

OUTCOME of test of a sample block of urethane foam will be recorded on oscilloscope and observed by Ernest R. Dunaway.

Sandia Entered In Competition for Professional Development Award

Sandia Corporation will again be entered in competition for the 1962 Industrial Professional Development Award by the New Mexico Society of Professional Engineers. The contest is sponsored by the National Society of Professional Engineers.

The award is presented annually to the industrial employer of engineering personnel which has advanced and improved the engineering profession through its employment practices. Purpose of the award is to give recognition to the

industrial firm which has improved and advanced engineering practices among all industrial employers.

The award is based on progress made in the following engineering employment practices: registration, education and technical training, technical and professional society membership, engineers as authors, professional working conditions, utilization, engineering titles, engineer-management communications, indoctrination programs, and salary plans and job evaluation systems.

Mystery of Stray Radiation; Culprit was Kitchen Sink

After investigating every source of stray radiation, health and safety engineers at Livermore Laboratory finally located the cause of the mysterious radiation exposure indicated by an employee's film badge—the kitchen sink counter.

The mystery came to light last fall when Bill Pritchard, a draftsman in Section 8114-5, turned in his film badge during the regular monthly collection of badges. A routine check revealed a harmless increase over normal background radiation.

The next month, the same thing happened, and again the following month. Then, in December, no trace of radiation was found on Bill's badge. Bob Henzel, a health physicist in Division 8242, was puzzled by the strange goings on, so he called Bill into his office to question him.

It turned out that Bill had not been near any known source of industrial radiation. The increased exposure had stopped, however, when Bill moved his family to Livermore from his mother's home in Stockton.

Bob gave Bill a pocket dosimeter—a visual radiation indicator—and asked him to take it with him next time he visited his mother in Stockton. When Bill returned to his former home, he placed the dosimeter on the counter near the kitchen sink, where he had been in the habit of leaving his film badge when he got home from work. Sure enough, it registered.

Soon thereafter, Bob Hanzel accompanied Bill to Stockton and

examined the kitchen counter. His examination revealed that the yellow tile on the counter was colored by an uranium pigment—just enough to expose the badge. The radiation, measured at twice normal background level a foot away from the sink top, was not high enough to cause any harm, according to accepted standards.

Bill's mother, although surprised by the findings, decided that since there was no cause for alarm, she would continue to prepare the meals and do the chores on a slightly radioactive sink top.

"We've run into different situations before," Bob said, "with badges accidentally exposed by medical and dental X-rays, luminous dial watches and clocks, even table tops, but never a kitchen sink."

Two recent items in national newsletters about Sandia Laboratory's use of programmed self-instruction in the out-of-hours training program have brought a flood of letters to Technical and Trades Training Division 3132. Several of the inquiries were from foreign countries.

The Manager's Letter published by the American Management Association reported early results of some experimental programs conducted by 3132 from September 1960 to September 1961. Two courses were selected for the test: Russian and Algebra. Costs of instruction and percentage of completions were compared.

The early results showed that in Russian the programmed self-instruction method averaged 60 per cent more completions and cost about \$30 less per comple-

Sandia's Unique Plastic Foam Applications Give Excellent Shock And Heat Protection

"The use of plastic foams for shock insulation isn't new," Brooke Anderson of Explosives, Adhesives, and Foams Section 1112-2 commented recently. "But many of our applications of plastics at Sandia Laboratory are unusual, and our use of plastic foams is practically unique."

Section 1112-2 uses urethane foam to support delicate electronic components and protect them from impact and thermal shocks, as well as other types of stress. "We find that our ability to vary the density of the foam enables us to 'tailor' it to suit many applications," Brooke explained. "Its density range, compliancy, and strength make it a useful structural material, applicable in situations where other, more rigid materials such as metals or solid plastics would transmit high shock forces."

Urethane foam is prepared by mixing two separate ingredients—a polyester resin with foam-

ing agent and an isocyanate prepolymer—which, when combined, produce a thick, resinous liquid filled with millions of gas bubbles. The liquid foam hardens in time and, in some cases, is cured by the application of heat. The mixing of foam ingredients is controlled in production by a machine which governs the temperatures and proportions of ingredients, and amounts of catalytic agents used in the mixing process.

"The foam is channeled in a liquid state into test or part molds which are later sealed," George Volda, supervisor of Section 1112-2, commented.

The foam expands and hardens, filling the sealed mold completely. The foam "blank" is then removed from the mold. In appearance, the foam resembles an egg soufflé and, if struck sharply, produces a hollow, wooden sound.

"In certain applications, the foam is milled on a lathe or other milling tool from a block or molded blank," Brooke said. "The material itself behaves well while be-

ing milled. But milling operations often present problems in stressing the material, caused by the need to mount the blank on a chuck or on some other support."

"We're testing the foam in a number of different ways to find out how it behaves," George Volda commented. "We test it under various conditions of static and dynamic compression and tension, over a range of temperatures."

"We've found that the foam withstands a single shock phase well," George said. "Its crushability accounts for its unusual shock-absorbing properties. However, in two-phase shock situations, the first wave compresses the foam and reduces its absorptive qualities considerably. The second wave is often at least partially transmitted by the compressed foam. This is one of the problems with the material that we're currently investigating."

Because of its qualities of compressibility, the foam has found limited use in situations where extremely tight tolerances occur between rigid components. Its "give" allows proper fitting of components without a resulting loss of strength between them.

"Foam is interesting material," Brooke concluded. "And as we learn more about it, we're finding new ways to make it more useful and versatile."



LOW-TEMPERATURE test of foam sample is conducted in chamber by R. L. Buckner (1113-1) in Mechanical Properties Lab.

J. W. Moyer Speaks To ASQC - AIIE On Improving Quality

John W. Moyer (7513-2) will speak on "Workmanship — The Key to Improving Quality" at a dinner meeting of the Albuquerque Chapter of the American Society of Quality Control on Mar. 12 at the Desert Sands Motor Hotel.

Last week he spoke on the same subject before a dinner meeting of the local chapter of the American Institute of Industrial Engineers. His technical paper, upon which both talks were based, has been accepted for publication by the Journal of Industrial Quality Control.

Mr. Moyer received a BS degree in mechanical engineering and an MS in industrial engineering from the University of Nebraska. He is a member of ASQC, AIIE, Pi Tau Sigma, Sigma Tau, and Sigma Xi.

Sandia Programmed Learning Use Attracts Queries

tion than the conventionally-taught course. Results in the Algebra course were less dramatic — 10 per cent more completions at a cost of about \$4 less than the conventional class.

Industrial Relations News carried a similar item reporting the experimental results of the Sandia program.

"These figures need further explanation," R. F. Utter, educational psychologist of the 3132 staff, says. "Although essentially correct, computing the cost of instruction is a complex undertaking. In our approach we used instructors to monitor the students and to serve as resource persons. The principal advantage of the programmed courses has been the gratifying high completion rates. Thus, our per-pupil costs have reflected savings due to these completions."

"Programs are not going to re-

place instructors," Mr. Utter said. "We have found it necessary in our out-of-hours program to continue to use an instructor. His major function is to evaluate student progress and encourage and motivate students to make reasonable progress. Although the programs are satisfyingly self-contained, we have found that students should try to work with them on a regular basis."

The students report to class regularly for work on the program and to take quizzes. In addition, the students take the programs home as homework.

"We have found it important to keep up contact with the student and keep him active," Mr. Utter says. "If a student is interrupted and gets away from a program for any length of time his chances of finishing diminish. On the other hand, short in-

terruptions for trips or illnesses do not hinder the student."

Courses currently being taught in the out-of-hours training program which features programmed self-instruction are: Algebra I and II, Mathematics A, Plane Geometry, Trigonometry, and Basic Technical Russian. In the past, Basic Electronics and Descriptive Statistics have been offered using the programmed self-instruction method.

"In our PSI course," Mr. Utter says, "we have used commercially available programs when they fitted Sandia's need. Such programs have enabled us to evaluate the techniques of programming and use these in writing our own programs. New developments in techniques promise increased training effectiveness and more attention to the needs of individual students."

Editorial Comment

No Long, Hard, Cold Winter

Last weekend, people by the hundreds were outdoors raking leaves, planting flowers, working on lawns, and carrying off the debris of winter.

Spring is here. It was not a long, hard, cold winter.

They never are anymore. Technology has taken care of that. Most of us were nice and warm and comfortable while the cold wind blew outside.

There are those who believe that given a generation of peace, technology could solve all the world's physical problems, keep everybody warm and well-fed. Part of the history of humankind is not very admirable. War after war has consumed millions of lives. People are killing people today in South Vietnam, in Algeria, in the Congo. The other part of human history is a great triumph of ideas, arts, and technology.

At Sandia we are building the world's most efficient weapons. It is a serious scientific business conducted with an almost overwhelming responsibility. These weapons and a strong dedication are the major hopes for peace. Never before has there been a nation that works as hard for peace. Never before has there been a technology such as we command.

Those flowers we planted will bloom. Next spring we will plant more.

Hardy Wells-Fargo Stage Driver Leads Strenuous Public Existence

A. D. "Sport" Fellingham gets robbed as often as six times a year, but he doesn't complain.

Sport, a service contractor at Livermore Lab, is the official stagecoach driver for the Wells Fargo-American Trust Bank. He gets robbed often at Wells Fargo bank openings, special celebrations, parades, and on television shows. It's all part of the act.

At Sandia, Sport reports to Maintenance Division 8222 for work assignments originated by Plant Engineering Division 8221. His company, Contractors Equipment Rental, has provided earthmoving and installation services on an annual contract basis since 1957.

Sport's adventures with stagecoach driving have carried him through several episodes of the "Tales of Wells Fargo" television series, with some of the scenes

shot at his 240-acre ranch just outside Livermore.

"We use original Wells Fargo stages worth several thousand dollars each," said Sport. "One of them, the Ben Holloway coach, was first put into use in the mid-1860's. It still has all of its original paint, leather trappings, lamps, and side curtains. Even the original harness is still used. For its age, the old coach is in pretty good shape."

All of the leather mail pouches, strong boxes, trunks and baggage carried on the stage were also bought by the bank for their historical significance. Many of the items used on special occasions were borrowed from the bank's Wells Fargo museum, maintained at its headquarters office on Montgomery Street in San Francisco. This museum, containing hundreds of early Wells Fargo items, is open to the public during banking hours.

