



—Rear Adm. Emmet O'Beirne, USN—



—Maj. Gen. H. C. Donnelly, USAF—

# Sandia Completes Studies of Craters Made by 1951 Nevada Buster-Jangle Test

Sandia Laboratory has completed a Department of Defense-sponsored research and exploratory program at the site of two 1951 nuclear detonations at the Nevada Test Site.

The project was designed to ascertain the true crater depths resulting from nuclear detonations in surface and shallow underground emplacements which were the final experiments in the Buster-Jangle series in November 1951.

At that time, there was no effort to determine the "true crater"

—defined as the cavity existing momentarily before the fallback of materials displaced by the detonation. The crater remaining after the fallback is defined as the "apparent crater."

The Sandia explorations in the Operation Buster-Jangle craters contributed to the understanding of cratering effects of nuclear explosives.

The crater resulting from the Buster-Jangle surface shot was small, but the apparent crater from the shallow underground detonation was about 53 ft. in depth and 260 ft. in diameter. The 1.2-kiloton device, detonated

at a depth of 17 ft., moved some 37,000 cubic yards of earth.

The Sandia program at the Buster-Jangle craters involved trenching at the shallow crater and the excavation of a vertical shaft to a depth of approximately 30 ft. below the floor of the deeper crater. Observation, sampling, radiochemistry, and strata study techniques were used to determine true crater dimensions.

L. J. Vortman, of Underground Physics Division 5412, was in charge of the Sandia project, and W. E. Cordek, of NTS Activities Division 7256, handled on-site arrangements.

## FC-DASA Command Changes; RADM O'Beirne Now in Post

Rear Admiral Emmet O'Beirne, USN, took command of Field Command, Defense Atomic Support Agency from the outgoing commander, Major General H. C. Donnelly, at a change of command ceremony on Sandia Base, June 5.

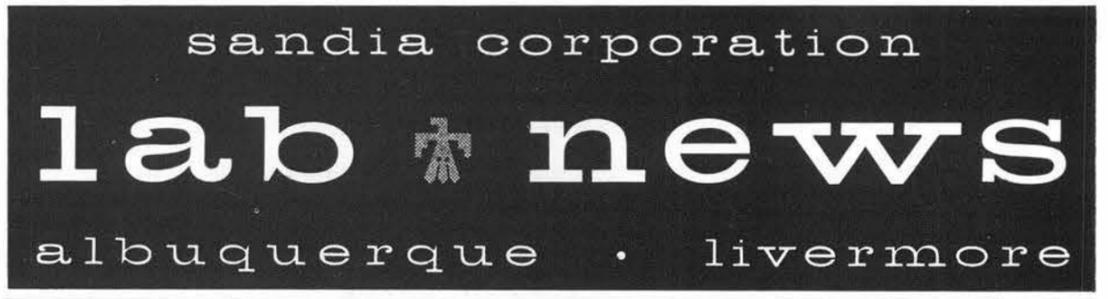
General Donnelly began his Field Command tour in July 1960. Previously, he served as Assistant Deputy Chief of Staff, Plans and Programs, Office of Deputy Chief of Staff of Plans and Programs, at Air Force Headquarters in Washington, D.C. A 1933 graduate of the United States Military Academy, General Donnelly holds a Legion of Merit with two Oak Leaf Clusters, the Order of the British Empire Officer Class, and the French Legion of Honor.

Rear Admiral O'Beirne comes to Field Command from Lisbon, Portugal, where he served as Chief of the

Military Assistance Advisory Group, Portugal. Previously—from September 1959 to August 1961—he was Deputy Chief of Staff and Deputy Chief of Staff for Plans, Policy and Operations to the Supreme Allied Commander, Atlantic.

A 1930 graduate of the United States Naval Academy, Rear Admiral O'Beirne holds the Navy Cross, the Legion of Merit with Combat "V", the Bronze Star Medal with Combat "V", and the Purple Heart Medal.

Change of command occurs at Field Command Headquarters every three years, and rotates among the three services, Army, Navy, and Air Force. The Navy flag previously flew above the Headquarters building from 1954-1957; commanding at that time was Rear Admiral Frank O'Beirne, brother of the present commander.



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## Here's the Word: Now Let's Put to Rest the Great Century Plant Debate

In recent weeks, the Great Century Plant Debate has been raging through the halls of Bldg. 892.

The grounds of the building have Southwestern landscaping: pebble beds, red rocks, trees, succulents, and a specimen of *Amaryllidaceae*, the Agave, sometimes called the "Century Plant." This Spring, a tall stem grew from the rosette of spiny leaves at the base of the plant and produced some short, tubular flowers.

Then, some ponderous questions came lumbering through the halls of 892. Is the plant really a Century Plant, and does it really bloom but once in a hundred years? And what happens after it blooms? What about offspring? And then what? How? Why? The Debate raged and raged.

To settle the specters haunting the brains of 892ers, here are some answers. The plant is, indeed, a Century Plant; it blooms but once in its lifetime. This singular event takes place anywhere between the plant's 5th and 60th year, if it lives that long. Most plants flower at about ten years of age, depending on soil conditions, climate, moisture, etc. After fruit is produced, the plant dies, but sometimes, suckers which produce new plants grow from the base.

"But why?" you may ask. "What good is a plant that lives so long but flowers only once?" Well, the answer to that one is, "Lots of good." The Century Plant is Useful. And we prize Useful things, you know.

If you're of a utilitarian bent, you can pound out the leaves of the Century Plant and make sisal fibers.

In Mexico, the sweet sap of the flowering stem is drawn off and fermented into a drink called *pulque*, thought by many to have much wholesomeness.

Pith from the flower stem, when dried and sliced, makes an excellent razor strop. Some species of the plant produce flower stalks 42 feet high. You could go into business.

A soapy juice extracted from the leaves of the plant will make a lather, and can be used as a detergent—no kidding—where alkali would be dangerous.

The thick, reddish roots of some species are used for medicine.

The concentrated sap in the bud at the base of the flower stem is used to make Agavase ( $C_{12}H_{22}O_{11}$ ), a rare sugar.

In some places in Mexico, the Century Plant is used as a hedge along railroad tracks.

And it's grown in some parts of Europe simply because it's pretty. Any more questions?



RAPID GROWTH characterizes the blooming of the century plant. Hazel O. Whitlock (3126) takes a careful look at the tubular yellow flowers growing like candelabra from the stem of the plant in front of Bldg. 892.

## R. F. Utter Named by Governor to Board of Psychologist Examiners

Robert F. Utter (3132-1), Sandia's Educational Psychologist, has been appointed by Governor Jack Campbell to serve on the newly-created New Mexico State Board of Psychologist Examiners. Effective date of the appointment is July 1.

Other members of the board are Ralph D. Norman and Harold E. Paine, both of Albuquerque; Manuel N. Brown of Santa Fe; and Joel Greene of Las Vegas. All of the appointees hold the PhD degree in psychology, and were recommended by the New Mexico Psychological Association. Law requires the appointees to have held the PhD degree for five years or longer, and to have rendered service, taught, served in training, or conducted research for at least five years.

The Twenty-Sixth State Legislature established that, to safeguard life, health, property, and the public welfare of the state, and to protect New Mexicans against unauthorized, unqualified, and improper application of psychology, it was necessary to establish and provide for an adequate regulatory authority.

Broadly, the duties of the Board involve the examination and certification of any individual offering his services to the public as a psychologist, or by any title which incorporates the words "psychological," "psychologist," or "psychology." The Board examines and cer-



— R. F. Utter —

tifies such individuals, and performs associated administrative functions.

Bob has been with Sandia Corporation since 1954; previously he was on the faculty of the University of New Mexico for five years, and served with the U.S. Quartermaster Corps' Climatic Research Laboratory. He will serve a one-year term on the Board; Drs. Brown and Greene will serve for two years; Drs. Norman and Paine will serve for three.

## Coronado Club Buffet Dinners Are Planned for All Fridays in June

Every Friday night in June, the Coronado Club is presenting special buffets which feature a delicious variety of foods at reasonable prices. Tonight's buffet will feature sea food. Prices are \$1.25 for adults; \$1 for children. Social hour begins this evening at 4:45 p.m. and lasts until 7:30 p.m.

Tomorrow evening the Club will present a Showboat Dance. The evening will begin with the Club's regular monthly buffet from 6:30-8 p.m. Dancing to the music of

McCloskey's Dixieland All Stars will begin at 9 p.m. and continue to 1 a.m. Prices for the evening are \$2.60 per person for members and \$3.60 per person for guests.

On June 28, the Club will feature a roast beef buffet. Social hour will be from 4:45 p.m. to 7:30 p.m. Prices for the buffet are \$1.50 for adults and \$1.20 for children. On June 29, from 6-10 p.m., there'll be a free Family Swim for Club members and their children. The snack bar will be open, and movies will be shown during the evening.

## E. S. Roth Appointed to Committee Of American Standards Association

The American Standards Association (ASA) B-89 Committee on Dimensional Metrology has appointed E. S. Roth of Advanced Manufacturing Development Division 2564, chairman of the subcommittee on Datum Definition.

Mr. Roth's subcommittee will prepare standards after investigating the effect of datum set up deformation and how the definition of part datums affect the meas-

urement of geometrical part characteristics, such as concentricity and parallelism.

The work will affect all the standards prepared by the B-89 Committee as the datum is the basis for all measurements.

Mr. Roth has six engineers representing inspection equipment builders, private industry, and military personnel on his subcommittee.

Editorial Comment

Handy Shopping Guide



Makes an ideal gift for graduations, birthdays, communions, bar mitzvahs or any occasion when you want to be especially nice to someone. Including yourself. Sells for only \$18.75



This is an increasingly popular size with millions of American families. If you'd started buying one every month ten years ago, you'd now have \$5,230. On sale at all times for \$37.50



In less than 8 years you can turn this Bond in for a crisp hundred dollar bill. You'll be getting a guaranteed return and your government's thanks. You can buy it for only \$75.00



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Grandfathers can give one of these Bonds to eight grandchildren (or eight of them to one grandchild) in any one year without paying the gift tax. Outlay per Bond is only \$375.00



Lots of businesses buy these as a good safe investment for company surplus funds. Also ideal for widows who find themselves with a large insurance check. Per Bond, \$750.00



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No matter what their denomination, all U. S. Savings Bonds have these things in common:

- They are one of the safest investments in the world.
- They're replaceable in case of fire, theft or plain carelessness.
- They return \$4 at maturity for every \$3 invested.
- They're cashable at any time.
- They do the double job of helping make your individual future, as well as your country's future, secure.

Buy the one that fits your budget through the payroll savings plan at Sandia Corporation. Payroll deduction cards have been distributed to all employees. If you missed yours, more are available. Call Payroll and Disbursements Auditing Division 4131, ext. 25156.

