



R. W. Henderson — Sandia VP — Named ASME Fellow

Announcement was made last week by the American Society of Mechanical Engineers that Robert W. Henderson, Vice President, Weapon Programs, has been named a Fellow in the organization. Formal presentation of the honor will be made May 6 at a banquet of the New Mexico Section of ASME. E. H. Draper, Vice President, Development, and Region VIII Vice President of ASME, will make the award.

The honor is bestowed for "outstanding contributions to the advancement of the science of engineering." A Fellow must have 25 years of active practice in the profession of engineering and have been an ASME member for 13 years.

Mr. Henderson's nomination to the rank read in part:

"Beginning with his position as Staff Engineer at the University of California Radiation Laboratory during the early work on the atomic bomb in World War II, Robert Henderson has had a responsible role in every stage of the engineering of nuclear weapons from the relatively primitive 20 kiloton bomb carried by the early B-29 bombers to the sophisticated high-yield weapons with 15,000-mile-per-hour delivery systems. During the span of the 17 years since the establishment of the Atomic Energy Commission, he has been principally responsible for the evolution of nuclear weapon ordnance engineering—in collaboration with first one and then two nuclear physics laboratories—from the operationally complex and limited weapons which ended the war with Japan to the widely varied nuclear arsenal which has revolutionized our nation's armed forces and is employed by all branches of the Department of Defense . . .

"Now he is the senior vice president of the nation's key nuclear ordnance development laboratory employing 8000 engineers, scientists, and support personnel . . . Sandia Corporation weighs heavily in the national security. And, largely through his leadership and under his guidance, Sandia has advanced and is continuing to advance the frontiers of engineering technology."

Sandia Takes Part in Contamination Control Meeting and Exhibit

The Third Annual Technical Meeting and Exhibits of the American Association for Contamination Control, to be held May 6-8 in Los Angeles, will have several Sandians participating as speakers and chairmen.

C. F. Bild, Director of Materials and Process Development 1100, will chair a discussion of "Parts Cleanliness Verification" on Thursday, and J. Gordon King, supervisor of Advanced Manufacturing Development Section II, 2564-2, will be chairman of a panel on "Laminar Flow Clean Rooms and Work Stations" on the following day.

Sandia papers to be presented include:

"Basic Design Requirements for Laminar Air Flow Dust Controlled Devices" by W. J. Whitfield, J. C. Mashburn, W. E. Neitzel, and L. C. Trujillo (all 2564).

"Verification of Cleanliness—What Does It Mean" by L. K. Jones (1121-1).

"Contamination Control in Industry" by D. W. Ballard (2564).

Some 2500 persons from throughout the country are expected to attend the meeting. The featured banquet speaker will be Maj. Gen. Ben I. Funk, USAF, Space System Division Commander, who will discuss "A Matter of Environment."

Additional information may be obtained locally from R. C. Marsh (2564).



SANDIA CORPORATION

PRIME CONTRACTOR TO THE ATOMIC ENERGY COMMISSION

ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

LAB NEWS

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They work, work, work . . .

Satellite Payloads Still Laboring After 6 Months

For six months, twin nuclear burst detection satellites have been circling the earth at an altitude of 50,000 miles, making an orbit every four and a half days.

After six months, the instrument payloads on board the satellites — designed by Sandia Corporation and Los Alamos Scientific Laboratory — are continuing to function flawlessly. More than 20 million transistor hours have been logged by the components of the payload. The systems survived rocket launch and are operating in the environment of space. They have continued to function through "total eclipses" in the shadow of the earth where the solar cells could not provide power. On-board power supplies took over and continued transmission of data.

Redundant circuitry, designed to be used in case of a failure, has not been called to perform. There are some 14,000 solar cells and 40,000 electronic components in the satellites.

Data transmission has continued according to plan. For the first few weeks, information from the satellites was transmitted to ground stations continuously. Now, reports are made on a periodic schedule or upon command.

More than two billion bits of information have been transmitted. This is equivalent to 80 million words or the number contained in 10 Manhattan Island telephone books.

It is estimated that the X-ray sensors in the satellites can detect a nuclear explosion at a distance equal to the diameter of the earth's orbit around the sun.

As a result of the success of the satellites, the program has moved ahead, bypassing four additional launches that were previously planned. The program has moved into its second phase at least six months ahead of schedule.

Two more satellites will be launched this summer with new detector and logics systems. The design changes — based on knowledge gained from the present systems — will extend the range of the X-ray, gamma, and neutron detectors and test new sensors developed by LASL.

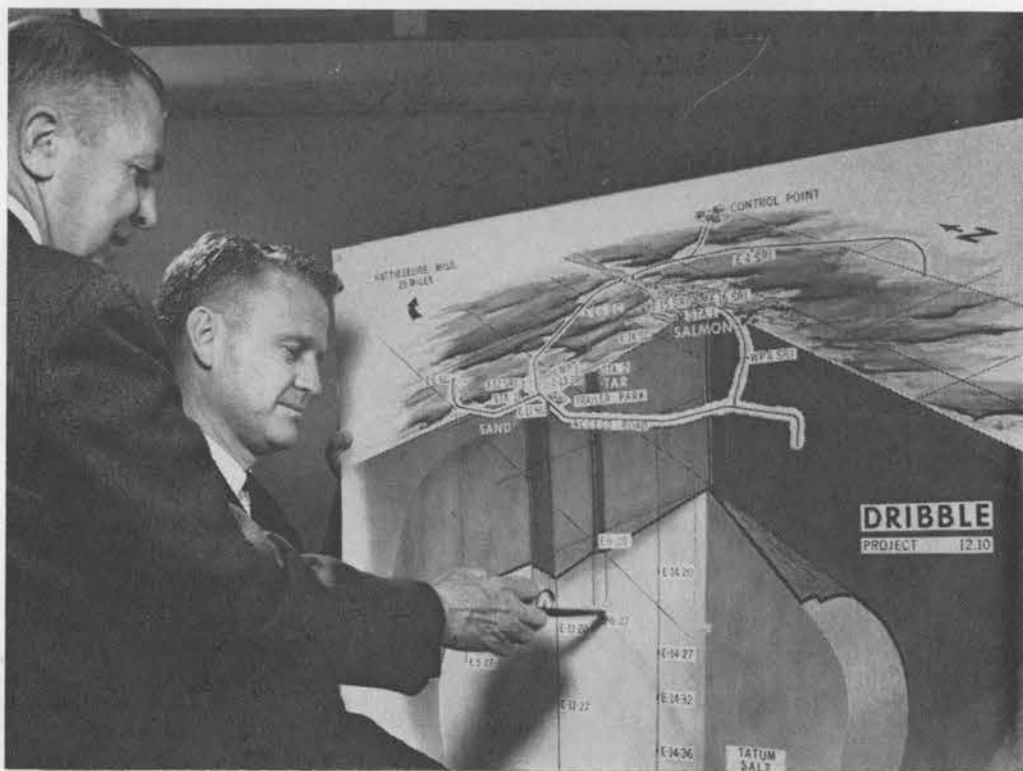
The detectors and accompanying logics systems have been fabricated, tested, and delivered to Space Technology Laboratory at Redondo Beach, Calif., space craft contractor for the project.

When carried into space, the satellites first went into an elliptical orbit. Then one satellite was injected into a second, almost circular, orbit. After the proper delay, the second satellite moved into final orbit opposite the first. The orbits can be visualized as two balls on opposing ends of a piece of string swinging around the earth, which is at the center of the string.

This intricate rocketry was performed by the Air Force Space Systems Division. The Department of Defense's Advanced Research Projects Agency has responsibility for the total detection program.

William C. Myre, supervisor of Space Projects Division 7432 and Sandia's project leader for the satellites, attributes the outstanding reliability performance of the present satellites to the initial design and the quality control and reliability programs of Sandia Laboratory's Engineering for Manufacturing 2000 organizations. The effort was centered in Specialties and Special Assignments Division 2543.

Stringent quality control was exercised in the production of the logics systems. One hundred per cent testing and inspection was used throughout production. Quality Assurance inspection procedures and instructions were written by Systems Planning Division 2121 and Logistics Division 2132 performed on-site inspection and quality audit of the material prior to acceptance. Quality Assurance surveys were conducted by Section 2134 and QA component evaluations were made by Division 2123.



Nuclear Tests Set For Mississippi Salt Dome Area

Personnel from Sandia Laboratory are participating in preparations for Project Dribble, a series of underground nuclear detonations, the first of which is scheduled to be made this summer. The Dribble program is in preparation in the Tatum Salt Dome, located some 20 miles southwest of Hattiesburg, Miss.

The program, sponsored by the Advanced Research Projects Agency of the Department of Defense, is part of a program of improving techniques to detect and identify underground nuclear detonations. Dribble is under the administration of the Nevada Operations Office of the AEC and the technical direction of the Lawrence Radiation Laboratory.

Three underground nuclear detonations have been proposed but not yet approved for Project Dribble; the first of these will be called "Salmon." The Salmon event, a nominal five-kiloton burst, will be followed by two smaller tests of 100 tons each. One of the latter will be decoupled, or detonated while centered inside a 95-ft.-diameter cavity at the bottom of a hole. The other bursts will take place in tamped holes with the devices close to the surrounding salt. Comparison of the data from detection instruments will indicate how well the decoupling procedure can hide the fact that a detonation has occurred.

The five-kiloton Salmon device will be detonated at a depth of approximately 2700 ft. The two 100-ton shots, called "Sand" and "Tar," will be detonated at a depth of 2000 ft. The three explosions will take place in a matrix of halite (rock

PLAN FOR PROJECT DRIBBLE is examined by Project Scientist, W. R. Perret (5412), and Project Leader, A. D. Thornbrough (7246-1). First event of the project, five-kiloton "Salmon" detonation, will be conducted in Tatum Salt Dome in Mississippi.

salt) of from 95 per cent to 97 per cent purity. The Tatum Dome is one of several similar halite deposits found in the Gulf area and formed during the Cretaceous geologic period, when shallow seas covered much of the central portion of the continent.

Project Scientist for the Sandia Corporation activities at Project Dribble is W. R. Perret of Underground Physics Division 5412. Project Leader is A. D. Thornbrough (7246-1); Alternate Project Leader is R. L. Rutter (7246-1).

Other Sandia personnel participating in preparations include W. R. Drake (7223-5), O. J. Birdsong (7245-2), R. W. Frame (7246-1), L. C. Jeffers (7245-1), D. B. List (7245-3), F. K. Millsap (7241-3), T. B. Morse (7245-2), E. A. Ryan (7246-1), and L. C. Sandgren (7246-2).

Sandia's activities for the Salmon event involve preparations for free field particle motion studies, including instrumentation of four drill holes with surface-motion gages and subsurface instrument stations. In addition, Sandia will be responsible for arming the Salmon device; this activity will be under the direction of R. J. Brousseau (7254-1).

JAMES E. WEBB (center), director of the National Aeronautics and Space Administration, during his recent visit to Sandia Laboratory was shown a reentry vehicle designed by Sandia to test the safety aspects of a nuclear generator reentering the earth's atmosphere. Sen. Clinton P. Anderson (left) and S. P. Schwartz (right), president of Sandia Corporation, accompanied Mr. Webb on the tour of laboratory facilities.



Editorial Comment

Spend Part, Save Part

"If the purpose of the Government's tax reduction program is to increase private consumption expenditures, why urge more savings through the purchase of U. S. Savings Bonds?"

This question, the Savings Bond Division of the U. S. Treasury Department reports, is being asked of them frequently these days. Under Secretary Robert V. Roosa, the Treasury's monetary expert, has a reply:

"The answer, of course," he says, "is what we would recommend to any individual as a prudent action; namely, do what anyone should always do with an increase in take-home pay — spend part and save part."

Mr. Roosa further reminds Americans that it is particularly fitting when the increase of take-home pay results from a deduction of Federal taxes, that the portion saved should come back to the national government through the medium of Savings Bonds.

There is also another query coming to the Treasury Department, Mr. Roosa reports.

"The other kind of question relates to the risk of an inflationary potential in the program to stimulate the economy that entails, at least for a transitional period, a larger deficit than would otherwise be the case. The control of this risk will come from our efforts to avoid destructive inflation by financing the deficit in a manner that will neither cause nor nourish inflationary tendencies.

"Thus far, in this administration, deficits have been financed without inflation and we fully intend to continue this. It is important that it be well understood that a cornerstone to our effort toward non-inflationary financing is the continued strong appeal for private sector savings generated by U. S. Savings Bonds."

Sandia Speakers

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

J. D. Williams and L. E. Terry (both 1433), "The Effect of Deposition Rate on the Textural Properties of Vacuum Deposited Germanium Films on Heated Amorphous Substrates," 1964 Spring meeting of the Electrochemical Society, May 3-7, Toronto, Canada. Mr. Williams will make the presentation.

A. L. Roark and G. M. Wing (both 5421), "A Numerical Method for Evaluating Eigenvalues of Certain Integral Equations," Rio Grande Chapter of the Association for Computing Machinery, May 8, Phoenix, Ariz. Mr. Roark will make the presentation.

A. F. Cone (2110), "Some Problem Areas in Vendor-Vendee Relationships," 18th National Convention of the American Society for Quality Control, May 6, Buffalo, N.Y. Mr. Cone also moderated a panel discussion of "Quality Control and Inspection Problems" before the Albuquerque ASQC chapter at the University of New Mexico on Apr. 10.

T. F. Meagher (8123-3), "High Energy Shock Facility Using Electromagnetic Energy," Institute of Environmental Science, Apr. 13, Philadelphia, Pa.

S. H. Peres (3133), "Understanding Personality Factors in Work Settings," Society for Personnel Administration and the American Society of Training Directors, Mar. 20, Hagerstown, Md.; "Ingredients of an Industry-Education Counseling Plan—The Need for Collaborative Action," American Personnel and Guidance Association, Mar. 22, San Francisco, Calif.

M. A. McCutchan (3132), "Jobs, the Challenge of the Sixties," North Albuquerque Lions Club, Apr. 1; "Education and Employment Opportunities," Cleveland Jr. High School, Apr. 2.

D. M. Fenstermacher (7224-1), "Telescope Making," Lincoln Jr. High School, Apr. 1.

Jean Gillette (3132), "Clerical and Secretarial Employment," Cleveland Jr. High School, Apr. 9.

John Cline (2421), "Mathematics and the Impact of Computers," Cleveland Jr. High School, Apr. 10.

J. A. Mauldin (2341-1), "Acceptance Inspection Procedures as Related to Quality," Joplin-Springfield Section, American Society for Quality Control, Apr. 16, Joplin, Mo.



HANDMADE VIOLIN represents hours of work by Thomas O. Taylor (3312), who learned to carve in Japan. Inch-thick maple and spruce boards were worked down to exact thinness for the body, while ebony was used for fingerboard, pegs, and other parts. Tom made the instrument for his grandson who is still too young to play.