The Wells Fargo coaches are known as Concord coaches because they were made by the Abbot-Downing Company of Concord, N.H. The company began building the overland stages in the 1850's.

Nine passengers rode on the inside, another sat by the driver, and six usually perched on the roof, making 16 passengers in all.

Luggage was stored in the leather-enclosed rack on the back, and the Wells Fargo treasure box was kept under the driver's seat. A shotgun messenger rode next to the driver.

Sport is an old hand at ranching and riding, having managed a herd of 19,000 cattle when he was 19. He was also president of the Livermore Rodeo Association for eight years. He now leases about 35,000 acres of grazing land to supplement the land on his ranch for raising 2000 head of cattle and 20 Belgian pure bred horses. His horses draw the Wells Fargo stages.

Fire Department Volunteers Put in Busy Sunday on Job

W. C. Colborne, R. B. Hosley, and Marcial Valdez (all 4152) put to use their training as members of the Corrales Volunteer Fire Department in extinguishing a brush fire on a recent Sunday.

The blaze, which was started by children playing with matches, got within 15 yards of Marcial's new adobe home. Through use of shovels, sand, and blankets the trio had the fire practically under control by the time the local fire truck arrived.

The fire couldn't have occurred at a worse time — the annual benefit ball for the Corrales Volunteer Fire Department had been held the night before.

A. W. Snyder Talks On Radiation Effects

A. W. Snyder, manager of Radiation Effects Department 5320, spoke at a recent meeting of the IRE Professional Group on Nuclear Science. Title of his talk was "Radiation Effects Phenomena in Materials That Alter Electronic Device Performance."



Ann Lee (3126/1413)

Take a Memo, Please

Accidents love attitudes — poor ones, especially. Anger, absent-mindedness, or just plain abuse can upset your mind's normal function of governing logic and stability.

Congratulations

Born to:

Mr. and Mrs. W. L. Jacklin (7312-1) a daughter, Linda Diane, on Feb. 4.

Mr. and Mrs. Charles J. Still (2412-2) twin sons, Michael Patrick and Patrick Michael, on Feb. 13.

Mr. and Mrs. Robert G. Fueger (2642) a son, James Matthew, on Jan. 27.

Mr. and Mrs. Peter Bortniak (2451) a daughter, Laura Ann, on Feb. 19.

Mr. and Mrs. A. V. Luhrs (2563) a son, Benjamin Frederick, on Feb. 11.

Sympathy

To J. Wayne Ellis (7243) for the death of his mother.

To Watson Snyder (7215) for the death of his father.

To Carl Cianciabella (7215) for the death of his brother.

To LaVern E. Dumond (4511-1) for the death of his father in Michigan, Feb. 19.

To Allen J. Williams (4512-1) for the death of his mother in Illinois, Feb. 19.

To James H. Walker (4514-4) for the death of his father in Illinois, Feb. 14.

To Jose T. Gomez (4511-3) for the death of his mother-in-law in Socorro, Feb. 10.

To A. W. Perkins (1112) for the death of his wife in Albuquerque, Feb. 19.

To D. S. Tarbox (3200) for the death of his mother in Akron, O., Feb. 19.



STAGECOACH DRIVER A. D. "Sport" Fellingham acts part in "Tales of Wells Fargo" TV episode with other members of cast. All the equip-

ment on the stage, including paint job, baggage, money box, mail pouch, and stage itself, is original equipment which is worth about \$10,000.



WESTERN SETTINGS for many scenes of the popular Wells Fargo TV series was A. D. "Sport" Fellingham's 240-acre ranch near Livermore. Here

Sport drives his team of Belgian purebred horses past the TV cameras in an action-packed sequence for the popular two-fisted weekly television show.

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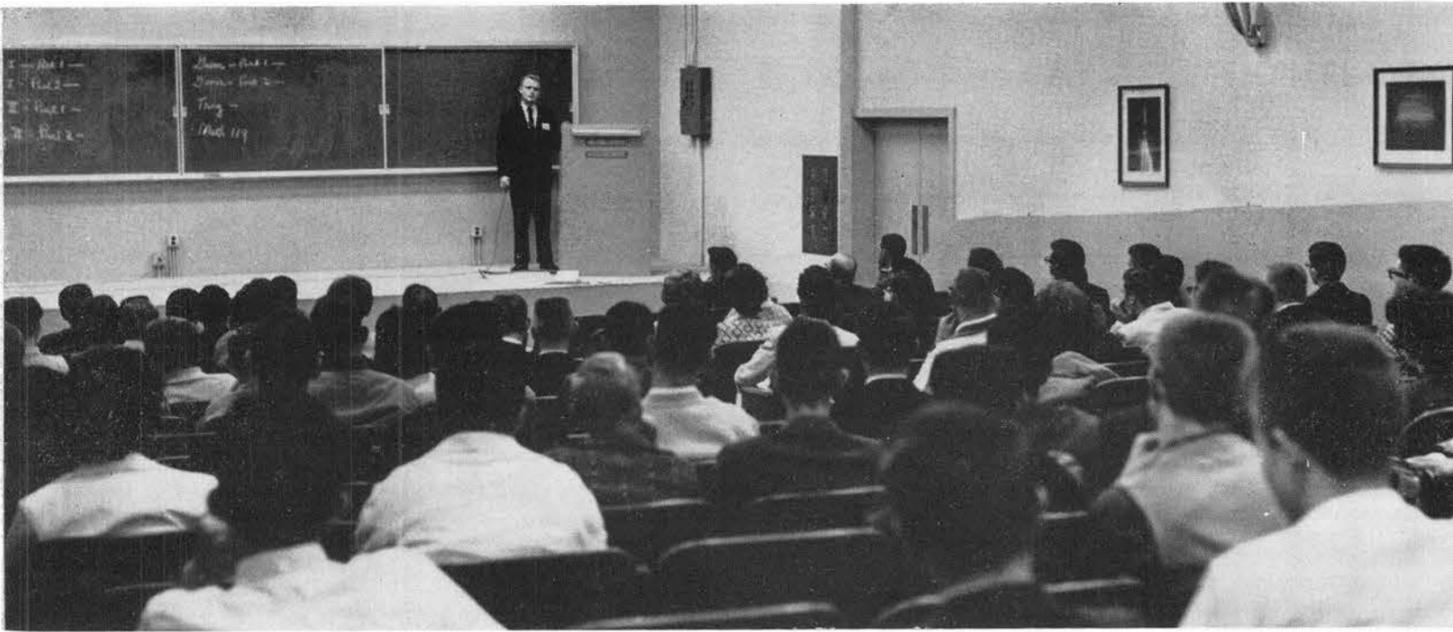
Telephone Sandia Base
Alpine 6-4411
Ext. 54241



Telephone Livermore
Hilltop 7-5100
Ext. 2395



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ANNUAL EDISON DAY TOUR of Sandia Laboratory by selected high school science students took place Feb. 16. Here A. D. Thornbrough (7251) addresses the group of 110 students and teachers on

"Project Gnome." The group later divided into four interest groups—math, chemistry, physics, and biology—and visited Bldgs. 880, 803, 830, and 805. Community Relations Division arranged tour.

J. S. Miller Heads Credit Union Officers

J. S. Miller (4122), as president, heads the recently-elected Sandia Laboratory Federal Credit Union officers. R. L. Kollman (4171) is vice president and E. R. Frye (1112) is secretary.

Board members are J. J. Michnovicz (3465), R. W. Whitson (7521), D. S. Tarbox (3200), R. A. Quelle (3122), and M. E. Grothe (4150). Board members are elected by the membership and the Board names its officers.

Jewette Tourney For Bowlers Rolled At Coronado Club

Top places and trophies were won by three Sandia Lab employees in the Women's Jewette bowling tournament held Saturday, Feb. 10, at the Coronado Club.

First place in the singles competition was won by Gertrude Byrne (3126-4). Kendra Longfellow (3151-2) and Doreen Westfall (4335-1) took top honors in the doubles. All Events was won by Shelby Banks (wife of R. H. Banks, 4151-1).

Prizes were paid to 31 of the 72 entries.

The next tournament scheduled at the Coronado Club will be a mixed doubles event for the week-end of Apr. 7-8.

Two Sandia Scientists Authors of Paper to Appear in Proceedings

Julius R. Blum and David L. Hanson, of Sandia Laboratory's Statistical Research Division 5425, are co-authors of a paper which has been accepted for publication in *Proceedings of a Recent Symposium on Ergodic Theory*. Title of the paper is "An Elementary Proof That Automorphisms of Kolmogorov Are Mixing of All Orders."



SANDIA'S IBM 7090 computer console holds the interest of this group of high school students who toured the Laboratory Feb. 16. Members of Electronics Data Processing Department 3450 explained the computer facilities and operations to the visitors.

D. H. Anderson Tech Article Published In Chemical Journal

An article by David H. Anderson of Applied Research Division 5132, entitled "Quadrupole Coupling in Lithium Nitrate," appeared in a recent issue of the *Journal of Chemical Physics*.

The objective of the paper was "to attempt to estimate the nuclear electric quadrupole moment of Li^7 by a solid-state technique. . . . It is hoped that this work will lead to a more reliable value of the quadrupole moment of Li^7 , and, in addition, add information which will be of assistance in furthering our understanding of field gradients in ionic crystals."

Acknowledgment was given A. J. Brouillard (7212) for experiment assistance, Diane Martin (5132) for help with computations, and E. J. Graeber (1122) for performing the X-ray analysis.

Steam System To Be Modified AEC Announces

Contractors have been advised that the Atomic Energy Commission will open bids Mar. 16 for modifications to the steam distribution system in Tech Area I of Sandia Laboratory. Bids were invited Feb. 23.

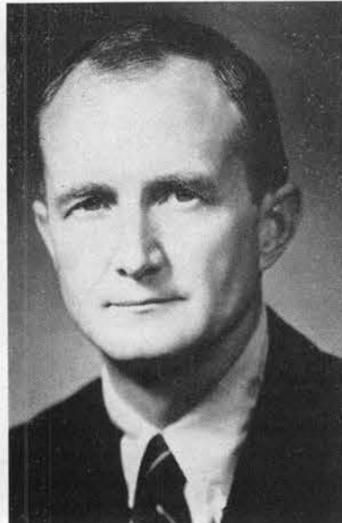
Work will include installing 600 linear ft. of 14-in. steel and six-in. condensate line, 900 linear ft. of 14-in. steel and six-in. condensate lines, all lines insulated; seven concrete manholes; and all valves, trenching, and backfill. The work is expected to require 120 days to complete after the contractor receives notice to proceed from the AEC.