Service Awards  
15 Year Pins



George G. Curry 7254 June 14, 1948  
Raymond C. Coffey 4332 June 15, 1948  
Roy H. Keyser 2621 June 22, 1948  
C. C. Fornero 2642 June 28, 1948



Peggy F. Henrie 3241 June 28, 1948  
Daniel M. McKnight 3424 June 28, 1948  
Walter R. Sims 2331 June 28, 1948  
Robert C. Spence 7243 June 28, 1948



Homer H. Wilhelm 4518 June 28, 1948  
Adolfo Sanchez 4624 June 29, 1948  
Howard T. Turner 1511 June 29, 1948  
Clyde A. Dunlap 2534 July 1, 1948



John J. Miller 7231 July 1, 1948  
Raymond E. Wason 7212 July 2, 1948  
F. E. McGillicuddy 4622 July 3, 1948



WEATHER, being what it is in Albuquerque, was not the cause of this flood. On Tuesday, June 4, a contractor crew was excavating an underground room near the loading dock of Bldg. 805 when they hit a 10-in. water main. The line, an old one no longer in use leading to the Military Tech Area, is not shown on any Sandia Laboratory Tech Area drawings. The main was opened about 4:10 p.m. and it took some two hours to locate a shut-off valve. In the meantime, Plant Maintenance Department 4510 and the Sandia Base Fire Department used pumps to keep the water out of the basement areas of Bldgs. 805 and 806.

Book on Congress  
And Lawmaking to  
Be in Booklet Racks

To understand how the Congress of the United States works is to understand one of the basic differences between a free nation and a nation under bondage.

In a few days, a booklet called "What Everyone Should Know About Congress and How Laws Are Made . . ." will be placed in the Sandia Corporation Booklet Racks at both Livermore and Sandia Laboratories. The booklet presents 19 pages of factual information about the organization and operation of the Congress, and about the process of bills into laws—the vital job that the Congress performs. The information is arranged in a words-and-graphics style that enables the reader to get the facts at a glance. And most importantly, the booklet explains how citizens can express their views to Congressmen.

All of the booklets will be placed in the racks; none will be held back for the convenience of late-comers. It would be wise to get your copy early. They'll be on the racks June 25.

Sympathy

To Louis Aragon (4153) for the death of his father in Albuquerque, June 7.

To Frank Biggs (5411) for the recent death of his mother in Arkansas.

To Hunter Hanna (4173) for the death of his brother, Richard, a Western Electric Company employee, in New York City on June 5.

To Herman Chaves (4512-2) for the death of his mother-in-law in Albuquerque, June 2.

To M. T. Hodge (4511-3) for the death of his mother in Texas, June 3.

To James H. Walker (4514-4) for the death of his mother in Albuquerque, June 7.

10 Year Pins

June 21-July 5  
Richard M. Allan 3451, K. Dan Hardin 1433, Odilia S. Silva 2321, Jack D. Stewart 2564, Don T. Weems 2541, Glenn O. Folkins 1512, Cecilio E. Sanchez 4413.  
Einar V. Forsman 1323, Carl A. Denney 2412, Jane F. Baker 3462, Pete C. Hernandez 7212, Charles A. McKeever 1413, James I. Poore 7312, Donald E. Thayer 3242, L. J. Bainbridge 3151.  
George H. Conrad 1122, Oswald B. Tietlweid 1523, and Ralph W. Kelley 7312.



Mary Martinez (2311)

Take a Memo, Please

Whenever working with wood, beware of splinters. This advice is as good to carpenters as it is to do-it-yourself handymen.

Splinters of metal are as great a threat as splinters of wood. Always wear safety glasses when cutting metal.

Welcome  
Newcomers

June 3-14

Albuquerque	
Sharon Sue Burnett	3126
Wallis R. Cramond	1314
Brenda J. Curlee	3126
Onadell D. Dillard	3455
Clyde A. Espinosa	4574
Joanne P. Foeller	3452
Margarito Griego	4574
Jane L. Hallisey	4432
Rosalie K. McRae	3452
Niel J. Pezzillo	3427
Tillie K. Pierce	4432
*L. Charlene Scott	3452
Christine M. Stone	4333
Vivian L. Wutke	4371
Arkansas	
William H. Hodge, Fayetteville	1511
Connecticut	
Walter R. Roose, Jr., Mystic	3421
Illinois	
N. Curtis Anderholm, Chicago	7223
Iowa	
James F. Noy, Ames	7146
Dean R. Pedersen, Newton	2452
Kansas	
David L. Streater, Lawrence	1322
Louisiana	
Joseph P. Brannen, Baton Rouge	5422
Michigan	
W. Dale Jones, East Lansing	2561
Minnesota	
Richard Dameron, Minneapolis	5131
Missouri	
George D. Alexander, Rolla	7434
New Mexico	
Jerry D. Winker, Hobbs	4412
North Carolina	
Rolland R. Bassinger, Salisbury	4412
Ohio	
James G. Eberhart, Columbus	1124
Oklahoma	
Wade N. Adkins, Stillwater	4412
Donald E. Brown, Stillwater	4413
*Olden L. Burchett, Norman	1113
Otis L. Cox, Ponca City	4121
Kenneth R. Dunbar, Stillwater	4412
T. Merl Hysinger, Norman	7412
Theodore W. Welton, Stillwater	4413
South Dakota	
John M. Nielson, Brookings	7251
Texas	
Jack T. Burgess, Arlington	4543
Charles F. Huff, Austin	1321
Charles H. Karnes, Austin	1113
Kenneth J. Kutac, College Station	7312
James P. Martin, Beaumont	7413
Virginia	
John L. Stephenson, Fairfax	9100
Wisconsin	
James E. Schwiner, West Allis	1432
Returned from Leave	
Kenneth R. Anderson	4233
Luis Martinez	4614
William C. Monday	1321
Carl E. Smith	7254
James C. Wambold	1113
Gary L. West	7222
Temporary Summer Hires	
Orville L. Brill, Columbia, Mo.	5411
*Jack B. Brown, Austin, Tex.	7512
Jerome W. Deverman,	
West Lafayette, Ind.	1443
Murphy J. Landry, Las Cruces, N. M.	7221
*James I. Latham, Rolla, Mo.	7251
Duane F. Rost, Ames, Ia.	1322
James R. Rowland,	
West Lafayette, Ind.	2422
Dean M. Ruwe, Ames, Ia.	7410
Bobby C. Spradlin, Stillwater, Okla.	2561
Lynn D. Tyler, Stillwater, Okla.	7420
Alfred H. Witte, Jr., Lincoln, Neb.	1425
*Farrell J. Perdreauville,	
Lafayette, Ind.	7181
*Merle L. Guisenberry, Albuquerque	4411
Francis E. Harper, Albany, Calif.	1311
*Eldred R. Harrington, Albuquerque	1314
*Glenn A. Whan, Albuquerque	5331
*Merton K. Bratton, Jr., Albuquerque	2344
*George Culp, Albuquerque	3311
Glenn R. Joyce, Columbia, Mo.	1313
Arthur A. Key, Albuquerque	1122
F. Landis Markley,	
San Francisco, Calif.	5151
James E. McDonald, Albuquerque	3132
*Manuel P. Olguin, Albuquerque	1121
*Edward M. Shoemaker, Urbana, Ill.	5152
Hollis D. Stout, Albuquerque	2411
Charles R. Westgate, Princeton, N. J.	5132
Arthur Houghton III, Albuquerque	1113
Ralph R. Wright, Blacksburg, Va.	1413
Dan R. Blazek, Lincoln, Neb.	2440
John R. Mentzer, State College, Pa.	5411
Colin C. Blaydon, Cambridge, Mass.	1413
* Denotes rehired.	

Congratulations

Mr. and Mrs. Karl D. Svensson (4411-5) a son, Seth Lee, on June 1.

Mr. and Mrs. Charles H. Stockley (7432) an adopted son, Scott Andrew, on June 5.

Mr. and Mrs. Ray Stinson (4254-5) a son, Randle Roy, on June 4.

Mr. and Mrs. W. N. Dehon (3432) a daughter, Anne Elizabeth, on June 13.

Mr. and Mrs. G. E. Seay (5133) a daughter, Cynthia Elizabeth, on June 10.

Mr. and Mrs. A. J. Chabai (5412) a daughter on June 9.

Mr. and Mrs. Eugene L. Emerson (4214-1) a son on June 12.

Mr. and Mrs. Dave Barton (3427-2) twin daughters, Donna Sue and Darlene Marie, on June 11.

sandia corporation  
**lab news**  
albuquerque • livermore

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# Orbiting Satellites Will Have Sandia-Designed Systems

The Department of Defense and the Atomic Energy Commission are planning to launch, commencing this fall, pairs of tandem spacecraft which will orbit the earth carrying instrumentation to determine the feasibility of detecting nuclear explosions in space. Sandia Laboratory is contributing the logics systems for the satellites which will make it possible to transmit, record, reduce, and analyze only significant data collected by the detectors.

The project, the Advanced Research Projects Agency's test detection satellite program, is a joint program of the Atomic Energy Commission and the Department of Defense. Directing the program is the DOD's Advanced Research Projects Agency. The Air Force Space Systems Division is the systems manager. Current plans call for several launches to start in the second half of 1963, each to put two instrumented satellites into earth orbits. The program was explained recently in a meeting of the Joint Committee on Atomic Energy.

The satellites will be launched as a single assembly by the same rocket. The satellites will be icosahedron shaped, with the triangular surfaces covered with solar cells to provide electrical power for operating the instrumentation. X-ray detectors will be placed at ten points around the structure. As the spacecraft spins about its axis, all directions into space will be scanned by many detectors simultaneously.

The satellites will also carry neutron and gamma-ray detectors. All detector instrumentation is being developed by Los Alamos Scientific Laboratory.

The large portion of energy in a nuclear explosion is contained in X-rays, while only a small fraction, probably less than one thousandth, is contained in the prompt gamma-ray and neutron radiations. Primary emphasis is placed on the X-ray instrumentation to capitalize on the potential long-range capability of this part of the

detection system on the satellites.

Estimates by Los Alamos scientists indicate a possibility of detecting a 10-kiloton explosion at a distance equal to the diameter of the earth's orbit around the sun. For less extreme distances, the gamma-ray and neutron signals will provide redundant detection capability. The gamma-ray and neutron signals are also important to confirm the true identity of the signal, in order to verify that the signal was received from a nuclear explosion rather than from natural radiations in space — such as solar X-rays or cosmic rays.

Sandia Laboratory project engineer for the high altitude test detection program is W. C. Myre, supervisor of Space Projects Division I, 7432. Work began on the project in 1959 under J. H. Scott, now manager of Space Projects Department 7430. Sandia-designed logics systems were tested by the Ranger series of space probes and the Blue Scout series. Detector systems and logics systems have been flown on balloon tests and "piggy-back" on DOD satellites.

Final design for the logics systems was completed in August 1961 by Airborne Logics Systems Section 7432-2, under F. E. Thompson. The logics systems are basically miniaturized and simplified computers with a built-in program for data handling. The reliability and environmental requirements, however, remove them from the category of "ordinary" computers.

Each satellite logics system must survive launch, separation and deep space environment. They are designed for a long life in space.

Aerospace Ground Equipment (AGE) to test the Sandia logics system was designed by Ground Data Handling Systems Section 7432-1, under D. E. Henry. This computer-like AGE is capable of performing 50,000 individual tests in seconds. The computer programs for the logics systems were written by E. K. Montoya of Mathematical Services Division 7242.

Housed in a special dust-free "gray room" in Bldg. 880, the AGE has been used to check complete

assemblies of the detectors and logics systems thoroughly.

Production of the satellite hardware began in January 1962. This Manufacturing Development phase of the program is the responsibility of Specialties and Special Assignments Division 2543, under W. G. Merritt. The work has been centered primarily in Specialties Section 2543-2, under D. S. Pitts.

Tubes and Semiconductor Section 2544-2, under C. J. King, contributed to the manufacturing development effort.

Stringent quality control was exercised in the production of the logics systems. One hundred per cent testing and inspection was used throughout production.

