

VELA SATELLITE MOCKUP was used to check the installation of the Sandia logics systems before the components were shipped to California. Shown with the 26-sided model is J. C. Rehberg of Satellite Systems Division II, 9234.

Sandia-Designed Logic Systems And Detectors Aboard Satellites

Shipment of larger and more comprehensive Sandia-designed logic systems for the fourth pair of Vela nuclear detection satellites was completed last week when the final modules were sent to TRW Systems in Redondo Beach, Calif. There they will be installed in the 26-sided, 5-foot satellites.

TRW Systems is assembling the satellite twins for a scheduled Dec. 15 launch that will take them to their orbital paths some 60,000 miles out in space.

Payloads on the new set have an improved capability for detecting nuclear bursts deep in the earth's atmosphere and a capability for detecting shielded weapons and weapons detonated behind the moon.

The satellites are larger, each weighing 730 pounds compared to the earlier satellites which weigh about 500 pounds. In addition, six solar cell panels have been added to each satellite, making them slightly fatter than the others which have 18 panels each. The extra solar cell panels supply additional power required by the newer and larger payloads.

Sandia designed and fabricated the associated data processing electronics in the payloads together with special equipment on the ground to test the performance of the payloads. In addition, the satellites will contain Sandia-developed detectors and power supplies.

Sandia logic systems are more sophisticated than those in the earlier satellites. The new systems have 24,500 resistors, as compared to 11,200 in the original pair; 1600 integrated circuits, with none in the first twins; 9000 diodes, as compared to 3700 in the first; 5700 transistors, more than double the number in the original set.

The logic system, together with the computer controlled ground checkout equipment, was developed by personnel of Satellite Systems Divisions I and II, 9231 and 9234. Sandia-supplied detectors were developed by Seismic Systems Division 9233 and Electro-Optics Division 9232. Local manufacturers, with guidance from Manufacturing Development Electronics Division I 2547, fabricated some of the hardware.

Los Alamos Scientific Laboratory designed the x-ray, gamma ray, and neutron radiation detectors for the satellites.

LASL is also supplying new scientific experiments, including a charged particle analyzer and a solar-proton telescope, designed to measure background radiation, particularly that associated with increasing solar activity as the sun moves into the active portion of its 11-year cycle.

The original three pairs of nuclear detection satellites, the first of which were launched in October 1963, continue to far exceed their design life of six months operation in space. The payloads have amassed a total of over 100,000 hours of orbital time, or 280 million transistor hours without a failure.

The detection satellite program is the responsibility of the Advanced Research Projects Agency of the Department of Defense. Air Force participation in the program is concerned with the development of the spacecraft, launch operations, and control of satellites in orbit. Management of this effort is under the Air Force Systems Command's Space Systems Division.

TRW Systems Group, a division of Thompson Ramo Wooldridge, Inc., designs and builds the spacecraft.

New Motor 'Sub-Pool' Works Well

"We went into this new motor pool plan knowing we'd have all kinds of problems—and we were waiting for them. But, we've had less than a half-dozen complaints; and the last one was about three months ago. Instead we've been getting a steady stream of compliments."

That is how Stan D. Brooks, supervisor of Motor Pool Division 4573, describes the "sub-pool" system after five months of operation.

On Feb. 1, 1966, vehicles were withdrawn from organizations where they'd been permanently assigned and, along with those already available on an individual trip basis, were divided among four sub-pools at Sandia Laboratory. Admittedly there were doubts—and grumbles—about the system when it first was placed in operation, but the smooth way it is now functioning can be attributed to both vehicle users and dispatchers.

"Specific vehicles are assigned to individual sub-pools. We worried whether employees would return the vehicles to the



J. A. Hornbeck



S. P. Schwartz

Change Effective Oct. 1

John A. Hornbeck Named to Succeed S. P. Schwartz as Sandia President

At a meeting of the Board of Directors, Sandia Corporation, on July 12, the resignation of S. P. Schwartz as President was accepted, to become effective as of the close of business Sept. 30, 1966.

Mr. Schwartz will continue as Vice President of Western Electric Co., Inc., and serve in an advisory capacity to Sandia until Oct. 31, 1966, at which time he will retire.

John A. Hornbeck, currently President of Bellcomm, Inc., will serve as Executive Vice President of Sandia during the month of September, and will assume the Presidency on Oct. 1.

Mr. Hornbeck was also elected a Director of Sandia Corporation effective Sept. 1. Coincident with this action by the Sandia Board, Directors of Western Electric Company elected Mr. Hornbeck a Vice President of that Company.

Before joining Bellcomm, Inc., as President in 1962, Mr. Hornbeck was Executive Director, Semiconductor Device and Electron Tube Division at Bell Telephone Laboratories, Inc.

He joined Bell Laboratories in 1946 as a research physicist in the Physical Electronics Department. In 1951 he transferred to the Transistor Research Department. He headed groups specializing in Semiconductor Physics from 1952 to 1953. He was named Director of Electron Device Development in 1955 and assumed the position of Executive Director at Bell Labs in October 1958.

Mr. Hornbeck received an AB degree from Oberlin College in 1939 and his PhD in physics from Massachusetts Institute of Technology in 1946.

He is a Fellow of the American Physical Society, a Fellow of the Institute of Electrical and Electronics Engineers, a member of the American Association for the Advancement of Science, Phi Beta Kappa, Sigma Xi, and Delta Rho Sigma.

Mr. Schwartz, who has served as Sandia's President for six years, joined the Bell Telephone System in 1927 as an engineer with Western Electric Company in New York City.

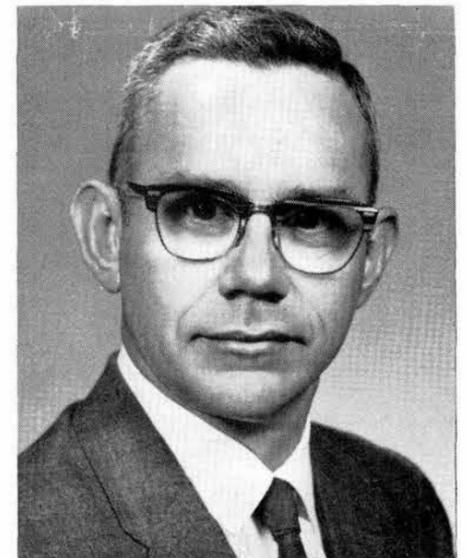
He has served in various supervisory assignments concerned with the communica-

tion and defense activities of Western Electric. In 1957 he was appointed Vice President and General Manager of Sandia Corporation.

He received his degree in electrical engineering from Lehigh University in 1926.

Mr. Schwartz is a member of the New Mexico Tech Research Foundation Development Council, the Air Force Historical Foundation, the TWA Advisory Council, the Chamber of Commerce of the United States, and the United Fund Campaign Advisory Committee.

He has served as a consultant to the Nuclear Panel of the Air Force Scientific Advisory Board and as a member of the Board of Directors of Bernalillo County Chapter of the American Red Cross, and as a member of the Advisory Board, Kit Carson Council, Boy Scouts of America.



W. J. Howard Is Vice President 1000, Effective on August 1

At a meeting of the Sandia Corporation Board of Directors, July 12, W. J. Howard was elected Vice President of Sandia, effective Aug. 1.

Also effective Aug. 1, Vice President R. W. Henderson will assume the responsibility for the 2000 Organization—the position formerly held by E. H. Draper.

Mr. Howard will succeed Mr. Henderson in charge of the 1000 Organization.

Mr. Howard has been Director of Advanced Systems Development 5600 since June 16 of this year. Prior to that he had been on a leave of absence from Sandia serving as Chairman of the Military Liaison Committee to the Atomic Energy Commission and Assistant to the Secretary of Defense for Atomic Energy. He was appointed to this post by President Kennedy in November 1963.

He joined Sandia in 1946 and was named manager of Engineering Development Department in 1952.

Mr. Howard transferred to Livermore Laboratory in 1956 and was promoted to Director of Systems Development 8100.

He received his BS degree in mechanical engineering from New Mexico A & M College in 1952.

Continued on Page Six

THE WHITE HOUSE
Washington

MEMORANDUM FOR THE HEADS OF
DEPARTMENTS AND AGENCIES

If Federal agencies were still operating at their 1964 level of efficiency, my 1966 and 1967 budgets would have to be \$3 billion higher. These savings mean that we are getting more value for our tax dollars. It means the American people are \$3 billion better off.

This makes clear why I consider cost reduction so important. It explains why I want every Government employee to think hard about opportunities for cost reduction, and why I want the best ideas publicized for all to use. A good idea from one agency should not stop there, but must be made known throughout the Government.

