viewed through a TV camera.

This hospital costs \$350-million per year to operate. The deficit attributed to treating charity patients is made up by \$350,000 contributed annually by the women's auxiliary which operates Children's Fairyland and by the \$80,000 allotted by the United Crusade.

The second stop for Livermore Laboratory employees was Goodwill Industries. There they saw how this agency provides employment for the handicapped—not only those physically or mentally handicapped, but also persons who are unable to get or hold a job in private industry due to sociological or emotional problems or age.

The self-respect which goes with the pride of holding a job is a big factor with many of these adults. They mend donated

clothing, re-upholster used furniture, and repair appliances.

Goodwill Industries also takes outside contract jobs—such as assembling calendars, refinishing furniture for schools, stuffing envelopes, etc. Despite this activity and sales from the agency's retail stores, Goodwill Industries is not solvent. Overhead costs are high. At Oakland they include salaries for the handicapped workers, salaries for a full-time psychologist and for a nurse, buildings, utilities, trucks, etc. The United Bay Area Crusade allots this agency \$10,000 a year to help carry out its useful function.



"YOUR FAIR SHARE GIFT works many wonders" is the slogan for the 1966 United Bay Area Crusade. Bobbie Balanda (8231) saw proof during a visit to Children's Hospital in Oakland, where she comforted this tiny patient.

LIVERMORE NEWS

SCLL's United Bay Area Crusade Starts Monday; Goal is \$21,000

Solicitors will give pledge cards to each employee at Livermore Laboratory during the coming week for contributions to the 1966 United Bay Area Crusade. The employee participation goal is \$21,000.

Eleven group meetings have been scheduled for Tuesday, Sept. 27, at which time employees will see a new 11-minute UBAC movie "Where Your Money Goes" and will hear a brief account of a visit to two UBAC agencies by a small group of SCLL employees.

These meetings will be held in Bldg. 912, Rm. 185, and Bldg. 911, second floor conference room.

As in the past, a payroll deduction plan is available as a convenient way to spread contributions over a 12-month period. Employees may indicate on their pledge cards how much they would like taken out of

Laboratory Represented At East Bay Job Fair

Personnel Representatives Philip D. Leiserson and Evelyn A. Foote (both 8212) will represent Livermore Laboratory at the East Bay Job Fair to be held Sept. 24 and 25 in Oakland.

The fair is sponsored by the City of Oakland and Alameda County to bring together the major employers and prospective employees of the East Bay Area. Representatives of industry will acquaint the unemployed and the underemployed with job opportunities and with requirements for each kind of job.

Another purpose of the job fair is to encourage students to improve their skills or further their training to enable them to compete successfully in the labor market.

Eye Injury Prevented By Use of Safety Lens

Safety glasses provide protection for your eyes at all times and Roger Busbee (8121-3) can attest to this statement.

Roger is a mechanical technician in a test assembly group, and he normally wears non-prescription safety glasses at work. He often wears them at home. Fortunately, he had them on when working on his car.

Roger was using a hand drill with grinding stone attachment to smooth down a weld. Suddenly the grinding stone broke and one of the pieces struck his safety glasses shattering one of the lens. There was no injury to Roger's eye.

Roger is being nominated by SCLL's safety organization for membership in the Wise Owl Club, a national organization comprised of employees whose eyesight has been saved through use of safety glasses.

each pay check, plus the date that the deduction should begin.

"We'd like to urge employees to contribute a 'fair share'—one hour's pay per month for the year," Campaign Chairman F. J. Maloney (8112) pointed out. "Crusade funds wholly or partially support more than 170 health, welfare, and youth service agencies in the five-county Bay Area. As the Crusade slogan says, 'one gift works many wonders.'"

Squad leaders and solicitors conducting the campaign this year are:

Squad Leaders

H. G. Birnbaum (8110), J. E. Vanderpoorten (8120), C. W. Schoenfelder (8130), F. J. Cupps (8140), B. D. Pontsler (8150), G. H. Funk (8160), R. O. Campbell (8210), J. A. Roach (8220), R. Raty (8230), D. S. Corder (8240), W. E. Thompson (8250, 5510, and 7262-1), and Mrs. J. P. Willford (Division 8252).

Solicitors

Solicitors for supervision are: R. A. Barroody, J. L. Rowe, R. L. Peterson, F. J. Murar, A. S. Rivenes, J. F. Bryson, J. P. Brock, A. L. Pearson, J. F. Genoni, and P. M. Henan, Jr.; and for department secretaries Mrs. L. J. Strandin.

5510: H. A. Krieger.

7262-1: R. J. Brousseau.

8110: E. D. Holbrook and F. E. Moore (8111), D. G. Irving and L. R. Myers (8112), W. B. Vandermolen and C. M. Shanabarger (8113), Mrs. J. L. Dunaway and T. N. Casson, Jr. (8116), G. L. Angvick and M. H. Rogers (8118).

8120: R. L. Miller (8121), R. T. Petersen (8121-3), D. E. Benthussen (8122), A. F. Rowe (8122-1), T. R. Payne (8123), W. R. Guntrum and W. A. Maupin (8124), J. C. Gibson (8126), H. D. Sorensen (8127), J. A. Kersey (8127-1).

8130: G. L. Ludwig (8131), M. E. Brown (8132), J. P. Darginis (8133), S. C. Berglund and E. M. Bishop (8134), J. M. Maurer (8135).

8140: A. G. Schuknecht (8143), Miss C. A. Shulver (8144), Mrs. C. L. Celoni and V. W. Estbrook (8144-3), B. W. Grange (8146), C. S. Hoyle (8147), R. E. Rychnovsky (8148), G. R. Dunbar (8149).

8150: G. N. Beeler (8152), L. J. Seibel (8153), J. W. Gumm and C. J. Pignolet, Jr. (8154), R. G. Crockett (8155), J. W. Liebenberg (8156).

8160: C. W. Campbell, Jr. (8161), J. H. Cordial (8161-1), N. R. Wagner (8163), D. J. Timmer (8166), H. P. Farmer (8168).

8210: M. A. Pound (8211), Mrs. B. M. Netherton (8212), J. A. Portolese (8213), A. M. Celoni and J. Rogers (8215).

8220: E. R. Newton (8222), A. B. Harrison (8222-1), F. G. Hohmann and L. Rothacker (8222-2), F. A. Floyd (8222-3), F. E. McMurtrey (8223), D. W. Sadler (8223-1), H. L. Reis (8223-2), A. J. Bastion (8223-3), Mrs. B. J. Clark (8223-5), R. E. Freeman (8226-2).

8230: Mrs. C. K. McGregor (8231), Mrs. D. R. Wackerly (8231-1), Mrs. R. E. Anderson and Mrs. D. L. Poudard (8232), Miss B. G. Piper (8233-2), E. H. Dopking (8233-3), J. P. Pons, Jr. (8234 and 8235), Mrs. P. R. Leigh (8235-2).

8240: Mrs. I. R. Kelly (8241), M. M. Lettrich (8243), S. R. Pickens (8244-3), Mrs. B. C. Hogan (8244-4), J. A. B. Hay, Jr. (8245), J. N. Barnhouse, Jr. (8245-2), J. C. Cough (8245-3), Mrs. D. E. Allan (8245-4).

8250: J. G. Harter (8251), Mrs. D. P. Kirby (8252-1), W. M. Coelho and Mrs. G. L. Matuska (8252-2), R. E. Cavitt and W. L. Pritchard (8252-3), D. C. Dahl (8252-4), V. Ham and O. D. Rohrbach (8252-5), Miss S. M. Ward (8253), Mrs. F. P. Lenz (8253-2), W. E. Hawkins and Mrs. T. L. Rogers (8253-3), D. D. Kirk, Jr. (8254).

Congratulations

Mr. and Mrs. Ken Riddle (8244), a son, Michael Edward, Aug. 12.

Mr. and Mrs. Mike Rogers (8118), a daughter, Michele Jo Ann, Aug. 13.

Mr. and Mrs. Ken Byrne (8156), a son, Glenn Robert, Aug. 8.

Sympathy

To Harriet Sitton (8235) for the death of her mother-in-law in Sacramento, Aug. 28.



TECHNICAL INSTITUTE INSTRUCTORS Merle Quisenberry (left) and Paul Gehris discuss a computer printout from a digitizer (shown in the background) during one of their rotational assignments in Department 2210 this summer.

Drafting-Design Tech Institute Grads Have Definite Place at Sandia

The changes in hiring patterns in industry are exemplified by the increasing demand for technical institute graduates in drafting and design at Sandia Laboratory.