Quality Assurance inspection procedures and instructions for the satellite's logics systems were written by Systems Planning Division 7521, under J. R. Harrison. Men of Logistics Division 7532, under P. J. Krogdahl, performed on-site inspection and quality audit of the material and quality acceptance. Quality Assurance surveys were conducted by Section 7534-1 under G. H. Bradley, Jr., and Quality Assurance component evaluations were performed by Division 7523 under C. L. Johnson.

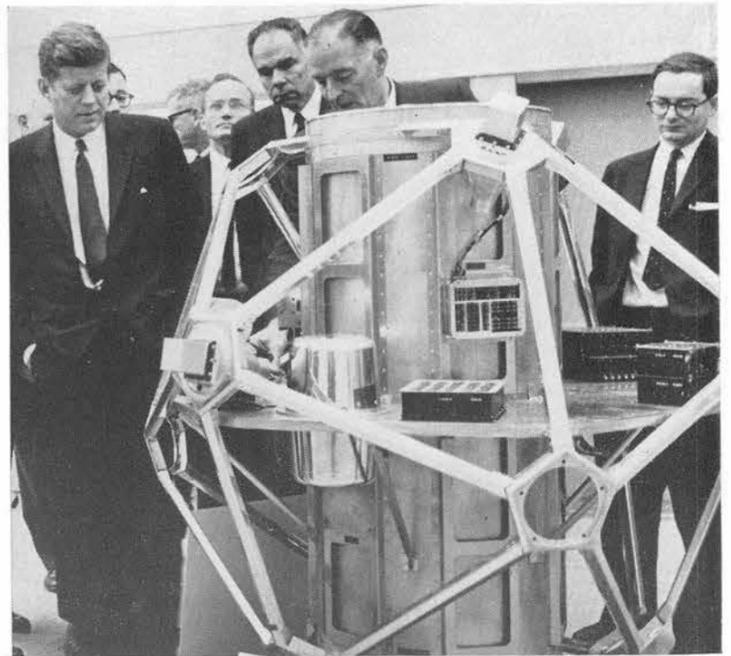
Assembly of the "black boxes" of the logics systems was performed by the design organization, Space Projects Division I. Each component, sub-assembly, and system was thoroughly tested by the Division, using the AGE testers. Environmental tests for vibration, heat, and cold were also performed.

The first set of the detector and logics systems has been delivered to Space Technology Laboratory, contractor for the spacecraft. Aerospace Corporation is the general systems engineering and technical direction contractor.

The satellites will be assembled at Space Technology Laboratory and undergo more rigorous testing prior to the launch.

Data from the satellites will be recorded by a world-wide network of Air Force ground stations. After collection on magnetic tape, the data will be sent to Sandia Laboratory's Mathematical Services Division 7242, under J. L. Tischhauser, for final reduction. Computer programs for this phase of data reduction are being written by E. K. Montoya and E. A. Aronson of the Division.

According to testimony of Dr. James H. Coon, LASL, given to the Joint Committee on Atomic Energy in March: "Experience gained by the LASL and Sandia groups in the 1962 high altitude tests in the Pacific aided in the investigations of the satellite-borne detection program. Some of the instrumentation for detection of X-rays, gamma-rays, and neutrons was of similar kind in the two programs. It was demonstrated in the Pacific tests that this kind of instrumentation could be carried to altitudes above the atmosphere and that it would function in the expected way when recording signals from a nuclear explosion. A success rate of 17 out of 17 rocket-borne payloads of LASL detectors, with supporting Sandia instrumentation, gave our groups information in knowing we can do this kind of job."



TEST DETECTION SATELLITE with Sandia Laboratory-designed logics systems was one of the highlights of the equipment displayed during last year's visit of President John Kennedy to Sandia. Satellites will provide a means to study the feasibility of detecting nuclear explosions in space. S. P. Schwartz, Sandia Corporation President, discussed the system with the President and Glenn T. Seaborg, Chairman of the AEC.



ASSEMBLING logics systems in the test detection satellite frame are W. B. Goldrick (7432-2) and F. E. Thompson, 7432-2 supervisor, right. Holes at the triangular points of the frame will contain LASL-designed X-ray detectors. Solar cells will power the satellite instrumentation.

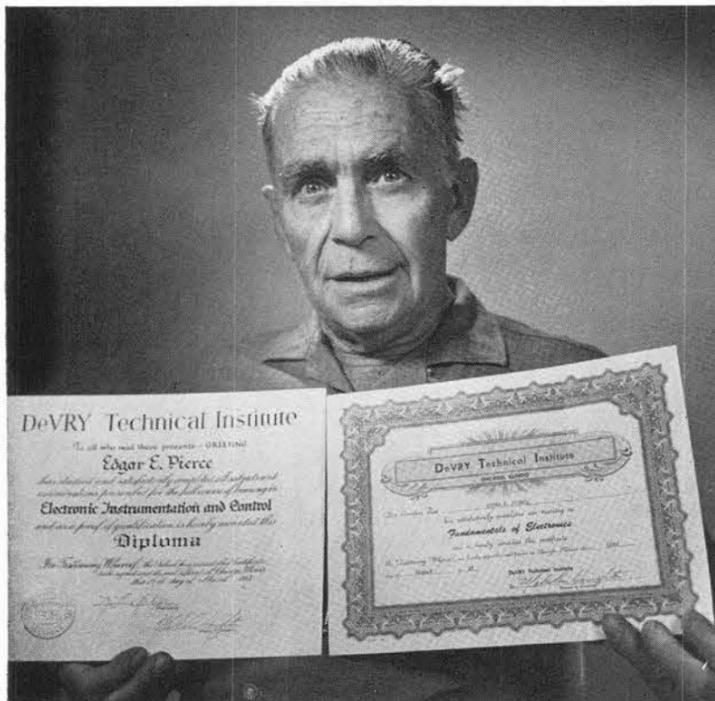


AEROSPACE GROUND EQUIPMENT designed by Section 7432-1 performs 50,000 individual tests in seconds on the satellite's logics systems. John R. Phelan (7432-1) checks computer read-out from the AGE. The equipment is programmed to pinpoint failure in any of the thousands of tiny components of the logics system undergoing performance tests.



CHAMBER TEST — Ross R. French (7432-2) prepares a satellite logics system module for a temperature test. Small chamber provides heat-cold environment from -25° to +175° F. Module will also be connected with AGE tested for performance check while in the chamber.

# 53 Complete TDP Program



THE TWO CERTIFICATES being held by E. E. Pierce (4511) represent eight years of study by correspondence. The two-part course of training offered by DeVry Technical Institute included Fundamentals of Electronics, and Electronic Instrumentation and Control. Mr. Pierce is already eyeing another home study course for after he has a "breather."

Fifty-three men in the second class have successfully completed Sandia Laboratory's second Technical Development Program. In this program staff members with Bachelor's degrees divide their time between classes at the University of New Mexico and work assignments at Sandia.

The second class was almost equally divided between mechanical and electrical engineers. Each enrolled for nine credit hours every semester for four semesters. The two-year course of graduate study places heavy emphasis on mathematics, statistics, and modern nuclear physics as well as advanced work in EE and ME.

The TDP was developed to insure that new members of Sandia's technical staff acquire a sufficient background of knowledge in modern analytical methods and basic scientific concepts to accomplish the company's technical mission.

The program is administered by Personnel Research, Training and Education Department 3130 through the cooperation of the University of New Mexico.

Members of the second class included: Earl T. Herzog, Jr. (1113), Donald L. Hester (1314), Keith D. Christian (1323), E. D. Zaffery (1323), Edward L. McKelvey (2344), Thomas A. Williamson (2411), Paul K. York (2412).

David K. Reitzel (2421), J. G. Ogurchak, Jr. (2422), Marvin E. Daniel (2442), Bill R. Emrick (2442), James C. Mason (2452), Don L. Dekker (2531), William C. Peila (2531).

Patrick W. Hurley (2532), Thomas F. Steely (2533), Frankie L. Crutcher (2533), Lewis A. Suber, Jr. (2533), John A. Case (2534), Richard Henneke (2542), Robert C. Meier (2561), Samuel B. Martin, Jr. (2563),



CONGRATULATIONS, Sandia Corporation President S. P. Schwartz told 53 graduates of the Technical Development Program during a luncheon at the Coronado Club last week. The TDP students had completed two years of additional study beyond a Bachelor's degree at the University of New Mexico while performing staff jobs at Sandia Laboratory.

Robert L. Ewing (2563), E. L. Patterson (2564), Walter J. Roth (5131), Gerald W. Smith (5132), Leland Wright (5133), Charles W. Gwyn (5321).

Kenneth W. Henry (5322), Scott K. Manlief (5322), Dale F. Warnke (5322), Gary M. Connell (7422), Robert L. Huguen (1521), John G. Koehler (1522), Ted S. Gold (1533).

John A. Engelland (1544), James T. McIlmoyle (7213), Daniel W. Miko (7222), Carl N. Kelly (7434), Francis Wessling (7224), Dean E. Gladow (7224), Paul D. Schaudt (7432).

Larry H. Canter (7251), Larry W. Oline (7311), Gerard W. Hauer (7312), Daniel J. Tebbs (7312), Ronald McClellan (7322), Ned A. Sigmon (7323).

John F. Damke (7325), James E. Randall (7325), Kenneth W. Drake (7521), Edward L. Burgess (7522), and Joseph Losinski (7523).

## R. P. Noble Has Article Accepted by Technical Journal

An article by Robert P. Noble (8122-2) has been accepted for publication within the next few months in the national trade magazine, **Electronic Packaging and Production**. The title of the article is "Designing Against Dielectric Breakdown of Printed Wiring Assemblies in Electronic Packages."

## Sandia Corporation Speakers

Following is a list of speakers, titles, and places of presentation for recent or forthcoming talks by members of Sandia Corporation.

N. J. DeLollis (1112), "Physical Properties of Various Epoxy Formulations," Symposium on Recent Advances in Adhesives Technology on June 27 during the 66th annual meeting of the American Society for Testing and Materials, Atlantic City, N.J.