Horace Moore (4543-2) is the Plant Engineering Department project engineer.

Board of Directors Meets at Sandia Laboratory



H. I. Romnes,
President, Western Electric Company



James B. Fisk
President,
Bell Telephone Laboratories



S. P. Schwartz
President, Sandia Corporation



R. W. Henderson,
Vice President, Weapon Programs,
Sandia Corporation

Sandia Corporation's Board of Directors convened at Sandia Laboratory Feb. 27-28 for its spring meeting. The board is comprised of seven members from Western Electric Company and Bell Telephone Laboratories and S. P. Schwartz and R. W. Henderson from Sandia Corporation.

During their two-day meeting the board members also visited Los Alamos Scientific Laboratory. On Tuesday, Feb. 27, they were briefed by various members of the staff on present and future activities of the Corporation.

Wednesday, Feb. 28, the board members journeyed to Los Alamos for a visit to Los Alamos Scientific Laboratory as guests of Norris E. Bradbury, Laboratory Director. Upon their return to Sandia Laboratory, they attended technical briefings and toured the new research building, 806.

The last meeting of the Board at Sandia was in September 1961.



Julius P. Molnar
Executive Vice President,
Bell Telephone Laboratories



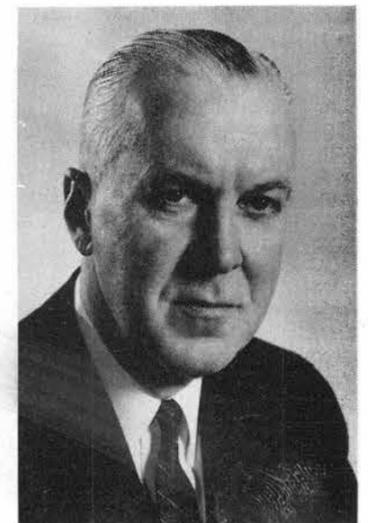
Howard K. Onstott
Vice Pres. and General Manager,
Bell Telephone Laboratories



Walter L. Brown
Vice President and General Counsel,
Western Electric Company



C. Raymond Smith
Vice Pres., Defense Activities Div.,
Western Electric Company



Paul R. Brousse
Vice President, Manufacturing Div.,
Western Electric Company

Supervisory Appointments

A. WILLIAM SNYDER to manager of Radiation Effects Department 5320.



Bill has worked in the field of radiation effects six of his eight years at Sandia. He was active in early planning for the Sandia Engineering Reactor Facility (SERF) and for three years headed Radiation Special Studies Section, dealing with nuclear measurements, dosimetry, and reactor component design.

Two years ago he was promoted to supervisor of Radiation Effects Studies and Testing Division, later renamed Radiation Effects Division II—Material and Components.

Previously Bill did fundamental nuclear research work for two and a half years at the AEC's accelerator laboratory in Ames, Iowa.

He has a Master's degree in physics from Iowa State College and a Bachelor's degree from Franklin and Marshall College, Lancaster, Pa.

During World War II, he served in the Navy two and a half years.

Bill is a member of Phi Beta Kappa, Sigma Pi Sigma, the American Nuclear Society, and the American Society for Metals.

LURL S. OSTRANDER to supervisor of Security Administration and Operations Division 8241, Livermore Laboratory.



Lurl joined Livermore Laboratory in November 1957 in the security organization. He was promoted to section supervisor in February 1959.

Before coming to Sandia, Lurl worked for about a year and a half for the Lawrence Radiation Laboratory, first in the personnel office and later on the business office staff. Before that he served as an F.B.I. special agent for four and a half years. From 1948-51 he was an elementary school teacher.

Lurl received his Bachelor's degree in geology from Fresno State College in 1948. During World War II he served with the U. S. Marine Corps in the Pacific theatre.

He is a member of the American Society of Industrial Security.

RAYMOND O. CAMPBELL to supervisor of Environmental Health Section 8242-2, Safety Engineering and Environmental Health Division, Livermore Laboratory.



Ray started at Livermore in April 1961 as a safety engineer.

His previous experience included three years as an industrial hygienist and supervisor at the Lawrence Radiation Laboratory. He was also employed for one year by the Los Angeles City Health Department as a sanitarian.

Ray was awarded his Master's degree in 1958 from the University of California at Berkeley, where he majored in public health. He received his BS degree in public health and preventive medicine from the University of Washington in 1956. He also attended technical schools while in the service.

An Air Force veteran, Ray served with the Medical Corps for six years at locations throughout the United States.

He is a member of the American Industrial Hygiene Association.

JAMES G. SPIRUP to supervisor of Physical Security and Visitor Control Section, 8241-1, Security Administration and Operations Division, Livermore Laboratory.



Jim has been with Sandia since May 1958, joining the Livermore Laboratory security organization as a staff member, where he carried out assignments in both physical and personnel security matters.

For six years before joining Sandia Jim worked for the San Francisco Operations Office of the AEC as a security personnel analyst and interviewer. Before that he served three years overseas as an Army lieutenant in the Intelligence Corps, working primarily in screening refugees.

During World War II he served as an ensign in naval aviation, stationed at Pensacola, Fla.

Jim received his BA degree in 1943 from George Fox College, Newberg, Ore., majoring in English. He also did work in history at the University of California at Berkeley.

L. CLAYTON GUYNES to supervisor of Administrative Assistant Division 3429, Technical Information Department.



In his new position Clayton will be responsible for the Administrative Assistants reporting to the 5000 Research organization.

Clayton has been with Sandia 11 years, starting as a program and scheduling coordinator. After a year and a half as administrative assistant for two engineering departments in Systems Development, he was promoted in May 1956 to supervisor of Ordering and Local Service Section. Three years ago he was transferred to serve as an Administrative Assistant to the 7100 Systems Development organization.

Before coming to Sandia Clayton was associated with several local firms including Geronimo Bus Lines and Barber's Food Store, where he was store manager.

GILBERT L. RHODES to supervisor of Safety Engineering and Environmental Health Division 8242, Livermore Laboratory.



Gil joined Sandia at Livermore in October 1957 as safety engineer. He was promoted to section supervisor in May 1959.

Before joining Sandia, Gil worked for four years as director of a home-safety research project sponsored by the W. K. Kellogg Foundation. He was also employed for eight years as industrial safety engineer with the California Department of Industrial Relations, and 10 years as field supervisor for the Standard Oil Co. of California.

Gil studied mechanical engineering and related courses at the University of California at Los Angeles and the University of Southern California. He is a member of the American Society of Safety Engineers, Southern California Industrial Safety Society, Northern California Safety Society, and The American Public Health Association.

He is the consultant to the State of California Public Health Department in accident prevention, and is a member of the Board of Directors of The Veterans of Safety, a national organization.



SPEAKER at Feb. 20 meeting of Sandia Laboratory Research Colloquium was Vice Admiral John T. Hayward (center), Deputy Chief, Naval Operations (Development), Department of the Navy, Washington, D. C. Others are (l to r) R. W. Henderson,

Vice President—Weapon Programs, Sandia Corporation; Captain David G. Adams, Commander, Naval Evaluation Facility; S. P. Schwartz, President, Sandia Corporation; and Rear Admiral Joseph D. Black, Deputy Commander, Field Command, DASA.

Poetry Magazine Published by Sandians Not for Money But As Hobby, Philosophy

Targets is a quarterly magazine of poetry. It is edited and financed by Lee Garner, information systems researcher for 9100. Assistant editor is Lloyd Alpaugh, a technical writer in 3423. The two Sandians have been publishing

the magazine for two years now. Each printing runs a deficit of about \$100.

"As hobbies go, this is not too expensive," Lee says. "Besides, success of poetry magazines has never been measurable in cents,

much less in dollars. Success is achieved only in proportion as numbers of readers of poetry are increased, writers are inspired, and publishers are encouraged. Since no poet makes his living at poetry, writers and publishers indulge in their craft for other motives."

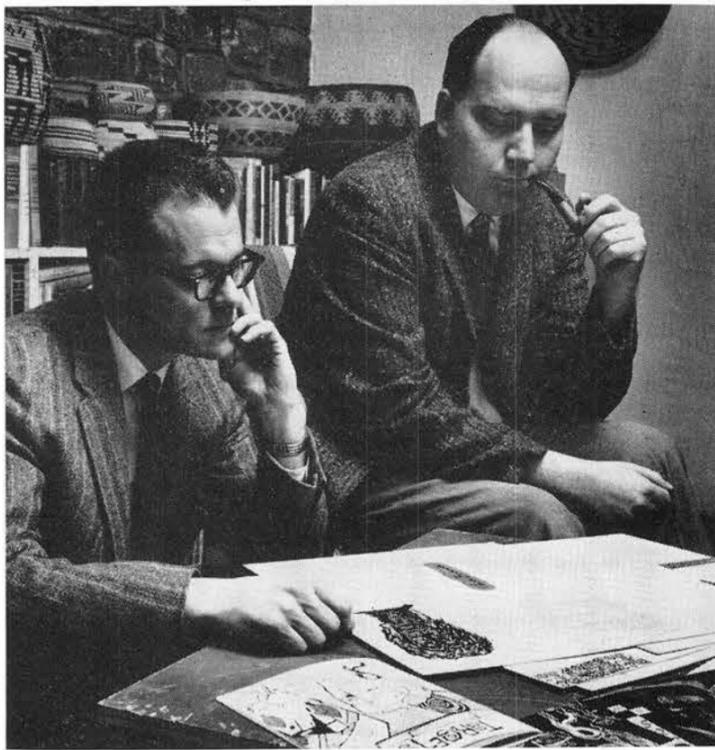
Targets aims at publication of the best contemporary poetry with no limitations of subject, technique, or style. A few announcements in other poetry and writer's magazines have assured Lee of a regularly-full mailbox.

"We receive poems from all over," Lee says, "many, many more than we can use. However, finding enough really good poetry does get to be a problem."

As a poetry magazine, Targets can be considered a modest success. Its 250 circulation is primarily to libraries, bookstores, universities, and poets.

"Naturally," Lee says, "We are continually trying to sell more subscriptions."