The first of these were hired by Sandia in 1956. Now almost half of the staff assistants in Design Definition Department 2210 are TI graduates (the balance were hired with experience or received on-the-job training). "It's rare now to hire a draftsman with experience," explains P. A. Nicovich, supervisor of Design Definition Division B, 2212. "We find that the tech institute graduates are well-equipped to carry out their assignments, and, due to a solid background in engineering basics, they can support what they're doing with engineering calculations."

The technician program began to grow after World War II when the shortage of graduate engineers became noticeable. Industry found that technicians could perform a number of engineering tasks, thereby freeing the graduate engineer for other duties.

The two-year technical institute program is college-level instruction filling the void between trade schools and baccalaureate engineering curriculum. The technical institute cannot properly be compared to a junior college because the purposes of the two types of educational institutions are different. The tech institute strives to provide applied knowledge in a concentrated form, and to place the student in the work force early in specific type of job. Many of the schools are accredited nationally by the Engineers Council for Professional Development.

"One advantage," Mr. Nicovich says, "is that these schools are interested in knowing what industry will demand of their graduates—and this is a constantly changing factor. Right now we believe future emphasis will be on computer-aided design and drafting, and to make use of this type of equipment, a solid understanding of graphics and math will be required."

To assist the schools in keeping their training courses up-to-date, Sandia customarily offers some of the tech institute instructors summer employment.

Through this practice, Sandia benefits by being assured that when graduates of these schools are employed here, they are already suited to our needs.

This past summer, two faculty members worked at Sandia learning to write their own computer programs using APT, a computer language. After a computer has verified as "correct" the words, punctuation, description, and mathematics, these programs can be used to produce parts with numerically-controlled equipment. The men also learned how to use a digitizer and an automatic drafting machine.

One of the faculty members was Merle L. Quisenberry, a former Sandia employee who was the first tech institute (Oklahoma State University) graduate hired by Sandia's Department 2210. He has since earned his Bachelor's degree in industrial arts from the University of New Mexico and has taught in Eastern New Mexico University's Technical Institute since January 1963.

Associate Professor Paul W. E. Gehris of Pennsylvania State University's Drafting and Design School spent his second summer at Sandia. He has been with the school since 1930 when it was known as Wyoming Polytechnic Institute and was spon-

sored by the local Textile Machine Works. Penn State annexed this campus in 1958.

Both men agree on the importance of keeping up with the needs of industry. They pointed out, for example, that two years ago positional tolerancing was entirely new; now it is part of optional drawing courses which students can take on their own time, and eventually will be on the regular curriculum.

Mr. Quisenberry noted that at Eastern New Mexico course content is left to the discretion of the instructors, and they are at liberty to make changes if they are not too drastic. The firsthand exposure to the new needs of industry is a factor in making these changes.

"We learn the very latest at Sandia," Mr. Gehris said. "Sandia is doing advanced work in the field with a national reputation for leadership," Mr. Quisenberry added.

Stuetzer Measuring Device Issued U. S. Patent

A patent has been issued for an "electrical input measuring device using ion drag pumps and pressure indication," which was invented by O. M. Stuetzer (5140) while he was employed by General Mills.

The invention uses an arrangement of electrohydrodynamic pumps which indicate the value of a voltage or a current by the pumping height of a liquid. This method of measurement is useful in a very high electrical voltage environment where wires cannot be tolerated, but where an insulating pipe containing liquid can be led to the outside or can be observed optically on the inside.

Mr. Stuetzer has been issued some 20 patents in the U.S. and Germany.



KEN SARASON (2563), fifth from left, standing, works with a team of AEC contractor personnel during a Value Engineering Workshop conducted at Sandia last week. VE techniques can reduce operational and production costs.

Supervisory Appointments



WILLIAM C. MYRE to manager of Advanced Systems Development Department I, 5610, effective Sept. 16.

Bill joined Sandia as a field test project engineer in June 1950. In 1954 he was named a section supervisor in the Field Test Project Division and was promoted to supervisor of the division four years later. In December 1961 he was named supervisor of Space Projects Division I, which later became Satellite Systems Division I, 9231. In this position he was responsible for the development of the Vela high altitude nuclear detection satellite system.

Bill received his BS degree in electrical engineering from Texas A&M in June 1950.

During his military service with the U.S. Army from 1955-57, Bill worked in the Special Weapons Branch at White Sands Missile Range and attended New Mexico State University.

He is a member of the Institute of Electrical and Electronics Engineers.



WILLIAM E. TUCKER to supervisor of Weapon System Evaluation Section 2126-3, Amarillo, Tex., effective Sept. 1.

Bill worked as a surveillance inspector for four years after he joined Sandia in December 1952. From 1956 to 1959 he was a quality assurance inspector. Since then he has been a quality evaluation system test specialist.

For three years before coming to the Laboratory, Bill was a supervisor (with the civil service) of a radio repair group in the General Depot at Fort Sam Houston, Tex.

He has taken a number of courses at night schools at the University of Nevada and San Antonio College toward a BS degree in electrical engineering.



BILLY M. GRAGG to supervisor of Second Shift Operations Section 9411-2 of the Data Center and Operations Department, effective Sept. 1.

Billy joined the Laboratory as a messenger in December 1952. Four months later he became a tabulating equipment operator. From 1955 to 1957, he was a staff assistant in mathematical services division before transferring to computer operations. For the past four years he has been in programming.

Billy served in the Air Force from 1948 to 1952, including three years at Kirtland AFB.



JOHN E. HINDE to supervisor of Satellite Systems Division I, 9231, effective Sept. 1.

Jack started working for the Laboratory in September 1953 as a member of a field test project group. Four years later he transferred to a transducers and telemetry components group. He spent about a year with a telemetry evaluation group and was a member of a rocket group involved with the Dominic test series in the Pacific for some eight months in 1962. Last year he transferred to Satellite Systems Division I.

Jack received a BS degree in engineering physics in June 1952 and an MS in electrical engineering in August 1953, both from the University of Illinois.

He is a member of the Institute of Electrical and Electronics Engineers.



LAWRENCE P. KEEGAN to supervisor of Third Shift Operations Section 9411-3 in the Data Center and Operations Department, effective Sept. 1.

Larry worked as an electronic data processing machine operator for the first six years after joining the Laboratory in March 1958. He has been a 7090 computer operator since 1964.

Before coming to Sandia Larry served nine years in the Army, including about two years at Sandia Base and two years in the electronic data processing machine field in France.

He has taken several courses in business administration at the University of New Mexico.

Regional Computer Meet Attracts Local Speakers

Six Sandians will make presentations at the fall meeting of the Rio Grande Chapter of the Association for Computing Machinery to be held Oct. 6-7 in Santa Fe. The theme of the meeting is "Simulation."

Speakers include: D. R. Morrison (5256), "Highlights of My Trip to Russia"; J. A. Allensworth (9422), "Demonstration of Two Faults in Computer-Produced Movies"; R. D. Andreas (2421), "Digital Computer Simulation as an Experimental Tool in the Evaluation of Sample-Data Systems"; G. J. Simmons (5612), "General Theory for the Simulation of Large Linear Systems"; C. J. Fisk (9424), "Test of Handwritten Characters"; and P. E. Eyer (2225), "Using an SC4020 Microfilm Device in Information Retrieval."

J. L. Tischhauser (9420) is chairman of the ACM chapter.

Value Engineering Sessions Continue for AEC Personnel

Forty-three representatives of the Atomic Energy Commission and AEC contractors from throughout the nation completed a Value Engineering Workshop at Sandia last week. A second workshop will start next week for another 46 participants.

Conducted by Value Engineering and Cost Improvement Division 2563, the Workshops transcend traditional cost reduction activities by applying new techniques to determine the basic function and the functional worth of a product. Goal is to provide the required product function at the lowest sound cost without compromise of quality, reliability, or safety.

The current workshop training incorporates actual projects submitted by the participants. In the past, workshop teams have brought about significant savings in similar projects.

John M. Hueter (2563) is the leader of the current training. Instructors are Ken Sarason, Al Smailer, and Reuben Minter (all 2563).

Research Colloquium Schedules Dr. Teller

World renowned scientist, Dr. Edward Teller, will speak before the Sandia Laboratory Research Colloquium at 10 a.m. Tuesday, Oct. 11, in Bldg. 815.

Colloquium Chairman R. L. Kruse (5256) said that the subject of the talk would be announced later.

Professor Teller is best known for his planning and prediction of the function of both the atomic and hydrogen bombs while with the war-time Manhattan Engineer District at the University of Chicago and at Los Alamos. He was assistant director of Los Alamos Scientific Laboratory from 1949-52.

He was educated in Germany at the Institute of Technology in Karlsruhe, the University of Munich, and the University of Leipzig, where he received his PhD degree in 1930. He has since been awarded honorary DSc and LLD degrees from many American universities.