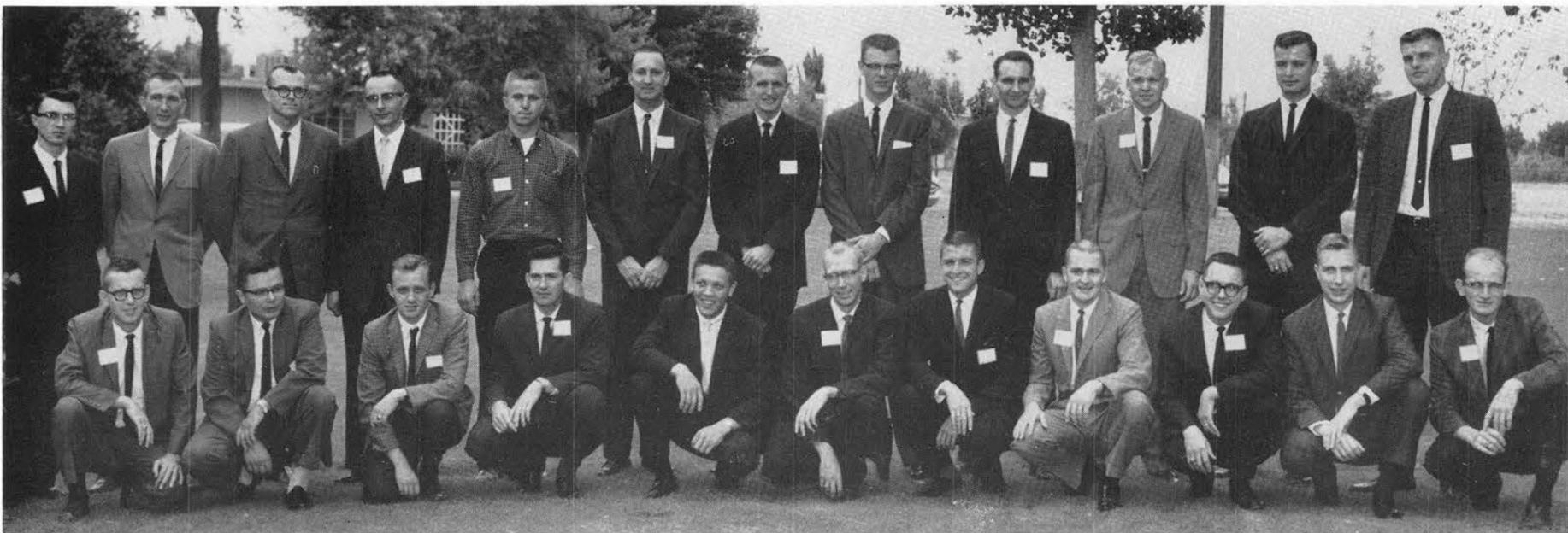
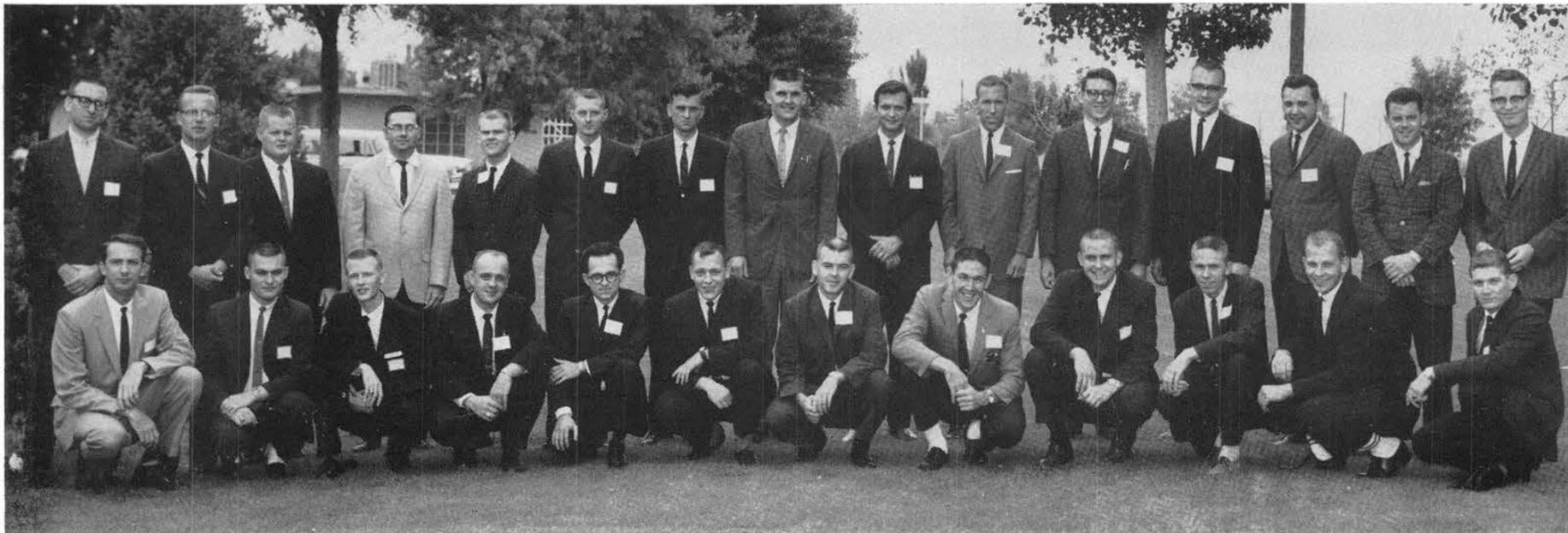
M. R. Madsen (7324), "Vibration Testing and Interpretation of Vibration Signals," Southwest Chapter of the Institute of Environmental Sciences, June 14, Dallas, Tex.

James Rodgers (8142-1), "Sandia High Precision Automatic Parts Engineering Computer Program," spring conference, western regional IBM 1620 Users Group, June 12-14, San Francisco, Calif.

Bert E. Barker (8142-1), "APT Usage in Design," first Automatically Programmed Tools technical meeting, Illinois Institute of Technology, June 5-7, Chicago.

W. A. Gardner (7300), "The Vital Role of the Environmental Laboratory in an Armament or Missile Program," Los Angeles Chapter of the Institute of Environmental Sciences, June 3, Inglewood, Calif.

## TDP Class Lines Up for Group Portraits . . .



## Supervisory Appointment

WILLIAM P. BROOKS to supervisor of Dynamic Stress Research Section 5133-1, Physical Research Department.



Bill has worked in the same department since he came to Sandia more than six years ago.

Previously, he served four years in the Air Force.

He has a Bachelor's degree in engineering physics from the University of Oklahoma, and was awarded a Master's degree in physics at the University of New Mexico last year.

Bill is a member of the American Physical Society, and Sigma Pi Sigma, Sigma Tau, and Tau Beta Pi, honorary societies.

## W. C. Nott to Retire June 28

W. C. Nott, a Sandia employee for 11 years, will retire June 28. He works in Voucher Section 4135-2.



Mr. and Mrs. Nott moved to Albuquerque in 1950 because of the milder climate than their native Minnesota. However, they continue to vacation in the lake country.

They plan a three-week trip to Minnesota this summer with stops in Minneapolis, Duluth, and Bemidji, "where you can step across the headwaters of the Mississippi," Mr. Nott explained.

Upon return, the Notts will continue to reside at 1320 Parsifal NE.

## Geneva Howell Retires June 28 After 10 Years

Geneva Howell will retire at the end of June after 10 years at Sandia Laboratory. She has worked the entire time as an ozalid operator in Reproduction Division, now 4432.



Mrs. Howell has a busy summer ahead of her—her three oldest grandchildren (10, 12, and 13) will be visiting. Her only daughter lives in Walnut, Calif.

"Taking care of three won't be hard after the first day or two," she said. "One time I baby-sat with all five grandchildren while their parents went on a vacation."

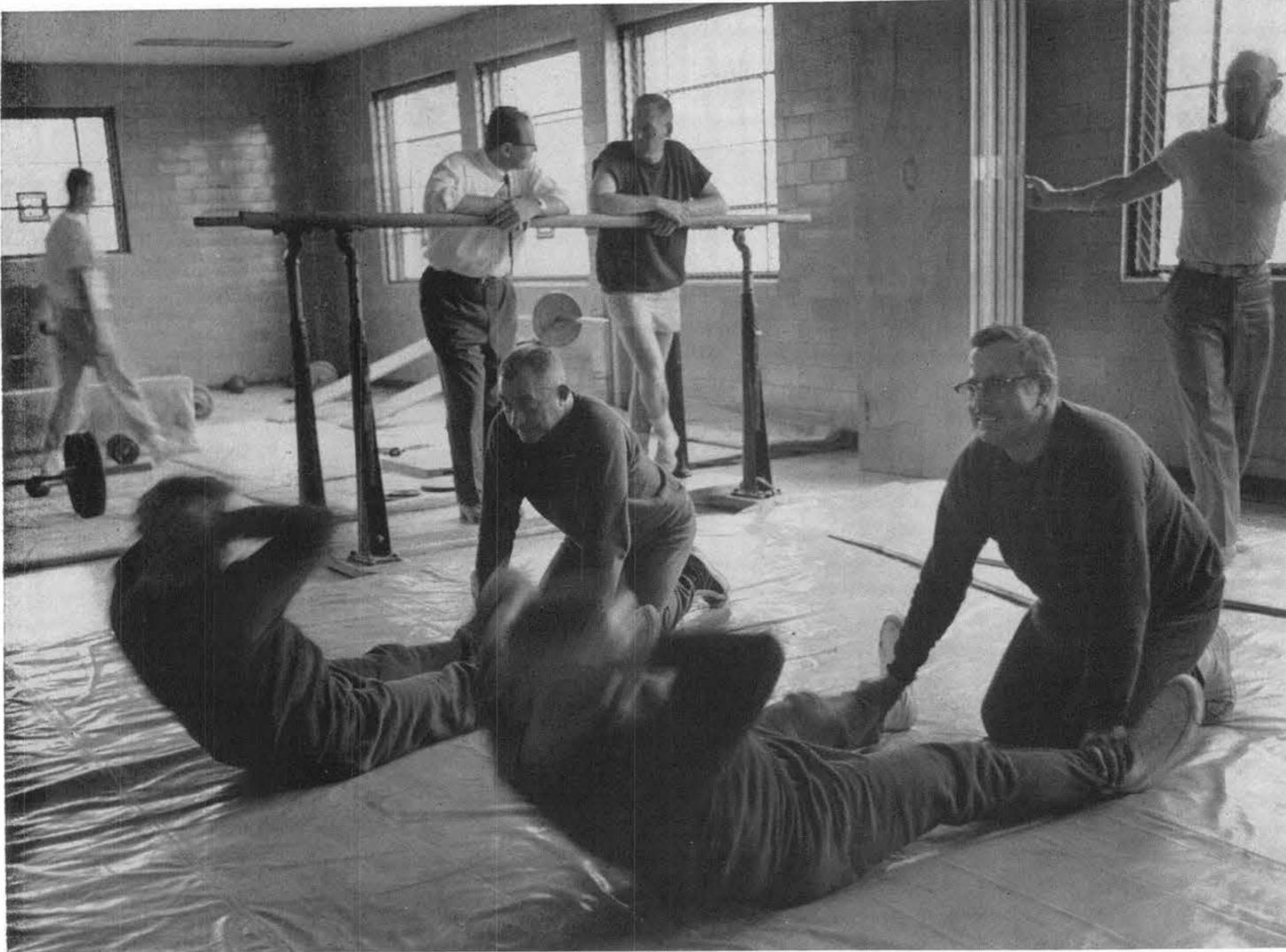
Mrs. Howell will remain in Albuquerque for the time being. Her home is at 2002 Second NW. Later she may visit her two brothers in Nebraska and a sister in Colorado.

## Sandia Employees Give \$89,571 to Community Fund

Sandia Laboratory employees, members of the Employees' Contribution Plan, have given a total of \$89,571 to the 25 agencies of the United Community Fund and nine other health and welfare agencies to date this year.

As the May checks—totaling \$13,235—were mailed last week, the following distribution had been made:

Agency	May	Year to Date
United Community Fund	\$10,327	\$69,113
American Cancer Society	662	4,565
Bernalillo County Health Association	542	3,701
Arthritis and Rheumatism Foundation	211	1,436
Albuquerque Association for Mental Health	132	887
N. Mex. Society for Crippled Children and Adults	529	3,529
National Multiple Sclerosis Society	92	647
Albuquerque Association for Retarded Children	198	1,385
Cerebral Palsy Association of Bernalillo County	278	1,867
Muscular Dystrophy Association of America	132	882



EXERCISE ROOM in the Sandia Base Gym is used by Security Inspectors for voluntary physical fitness program. During first week of the program,

102 inspectors signed up for the out-of-hours activity. Individual capability tests were performed as a basis for personal development programs.