Although Lee has an MA from the University of Iowa, Lloyd is the poet of the two. Part of his master's thesis, a selection of poems written for a creative writing degree in literature at the University of New Mexico, appeared in Targets.



LEE GARNER and Lloyd Alpaugh contemplate an issue of Targets, a magazine of poetry which they edit and publish.

Driving to Tonopah Test Range Will Be Smoother Soon

Sandians who make the 36-mile drive from Tonopah, Nev., to the Tonopah Test Range are happier these days. Twenty-five miles of the road which has rattled bones for several years is undergoing extensive construction.

The old road, first built during WW II as an access to the Las Vegas Bombing Range (now Tonopah Test Range), is being resurfaced and widened. It had not received maintenance since the end of the war. Designated Nevada Highway 25, the road is being rebuilt by the State of Nevada Highway Department through funds made available by the Atomic Energy Commission.

The road begins 12 miles out of Tonopah on U. S. Highway 6 and continues to the boundary of the Test Range.

Construction is estimated to be completed in June 1962.

Promotions

Pablo L. Baca (4574) to Janitor
 Roger A. McClure (4233) to Wireman
 P. A. Hamilton (3421) to File Clerk
 Meregildo Gallegos (3444) to Messenger
 Gregory M. Silva (3444) to Messenger
 Willie M. Sineros (3444) to Messenger
 Martelle G. Reid (8232) to Document Clerk
 George C. Gray (8121) to Laboratory Assistant
 Jim L. Starkovich (7321) to Laboratory Assistant
 Manuel Cordova (7324) to Laboratory Assistant
 Diane B. Holdridge (5426) to Staff Member, Technical
 P. L. Vandellinder (5426) to Staff Assistant, Technical
 Howard J. Perdue (7536) to Staff Assistant, Technical
 Rogerio G. Gonzales (4518) to Helper-Trades
 Arthur P. Leyba (3462) to Plate Maker
 Lester C. Harris (4234) to Technician
 Terry A. Leighley (3444) to Report Clerk
 Frances Fawver (3126) to Secretarial Stenographer
 Barbara J. Wallstrom (3126) to Secretarial Typist
 Lorraine G. Cook (3126) to Secretarial Typist
 Sonja C. Sager (3126) to Secretarial Stenographer
 Thelma M. Cole (3126) to Secretarial Typist
 Betty M. Sterling (3126) to Secretarial Typist
 Alice N. Boothe (3421) to Library Assistant
 Larry E. Wilhelm (3444) to Mail Clerk
 Ralph D. Lovvorn (3444) to Camera Operator
 Mary Ann Yaple (4132) to Record Clerk
 Sue C. Clements (4212) to Receptionist
 Charles R. Sage (8232) to Ozalid Operator
 William A. Lovato (8225) to Metal Stock Handler & Cutter
 Dwayne Pool (8225) to Receiving Clerk

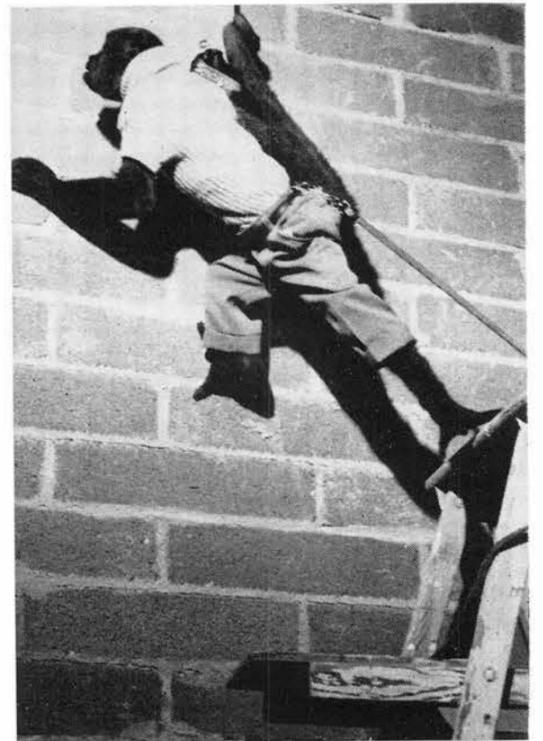
Patrick J. O'Shea (8225) to Receiving Clerk
 Carol A. Portolese (8161) to Message Center Equipment Operator
 Carlene M. Mohr (8212) to Secretarial Stenographer
 D. R. Mascarenas (8212) to Secretarial Typist
 Curtis F. King (4231) to Technician
 Fred A. Drummond (4233) to Layout Technician
 William E. Scott, Jr. (8225) to Receiving Clerk
 Thomas M. Harban (8224) to Property Clerk
 Silverio J. Armijo (4518) to Laborer
 Arthur D. Bacon (4624) to Packer
 C. Gutierrez (4511) to Junior Tradesman
 Warner H. Jones, Jr. (3432) to Service Clerk
 D. B. Sparger, Jr. (8225) to Stockkeeper
 Franklin D. Bainter (8225) to Shipping & Receiving Clerk
 Gary W. Konopka (8225) to Stockkeeper
 Stephen R. Zdunek (4623) to Material Handler
 Ernest R. Sanders (3311) to Staff Assistant, Technical
 Dwayne L. Mohrman (8123) to Staff Assistant, Technical
 Conrado A. Otero (4234) to Wireman
 Antonio Silva (4132) to Tabulating Equipment Operator
 Patricia J. Lee (4423) to Typist
 Ronald W. Pugh (8121) to Laboratory Assistant
 Louise M. Meyers (4110) to Secretary
Supervisory Lateral Transfers
 R. D. Freyermuth from 4361-1 to 4315-2
 J. McMinn from 8234 to 8134
 J. P. Brock from 8224 to 8234
 H. A. Vaughn from 9113 to 7131
 H. J. Przystas from 8232-2 to 8234-4
 R. C. Mueller from 4332-2 to 4112-1



YEHUDI, an energetic cooperative wooley monkey, was coaxed by Stan DeVault of Sandia Laboratory's Safety Division 3211 in helping promote safety around the house. (That's Stan on the right.) Yehudi was turned loose in a typical home and the Lab News photographer worked hard to catch his fast-moving antics.

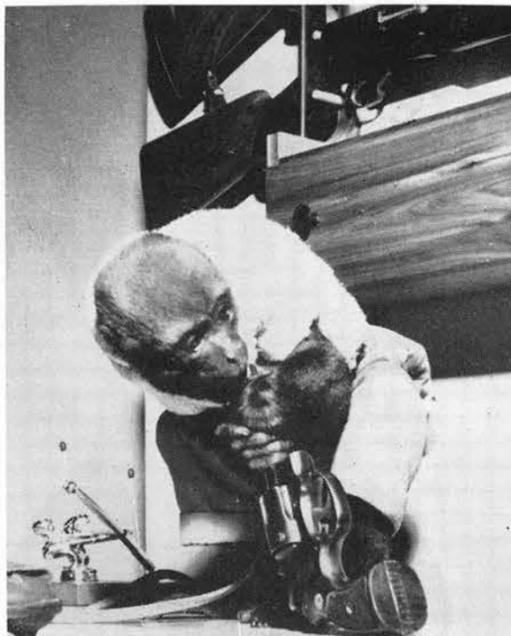


SMELLS GOOD and it's hot. This is a natural lure for any child. Don't monkey around with this hazard. Keep children away from cooking areas at all times. Always keep handles from extending out over range within reach of monkeys or children.

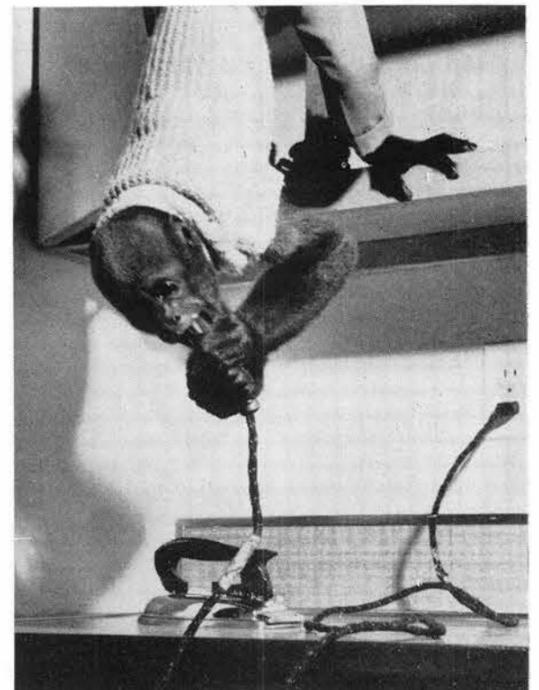


YEHUDI can do this—reach from the top step of a ladder. You had better not try this monkey business unless you have built-in safety belt such as Yehudi's tail if you desire to stay healthy.