Before emigrating to the United States, Prof. Teller was a research associate in Leipzig and Goettingen, a Rockefeller fellow in Copenhagen, and a lecturer at the University of London. He became a professor of physics at George Washington University (Washington, D.C.) in 1935, and later taught at Columbia, Chicago, and the University of California, where he remains a Professor-at-Large. He has been associate director of the University of California's Lawrence Radiation Laboratory since 1954 and was director of LRL at Livermore from 1958-60.

Professor Teller is a Fellow of the American Nuclear Society and the American Physics Society.

J. V. Walker Participates In British Conference

J. V. Walker (5222) presented two technical papers at the Nuclear Radiation Measurements Conference held Sept. 12-16 in Berkeley, England.

C. L. Grier, a Sandia consultant, was co-author of the paper entitled "A Procedure for the Computation of Neutron Flux from Foil Activation Data—SPECTRA Code."

The second paper, "Thermal Neutron Flux Perturbations Induced by Activating Foils in Maxwellian Fluxes in Water," was written by Mr. Walker and J. J. Koelling, who did research at Sandia under an AEC-ARMU Fellowship.



Phyllis Dodd (9412)

Take A Memo, Please

Safety rules are like traffic rules: meant to be followed by everyone. There can be no exceptions.

International Congress of Mathematicians

Sandians Report Moscow Experiences

Technical papers by three Sandians were presented at the recent International Congress of Mathematicians in Moscow, Russia. The men were H. H. Wicke (5251), D. R. Morrison (5256), and R. D. Driver (5262).

The Congress meets every four years to provide an opportunity for mathematicians to report on their progress and to present technical papers in the various fields. The last meeting in the United States was in Cambridge, Mass., in 1960; since then the Congress has been held in Amsterdam, Edinburgh, and Stockholm.

This Congress at the University of Moscow was attended by approximately 6000 mathematicians, including 2000 from the USSR, 600 from the United States, and the balance from 51 other countries.

The scientific sessions were conducted concurrently in 15 fields of mathematics. There was a total of 73 invited addresses of one-half to one hour each plus approximately 2000 contributed papers of 15 minutes each. Official languages were English, French, German, and Russian, and in many sessions there were simultaneous translations.

Mr. Wicke presented a paper entitled, "Open Continuous Mappings and Bases of Countable Order." This is based upon major research he has conducted for several years with J. M. Worrell (5261). As Mr. Wicke explains, "The research is basically a study of what properties remain invariant under certain classes of transformations. The basic work underlies mathematics used in mathematical analysis and in formulation and solutions of problems in physics."

Mr. Wicke has been at Sandia nearly 12 years. He holds BA and MA degrees in philosophy, and a PhD degree in mathematics, all from the University of Iowa.

The topic of Mr. Morrison's paper was "A Feasible Library Automaton." It is described as a discussion of how an automaton can be used to retrieve information from a large automated library in a number of steps proportional to the quantity of information to be retrieved and independent of the size of the library.

Mr. Morrison has been at Sandia 11 and a half years. He holds a BS in education from Northern Illinois State Teachers College, and MS and PhD degrees in mathematics from the University of Wisconsin.

The technical paper by Mr. Driver was entitled "A Volterra Functional Equation with Solutions in L_1 ." Equations of this type arise in the study of certain systems whose present behavior depends essentially upon their previous history. Examples include the (relativistic) equations of motion of charged particles and the equations of motion of automatic control systems in which inherent time lags give rise to delayed effects.

Mr. Driver has been at Sandia four years. He holds BS and MS degrees in electrical engineering, and a PhD degree in mathematics, all from the University of Minnesota.

Upon their return to Albuquerque, the three men had a number of comments to make regarding the Congress and their stay in Russia.

Mr. Wicke had looked forward to meeting several mathematicians at Moscow University whom he knew were working in fields similar to his own. Upon conclusion of his presentation, one of these Russians, Prof. Arkhangelski of the School of Topology, stood up, commented favorably on the Wicke-Worrell paper, and mentioned that it helped to solve a problem of his. On later occasions, Prof. Arkhangelski hosted the Sandian at dinner, took him on a tour of the city, and invited him to



UNIVERSITY OF MOSCOW—site of the recent International Congress of Mathematicians. Three Sandians attended the sessions.



R. D. DRIVER (5262), left, conferred with Prof. A. D. Myshkis of Khar'kov, one of the world's leading contributors to the theory of differential equations with lags, during the recent international Congress of Mathematicians in Moscow.

attend a soccer game between Moscow and Kiev teams.

"During these social activities, we had many technical discussions about mathematics and Arkhangelski mentioned several problems to me that he was interested in. Our scientific interests are basically the same," Mr. Wicke said.

Prof. Arkhangelski spent two weeks in the United States last year and spoke English. Mr. Wicke speaks Russian, so there was little language difficulty between these mathematicians.

"The Congress was satisfactory in a technical sense—it was well organized, there were programs and abstracts of talks to be presented, and it was relatively easy to locate other persons," Mr. Wicke reported. "The Russians were reasonable hosts and our passage through customs was smooth."

The participants in the Congress were given special badges to wear at all times and there was also a special Russian stamp issued for the occasion. Mr. Wicke has a number of clippings of articles about the Congress which appeared in PRAVDA and in a monthly literary gazette.

Mr. Morrison noted that the quality of the papers was generally excellent and many of the results in the invited addresses were very recent, but had been publicized prior to the Congress. "My own paper," he said, "was well-received and prompted several questions and requests for further information." He, too, made the

acquaintance of many algebraists whose work was previously known to him, including Prof. L. A. Sornjakov, who later invited the American to dinner at his Moscow home.

"I visited exhibits of literature in Mathematics and Computing; also the Exhibit of Economic Achievement, which included, among other things exhibits on Atomic Energy, Computing, and Astronautics," Mr. Morrison said. "The computers actually displayed were comparable to U. S. computers of the 1958-59 era. There were exhibits of solid-state components for the more advanced Ural series, which appeared to me to be comparable to the early U. S. solid-state computers of the 1960-62 vintage. The exhibit on Atomic Energy was confined to peaceful applications, primarily medical and agricultural. They were for popular consumption and did not reveal any technical details."

Both men made extensive use of the famed Moscow subways and, after the Congress, took an overnight train to Leningrad to see the points of historical interest there.

Mr. Driver combined attendance at the Congress with a 20-day vacation in the Soviet Union with his wife. In addition to attending the Congress, they visited Kiev, Yalta, Tbilisi (capitol of Georgia), Vladimир, and Suzdal. In their travels they spoke to a number of Russians and found them friendly and generous. As with most prospective visitors to the Soviet Union, a complete itinerary and list of reservations confirmed by Intourist, the official Soviet travel bureau, were prerequisites to obtaining a visa from the Soviet Embassy. However, upon arrival, they found that confirmed reservations often don't mean



RUSSIAN MATHEMATICIAN Arkhangelski (left) was host to Howard Wicke (5261) on several occasions during the Sandian's stay in Moscow.

a thing—yet a minor change in itinerary required standing in lines for hours to see the appropriate Intourist representatives.

After presenting his paper, Mr. Driver met and talked with about 20 other mathematicians, mostly Soviet, working in the same or related fields.

"On one of the last days of the Congress," Mr. Driver said, "we and some other foreigners interested in this field received an impromptu invitation to visit the home of Prof. S. B. Norkin, a Soviet mathematician. We realized later that since he had no phone, his wife (a physician) had no knowledge that there would be 10 extra people for dinner until we arrived at the apartment door. But she took it in stride. Her mother-in-law and two of the other Soviet mathematicians' wives helped her prepare a fine dinner of cold cuts, canned fish, salads, caviar, cake, and wines."

"Most of us present that night had previously 'known' each other only through the published mathematical literature. But now Prof. G. A. Kamenskii toasted the visitors 'who had been only abstract notions and were now known to be such nice people.' He added his hope for greater friendship among the scientists and all peoples of our countries."

All three Sandians agreed upon the benefit derived from meeting mathematicians from other countries and observing their work and method of approach on problems.

Sandia Speakers

G. O. Hawley (2433), "Basic Concepts of Acceptance Sampling," 18th Annual Rutgers Conference on Quality Control, Sept. 10, New Brunswick, N. J.

P. A. Nicovich (2212), "ASA Y14.5-1966—A New Unified American Standard," annual meeting of the Standards Engineers Society, Sept. 12-14, Atlantic City, N. J.

W. H. Curry and J. F. Reed (both 9322), "Measurement of Magnus Effects on a Sounding Rocket Model in Supersonic Wind Tunnel," Second Biennial American Institute of Aeronautics and Astronautics Aerodynamic Testing Conference, Sept. 21-23, Los Angeles.

H. S. Levine (5234), "High Temperature Metallic Oxidation Reactions: III. Boundary Layer Effects," American Chemical

Society, Sept. 11-16, New York City.