## Security Inspectors Keeping Fit With Special Workouts

"I've lost six lbs. already," one Sandia Laboratory Security Inspector said last week as he worked out at the Sandia Base Gym. He was one of 102 Inspectors who joined a volunteer physical conditioning program for the Guard Force. The program started last week.

Activities are conducted during non-duty hours, but the program will provide year 'round physical conditioning tailored to the individual capabilities of the Inspectors.

The program was developed by Walt Troy of Physical Security Section 3243-2. Frank Treon (3242) has been appointed Physical Training Instructor and will

administer the program. He is assisted by Armand Seidler, Chairman of the Department of Health, Physical Education and Recreation, University of New Mexico.

In all cases, participants in the Sandia program establish their own rate of physical activity and set their own goals of accomplishment. Sandia's Medical organization is consulted as individual programs are designed.

The program consists of progressive calisthenics, weightlifting, and selected activities (such as swimming) to develop overall fitness and peak physical efficiency. Activities are conducted five days a week at the Sandia Base Gym.

## Batting Average of .730 Leading In Sandia's Slow-Pitch League

"Everybody hits, everybody makes runs," is the way one enthusiastic Sandian described playing in the "slow pitch" softball league. As the first half of league play wound up recently, the 7100-1300-2400-4400 team was leading with a six won—two lost record. The team batting average was .533.

Four teams compete in the league with games played every Wednesday evening on Sandia Base Diamond C. Game times are 6:30 and 8:15 p.m.

The difference between slow pitch and regular softball is two-fold: There are 10 men on a team. The extra man is a roving fielder (with the way hits go, he's needed).

"It's wild," Mike O'Bryant (4411), manager of the leading team, says. "The pitched ball must arc at least three ft. before going across the plate. This is the big difference from regular softball. Everybody gets hits."

Home runs, triples and doubles abound. League-leading Don Deatherage (2452) has hit nine home runs. He's been at bat 37 times, made 27 hits, and has a batting average of .730. He's scored 23 times and has batted-in 37 runs.

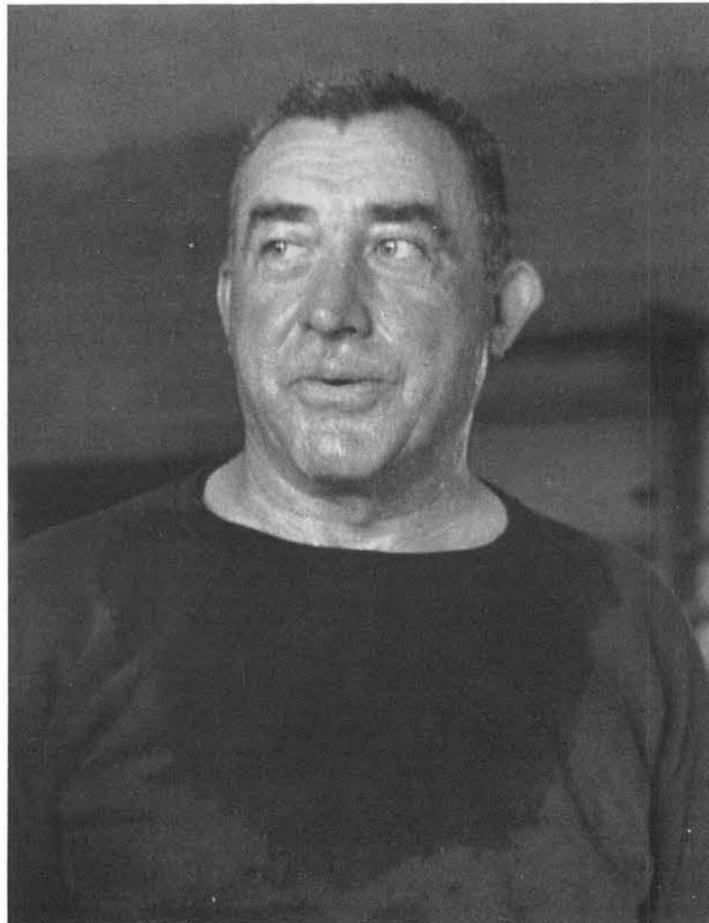
"This game is for fun," Mike says. "We try to win, of course, but this is not as important as playing the game."

New players are still welcome

on the four teams. Anyone interested is invited to contact Services and Benefits Division 3122, ext. 29157.

As the league starts the third round of play, the standings are as follows:

Team	Manager	Won	Lost	Pct.
7100-1300-2400-4400	O'Bryant	6	2	.750
3400	Garcia	3	4	.428
4100-2500-2600-AEC	Long	3	4	.428
7300	Bradshaw	2	4	.333



WHEW! Sgt. Tom Wright of the Guard Force rests for a minute between strenuous exercises. Voluntary physical fitness program also features recreation activities such as swimming, basketball, and other sports.

# Promotions

Ruperto Jaramillo (4574) to Janitor  
Juan B. Pacheco (4574) to Janitor  
R. K. Wenzelburger (4574) to Janitor  
Ruben E. Trujillo (4574) to Janitor  
Bobby A. Roane (4233) to Technician  
Onella R. Allen (3126) to Teletypewriter Operator  
C. E. Fitzpatrick (3126) to Typist Clerk  
Steven S. Hight (3444) to Messenger  
Mercedes Snider (8212) to Stenographer Clerk  
Mary L. Ward (4413) to Draftsman  
John R. Goff (7332) to Laboratory Assistant  
Francis H. Treon (3242) to Staff Assistant, Administrative  
Mollie C. Miller (3121) to Staff Member, Administrative  
Tess K. Reis (3121) to Staff Member, Administrative  
Mary J. Yager (3121) to Staff Member, Administrative  
Warren E. Chandler (8243) to Staff Member, Administrative  
Joseph C. Newton (1413) to Staff Associate, Technical  
Edward L. Lane (1422) to Staff Associate, Technical  
Elwin E. Chestor (7522) to Staff Associate, Technical  
Albert M. Dias, Jr. (8222) to Utility Operator  
Arthur H. Andazola (3444) to File Clerk  
Ted R. Garcia (3444) to File Clerk  
Joe E. Tapia (3444) to File Clerk  
Barbara M. Wood (3126) to Secretarial Typist

Geraldine J. Layne (3126) to Secretarial Stenographer  
Berenice M. Schwarz (4432) to Reproduction Service Clerk  
Carl R. Wersonick (3444) to Microreproduction Equipment Operator  
Frances A. Schroer (4423) to Editorial Assistant  
Joe C. Garcia (3446) to Senior Clerk  
Doris M. Welch (3441) to Investigator  
F. S. MacDonald (3241) to Staff Assistant, Administrative  
Larry E. Moore (8232) to Reproduction Equipment Operator  
C. G. Widger (8212) to Secretarial Stenographer  
Claudia J. Cozzo (8212) to Record Clerk  
Johnny R. Allen (8232) to Camera Operator  
Bruce E. Affeldt (8232) to Assignment Clerk  
Jim L. Starkovich (7332) to Staff Assistant, Technical  
Howard L. Hudson (4231) to Technician  
Robert T. Tuffnell (4121) to Staff Assistant, Administrative  
George W. Perkins (8243) to Staff Assistant, Administrative  
Stephen H. Vigil (3462) to Reproduction Equipment Operator  
Kenneth A. Peters (4611) to Stockkeeper  
Richard A. Yung (8214) to Stockkeeper  
L. Jim Connolly (8225) to Toolkeeper  
Dennis R. Johnson (8214) to Shipping and Receiving Clerk  
Kaye L. Hunemuller (4432) to File Clerk

Jose R. Luna (3462) to Reproduction Equipment Operator  
Edito O. Trujillo (4623) to Material Handler  
James J. Jackson (4621) to Dismantler  
Mary T. Brunacini (4131) to Payroll Clerk  
Lela F. Martinez (4131) to Document Clerk  
Billie A. Hayes (2563) to Data Reduction Clerk  
Viola M. Gomez (4431) to Editorial Assistant  
Elaine A. Brint (8161) to Record Clerk  
Robert J. Hurst (8121) to Laboratory Assistant  
Thomas F. Springer (4413) to Draftsman  
Orville A. Moore, Jr. (4413) to Draftsman  
Ralph L. Kemp (4413) to Draftsman  
Kathleen C. Mooney (4110) to Secretary  
**Supervisory Lateral Transfers**  
R. Lynes from 3442 to 3456  
E. K. Baker from 3341 to 4212  
B. D. Neil from 4212 to 4211  
P. V. Davis from 4111-1 to 4114-3  
W. C. Elder from 4252-3 to 4254-1  
J. R. Bell from 4254-1 to 4252-2  
W. H. Seelbach from 4252-2 to 4252-1  
L. Gutierrez from 8140 to 8120  
P. W. Callies from 2451 to 2444  
A. L. Anderson from 2451-2 to 2453-1  
H. W. Rogers from 2452-3 to 2452-2  
T. H. Moyer from 2341-4 to assignment in 2343  
J. G. Wimping from 2341-5 to 2341-1  
C. A. Wells from 2341-1 to 2341-4  
C. F. Muehlenweg from 5134-1 to 5131-1  
T. L. Pace from 7221 to 7435  
J. G. Hawley from 7221-1 to 7435-1

# Here's How You Can Estimate Your Retirement Income

What will you be doing after you retire?

Naturally, there are many things to consider when you begin to think about laying aside your working tools, but the answer to the question above depends largely on how much money you'll have to live on at retirement.

Your retirement income will perhaps be from several sources; one

of which will be Sandia's Retirement Income Plan.

It's easy to figure out your approximate retirement income from Sandia's plan. By answering the questions below, you can estimate the annual retirement annuity you'd receive from the Plan if you continue at your current salary until either age 60 or 65. Future salary growth would permit a larger retirement income.

- A. Number of years until your 60th birthday .....
- B. Number of years until your 65th birthday .....
- C. Total retirement contributions to date (from your most recent "Statement of Payroll Account") .....
- D. Present annual salary .....

If you retire at age 65:

- 1. 3% of the first \$3,000 of your present salary (Item D) \$90.00
- 2. 6% of your present salary in excess of \$3,000 .....
- 3. Total annual contribution (Items 1 plus 2) .....
- 4. Multiply total annual contribution (Item 3) by years remaining until age 65 (Item B) .....
- 5. Include contributions made to date (Item C) .....
- 6. Add items 4 plus 5 to get contributions at age 65 .....
- 7. Divide Item 6 by 3 for annual annuity at age 65 .....