Some time ago I asked the Budget Director to develop a system of exchanging information about cost reduction among Federal agencies. He has prepared the pamphlet which is attached—the first issue of a series of "Cost Reduction Notes."

"Cost Reduction Notes" describes imaginative actions which have produced savings in one agency and which carry promise of applicability throughout the Government. The ideas vary widely, but they were chosen as ones likely to be useful to agencies with differing responsibilities. By bringing the ideas together in a pamphlet which will be circulated throughout the Federal Government, we are seeking to multiply the savings already achieved.

I want "Cost Reduction Notes" to be read widely in every agency, both in Washington and in the field. I want each idea to be considered carefully. I hope that many of them can be put to use.

/s/ Lyndon B. Johnson

This memo was sent to Sandia President S. P. Schwartz with a cover letter from AEC Chairman Glenn T. Seaborg which noted:

"The enclosed message from President Johnson again emphasizes the importance of good cost reduction ideas and actions. It also transmits a pamphlet—the first issue of a series of 'Cost Reduction Notes.' Additional copies are being distributed to your organization through our field offices so that each idea can be considered carefully, as the President has requested . . .

"I know that we can benefit from the experience of other agencies. At the same time, I am confident that by making fuller use of the knowledge, experience, and imagination available in the AEC and contractor organizations we can extend and better our cost reduction record.

"Our obligation to obtain greater efficiency and economy never ends."

Copies of the pamphlet "Cost Reduction Notes" may be borrowed from Value Engineering and Cost Improvement Division 2563, tel. 264-5973.

Promotions

M. Louis Selder (8251) to Staff Member, Technical
Catherine Banks (8213) to Staff Member, Administrative
James A. Kersey (8127) to Staff Associate, Technical
John Woodworth (1122) to Staff Assistant, Technical
Terry A. Leighley (7226) to Staff Assistant, Technical
Billie L. Pierce (7226) to Staff Assistant, Technical
Orville F. Padilla (2555) to Staff Assistant, Administrative
Eleanor Kelly (3151) to Staff Assistant, Administrative
Charles R. Ortiz (3241) to Staff Assistant, Administrative
Raymond H. Chavez (3463) to Staff Assistant, Administrative
James R. Rozell (4615) to Staff Assistant, Administrative
Joseph A. Portolese (8213) to Staff Assistant, Administrative
Johnny R. Ellen (8243) to Staff Assistant, Administrative
F. C. Sandoval (9414) to Staff Assistant, Administrative
Ermenio C. Mata (4574) to Janitor
Glenn B. Baker (4212) to Toolkeeper
Marvin O. Aaron (4614) to Utility Operator
Juan N. Sanchez (4614) to Utility Operator
Howard Anderson (4511) to Helper
Mae L. Lovelace (4632) to Technician
Joseph T. Plant (4514) to Helper
George R. Edgerly (4233) to Technician
James E. Tichenor (4224) to Specialties Technician
Terrance Wolfe (8222) to Laborer
Wayne E. Townes (8222) to Utility Operator
Roberta Rainhart (3126) to Typist Clerk
Barbara A. McMurrugh (3428) to File Clerk
Eileen V. Bennick (3126) to Secretary Steno
Wynn L. Harlan (3126) to Secretary Steno
Mary C. Helton (3126) to Secretary Steno
Shirley I. McCall (3126) to Secretary Steno
Estelle D. Simmons (3126) to Secretary Steno
Maria G. Telles (3126) to Secretary Steno
Benita Villanueva (3126) to Secretary Typist
Floria S. Abe (3421) to Library Assistant
Veronica Dostert (3421) to Library Assistant
Mary Hurst (2433) to Record Clerk
Maureen Goodwin (2234) to Service Clerk
Mary M. Gonzales (7521) to Typist
Eugenia Flickinger (3421) to Library Assistant
Dorothy Jones (4152) to Accounting Clerk
Doreen Westfall (2112) to Report Clerk
Carl O. Kemp (3465) to Camera Operator
Grant M. Johnson (4212) to Stock Analyst
Dominic Russell (4613) to Stock Analyst
Jesse Watts (8245) to Chauffeur
Willard W. Irwin (8223) to Technician
Rodney D. Aguilar (8235) to Messenger
Betty Parker (8213) to Accounting Clerk
Janet Vahlensieck (8147) to Secretary Typist
Victor A. Dominguez (8235) to Mail Clerk
Elizabeth Freynik (8253) to Reproduction Service Clerk
Carolyn S. Viel (8120) to Secretary
Mary C. Sites (8231) to Typist
Margaret B. Wilson (1120) to Secretary
W. Sue Williams (2570) to Secretary
Lucille Larrabee (4110) to Secretary
Michael Drago (3463) to Chartist

Congratulations

Mr. and Mrs. John Budlong (7336), a son, Todd William, June 28.

Mr. and Mrs. G. T. Leyba (7322), a daughter, Evette, June 27.

Mr. and Mrs. R. C. Cranfill (2565), a daughter, Robin Lynn, June 27.

Mr. and Mrs. Leonard V. Hansen (5212), a daughter, Karey Lyn, July 7.



PARKING LOT PROBLEMS are created when drivers don't watch the parking space lines. Parking too close to another car results in scratches and dents when doors are opened or cars are backed out carelessly. Park carefully, the repair bill avoided may be your own.

K. F. Krug Marks 45 Years With WE



Karl F. Krug observed his 45th service anniversary with Western Electric Company on July 8.

Mr. Krug transferred to Sandia Laboratory in August 1961 and since that time has been manager of Price & Cost Analysis Department 4350 in the Purchasing Organization.

He joined Western Electric in 1921 at the Hawthorne Works and worked there for five years in reproduction and field services activities. In 1926, he was transferred to the Kearny Works where he spent four and one-half years in the Equipment Engineering Organization.

From 1930 until he joined Sandia, Mr. Krug was stationed at Western Electric Headquarters in New York City. His principal assignments were Office Service Manager for Headquarters Organizations in Supply Service and Program Planning, and Government contracting.

Mr. Krug is a member of the Telephone Pioneers and in 1960-61 served as president of the Thayer Chapter (New York metropolitan area).

R. J. Hansen Reappointed To Red Cross Council



R. J. Hansen, director of Development Shops, has been reappointed to the Western Area Advisory Council of the American Red Cross. His new three-year term began this month.

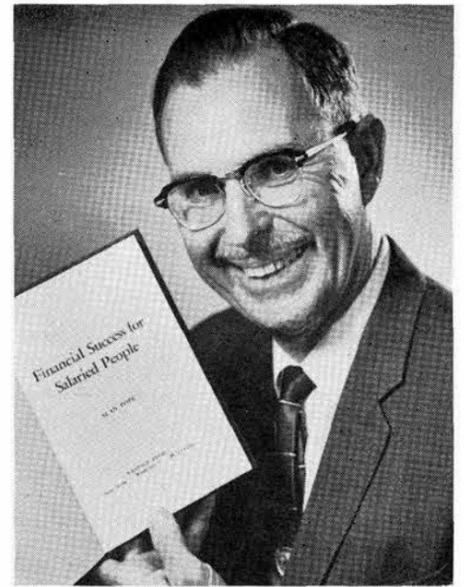
A year ago he was appointed to the council to fill the unexpired term of a member who has transferred from the Western area.

The Western Area Advisory Council has 25 members including seven who are on the Red Cross' Board of Governors and reside in this area. The council offers a means of contact between local chapters, administrative officials in the national organization, and the Board of Governors, which has powers of government, direction, and management of the American Red Cross.

Mr. Hansen has also been named to the 1967 National Convention Organization Committee. This group will consider nominees for chairman, vice chairman, and secretary and will select a nominating committee for the forthcoming election.

Active in the Bernalillo County Red Cross Chapter, Mr. Hansen was elected to the board in 1956, served as Budget Chairman, Disaster Chairman, and Vice Chairman, and in 1963 was named Chapter Chairman. He served in this position until last March and is still a member of the board of directors.

"I'm thoroughly in favor of the Red Cross' principles and am convinced that it offers worthwhile services," he said. "The most important of these are disaster relief and service to our armed forces."



SHARING HIS KNOWLEDGE on mutual funds, A. Y. Pope (9300) ended up with enough material for this book, which has just been published.

Seventh Book Has Popular Subject

Books by Alan Y. Pope, director of Aero Projects, have been appearing regularly for quite a few years. These have ranged from textbooks in the field of aerodynamics to technical books on wind tunnel testing—everything from low speed to high speed.

Alan's seventh book isn't on any of these subjects. Instead, he wrote about a subject dear to his heart—and everyone else's. Money!