D. M. Mattox (1123), "Film Deposition by Exploding Wires," Gordon Research Conference on Thin Films, Aug. 28-Sept. 3, Tilton, N. H.

W. W. Troy (3243), "Training Plant-Protection Personnel," annual seminar of the American Society for Industrial Security, Sept. 19-22, Philadelphia.

Dan Parsons (7224), "SPIE Development Procurement, How? Not What," Society of Photographic Instrumentation Engineers, Aug. 25, St. Louis.

John P. Grillo (3311), "Semi-Quantitative Spectrographic Method for Swipe Analysis," Rocky Mountain Section, American Industrial Hygiene Association, Sept. 30, Denver, Colo.



PRACTICE SESSION—Coaching a Young America Football League team through a workout are Sandians (from left) Joe Dal Porto, Tony Lopez, and Cliff Kinabrew. First game of the new league will be played at 9 a.m. tomorrow at the Heights Community Center.

Sandians Help Organize Young America Football League; Games Tomorrow

Several Sandians will be screaming their heads off tomorrow.

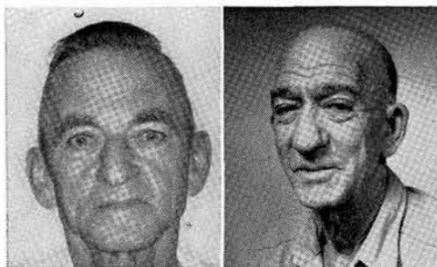
The occasion will be the opening games of the Albuquerque Young America Football League. The league, similar to Little League baseball, was organized in Albuquerque recently with a number of Sandians instrumental in getting the ball rolling.

Cliff Kinabrew (7244) is secretary of the league. Tony Lopez, Jr. (4212-2), Bernie Tiefa (9421), and Joe Dal Porto (1131) are coaches of teams. Tom Towne (5133) is a game official.

Eight teams have been organized. After a month of practice, the first league game will be played tomorrow at 9 a.m. at the Heights Community Center, 823 Buena Vista Dr. SE. Another will be played at 1 p.m. The schedule will continue with two games each for several Saturdays.

Four of the eight teams are heavyweights—100 pounds or over. The other four teams are lightweights, less than 100 pounds. The players are in the fifth through eighth grades. The league is designed to supplement regular school recreation and physical education programs. School authorities have endorsed the program.

Two goals are fundamental in the program, according to Cliff Kinabrew. "First, we will teach sportsmanship," he says. "And then we will teach football—11-man tackle football. This should give boys who want to learn the game an opportunity. As it stands now, the school system does not provide for this kind of football until the youngsters reach the ninth grade."



E. O. Baca

O. H. Schutt

Deaths

Emiliano O. Baca, a janitor in Division 4574, died Sept. 11 after a long illness. He had been on a leave of absence since April 6.

He had been employed at Sandia since 1952.

Owen H. Schutt, a retired Sandia employee, died Sept. 5 after a lengthy illness. He had retired from Sandia last March after 14 years as a carpenter in Maintenance organizations.

Sympathy

To Clarence R. Ray (2551) for the death of his father in McCarty, N.M., Aug. 26.

To Cid Dalin (3465) for the death of his mother in Montana recently.

To Gladys Goodlive (5231) for the death of her father in Independence, Mo., Aug. 31.

To Jean Gillette (3132) for the death of her mother in Vacaville, Calif., Sept. 6.

To R. F. Utter (3132) for the death of his father in Long Beach, Calif., Aug. 22.

Quick Action by Ed Stang Saves House From Flames

Quick action with a dry chemical fire extinguisher by Ed Stang (7513) prevented serious damage to a neighbor's house when a car smashed into it recently. The owner of the house, Mel Pliner (9214), was out of town with his family when the incident occurred.

It was about 10:30 at night, Ed recalls, and he was getting ready to call it an evening when he heard the roar of the car in the street, the sound of tires squealing, and then the crash of impact. The car jumped the curb, knocked down a block wall, and plowed into the carport of the Pliner house.

Ed rushed outside and saw flames leaping from the silhouette of the car. He yelled for his wife to call the police and grabbed his fire extinguisher from the storage room by the kitchen.

As he ran across the street, Ed took the safety wire off the extinguisher and tried a test burst. In less than a minute, he had smothered the flames with the extinguisher.

Apparently the gas line had broken in the front of the car and gasoline had leaked over the motor and ignited. Flames roared from the motor compartment and from underneath the car.

"I was worried whether the gas tank would go," Ed said, "but the chemical cloud quickly smothered the fire. The occupants of the car—four teenagers, police learned later—fled from the scene immediately after the crash."

Ed purchased the extinguisher through an arrangement made by Sandia during Fire Prevention Week a couple of years ago.

"When you need one of these, you really need one," Ed says. "Water from a garden hose would have been ineffective against this kind of gasoline fire. We learned later that the flames were close to a storage area containing paint, thinner, and cleaning solvents. If that had gone up, Mel could have lost his house."

The same type of small, effective chemical fire extinguisher will be made available to employees during Fire Prevention Week in October.

Arrangements have been made by Field and Plant Operations Engineering Division 4544, which conducts Sandia's fire prevention program, for employees to order the extinguisher at a special price. An Employee Bulletin in October will supply full details.

"I'm going to buy another one," Ed says, "to keep in my car."

Take Note

Lea Hill (2234) plays the role of an opera singer and Cim Adams (1431) is the vocal director of the Albuquerque Light Opera's current musical production of "Little Mary Sunshine" which opened last night at the Playhouse, 113 Alvarado, NE. The musical is a modern satire of the old shows with an outdoor setting of the Colorado Rocky Mountains. Performances are scheduled for Sept. 23, 24, 29, 30, and Oct. 1. Reservations may be made by calling 255-0077.

The University of Nebraska Alumni Club of New Mexico will hold its annual picnic Sunday at Dead Man's Flat in the Manzano Mountains. The area is one mile south of Pine Flats on south Highway 10. Former students and their families are invited. Games are planned for all age-groups. Members of the executive committee include Art Witte (7324), Bill Kampfe (7344), Dale Buchanan (7331), and Bob McCallum (2412).

Technical illustrator Gordon Snidow (3463) was elected secretary-treasurer of Cowboy Artists of America during the group's recent combination meeting-showing in Oklahoma City.

More than 8500 persons attended the opening weekend showing of paintings by the artist-members at the Cowboy Hall of Fame. The exhibit will continue through September. Both Gordon and George Marks (also 3463) have paintings with Western themes on display.

The Tumbleweed Square Dance Club's fall adult square dance class will start at 7 p.m. next Thursday at the Albuquerque Square Dance Hall, 2410 Washington NE. New members will be welcomed at the first session and the following Thursday, Oct. 6. Sandians interested in obtaining more information about the club may contact Ray Clark (5221) at 298-6502.

W. H. Curry (9322) attended the Advisory Group for Aerospace Research and Development (AGARD) Specialists' Meeting on "The Fluid Dynamic Aspects of Ballistics," held at the College Universitaire de Mulhouse, Mulhouse, France, on Sept. 5-8.

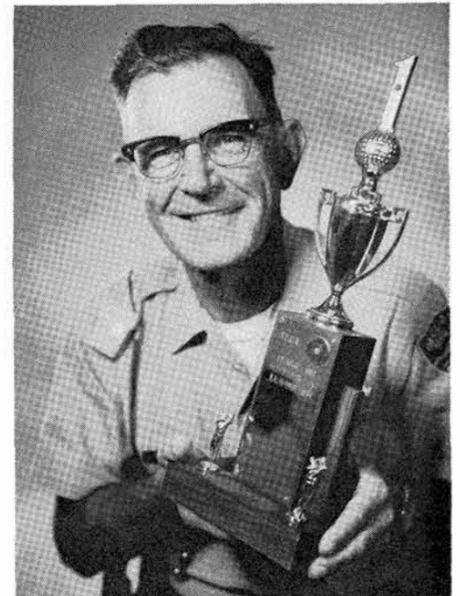
Sandians A. Y. Pope (9300) and W. B. Pepper (9324) attended the first American Institute of Aeronautics and Astronautics (AIAA) national specialists conference on Aerodynamic Deceleration Systems in Houston, Sept. 7-9.

The meeting was held jointly with the AIAA/IES/ASTM Space Simulation Conference. Mr. Pepper was chairman of the arrangements subcommittee for the parachute conference.

One of the speakers was Frank White of the University of Rhode Island who presented a theoretical paper on parachute-vehicle stability which he developed while working as a consultant to Sandia's Aero and Thermodynamics Department.



PRESIDENT LEE STINNETT (4517) of the New Mexico Chapter of AIEE received the third place Region IX Chapter Development Program Award during the association's annual conference in San Francisco. The presentation was made by Frank J. Johnson (left), national AIEE director of chapter development.