Some people wish to retire before they reach age 65. The Retirement Plan provides for early retirement — if the employee wishes — from age 60 to 65. Here's how you can figure your retirement income at age 60:

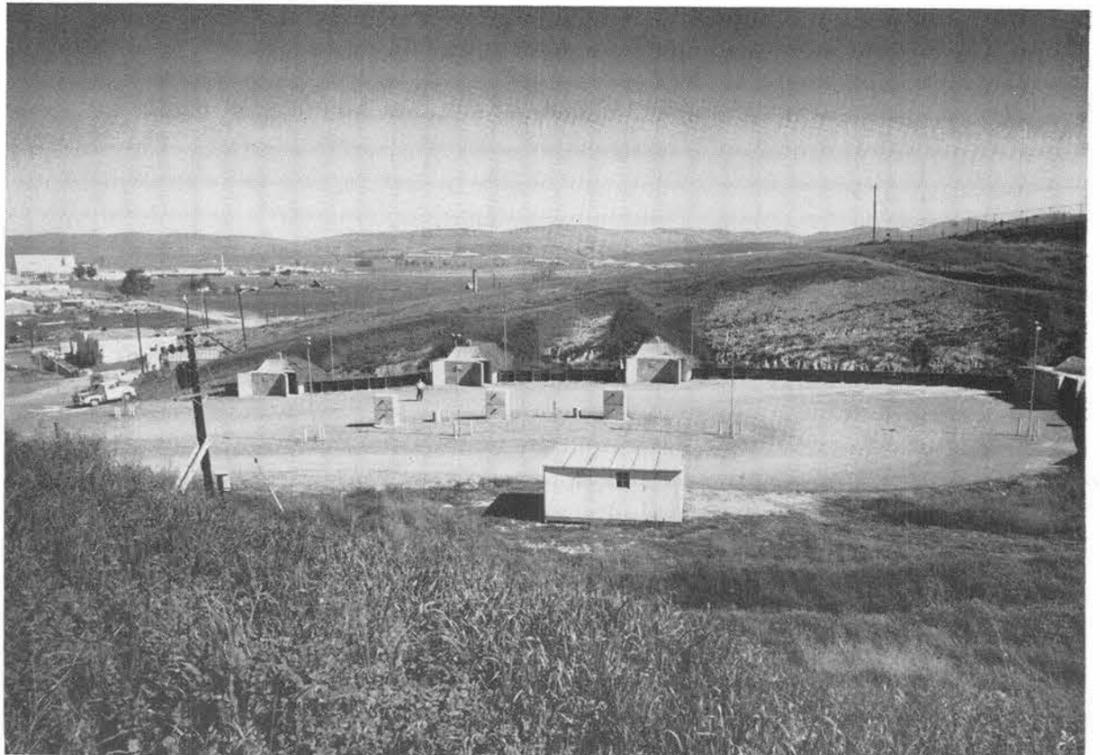
- 8. Multiply total annual contribution (Item 3) by the number of years until age 60 (Item A) .....
- 9. Add contributions to date (Item 5) .....
- 10. Add Items 8 and 9 to get contributions at age 60 .....
- 11. Divide Item 10 by 3 .....
- 12. Multiply Item 11 by .668 (or .700 if female) .....

If you retire after 60 and before 65 the amount shown in Item 12 increases with each year of service.

Other sources, such as social security, life insurance, property, stock investments, and veterans benefits (if applicable) would add to your retirement income. For example, a man and his wife, if both are 65, would draw approximately

\$180 per month from social security, if they met the requirements (and most Sandians would).

Why not take a moment to fill in the blanks above. If you have any questions when you've finished, call Benefits Section 3122-1, ext. 52144 or 52136; or Employee Services Section 8212-2, ext. 2233.



EXPLOSIVE STORAGE SITE in small valley of Area I bunkers dug into sides of hill, and three double-decked at Livermore Laboratory shows four large magazine cement storage magazines standing in the center.

## Explosive Handlers' Jobs Safe; They Know What To Do

On the hill behind Livermore Laboratory a small, thick, metal door is carefully closed on a large oven-like structure. Inside, the heat builds up swiftly to 500°F. Suddenly, a series of muffled explosions goes off inside.

The explosions mark the destruction of a batch of surplus and sometimes faulty explosive bolts and switches. They were blown up in the new explosives incinerator recently installed at Area 8. It was an operation that has now become routine to the Laboratory explosives experts, T. K. O'Kelley and John Rogers (both 8242-1).

Whenever explosives are involved, T.K. and John are on the job. "We receive, store, ship, deliver, and coordinate the use of all explosives at the Laboratory," said T.K.

In addition, T.K. instructs others in the safe use of explosives and firing chambers, and assists in establishing safe operating rules and regulations. He also investigates safety aspects of new explosives, coordinates procedures with test groups, and monitors tests.

"Handling explosives can be pretty dangerous unless you know what you're doing," said T.K. "It's

important to observe basic safety rules and assume that any explosives you pick up will go off if mishandled."

### More Hazardous

Some explosives are considerably more hazardous than others, T.K. said. "The less energy required to activate an explosive, the more hazardous it is."

As a result, explosives are divided into three classes: A, B, and C. Class A explosives are those of a maximum hazard; Class B, intermediate; and Class C, a minimum hazard.

"As an example, TNT and dynamite are considered Class A explosives," said T.K. "Rocket propellants and certain fireworks are class B explosives, and small arms ammunition is a Class C explosive."

When a shipment of explosives arrives at the Laboratory, it is taken directly to the special explosives receiving room in Area 8. The room, built into the side of a hill, is about 12 ft. square and designed with meticulous attention to safety.

The concrete walls of the receiving room are eight inches thick, and all equipment in the room is

either heavily insulated or made of spark-resistant materials. The lighting fixtures are explosion-proof. Special spark resistant tools and calibration instruments are used to unpack, weigh, count, inspect, and certify the shipment carefully.

The packing materials are closely examined for explosives contamination, and, if any are found to contain particles of explosives, they are burned in the explosives incinerator.

After the shipment has been inspected, it is placed in special red wooden boxes marked "Explosives." These boxes are then loaded on an explosives truck which is used to transport them to one of 10 storage bunkers located in a small valley in Area 8.

### Explosives Storage

Four large magazine bunkers are dug into the sides of the valley and are used to store explosives. Six small cement magazines, double-decked in three units, are located in the center of the valley above ground, and are used for storing small amounts of explosives. All explosives are kept in storage until requisitioned by test groups for specific projects.

Periodically, T.K. and John inspect the bunkers for danger signals or to conduct inventories. They maintain detailed stock control records on all of the explosives.

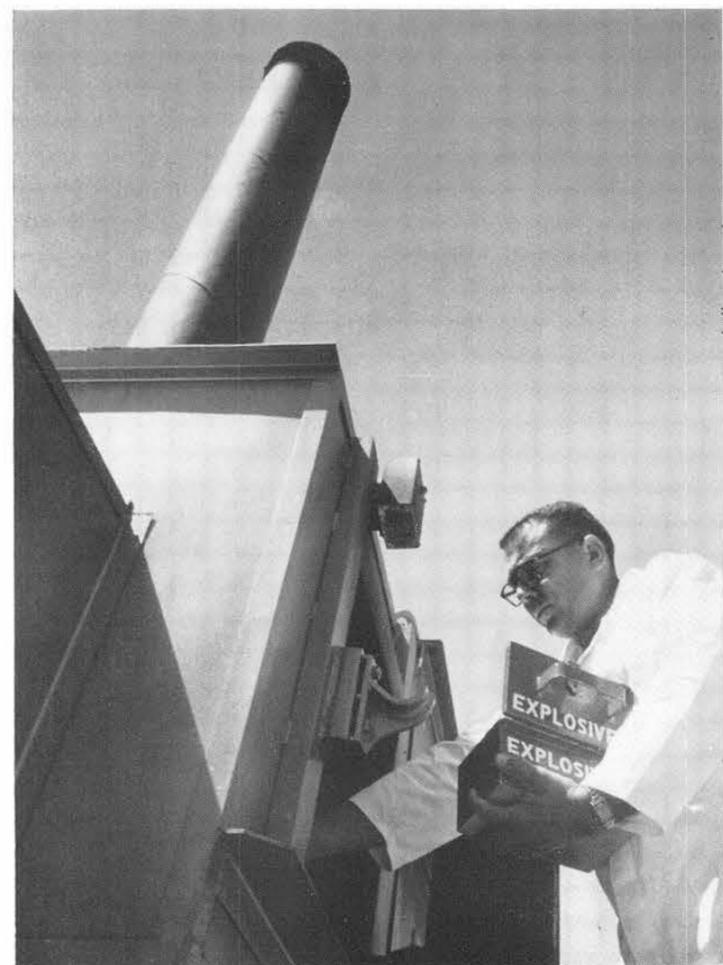
Frequently, T.K. and John wash down the Laboratory's two huge firing chambers with water to remove any explosive residue which might have accumulated on the walls from large charges shot off in tests. The water is collected in a tank and taken to a special contaminants pond near the explosives incinerator.

The pond has four cement walls and a dirt bottom. The contaminated water placed in the pond is allowed to filter into the ground, leaving its residue of explosive particles on top. When the particles are dry, they are burned off.

While T.K. and John thoroughly enjoy their work, they find it tame compared to their World War II experiences.

During the war, T.K. served aboard an ammunition ship as cargo officer on a destroyer as gunnery officer, and later, as the ordnance planning officer of the Naval Ammunition Depot at Concord, Calif. John worked with ordnance disposal and demolition crews with the Army in Europe. His activities included de-activating anti-personnel mines planted on enticing war souvenirs.

As a result, both men have a healthy respect for explosives—a must in their job.



EXPLOSIVES intended for destruction are loaded into specially constructed incinerator by John Rogers (8242-1). Explosives will safely blow up inside chamber. The 20-ft. smokestack of the incinerator, which contains an after-burner, complies with California smog law.



HIGH EXPLOSIVES TECHNICIAN T. K. O'Kelley (8242-1) removes mis-fired detonator from a charge inside one of the Livermore Laboratory firing chambers. The detonator will eventually be destroyed in the explosives incinerator along with other faulty explosive devices.

# Reporter's Life Away From Work Centers Around Youngsters' Sports

This is another in a series of articles telling of Sandia employees who serve as volunteer reporters to the Lab News.

Isabella Seeley has been at Sandia two and a half years, first in Division 2542, and for the past year as department secretary in 5410. She has been a volunteer Lab News reporter since her assignment to 5410.

Outside of work hours, Isabella keeps very busy. Her husband is stationed with the Army in Germany, so she is responsible for the care of their three sons. "I guess Babe Ruth and Little League baseball might be considered my hobby," she explained. "The boys each play on a different team, so this week there is a game scheduled for every night except one, and three games to be played on Saturday."

After her husband's retirement next year, the Seeley's plan to continue making their home in Albuquerque.



Isabella Seeley

## Former Kansans to Meet at Picnic in Albuquerque July 7

Former residents of the Sunflower State are invited to the annual Kansas picnic to be held in Bataan Park at 1:30 p.m., Sunday, July 7.

Gov. Jack Campbell and Mrs. Alberta Miller, Secretary of State, both formerly of Hutchinson, Kan., and Dr. Jack Redman, formerly of Morton, Kan., will be speakers on the program.

Each family is asked to bring a generous covered dish and sandwiches, and their own table service. Cold pop will be furnished by the committee.

## C. A. Monroe Elected To American Legion Vice-Commander Post

C. A. Monroe (4614) was recently elected Vice-Commander of Carlisle-Bennet Post 13 of the American Legion. Charles MacAluso was elected Commander. Mr. Monroe has been a member of Post 13 for the past 14 years. He encourages American Legion members who may have questions or wish information about Post 13 to contact him at AX 9-3041.

## Two Sandians Help Organize Alumni Club For Single Graduates

A new organization to be affiliated with the National Association of Catholic Alumni Clubs is being formed in Albuquerque. The club will offer cultural, social and religious programs for single Catholic college graduates. Anyone interested in joining is invited to contact either Ken Arasim (5332), phone 242-6285, or Bob Eldredge (4112), phone 268-3122.

## Financial Department Tellers' Windows Open At 10 a.m. on July 1

Tellers' windows in Financial Department 6020 will be closed Monday, July 1, until approximately 10 a.m. This is necessary due to year-end closing activities, reports C. Olajos, department manager.