"Financial Success for Salaried People" is the title and it is being published by Vantage Press.

"I've done a lot of investing of every type including rental houses, land, notes, stocks, bonds, and mutual funds," Alan said. "I'm sold on growth-stock mutual funds. I own mutual funds. I am buying them for each of my four children."

As explained in the book's preface: "This book has been written to help salaried people, starting with a few dollars, obtain guidance for accumulating wealth. It is the story of growth-stock mutual funds . . . and how they meet the needs of salaried people . . ."

The book was an outgrowth of Alan's interest in the subject and started as a supplement for his many talks before local investment groups. "I decided to write 10 pages on the subject which I could pass around, but I ended up with a book," he explained.

Where does he find the time to write so many books? "I have to fly frequently. On an airplane there are no telephones or other interruptions. I do most of my writing by longhand on trips and then type the pages when I get home," he explained.

In the next month or two Alan's eighth book (the third in one year) will be published—this one will have a technical subject.

PAGE TWO
LAB NEWS
JULY 15, 1966

SANDIA CORPORATION LAB NEWS



ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

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BOTTLEOLOGISTS Jim and Millie McGriff display their collection of hard-earned purple bottles, relics of the Nevada pioneers. The bottles turn shades of lavender and purple after years in the desert sun. Other avid collectors include Ray and Pat Brin.

At Tonopah

Sandians Hooked on Collecting 100-Year-Old Purple Bottles

A bottleologist, Tonopah style, is a collector of bottles discarded by the pioneers of a hundred years ago. The old bottles, weathered by decades of desert sun and sand, come in shades of lavender through deep purple depending on the amount of manganese oxide in the glass and the length of time in the sun. They are beautiful — and valuable to a collector.

Two of the most avid collectors among the Sandians of Tonopah Test Range Department 7230 are Ray Brin and Jim McGriff. With their wives, maps dating back to 1878, shovels, rakes, suntan lotion, and an abundance of energy; the two couples head for the desert hills on weekends in search of the elusive purple bottle.

The clue on where to dig may be only a few rusty tin cans or a few shards of purple glass. But dig they must, since the bottles on the surface have long ago become part of the collections of other, lazier bottleologists.

Locating an area where the people of yesterday discarded their trash may take time and patience, but it can be done. It is not unusual to find Ray and Jim in the bottom of their "bottle mine" six feet down and going deeper. No stone is left unturned (you find more scorpions that way) in the search.

Oldtimers would flip to see the fuss made over an old medicine bottle, whiskey flask, or a jar that contained Engrams Milk Weed Creme.

The genteel lady of the time wouldn't have thought of putting a bottle of rye whiskey in her shopping basket, but she did purchase socially-approved bottles of Dr. Thomas Hall's California Pepsin Wine Bitters. The bottles are highly prized today.

Another prize is a "pumpkin seed" whiskey bottle. A round hip flask, the pumpkin seed glass contained many bubbles. This is

a true "brag bottle" nowadays.

Pat Brin and Millie McGriff keep a sharp eye out for perfume bottles and stoppers, opium bottles, and Chinese flasks. A true collector also prizes the mold marks on the bottles identified as "inside screw," "two-piece mold with applied lip," "three-piece mold" and many others.

It takes plenty of elbow grease to clean these bottles that have been buried for long periods, but the effort is worth it, according to the Sandians.

"It takes only one bottle to develop the habit," Ray Brin says.

Retiring . . .



J. A. (Jay) Paulhamus of Manufacturing Process Division 2565 will retire the end of July after almost 14 years at Sandia Laboratory.

His work at the laboratory has all been in the Manufacturing Engineering organization. One of the high points of his career at Sandia was his participation in the preparation of Federal Standard 209—"Clean Room & Work Station Requirements, Controlled Environment." Jay was secretary of the working group which prepared the standard for the Atomic Energy Commission. The standard was accepted by the General Services Administration in December 1963, and now controls all Government clean room procurement.

Jay served as chairman of the working group which recently completed a revision to Federal Standard 209. Primarily the revision clarifies some points, prevents conjecture, and adds use of the metric system. The latter suggests that it could be adopted by European countries and become an International Standard. The revision has been accepted by GSA and is now in a Government printing office.

Since May of this year, Jay has been on loan to Planetary Quarantine Department 2570, to prepare a handbook for the National Aeronautics and Space Administration on "Contamination Control." During his years at Sandia, he has written manuals on five different manufacturing processes and has been an instructor for manufacturing processes courses.

"I have had a grand time at Sandia," Jay says. "It has been fantastic and gratifying—the people I've worked with, the job assignments I've had, my supervision, and the Company."

Mr. and Mrs. Paulhamus will live in San Diego following his retirement, and he hopes to get in lots of bridge and golf. He has a daughter, granddaughter and two great grandchildren living in California, and a son and three grandchildren in Maryland.

Mr. Paulhamus will continue to be affiliated with Sandia Corporation as a consultant. In this capacity, he will occasionally serve as an instructor for manufacturing processes courses and will write additional manuals.

Supervisory Appointments



MERTON M. ROBERTSON to supervisor of Analytical Methods Division II 1122, effective July 1.

In January 1961, Mert joined Sandia in the materials and process development organization where he was concerned with plasma diagnostics for about a year. He later worked on spectrographic investigations of SNAP re-entry flight demonstration vehicles. Last year he had several experiments aboard Sandia's airborne scientific expedition to study the eclipse in the South Pacific and has been designated scientific commander of the Laboratory's airborne expedition scheduled to study the solar eclipse from Buenos Aires in November.

The Elks named Mert the outstanding student in Montana in 1950. He was a Fulbright Fellow to the Netherlands in 1951-52, received a University of Chicago Physics Department Fellowship for 1952-53, and was awarded an Atomic Energy Commission Fellowship for 1953-54.

Mert received a BA degree from the University of Montana in August 1951, a MS in physics from the University of Wisconsin in June 1956, and a PhD in physics, also from Wisconsin, in May 1960.

He is a member of Sigma Xi, American Physical Society, Pi Mu Epsilon, Kappa Tau, Phi Kappa Phi, and Gamma Alpha.



DONALD M. MATTOX to supervisor of Inorganic Materials Science Division 1123, effective July 1.

Don joined the Laboratory in the inorganic materials science group in April 1961.

Since then he has been primarily interested in the electrical properties of semiconducting compounds, structures and properties of thin films, and surface physics.

Don received his BS degree in physics from Eastern Kentucky State College in June 1953 and his MS in physics from the University of Kentucky in August 1960.

From 1953 through 1957, he served as a meteorologist with the U. S. Air Force, mostly in Alaska.

He is a member of the American Physical Society and Sigma Xi.



JACK V. WALKER to supervisor of Applied Radiation Science Division 5222, effective July 1.

Jack joined the Laboratory in the research organization in May 1964 where he has worked with a group doing research in the area of neutron and gamma ray measurements.

Before coming to Albuquerque, he was chief of the advanced training section for the U.S. Army reactors group in Washington, D.C., for eight months. From January to August 1963 he was assistant professor of nuclear engineering at Texas A.&M. University.

Jack received his BS degree in mechanical engineering in June 1960, and a PhD in nuclear engineering in June 1963, all from Texas A.&M.

Jack is a consultant on the Defense Atomic Support Agency's initial radiation panel and a member of the radiation measurement committee of the American Society for Testing Materials. He is also a member of Phi Kappa Phi, Sigma Xi, Tau Beta Pi, and the American Nuclear Society.



MRS. MARY M. CAMPBELL to supervisor of Secretarial Section 3126-6, effective July 1.

Mary joined Sandia as a stenographer-clerk in the staff training group of the personnel organization in August 1957. From December 1959 to February 1965 she was department secretary in Aero- and Thermodynamics Department. She has been secretary to the director of aero projects since then.

Before coming to the Laboratory, Mary was with an oil and gas company in Albuquerque from 1955 to 1957. Before that she was with the Veterans Administration and the Office of Price Administration.

Mary received a BS degree in economics and secretarial studies from Texas Woman's University in Denton in June 1942.

Mary has been teaching noon-hour classes in shorthand theory at Sandia for the past three years. She is a member of the American Association of University Women.

Death

Kathryn F. Vickery, a Sandia employee for some 12 years, died July 5 in Phoenix, N. Y.

She had been a secretary at the Laboratory and was on sick leave at the time of her death. Mrs. Vickery is survived by her parents and a brother.



Events Calendar

July 14-16 — Cole Porter's "You Never Know," Albuquerque Music Theater, 8 p.m. at Menaul School Auditorium.