HOLE-IN-ONE—Jim Kimbrough (3242) will be added to the list of Sandians on this trophy who have shot a hole-in-one during Sandia golf league play. Jim sank his historic shot on the 192-yard ninth hole at Arroyo del Oso Sept. 10.

Two Accidents Down Lab Safety Record

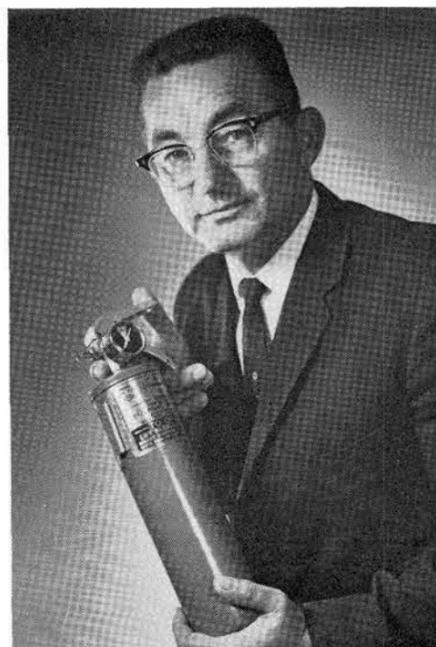
Two accidents last week caused minor injuries to two employees.

On Thursday, Sept. 15, an employee was walking to Bldg. 870 in Tech Area I with two co-workers. They were talking as they stepped off a curb to cross a street. The one employee missed his footing and turned his ankle. They completed their business in Bldg. 870, and the injured employee asked for a ride to Medical. He was treated and told to spend a day at home recuperating.

On Friday, Sept. 16, an employee was injured in a traffic accident.

He was driving south on Main Street when another vehicle failed to stop at the intersection of Main and B streets. The other car crossed in front of the Sandian, hit the curb on the far side, spun around and struck the Sandia vehicle on the left side. The Sandian was shaken up. He was examined at Medical, treated, and told to report back on Monday. However, some pain developed over the weekend, and the employee reported to a local hospital (as he had been instructed, if complications did occur). The examining doctor recommended bed rest.

At the time of the first accident, Sandia Laboratory employees had worked 21 days or 735,000 man hours without a disabling injury.



HANDY FIRE EXTINGUISHER and the quick work of Ed Stang (7513) saved a neighbor's house from serious fire damage recently when a car smashed into the carport and leaking gasoline ignited.

Service Awards

15 Years



L. G. Adam
2526



O. H. Berlier
4513



Cora Callender
7216



A. J. Clark, Jr.
9330



M. J. Contreras
4573



J. B. Duran
1131



R. R. Harnar
2113



W. D. Ingram
5133



Louise Major
5113



B. C. McKay
4221



C. C. Montano
4622



R. J. Mueller
2234



D. L. Rost
3211



L. R. Sladek
3241



R. C. Smelich
3416



K. S. Spoon
4300



P. L. Stewart
8118



E. W. Swanson
6021



R. E. Whitford
1433



Don Williams, Jr.
7311



C. W. Young, Jr.
7256

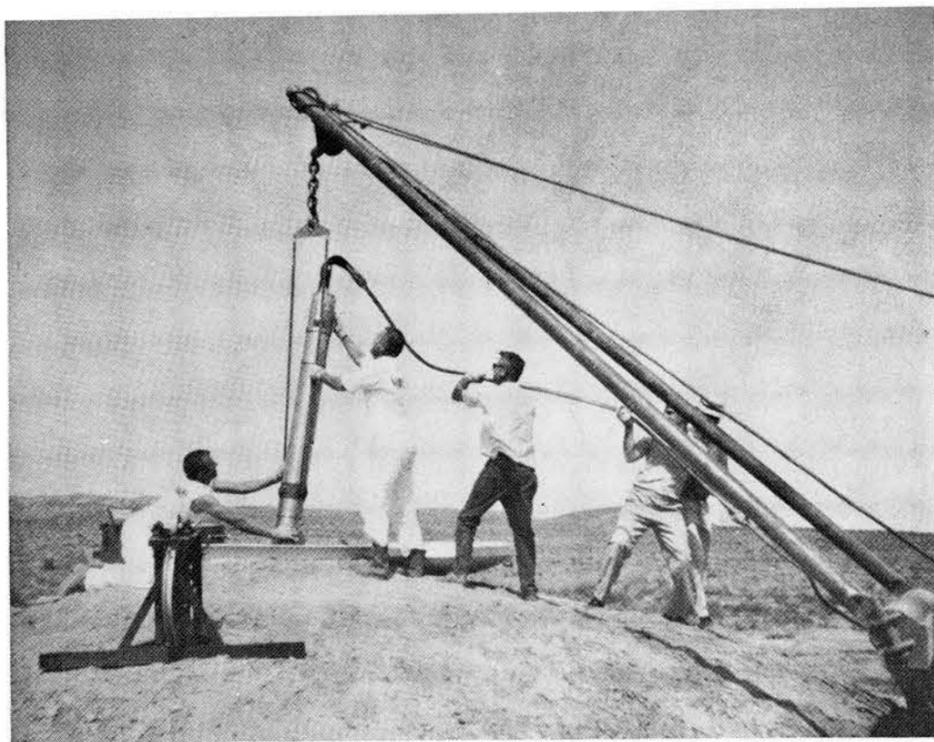
10 Years

Sept. 23 - Oct. 6

W. R. Caldwell 2451, Nick Padilla 3416, W. B. Robertson 4234, G. C. Garcia 7344, D. E. Salas, Jr. 9411, R. W. Corwin 5242, L. L. Phillips 7523, W. Schuessler 2411.
J. W. Williams 4252, Geomy Pohl 4614, R. L. Terwilliger 2126, D. R. Johnson 1131, O. E. Carter 2122, Palma E. Oliva 2234, G. J. Uhl 4213, L. E. Williams 4213.
E. G. Stewart 4512, W. H. Phelps 4513, H. J. Stein 5211, Angela C. Graner 3126, O. J. Otero 4231, A. D. Foster 9325, G. G. Swagerty 2126, C. F. Schroeder, Jr. 2134, and H. J. Gregory 5632.

Congratulations

Mr. and Mrs. Robert C. Prew (2433), a son, Paul Michael, Sept. 7.
Mr. and Mrs. E. John Sutton (9211), a daughter, Lisa Lynette, Sept. 10.
Mr. and Mrs. Harold Myers (7336), a son, Patrick John, Sept. 9.



UNMANNED SEISMIC OBSERVATORY package was lowered into a 200-foot borehole southwest of Vernal, Utah, recently by personnel from Seismic Systems Division 9233. The nine-foot-long package shown being guided through a small underground shelter into a borehole contains the long and short period seismometers. Another Sandia-designed prototype of the USO unit was installed near Fairbanks, Alaska, this Spring for evaluation of the effect of permafrost. The units are checked by personnel of Seismic Systems Division every three to four months. Left to right are M. D. Weaver (2213 on loan to 9233), E. R. Stepka, R. S. Reynolds, P. A. Fjelseth (all 9233), and J. K. Linn (9234).

ACTIVATING SEISMIC SYSTEM for approximately 120 days of unattended operation is H. M. Dumas, supervisor of Seismic Systems Division 9233. Electronic devices and tape recorders are housed in the small underground shelter. The seismometer package is contained in a borehole below the shelter. The prototype observatory was developed by the Laboratory for the Advanced Research Projects Agency of the Department of Defense for the detection, location, and possible identification of seismic sources. The system is expected to be evaluated by early 1967.



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LAB NEWS

SEPTEMBER 23, 1966

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

'65 CHEVELLE Supersport wheel covers, \$20. Vigil, 8027 Constitution NE, 296-3590.
'54 RANCH WAGON 292 engine, \$75; Army Jeep, recent engine overhaul, \$450. Landavazo, 299-3422.
'61 PORSCHE Super Coupe, \$1800. Manweller, 298-5673.
BOTTOM HUTCH, hard rock maple. Barton, 265-7219.
ELECTRIC CHURN, \$5. Rutledge, 282-3151.
BUFFET B-FLAT clarinet, \$95. Newman, 299-2729.
BOTTLE COLLECTORS: old handblown whiskey bottles, found buried near a New Mexico ghost town. Riech, 268-4213 or Burd, 296-4124, after 4.
BUNK BED w/springs-mattress and matching chest of drawers, \$85; K&E 32x41 drafting table w/K&E parallel straight edge, \$35. Vinson, 255-6962.
2-BDR. HOME, NE Heights near Fatima & Jefferson schools, walled backyard, sprinklers, draperies and carpeting, central heating, AC. Stricker, 256-3830.
STRING BASS w/cover and bow, \$250. Ray, 299-1253 after 6.
FLYING CLUB membership, Rainbow Flyers, Inc., 1959 Cessna Skylane. Presently five members total. Risse, 299-5002.
SPORTSLINER CAMPER, fits long wheelbase narrow box Chev. or GMC, \$150. Harker, 282-3435.
PINGPONG TABLE: camping lantern; garden cultivator; adjustable trailer hitch; Oldsmobile shocks; snow chains; cartop carrier. Galbreath, 898-0544.
SPRAGUE-CARLETON maple dining table, 4-legged, drop leaf, 42x26 leaves down, opens to 72x74, plus two leaves. Sitts, 298-5246.
MALE CANARY and cage, \$10; fish tank, 15-gals., fish, pump, thermostat, heater, etc., \$25. Slesinger, 299-4626.
CIVIL WAR SWORD, \$18; Ruger single six .22 Frontier, new, \$55; want old hunting knives. Smitha, 299-1096.
'62 TR-4 ROADSTER, light blue, white rag top and tonneau cover, new white sidewall tires, \$1195. McCloskey, 299-1851.
CORLON COMMODORE, portable flushing toilet for travel trailer or camper, \$25. Dye, 299-2823.