Promotions

John L. Sullivan (4575) to Laborer
Robert D. Eiler (4632) to Technician
Daniel W. Davis (4254) to Precision Grinder
James R. Grund (8222) to Maintenance
Dannella Y. Davis (3126) to Secretary Steno.
Eileen P. Jones (3126) to Secretary Steno.
Daphne J. Edrington (3126) to Secretary Typist
George L. Pacheco (4573) to Senior Clerk
A. H. Archuleta (2643) to Order Analyst
Joe Ruiz, Jr. (8214) to Receiving Clerk
Dorit N. Mathers (8212) to Senior Clerk
John F. Bacher, Jr. (8144) to Computer Operator
Anne E. Crow (8144) to Computer Operator
Marie W. Blythe (3311) to Stock Record Clerk
Laverne W. Lathrop (7323) to Laboratory Assistant
Hugh A. Sumlin (4253) to Layout Operator
B. O. Sandoval (4212) to Material Handler
Marion P. Apodaca (4224) to Specialties Worker
Kenneth A. Peters (4631) to Tester
James E. Lujan (4631) to Technician
Samuel M. Bragg, Jr. (4231) to Technician
Fidelino Carrillo (4231) to Technician
Alvin T. Plant (4231) to Technician
Edward L. Amador (4234) to Technician
James Carmody III (4234) to Technician
Louis A. Sanchez (4234) to Technician
William L. Gibson (4231) to Machinist
Jack J. Anderson (7612) to Computer Facility Operator
George Martinez (7612) to Computer Facility Operator
Chadyeane M. Snapp (8232) to Message Center Equipment Operator
Thelma F. Foster (7240) to Secretary
Austin V. Glover (3143) to Staff Member—Administrative

Supervisory Lateral Transfers
P. D. Gildea from 8165-1 to 8141-3
R. W. Male from 7223-2 to 7223-4
A. B. Cole from 2136 to 7256
J. S. Cundy from 4622-4 to 4614-3
C. D. O'Connor from 4623-2 to 4623-3
W. A. Johnson from 4623-3 to 4623-2
G. L. Hutchinson from 4624-1 to 4624-2
A. Sanchez from 4624-2 to 4624-1
V. A. Southerland from 4614-2 to 4613-2
W. L. Paxton from 4613-2 to 4614-2
V. M. Brewster from 7223-4 to 7223-3
W. G. Levy from 1332-1 to 1322-3
R. L. Maxwell from 1332-4 to 1323-3
K. L. Gillespie from 1324 to 1333
R. S. Pinkham from 1324-1 to 1333-1
R. F. Ashmore from 1324-2 to 1333-2
W. C. Stevens from 1531 to 9100 Staff
W. T. Smith from 7213 to 7255
R. C. Spence from 7243 to 7213

Sandia Employees Candidates In May 5 Primary Election

The following Bernalillo County Sandia Laboratory employees are candidates for public office in the May 5 primary election.

A. H. Archuleta (2643), County Commissioner, Democrat.
Gaynor E. Atkinson (7331), Justice of the Peace, Precinct #50E, Republican.
Richard G. Bemis (2412), State Representative, District #11, Republican.
Harry R. Botts (4234), State Representative, District #3, Republican.
Joseph J. Bradshaw (7324), Constable, Precinct #43D, Republican.
Richard G. Carlisle (4513), Constable, Precinct #47A, Republican.
Charles L. Carpenter (1513), County Commissioner, Republican.
Dennis S. Chavez (2642), Constable, Precinct #17B, Democrat.
Robert G. Clay (1543), School Superintendent, Republican.
Guy Denton (4518), Constable, Precinct #2B, Democrat.
John M. Farner (4254), Constable, Pre-

cinct #50B, Democrat.

William A. Gardner (3111), State Representative, District #14, Republican.

Charles L. Hines (3244), State Representative, District #9, Republican.

Thomas W. Hoover (1543), State Representative, District #17, Republican.

William Jackson (4252), Justice of the Peace, Precinct #50C, Democrat.

Harry E. Kinney (1542), Commissioner of Public Lands, Republican.

Wallace L. Pritchard (3242), Justice of the Peace, Precinct #37G, Democrat.

Thomas K. Smith (2641), State Representative, District #3, Democrat.

John S. Todd (3244), State Representative, District #11, Republican.

Gail B. Ward (3463), Constable, Precinct #45E, Democrat.

James J. Weber (5133), County Commissioner, Democrat.

Louis H. White (4573), Justice of the Peace, Precinct #45D, Democrat.

Charles S. Williams, Jr. (1442), State Representative, District #12, Democrat.

In addition to the above candidates from Bernalillo County, Howard Christianson (4252) is a candidate for Sandoval County Commissioner on the Republican ticket.

The Lab News hopes this is a complete list of all candidates and regrets any inadvertent omissions.

Supervisory Appointments



WILLIAM C. COLBORNE to manager of Auditing Department 4120.

Bill has been at Sandia nearly 11 years and has worked in Auditing, Cost Accounting, and Systems and Procedures. He was promoted to Senior Auditor eight years ago, and to division supervisor in October 1958.

Prior to coming here, Bill taught business administration courses at Arizona State College, and worked for a Certified Public Accountant firm in Arizona.

He has both BA and MA degrees in business administration from Arizona State College, and is a Certified Public Accountant. He is a member of the American Institute of Certified Public Accountants.

Bill served four years in the Navy.

R. R. BOYD to supervisor of Maintenance Section B, 4512-2, Plant Maintenance Department.

Bob has been at Sandia more than 15 years. He started work in Plant Maintenance Department, but for the past eight years has been a plant inspector in Plant Engineering Department.

He previously was studying mechanical engineering at the University of New Mexico.

During World War II, Bob served in the Army for three years, and is presently in the National Guard.

DALE P. BRAUTIGAM to supervisor of Maintenance Control Section 4517-1, Plant Maintenance Department.

Dale began work for Sandia Corporation in July 1953. He left two years later and returned in September 1962. His assignments have been with Wage and Salary Administration Department 3110.

During the interim period, Dale was chief plant engineer for the Westran Corporation in Muskegon, Mich.

He has a Bachelor's degree in liberal arts from Albion College in Michigan, a BS in industrial engineering from Washington University in St. Louis, Mo., and has completed most of his coursework toward a Master's degree in business administration at the University of New Mexico.

Dale is a member of Alpha Pi Mu and Kappa Mu Epsilon, honorary societies, the American Institute of Electrical Engineers, and the American Institute of Plant Engineers. He is a registered professional mechanical engineer in Michigan.

He served two years in the Navy.

Biomedical Sciences Instrumentation Group To Meet May 4-6

Several Sandians are actively participating in plans for the forthcoming Second National Biomedical Sciences Instrumentation Symposium, which will be presented by the Albuquerque Section of Instrument Society of America.

The symposium will be held May 4-6 at the University of New Mexico. Honorary co-sponsors are Kirtland AFB, Los Alamos Scientific Laboratory, Lovelace Foundation, Sandia Corporation, and the University.

Jack L. Mortley (7334-1) is chairman of the ISA Host Committee. Assisting him in arrangements are R. P. Baker (2441), J. H. Smalley (5311), and J. H. McCutcheon, (1321).

Health Physics Society Names W. H. Kingsley President of Local Chapter

W. H. Kingsley, manager of Environmental Health Department 3310, was installed as president of the Rio Grande Chapter of the National Health Physics Society at a meeting Apr. 10 in Santa Fe.

Dr. Robert Thomas of Lovelace Foundation was voted president-elect, and will take office one year hence, when Mr. Kingsley's term expires.

During the business session, Dr. William Ham, Department of Biophysics, Medical College of Virginia, gave an informal talk on the Health Physics Society, its future, new plans, and the certification aspect.

The Rio Grande Chapter includes all of New Mexico and part of Texas.

SANDIA CORPORATION LAB NEWS



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BTL Plans to Build New Facility in Illinois

Bell Telephone Laboratories plans to move its entire Electronic Switching Development Organization from Holmdel, N. J., to a new development center costing \$7,000,000 to \$9,000,000, which it plans to build near Naperville, Ill.

The Laboratories announced that some 1200 persons, including BTL staff and a small group of associated Western Electric engineers, are expected to work at the new facility. The plans call for it to be built on a site of about 200 acres, north of Naperville. Naperville is about 20 miles west of Chicago.

Construction of the center is contingent upon rezoning the proposed site to permit a Research and Development installation, the Laboratories said. Suitable public services also need to be obtained. Plans call for con-

struction of the new laboratory to begin early in 1965 with the building to be completed in 1966.

About 650 people at BTL's Holmdel Development Center are scheduled to be transferred to the Illinois facility. It is also planned that a small number of Western Electric engineers from the Columbus Works and appropriate people from the Systems Equipment Engineering Organization will be transferred eventually, so that the efforts of the Laboratories and WE can be closely coordinated in the development of switching systems.

The new Illinois Laboratory will continue the development of electronic switching systems already in being, as well as even more advanced systems, the Laboratories announced.

Science Teachers See Sandia Laboratory During Institute

Forty-four science teachers toured Sandia Laboratory facilities Apr. 9, while attending the National Science Foundation Academic Year Institute, held at the University of New Mexico.

The group toured the Sandia Sphere of Science, where they saw the film, "The Sandia Story." Then, they visited Sandia's EMP and Resistance Standards, Length and Mass Standards, Environmental Standards, Time and Frequency Standards, Microwave Standards, Glass Filament Windings, Mechanical Testing, and Dielectric Research Laboratories.

They were briefed during the tour by R. E. Fisher, supervisor of Chemistry and Spectroscopy Division 1122; and by R. A. Richards, supervisor of Electrical Standards Division 2412. Tour arrangements were made by members of Community Relations Division 3143.

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G. A. Fowler to Preside at 1964 Conservation Dinner

Glenn A. Fowler, Vice President, Development, will be master of ceremonies for the Golden Anniversary Dinner and Liar's Contest of the New Mexico Wildlife and Conservation Association. The event will be held at 6:30 p.m., Apr. 30, at the VFW Hall, Lomas and Washington N.E.

The organization was founded in 1914 and will be observing its 50th annual dinner.

About 450 persons are expected to attend, according to Charles L. Hines (3244), president. Orlando Uliyarri (2641) is the banquet chairman.

Meets at Livermore Lab . . .

Interagency Mechanical Operations Group



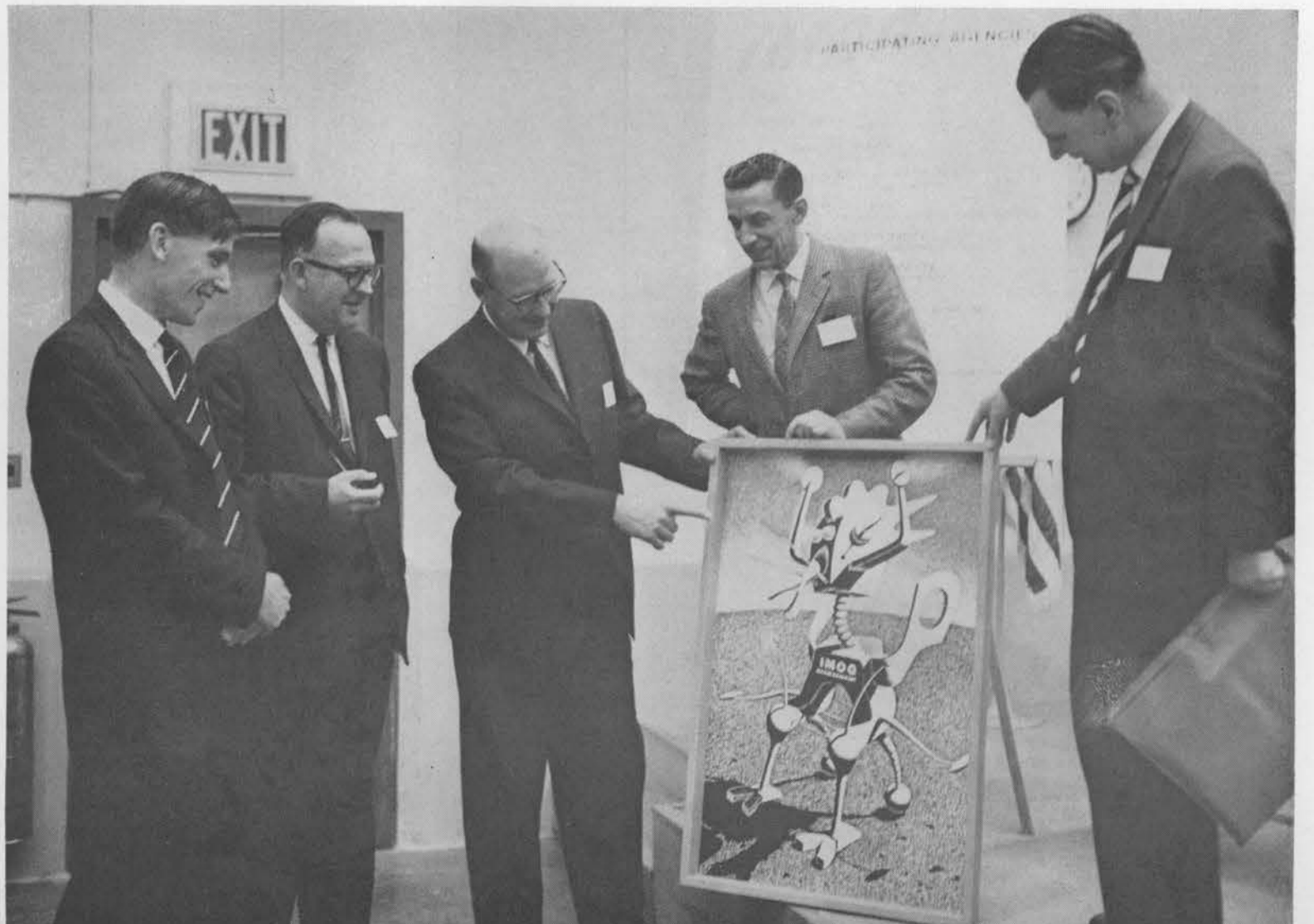
DR. EDWARD TELLER, Professor-At-Large, University of California, spoke last week at the opening-day session of the Interagency Mechanical Operations Group (IMOG) meeting in Livermore. About 150 representatives of contractors in the atomic weapons complex heard him discuss "Thoughts on Future Nuclear Weapons and Explosives."

GREETING GUESTS at Castlewood Country Club banquet, following opening-day session of IMOG last week, was Dr. John S. Foster, Director of the Lawrence Radiation Laboratory at Livermore. Pictured (l to r) are: M. C. Larsen, LRL, Dr. Foster, Carl Cartledge, LASL, Dick Victor, LRL, and Frank Roberts, Atomic Weapons Research Establishment (AWRE), United Kingdom.



REGISTERING at the opening session of the IMOG meeting last week was B. S. Biggs (8000). Attending to registration matters were hostesses (seated, l to r), Carolyn Wilson, LRL, Barbara Whitlow (8231), and Lois Strandin (8230).

SURREALISTIC CREATION of Livermore Laboratory illustrator Ben Aikin (8233-2) decorated the speaker's rostrum at the IMOG meeting. Here C. R. Barncord (8150), chairman of the IMOG steering committee, explains its symbolism to (l to r), F. West, AWRE, R. W. Henderson (100), F. Roberts and J. Priestly, AWRE.