## Horseshoe Pitchers Take Belen Honors

Three Sandians shared honors in a recent open horseshoe tournament sponsored by the Belen Horseshoe Club. Playing at Rio Grande Estates June 8-9, Ross Sinkey (2452) took the Class B championship while Tom Towne (1113) was runnerup in Class A, and Gordon Cummings (4251) was Class C runnerup.

# Safety Engineers Have Half Century Record of Service to Industry

This is another in a series of articles describing the activities of member organizations of the New Mexico Council of Technical and Scientific Societies.

"In the half-century since the founding of the American Society of Safety Engineers, the safety movement has grown from a sporadic effort on the part of a few industrial, insurance and government men to an organized movement of national and even international proportions," Orvalle W. Graham (3211), said.

Orvalle is immediate past president of the New Mexico Chapter of the American Society of Safety Engineers and currently a member of the Board of Directors. Dale S. Cone (3211) is also a board member.

The New Mexico Chapter was organized in 1956. Currently the group numbers 40 safety engineers throughout the state. The National society has 7500 members in more than 2000 chapters in the United States and Canada.

Objectives of the organization are to contribute to the science of safety engineering and the conservation of life and property. The society actively engages in safety education and works with the National Safety Council, governmental agencies, and other technical societies in promoting safety projects.

"The New Mexico Chapter has been active in promotion of safety in schools and colleges," Orvalle said. "We sponsor an annual

safety essay contest for students in driver training courses and award a savings bond to the winner."

Other local projects have included a campaign to make driver training mandatory in public schools. Assistance has been given state and municipal authorities in setting up safety codes and ordinances. The society has helped set standards for registration of safety engineers.

"We have also assisted Civil Defense authorities in various studies and projects," Orvalle said, "and we support the educational projects of the New Mexico Council of Technical and Scientific Societies."

Meetings are held monthly except in August and December. Programs consist of speakers, demonstrations, workshops, and discussions designed to help members keep informed about new developments in safety engineering.

National publication of the organization is the **Journal of the American Society of Safety Engineers**. It is a vehicle for presentation and discussion of technical papers and research findings.

Members convene annually in the Fall to attend the Safety Congress in Chicago, Ill., headquarters for the national society.

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

**RULES**

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

FOR SALE

- TWO LOTS, each 75' x 200', 2 miles east from Hiway 10 on Hiway 66. Griego, AX 9-4043.
- '57 VOLKSWAGEN sunroof, radio, new w/w tires, air, also '60 Chevrolet Impala 2-dr. HT, R&H, auto. trans., factory air. Gallegos, DI 4-4788.
- HEATHKIT PREAMP, base amplifier, FM tuner, \$45. Johnson, 255-5427.
- 2.7 ACRES on Rio Grande Blvd. NW, \$8,000. Terms. Christianson, DI 4-2867.
- ROLLER SKATES, Chicago custom gold medalist, Fo-Mac premier wheels, full precision bearings, high top black boot, size 11 1/2. Gary, AL 6-7325.
- BUFF BRICK 3-bdr. 1 3/4 bath, landscaped, sprinklers, AC, FAH, carpeted, drapes, convenient neighborhood, 2713 Valencia NE. Poore, AM 8-2036.
- GREAT DANE pups, black and harlequin, AKC registered, champion lines, 8 weeks old. Holt, 299-5943.
- '57 FORD 6-cyl. std. trans., new clutch, rings and valves, tinted windshield. Moeding, 299-4904.
- STAMP COLLECTION, World Wide: Regent album with stamps and large number of loose stamps, less than one cent each, \$15 or best offer. Duvall, 299-8744.
- '60 CORVAIR, R&H, auto. trans., blue and white. Garcia, DI 4-9433.
- '58 JEEP WAGON, 6 cyl., OD, seat belts, below book. Buescher, 299-8744.
- '48 CHEVROLET club coupe, good transportation, \$100 or best offer. Comiskey, AM 8-5120 after 5 p.m.
- CAMPING TRAILER, 2-wheel fold up tent type, \$150; girl's bike, 20", \$10. Barbier, 1425 Hoffman Dr. NE, 299-1305.
- '57 FORD FAIRLANE 500, 4-dr., R&H, automatic; '57 Ranchero, R&H, standard; camping trailer, 19 ft. Zenith, self-contained. Otero, 256-6597.
- '57 PLYMOUTH Savoy, owned by mechanic. \$350 or best offer. Smith, AL 6-4411, ext. 54176 after 5 p.m. or weekends.
- S&W Chief's special revolver, .38 cal., 2" barrel, oversized grips, trigger shoe, \$47.50. Parks, AM 8-0875.
- '55 PONTIAC hardtop coupe, 2-dr., R&H, w/w, \$375. Wilson, AX 8-0049.
- ENCYCLOPEDIA Britannica, seven years old, up to date year books. Cates, AM 8-8650.
- REFRIGERATOR, \$30; two year old 30" gas range, \$80; automatic washing machine, \$50; grand piano, \$400. McFall, AX 8-1552.
- RELAXICIZOR, \$40; blond dinette set, \$20; bathinette, deluxe, \$12; feeding table, \$10; kitchen table, no chairs, \$5. Mandell, AX 9-4158.
- HARDWARE for overhead garage doors. Hostetler, AL 6-3803.

**NEXT DEADLINE**  
**FOR SHOPPING CENTER ADS**  
**Thursday Noon, June 27**

- COLLIE PUPS, AKC registered, tri-colored or mahogany sable, championship stock. Linn, BU 2-3986.
- POWER MOWER, Sears reel type, \$40; Cornet, \$115. Hayes, 298-4682.
- SELL OR TRADE: 3-bdr w/attached garage, 1/2 acre land, soft water, \$12,900, country living. Cummings, 298-5173 after 5 p.m.
- CHINA, Winfield Dragon Flower design, won in contest, never used, 35% discount. Carter, DI 4-6563.
- '58 RAMBLER Deluxe sedan 4-dr., 6-cyl, OD, available July 2 for best offer. Binder, 299-2937.
- WIRE DRESS FORM, Sear's, adjustable, for sizes 12-16, \$15; woman's overcoat-type heavy winter coat, \$10; B-4 bag, dark blue, \$5. Champion, AX 9-5821.
- '57 FORD RANCHWAGON, 6-cyl, std. trans., one owner, \$550. Mabie, AX 8-1535.
- '56 CHEV. BEL-AIR 4-dr. sedan, AT, PB, R&H, new brake linings, 65,000 miles \$500; 17" Motorola TV console, \$30. Diebold, AX 9-6772.
- '59 OPEL STATION WAGON, R&H, see at 305 Wyoming NE. Slater, 268-0889.
- CRAFTSMAN RIDING LAWN MOWER, \$65. Cary, Los Lunas exchange 865-9303.
- COSCO JUMPER CHAIR; car bed w/extra bassinet pad; twin size springs and mattress. Coon, 6931 Edwina NE, AX 8-0845.
- 3-PIECE SECTIONAL, pink w/foam cushions, \$50 or best offer. Netz, AX 9-7036.
- '56 TRIUMPH CYCLE 650CC; Magnavox TV-radio-phono w/15" speaker. Looney, 298-2123.
- SOFA BED, Pitti, AL 6-1629.
- CUSTOM BUILT 3-bdr, 1 3/4 bath, a/c, fireplace, electric built-ins, double garage, pitched roof, landscaped, assume 5 1/4 GI loan, \$18,400. Nelson, AX 8-0847.
- HOT PLATE, Kenmore electric, 2-burner, low, medium, high heat, \$5; tennis racket, Melbourne, w/racket press and cover, \$5. Young, AL 6-9158.
- TAPE RECORDER and accessories, Wollensak. Frettem, AX 9-1588.
- REFRIGERATIVE AIR CONDITIONER window mounted, cost \$180 new, sell for \$75; two 8.00x14 snow tires, \$20. Reed, AX 9-7425.
- HOSPITAL BED, Simmons, 1960, w/custom made foam mattress. Hillier, AX 9-1771 after 5 p.m.
- AT CEDAR CREST, new unfurnished 2-bdr, frame house, pitched roof, approximately 1/4 acre, Highway 10 frontage, \$5400. Aaron, 282-3124.
- '54 FORD 4-dr., 6-cyl. straight stick. Calvery, 255-9545.
- 26", 3HP MOWER, \$25; electric edger, \$15; 20W amplifier w/controls, \$30; round bridge table, 4 chairs, \$8. Carlson, 299-0258.
- CATAMARAN BOAT, 17' x 8' Powercat fiberglass, American trailer, twin Mark 58 engines, sell or trade. Capaldi, 2013 Palomas NE.
- '52 BUICK 4-dr. stand. trans., R&H, good rubber, \$95; Jeep, \$175; twin beds w/bookcase headboards, \$15 ea. Brown, DI 4-6831.
- 3 BDR home, w/ fireplace, garage, hardwood floors, AC, vac-u-flo system, forced air heat, less than FHA appraisal. Meahl, AL 5-0674.

- '62 CORVAIR "700" 2-dr. sedan. Will trade. Wade, AL 6-6995.
- THUNDERBIRD tent trailer; 1 full size crib. Goldenberg, AX 9-5034.
- EVAPORATIVE COOLER, 3000 cfm, \$35; clamp-on trailer hitch, \$2.50. Toya, 125 El Pueblo Rd. NW, DI 4-2775.
- BEDROOM SUITE, limed oak; '59 model Kenmore washer; dryer; small chest; kitchen stool; gossip bench; girl's bike; tricycle. Canady, 1105-B Louisiana SE.
- 8' CABOVER camper, sleeps four, complete with lifting rig; '62 Dodge 1/2-ton, 4-speed V-8. Sell each or both. Tolbert, 282-3438.
- HAM RECEIVER, Hammarlund HQ-129X, \$115; scooter, '53 Lambretta, \$45. Fisher, AX 9-2662.
- SHELTIE (toy collie) puppies, AKC registered, championship stock. Schneider, AX 9-6243.
- 24" TV, Westinghouse table model w/stand. Will sell or trade for 19" portable. Gluvna, 299-8027.
- DEEP FREEZE, Coldspot, 14 ft., \$90; Coldspot refrigerator, 6.5 ft., \$50. Granum, 243-1491.
- 5 PAINT cans, 5 gal. size with covers, asphalt coated, \$1 for the lot. Hill, CH 3-3493.
- CALICO CAT and 3 kittens; 6-year crib, \$15; Singer vacuum, \$25 or twin bed; 1961 Nash Metro, 9,000 miles. Naumann, 298-6476.
- NORGE REFRIGERATOR, 11 cu. ft., \$45. Brockway, 243-1019.
- LEAVING TOWN, 3 bdr., enclosed patio, carpeted, AC, forced air heat, 1 3/4 baths, assume 4 1/2% G.I., minimum down. Pazel, 298-5805.
- '57 FORD, black, convertible, heater, automatic shift, \$500. Tapia, 268-3762.
- DRAPES, modern design, light background, 120" x 84", \$10; hand lawnmower, needs adjustment, \$5; umbrella style clothesline, \$8. Thorne, 256-7865.
- RUGGED 1958 NSU Prima scooter, 7000 miles, 12 volt starter-generator, 6.2 hp, windshield. Beck, AX 9-8318.
- '51 PLYMOUTH coupe, 70,000 miles, \$100. Martin, AX 8-2064.
- EXERCYCLE manually operated. Kostka, AM 8-8793.
- DINETTE SET, chrome, 4-chairs and table, original cost \$159, now \$35. Delnick, 298-5276.
- DUNCAN PHYFE table; antique marble top; wash table w/complete Wedgewood china. Savage, 268-0755.
- LEAVING AREA, best offer takes: tandem bicycle, wringer washer, TV, lawnmower, electric fry-pan, bedroom set, dining room set. Pazel, 298-5805.
- TRICYCLES, two, \$5 each; boy's 26" bicycle, \$5; child's small scooter, \$1. Kirby, 10011 Betts Dr. NE, AX 9-2948.
- SIGMA AIRCRAFT club has openings for one membership on Cessna 172 and two memberships on Taylorcraft. Hedberg, AX 9-6359 or Risse, AX 9-5002.
- 9-PASS. Station wagon, 1956 Mercury V-8, auto. trans, power brakes, R&H, seat belts, \$550. Summers, AX 9-4674.
- COSCO chrome and red plastic youth chair, \$5; 4-drawer, white painted dresser base, \$12. Campbell, AL 6-1015 after 5 p.m. or weekends.
- SCREEN DOOR, 36" wide, white w/grille and lock, \$5. Harper, AX 8-0146.
- 1957 OLDS Deluxe; radio Collaro TC-540 changer Eico HF-61AK preamp. Bortniak, 298-5093.
- DANISH MODERN walnut dining room set, 10 pieces, 6 months old, pay balance due, save 30%, no equity. Stohler, 268-9510.
- '56 BUICK ROADMASTER, 4-dr. sedan, R&H, PS, PB, \$250. Disch, AX 9-1201.