IRON RITE ironer, square coffee table. Gallegos, 344-5441 after 5:30.
SAM SNEAD Blue Ridge woods, No. 1 and No. 3, \$10 ea. or both for \$17. Morrison, 855-6244.
LAMBRETTA MOTOR SCOOTER, consider trade for FM tuner or what have you, sale price \$40. Rose, 298-6238.
PITNEY BOWES folding machine. Garcia, 877-4264.
BOY'S 27" Schwinn 10-speed green bicycle w/thorn-proof tires and carrier, \$50. Merrillat, 242-4873.
WINCHESTER .22 loading dies, various caliber; size 10 football gear; Trick Track Mousetrap game, trade for fly tying gear. Butler, 299-5626.
STUDENT FLUTE, Conn Director model, \$85 or make offer. Spatz, 299-0410.
VIBROPLEX BUG, \$10; two folding steel cots, \$5 ea.; 7.65 MM Mauser, \$15; .22 single shot rifle, Remington, \$12. Schowers, 255-9279.
LARGE umbrella type clothes pole w/new ground holder, \$7. Gauere, 299-5806.
HO-gauge model train, track mounted on 4x9' board, complete and in running condition, \$40; Book of Knowledge encyclopedia, \$20. Pardee, 255-1998.
3-BDR., paneled den w/fp, 2 baths, entry foyer, carpet, drapes, hw floors, large covered patio, dbl. garage, sprinklers. Villanueva, 299-9219.
'58 CHEVROLET 4-dr. Belair, PS, stick shift, R&H, w/w tires. Sherwood, 2326 Hoffman NE, 299-2169.
BABY CRIB w/mattress, \$10. Fewell, 2816 Dakota NE, 268-9084.
GE double-door refrigerator-freezer, \$50 delivered; GE upright vacuum sweeper, \$10. Cave, 299-5066.
9x12 RUG, non-reversible, green, \$10. Navratil, 299-3355.
CELLO, 3/4 size w/case, \$100. Champion, 299-5821.
TWO RCA 21" TVs; one at \$15 needs power supply work, one at \$35 in operating condition. Schneider, 299-3769.
2-HORSE TRAILER, Miley Circle M. 1 yr. old, hauled less than 500 miles, \$690. Bushmire, Los Lunas 636-2872.
REFRIGERATOR, electric, \$40. Warner, 298-1746.
'56 FORD station wagon, V8, OD, AC, recent engine-OD-transmission overhaul, \$350. Harnar, 299-3400.
CLARINET, Bundy w/case and music stand, original price, \$135. Meyer, 344-3094.
POTTY CHAIR, stroller, bassinette, bathinette, Baby Tenda, etc. Cunningham, 344-9841.
APPROX. 9 sq. yds. new waffle rubber carpet padding; 7 pc. dinette set; tree lamp; 21" console TV; wading boots size 9 1/2. Miller, 255-4452.
DINETTE SET, maple, 5 pc., \$50; guitar, steel, electric, w/amplifier, Magnetone, \$25. Crumley, 299-5293.
BUNDY CORNET w/case. Heidrich, 344-7669.
METAL DOG TRAVELING CAGE. Dusek, 299-5538.
'62 CHEV. TRAILER HITCH, \$7; mail box \$1; air defl. for st. wgn., \$5. Roberts, 255-9527.

RECORD CHANGER, Collaro (English) w/Shure stereo cartridge, \$10; amplifier, monaural, high gain, high fidelity, RCA, \$10. Merritt, 299-6650.
LEAVING STATE, Roberson 3-bdr., 1 1/4 baths, den, redecorated inside and out, pitched roof, corner lot, built-ins, 11201 Prospect NE. Shields, 298-8028.
SIMMS RANCH, Los Poblanos Estates, 3-acre residential lot w/old trees, paved road, terms, evenings and weekends. Stein, 242-2967.
WINCHESTER Model 70 (300 H&H Magnum) reloaded for Weatherby 300 Magnum; Mannlicher style stock; 6X (J. Unerth Condor) scope; Red-field mount; case; sling; 74 rounds, \$135. Suchland, 1100 Altez St. NE.
MINIATURE BLACK AKC registered poodles, 5 weeks old, take your pick of litter for delivery in one week, \$35-85. Workman, 298-8201.
'50 CHEV. pickup with 235 engine, body solid. MacGibbon, 247-4479.
GARAGE SALE, Saturday, Sept. 24, furniture, electric appliances for kitchen and home, drapes, luggage, etc. Parisi, 3112 Florida NE.
SX 71 HALLICRAFTER general-coverage receiver, \$80; Johnson Ranger transmitter \$85; 5 gal. aquarium, complete, \$16; mobile rig, A54 Elmac, Morrow converter. Eagan, 299-0196.
FREE—6 boxer-collie pups, 6 weeks old, 4 male, 2 female. Neas, 11617 Snow Heights NE. 299-1764.
ORIENTAL COCKTAIL table, other oriental items. Also antique cut glass and pressed glass pieces. Devor, 298-9743.
'64 MGB ROADSTER, \$1300. Romaine, 299-4758.
\$350 DOWN on house in NE Heights, 3-bdr., 1 1/2 baths, carpeting, drapes, patio, att. garage. Bowen, 255-8195.
'60 OLDS, PB, PS, R&H, \$590. Freese, 299-4967.
3-DRAWER chest, bookcase, and desk or vanity—one unit—white Formica, \$60; refrigerator w/top freezer, \$35. Crosley, 255-7249.
AQUARIUM, 10 gal., complete w/fish, accessories, and decoration, \$30. Littrell, 256-3720.
EICO 460 scope, \$50; Hallicrafters S40B rcvr, \$50; Win. Model 12 3" mag w/polychoke, \$100; Dumbot 21" TV, needs work. Beasley, 268-7386.
CHIUAHUA, female; black female puppy, 1/2 Chihuahua, 1/2 toy poodle. Villa, 268-0568.
'58 VW SEDAN, radio, new w/w tires, \$475 or would consider trade for Corvair. Netz, 282-3607.
CAMP STOVE, \$7; lantern, \$7; tent heater, \$7; electric heater, \$5; girl's bicycle, \$18; accordion, 24 bass, \$50. Eversgerd, 256-6345.
TWO PUPPIES, \$7.50, will be small dogs, mother is beagle, 6 weeks old, one male. Anderholm, 255-6835.
LARGE PLATE glass mirror; 8-pc. butternut and pecan dining set; 70" drop leaf walnut coffee table; other pieces. Machen, 298-1698.
'62 T-BRD, factory air, all power, \$1700. Smith, 299-1665 after 5.
BICYCLE, girl's standard, \$15. Stewart, 298-0439 after 5.
TROMBONE, Olds, \$125. Kohut, 298-0695.