Cancer - - An Ever-Present Enemy

Our Best Hope In Fighting Cancer Comes From Early Detection and Treatment

Our body is made up of trillions of cells, tiny microscopic building blocks — one thousandth of an inch in diameter— within whose walls the secret of life itself is held.

But somewhere along the course of life — in one out of every four human beings — something goes wrong. Out of the trillions of these tiny cells, one cell undergoes an unfortunate change. It becomes hostile. It ceases performing its normal functions, concentrates instead on reproducing its own abnormal kind, over and over again, dividing and redividing. Each new cell is as hostile to the human body as the first.

Doctors call such an abnormal cell malignant, the disease itself cancer.

Anyone old enough to read the above is well aware — and rightfully so — that cancer, by whatever name, is a dread malady. It is one of the two major causes of death for men and women in the Bell System, ranking first with women and second with men. This year in the United States, about 280,000 will die of the disease, one every two minutes.

But like so many of man's ills, the name itself is often more fraught with dread than the disease itself. And never was this more true of the disease of cancer than today.

For unlike our ancestors, whose chances of surviving cancer were virtually hopeless, today half of those who get cancer could be saved with early diagnosis and prompt treatment. Except for lung cancer, cancer rates in general are leveling off and in some cases declining — evidence that the relentless battle against the disease is being won, however slowly.

Unfortunately, however, while half of all those who develop cancer could be saved, not all of them are. Actually, only a third are being saved. According to the American Cancer Society some 88,000 cancer patients will die needlessly this year.

The reason? Failure to obtain early detection and treatment.

According to doctors, early detection and treatment is the front line on which every individual must wage his war against cancer today.

The ultimate victory against the disease will probably take place in the laboratories and universities where doctors and scientists are searching for the cause and cure of cancer. The American Cancer Society this year alone is spending over \$11 million for research. But until that victory comes, the battle must be fought by each and every individual, and they alone have the power to make the odds on their survival.

Why Early Detection Is Important

Typically, cancer begins as a localized disease — most of the time on the surface of some tissues such as the mouth, the lining of the stomach, or deeper in the tissues of the breast or elsewhere.

For a time such cancers typically remain at the site of origin. While it remains thus confined, it is known as **carcinoma in situ** — that is, a cancer in its original site.

After a time some of the cancer cells penetrate beyond the surface and invade the underlying tissues. This is called "invasive cancer." They still continue to grow but continue to remain more or less in a mass. So long as the living cancer cells re-

main where the disease started it is said by doctors to be "localized." Chances of successful treatment at this point are still good.

Beyond this point, however, the chances are greatly reduced. For the cancer cells become detached and are carried through the lymph channels or blood vessels to many parts of the body. Doctors then call the disease advanced. Death from the disease at this stage is almost inevitable, although not necessarily quick.

For unknown reasons, some cancers grow and spread slowly while others grow and spread rapidly — some so rapidly that they are incurable. The problem is to detect the cancer before it has spread so that it can be removed by surgery or destroyed by radiation.

While the chances of cancer increase with age, the disease can develop at any age — even among children. And while many people tend to think of cancer as primarily a disease of the aged, the American Cancer Society reports that half of all cancer deaths are among persons under 65.

More men than women die of cancer and this has been the case since 1949. The ratio is about 54 men to 46 women. Cancer is also the leading cause of death for children of school age — most of them victims of leukemia. Last year cancer took the lives of more than 4700 children.

Physical Checkups Important

Early detection and prompt treatment offer at present the best hopes for survival from cancer, and doctors recommend that every person have at least one complete physical checkup every year, whether or not a medical problem is suspected. In addition, it is the wise person who is alert to cancer's danger signals and who reports his suspicions immediately to the doctor. In many cases cancer signals can be deceptive — patterning themselves after less serious illnesses, but only a doctor can make the distinction. When cancer is suspected, it's better to be sure early — than sorry later.

Here listed are some of the more common sites for cancer for both men and women along with some of the early warning signs:

Breast — Leading cause of cancer deaths among women. Lends itself to early detection through the technique of regular breast examination, and many are detected by women themselves. If discovered in the local stage, it is about 92 per cent curable.

Lung — By far the leading cause of cancer deaths in men. It is increasing at an alarming rate and is now 10 times as prevalent as it was 10 years ago. It is the wise

man who gives up smoking since mounting evidence points to a correlation between lung cancer and cigarette smoking. Smokers should include a chest x-ray as an important part of annual physical checkups. Even with periodic examinations it is difficult to diagnose lung cancer for sure. Only about five per cent of all cases are being cured today. There are three main reasons for this low rate of cure (1) Since it is located within the chest, the cancer can neither be seen nor felt; (2) symptoms or complaints are often noted late in the course of the disease; and (3) many of the cancers that originate in the lung show rapid growth. Symptoms are difficult to detect, but a persistent cough or lingering respiratory ailment should be reported to the doctor promptly.

Colon and Rectum — Most common type of cancer in both men and women, striking some 73,000 Americans each year, of whom 40,000 die. However, three out of four patients could be saved by early diagnosis and treatment. Key to early diagnosis is an examination with the proctoscope as part of the health checkup. Change in bowel habits or bleeding are signals for an immediate visit to the doctor.

Bladder — About twice as frequent among men as women and usually found in persons over 55 years of age. Blood in the urine is a symptom of bladder cancer as well as other less serious ailments. Other signs include back pain, disturbances in urination such as increased frequency, burning and other discomfort. Some 67 per cent of the cases could be cured if found in the local stage.

Mouth — The lower lip, tongue, and inside of the cheeks are common sites of cancer. First noticeable as a small sore, lump, or hardened area. Any sore, fever blister, or gum boil that does not heal within several weeks should be examined by a doctor. Chances of successful treatment are excellent when the diagnosis is established early.

Larynx — The most obvious warning sign is persistent hoarseness. Other symptoms include sensation of a sticking feeling in the throat, discomfort when swallowing, and a swelling or lump in the neck. Cure rates for early larynx cancer are high.

Stomach — A common site of cancer, especially among men. Earliest warning is usually a mild but persistent indigestion. Other symptoms include loss of appetite, frequent heartburn, repeated vomiting, vomiting that contains blood, or dark tarry blood in the bowel movement.

Prostate — This gland is a common site for cancer among men 50 years or older. Symptoms include blood in the urine, or difficulty, discomfort, or increased frequency in urination. Surgical treatment offers a good chance of cure if cancer is discovered before it spreads beyond the gland itself.

Uterus — Second most common site of all cancers among women. May occur at any time during adult life, but most commonly between the ages of 30 and 55. First warning of uterine cancer usually is any abnormal discharge or bleeding from the vaginal tract. Since the application of "pap" smears, this cancer has been on the decline. Every adult woman should have a "pap" smear as part of her annual physical examination.

Obviously many of these symptoms for cancer are common to other less serious ailments as well. Therefore, an awareness of any of these symptoms should not be a cause for alarm, but it should be a cause for concern. And it is the wise person who calls these symptoms to the attention of his or her doctor and does not wait until the next physical checkup.

The American Cancer Society urges all adults to do two things:

1. Have a medical checkup annually, no matter how well you feel.
2. Know cancer's danger signals and go to your doctor immediately if one of them lasts longer than two weeks.

There are now 1,200,000 Americans alive today who have developed cancer and have been cured. In addition, there are 700,000 cancer patients diagnosed and treated within the last five years who will live to enter the ranks of those pronounced cured.

It is cause for hope. For nearly every cancer case, there is a time when cancer can be caught and cured. For many this time may occur next year, or 10 years, or 20 years from now. For some, the time may be now.

Take Note . . .



Samual McAlees, supervisor of Re-entry Aerodynamics Section 7421-2, will lecture on "Re-entry Environment" May 7 at the University of New Mexico.

His talk is part of a lecture series on solids. The discussion will include a theoretical analysis of the acceleration loads and heat transfer rates experienced during re-entry of a vehicle into the earth's atmosphere.

Persons not enrolled in the course may attend the individual lectures, presented at 4 p.m. in Rm. 2, ME Bldg.

Sandia's auditors will sponsor a dinner-dance at Four Hills Country Club on May 8 honoring E. M. Shonka, manager of Auditing Department 4120, who will retire June 30.

Tickets and further information may be obtained from Earl Simonson (4122). The deadline for reservations is May 1.

Recently-elected officers of American Legion Post No. 13 were Charles A. Monroe (4614-2), vice-commander; Flavio Gonzales, Jr. (4212-3), member of the executive board; and Robert Durand (2625-2), district executive committeeman.

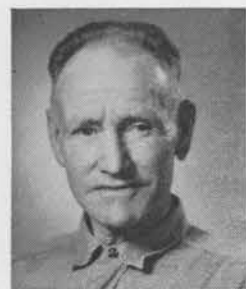
Crawford MacCallum (5411) will have a leading role in the initial production of a new drama group in Albuquerque called the "Old Town Studio."

The first presentation, on May 1, is called "A Happening," and is described as a panorama designed to stimulate the audience's senses. Four plays are planned through the summer—each to run for a month but only on Fridays, Saturdays, and Sundays.

The studio is located at 2033 Central NW. Tickets will be sold at the door before the performance (at 8:15 p.m.).

Hans Baerwald (5132) will lead a group of New Mexico Mountain Club members and visitors on a hike up Mosca Peak in the Manzano Mountains, on Saturday, Apr. 25. The hikers will meet at 8 a.m. at the Western Skies, and proceed to 4th of July Canyon, whence the hike up the peak will begin. Information is available from Hans, tel. AX 8-1526.

Retiring



William M. Lansdell (4574) will retire Apr. 30 after 11 and a half years employment with Sandia Corporation.

Although he and his wife will continue to live at 902½ La Vega Rd. SW, they will spend considerable time at their cabin at Blue Water. Mr. Lansdell plans to build a second cabin there this summer—when the fish aren't biting.

The couple has one living son, seven grandchildren, and five great-grandchildren, all in Albuquerque.

Mr. Lansdell enjoys gardening and tending his fruit trees.

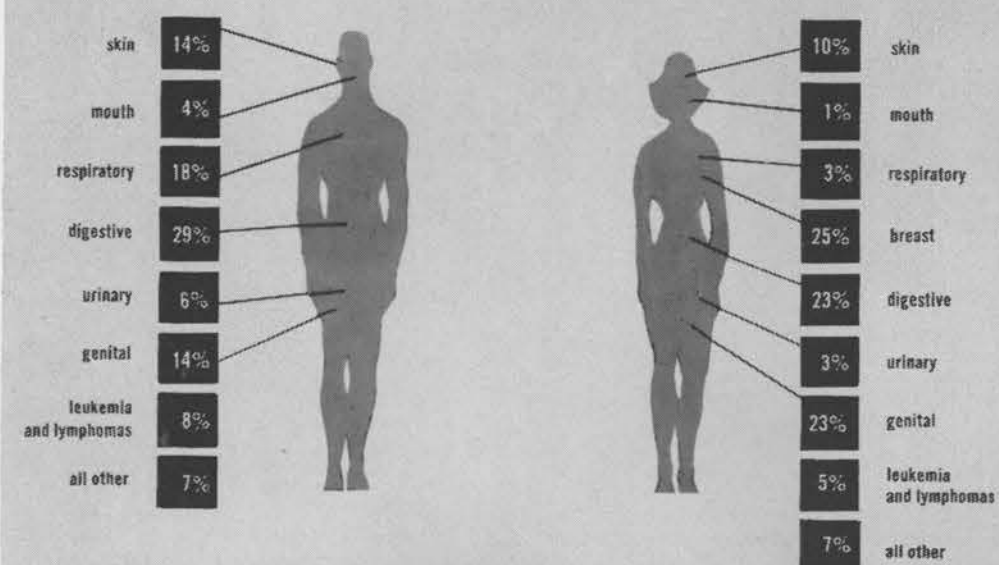


Roy D. Nix of Packaging Section 4624-2 will retire Apr. 30. He's been a Sandia employee, and a member of Section 4624-2, since Oct. 2, 1951. Before coming to Sandia, Roy worked for General Motors.

After retirement, he plans to do "the usual thing"—some travel, including a trip to the Ozark Mountains; and some fishing.

Mr. and Mrs. Nix will continue to reside in Albuquerque at 436 General Stilwell, N.E.

CANCER INCIDENCE BY SITE AND SEX



HE Studies to Show Possibility of Nuclear Excavation for Projects

First of a series of experiments using chemical explosives set in patterns, part of a Sandia Laboratory cratering study, was detonated at Tonopah Test Range this week. The study, conducted by L. J. Vortman of Underground Physics Division 5412, will provide information on charge burial depths and spacings required to obtain desired crater configurations.

The study is part of the Plowshare Program which investigates the feasibility of using nuclear detonations for peaceful purposes.

Detonations this week used four 64-lb. charges spaced at the corners of a square pattern. Resulting crater will be compared against data from a single explosion buried much deeper in the soil, an experiment performed some time ago.

"This study will provide information, on a model scale, which might be useful to decide how to dig a harbor with nuclear devices," Mr. Vortman says. "A harbor could be excavated using a large single device buried very deep," he continued. "But it might be more desirable to have a large shallow area excavated by a number of small detonations."

"Results will also help us evaluate the feasibility of using nuclear explosives to remove the overburden from ore deposits to permit open-pit mining operations."

A series of 36 experiments, each using four chemical charges, is planned. Ralph C. Holland and Carl D. Northam (both 7221) are the Field Test project engineers responsible for placing and firing the charges.

Sandia Authors

Current or forthcoming articles by Sandia authors in technical journals include the following:

R. C. Heckman (1124), "Electrical Properties of the Cerium and Gadolinium Hydrogen Systems," May 15 issue, *Journal of Chemical Physics*.

G. J. Simmons (1531), "A Combinatorial Problem Associated with a Family of Combinations Locks," May-June issue, *Mathematics Magazine*.

K. E. Sutton (3244) and F. O. Carleton (3133), "The College Recruiter: A Critique," April issue, *Journal of College Placement*.

D. H. Anderson (5132), "Chemical Shifts of Pb^{207} in Perovskite Ferroelectrics," Vol. 40, Page 1168, 1964, *Journal of Chemical Physics*.

P. A. Nicovich (4412), "The Positional Tolerance Controversy—Diameter or Radius?" April issue, *Graphic Science*.

B. T. Kenna (1122) and P. K. Kuroda of the University of Arkansas, "Technetium in Nature," Vol. 26, No. 4 (April), *Journal of Inorganic and Nuclear Chemistry*.

L. P. Wilson and R. L. Buckner (both 1111), "Mechanical Properties of Certain Low-Melting-Point Alloys," March issue, *American Society for Metals Transactions Quarterly*.

A. T. Fromhold (5151), "Space Charge in Growing Oxide Films. IV. Rate Effects Deduced by an Averaging Technique," June 1 issue, *Journal of Chemical Physics*.

H. H. Mable (1322) and C. B. Rogers (7622), "Transverse Vibrations of Tapered-Cantilevered Beams with End Loads," March issue (No. 3), *Journal of the Acoustical Society of America*.

J. L. Wentz and L. Z. Kennedy (both 1113), "The Primary Pyroelectric Effect in the PZT 95/5 Ceramic," June issue, *Journal of Applied Physics*.