- STEEL CASEMENT WINDOWS w/screens and hardware, roll out type, 2-54"x38", \$10 ea., 2-38"x36", \$8 ea. Gubbels, 298-3528.
- '61 VESPA, 4000 miles, 150 cc, 80-90 miles to gallon, \$300. Clark, 242-0545.
- '60 LAND ROVER station wagon, 4-wheel drive, 18,600 miles, Diesel-powered, selling below market value to settle an estate. Credit Union financing available. Reynolds, AX 9-0709, Dickinson, AL 5-6554.
- LARGE GE electric stove, \$75. Ahern, AX 8-0956.

WANTED

- TO RENT some July week-end, pickup camper to fit '58 Ford std. bed or Chev. long bed. Wilson, BU 2-3225.
- CARE FOR first-grader before and after school starting this fall. Must live within short distance of Yucca Elementary School. Akin, AX 9-4242.
- 32" SCREEN door in good condition, with or without screen. Garcia, AL 6-7606.
- DRIVER to share expenses on trip to New York City, leaving Aug. 22, return Sept. 8. Gottlieb, 345-1009 after 6 p.m. or weekends.
- RIDE from 11400 Hannett NE to Bldg. 840. Hudson, 299-1208.
- '58 or '59 Rambler American, auto. trans., excellent condition. Joseph, 299-6989.
- WOMAN to share 2 bedroom home in Southeast Heights. Young, AL 6-9158.
- 20", 24", 26" used bicycle in good condition. Eric, 256-6541.
- RIDE or share ride from vicinity of Carlisle and Constitution. Hayes, AL 6-3812.
- ECONOMICAL CAR in good condition. Hayes, 298-4682.
- GOOD HOMES for five housebroken, weaned, six-week-old kittens. Colgan, CH 3-4882.
- CHILDREN to care for at my home. Candelaria, 728 56th NW, CH 7-4935.
- HOMES for well-trained, pettable kittens. Johnson, AL 5-8851.

FOR RENT

- NE HEIGHTS summer rental, furnished, 2-bdr, brick patio, 13 mins. from base, 3 from Winrock, \$130 monthly. MacCallum, AL 5-6363.
- MODERN, FURNISHED, Sandia Mt. cottage, suitable for 1 or 2, 25 min. from base, water and butane paid, \$45/mo., available July 1. McMillin, BU 2-3226.
- UNFURNISHED 2-bdr. apts., stove and refrigerator, a/c, walled, automatic washer rough-in, near Bases and schools, 401 Grove SE. Milligan, CH 2-2959.
- RENT OR SELL: 3 HP rototiller. Bortniak, 298-5093.

LOST AND FOUND

- LOST CHILDREN'S PET, white miniature poodle, Meme, from home Sandia Knolls on Frost Road, reward. Wilson, BU 2-3225.
- LOST: religious book with bright green paper cover; Ronson butane lighter; dark brown wallet with ID of W. H. Edwards and \$3; 3 keys on ring; 3 1/2" stog handle knife with 2 blades; 2" yellow handle penknife; child's blue frame glasses, lost at pool. Last and found, ext. 29157.
- FOUND: black leather watch strap; brown frame prescription glasses; keys on chain; Rivera pipe; gold rim, green temple sunglasses; bone handle penknife; shield-shaped tie tack; Practical Electronic booklet; slide rule marked Dale Stout, Cherokee, Okla. Lost and Found, ext. 29157.



EXAMINING a map of Albuquerque for the location of the proposed Montano Bridge, which will affect the residents of the Paradise Hills area favorably, are (l to r) Bob Gall (3431), president of the Paradise Hills Community Association; Owen Berg (4411), president of Volunteer Fire District No. 7; and Sverre Johannesen (2344), a member of the board of directors of the Community Association, incorporated in April.

### Group of Sandians Working Hard In Volunteer Community Projects

"A community is only as active as the people living in it," R. P. Gall (3431) commented. "Our goal, through community action, is to make our community a pleasant, wholesome, and productive place to live."

Bob is president of the Paradise Hills Community Association, a group of residents recently incorporated on a non-profit basis to promote and provide for the continued improvement of the Paradise Hills area. Several other Sandians are serving on the board of directors of the new organization, on committees, and in other capacities.

Other members of the board include Harry Caldwell, vice president of the Association; Charles Bender, secretary; William Clair, treasurer; Robert Trapp, corresponding secretary; and Sverre Johannesen (2344-3). The president of Paradise Hills' fire protection organization — Volunteer Fire District No. 7 — is Owen Berg (4411-6). Other members of the District 7 Fire Department include Ray J. Holesinger (1332), S. S. Marcowicz (2421), Gene H. Romero (3242), and Vernon F. Simmons (2534).

"Our excellent fire department — which, incidentally, was trained at Sandia Base — is one of the community organizations we're working with," Bob continued. At a recent public meeting, the organization and purposes of the Association were outlined to the residents of the Knolls, Country Club Estates, and Rio Vista areas of

Paradise Hills. Plans for such projects as a community center, a swimming pool, parks, a library, a newsletter, and other community facilities were outlined, and plans for forming working committees were discussed. In addition, the Association plans community action in such areas as public utilities, police protection, and public safety.

"Plans for the park are already drawn up," Bob continued, "and we've gained excellent support from such organizations as the Corrales Adobe Theater, which is contributing the amount of ticket sales for one night of its current production of "Of Mice and Men" to the Association's fund for a community building. W. A. Carstens (3423) is appearing in the production. Some working committees are already organized; others will soon be underway."

The Paradise Hills Community Association is not a governmental organization, nor does it incorporate the community as a village. "Membership in the Association is growing rapidly," Bob concluded, "but we need more members who will actively participate in the various programs and projects. It's a group effort in which everyone can participate, and from which everyone can derive solid benefits."

### Avert Vacation Financial Disaster; Carry Protected Travellers' Checks

The way Americans are losing track of their cash these days, you'd think it grew on trees. And with the vacation season here, with more people traveling, and with the relaxed state of mind that sunshine, fresh air, and vacation leisure induce in some of us, personal loss of cash will probably increase.

A survey conducted for a national vendor of travellers' checks disclosed that the total of such losses in America has reached a rate in excess of \$700,000,000 each year. That isn't just pin money. Further, the survey disclosed that more than nine and one half million Americans experienced losses of cash in a single year, and that the average loss was \$75 per person. And, surprisingly, those who have the greatest loss record with their cash are those who are most favored occupationally and educationally.



SANDIA LABORATORY VOLLEYBALL CHAMPIONS collected their trophies last week. The 7300-I team took the crown of the Redbird League with a 7 won-no lost record and went on to sink 7300-II in the playoffs. From left are Bob Henderson (7311), Don Bauder (7323), Bill Hoffman (7323), Bob Workhoven (7323), accepting team trophy from R. H. Schultz (7320), Bill Kampfe (7323), Ray Peabody (7324), Bill Wilson (7325).

## Strokes Affect Thousands Each Year — Blood Supply to Brain Is Reduced

By S. P. Bliss, M.D.  
Sandia Corporation Medical Director

Strokes affect hundreds of thousands of people every year. Although many people associate this disorder with the later years of life, it is not necessarily an affliction of old age.

A stroke occurs when the blood supply to a part of the brain is reduced or completely cut off. When the nerve cells in that part of the brain are deprived of their blood supply, they cannot function and the part of the body controlled by these nerve cells cannot function normally either. The result of a stroke may be, for example, difficulty in speaking, paralysis, or loss of memory.

Interference with the blood supply to the brain may be due to a number of causes. Most commonly it is caused by a blood clot, or thrombus, which forms in an artery narrowed by atherosclerosis. Sometimes it is caused by a clot which is carried in the bloodstream to the brain from another part of the body. This type of clot is called an embolus. Another common cause of stroke is hemorrhage, or bleeding from an artery in the brain.

After a stroke, the damaged nerve cells may recover, or their functions may be taken over by other brain cells. Some patients recover quickly. Others may suffer such serious damage that it will take a long time to make even a partial recovery.

Immediate attention to the proper exercises and other forms of physical therapy, and to the position of the patient in bed, can

do much toward helping the patient regain the use of the affected muscles. Even a late start with physical therapy may be helpful, but the sooner these measures are taken, the more effective they are likely to be.

When a stroke has been brought on by a blood clot, doctors may use anticoagulants to help prevent another stroke. However, these drugs are not used with all patients.

When strokes have been caused

by atherosclerosis in a neck artery leading to the brain, surgery can sometimes help. This may mean removing the obstruction from the artery, or replacing the affected section of the vessel with a synthetic artery graft.

Terms used for various kinds of strokes include cerebral thrombosis, cerebral embolism, cerebral vascular occlusion, and cerebral hemorrhage. Apoplexy was once a common name for stroke, but it is seldom used by physicians today.



WINNERS in the recent Fred J. Given Memorial Golf Tournament admire trophies collected. Wendell Nelson (4152), right, took low gross honors with a 76 on 18 holes. Jack Marceau (2421), was low net winner with 64. The tourney was played June 1 on the UNM golf course.

### More Sandia Employees Receiving Bachelor Degrees This Term

Six more Sandia Laboratory employees received Bachelor's degrees during recent commencement exercises.

B. S. Jaramillo (2643) was awarded a Bachelor's degree in business administration from the College of St. Joseph.

At the University of New Mexico, Bachelor of Business Administration degrees were conferred on Gertrude M. Byrne (3126-4) and Roger W. Thorp (4123).

Bachelor of Science degrees in electrical engineering were conferred upon Leeland H. Hogue (1431), John H. Lovelace (1113), and Gary L. West (7222), also at the University of New Mexico.

## Sandia's Safety Record

**Sandia Laboratory HAS WORKED 1,610,000 MAN HOURS OR 46 DAYS WITHOUT A DISABLING INJURY**

**Livermore Laboratory HAS WORKED 290,000 MAN HOURS OR 54 DAYS WITHOUT A DISABLING INJURY**

... and yourself.