July 14-17, 20-24 — John Steinbeck's "Burning Bright," Old Town Studio, 1208 Rio Grande NW, for reservations tel. 242-4602.

July 15, 20, and 23 — "Dialogues of the Carmelites"; July 16—"Tosca"; July 22—"Don Giovanni"; July 27 and 29—"The Rake's Progress," The Santa Fe Opera.

July 15-17—Rodeo de Santa Fe.

July 26—Feast day at Santa Ana Pueblo, corn dance at Taos, Acoma, and Santa Ana Pueblos.

Take Note

be offered to about 2000 volunteer Scout leaders this summer.

Like to brush up on your speaking ability among friendly critics? You can by joining the Beta-Aloosters Toastmasters Club.

Most club members are Sandia Corporation and AEC employees. The group meets every Wednesday from noon to 1 p.m. in the staff dining room of the Coronado Club.

For further information call H. H. Patterson (9230) at tel. 299-5152, or Coleman Richardson (AEC-ALO) at 268-9573.



MEN IN MASKS from Grounds Maintenance Section 4575-2 shouldn't be interrupted when they're spraying. It's not that they mind answering your questions about the content of the spray (usually Malthion or nicotine), it's simply that the sprays are dangerous. So if you've got a question to ask about what spray's best for what bug or disease, wait till the spray's turned off and the mask is removed.

A paper entitled "Flow Modification Through Space Charges" has been written by O. M. Stuetzer, manager of Technical Physics Research Department 5140. It was published with other scientific papers in a memorial volume for Dr. Adolf Baeumker, U.S. Advisor to the German Defense Ministry and Ministry of Science and Atomic Energy, U. S. Embassy in Bonn, Germany. The special publication was presented July 14 on the occasion of Dr. Baeumker's 75th birthday.

The MIT Club of New Mexico recently held its annual election of officers for the year 1966-67 and Sandia swept the field. The new president-elect is Thomas (Tim) J. Raftery, MIT '31, a Sandia retiree after almost ten years as weather forecaster in Field Testing. Vice president-elect is Norbert (Bert) J. Eich (1100), MIT '29. The secretary-treasurer, who is in the midst of his three-year term, is Dave Caskey (9226), MIT '63.

J. E. Schirber (5151) and G. A. Samara (5132) presented technical papers at the Gordon Conference on High Pressure held last month in Meriden, N. J.

Mr. Schirber's paper was entitled, "Pressure as a Tool in Fermi Surface Studies," and Mr. Samara's invited paper was on "Pressure Dependence of Ferroelectric Properties."

Lyle K. Porter (9233) recently participated in a volunteer training program at Philmont Scout Ranch and Explorer Base at Cimarron in northern New Mexico.

He was enrolled in a leadership conference, which was organized by the national Scout leaders as part of the "Breakthrough for Youth" program of the Boy Scouts of America. The course is one of 25 that will

LIVERMORE NEWS



ON A RECENT VISIT, S. P. Schwartz, president of Sandia Corporation, presented the Minuteman Flag to Livermore Laboratory employees for their outstanding participation in the U.S. Savings Bond drive. Shown with the flag are (l to r) J. F. Genoni (8235), drive secretary; Mr. Schwartz; G. L. Scholer (8134), drive coordinator; and B. S. Biggs, vice president 8000. Some 7297 employees, including 788 at Livermore Laboratory, are now enrolled in the payroll deduction plan—91 percent of the Company's work force. Their annual purchases in U.S. Savings Bonds will amount to \$1,122,000.

Fluid Testing Facility and Arroyo Crossing Contracts Awarded

A new fluid testing facility, to be added to existing Bldg. 972 in Area 8, and an arroyo crossing are scheduled for Livermore Laboratory.

The Atomic Energy Commission's Albuquerque Operations Office has awarded a contract for the two projects to Vikol, Inc., of Oakland, which submitted the lowest bid of \$98,186.

The fluid testing facility was designed to supplement SCLL's environmental testing capability by providing, in one location, the means for submitting materials and components to hydrostatic tests under high pressures. Environmental Test Division I, 8112 will be responsible for test projects conducted in the new facility.

The building addition for the facility will be a 1350-square-foot high bay on the east side of the Hazardous Test Bldg. 972. Construction is of conventional masonry and steel, approximately 17 feet wide, 81 feet long, and 21 feet high.

The ground level floor will be used for general laboratory activity. It will contain various pressure vessels for hydrostatic loads, a combination hydrostatic and static load fixture, control equipment, and test instrumentation.

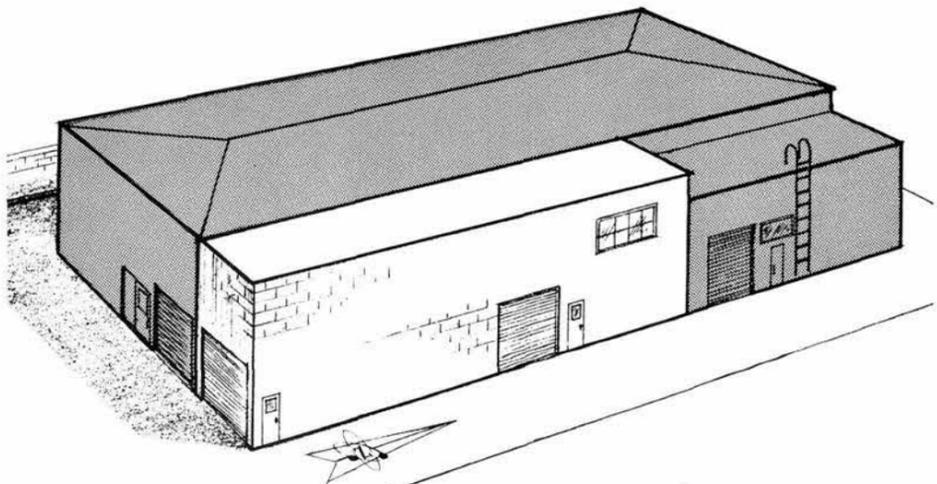
A 23-foot long mezzanine, built along the north end of the addition, will serve as a test control room for the existing air gun and variable angle slide facility located east of Bldg. 972.

Arroyo Project

The arroyo crossing will consist of a 30-by-50-foot bridge with drilled piers, precast concrete tees, concrete deck and curbs, metal rails, asphalt paved aprons, and traffic guard rails. The bridge will span Arroyo Seco at the west property line of Livermore Laboratory. Arroyo Seco cuts directly across SCLL property between Areas 1 and 8. The crossing will provide a paved permanent road outside the SCLL technical area between Areas 1 and 8.

Corlett and Spackman, architect-engineers of San Francisco, designed the construction projects. Personnel of Plant Engineering Division 8251 involved in these projects include Jim Harter, project engineer; Bill Thompson; Len Bedinger; and Dick Wilhite.

Work is scheduled for completion about the end of November.



ARTIST'S SKETCH shows exterior (white portion) of new fluid testing facility to be added to Bldg. 972 in Livermore Laboratory's Area 8. Total construction costs for the facility and an arroyo crossing will be \$98,186.

Welcome Newcomers

June 3 - July 5

California	
Jimmy W. Ackerman, Fremont	8235
William A. Cole, Dublin	8253
Douglas C. Dahl, Stockton	8252
*Lawrence M. Dorey, Albany	8146
*Steven M. Knight, El Cerrito	8118
*Ted C. Krumland, Concord	8131
*Paul A. Lux, Davis	8118
Cynthia Moore, Livermore	8212
Glenna Nieto, Livermore	8235
Albert L. Reichmuth, Manteca	8252
Atwell L. Richmond, Empire	8252
Carol N. Rutherford, Livermore	8244
Cyril F. Scholl, Jr., Stockton	8252
R. Edward Watchepino, Fresno	8233
Robert H. Weitzmann, San Francisco	8154
Peter O. Witze, Palo Alto	8146
Tolly A. Vincent, Livermore	8235
Clifford T. Yokomizo, Oakland	8154
Alabama	
William A. Phillips, Tuskegee	8146
Hawaii	
Henry M. Nakatani, Honolulu	8147
Maine	
Donald C. Spencer, Gorham	8231
Michigan	
Gary L. Ludwig, Grass Lake	8131
New Jersey	
David K. Kahaner, West New York	8144
New Mexico	
William E. Hawkins, Albuquerque	8253
Oregon	
Ralph E. Clark, Corvallis	8124
Michael D. Shieler, Klamath Falls	8252
*Walter R. Richartz, Klamath Falls	8126
Utah	
Frank D. Breinholt, Provo	8252
Virginia	
Dorn L. Schmidt, Blacksburg	8148
Washington	
Thomas Bruguier, Pullman	8154
*Ralph M. Morrison, Kirkland	8118
Transferred from Albuquerque	
Federico Martinez	8213
William M. Bray	8156
Youth Opportunity Program (Livermore)	
James M. Alviso, Livermore	8210
*Arnold L. Birr, Livermore	8210
*Deanna L. Correa, Livermore	8210
*Gregory C. Drummond, Livermore	8210
Rita E. Garcia, Livermore	8210
*Ross H. Hohlitzell, Livermore	8210
*Linda L. Light, Livermore	8210
Beatrice M. Morris, Livermore	8210
*Jill M. Roach, Pleasanton	8210
Thurman J. Watts, Hayward	8210
*Denotes retire.	