F. A. Philgreen (4214), "Dielectric Properties and Phases of Some $Ga_2O_3-Nb_2O_5$ Ceramic Compositions," January issue, *Journal of the American Ceramic Society*.

Cozine Elected Officer Of ASME Sub-Section

Ralph Cozine (8154-2) has been elected vice chairman of the Mt. Diablo sub-section of the San Francisco Section, American Society of Mechanical Engineers (ASME). Ralph, who has been a member of ASME for the past five years, served on the sub-section's executive committee as a director for the past year.

PAGE FIVE
LAB NEWS
APRIL 24, 1964



Explosive Handlers Work 17 Years Without Incident

"We're proud of our safety record," Cecil C. Gulley (4614-1) commented recently. "The section hasn't had a lost-time accident in its entire history, or in the 17 years I've been at Sandia."

Such a record is impressive in itself, but its doubly so when you consider the fact that the men of Section 4614-1 receive, store, move, and control all of the explosives and explosive devices used at Sandia Laboratory and by the Albuquerque Operations Office of the AEC.

"Explosive Services Section processes some 1200 line items each month," Cecil continued. "There are about 115,000 pieces of explosives in storage in Area 6000, ranging from rocket motors to matches and squibs."

Cecil began working with explosives as an employee of Hercules Powder Co. in 1939. He and the other members of his section have many years in their field, and have a healthy respect for explosive materials.

Explosives at Sandia are stored in the 6000 igloo area in a group of magazines which are dispersed and designed to minimize hazards, with special lighting equipment and handling facilities. The explosives are categorized and stored according to their compatibility. At all times, the section adheres strictly to the precautions of the Ordnance Safety Manual.

These safety precautions enable personnel to control variables which otherwise might be dangerous. The men wear safety glasses, and grounded booties and wristlets while working with explosive materials. Twice monthly, safety representatives from Technical Service and Support Section 3211-2 visit the explosive storage area and inspect it for potential dangers. The men of Section 4614-1 discuss their activities with the safety inspectors to determine the safest way of getting things done. They also hold periodic safety meetings on their own.

"Procedures for handling explosives invariably follow strict regulations," Andy Blain, supervisor of Explosives and Material Handling Division 4614, continued. "Our procedures for shipping explosives are typical of other routines we use in receiving, storing, and moving them."

A typical day for the section will involve either a request for movement of explosives to the various technical areas, or a request for packaging and shipping of explosives. To assure that the packaging and shipping meets all I.C.C. regulations, Packaging Engineering Organization 1554-3 provides the section with specifications or written instructions for shipment.

A new explosives administration building is under construction in Area 6000, and Section 4614-1 expects to occupy it this summer. "Besides providing us with a center of operations, the new building will locate us nearer to the receiving and storage area," Andy concluded.

EXPLOSIVES STORAGE Area 6000 is the scene of operations for personnel of Explosives Services Section 4614-1: (l to r) Henry Carthel; Matt Bustos; Cecil Gulley, section supervisor; James Davis; Eugene Monahan; and E. C. Montano. They handle all explosive materials at Sandia Laboratory.

ASME Administrative Committee To Be Here for Awards Banquet

The New Mexico Section of the American Society of Mechanical Engineers will host a meeting of the ASME Region VIII Administrative Committee here May 6-7. Concurrently, the annual awards banquet of the local section, installation of new officers, and a student chapter conference will be held.

Delegates are expected from Utah, Colorado, Wyoming, Idaho, and Montana as well as from New Mexico, according to E. H. Copeland (7331, chairman of the New Mexico Section. E. H. Draper (1000), is ASME vice president for Region VIII and John W. McKiernan (7419) is Region VIII secretary.

The Regional Student Conference will be held Friday and Saturday at the University of New Mexico. Regional delegates and students will tour Sandia Laboratory's Area III.

Don Williams (7311) is in charge of arrangements for the Regional meeting and the Area III tour. Other delegates to the Regional meeting will include Mr. Copeland, R. A. Bice (2000), J. P. Myers (4213), A. J. Clark (7412), and G. C. McDonald (1550).

Highlighting ASME activities during the week will be the New Mexico Section Annual Banquet and Installation of Officers. The event will be held Wednesday evening, May 6, at the Cole Hotel, beginning with a social hour at 6 p.m.



ASQC to Honor Sandia Author for Outstanding Article

John W. Moyer (7253) will be honored by the American Society for Quality Control during its annual convention May 4-5 in Buffalo, N. Y. John will receive the 1963 Brumbaugh Award. This award is presented to the author of the paper published in *Industrial Quality Control* judged to have made the greatest contribution to the development of industrial applications of quality control.



John's article, "Workmanship—The Key to Improving Quality," appeared in the July 1962 issue of the journal. It is available as a Sandia Corporation reprint, SCR-517.

John has been at Sandia Laboratory since February 1960. He came here after graduation from the University of Nebraska with a Master's degree in Industrial Engineering. He earned his Bachelor's degree in Mechanical Engineering from the same school in 1958.

He worked in the Quality Assurance organization almost four years before his present Field Test assignment.

John is active in the local chapters of ASQC and the American Institute of Industrial Engineers. He is a member of Sigma Xi, scientific research honorary; Sigma Tau, engineering honorary; and Pi Tau Sigma, mechanical engineering honorary.

The program will include awards to members of the New Mexico Section and the UNM Student Section, promotion of R. W. Henderson, Vice President, Weapon Programs, to ASME Fellow, and remarks by Elmer O. Bergman, president-elect of the national ASME organization.

New Mexico Section officers to be installed include J. P. Myers (4212), chairman; C. L. Carpenter (1513), vice chairman; W. A. Gardner (7300), secretary; C. E. Runyan (4220), treasurer; and Capt. D. G. Jones, director.

Speaker for the banquet will be Maj. Jack E. Steel, bionics specialist, Air Force Research Center, Dayton, Ohio. He will discuss, "Extremely Foreign Technology or What Every Engineer Should Know About Birds and Bees."

Guests are welcome. Reservations may be made through L. H. Stradford (1552), ext. 264-6166. Deadline for reservations is Monday, May 4.

PLAN MEETING — Members of the American Society of Mechanical Engineers make plans for a Region VIII committee meeting, student conference, and annual banquet of the ASME New Mexico Section. From left are Don Williams, Jr. (7311), arrangement chairman; E. H. Copeland (7331), New Mexico Section chairman; E. H. Draper (1000), Region VIII vice president; and J. W. McKiernan (7410), Region VIII secretary.

Naval Reservists Get NASA Briefing

Four Sandia employees, with seven other members of the Naval Reserve Research Division, Albuquerque, attended the second NASA-MSC Seminar at Houston, Tex., Apr. 3-5.

Attendees from Sandia included Lt. C. J. Mauck (7214-2), Commanding Officer; LCDR Robert R. Harnar (2122-2); LCDR G. W. Hosking (2122-2); and LCDR J. M. Houston, USN, Ret. (2332-2).

The group was given a briefing on the mission and overall responsibility of the Manned Space Center, on the current and future facilities of the center, and on the Gemini and Apollo projects.

White Water Experts To Race in Rio Grande

The 7th Annual Rio Grande White Water Race will be held near Pilar, N. Mex., May 2-3. Boatmen from New Mexico and Colorado will participate in a slalom event on Saturday and a 4-and-one-half-mile downwater event on Sunday.

The course will be easily visible from Highway 64 from Pilar down to the Taos-Rio Arriba County line. Further information is available from Doug Smith (5135), president of Albuquerque White Water Club, tel. 299-7926.

Service Awards

15 Year Pins



L. E. Davies
8110
May 2, 1949

Dora E. Elick
4432
May 2, 1949



S. A. Moore
1540
May 3, 1949

Alfredo Pena
3462
May 4, 1949



L. R. Wilson
4574
May 4, 1949

J. C. Hart
4620
May 4, 1949



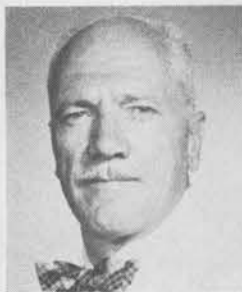
B. M. Langford
4231
May 5, 1949

10 Year Pins

May 1-31

Leroy G. Rainhart 1112, R. B. Middleton 2136, Naomi L. Myszkowski 3126, C. A. Sullivan, Jr. 1313, Anthony Toya 6021, Jeremiah F. Donovan 7224, Earl E. Minor 2122, Edward J. Newfield 2642, Ernest E. Landavazo 4573, Joseph A. Woodley 4632, Clarence L. Kassens 7253, Thurman H. Moyer 2343, F. Mary Bacon 4432, Byron F. Murphy 5410, Eugene R. Frye 1112, Ivy E. Dunn, Jr. 2441, Harold Schulte 4413, Florence M. Bonnell 6020, George H. Johnson 7332, Harrison W. Young 2624, Robert C. Ezell 3465, Carl W. Kochmann 4224, C. J. Kenfield 4431, Anne E. McCullough 4431, Donadieu Sonnier 4573, Samuel M. Cummins 2132, Fred A. Drummond 4233, John W. Budlong 7332, Edward J. Kurpiers 2413, Harvey D. Kubiak 2621, Dale R. Hanely 4211, Isabel L. Baca 4574, R. P. Noble 8122, and Jeanne R. Powell 8123.

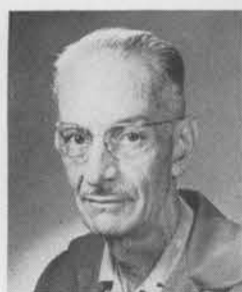
Deaths . . .



Ralph L. Holloway, a Sandia employee for more than nine years, died in a traffic accident Apr. 17. He was 56.

Mr. Holloway worked in Design Definition Section AI, 4411-1. Funeral services and burial were in Philadelphia, Pa.

Survivors include his widow, a son, Ralph Jr., of San Jose, Calif.; a grand-daughter; his mother and a sister, both of Penn.



Howard Melling, a retired Sandia Corporation employee, died Apr. 19 after a short illness. He was 70.

At the time of his retirement in January 1959, Mr. Melling was a model and instrument maker. He had been

with Sandia seven years.

Survivors include his widow, six children, seven grandchildren, and a sister.



Frank (Fritz) Bennett, a Sandia employee for nearly 10 years, died suddenly Apr. 8. He was 50.

Mr. Bennett was a staff assistant in Methods and Audit Section 2343-1 at the time of his death.

Survivors include his widow; a son, Lawrence, stationed with the Navy in Newfoundland; and his sister, brother, and mother, all residing in Chicago.

Sympathy

To Tomas A. Baca (4575-1) for the death of his sister Apr. 6 in Albuquerque.

To Joe Guzman (7325-1) for the death of his father-in-law in Phoenix, Ariz., Mar. 2.

To Willard Rappleyea, Jr. (4212) for the death of his father in St. Charles, Mich., Mar. 30.

To L. R. Neibel (4330) for the recent death of his mother.

To W. E. Lew (4332-2) for the recent death of his daughter.

To D. E. Hurt (2561) for the recent death of his father.

To M. W. McMullen (3242) for the death of his father in Albuquerque, Mar. 21.

To Domingo B. Martinez (4575-1) for the death of his sister in Las Vegas, N.M., Mar. 29.

To Jose C. Valdez (4575-1) for the death of his mother in Denver, Colo., Apr. 1.

To Martha Spencer (3126-5) for the death of her husband on Apr. 1.

To Biliardo Sedillo (4575-1), for the death of his mother in Belen on Apr. 16.

Law Day, U.S.A.

'Observe the Law--- Key to Order, Justice, Freedom'

In 1958, the President of the United States proclaimed that May 1 of each year should be set aside for the observance of "Law Day, U.S.A." The observance was given additional authority in 1961 by a joint resolution of the Congress.

Law Day, U.S.A. is an effort of the legal profession, with the cooperation of leading business, educational, religious, and civic organizations, to bring about a deeper awareness of our system of liberty under law, in contrast to the denial of human dignity and rights under the communist system.

In his proclamation of Law Day, U.S.A.—1964, President Johnson stated that, "Bringing a fuller awareness of these truths to all citizens, and particularly to young Americans, is the central purpose of the seventh annual Law Day U.S.A., on May 1, 1964. The theme of 'Observe the Law — Key to Order, Justice, Freedom,' will serve as a timely reminder that the basic values of our system can be maintained only through voluntary adherence

to the rule of law in our daily lives."

The preservation of democracy is assured by the individual citizen's participation in the government; in the American system, this participation involves such activities as jury service, court testimony of a witness, election campaigning, informed voting, and active opposition to injustice. These activities assure that the power of the government remains vested in the people.

Law Day, U.S.A. — 1964 will be commemorated at Sandia Base with a no-host luncheon at the Officers' Mess, sponsored by the Field Command Judge Advocate's Office on Apr. 30. Master of Ceremonies for the luncheon will be K. F. Hertford, Manager, Albuquerque Operations Office, AEC. Guest Speaker will be Governor Jack M. Campbell.

Attending from Sandia Corporation will be S. P. Schwartz, President 1; R. W. Henderson, Vice President, Weapon Programs 100; R. B. Powell, Vice President, Personnel 3000; F. C. Cheston Jr., General Attorney, Secretary and Treasurer 6000; R. M. Betz, Patent Manager 6010; R. A. Ledogar, Attorney 6030; and T. M. Gemberling, Attorney 6040.

Sandia Takes Part In Rock Channeling Experiment at NTS

Five 20-ton charges of chemical high explosives buried in a row will be detonated simultaneously at the Nevada Test Site in June, the Atomic Energy Commission has announced. The experiment, evacuation of a channel in hard rock, is part of the Plowshare Program of developing peaceful applications for nuclear explosives. No nuclear explosives will be involved in this experiment.

Data obtained, however, will be useful in designing nuclear row charge excavation experiments. Of particular interest is whether explosions form channels in rock as they do in soil.

Technical direction of the project will be by Lawrence Radiation Laboratory. L. J. Vortman (5412) will be in charge of close-in air blast measurements and J. W. Reed (5414) will be in charge of micro-barograph measurements. Field Test project engineer for these Sandia programs will be A. M. Triest (7245).

A number of row charge experiments have been conducted using chemical explosives in a medium of lightly cemented sand and gravel (alluvium). Channels produced have several interesting and potentially useful characteristics — relatively smooth edges and bottoms, material thrown out falls to the sides and not to the ends making it easy to connect such channels, and the volume of the channels is greater than the volume of a series of overlapping single craters. Adjacent explosions reinforce each other.

Plowshare scientists believe that row charges will produce a similar channel in hard rock. Data from the experiment will contribute to a nuclear excavation technology.

TEACHERS attending the National Science Foundation Academic Year Institute, held in Albuquerque Apr. 9, visited several Sandia facilities. J. C. Moody, supervisor of Length and Mass Standards Section 2411-1, conducted the group on a tour of Sandia's Length and Mass Standards Laboratory.

Nuclear Society To Present Lecture Series at LASL

Trinity Section of the American Nuclear Society will present a series of unclassified technical lectures at Los Alamos Scientific Laboratory on Apr. 29. The series, titled "Nuclear Activities in Albuquerque," will be held at the Administration Building Main Auditorium from 1:15 to 4:45 p.m.