**No
Monkey
Business
This
Safety
Business**



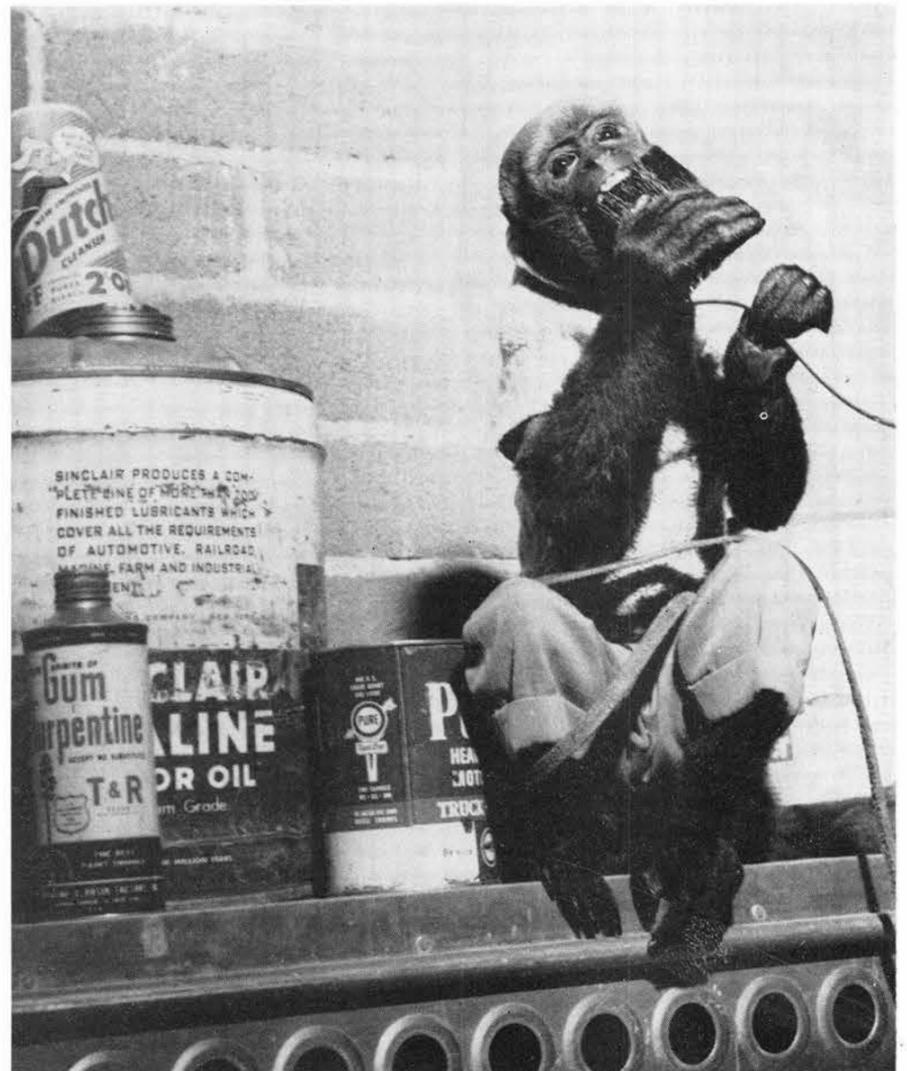
GUNS are an obvious hazard. Yehudi is checking to make sure that all the guns shown here are not loaded. Locking in a closet is a safer arrangement.



ELECTRICAL APPLIANCES are a natural hazard. Yehudi doesn't know that the wires are frayed and that the iron is piping hot. Protect your children.



LIKE ANY OTHER five-year-old, Yehudi is curious about the contents of the medicine cabinet. Unless locked, household medicines are a hazard to children around.



PAINT, cleaners, detergents, thinners, and caustics should be stored in a safe place away from casual reach. Yehudi likes chewing paint brush. Children might, too.

Sandia Couple Likes Good Life Down on the Farm



FOUR of the younger members of Ed Servis' Hereford herd enjoy a morning meal. All of the calves were added to Ed's stock in the past year. His farm includes pasturage and a fruit orchard.

Sandians Who Serve . . .

Work of Ed Phinney, Dick Richards Saving County Money on Voter Registration Job

Bernalillo County has approximately 100,000 registered voters. Responsibility for seeing that registration affidavits do not contain names of ineligible persons rests with the three-man Bernalillo County Board of Registration.

Edward S. Phinney (7147) and Richard A. Richards (2422) are two of the members of the Board. These Sandians have spent almost every Saturday since last October at the County courthouse checking for ineligible voters.

"We have been purging the rolls," Ed says. "We remove the names of people who by official certificate are dead, insane, or convicted felons whose political rights have not been restored. We are also notifying those people who it appears have not voted in the last two general elections of our intent to drop their names from the lists of eligible voters. If they do not protest this action by proving that they did vote, we cancel their registration. They can always re-register."

To date, some 14,000 names are being dropped from the rolls. "There was quite an accumulation," Dick says. "The records needed much work."

This work will go much faster and be more accurate in the future, thanks to a machine record system inaugurated by the Board in cooperation with the county clerk. The voter registration sys-



DICK RICHARDS, left, and Ed Phinney serve on the Bernalillo County Board of Registration. Their work will save County money.

tem is being improved by use of a machine card tabulating system.

Ed points out that the County already owned the record-keeping machines necessary to do this.

"It was a matter of convincing everybody to convert to the machine system" he says. "We had a great deal of help from County Commissioner Harry Kinney (7183) and others who could see the value of the system."

Dick Richards is supervisor of Apparatus Development Division 2422 in Automated Data Systems Development Department. Ed Phinney is in Project Division 7147 of the Missiles Systems Project Department.

Dick has been active in the Republican Party for seven years. Currently he is a member of the County and State Central Committee and has held various posts, including Precinct Chairman.

Ed has worked for the Democratic Party for the past two years. He is a Committeeman from Precinct 46C and a member of the County Democratic Central Committee. In 1960 he conducted a door-to-door voter registration campaign in his precinct and brought in more than 400 new voters.

"The Board of Registration also encourages eligible voters to register and vote," Ed says. "Especially Democrats."

"Especially Republicans," Dick says. "Everybody, in fact."

"It's not because we're unsocial; it's because we enjoy making something profitable out of something that we enjoy doing," Edwin R. Servis (4422-2) commented recently. He was speaking about his preference for living in the country rather than in the city.

Ed, his wife, Willie (3421), and their two boys live on a small farm near Valencia, N. Mex., 19 miles from the Albuquerque city limits. On the farm, they raise registered Hereford cattle, maintain some permanent pasturage, and tend a small orchard. Their livestock also includes a horse, a Shetland pony, a collie, and several cats. "They make up quite a menagerie," Ed said. "But they get along well and seem to enjoy each other."

Ed is in partnership with his father. The Servis family has been farming in New Mexico for many years, and Ed accounts for his interest in farming as an inheritance from his parents. "I've always enjoyed rural life," Ed explained, "and so has Willie. We've parlayed this interest, along with our love for animals, into what we hope will continue to be a self-sustaining enterprise."

Add to Herd

Four calves were added to the Servis herd in the past year. Ed is planning on a larger increase for next year. Both he and his wife have degrees in chemical engineering, and they're experimenting with new soil fertilizers to improve the quality of their pasturage.

"We're sometimes hard pressed for time to experiment, along with everything else," Ed commented.

"Since we both work at Sandia, our work at home is done evenings and weekends. During the summer, we alleviate things by hiring an extra hand."

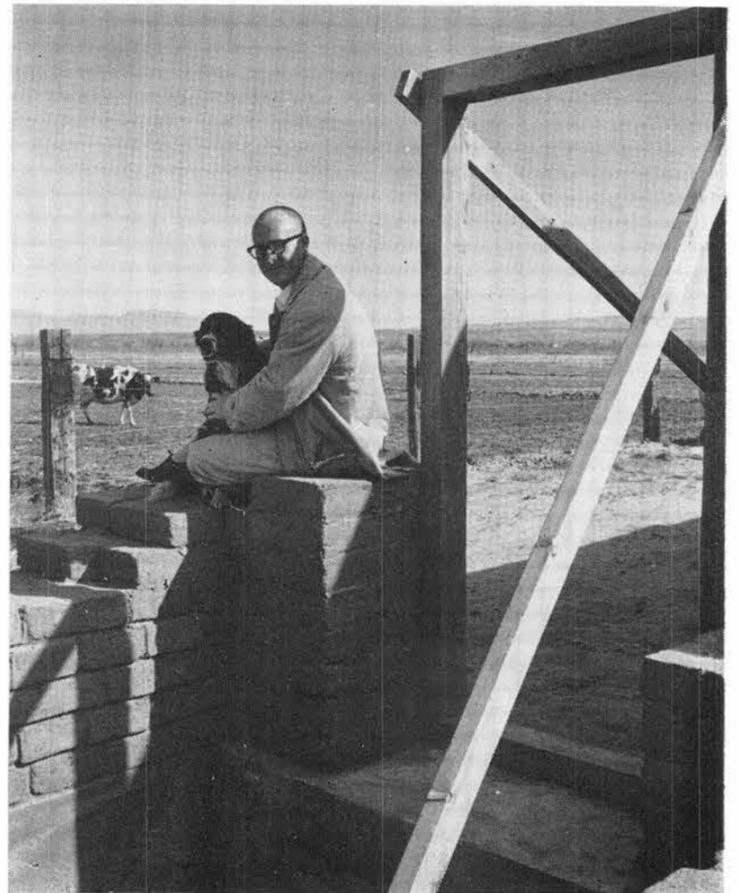
The Servises are building a house on the farm, a low and spacious adobe with viga ceilings, glassed breezeways, and a gigantic, brick-floored, screened-in porch. They have worked on the house for the past three years, and it is nearly completed.

"We find that nearly every minute of our so-called 'leisure' time is accounted for," Willie added. "What with our work at Sandia, the cattle, the house, and our two children, we're constantly busy." Yet, somehow the Servises find time for various avocations. "We both do a lot of reading," Willie continued. "And we enjoy listening to high-fidelity music."

Camping Trip

Last summer, the Servises took time for an extended camping trip in the Gila National Wilderness. "We thought there was a lot of solitude on the farm," Ed commented. "But the wilderness is really quiet." The Servises enjoyed camping in the wilderness, quiet though it was. "And the boys had a wonderful time," Willie added.

"All things considered, it's all a great adventure for us," Ed concluded. "While there's a lot to be said for the benefits of urban living, no one can deny that life away from the city has its advantages, too. The country is a place where the effect of a man's labor can be immediately apparent. And in this day and age, it's good to be close to the realities of the earth and the air."



PEACE and quiet are virtues of living in the country. Here, Ed Servis (4422-2) enjoys a moment's relaxation with his dog at the well house near home he and his wife, Willie (3421-1), are building.



BREAKFAST is served by Ed Servis (4422-2) to part of his Hereford stock. During the winter months, Ed finds time to feed stock and do other farm duties before going to work and in the evenings.

Service Awards

15 Year Pins



Richard C. Clifton
4611
March 3, 1947



Burke C. Duff
7246
March 3, 1947



D. D. Deapen
1332
March 14, 1947

10 Year Pins

March 1-15

E. K. Baker 3341, E. H. Bowman 1424, A. V. Engel 9111, L. L. Lathrop 7213, J. W. Pearce 7310, P. F. Proulx 5433, D. A. Young 5426, G. F. McFall 2413, O. B. Trujieque 4573.

E. I. Alvarez 4621, F. J. Gallagher 7532, W. R. Green 8131, R. C. Jaramillo 4234, C. C. Paschal 4254, A. R. Varardo 2643, Mary E. Fischer 3126, A. L. Anderson 2452.

Lorenzo Lopez 4631, G. B. Stephens 1420, M. K. Linn 3420, J. E. Simpson 7124, F. M. Batchelor 1111, Dorothy M. Dempsey 3462, H. W. Hanna 3113, H. J. Meyers 2643.