Congratulations

Mr. and Mrs. Dave Timmer (8166) a son, Brendan Louis, June 19.

Sympathy

To Donna Cook (8243) for the death of her daughter in Oakland, June 25.

'Old Time' Player Piano Brings Back Memories To Chuck Pignolet

A little over two years ago, Chuck Pignolet (8154) purchased a 45-year-old player piano for his daughter to use as a practice piano. The player piano serves well as a practice instrument and also is the center of an interesting, fun-filled hobby for Chuck.

Although the player piano was operable when Chuck brought it home, it needed some repair and maintenance. Hoping to do his own maintenance and repair work, Chuck read all the literature he could gather concerning player pianos. "I had to learn all about them in self-defense," Chuck explains. "When a player piano breaks down, there aren't many people around who can fix it." In a short time, he learned enough to repair the piano's player mechanism — and as an interesting bonus became knowledgeable on player piano history.

According to Chuck, player pianos first appeared on the American scene at the turn of the century. However, they did not become extremely popular until the Roaring Twenties. "During these exciting years, the player piano was as much a part of the household as the stereo or television set is today," he says. There were many player piano manufacturers during the Twenties, but almost all of them went out of business during the depression and the years following. The emergence of commercial radio and the phonograph as home entertainment also helped push the player piano into the attic or basement and eventually into the past.

"There now seems to be a resurgence on the piano market for player pianos," Chuck says. "Many firms are making modern pianos complete with player mechanisms. Electric motors now provide the power that used to be created by foot-pumped pedals. The newer instruments sell for fantastic prices; but, in my opinion, they don't sound as good as the old ones."

In addition to playing and maintaining his piano, Chuck collects old piano rolls. "Every chance I get, I rummage through antique shops looking for interesting oldies that I can add to my collection," he says. He currently has about 120 piano rolls which range from honky tonk to classical with titles like "Barney Google," "Glow Worm," and "Bohemian Girl." Current hits such as "Hello Dolly" and "Alley Cat" are also available on piano rolls.

"The musical quality of the old piano rolls is difficult to determine without actually playing them," says Chuck. "I've learned to recognize the names of favorite pianists of the times like Max Kortlander, 'Zez' Confrey, and Victor Arden to help guide me in my selections." His most recent find is a snappy tune called "Loud Speaking Papa" which he bought in a small antique shop in Albuquerque.

Contrary to general opinion, Chuck insists, it takes skill to play a player piano. "I can vary the expression and mood of the music with 'foot pedal techniques' and by manipulating mechanical devices which are part of most player pianos," he says. He has also added a part to the piano so that it can sound like a harpsichord.

"The player piano brings back many pleasant childhood memories, and the family and I enjoy having it around," he says. "Player pianos can be a lot of fun and are especially entertaining at parties. Many of the piano rolls have the words to the songs printed in the margin so everyone can gather 'round and sing."

Most of all Chuck likes to play the piano in the evenings to relax and unwind after a hard day at the office. "After all," he says, "what other instrument can you play with a glass in one hand and a cigarette in the other."

B. S. Biggs Observes 30-Year Anniversary



B. S. Biggs observed his 30th anniversary with Bell Telephone Laboratories July 1.

Mr. Biggs, vice president at Livermore Laboratory, 8000, joined Sandia in January 1958 as director of Materials and Standards Development. He was promoted to vice president, Development, in September 1960 and assumed his present position on June 1, 1961.

Throughout his entire career with the Bell System, Mr. Biggs has been extensively involved in materials research and engineering. His first five years were spent at the old Summit, N. J., Laboratory, which was the forerunner of Murray Hill. During these and subsequent years at Murray Hill, he was engaged in the synthesis of various materials, including organic dielectrics and polymers of the polyester and polyamide types.

During World War II he participated in research in synthetic rubber under a contract between Bell and the U.S. Rubber Research Program. In 1946 he initiated a research program in oxidation of organic polymers which is still going on there and which contributed to an understanding of aging processes in engineering materials. In 1949 he was given the responsibility for materials engineering of all organic materials, and rose to assistant chemical director - development of the Bell Laboratories, Murray Hill.

Mr. Biggs became a consultant to Sandia in rubber and plastics engineering in 1950 and made trips to Albuquerque periodically until his assignment here in 1958.

Before joining the Bell System in 1936, he was a member of the staff at Coal Research Lab, Carnegie Institute of Technology, for three years.

He has an AB degree from Southwest Texas State Teachers College, and AM and PhD degrees in chemistry from the University of Texas.



WITH A ROARING TWENTIES TUNE, Chuck Pignolet (8154) demonstrates the player piano he bought several years ago as a practice instrument for his daughter. The piano has since become the center of an interesting and fun-filled hobby for Chuck and his family.

PAGE THREE

LAB NEWS

JULY 15, 1966

Service Awards

20 Years



E. L. Arterburn
4253



G. C. Holloway
7520



W. R. Rosenburg
3240

15 Years



S. M. Aragon
4253



J. C. Arndell
9322



A. E. Becker, Jr.
4221



Hermes Chavez
4624



D. J. Coleman
3313



H. K. Daniel
7513



R. A. Dawirs
7251



W. L. Dowd
3242



C. E. Erickson
9232



R. R. Evans
2133



R. A. Humes, Jr.
3242



G. J. Lombardi
2512



C. M. Long
1313



B. F. Lopez
4252



A. I. Martin
4542



M. A. McCutchan
3132



Vera Lee Miller
3428



R. A. Quelle
3122



V. G. Redmond
9331



G. E. Reis
9231



Marrian Salomon
1414



T. W. Strome
7531



R. S. Summers
2443



L. J. Underwood
2511



E. M. Van Vickle
4511



Nelson Weidman
4254



J. K. Williams
1411



Ellen C. Wood
4333

C. H. Bidwell Retires After 39 Years of Service with Bell System

Charles H. Bidwell retired July 1, ending 39 years with the Bell System, including 15 years with Sandia Corporation.

Charlie, a Bell Labs employee on loan to Sandia since June 1961, has worked with radar fuzes, the analysis of countermeasures, and related system problems as a division supervisor (at Sandia Laboratory) and as a member of advanced systems research staff (at Livermore). Since 1965 he has been assigned to Special Studies in the Electronic Systems Department 1420.

He received his BS degree in physics and electrical engineering from the California Institute of Technology. Although Charlie was born in New York state, his family moved to California when he was about six years old and when he returned to New York City in 1927 as an employee of Bell Labs, he was a stranger to the city. "Several of us young fellows lived together and one of the things we enjoyed most was showing the sights to our California friends," Charlie notes. "We held regular sight-seeing tours." In addition to the tours, the group saw a great many Broadway shows. "Even though this might date me," he says, "I saw the first production of 'Show Boat' and it is still my favorite."

In the early '30s, Charlie took a bicycle tour of England and parts of Europe. "I saw England, Germany, France, and Holland but ran out of money before I could reach Austria," he laughs. "We hope to visit Europe next year, and maybe I'll reach Austria this time."

"My wife, Laura, and I are pretty busy this summer," he says. "Our two granddaughters, ages 4 and 6, are spending the summer with us." When the children return to their home in Florida in the fall, Mr. and Mrs. Bidwell will visit friends in New Jersey and New York.

The Bidwells have two children, their daughter in Florida, and a son who graduated this year from UNM and is employed by General Dynamics in Fort Worth, Tex.

The Bidwells reside at 724 Lafayette Dr. NE. Besides traveling and playing tennis, Charlie thinks he also might do some consulting work.



10 Years

July 15-28
C. C. Sanders 1312, R. A. Hanson 2134, W. J. Brion 2442, Mario C. Bowers 3211, A. V. Glover 3433, A. D. Alire 4513, B. A. Hock 7212, R. H. Lanes 7212, A. J. Korbe 7231, R. M. Adams 8252, W. E. Bergsten 2565, R. A. Case 9214, H. A. Wente 9324, C. E. Bennett, Sr. 7321, T. R. Payne 8123, H. A. Singleton 1512, D. D. Robie 2542, F. F. Taylor 3465, Phil Moya 4212, P. R. Souder 7253, D. M. Bruce 9323, H. H. Pike 2511, L. M. Mileschovsky 3126, H. J. Perdue 7311, and Adela J. Cooke 3462.