Last year at this time, LASL made a similar presentation at Sandia Laboratory. This year's presentation is an effort to acquaint LASL personnel with nuclear activities in the Albuquerque area.

G. A. Fowler, Vice President, Development 7000, will discuss "The Aerospace Nuclear Safety Program at Sandia Corporation," and J. W. Easley, Director of Radiation Physics 5300, will speak on "Radiation Effects Studies and Facilities at Sandia Corporation."

Other speakers on the program will include Col. M. E. Sorte, USAF, Deputy Director of the Air Force Weapons Laboratory, KAFB, "Air Force Weapons Laboratory Activities at KAFB"; Col. Chas. Stewart, USAF, Director of Nuclear Safety, KAFB, "Air Force Directorate of Nuclear Safety Activities at KAFB"; and W. T. Geyer, Director of Engineering, ACF Industries, "Nuclear Engineering Activities at ACFI."

John Colp (7412) is chairman of the program committee for the presentation. Current officers of the Trinity Section include D. M. Ellett (1541), chairman; A. H. Hasenkamp (5331), secretary; and P. D. O'Brien (5332), treasurer. Joint Technical Council representatives include W. H. Schmidt (5331), and R. M. Jefferson (5332).

Information about the meeting is available from any of the current Trinity Section officers.



Sports Car Fans Help Stage Benefit Racing Event

Behind-the-scene workers at the 10th annual Fort Summer Races on May 2 and 3 will include a number of Sandia sport car enthusiasts.

Jack Shoup (1430) will be chief of scoring and W. J. Denison (1512) will be the chief steward. One of the race's co-chairmen is Dave Berry (4431). Leon Day (7215) is in charge of communications and Lloyd Melick (1422) is on the publicity committee.

Ruth Shoup (2323) is the race secretary and in charge of registration. Jim Hudson (5311) is on the flag team. Jim Phillips (2451) is the pit steward and will be assisted by Dave Nokes (2451). A driver's school run in conjunction with the race will have as its instructor Ken Haynes (5332).

The course is 3.2 miles long. On Saturday there will be three five-lap races, and on Sunday, four 12-lap races. Reservations may be made with Ruth Shoup for the barbeque on Saturday night.

The races are sponsored by the Rio Grande Chapter of the Sports Car Club of America and the Fort Summer Lions Club (to finance its charitable activities).

Congratulations

Mr. and Mrs. M. D. Elifritz (1423), a son, Andrew Dwaine, Mar. 27.

Mr. and Mrs. C. J. Cron (1122), a son, Christopher John, Mar. 31.

Mr. and Mrs. L. E. Terry (1433), a son, Philip Bret, Mar. 31.

Mr. and Mrs. W. R. Reynolds (1513), a son, Kevin Ray, Apr. 4.

Mr. and Mrs. T. F. Long (4136), a daughter, Christine Marie, Apr. 3.

Mr. and Mrs. R. S. Sonnenberg (1523), a daughter, Diane Carol, Apr. 5.

Mr. and Mrs. Julian Bartlett (7331-3), a daughter, Tracie Leigh, Apr. 6.

Mr. and Mrs. J. E. Uhl (7324), a son, Christopher Eugene, Apr. 6.

Mr. and Mrs. E. C. Reilly (3462), a son, John Andrew, Apr. 16.

Mr. and Mrs. C. R. Andes (4152-2), a daughter, Tracy Lynn, Apr. 18.

Mr. and Mrs. E. L. Hollar (1124), a son, Kevin Lyle, Mar. 13.

Mr. and Mrs. Jack Davis (3411), a son, Bart, Mar. 16.

Mr. and Mrs. Henry Street (4211-1), a son, Henry Kelso Jr., Mar. 19.

Mr. and Mrs. W. B. Estill (1122-2), a daughter, Mary Ellen, Mar. 19.

Mr. and Mrs. F. N. Coppage (5323), a son, Arthur Thomas, Mar. 19.

Mr. and Mrs. P. D. Shoemaker (4413), a daughter, Bonnie Jean, Mar. 19.

Mr. and Mrs. H. A. Plumer (4254), a son, Gregory, Mar. 23.

Mr. and Mrs. C. A. Davidson (2621), a daughter, Christine Marie, Mar. 25.

Mr. and Mrs. Donald Hester (5322), a son, Clinton Douglas, Mar. 28.

Mr. and Mrs. Reynaldo Gonzales (4611), a son, Richard, Mar. 29.



Brian Finley Writes Lyrics for New Recording

Brian Finley, supervisor of Salary Job Evaluation Section 3111-1, has written poetry for some time. Recently, he tried his hand at lyrics for a song.

The result, called "They Followed the Wind," and sung by the "New Mexicans," a group which includes several other Sandians, has been recorded and will be released in Albuquerque soon.

"They Followed the Wind" is written in the folk song idiom," Brian says. "It recounts the experience of Coronado and his men as they made their way into this area from Mexico."

MEMBERS of "The New Mexicans," singing group which recently recorded album of folk songs and spirituals entitled "Something Different," include (l to r) C. E. Abraham (5422), D. L. Rost (3211), C. H. Purdue (2442), and B. H. Finley (3111). Mr. Finley wrote lyrics for "They Followed the Wind."

The group which sings the selection, directed by Norman Russell Bell, includes Brian's wife, and Calla Crepin (3421), C. E. Abraham (5422), N. A. Beauchamp (5411), R. E. Bertrand (4113), R. E. Minor (2122), C. H. Purdue (2442), E. N. Rose (3122), D. L. Rost (3211), and F. F. Taylor (3465).

"They Followed the Wind" is one of an album of 12 songs issued by QQ Recordings.

PAGE SEVEN

LAB NEWS

APRIL 24, 1964

SHOPPING CENTER

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CLASSIFIED ADVERTISING

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

RULES

1. Limit: 20 words
2. One ad per issue per person
3. Must be submitted in writing
4. Use home telephone numbers
5. For Sandia Corporation and AEC employees only
6. No commercial ads, please
7. Include name and organization
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

FOR SALE

MOSSMAN 3 bdr., 1 1/2 bath, double garage, room for den, recently redecorated, new wool carpet, AC, FA heat, 4 1/2%. Wheeler, 256-7284.

3-BDR, 1 3/4 bath, \$1000 new carpeting, all rough-ins, disposal, utility room, landscaped, requires \$450 down at FHA appraisal. Forner, 255-9897.

HELENE CURTIS commercial hair dryer, \$18. Hart, 256-2811.

LOTS, NE location. Dunaway, 299-1422.

MOTORCYCLE, Allstate, 175cc, generator disconnected (now running off battery), \$150 or best offer. Chandler, 298-5069.

'59 FORD 1/2 ton-6 cyl. pickup, 4-speed, short, wide box. Fifer, 344-9814.

WILSON baseball shoes, size 10 1/2, \$5; \$14 Nakomis catcher's mitt, \$5; tennis shoes, size 8 1/2, \$1.50; new face projector, \$1.50. Costello, 256-9702.

BANJO with case, Joe B. Rogers, Jr. head, \$95. Ray, 299-5278.

'63 RAMBLER Classic 550, 4-dr., auto shift, radio, 8300 miles, blue; 1958 Thunderbird, yellow, black & white interior, new tires. Far, 299-7232 after 4 p.m.

2-WHEEL utility trailer with steel bed, 4x6; used lawn mower, 18" gasoline reel type, new cutting blade, \$20. Miera, CH 3-1826.

GERMAN shepherd, AKC registered, 18 months old, house-yard-and-obedience trained, \$55. Schreiner, AM 8-4159.

ELECTRIC stove, \$100; brown rug 9x16, \$25; baby bed, complete, stroller, car seat, training chair, \$20. Glenn, 2832 Dakota NE, AM 5-0647.

'56 RAMBLER station wagon and 1958 Cushman Eagle motor scooter. Harper, 256-1657 after 5 p.m.

TWO foot lockers; 1 large trunk; 2 8" x 6" x 6" screen door and hardware; 10' x 14' cotton rug. Burrell, 299-0233.

CRAFTSMAN 10 in. radial arm saw. Daniel, 299-4761.

'61 MUSTANG Thorobred motorcycle, 12 1/2 hp, 2800 miles, speedometer and other extras, emerald green, \$635 new, asking \$300. Henderson, 255-1941.

ELECTRIC hand saw, \$20; plumbing tools, \$25; pipe fittings, \$15; portable cooler, \$10; seat belts, \$5; luggage rack, \$20. Kross, 255-3088.

PICTURE window glass, 1 1/2'x5 1/2'x4 7/8", \$7; outside pine door, 32" x 80" with three hinges and Schlage knobs attached and glass panel 21" x 80", \$10. Kerns, 255-1450.

BAR BELL, 110 lbs., Healthways w/handles, complete \$18. Denish, 256-1559.

MONO Hi-Fi component set, black lacquer cabinet, \$125. Burkhardt, AL 6-3310.

'58 TRIUMPH roadster. Colquitt, AX 8-2113.

'57 OLDS 2-dr. HT, fully-equipped to include J-2 set up. Cooper, 4052-B Ward Place, Sandia Base, tel. 264-1297.

TWO adorable kittens, mother Siamese, need homes. Walter, 299-2900.

PLAYER PIANO, \$450. Murray, 344-5289.

HI FI, AM/FM tuner, 13 tubes by Approved Electronics, \$30; Argus C-3 camera, case and flashgun, \$10. Vivian, 299-1785.

DAIMLER sports car, 1961, V-8, 150 hp, 25,000 miles. Cully, DI 4-7055.

SPEAKERS, walnut corner enclosures with 12" coaxial, \$120 for the pair. Stirbis, 299-5363.

'55 PONTIAC V-8 motor, transmission, rear end. Body total loss but will throw in. Make offer. Dunbar, UL 8-9556, after 6 p.m.

WOODEN FRAME screens for patio, two each 6x8", one each 6x6". Will trade for steel window. Calvery, 255-9545.

'55 FORD fordor, \$125; Storkline baby bed with mattress, \$15. Windsor, 344-6557.

'63 FAIRLANE 500 white sport coupe, 260, V-8, bucket seats, R&H, AC, \$1,750. Touloumis, 255-3670.

5-PIECE dinette set, gray Formica table, orange buttoned chair bottoms, \$30. Hook, 255-1897.

FORD 8N tractor with front loader and plows, \$1000; swivel office chair; dish washer. Patterson, 299-6590.

BY OWNER, three bedroom and family room, 1 3/4 bath, new carpet, near Winrock, no down G.I. Mares, 7723 Robin NE, 299-6958.

'55 OLDS Super 88, 4-dr. hardtop, AC. Cummings, 298-5173 after 5 p.m.

JEEP, 1949 station wagon w/1961 6-cyl. engine, recent rings, valves, paint, \$150; camping trailer, 16', sleeps six, \$800. Harnar, 299-3400.

STEEL casement with frame window, approx. 50x40"; 4x8 12-ply plywood; 4 outside shutters, 50" long; size 37 western suede jacket. Dollohan, 299-8107.

ALUMINUM blinds (green) suitable for a screened-in porch, varying in width—7', 5' and 3'. McMaster, 268-8062 after 5:15 p.m.

GAS RANGE, \$40; electric refrigerator, \$40; reel (push) lawnmower, \$15; Coleman icebox; used Remington auto-hone shaver, \$7. Letbetter, 246-1242.

HOME air conditioner, \$35. Pierce, 255-7923.

KENMORE washing machine, \$50. Kohut, 298-0695.

MASONIC RING, 32nd degree Scottish rite, diamond set, double-headed eagle crest, Fogg appraisal \$350, will sell for \$250. Davis, 299-9079.

CORNET and mutes, \$95. Hayes, 298-4682.

PORTABLE typewriter, Smith - Corona "Sterling" tabulator, \$45. Dossey, AL 6-0857.

'57 DODGE 2-dr. hardtop, auto, trans., licensed, make offer. Payne, 268-3184.

'55 DE STORO, factory air conditioning, power steering, power brakes, 4-dr. sedan. Mikkelsen, 268-1485.

CUSTOM CHAPMAN, 3-bdr., den, approx. 1600-sq. ft., fronts on park, 10 min. to Sandia, double garage, 1 1/2 bath, sprinklers. Barnum, 299-4939.

'62 RENAULT Gordini, white, less than NADA. Randle, Pucitas.

3-BDR., built-in electric stove, refrigerator, walled, garage, AC, \$200 down, financing arranged. Curkendall, 298-4738 weekends or after 5 p.m.

'53 DODGE Coronet, 4-dr., auto. trans., R&H, \$100. Eden, 298-5182.

COLT .45 revolver, U.S. Army mod. 1917, 6 1/2-moon clips, 100 rounds ammunition, \$30. Drury, 282-3195.

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, May 1

OR SWAP, Sandia Knolls lot 115, power and water. Nogle, 299-3863.

'50 CHEVROLET, 4-dr.; two 8:00-8:20x 15 snow tires, never used; one 15 in. Cadillac wheel. Brooks, 299-1884.

'60 FALCON wagon, 4-dr., stick shift, seat belts, R&H, AC, \$750. Holben, AM 5-0998.

'57 FORD V-8, 4-dr., stick shift with OD, \$350. Peet, 256-3049.

'60 INTERNATIONAL Travelall, V-8, automatic, 35,000 miles, AC, two gas tanks, equipped for trailer. Bice, 5717 Gilmer Pl. NE, 255-5613.

'60 CHEVROLET station wagon "Brookwood," power steering, ermine white, seat belts, 4-dr., \$995 (NADA price \$1155). Huff, 256-9426.

TAPE RECORDER, stereo model, Magic-IE indicator; Kenmore rotisserie broiler grill, timer & temp. control. Shinn, 8607 Los Arboles NE.

'59 RAMBLER Super 6, 4-dr. station wagon with overdrive, '64 tag, \$925. Gatlin, 255-5171 before 9 p.m.

HI-FI, Columbia console. Stoner, 299-6892 after 5 p.m.

ELECTRIC STOVE, 40" wide, white, \$69.50. Padilla, AX 9-0460.

VIKING II w/VFO, \$125; 2 meter rig, \$65. Cundy, 255-0381.

GLADIRON range, portable, \$25; Unger auto race, mounted, \$6; window auto AC, \$2; soapbox racer, \$14; wheels only, \$8. Adams, 256-7265.

.22 CAL. Ruger standard semi-automatic pistol with holster. Wilde, DI 4-6079.

PING PONG table and small evaporative cooler. Any offer considered. Breiphohl, 256-3368.

SW VALLEY, 3-bdr., den, 2 1/2 BR w/vigas, 2 fireplaces, carpeted, 13 1/4 bath, double carport w/storage, 2000 sq. ft. Less than appraisal. Roth, CH 3-7049.

GAS RANGE, \$40; electric refrigerator, \$40; reel (push) lawnmower, \$15; Coleman icebox; used Remington auto-hone shaver, \$7. Letbetter, 246-1242.

ELECTRONIC counter chronograph, 5 decade 100 KC time base. Makes velocity measurements of bullets, \$65. Vaughn, 298-5919.