Nabor Rael 4221, J. N. Timmons 3232, L. M. Berry 8115, J. P. Chandler 3242, O. G. Perea 4611, Arturo Jimenez 4611, J. E. Wesbrook 3453, Berta L. Guest 4632, and Ethel M. Kind 4135.



John A. Southwick
2444
March 14, 1947



SATELLITE replica at Sandia Corporation's Sphere of Science is observed by three AFROTC cadets, (l to r) Robert Bloss, Eddie Brown, and Chip Tobey. The trio was part of a group of 22 cadets

and two officers from the University of Arizona at Tucson who visited the Sphere Feb. 16. Their visit included a viewing of "The Sandia Story," a briefing by FC/DASA officers, and a Kirtland AFB tour.

Robert C. Colgan Appearing In 'The Diary of Anne Frank'

"The Diary of Anne Frank," a two-act drama, will be presented by The Family Players as a benefit for the New Mexico Girls' Welfare Home on Mar. 4-5. The production will be staged at the Home, 7/10ths of a mile north of Menaul on NM 422 (Interstate 25).

Net proceeds will be used by the Home for certain medical and educational expenses that cannot otherwise be met.

Robert C. Colgan, Public Information Division 3431, will portray Mr. Van Daan, one of the eight Jews who go into hiding.

Most of the cast have professional or extensive stage experience. Tickets are \$2 each and can be obtained from the Nob Hill Drug Store, the New Mexico Girls' Welfare Home, or Bob Colgan. Curtain time is 8:30 p.m.

A. Y. Pope Speaks Before Two Groups

Alan Y. Pope, Manager of Sandia Laboratory's Aero- and Thermodynamics Department 7130, spoke before the Student Chapter of the Institute of the Aero-Space Sciences in Atlanta, Ga., recently. Title of his talk was "Salary Expectations for Aeronautical Engineers."

Mr. Pope has also spoken to a joint meeting of the Institute of the Aero-Space Sciences and the American Rocket Society on "Rockets Over Nevada," in which he discussed the use of rockets for research purposes.

Journals Give Favorable Reviews to Text Co-Authored by D. B. Owen

Technical journals in recent months have carried a number of favorable reviews on "Tables of the Hypergeometric Probability Distribution," which was co-authored by D. B. Owen, supervisor of Statistical Research Division 5425, and Gerald J. Lieberman of Stanford University.

The Journal of the American Statistical Association, in its review in the September 1961 issue, noted that the tabulations "... appear to have been compiled with great care and should facilitate more extensive use of the distribution in the physical and social sciences and in engineering."

Biometrics, for September 1961, noted that the book "... will become an important reference volume and one recommended to all working in areas of relevance."

The book was also reviewed in the Computing Reviews, Industrial Quality Control, Mathematical Reviews, and Psychological Reports.

Stanford University Press, who published the statistical tables,

has notified Mr. Owen that the book was among those displayed in exhibits before meetings of the American Association for the Advancement of Science in Denver, the Special Libraries Association in San Francisco, and the American Mathematical Society in Seattle.

It was displayed at Book Fairs in Leipzig, East Germany; Frankfurt/Main, West Germany; Warsaw, Poland; and Belgrade, Yugoslavia.

The book was also mentioned under listings of new publications in the American Mathematical Monthly, American Scientist, Operations Research, Scholarly Books in America, Biometrika, and Annals of Mathematical Statistics.

The 700 pages of statistical tables, combined with existing methods, have applications in the fields of quality control, quality assurance, industrial management, and economics. The computations were performed on Sandia's IBM 704 computer.

Coronado Club's International Night Provides Members With Irish Fare

Shamrocks, little white pipes, and perhaps a Leprechaun in search of a trip to Eire will be in evidence at the Coronado Club at the monthly buffet-dance on Saturday, Mar. 17. Irish folk dances will be presented from 8:30 to 9, and from 9 to 1 everyone can dance to the Music of Tommy Kelly's band.

Diners will be treated to an all-Irish menu when the buffet is served from 6:30 to 8, and social hour prices will be in effect during that time. Tickets cost \$2.60 per person for members, \$3.60 for guests.

There's a new feature in the Club's sandwich line at noon. Roast prime rib and top sirloin plates and sandwiches are being offered for those who prefer a hot lunch, yet don't want a full-course meal. The platters cost \$1

and the sandwiches 75c; both include salad and rolls.

Kenny Dark, local disc jockey, will emcee the Teenage Record Hop on Mar. 10 from 8 to 11 p.m. Parents may pick up the 25-cent tickets in advance or at the door.

The Mixed-Pair Bridge Tournament on the 15th will include a dinner for those who participate. Reservations for the \$2 evening should be made with George Arnot, ext. 36245.

The Del Reys, a well-rehearsed and swinging combo, will provide the music at Social Hour on Mar. 9.

No job is so important and no service is so urgent that we cannot take time to perform our work safely.

SHOPPING CENTER

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

15-VOLUME SET of Encyclopedia Britannica Jr. with dictionaries, \$125. Barefoot, 877-0310 after 6 p.m.

3-BDR HOUSE, 10 min. from Base, walled-in yard. Temple, AL 6-3048.

GAS HEATER, 15,000 BTU, suitable for den or garage, 12x18x32"; '56 Chevrolet 4-dr. station wagon, 6-cyl., power-glide, R&H, Hall, AX 9-3594.

'61 DODGE SW, lug rack, auto, trans., R&H, original owner, best offer over \$2300. Finley, AX 9-0739.

FEMALE thoroughbred Dachshund, 5 years old, \$20; Dejur 8mm movie camera, f/2.5 Wollensak lens, \$5. Birdsall, AL 6-6225.

'59 JOHNSON outboard motor, 5 1/2 HP, used very little; 26" boys' bike, new tires, \$15. Higgins, 1027 Truman SE, Apt. #6.

WHITE MALE POODLE, 7 mo. old, house broken, rabies and distemper shots, excellent with children. Carlson, AM 8-8138 after 5 p.m.

RADIO-PHONOGRAPH, single speed phono with phono jack for player with other speeds, \$15. Goodman, AX 8-2287.

CAMERA, 35mm Voigtlander Vitessa, F2 50mm lens, Ever Ready case, best offer. Gumley, AX 8-1667.

LIVING ROOM SUITE, 5-pc., light oak Monterey, \$55; light oak dropleaf dining room table w/6 chairs, \$65. Neun, 3600 Porsifal NE, AX 9-9188.

REBUILT '49 1/2-ton Ford V-8 pickup, 3-speed, \$295. Zimmerman, AX 9-5195.

3/4 STUDENT VIOLIN w/case, \$30; recorder C-soprano, \$6.50; girl's ice skates, size 1, \$4. Ivey, AX 9-3635.

'61 CORVAIR, 700 series, 4-dr., standard transmission, heater, less than 12,000 miles, \$1650. Buck, AL 5-8038.

ICE SKATES, Ladies, new, size 5, \$10; boys', used, size 6, \$5; boys' track shoes, size 6, \$5. Spacer, AX 9-0211.

END TABLES, two, blond, step type, \$3 each. Flowers, AL 6-1656.

5" OSCILLOSCOPE, audio frequency type, operable condition, \$20. Vaughn, AL 6-0341.

CAR-TOP boat carrier, \$6; 1 1/2 HP Johnson outboard motor, \$35. Cook, AX 9-7509.

RED RIVER CABIN, electricity, water, telephone, 1/4 acre ground, six blocks from town, one year old. Cummings, CH 2-1061 after 5 p.m.

3-BDR HOME, family room, double garage, \$18,000 furnished, small down payment, near University, Monte Vista, Jefferson, Fatima schools. Steele, AL 6-7504.

'50 DESOTO club-coupe, R&H, 6-cyl., good glass, tires, \$150. Moorehead, 1624 Stanford SE, CH 2-2546.

2 CARSEATS, 2-5 yr., \$2 ea.; AC-DC radio & 78 player, both \$10; Olds trumpet, \$30; darkroom sink, \$14. Lenz, AL 6-7037.

8 MM CAMERA w/case, lightmeter and filter lens, \$15. Young, 837 Valencia Dr., SE.

PLAY PEN; jump chair; sterilizer; glass, plastic bottles; car bottle warmer, 6 or 12-volt; 117-volt bottle warmer, make offer. Cockrill, AM 8-5502.

'51 BUICK, R&H, easy eye glass, window washers, seat covers, night and day mirror, 2-tone, terms, \$150. Vilella, AM 8-3594.

UTILITY TABLE, black metal, \$2.50; Venetian blind, 80" w x 52" h, \$1.50; '59 Volkswagon sedan, 16,000 miles, \$1165. Browning, AX 9-6384.

10-GAL. AQUARIUM w/under-gravel filter, stainless steel cover, heavy-duty pump, 4-valve air manifold, thermometer, 3 fish, \$17.50, retails \$35. Stamm, 5105 Guadalupe Trail NW, DI 4-7431.

ACCORDIAN, 120 bass, \$100; 2-burner hot-plate, \$15; Brownie Hawkkeye camera, \$2; drafting board w/T-square, \$3; baby stroller, \$2. Sisson, AX 9-4217.

'51 DESOTO Deluxe 6, 2-dr., R&H, good engine but body needs a little work, \$125. Trybul, 298-3325.

'54 FORD, new bearings, seat covers, radio, chains, auto., 4-dr., \$300; antique organ, best offer. Newcomer, 255-9728.

TWO 24" girls' Schwinn bicycles, \$25 each. Jones 255-6190.

5-PC REVERSE WARE set, includes double boiler; Sunbeam deep-fryer; imported silver service for 6; pole and floor lamps. Sager, AM 8-4897.

'56 FORD V-8, std. transmission, original owner, new tires and battery, seat belts. Delker, AX 9-0773.

PIANO, 45" walnut studio model Wur-litzer, \$300. Lindquist, AX 9-0545 after 5:30 or Sat.

10" TABLE SAW w/full horse motor; latest Sears model tilting arbor, complete w/metal stand, table extension and electric control box, \$125. Denison, AL 5-3535.

NEXT DEADLINE
 FOR SHOPPING CENTER ADS
 Friday Noon, Mar. 9

STEREO RECORD PLAYER, 4 speed, VM console, brand new for half price. Geck, AX 9-5095.