AEC Recognizes Air Service Record

The AEC's recognition of the outstanding safety performance of Carco Air Services, Inc., was of interest to many Sandians who frequently use the firm's service between Albuquerque and Los Alamos.

An average of 250 Sandia passengers make the flight monthly, plus an additional 25 charter flights a month (for freight or passengers or both) which Carco flies for the Company.

The AEC Award of Honor cited Carco "for operating from 1951 through 1965 without an accident resulting in major damage to any aircraft or any injury to a passenger or crew member."

Participants at Sandia Lab Youth Opportunity Program

Mary Ann Aikin	3126
Ruben V. Aragon	2210
William B. Aragon	4513
Henry Armijo	4153
Cecilia T. Baca	3126
Gilbert L. Baca	2232
John Michael Baca	3428
Charles Baldonado	9411
Stuart J. Baldwin	7340
Robert Brigham	9322
Christina Candelaria	4613
*David R. Casias	4135
Linda B. Champlin	3110
Andrew T. Clawson	2210
*Charles K. Davis	4542
John DeFice	4574
Harry P. DeLong	3152
Duane C. Dunsworth	7213
Margaret Fernandez	3241
Alice G. Garcia	2232
Evans A. Garcia	4613
Tom J. Garcia	4333
Albert J. Giannini	3126
Pearl D. Gonzales	3126
*Rose Lee Gonzales	3126
Michael R. Gurule	5134
John Hebert III	4512
Dale M. Holmen	7341
Carol A. Hood	3126
*Richard H. Jackson	1134
Nathan D. Jones	5122
James L. Karins	1316
Ernest E. Kilker	3428
Ronald A. King	2210
Dan M. Kirk	1316
Donna L. Lewis	4333
Stuart A. Licht	7324
Donald A. Lobato	3415
*Luis F. Lucero	7253
John N. Lujan	4514
Leonard L. Lujan	4575
Gene Marquez	4518
Herman Mayfarth III	1114
Ural Mitchell	2112
Gloria J. Montano	3421
Nicholas J. Nagy III	2131
Betty S. Nails	3341
Ralph L. Nieto	4511
Della C. Ortega	3126
Elizabeth Padilla	3126
Daniel J. Pancauef	2560
James L. Powell	9232
Gilbert L. Quintana	2411
Maureen Roesch	5590
*Eleno J. Romero	2523
*Mary Ann Romero	3430
Stephen G. Romero	4543
Yolanda P. Romo	3241
R. Neil Rudolph	5122
Franklin D. Sanchez	7212
*Max B. Sandoval	2440
Bertha R. Schloer	3153
Phyllis E. Schubert	3241
Tom E. Schwerkoske	4573
Theresa Serna	2512
Francisco Silva	2512
Eddie Ruth Smith	3241
Kathleen S. Sullivan	3341
Joseph P. Sutton, Jr.	3210
*Gretchen Votlon	3110

*Denotes rehire.

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

METAL traveling cage for dog, 2 ft. long, cost \$12.50. Dusek, 299-5538.

3-BDR. MANKIN, AC, fp., patio, landscaped yards, assume FHA loan, \$12,400 balance, \$500 down, \$97/mo., 13004 Lomas Verdes NE. Guy, 298-6408.

HI-FI component and speaker cabinet by Jensen; Scott integrated amplifier; Proctor adjustable ironing board. Webb, 298-8139.

MOSSMAN 3-bdr., 1 1/2 baths, family rm., refinance for \$900 down, \$4200 to assume loan w/\$119 payments. Bader, 299-9459.

'64 YAMAHA motorcycle, 5000 miles, w/helmet, windshield, tool kit, and grease gun, \$425 cash. Heustess, 256-6337.

'62 LAMBRETTA scooter, 150cc, 8000 miles, windshield, spare tire, buddy seat, helmet, \$190. Osmond, 268-8861.

30 HP Evenrude outboard motor, \$85. '52 model, original cost \$460. Dwyer, 255-2082.

5 ACRES mountain land, close in on Hiway, electricity, water at shallow depth. Crosby, 898-0705.

BASSET PUPPIES, 2 qual. litters, one breeding produced N.M.'s newest Ch. "Bouffe", at stud, terms available. Klinetobe, 268-8227 after 5.

'64 FORD GALAXIE 500, 2-dr. HT V8, "390", 4-spd., PS, R&H, wsw, under NADA, light blue. Nelson, 255-2364.

BOAT, '66 Larson Medallion, fully equipped for six people, used four times, cost \$4600, sell for \$4200. Russell, 299-0159.

THREE 8" wheels, four lugs, for boat trailer; one 8" tire. Harrison, 299-7928.

SWING SET, children's heavy duty w/tie down, \$5, 2912 Mesilla NE. Shead, 298-3373.

21" TV, new picture tube, blond cabinet, wrought iron stand, \$66; quality exterior oil paint for wood, sandalwood color, 4 gals., \$10. Drake, 296-3548.

'60 CHEVY, 235 cu. in., 6-cyl. engine, make offer. Dyer, 299-5329 after 5.

26" GIRL'S Schwinn bike, best offer. Heidrich, 344-7669.

D.C. to 5 mc scope, 85 nsec, rise time, triggered sweep, 1 yr. old, best offer. Shanfeldt, 256-7210.

3-BDR. HOUSE, SW valley, pitched roof, carpeted, all lawn, irrigation well, room for horse, lots of mature shade, FHA or terms. Peoples, 877-5620.

BOY'S 3-speed bike; girl's 3-speed bike; boy's 2-speed bike; upright Emerson piano. Roberts, 298-3062.

LAWN MOWER w/grass catcher, \$5; two portable type evaporative room coolers, \$15 and \$25. Cashion, 242-3345.

24" MAGNAVOX console TV, 4 yrs. old, \$100 or highest offer. Lewis, 9716 Mesa Arriba NE, 296-4422.

4-PIECE SECTIONAL, black w/silver threads; 2-piece beige sectional w/built-in end tables, asking half original cost. Seaburn, 268-9560.

'56 CHEV. 4-dr., AT, 50,000 miles, \$375. Gasser, 255-4562.

6-CYL. JEEP MOTOR, complete w/clutch, trans., OD, starter, generator, carb., \$100; walking garden tractor, 5 1/2 hp, 3 fwd. spds., rev., 2-spd. axle, wheel weights, \$225. Frasier, 299-6933.

'50 STUDEBAKER, eng. overhauled, OD, new tires, \$115; small Crosley refrigerator. Russell, 299-0159.

'60 CADILLAC, 2-dr. HT, R&H, priced for quick sale. Laube, 309 Gen Somervell NE, 298-9203.

CAMPER DINETTE table w/wall bracket, formica top; telephone style intercom system, 12V, buzzer signal. Schaefer, 299-6217.

ACCORDION, 120 bass, La Tosca, w/case, \$175; violin, Anion Berber, full size w/bow and case, \$65. Beach, 299-2990.

PLATINUM 15-diamond wedding band, original design, appraised \$1375, wish to dispose—sacrifice to sell. Shinn, 299-6238.

SMALL SWING SET w/glider and swing, \$5. Coalson, 298-8074.

20" CONVERTIBLE sidewalk bike w/training wheels, \$10; pair removable trailer rear-view mirrors, \$5. Kepler, 298-5652.

20" GE FAN, thermostat control, electrically reversible, \$20. DeBoom, 299-7930.

LOG CABIN for hunting and fishing, Horseshoe Springs summer home area, Jemez Mts., \$3800, terms. Hobart, 282-3983.

DROP-LEAF maple table w/extension provisions for seating 12, 4 matching chairs. Waldorf, 242-8303.

'64 VOLVO 122S, 4-dr. sedan, Michelin X tires, \$1600 or best offer. Kjeldgaard, 296-2212 evenings.

TYPEWRITER, Smith-Corona compact electric, \$150, 2 yrs. old. Landvater, 298-1650.

MERCEDES 190SL, '62, \$2775, will deal after 5; utility trailer, 4-wheel, \$200. Haskell, 345-0752.

'55 DESOTO 4-dr. V8, PS, PB, AT, ww, R&H, tinted glass, \$150. Moody, 282-3466.

MOBILE HOME, 10x48 Hicks 2-bdr., AC, washer. Tucker, 877-1140.

SET OF BONGO drums, never used, \$15. Hill, 243-3493.