STUDENT airplane, T-craft BC-12D, new license, A-80 engine, 360 smph, 1450 TT, \$1250. Lochner, 265-4037.

9'x12' umbrella tent, \$30. Hansen, 3119 Lykes Dr. NE, 298-0308 (after Apr. 27).

'63 COMET, custom 4-dr., 170 cu. ft. engine, 4-speed, R&H, other extras, in warranty, under book. Fisher, AX 8-0526.

BELT VIBRATOR, Walton Line design, Westinghouse. Anaya, 344-3245.

3-BDR., separate dining room, heated workshop, \$12,000. Rudeau, 256-2380.

BABY CRIB, deluxe, complete, cost \$60 new. Make offer. Adams, 264-2192.

17" TV Crosley console, wood cabinet, \$25; 2 tires, 6.70x15, some tread, \$1 each; crock and bottle capper, \$4. Ring, AM 8-2896 after 5 p.m.

'59 RENAULT Dauphine; 1961 Studebaker Lark, 6 cyl., 4-dr. Corey, 865-9970.

SACRIFICE, Hammond chord organ, original price \$1000, asking \$495. Ricker, 256-2678.

NEW ZEBCO spin rod and reel, retails \$25, asking \$15; new lona blender, retails \$30, asking \$20; double wardrobe, \$30. Mitcham, AX 9-8425.

3-PC sectional turquoise; two walnut step tables, walnut coffee table; 5-pc. dinette set. Rutherford, 298-0773.

HO TRAIN layout, 4'x8', pike includes 9 switches, 40' track, 20 buildings, control box, 2 transformers, cost \$120, sell \$60. Schorr, 255-7234.

'62 PHILCO 30" pushbutton electric range, \$95. Smith, 256-0375.

TWO-BDR. HOUSE, faces University Golf Course, dining room, large kitchen, hw/floors, walled back yard w/5 fruit trees. Hamilton, 268-9787.

7'x8' WOOD garage door w/hardware, \$10; 8.25x15 truck tire and 8-hole wheel, \$10; Cub Scout uniform, size 10, \$7. File, 344-8853.

'57 OLDSMOBILE 98 2-dr. HT, full power. Capaldi, after 5 at 318 Mesilla NE.

'50 PONTIAC 4-dr., needs work, best offer; steel casement window w/screen, 36"wx38"h, \$10. Schimke, 299-6375.

VIKING STEREO TAPE DECK and pre-amplifiers, \$210; or Voice-of-Music stereo tape recorder with 40 in pre-recorded tapes, \$100. McIntire, 298-6145.

MARBERRY 3-bdr. and den, fireplace, 1 3/4 bath, 8' gate into back yard, drapes, carpet, a/c, other extras. Stuart, 299-9190.

'60 VW SEDAN w/or wo/radio and anti-sway bar. Thompson, AX 8-0946.

FOR TR CAR: custom trailer hitch, hand crank, new fan belt, and boot; also new Hydro-Flite jumping water skis. Rowley, 299-8419.

'64 PONTIAC TEMPEST LeMans conv., V8, 4-speed. Giolma, 242-5556 evenings or weekends.

3-BDR. MANKIN, walled, patio, lawns, sprinklers, carpeting, a/c. Long, 299-1416.

'59 VW SEDAN, radio, seat belts, \$850. Kidd, 299-0035, 11008 Elvin Ave. N.E.

MOSSMAN LONDONAIRE 3-bdr., large living room, 2-way fireplace, 1 3/4 bath, drapes, carpets, landscaped, 2819 Dakota, NE. Bustamante, AM 8-0532.

LOT near Penasco on the Rio Pueblo, excellent for summer cottage, near winter skiing. Scranton, 299-5720.

YELLOW HEAD PARROT, young, tame w/ cage, \$35. Matlack, 256-7371.

SET OF ENCYCLOPEDIA BRITANNICA, complete w/large dictionary, 2 year books, and stand, paid \$225, sell for \$100 cash. Montoya, 344-6222.

INNERSPRING MATTRESS and box spring set for double bed, \$15. Holmes, 299-4167.

'61 BUDDY MOBILE HOME, 55x10 w/living room extension, newly carpeted, a/c, completely furnished, parked at Aloha Village Mobile Home Park. Hunt, 243-0162 or 268-4200.

'56 FORD 4-dr. w/new '58 engine 6, stick shift, \$250. Rush, 298-4521.

MATCHING DEN CHAIRS, \$10 ea.; also round two-tier coffee table, \$7. Chandler, 298-5069.

'57 MGA, Michelin 32 tires, new batteries. Oravec, 299-3247.

3/4 ROLLAWAY BED, \$25; 22 cal. rifle, 8-shot w/weaver scope, extra clips and cleaning kit, \$25. Rauch, 268-0232.

FRIGIDAIRE refrigerator, \$30. Nogales, 1100 Silver SE, CH 7-1178.

CRAFTSMAN vibrating jig saw, \$18; and Synco orbital sander and polisher, \$12. Reynolds, 299-7832.

'57 BUICK SUPER 4-dr., automatic transmission, R&H, a/c, other extras, low mileage. Vickers, 256-1418.

CUSTOM 3-BDR. HOME, den, fireplace, carpeting, drapes, a/c, built-ins, double garage, patio, landscaped, \$24,500; piano, modified upright, \$150. Amos, 298-4470.

FULL-SIZE SADDLE, quick change stirrups w/bride and blanket, \$60 or trade for tools, furniture or misc. Coalson, 282-3208.

BED, rollaway, 3/4 size, \$8. Stuart, 299-9190.

3-BDR. 1 3/4 bath, 26' living room, country kitchen w/bar, carpet, drapes, fireplace, double garage, \$104 monthly. Fisher, AX 8-2546.

'58 CADILLAC 4-dr., HT, full power. Hare, 299-7137.

WARDROBE, plywood; gas range; refrigerator w/large freezer compartment. Schulteis, 268-0573.

ARGUS C-3 camera, complete filters, aux. lenses, polarizer, attachments, \$15; Sunbeam hand mixer, \$5; GE 12" fan, \$8. Dehon, 898-2219.

CLARINET AND CASE, B-flat Bundy, \$75; 2 men's sport coats, wool, size 42, \$5 ea.; laundry tubs, double, worktable top, on legs, \$7.50. Thayer, 1424 Hoffman Dr. NE, 299-3127.

OR RENT: 1 3/4 bath, den w/fireplace, double garage, sprinklers front and back. See at 10820 Cordova NE. Burns, CH 2-2407 evenings or weekends.

BEAGLE PUPS, 8 weeks old. Woodall, 299-6729.

'56 FORD 4-dr., big engine, AT, radio, new paint, seat belts, \$395. Driscoll, 298-4641.

'52 GADABOUT CHEVROLET, 4-dr., overhauled engine, diminutive gasoline consumption, heater, standard transmission, forest green, all for \$99. Weinsreich, DI 4-9167.

'61 OLDS 2-dr., radio, PS, PB, \$1550. Pritchard, 268-9618.

DREXEL mahogany bed, dresser, \$40; Kuba stereo, AM-FM, extra speakers, \$175; antiques: small desk, 4 chairs, pictures, misc. Runyan, 255-6719.

G.I. YEAR LEASE, 3-bdr. brick home, den, FA heat, HWF, double garage, AC, 2728 Palomas NE. Hudson, 256-0564.

WANTED

RIDE FROM vicinity of Constitution and Louisiana to Area 3 gate. Flowers, 256-1656.

WILL CARE for child in my home on Sandia Base. Cook, 264-6393.

CEMENT MIXER, and 1/4-1/3 hp electric motors. Abrams, DI 4-8252.

A RIDE or join carpool from Euclid and Pennsylvania to Bldg. 840. Trujillo, 298-5264.

BERMUDA grass sod or plugs. West, 299-6695 after 6 p.m.

TENOR saxophone, good condition. Vandi, AL 5-0685.

RIDE OR carpool from Hoffmantown area (Wyoming and Menaul) to Bldg. 838. Hawes, 298-8461.

CONCRETE mixer, small 4 to 6 cu. ft. Sears & Roebuck type. Vaughn, 298-5919.

NAME of people living on Base who do professional clipping of poodles. Matlack, 256-7371 evenings.

FOR RENT

2-BDR. APT., unfurnished, 536 San Pablo SE, near base, \$75/mo. Puccini, 242-7137.

AVAILABLE JUNE 1, 3-bdr. furnished house, NE Heights, carpeting, built-ins, double garage, 3801 Douglas MacArthur. NE, Tullar, 344-1443.

3-BDR., 1 1/2 bath, brick home, 940 Dakota SE, \$135/mo., water and garbage paid. Jiron, 268-8573 after 6 p.m.

LOST AND FOUND

LOST—Men's sunglasses w/plastic frame, man's Timex watch, Chevy II hubcap. LOST AND FOUND, ext. 264-2757.

FOUND—Ladies' white fabric glove w/pearl trim, 15-yr. SC tie clasp, ladies' sun-glasses w/gold trimmed plastic frames, car key. LOST AND FOUND, ext. 264-2757.



Value Engineering Education

Monday, May 4, will mark the start of Sandia Corporation's Value Engineering Education Program. At 7:45 a.m., 25 participants from various Sandia organizations, as well as invitees from Bendix Corporation, Kansas City and ACF, Albuquerque, will convene to begin a 40-hour workshop scheduled for four hours each day for two weeks.

E. L. Devor, J. M. Hueter, R. F. Phillips, and K. A. Sarason, all of Product Data Division 2563, will provide the training and workshop consultation, along with the assistance of D. L. Hughes and E. R. Servis of Technical Training and Education Section 3132-1. In addition, members of Sandia management will discuss various aspects of Value Engineering as guest speakers.

"Value Engineering is the newest and perhaps the most effective organized approach to reducing the costs of product and services without compromising reliability, schedules, and quality," Elmer Devor explains. "Applied through the process of analyzing true function to identify and eliminate unnecessary and excessive costs, Value Engineering also frequently

PREPARATIONS for forthcoming Value Engineering Education Program are being made by instructors (l to r) J. M. Hueter, E. L. Devor, and K. A. Sarason, all members of Product Data Division 2563. Fourth member of the teaching team (not pictured) is R. F. Phillips (2563-1). Program sessions begin May 4, will continue through May 15.

reveals major improvements to product manufacturability and performance, as well as improvements to operations."

Both President Johnson and Secretary of Defense McNamara have encouraged cost reduction programs designed to ensure that the government "get a dollar's value for every dollar spent." In a letter, dated Dec. 2, 1963, to 7500 defense contractors, President Johnson stated, in part, "I have directed the heads of all government agencies to accelerate immediately their efforts to operate their programs at the lowest possible cost . . . I am calling on you personally to assist me . . . in achieving further significant reductions in Defense expenditures . . . If you already have such a (cost reduction) program in being, then I call on you to accelerate, expand, and intensify this effort."

In a similar letter to defense contractors, Secretary of Defense McNamara states, "Some defense contractors now have formal value engineering programs and such contractors have been able to recommend hundreds of ideas to reduce costs of parts, components, and end items by as much as 50 per cent. I urge all contractors to stress such critical examinations . . ."

On Mar. 14, 1964, Glenn Seaborg, Chairman, Atomic Energy Commission, wrote to "Fellow (AEC) Employees," in part: ". . . we plan to press vigorously ahead with further steps to operate our programs at the lowest possible cost consistent with maintaining essential high quality and performance standards . . . I will be requesting selected contractors to accelerate their cost reduction programs . . . Today I call on you to participate in these efforts and to assume personal day-to-day responsibility for devising and proposing ways for improving performance and reducing costs in your assigned areas."

Members of the teaching staff have been trained in Value Engineering concepts. Jack Hueter and Ken Sarason participated in sessions at the University of Wisconsin in October 1963; Dick Phillips and Ed Servis attended a two-week workshop at Motorola, Scottsdale, Ariz., this month; and Elmer Devor was involved with Value Engineering at the General Electric Company before joining Sandia in 1958.

"Because of its prominent design and manufacturing development activities, Sandia Corporation should benefit greatly by the application of Value Engineering to its product and services as should other AEC contractors," Elmer concludes.

President Johnson Asks . . .

A Dollar's Value for Every Dollar Spent

S. P. Schwartz, president of Sandia Corporation, was a speaker recently at a conference on Quality Control Techniques and Equipment. Members of the conference, meeting at the University of New Mexico, approached the problem through the avenue of quality control as paving blocks in the road to greater profits.

Mr. Schwartz first mentioned profit in the broad sense, namely, to derive benefit or to be of use or advantage.

He pointed out that there is a growing tendency toward incentive-type supplier contracts whereby a good product produces financial profit for the manufacturer and produces this profit in the form of good performance for the user.

"I understand," he said, "that there are contracts in existence or are being produced whereby the performance of a satellite in orbit increases profit to the designer and manufacturer of the system and at the same time produces the benefits that good performance brings to the success of space projects."

Another area discussed by Mr. Schwartz was profit to the taxpayer resulting from the Administration's objective of getting a dollar in value for every dollar spent.

"I'm sure," he said, "we all applaud President Johnson's program which has been brought to the attention of industry in a letter such as was received by the President of Western Electric."

Mr. Schwartz quoted the letter:

"In addressing the Congress last week, I pledged my Administration to the utmost of thrift and frugality, and to get a dollar's value for every dollar spent.

"I have directed the heads of all government agencies to accelerate immediately their efforts to operate their programs at the lowest possible cost. The Secretary of Defense has already established a cost reduction program aimed at achieving annual savings of \$4 billion, through efforts now in process or planned by Fiscal Year 1967, and he has further committed his Department to realizing \$1.5 billion of these savings in the current fiscal year. More than 55c out of each Defense dollar is spent by its contractors. It is for this reason that I am calling on you personally to assist me and the Secretary in achieving further significant reductions in Defense expenditures.

"It is my desire that you establish an affirmative program of cost reduction in the performance of Defense contracts, both those which you now hold and those you may subsequently receive. If you already have such a program in being, then I call on you to accelerate, expand, and intensify this effort.

"I have asked the Secretary of Defense to take into account the accomplishments of contractors who successfully reduce the cost of Defense procurement, when making future source selections, and in determining profit and fee rates on non-competitive negotiated contracts.

"I have also discussed this program with the Director of the Budget and the Comptroller General.

"The Secretary of Defense's letter, elaborating this program is enclosed. It has my fullest endorsement. Sincerely, Lyndon B. Johnson."

This letter, Mr. Schwartz told the conference, was followed by one from Mr. McNamara for the Department of Defense with suggestions and recommendations for strong cost reduction programs. James Webb, head of the National Aeronautics and Space Administration, similarly identified the objectives of NASA with particular attention to buying at the lowest sound price compatible with NASA's reliability requirements, placing increased emphasis on incentives and reduction of operating costs.

"Industry has pledged full support to this program," Mr. Schwartz said. He then read several quotes from a letter to President Johnson from E. J. McNeeley, President of the American Telephone and Telegraph Company.

"The requests that you have made are both reasonable and sound, and the Bell System not only endorses your

action, but pledges wholehearted cooperation in attaining your objective.