'52 PONTIAC, Hydramatic, rebuilt running gear, ignition & carburation systems valves, good rubber, 65,000 original miles, new license, \$225. Consider trade. Floyd, AX 9-2419.

TWIN BED, Hollywood style, mattress and springs, \$15 or best offer. Latta, AX 9-9380.

4-DRAWER chest, twin-size bed, mattress and springs, \$20 total. Separate 4-drawer pine chest, \$5. Hart, AX 9-8832.

CAMERA, SL reflex, 35mm, F2 Zeiss, \$90; 135mm Zeiss telephoto lens, \$45; electronic flash, exposure meter, all for \$145. Guaranteed. Heins, AL 5-6632.

AUTOMATIC WASHER, Norge, \$50. Farnar, AX 9-6007.

PORTABLE TV, 19" Silvertone, used one month, assume payments or best offer. Miller, 298-1289.

SHALLOW WELL pump, pressure tank, \$25; 3 compartmentized hen cages, \$15 each; pullet cage battery, \$20; 1938 Chrysler, \$75. Penn, BU 2-3997.

GALVANIZED PIPE, used, half-inch, 200 ft., ideal for sprinkler system, five cents per foot or best offer. Houghton, AX 9-3886.

MOUNTAIN CABIN, 12' x 24', wired, needs fixing on 6/10 acre, \$300 down, balance your terms. Ogden, CH 3-4723.

'50 HARLEY DAVIDSON, 45 cu. in., runs good, windshield, front and rear crash bar, \$195. White, AL 5-9479.

'61 HEALEY, 4 seater, deluxe, radio, safety belts, factory hardtop. Schultz, AX 8-2731.

RIFLE, Winchester model 88, .308 caliber, includes Lyman rear sight and carrying strap, \$120. Kubiak, AL 6-1513.

'56 Oldsmobile 88, 4-door, by original owner, 65,000 miles, \$650. Thomas, AX 9-0178.

'46 UNIVERSAL jeep, 4-wheel drive w/metal cab, towbar, Warn hubs, heater, good snow tires and gun rack, engine, brakes and steering just overhauled, \$475. Hillman, AX 9-8438.

16' BOAT, convertible top, walk thru back-to-back seats, 35 Evinrude, tilt trailer, spare tire, equipment \$995. Skelton, AX 9-3190 after 5 p.m.

ROTH VIOLIN, used seven months, full size, \$55 or best offer. Landavazo, AX 9-6579.

'59 MGA roadster, wire wheels, \$1300. Dill, AM 8-3815 after 4:30 p.m.

3 BDR HOUSE, below appraisal, walled, sprinklers, AC, disposal, drapes, attached garage. Will consider renting. 11513 Ralph NE. Letbetter, AX 9-4343.

WINCHESTER 30-30; Argus 35mm camera; RCA transistor radio; .22 pistol. Want Indian items, guns, or coins. Zaluga, DI 4-1564.

KITCHEN SINK, double bowl; plastic bowling game w/8" balls; 40" x 40" beaded screen; bowling ball bag. Giveaway prices. Scranton, AX 9-5720.

MOUNTAIN HOME in Cedar Crest, two bedroom, fireplace, guest house, work shop, summer kitchen, \$13,900 total, 1/2 down. Bush, BU 2-3996.

HI-FI COMPONENTS: Garrard RC-88 changer, Heathkit EA-2 amplifier, Japanese speaker and enclosure, all for \$45. Petrone, AL 5-3633.

MANKIN 3 BDR, hw/floors, walled, sprinklers, payments \$77 per month, near Sandia Base. Sineras, AX 9-8275.

RUNABOUT SKI BOAT with homemade trailer, \$300 or best offer. Cox, AL 6-1977.

DINING ROOM SET, blond, 6 chairs, \$95; baby bed w/mattress, \$15; high chair, metal, folding, \$7. Vath, AX 9-1448.

'51 CADILLAC, Series 62, 4-dr., black w/white top, motor recently overhauled, has 1953 Hydramatic and new seat covers. \$275. Russell, AX 9-0159.

WRINGER WASHER, \$20 or best offer. Pope, AM 8-7206 after 5:30 p.m.

BRICK HOME, 3-bdr., 1 1/2 bath, FHA loan available, 1600 sq. ft., near schools, 900 Cardenas SE. Allen, 268-1027.

COFFEE TABLE, oval, approx. 3' x 5', very heavy and sturdy, \$15; 9' x 12' oval braided rug, brown and beige, \$20. Miller, 2904 Dakota NE, AM 8-1939.

GRASS, African bermuda turf, 6 sq. yards, free for the digging. Gross, AL 5-7327. 1208 Florida NE.

'59 MUSTANG, 4-speed, extras, \$285. Brown, DI 4-6831.

DUMONT TV combination, including AM-FM radio and automatic record player, will sacrifice for best offer. Wank, AX 9-3450.

'60 RAMBLER American station wagon, 2-dr., OD, 21,000 miles, tu-tone green mattress included, \$1395 or best offer. Rynders, AX 9-3894.

JUVENILE CHIFFONROBE, \$15, 4-drawer chest, \$12. Campbell, AL 6-1015.

'53 OLDSMOBILE, 4-dr., R&H, new battery, '62 license, \$150. Meyer, 298-4825.

'56 FORD, Hdtpr., V-8, radio. DeZeeuw, DI 4-7392.

PRIVATE ROOM with home privileges, one or two males, rent \$50, 2712 Florida NE. Ed Vilella, AM 8-3594.

3-BDR, den, 1 1/4 baths, garage, venetian blinds, landscaped, sprinklers, walled yard, NE, \$125 mo., water paid. Seay, AX 9-5270.

FURNISHED ROOM, male only, references. Share entire house with two other men. Cooking privileges, utilities furnished, SE Heights, \$50 per month. Hansen, AM 8-1148.

LARGE 3-BDR, furnished house, utility room, attached garage, spacious yard, rug, washer, very clean, \$100. Brown, 3017 Edith NE, DI 4-6831.

LARGE 2- bdr., apt., w/carpet, all electric kitchen and garage, 931 C Alvarado Dr. SE. Barefoot, 877-0310 or TR 7-9361 after 6 p.m. weekdays.

WANTED

HOME for small black female dog, very good watch dog and very affectionate. Holesinger, 898-2296.

CAR POOL MEMBER, vicinity of Girard and Stanford; .22 calibre automatic target pistol, Woodsman or Hi-Standard preferred. Denison, AL 5-3535.

60 TO 75 HP outboard motor, will pay cash. Meikle, AX 9-4640.

CHILD CARE in my home, 316 Texas NE. Jones, AL 5-2591.

TO TRADE old commemorative stamps unused for new unused. Jones, 255-3390 after 7 evenings.

CHILDREN to care for in my NE Heights home. References. Murray, AX 9-4607.

BABY SITTING in my home. Mrs. Farnar, AX 9-6007.

COMPANION to drive to Deming and back some weekend in March. Ellen Jones, 255-3390 evenings after seven.

TWO MORE riders in car pool, vicinity of Eubank and Comanche. Gorney, AX 9-8901.

CHILD CARE in my home. Morris, 920 Kentucky SE, AL 6-0152.

SMALL EVAPORATIVE air conditioner, approx. 1500-2000 CFM. Hollowwa, 255-6938.

USED K;22 pistol in good condition, must be reasonable. Cox, AL 6-1977.

LOST AND FOUND

LOST—SC 10 year tie clasp, dark brown horn rim glasses, blue plastic briefcase, slide rule and pen in black case with initial WR, man's brown hat and gloves, man's gold wedding band, 1954 Highland High ring, copper and jade earring. LOST AND FOUND—ext. 26149.

FOUND—White gloves, tan and brown scarf, 4 keys on chain, grey plastic frame glasses, maroon Sheaffer pencil, single strand of pearls, hand-woven Indian purse, grey scarf. LOST AND FOUND—ext. 26149.

FOR RENT

ROOM in nice home for middle aged woman, carpeted, with private bath. NE heights. Yuric, AX 9-2389.

Machinists Union Members Receive Thanks for Project

Recently Cliff Shaw (4251-1), president of Sandia Lodge 1689, International Association of Machinists, received a letter from Desi Baca, principal of River View School. The letter was addressed to members of the Union and conveyed Mr. Baca's appreciation of a Christmas project conducted by the Union for students at the school.

The letter said in part: "During the month of December our school children were the recipients of a dinner, presents, and a Christmas party which was made possible through your members and through local 1988. This has been the largest single project for children that I have witnessed in my nine years in the teaching profession."

"The monetary contribution in itself was large but the thing that impressed me even more was the spirit in which it was given. I'm cognizant of the many extra hours of work that went into this project."

"Many of the youngsters brought their gifts to school on Jan. 2, 1962. They were so happy with their presents, and to many youngsters, your presents were the only ones they did receive for Christmas."

"In the name of our faculty, our school children and our community, I want to say thank you for a project well done."

Sandia Lab Players Help Local Team to Place in AAU Tourney

A group of Sandia players helped Bel-Air Drug win third place in the recent A.A.U. basketball tourney.