ONE ACRE home site Holliday Hills, city electricity and free water, \$1095 or make offer. Elder, 268-7479.

COLUMBA UNIVERSITY speed reading course, 13 volumes, complete w/pacer, used only once. Brown, 255-0566.

'64 OLDSMOBILE Jetstar, HT, bucket seats, PB, PS, AT on floor, 11,000 miles, any reasonable offer. Frankel, 298-6265.

14 CU. FT. Gibson refrigerator w/100 lb. freezer; Stromberg Carlson cabinet TV, bcd picture tube; chrome roll bar for MGA sports car; make offer. MacDougall, 299-8496.

20" BIKE, \$10. Hart, 299-8832.

SHETLAND FILLY, 2 yr. old paint, saddle, bridle, \$90. Smith, 264-5755.

BOY'S 26" and girl's 24" bicycle. Garcia, 256-6609.

AMC upright freezer, \$120; steel casement window, \$5. Wagoner, 299-6805.

'63 FORD Fairlane "500" V8, all vinyl interior, R&H, AC. Sample, 256-6968.

'49 FORD V8 2-dr. sedan, Stinnett, 298-5085.

9'x7' WOOL area rug, beige, \$30 or trade for portable television. Young, 255-9022.

SEWING MACHINE, Pfaff, model 60, straight stitch, attachments, cabinet, \$130. Schuster, 299-1072.

'62 VW, one owner, complete maintenance record, \$950. Castle, 299-0077.

\$700 investment in rented 2-bdr. house, nets \$250 annually, perfect rental record. Cotter, 265-8631.

BICYCLE, girl's 24" J. C. Higgins, coaster brake, lights, kick stand, basket, \$18 or less. Corwin, 256-0779.

FREE KITTENS, free delivery. Tatum, 877-0997.

BOSQUE FARMS, 4-bdr., study, 1 1/4 baths, AC, carpeted, 2 wells, corrals, 3 acres. Jarrell, 636-2834.

5-BDR. HOUSE, 3000 sq. ft., all brick, 3 baths, 2 fp, \$30,400, 5 1/2% loan, low down and REC. Goodman, 299-3652.

'56 VOLKSWAGEN, under 30,000 miles on engine; Westinghouse 30" electric range; twin box springs. Mogford, 282-3154.

3-BDR. MOSSMAN, below FHA, fp, AC, DR, hw/floors, walls, patio, landscaping, NE, \$12,000. Freeman, 299-1481.

REGISTERED HALF-ARABIAN buckskin mare in foal for early '67, nicely started western, good trail horse, small; others. Gentzler, 282-3425.

'57 BELLBOY 16' fiberglass boat, Mercury Mark 75 6-cyl. outboard mtr. TeeNee trailer, ski equipment, \$1175. Shepherd, 268-9607.

BLACK standard Poodle puppies, sire champion Carlin, Chancellorsville (Carillon line bred), Meriwick's Bombachas DeLawa (Astron bred). Randle, 265-8903.

APT. SIZE Hotpoint refrigerator, \$30; '65 El Camino, 4-speed, large motor, R&H, snow tire, white cover, trade or \$2200. Browne, 344-9675.

'60 RAMBLER American station wagon, \$450. Kent, 877-3821 after 5:30.

CHILD'S 8'-dia. swimming pool; small wading pool; musical rocking chair; and other equipment. Reinman, 256-9737.

REFRIGERATOR, Sear's Coldspot, 12 cu. ft., white, \$50. Johnson, 255-0262.

BATTERY, 12-volts, 24 months, 20 months left on guarantee, Atlas or Delco, \$15. Holzhauser, 242-7131.

'62 VW sedan, 17,000 miles, R&H, \$900. Maginins, 299-0068 after 5:30.

CORRALES, 1.4 acres, private road, restricted. Reed, 898-0117.

'63 DODGE 880 wagon, AT, heater, PS, PB, tinted windshield, astrophonic all transistor radio, \$300 below book price. Neas, 299-1764.

WINDOW, steel frame, 3'x6', \$20. Hawk, 256-6264.

PORTABLE auto air cooler, Allstate evaporative, 12 volts, originally \$40, \$15; girl's J. C. Higgins 16" bike, originally \$40, \$10. Morrison, 255-8802.

'60 VW microbus. Shelton, 299-8489.

LARGE WALNUT office desk and chair, ditto-type duplicator machine, Britannica encyclopedia, Syntopticon book set. Quinlan, 296-3336.

NINE 10-gal. aquariums, complete; male Basenji, 6 mos old; TV; two couches. Cummings, 295-4626.

SIMMS RANCH, Los Poblanos Estates, 3-acre residential lot w/trees, paved road, terms, evenings and weekend. Stein, 242-2967.

APACHE transmitter, 150 watts, \$95; Turner 252 dynamic microphone, \$5. Lathrop, 255-1901.

'64 CORVAIR Monza coupe, 14,000 miles, 4-speed, big engine, original owner, below NADA retail. Gregory, 268-2022.

TERRAZZO TILE, 120 sq. ft., gray and pink, \$45. Romero, 344-0302.

2-BDR., den, AC, near University, assume 5 1/4% FHA loan, low equity, flexible terms. Sandoval, 255-6064.

CAMP TRAILER, Ward's tent-type, sleeps four, gas bottle, stove, lamp, new heavy duty undercarriage, \$250. McIlroy, 299-4977.

WANTED

HULA LESSONS. Cutchen, 296-4247.

BARBELL and dumbbell set, or extra weight plates. Garcia, 256-6609.

CANOE, 14 to 16 ft., aluminum. Everett, 298-3994.

BIKE for use in Tech Area. Hill, 243-3493.

WANT low equity in 3-bdr. house near schools and Kirtland Field, call before 8 a.m. or at noon. Ash, 243-1869.

WILL SHARE 3-bdr. home with 2 male tenants. Gallegos, 344-6994.

26" GIRL'S lightweight bicycle in good condition. Shepherd, 299-9066.

SIX-VOLT evaporative type air cooler for use inside car. White, 298-3630.

FORM or join car pool from San Mateo and Comanche area to Area III. Tucker, 344-4240.

HAND LAWN MOWER. Entwisle, 296-3379.

FOR RENT

DELUXE 1-bdr. furnished apartment, electric kitchen, nylon carpets, storage rm., AC, \$95, 10104 Comanche Rd. NE. Stone, 298-4620.

FURNISHED and unfurnished 2-bdr. apts., AC, stove, refrigerator, washer rough-in, near Sandia Base, \$65-82.50/mo., 8410 Trumbull SE. Villella, 268-7591.

LOST AND FOUND

LOST: Cigarette lighter, keys on soldered wire, leather pouch w/4 keys, sun glasses w/black frames. LOST AND FOUND, tel. 264-2757, Bldg. 610.

FOUND: Book of 5c postage stamps, motorcycle kit w/medical supplies and tools. LOST AND FOUND, tel. 264-2757, Bldg. 610.



NO LION about it, the "Come As You Are" costume party at the Coronado Club tomorrow night will be a whiz bang. Cool costumes, like those worn by Claudia Garlick (left) and Marian Clark (both of 3126) will be the style as well as something catchy or kooky. Tickets must be picked up by 9 tonight.

Tomorrow Night

'Come As You Are' to Coronado Club

Dig deep in the old trunk or ransack the closets for the kookiest costume you can come up with. Wear it tomorrow night at the Coronado Club's "Come As You Are" costume party. It's a do-it-yourself affair encouraging something cool, catchy, or kooky.

The fun starts with dancing at 9 p.m. with Tommy Kelly's combo. Time out for steak and eggs is scheduled from 11 to 12:30. Cost to members is \$1.50, guests \$2. Tickets must be picked up by 9 p.m. July 15 at the Club office.

On Saturday July 30, the Club has scheduled a patio barbeque and swimming party. Activities start with swimming from 7 to 9; dinner featuring barbecued pork spareribs, barbecued chicken, and Boston

baked beans from 8 to 9; and dancing to the Estancia Valley Boys from 9 to 1. Cost to members is \$2.50, guests \$3. Tickets must be picked up by 9 p.m. July 29.

Social Hours

Tonight, Tommy Kelly's combo will make the happy music. The seafood buffet will be served. Cost to adults is \$1.25, \$1 for kids.

Next Friday, July 22, Bud Fisher will provide the music for the popular Mexican buffet.

On Friday, July 29, Elton Travis will be on the bandstand and the chuckwagon roast beef and shrimp buffet will be served. Cost to adults is \$1.75, \$1.50 for children.