"As you know, the Bell System is a unique organization composed of the Bell Telephone Laboratories, the Western Electric Company, our Associated Operating Telephone Companies, and the Long Lines Department, which operates the interstate long distance part of our business.

"All of these organizations have directed their efforts primarily toward one objective, namely, a communications system of the best quality at the lowest possible cost, consistent with a reasonable return on the investment involved.

"The Bell Telephone Laboratories has not only developed new, faster, and more reliable communication systems over the years, but has also made many basic research discoveries which have led to such components as transistors, traveling wave tubes, solar batteries, etc., which are now being used at great savings in costs to Government and civilian users alike.

"The Western Electric Company has had a formal cost reduction program since 1928.

"One measure of the results is that the general level of prices in Western Electric was 13% lower in 1963 than it was in 1950, despite increases of 78% in labor costs and 20-25% in material prices.

"In the field of quality control, Western Electric has been a pioneer, setting up a formal program in 1924. It applies the same high quality standards and techniques to Government contracts as it does to Bell System work, and in addition, it is sharing its knowledge and experience with the Air Force and others to help them obtain their quality objectives in other procurement areas."

To Mr. Schwartz, the key word behind the success of this program is "quality"—quality in design, quality in product, quality in performance.

"We at Sandia," he said, "operating on a no-profit basis, must be doubly aware of doing everything possible to get a dollar value for every dollar spent."

Stating that Sandia is placing much emphasis on the word "value" in all its respects (value analysis, value engineering), he reminded the listeners that value is more than a word—it is a state of mind, a cost conscious state of mind.

"It could be defined," he said, "as a scientific method of accomplishing a function at the lowest possible cost and of producing the highest quality product at the lowest expenditure of money." Mr. Schwartz pointed out that achieving better value does not mean reducing quality, or, in Sandia's case, reducing safety in the product for which the Laboratory has design responsibility.

"I do not feel," he said, "that there is any conflict between value or cost and quality for I sincerely believe that the quality product produces the most value per dollar spent."

Sandia Mail Section Supervisor to Lead Seminar for AMA

N. V. Tarnawsky, supervisor of Mail Services Section 3413-2, has been invited to be leader of an American Management Association seminar in New York City June 10-12.

The seminar is entitled "Improving the Mail and Messenger Service."

Mr. Tarnawsky's qualifications in leading a seminar on this subject are backed up by a survey of internal mail delivery at Sandia Laboratory conducted six months ago by Personnel Systems and Procedures Division 4112. The shortest delivery time between two buildings through regular Corporation mail channels was 55 minutes. The average was two hours, 59 minutes—which is very good time, particularly when you consider the size of Sandia's technical area.

Sandia's Safety Record

Sandia Laboratory
HAS WORKED
1,190,000 MAN HOURS
OR 34 DAYS
WITHOUT A
DISABLING INJURY

Livermore Laboratory
HAS WORKED
490,000 MAN HOURS
OR 91 DAYS
WITHOUT A
DISABLING INJURY



R. W. Henderson — Sandia VP — Named ASME Fellow

Announcement was made last week by the American Society of Mechanical Engineers that Robert W. Henderson, Vice President, Weapon Programs, has been named a Fellow in the organization. Formal presentation of the honor will be made May 6 at a banquet of the New Mexico Section of ASME. E. H. Draper, Vice President, Development, and Region VIII Vice President of ASME, will make the award.

The honor is bestowed for "outstanding contributions to the advancement of the science of engineering." A Fellow must have 25 years of active practice in the profession of engineering and have been an ASME member for 13 years.

Mr. Henderson's nomination to the rank read in part:

"Beginning with his position as Staff Engineer at the University of California Radiation Laboratory during the early work on the atomic bomb in World War II, Robert Henderson has had a responsible role in every stage of the engineering of nuclear weapons from the relatively primitive 20 kiloton bomb carried by the early B-29 bombers to the sophisticated high-yield weapons with 15,000-mile-per-hour delivery systems. During the span of the 17 years since the establishment of the Atomic Energy Commission, he has been principally responsible for the evolution of nuclear weapon ordnance engineering—in collaboration with first one and then two nuclear physics laboratories—from the operationally complex and limited weapons which ended the war with Japan to the widely varied nuclear arsenal which has revolutionized our nation's armed forces and is employed by all branches of the Department of Defense . . .

"Now he is the senior vice president of the nation's key nuclear ordnance development laboratory employing 8000 engineers, scientists, and support personnel . . . Sandia Corporation weighs heavily in the national security. And, largely through his leadership and under his guidance, Sandia has advanced and is continuing to advance the frontiers of engineering technology."

Sandia Takes Part in Contamination Control Meeting and Exhibit

The Third Annual Technical Meeting and Exhibits of the American Association for Contamination Control, to be held May 6-8 in Los Angeles, will have several Sandians participating as speakers and chairmen.

C. F. Bild, Director of Materials and Process Development 1100, will chair a discussion of "Parts Cleanliness Verification" on Thursday, and J. Gordon King, supervisor of Advanced Manufacturing Development Section II, 2564-2, will be chairman of a panel on "Laminar Flow Clean Rooms and Work Stations" on the following day.

Sandia papers to be presented include:

"Basic Design Requirements for Laminar Air Flow Dust Controlled Devices" by W. J. Whitfield, J. C. Mashburn, W. E. Neitzel, and L. C. Trujillo (all 2564).

"Verification of Cleanliness—What Does It Mean" by L. K. Jones (1121-1).

"Contamination Control in Industry" by D. W. Ballard (2564).

Some 2500 persons from throughout the country are expected to attend the meeting. The featured banquet speaker will be Maj. Gen. Ben I. Funk, USAF, Space System Division Commander, who will discuss "A Matter of Environment."

Additional information may be obtained locally from R. C. Marsh (2564).



SANDIA CORPORATION

PRIME CONTRACTOR TO THE ATOMIC ENERGY COMMISSION
ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

LAB NEWS

VOL. 16, NO. 9 / APRIL 24, 1964

They work, work, work . . .

Satellite Payloads Still Laboring After 6 Months

For six months, twin nuclear burst detection satellites have been circling the earth at an altitude of 50,000 miles, making an orbit every four and a half days.

After six months, the instrument payloads on board the satellites — designed by Sandia Corporation and Los Alamos Scientific Laboratory — are continuing to function flawlessly. More than 20 million transistor hours have been logged by the components of the payload. The systems survived rocket launch and are operating in the environment of space. They have continued to function through "total eclipses" in the shadow of the earth where the solar cells could not provide power. On-board power supplies took over and continued transmission of data.

Redundant circuitry, designed to be used in case of a failure, has not been called to perform. There are some 14,000 solar cells and 40,000 electronic components in the satellites.

Data transmission has continued according to plan. For the first few weeks, information from the satellites was transmitted to ground stations continuously. Now, reports are made on a periodic schedule or upon command.

More than two billion bits of information have been transmitted. This is equivalent to 80 million words or the number contained in 10 Manhattan Island telephone books.

It is estimated that the X-ray sensors in the satellites can detect a nuclear explosion at a distance equal to the diameter of the earth's orbit around the sun.

As a result of the success of the satellites, the program has moved ahead, bypassing four additional launches that were previously planned. The program has moved into its second phase at least six months ahead of schedule.

Two more satellites will be launched this summer with new detector and logics systems. The design changes — based on knowledge gained from the present systems — will extend the range of the X-ray, gamma, and neutron detectors and test new sensors developed by LASL.

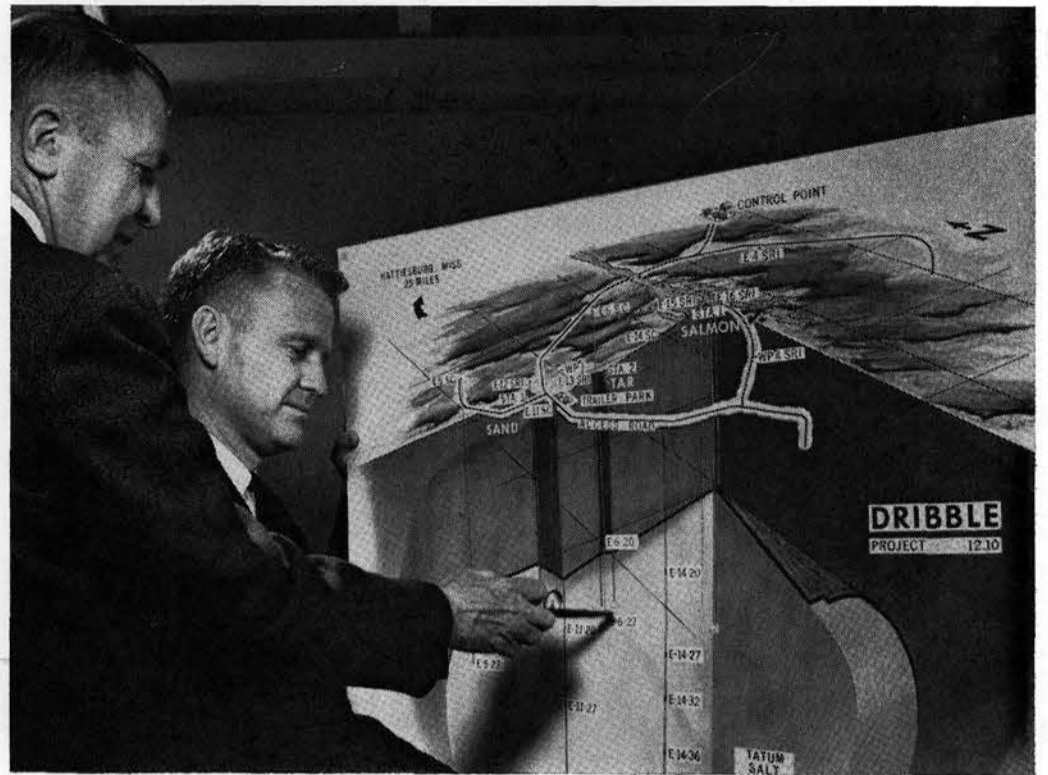
The detectors and accompanying logics systems have been fabricated, tested, and delivered to Space Technology Laboratory at Redondo Beach, Calif., space craft contractor for the project.

When carried into space, the satellites first went into an elliptical orbit. Then one satellite was injected into a second, almost circular, orbit. After the proper delay, the second satellite moved into final orbit opposite the first. The orbits can be visualized as two balls on opposing ends of a piece of string swinging around the earth, which is at the center of the string.

This intricate rocketry was performed by the Air Force Space Systems Division. The Department of Defense's Advanced Research Projects Agency has responsibility for the total detection program.

William C. Myre, supervisor of Space Projects Division 7432 and Sandia's project leader for the satellites, attributes the outstanding reliability performance of the present satellites to the initial design and the quality control and reliability programs of Sandia Laboratory's Engineering for Manufacturing 2000 organizations. The effort was centered in Specialties and Special Assignments Division 2543.

Stringent quality control was exercised in the production of the logics systems. One hundred per cent testing and inspection was used throughout production. Quality Assurance inspection procedures and instructions were written by Systems Planning Division 2121 and Logistics Division 2132 performed on-site inspection and quality audit of the material prior to acceptance. Quality Assurance surveys were conducted by Section 2134 and QA component evaluations were made by Division 2123.



Nuclear Tests Set For Mississippi Salt Dome Area

Personnel from Sandia Laboratory are participating in preparations for Project Dribble, a series of underground nuclear detonations, the first of which is scheduled to be made this summer. The Dribble program is in preparation in the Tatum Salt Dome, located some 20 miles southwest of Hattiesburg, Miss.

The program, sponsored by the Advanced Research Projects Agency of the Department of Defense, is part of a program of improving techniques to detect and identify underground nuclear detonations. Dribble is under the administration of the Nevada Operations Office of the AEC and the technical direction of the Lawrence Radiation Laboratory.

Three underground nuclear detonations have been proposed but not yet approved for Project Dribble; the first of these will be called "Salmon." The Salmon event, a nominal five-kiloton burst, will be followed by two smaller tests of 100 tons each. One of the latter will be decoupled, or detonated while centered inside a 95-ft.-diameter cavity at the bottom of a hole. The other bursts will take place in tamped holes with the devices close to the surrounding salt. Comparison of the data from detection instruments will indicate how well the decoupling procedure can hide the fact that a detonation has occurred.

The five-kiloton Salmon device will be detonated at a depth of approximately 2700 ft. The two 100-ton shots, called "Sand" and "Tar," will be detonated at a depth of 2000 ft. The three explosions will take place in a matrix of halite (rock

PLAN FOR PROJECT DRIBBLE is examined by Project Scientist, W. R. Perret (5412), and Project Leader, A. D. Thornbrough (7246-1). First event of the project, five-kiloton "Salmon" detonation, will be conducted in Tatum Salt Dome in Mississippi.

salt) of from 95 per cent to 97 per cent purity. The Tatum Dome is one of several similar halite deposits found in the Gulf area and formed during the Cretaceous geologic period, when shallow seas covered much of the central portion of the continent.

Project Scientist for the Sandia Corporation activities at Project Dribble is W. R. Perret of Underground Physics Division 5412. Project Leader is A. D. Thornbrough (7246-1); Alternate Project Leader is R. L. Rutter (7246-1).

Other Sandia personnel participating in preparations include W. R. Drake (7223-5), O. J. Birdsong (7245-2), R. W. Frame (7246-1), L. C. Jeffers (7245-1), D. B. List (7245-3), F. K. Millsap (7241-3), T. B. Morse (7245-2), E. A. Ryan (7246-1), and L. C. Sandgren (7246-2).

Sandia's activities for the Salmon event involve preparations for free field particle motion studies, including instrumentation of four drill holes with surface-motion gages and subsurface instrument stations. In addition, Sandia will be responsible for arming the Salmon device; this activity will be under the direction of R. J. Brousseau (7254-1).

JAMES E. WEBB (center), director of the National Aeronautics and Space Administration, during his recent visit to Sandia Laboratory was shown a reentry vehicle designed by Sandia to test the safety aspects of a nuclear generator reentering the earth's atmosphere. Sen. Clinton P. Anderson (left) and S. P. Schwartz (right), president of Sandia Corporation, accompanied Mr. Webb on the tour of laboratory facilities.



Editorial Comment

Spend Part, Save Part

"If the purpose of the Government's tax reduction program is to increase private consumption expenditures, why urge more savings through the purchase of U. S. Savings Bonds?"

This question, the Savings Bond Division of the U. S. Treasury Department reports, is being asked of them frequently these days. Under Secretary Robert V. Roosa, the Treasury's monetary expert, has a reply:

"The answer, of course," he says, "is what we would recommend to any individual as a prudent action; namely, do what anyone should always do with an increase in take-home pay — spend part and save part."

Mr. Roosa further reminds Americans that it is particularly fitting when the increase of take-home pay results from a deduction of Federal taxes, that the portion saved should come back to the national government through the medium of Savings Bonds.

There is also another query coming to the Treasury Department, Mr. Roosa reports.