'57 CADILLAC Coupe DeVille, all power and factory AC, nearly new whitewalls, \$495. Wilson, 298-0049.
'61 FORD Country Squire, all power equipment, R&H, almost new tires, \$875. Selph, 298-7633 or 299-6833.
3-BDR, den w/fireplace, LR, DR, dinette space in kitchen, utility room. Matlock, 6207 Aztec Rd. NE, 255-0109.
REFRIGERATOR, 9 cu. ft., Crosley, \$30; I2y transistor output car radio, \$10. Pardo, 299-7214.
VIEW CAMERA, 4"x5", F4.5 lens, \$50; AM-FM tuner, amplifier, turntable and 15" speaker, \$50; bed for traveling baby, used twice, \$10. Drake, 296-3548.
THREE MINIATURE poodle pups, three months old, AKC registered. Smartnick, 898-2326.
\$900 TOTAL price for 2-bedroom, 8'x44' new Moon trailer, see at 1542 1/2 Gonzales Rd. SW. Cotter, 265-8631.
CHILD'S SEAT belt harness, made by Rose Mfg. Co., \$3. Estery, 256-9251.
TWIN SIZE box spring, mattress, and headboard, \$40. DeLorris, 299-5384.
14 KARAT diamond ring set; 17 diamonds in engagement ring, 8 diamonds in wedding band, \$400 appraisal, sell for \$300. Fink, 877-1127.
'53 FORD 4-dr., AT, \$85; 2'8" x 6'8" panel door, \$3; 2'8" aluminum screen door with hardware, \$5. Fuller, 299-4785.
'65 RAMBLER Classic, 2-dr., 6 standard, economy car, \$100 under average retail, about \$1500. O'Neal, 298-2859.
'56 UNIVERSAL Jeep w/factory made cover, 4-wheel drive w/locking hubs, tow bar. Williams, 298-4602 after 5.
'63 CUSHMAN motor scooter, 2-speed, low mileage. Beyeate, 299-6157.
TWO WEANLING fillies, registered half Morgans, one bay, one dark chestnut, good riding or driving prospects, \$150 each. Ault, 282-3280.
3-BDR., walled yard, fruit trees, 10x13 storage bldg., AC, drapes, stove, take over payments \$78 and low equity. Glanzer, 256-1302.
'65 STINGRAY, 396, 425 hp, 12,000 miles, disc brakes, HD suspension, luggage rack, AM-FM, 5 new Goodyear Blue Streaks, 4-speed, \$4000. Mueller, 299-1079.
30:06, 1903A3, \$25, w/Lyman peep sight, \$40; 30:06 GI Ball ammunition non-corrosive \$1.50/box; Peters .308 hunting ammo, \$3/box. Mattox, 296-4149.
DINING ROOM set, 7-piece, dark color, including buffet, \$25. Sanchez, 242-4984.
PUSH BUTTON car radio w/deluxe antenna, 6 volt, 6x9 inch dual speaker, best offer over \$20. Mackay, 298-1972.
CLEANING MACHINE, recirculating pump, tank is 18" deep, 18" wide, 36" long, \$30. Disch, 299-1201.
OR TRADE, '57 Mercury station wagon; 20" convertible bike-tricycle. Naumann, 877-6640.
'55 FORD truck, new paint job, \$325 or reasonable offer; single garage door; 8" table saw. Amador, 242-7728.
SWEDISH MAUSER, Model 94 carbine, 6.5x55, bolt action, with gun case and shells, \$25. Eglinton, 256-1921.

3-BDR., 1 1/2 bath, garage, pitched roof, patio, near schools, shopping, city and Sandia busline, \$14,000, 4005 Palo Duro NE. Hastings, 344-6818.
'63 FORD 1/2-ton pickup, 4-speed trans., 6-cyl. engine, 16" tires, 35,000 miles, new paint, \$970 (\$100 above NADA loan value). Williams, 298-4602.
ROLLEIFLEX, Zeiss Tessar 3.5 lens, new Rolleikin adapter for 35 mm, GE exposure meter, Kaligar telephoto and wide angle auxiliary lenses, leather carrying case, \$145. Prohaska, 298-8497.

WANTED

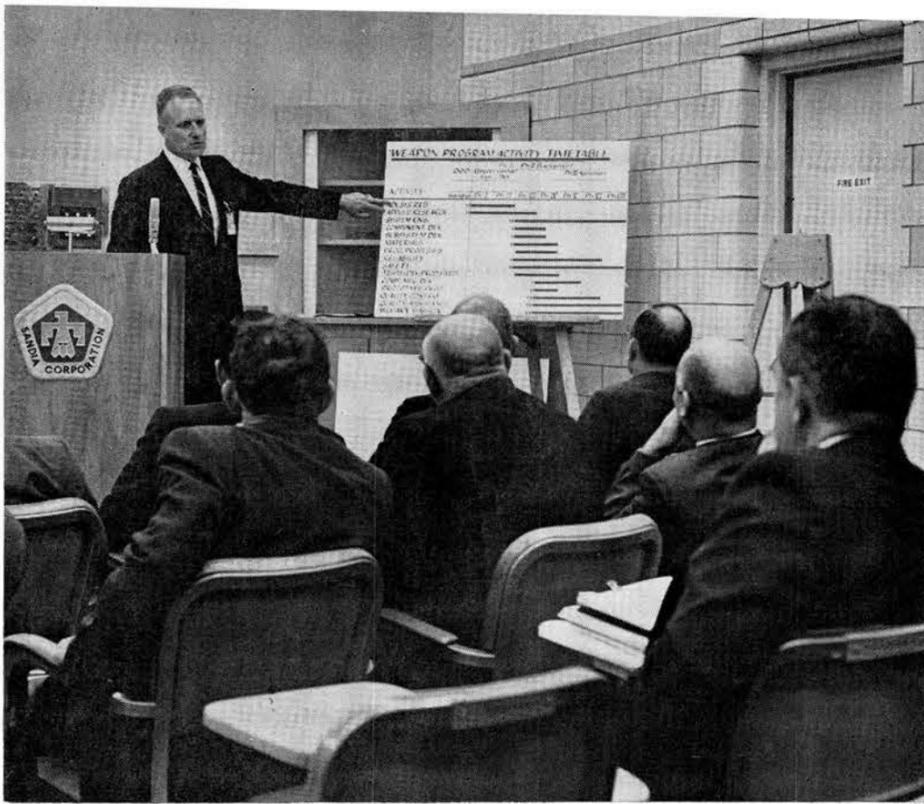
PLAY HOUSE for small girl; 3-4 horse gasoline engine, horizontal shaft, in good condition. Everett, 264-6877.
PARTS for Morris Minor, will buy complete car or separate parts. Cowham, 298-4249.
USED 4-5hp rotary mower; pool table; portable weed sprayer; 2" electric well pump. Roth, 877-4997.
HOME FOR KITTENS, one black on white, one cafe au lait, now six weeks old, will deliver. MacCallum, 242-4602.
HEATHKIT SB10 single sideband adapter, any condition. Day, 256-6360.
RIDE or car pool from vicinity of Echo Ridge Desert Terrace to vicinity Bldg. 880. Johnson, 264-3239.
CHILD TO care for in my home, weekdays, SE Heights area near Bataan. Mrs. Moss, 268-4240.
BABY SITTING in my home, part or full time, NE Heights area, walled yard, only minutes from Base. Orth, 256-3236.
GOOD HOME for male German Shepherd cross pup, 9 weeks old. Corli, 255-5683.
BABY SITTING in my home 7:30 a.m. to 5 p.m., hot lunch, vicinity of Matheson Park School, 10900 Los Arboles Ave. NE. Almaraz, 298-0817.
RIDER for carpool, share ride from vicinity of Copper and Juan Tabo NE to Bldg. 860 parking lot. Bartlett, 299-4861.

FOR RENT

3-BDR. HOME, NE Heights, walled yard, carpeted throughout, near schools, will sell. Hackard, 298-4613.
3-BDR. ROBERTSON, 1 1/4 baths, carpeting, drapes, landscaped, AC, available Oct. 1. Clark, 299-6410.
FOR LEASE near Los Lunas, large adobe, 4-bdr., 1 1/4 bath, WBFP, AEK, 2 acres, lots of shade. West, 865-7454 Los Lunas, after 5:30.
3-BDR., 1 1/4 bath, AC, walled yard, covered patio, carpeted, stove, refrig., water paid, no garage, \$120, 9014 Claremont NE. Cover, 268-0921.

LOST AND FOUND

LOST—three decks IBM cards; pink and gold cameo brooch w/pearls; book "Stress Waves in Solids"; pipe tamper. LOST AND FOUND, Bldg. 610, tel. 264-2757.
FOUND—silver skull ring; pink and yellow gold earring. LOST AND FOUND, Bldg. 610, tel. 264-2757.



LABORATORY TECHNIQUES AND METHODS used in support of various weapon programs are described by L. J. Heilman, Director of Quality Assurance 2100, during a recent meeting with U.S. Navy and Navy contractor personnel responsible for the development of a new non-nuclear torpedo. The chart outlines a general timetable Sandia uses in the phase development of different weapon systems.

Sandia Lab Serving as Consulting Agency in New Weapon Program

Navy and Naval-contract personnel responsible for the development of a new torpedo system recently attended special seminar sessions at the Laboratory. The meetings are one phase of Sandia's role as a consulting agency for the U.S. Navy.

The new assignment is unique for Sandia because it was requested to serve solely in a consulting capacity, with no design or development responsibilities, on a non-nuclear system.