Welcome Newcomers

June 13 - July 8

Albuquerque	
Pedro A. Armijo	4574
Phyllis T. Bernyk	3126
Vivian L. Bianchi	3126
*Deanna M. Bowman	3126
Norman L. Breazeal	5253
Joanne M. Buccheri	3126
Judith A. Carlson	1111
Frank M. Chavez	4574
Derland P. Drury	4151
Charles R. Duvall	2213
*Mary Ellen England	4623
*E. Lorraine Entwisle	3413
Molly E. Foster	3126
*Wayne L. Garner	3410
Mary Louise Gauthier	4311
Margaret E. Glover	4315
Martin H. Gonzales	3415
*Miguel Griego	4574
Joyce D. Gross	5222
Deluvino Gutierrez, Jr.	3462
Judy Ann Groves	3126
G. Joseph Hartman	7323
Alethea L. Hill	2234
Robert C. Hughes	5213
Roberta J. King	3126
David H. Lange	4574
Sandra L. Lee	3126
*John M. Levesque	5232
Norma L. Lindberg	3126
Jane E. Logsdon	4135
Marcella S. Luna	3126
*Inez M. Maes	4613
*Marianne K. Newton	4371
*James P. Quint	7211
Ray E. Smith	3126
Carol M. Somermeyer	4622
Clinton Van Blaricum	7311
Enid E. Walker	3126
*Joseph Zanetti	3410
California	
Stewart M. Kohler, Pasadena	1000
Colorado	
Alan C. Dickinson, Colorado Springs	4543
Jay D. Holton, Colorado Springs	4542
Michael F. Furney, Pueblo	1111
Idaho	
Ivan G. Waddoups, Darlington	9000
Illinois	
Richard J. Yactor, Niles	1333
Kentucky	
Samuel L. Thompson, Lexington	5231
Massachusetts	
Francis P. Gerstle, Jr., Medford	7311
Minnesota	
David L. Johnson, Minneapolis	5221
Mississippi	
Alfred C. Watts, Bay St. Louis	7000
Missouri	
Roger M. Gray, Monette	1000

Nebraska	
Charles N. Boyd, Lincoln	7214
L. Thomas James, Lincoln	9211
New Jersey	
Garth W. Gobeli, Murray Hill	5214
John E. Davenport, Princeton	1333
Jerry J. Cashen, Eatontown	2422
New Mexico	
Ronald T. Haid, Portales	2213
Oklahoma	
Tobert D. McIntosh, Norman	2521
Stephen H. Van Hauen, Stillwater	4151
Donald L. South, Oklahoma City	2211
David Lee Humphreys, Oklahoma City	2213
Pennsylvania	
Henry G. Andreski, Pittsburgh	2212
*Frederick G. Blotner, Worcester	9321
Martin R. Kodlick, Coaldale	2212
John M. McDowell, Jr., Kennesdell	2211
John J. Stanalonis, Sheppton	2212
John V. Lukac, Freeland	2213
John A. Halbleib, Sr., Pittsburgh	5222
John M. Spickler, Mt. Joy	2213
Thomas J. Philbin, Pittsburgh	2212
Charles S. Swietlik, Dravosburg	2211
Kenneth Young, Pottsville	2211
Tennessee	
William K. Tucker, Memphis	7000
Temporary Summer Hires	
(Albuquerque unless otherwise indicated)	
Arthur A. Armstrong, Jr.	1111
Charles E. Albright, Jr., Evanston, Ill.	1131
William T. Bailey, Austin, Texas	4150
Sidney Birnbaum, Columbia, S.C.	5261
Thomas A. Budge, Jr.	1325
Daniel R. Cassidy	5211
Eugene J. Clothiaux, McMurray, Pa.	5142
David L. Eitelbach, Menlo Park, Calif.	5130
K. Thomas Feldman, Jr.	9330
*Paul W. E. Gehris	2210
Richard H. Greischar, Cambridge, Mass.	1410
Richard B. Hodges, Berkeley, Calif.	5263
*John M. Holovka	1311
Keith A. Holsapple, Seattle, Wash.	5261
James A. Hunter, Coralville, Iowa	9322
*John Kushner, Binghamton, N.Y.	3132
Sidney C. Larson, Minneapolis	1420
Trevor J. McMinn	5256
*Archer S. Mitchell, Pittsburgh, Pa.	7332
Richard J. Murphy, Belmont, Mass.	1120
John L. Norton, Pittsburg, Kan.	9422
William G. Oldham, Berkeley, Calif.	5212
Blaine E. Pearce, Seattle, Wash.	2234
David T. Price, Chicago	5256
Charles E. Semler, Jr., Columbus, Ohio	1121
James M. Strickland, Pittsburgh, Pa.	5520
Gerald R. Wagner, Williamsville, N.Y.	1111
*Donald B. Wheeler, Jr., Bethlehem, Pa.	5590

*Denotes rehired.

Continued from Page One

Motor Sub-Pool a Success

records, and handling forms for issuance of Government driver's licenses.

The sub-pools are manned from 7:15 a.m. to 4:45 p.m. (during summer work schedule), but a box on the outside of each sub-pool office contains trip tickets and a few car keys for early birds. The box can also be used to deposit keys when a vehicle is returned after normal work hours.

The gas tank of each vehicle is filled every other night and all vehicles contain seat belts. A schedule of preventive maintenance has been programmed for the IBM 7090 computer, and each month lists are received indicating which vehicles are due for servicing.

The motor pool has changed considerably since 1947 when it had a fleet of just 16 vehicles. Initially every vehicle was dispatched from the motor pool for each day and had to be left at the pool overnight. "That involved a lot of lost time," Stan

said, "so we tried dispatching vehicles on a weekly basis. Gradually that grew to a monthly basis."

Now the only vehicles on permanent assignment to organizations (except those used by the security force) are vehicles at remote locations or those containing special equipment. Since the sub-pool system started, vehicles have averaged 100 miles more mileage per month than previously, which indicates that the Company is getting more usage from the equipment.

There are approximately 4000 U. S. Government motor vehicle driver's licenses issued to Sandia employees for operation of Government vehicles on official business.

"With the cooperation we've been getting from all of these drivers, we know that we'll continue to achieve maximum service and usage of the AEC vehicles at Sandia," Stan concludes.



SUB-POOL 2 DISPATCHER Johnny Chavez hands a trip ticket and vehicle keys to Frank J. Conrad (1121) as the latter shows his U.S. Government operator's license. Light duty vehicles are now "pooled" in four locations at Sandia Laboratory.

Sandia Authors

J. A. Kenagy (4224), "Applying 'Down-flow' to Dust-Fume Control in a Plastics Facility," June issue, CONTAMINATION CONTROL.

C. D. Taylor (1425), "On the Motion of Electrons Scattered from an Infinite State," May issue, JOURNAL OF MATHEMATICAL PHYSICS.

C. A. Trauth (2571) and Frank Harary, University of Michigan, "Connectedness of Products of Two Directed Graphs," March issue, JOURNAL OF THE SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS; C. A. Trauth, "Group-Type Automata," January issue, JOURNAL OF THE ASSOCIATION FOR COMPUTING MACHINERY.

D. P. Brautigam (4517-1), "The Decision Matrix Approach in the Selection of Maintenance Personnel," June issue, TECHNIQUES OF PLANT ENGINEERING AND MAINTENANCE, and June issue, POWER MAGAZINE.

Osborne Milton (1133), "A Recessed Rogowski Electrode for Electric Strength Testing," recently released 1965 PROCEEDINGS OF THE AMERICAN SOCIETY OF TOOL MANUFACTURERS; with J. L. Wentz (1133), "Correlation of Electric Strength to Test Area for Three Casting Resins," May issue, INSULATION.

Katheryn Lawson (1121), "Electronic Absorption Spectra of Mn²⁺, Fe²⁺, and Co²⁺ in Dihydrated Halide Crystals," June issue, JOURNAL OF CHEMICAL PHYSICS.

R. L. Schwoebel (5123), "Step Motion on Crystal Surfaces," August issue, JOURNAL OF APPLIED PHYSICS.

K. H. Zimmermann (2133), "High Frequency Cable," June issue, NEW MEXICO PROFESSIONAL ENGINEER.

Sympathy

To Margaret Jarvis (4516) for the death of her father in Graham, Tex., July 3.

To Elzie A. Greene (2432) for the death of her father in Ark., July 5.

PAGE SIX

LAB NEWS

JULY 15, 1966

Sandia's Safety Scoreboard

Sandia Laboratory:

41 DAYS

1,435,000 MAN HOURS

WITHOUT A

DISABLING INJURY

Livermore Laboratory:

29 DAYS

144,480 MAN HOURS

WITHOUT A

DISABLING INJURY