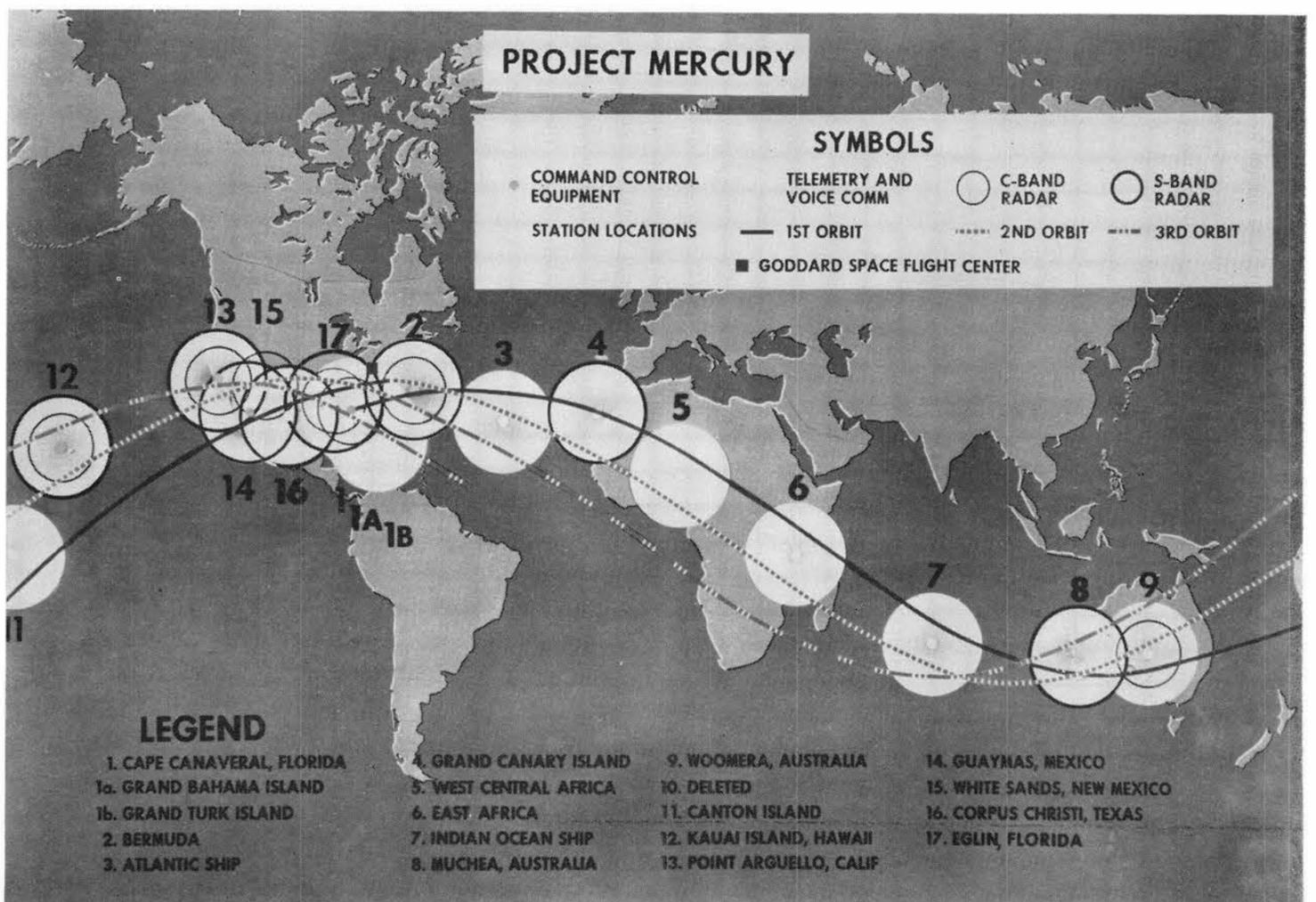
The players included Bud Herzog (1113), Jim Tichenor (4224), Larry Tichenor (4224), John Brane (4411), Don Dekker (2531), Bob Hedges (7122), and Manager Larry Bowen (4250).

The team's record for the season was 22 wins and five losses.

Welcome Newcomers

Feb. 1-23

Albuquerque	
John C. Bagg, Jr.	3113
William G. Brown	2332
Betty Collier	3126
Hector Delgado	3444
Evangelina H. Duran	4613
Judith E. Eldar	3463
Roy A. Furrow	4574
Frank Garcia, Jr.	3444
Lillian Hayes	3153
Rose E. Kaiser	3452
Larry J. Kohl	3441
Doris C. Koonty	3441
Charles Lewis	4574
Ruth Lindquist	4325
Edith A. Millage	3126
Juan R. Montoya	3444
Peggy L. Noltensmeyer	3126
Donald F. Post	1424
*Donald F. Rauber	3423
Paul D. Stang	1313
Faye J. Swinford	3126
Margaretta M. Tennyson	3126
Arkansas	
Ramon S. Satterwhite	1410
California	
*Ralph A. Hampy, Arcadia	1432
Georgia	
Fred V. James, Jr., Atlanta	3433
Illinois	
Paul M. Beeson, Palestine	5432
Indiana	
*Paul E. Phipps, Lafayette	7252
Billy R. Stanton, Valparaiso	5153
Kansas	
Duane E. Walker, Manhattan	7117
Kentucky	
Royce D. Lindsey, Lexington	7125
Missouri	
George H. Schmetzer, Center	1432
New Mexico	
Glenn Seay, Los Alamos	5133
Texas	
Donald M. Carlton, Austin	1111
* Denotes rehired	
Returned from Leave	
Jack L. Kiker, Albuquerque	5133
James M. Ortega, Palo Alto, Calif.	5426
Canuta C. Ortiz, Albuquerque	4423
Gerry K. Smith, Albuquerque	1422



AMERICA'S MAN-IN-ORBIT PROJECT used the global tracking and communications network engineered and built for the National Aeronautics and Space Administration by a Western Electric-led industrial team. The 18-station system reaches into remote corners

of Africa, and at sea aboard instrumented ships in the Atlantic and Indian Oceans. Mercury's ground network links the range stations to the Mercury Control Center at Cape Canaveral through the Goddard Space Flight Center at Greenbelt, Maryland, network hub.

Friendship 7 Tracking, Communication Stations by Western Electric Company

At 9:47 a.m. EST Tuesday, Feb. 20, the National Aeronautics and Space Administration launched and orbited Friendship 7, its first orbital spacecraft equipped with human judgment and live voice. Astronaut John Glenn furnished these features for a listening and looking world. Human judgment and live voice were being translated meaningfully by the 18 tracking and communications stations built by an industrial team led by the Bell System's Western Electric Co. These stations, strategically located around the world, represent about 140,000 miles of communications circuits—about twice the distance covered by the spacecraft in its three-orbital mission. The moment the Atlas missile was launched, valuable data started pouring into Project Mercury's tracking and communications system. Scientific institutions all over the world immediately began receiving new knowledge, and every nation shared the dramatic moments of space history via radio and TV as they were occurring.

On the first orbit, the following official times indicated the precision with which the tracking network functioned:

Bermuda	9:51
Kano, Nigeria	10:09
Zanzibar	10:18
Indian Ocean Ship	10:28
Muchea, Australia	10:40
Woomera, Australia	10:43
Guaymas, Mexico	11:09

No other official times for the initial orbit were disclosed. Official time for the first orbit—88.29 min-

utes. The velocity of the spacecraft was given at 17,500 mph. During his first orbital journey, the tracking station at Bermuda reported that Astronaut Glenn said that all systems are go. At Kano, Nigeria, the report indicated the astronaut's status was still go. Glenn was in excellent voice. His heart action was excellent and there was an indication that he did his first eating as he passed over Kano. Kano further reported that Glenn performed his first yaw exercises. From the Indian Ocean ship came the reports that the mission was proceeding normally, and data from the network indicated that all systems were performing satisfactorily. Aeromedical reports from Woomera indicated that Glenn was in excellent physical condition. His respiration, pulse, blood, and temperature were reported excellent. He said, "I have had no ill effects—no nausea—no discomfort whatever."

Official times reported for the second orbital pass are as follows:

Bermuda	11:26
Grand Canary	11:37
Kano, Nigeria	11:42
Zanzibar	11:51
Indian Ocean Ship	12:01
Muchea, Australia	12:10
Woomera, Australia	12:16

1962's Fifth Injury Downs Sandia Lab Safety Record Again

Sandia Laboratory's safety record went down for the fifth time since the first of the year when a disabling injury occurred Feb. 21. At the time of the accident the Lab's record had climbed to 21 days or 525,000 employee-hours worked without a disabling injury.

A heavy equipment operator was driving a motor crane across a shallow ditch when the front wheels hit sand. This spun the steering wheel violently. A spoke of the wheel struck the employee and fractured his right forearm.

The employee was taken to Medical Department 3320 for treatment and transferred to a local hospital where he remained for two days. He is now recovering at home.

Canton Island	12:31
Hawaii	12:39

As Glenn passed over the Hawaiian site, Mercury Control announced the decision was made to go for the third orbit. His status was excellent.

He continued to manually control the space vehicle under "fly by wire" — manually controlling the automatic systems.

Astronaut Glenn talked to the communicators in the range networks and they talked to him. The range stations followed him with radar and collected and transmitted telemetry data covering the condition of his vehicle, environment, and his physical condition. The range stations funneled their information into the Goddard Space Flight Center at Greenbelt, Md., computer and communications hub for the entire network—where highspeed computers and switching equipment organized and relayed this information to the Mercury Control Center at Cape Canaveral, Fla.

As on previous missions, the network performed in a precision-like manner. R. M. Goetchius, Project Manager for Western Electric on the worldwide tracking and ground instrumentation network, said, "We are very pleased with the performance of the network."

At 2:30 p.m. EST, Mercury Control confirmed that the retro-rockets had been fired and Friendship 7 had started its descent toward re-entry. Glenn had just reported that he could see the coast of California and was starting his descent trajectory. Throughout the third orbit, all stations reported that all systems were operating satisfactorily. The Guaymas, Mexico, station reported contact at 2:23 p.m. EST. Glenn had been advised not to jettison the retro-package until he was over Texas. Corpus Christi reported contact at 2:26 p.m. EST. Mercury Control Center announced contact at 2:28 p.m. and anticipated a landing at 2:37, marking the end of Friendship 7's orbital flight. Electronic transmission from the spacecraft indicated that the spacecraft would land about a mile from a

destroyer in the recovery zone. Mercury Control Center announced that Friendship 7 landed at 2:43 p.m. EST about six miles from the nearest destroyer in the recovery force. The vehicle was picked up at 3:01 and was on board the USS Noa at 3:04 p.m. EST.

Russell E. Herbert Died Feb. 15

Russell E. Herbert, supervisor of Branch Shop Section 4252-6, died Feb. 15. He was 58.

Mr. Herbert had resided in Al-



buquerque for 17 years and had been employed at Sandia Laboratory since April 1949.

Survivors include his widow, two daughters, and a sister residing in Shavertown, Pa.

Retired Sandian W. H. Greaves Died Feb. 18

William H. Greaves, a retired Corporation employee, died Feb. 18 at the age of 70.

A long-time resident of Albu-



querque, Mr. Greaves had worked at Sandia for five years as a night-shift janitor before his retirement Jan. 1, 1957.

He is survived by a nephew, Joe Black of Santa Fe.

Sandia's Safety Record

<p>Sandia Laboratory HAS WORKED 210,000 MAN HOURS OR 6 DAYS WITHOUT A DISABLING INJURY</p>	<p>Livermore Laboratory HAS WORKED 519,000 MAN HOURS OR 97 DAYS WITHOUT A DISABLING INJURY</p>
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