Sandia is to provide the Navy's Anti-Submarine Warfare Systems Project Office with the techniques and methods Sandia uses in developing assurance programs for weapons. The specific areas include weapon system reliability, quality assurance, stockpile surveillance, and safety. The Laboratory will also provide consultation as requested in such areas as manufacturing development engineering, design information, and preparation of manuals.

The meeting was arranged to brief the

torpedo weapon system personnel on Laboratory procedures in these fields.

Robert H. Harnar (2113), the Sandia project leader, opened the meeting with brief introductions.

L. J. Heilman, Director of Quality Assurance 2100, then outlined Sandia's quality assurance program, noting that it is based on the concept that reliability of a weapon system is assured only through a wide range of development tests, manufacturing control, and quality test efforts.

Other speakers and their topics were J. M. Wiesen (2150), "Weapon System Reliability"; T. D. Harrison (2434), "Quality Control"; R. E. Reed (1544), "Safety"; and E. L. Roper (2133), K. E. Weidner (2111), and D. S. Dreesen (2122) discussed other facets of quality assurance.

Attending the meeting were personnel from Anti-Submarine Warfare Systems Project Office, U.S. Navy; Ordnance Research Laboratory; Operations Research, Inc.; Naval Underwater Weapon Research and Engineering Systems; Naval Weapons Evaluation Facility, and Fleet Missile System Analysis and Evaluation Group.

Coronado Club Activities

Octoberfest Scheduled at Club Oct. 1, Famous Hofbrau Menu Will be Served

October first will bring on Octoberfest to the Coronado Club.

The famous Hofbrau menu will be spread on the buffet tables beginning at 7 p.m. Dancing is scheduled from 9 to 1 with the MBC Trio providing the oom-pah-pahs. Cost to members is \$3, guests \$3.50. Tickets must be picked up at the Club office by 9 p.m. Sept. 30.

One of the more popular events at the Club, the Coronado Hofbrau menu is famous for sauerbraten, bratwurst, and eisbein mit sauerkraut. It follows the finest German tradition.

* * *

Las Vegas Weekend

Deadline for making reservations for the Oct. 14-16 Las Vegas weekend is Monday, Sept. 26. The travel package includes round trip air fare to Las Vegas, two nights at the Hacienda Hotel, one dinner, brunch, cocktails, entertainment, and a few other goodies. The price for couples is \$74.25 per person, singles \$86.85.

* * *

Social Hours

Tonight, Rex Elder will be on the bandstand. The popular chuckwagon roast beef and shrimp buffet will be served. Cost to adults is \$1.75, \$1.50 for children.

On Friday, Sept. 30, Tommy Kelly will provide the happy music and the Mexican buffet will be served.

On Friday, Oct. 7, the Elaine Harris group will be on the bandstand and the chuckwagon roast beef and shrimp buffet will be served.

* * *

Bowling

The Coronado Club mixed league and the women's league need substitute bowlers. (Club members only). Both leagues provide free bowling for subs. The mixed league rolls at San Mateo Lanes on Wednesdays starting at 6:30 p.m. The women's league bowls at Lomas Bowl Thursdays beginning at 6:30 p.m. If you are interested in women's league, call Mina Carnicom (9326) at 283-3421. For mixed league, call Ken Carmichael (4135) at 299-4368.

* * *

Special Swim Rates

The Coronado Club Board of Directors reminds all those eligible for Club membership that to qualify for the special reduced swimming rates next summer, membership must be continuous from Sept. 1. Retroactive membership to Sept. 1 is still permissible in most cases. Check with the Club office. Coronado Club membership dues are \$25 annually, \$13 semiannually, or \$2.50 per month. Family swimming rate is \$5 for continuous membership, \$28 otherwise.

If You Win, Call Us

Any Sandian who takes a prize in the New Mexico State Fair competitions is asked to contact SANDIA LAB NEWS office, Bldg. 800, Rm. 112, telephone 264-7841.

New Process for Lettering Switches Will Save Company \$6344 in 2 Years

A cost improvement action amounting to \$6344 for the next two years was credited recently to T. A. Allen and E. M. Hopkins, both section supervisors in Electrical Division 4233.

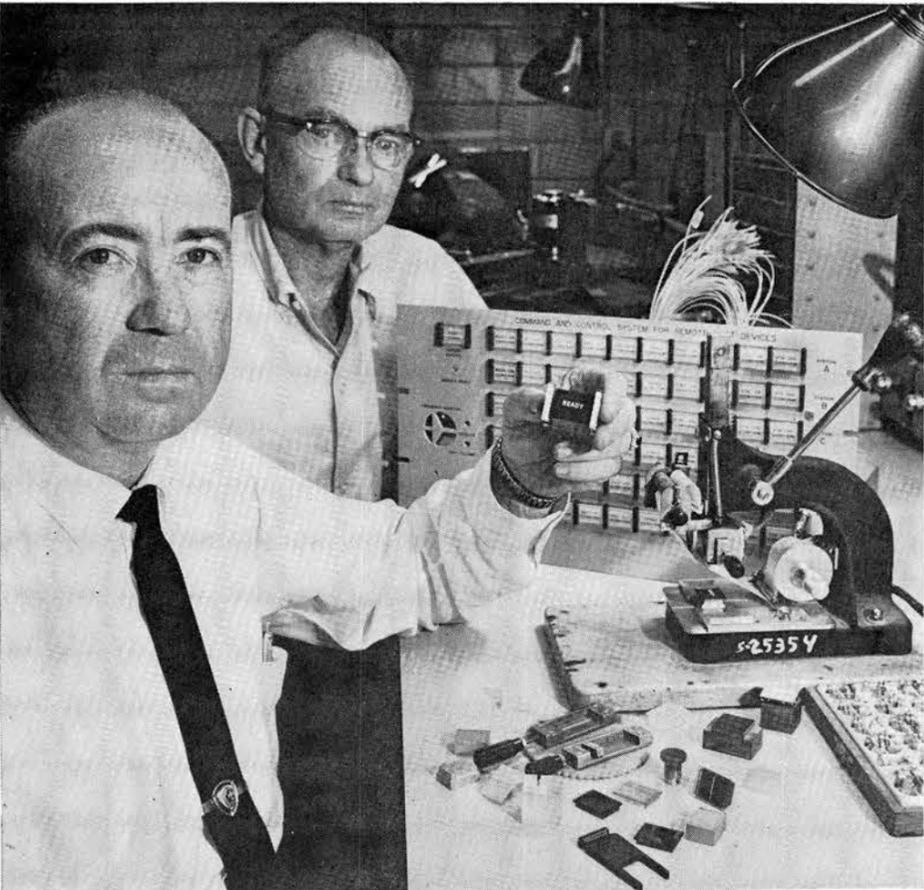
The men devised a new way to apply lettering to the small plastic panels used with indicating switches in standard electronic racks. These panels, when lit by the switch, tell the operator the status of various circuits in the rack such as "on," "off," "ready," etc. For the prototype instrumentation designed and built for Sandia purposes, the racks might have as many as a hundred indicating-switches with that many individual designations. In the past, the words on the panels have been engraved one letter at a time using a pantograph engraver.

Most of this work was performed by electronic apprentices in Section 4233-2 under Mr. Allen. It was slow work. Setup time was about 15 minutes for each panel, engraving averaged about five minutes, and then filling the engraved letters with color required another minute.

Now the whole job is done with movable metal type and a hot stamping machine formerly used to mark electrical cable. Mr. Hopkins designed some jigs which allow the hot stamping machine to be used to mark the plastic panels. Registration marks on the jigs allow the operator to quickly position one line of words or several lines on the panel. Color is controlled by the tape used for stamping. The process is quick, efficient, and the quality of the finished lettering is entirely acceptable. It looks professional and is easy to read. Setup time is three minutes and stamping can be performed in 15 seconds.

The cost savings figure is based on the average work load of the shop and difference in time from the former method to the new method. The savings are projected for two years.

Not counted in the cost improvement figures is the difference in the cost of the two machines — an engraving machine costs about \$900, a hot stamping machine about \$165.



HOT STAMPING MACHINE can produce words on the small plastic panels of indicating switches more rapidly than an engraving process. T. A. Allen, left, and E. M. Hopkins demonstrate their method which will save the Company \$6344 in the next two years. Mr. Hopkins holds a typical switch array from a Sandia electronic rack. This job has 62 panels. It would have required 22 hours of shop time using the old engraving method. Hot stamping took only three and one half hours, a savings of \$131.25 for the one job.



MIKE MICHNOVICZ (2555) and the MBC Trio will be on the Coronado Club bandstand Oct. 1 for the Octoberfest.

Sandia's Safety Scoreboard

Sandia Laboratory:
5 DAYS
175,000 MAN HOURS
WITHOUT A
DISABLING INJURY

Livermore Laboratory:
99 DAYS
468,800 MAN HOURS
WITHOUT A
DISABLING INJURY