"The other kind of question relates to the risk of an inflationary potential in the program to stimulate the economy that entails, at least for a transitional period, a larger deficit than would otherwise be the case. The control of this risk will come from our efforts to avoid destructive inflation by financing the deficit in a manner that will neither cause nor nourish inflationary tendencies.

"Thus far, in this administration, deficits have been financed without inflation and we fully intend to continue this. It is important that it be well understood that a cornerstone to our effort toward non-inflationary financing is the continued strong appeal for private sector savings generated by U. S. Savings Bonds."

Sandia Speakers

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

J. D. Williams and L. E. Terry (both 1433), "The Effect of Deposition Rate on the Textural Properties of Vacuum Deposited Germanium Films on Heated Amorphous Substrates," 1964 Spring meeting of the Electrochemical Society, May 3-7, Toronto, Canada. Mr. Williams will make the presentation.

A. L. Roark and G. M. Wing (both 5421), "A Numerical Method for Evaluating Eigenvalues of Certain Integral Equations," Rio Grande Chapter of the Association for Computing Machinery, May 8, Phoenix, Ariz. Mr. Roark will make the presentation.

A. F. Cone (2110), "Some Problem Areas in Vendor-Vendee Relationships," 18th National Convention of the American Society for Quality Control, May 6, Buffalo, N.Y. Mr. Cone also moderated a panel discussion of "Quality Control and Inspection Problems" before the Albuquerque ASQC chapter at the University of New Mexico on Apr. 10.

T. F. Meagher (8123-3), "High Energy Shock Facility Using Electromagnetic Energy," Institute of Environmental Science, Apr. 13, Philadelphia, Pa.

S. H. Peres (3133), "Understanding Personality Factors in Work Settings," Society for Personnel Administration and the American Society of Training Directors, Mar. 20, Hagerstown, Md.; "Ingredients of an Industry-Education Counseling Plan—The Need for Collaborative Action," American Personnel and Guidance Association, Mar. 22, San Francisco, Calif.

M. A. McCutchan (3132), "Jobs, the Challenge of the Sixties," North Albuquerque Lions Club, Apr. 1; "Education and Employment Opportunities," Cleveland Jr. High School, Apr. 2.

D. M. Fenstermacher (7224-1), "Telescope Making," Lincoln Jr. High School, Apr. 1.

Jean Gillette (3132), "Clerical and Secretarial Employment," Cleveland Jr. High School, Apr. 9.

John Cline (2421), "Mathematics and the Impact of Computers," Cleveland Jr. High School, Apr. 10.

J. A. Mauldin (2341-1), "Acceptance Inspection Procedures as Related to Quality," Joplin-Springfield Section, American Society for Quality Control, Apr. 16, Joplin, Mo.



HANDMADE VIOLIN represents hours of work by Thomas O. Taylor (3312), who learned to carve in Japan. Inch-thick maple and spruce boards were worked down to exact thinness for the body, while ebony was used for fingerboard, pegs, and other parts. Tom made the instrument for his grandson who is still too young to play.

Promotions

John L. Sullivan (4575) to Laborer
 Robert D. Eiler (4632) to Technician
 Daniel W. Davis (4254) to Precision Grinder
 James R. Grund (8222) to Maintenanceman
 Dannelia Y. Davis (3126) to Secretary Steno.
 Eileen P. Jones (3126) to Secretary Steno.
 Daphne J. Edrington (3126) to Secretary Typist
 George L. Pacheco (4573) to Senior Clerk
 A. H. Archuleta (2643) to Order Analyst
 Joe Ruiz, Jr. (8214) to Receiving Clerk
 Dorit N. Mathers (8212) to Senior Clerk
 John F. Bacher, Jr. (8144) to Computer Operator
 Anne E. Crow (8144) to Computer Operator
 Marie W. Blythe (3311) to Stock Record Clerk
 Laverne W. Lathrop (7323) to Laboratory Assistant
 Hugh A. Sumlin (4253) to Layout Operator
 B. O. Sandoval (4212) to Material Handler
 Marion P. Apodaca (4224) to Specialties Worker
 Kenneth A. Peters (4631) to Tester
 James E. Lujan (4631) to Technician
 Samuel M. Bragg, Jr. (4231) to Technician
 Fidelino Carrillo (4231) to Technician
 Alvin T. Plant (4231) to Technician
 Edward L. Amador (4234) to Technician
 James Carmody III (4234) to Technician
 Louis A. Sanchez (4234) to Technician
 William L. Gibson (4251) to Machinist
 Jack J. Anderson (7612) to Computer Facility Operator
 George A. Martinez (7612) to Computer Facility Operator
 Chadyeane M. Snapp (8232) to Message Center Equipment Operator
 Thelma F. Foster (7240) to Secretary
 Austin V. Glover (3143) to Staff Member—Administrative

Supervisory Lateral Transfers
 P. D. Gildea from 8165-1 to 8141-3
 R. W. Male from 7223-2 to 7223-4
 A. B. Cole from 2136 to 7256
 J. S. Cundy from 4622-4 to 4614-3
 C. D. O'Connor from 4623-2 to 4623-3
 W. A. Johnson from 4623-3 to 4623-2
 G. L. Hutchinson from 4624-1 to 4624-2
 A. Sanchez from 4624-2 to 4624-1
 V. A. Southerland from 4614-2 to 4613-2
 W. L. Paxton from 4613-2 to 4614-2
 V. M. Brewster from 7223-4 to 7223-3
 W. G. Levy from 1332-1 to 1322-3
 R. L. Maxwell from 1332-4 to 1323-3
 K. L. Gillespie from 1324 to 1333
 R. S. Pinkham from 1324-1 to 1333-1
 R. F. Ashmore from 1324-2 to 1333-2
 W. C. Stevens from 1531 to 9100 Staff
 W. T. Smith from 7213 to 7255
 R. C. Spence from 7243 to 7213

Sandia Employees Candidates In May 5 Primary Election

The following Bernalillo County Sandia Laboratory employees are candidates for public office in the May 5 primary election.

A. H. Archuleta (2643), County Commissioner, Democrat.
 Gaynor E. Atkinson (7331), Justice of the Peace, Precinct #50E, Republican.
 Richard G. Bemis (2412), State Representative, District #11, Republican.
 Harry R. Botts (4234), State Representative, District #3, Republican.
 Joseph J. Bradshaw (7324), Constable, Precinct #43D, Republican.
 Richard G. Carlisle (4513), Constable, Precinct #47A, Republican.
 Charles L. Carpenter (1513), County Commissioner, Republican.
 Dennis S. Chavez (2642), Constable, Precinct #17B, Democrat.
 Robert G. Clay (1543), School Superintendent, Republican.
 Guy Denton (4518), Constable, Precinct #2B, Democrat.
 John M. Farner (4254), Constable, Precinct #50B, Democrat.

William A. Gardner (3111), State Representative, District #14, Republican.
 Charles L. Hines (3244), State Representative, District #9, Republican.
 Thomas W. Hoover (1543), State Representative, District #17, Republican.
 William Jackson (4252), Justice of the Peace, Precinct #50C, Democrat.
 Harry E. Kinney (1542), Commissioner of Public Lands, Republican.
 Wallace L. Pritchard (3242), Justice of the Peace, Precinct #37G, Democrat.
 Thomas K. Smith (2641), State Representative, District #3, Democrat.
 John S. Todd (3244), State Representative, District #11, Republican.
 Gail B. Ward (3463), Constable, Precinct #45E, Democrat.
 James J. Weber (5133), County Commissioner, Democrat.
 Louis H. White (4573), Justice of the Peace, Precinct #45D, Democrat.
 Charles S. Williams, Jr. (1442), State Representative, District #12, Democrat.
 In addition to the above candidates from Bernalillo County, Howard Christianson (4252) is a candidate for Sandoval County Commissioner on the Republican ticket.
 The Lab News hopes this is a complete list of all candidates and regrets any inadvertent omissions.

Supervisory Appointments



WILLIAM C. COLBORNE to manager of Auditing Department 4120.

Bill has been at Sandia nearly 11 years and has worked in Auditing, Cost Accounting, and Systems and Procedures. He was promoted to Senior Auditor eight years ago, and to division supervisor in October 1958.

Prior to coming here, Bill taught business administration courses at Arizona State College, and worked for a Certified Public Accountant firm in Arizona.

He has both BA and MA degrees in business administration from Arizona State College, and is a Certified Public Accountant. He is a member of the American Institute of Certified Public Accountants.

Bill served four years in the Navy.

R. R. BOYD to supervisor of Maintenance Section B, 4512-2, Plant Maintenance Department.



Bob has been at Sandia more than 15 years. He started work in Plant Maintenance Department, but for the past eight years has been a plant inspector in Plant Engineering Department.

He previously was studying mechanical engineering at the University of New Mexico.

During World War II, Bob served in the Army for three years, and is presently in the National Guard.

DALE P. BRAUTIGAM to supervisor of Maintenance Control Section 4517-1, Plant Maintenance Department.



Dale began work for Sandia Corporation in July 1953. He left two years later and returned in September 1962. His assignments have been with Wage and Salary Administration Department 3110.

During the interim period, Dale was chief plant engineer for the Westran Corporation in Muskegon, Mich.

He has a Bachelor's degree in liberal arts from Albion College in Michigan, a BS in industrial engineering from Washington University in St. Louis, Mo., and has completed most of his coursework toward a Master's degree in business administration at the University of New Mexico.

Dale is a member of Alpha Pi Mu and Kappa Mu Epsilon, honorary societies, the American Institute of Electrical Engineers, and the American Institute of Plant Engineers. He is a registered professional mechanical engineer in Michigan.

He served two years in the Navy.

Biomedical Sciences Instrumentation Group To Meet May 4-6

Several Sandians are actively participating in plans for the forthcoming Second National Biomedical Sciences Instrumentation Symposium, which will be presented by the Albuquerque Section of Instrument Society of America.

The symposium will be held May 4-6 at the University of New Mexico. Honorary co-sponsors are Kirtland AFB, Los Alamos Scientific Laboratory, Lovelace Foundation, Sandia Corporation, and the University.

Jack L. Mortley (7334-1) is chairman of the ISA Host Committee. Assisting him in arrangements are R. P. Baker (2441), J. H. Smalley (5311), and J. H. McCutcheon (1321).

Health Physics Society Names W. H. Kingsley President of Local Chapter

W. H. Kingsley, manager of Environmental Health Department 3310, was installed as president of the Rio Grande Chapter of the National Health Physics Society at a meeting Apr. 10 in Santa Fe.

Dr. Robert Thomas of Lovelace Foundation was voted president-elect, and will take office one year hence, when Mr. Kingsley's term expires.

During the business session, Dr. William Ham, Department of Biophysics, Medical College of Virginia, gave an informal talk on the Health Physics Society, its future, new plans, and the certification aspect.

The Rio Grande Chapter includes all of New Mexico and part of Texas.

SANDIA CORPORATION LAB NEWS



ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

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BTL Plans to Build New Facility in Illinois

Bell Telephone Laboratories plans to move its entire Electronic Switching Development Organization from Holmdel, N. J., to a new development center costing \$7,000,000 to \$9,000,000, which it plans to build near Naperville, Ill.

The Laboratories announced that some 1200 persons, including BTL staff and a small group of associated Western Electric engineers, are expected to work at the new facility. The plans call for it to be built on a site of about 200 acres, north of Naperville. Naperville is about 20 miles west of Chicago.

Construction of the center is contingent upon rezoning the proposed site to permit a Research and Development installation, the Laboratories said. Suitable public services also need to be obtained. Plans call for con-

struction of the new laboratory to begin early in 1965 with the building to be completed in 1966.

About 650 people at BTL's Holmdel Development Center are scheduled to be transferred to the Illinois facility. It is also planned that a small number of Western Electric engineers from the Columbus Works and appropriate people from the Systems Equipment Engineering Organization will be transferred eventually, so that the efforts of the Laboratories and WE can be closely coordinated in the development of switching systems.

The new Illinois Laboratory will continue the development of electronic switching systems already in being, as well as even more advanced systems, the Laboratories announced.

Science Teachers See Sandia Laboratory During Institute

Forty-four science teachers toured Sandia Laboratory facilities Apr. 9, while attending the National Science Foundation Academic Year Institute, held at the University of New Mexico.

The group toured the Sandia Sphere of Science, where they saw the film, "The Sandia Story." Then, they visited Sandia's EMP and Resistance Standards, Length and Mass Standards, Environmental Standards, Time and Frequency Standards, Microwave Standards, Glass Filament Windings, Mechanical Testing, and Dielectric Research Laboratories.

They were briefed during the tour by R. E. Fisher, supervisor of Chemistry and Spectroscopy Division 1122; and by R. A. Richards, supervisor of Electrical Standards Division 2412. Tour arrangements were made by members of Community Relations Division 3143.

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G. A. Fowler to Preside at 1964 Conservation Dinner

Glenn A. Fowler, Vice President, Development, will be master of ceremonies for the Golden Anniversary Dinner and Liar's Contest of the New Mexico Wildlife and Conservation Association. The event will be held at 6:30 p.m., Apr. 30, at the VFW Hall, Lomas and Washington N.E.

The organization was founded in 1914 and will be observing its 50th annual dinner.

About 450 persons are expected to attend, according to Charles L. Hines (3244), president. Orlando Ulivarri (2641) is the banquet chairman.

Meets at Livermore Lab . . .

Interagency Mechanical Operations Group



DR. EDWARD TELLER, Professor-At-Large, University of California, spoke last week at the opening-day session of the Interagency Mechanical Operations Group (IMOG) meeting in Livermore. About 150 representatives of contractors in the atomic weapons complex heard him discuss "Thoughts on Future Nuclear Weapons and Explosives."



REGISTERING at the opening session of the IMOG meeting last week was B. S. Biggs (8000). Attending to registration matters were hostesses (seated, l to r), Carolyn Wilson, LRL, Barbara Whitlow (8231), and Lois Strandin (8230).

SURREALISTIC CREATION of Livermore Laboratory illustrator Ben Aikin (8233-2) decorated the speaker's rostrum at the IMOG meeting. Here C. R. Barncord (8150), chairman of the IMOG steering committee, explains its symbolism to (l to r), F. West, AWRE, R. W. Henderson (100), F. Roberts and J. Priestly, AWRE.



Cancer - - An Ever-Present Enemy

Our Best Hope In Fighting Cancer Comes From Early Detection and Treatment

Our body is made up of trillions of cells, tiny microscopic building blocks — one thousandth of an inch in diameter — within whose walls the secret of life itself is held.

But somewhere along the course of life — in one out of every four human beings — something goes wrong. Out of the trillions of these tiny cells, one cell undergoes an unfortunate change. It becomes hostile. It ceases performing its normal functions, concentrates instead on reproducing its own abnormal kind, over and over again, dividing and redividing. Each new cell is as hostile to the human body as the first.

Doctors call such an abnormal cell malignant, the disease itself cancer.

Anyone old enough to read the above is well aware — and rightfully so — that cancer, by whatever name, is a dread malady. It is one of the two major causes of death for men and women in the Bell System, ranking first with women and second with men. This year in the United States, about 280,000 will die of the disease, one every two minutes.

But like so many of man's ills, the name itself is often more fraught with dread than the disease itself. And never was this more true of the disease of cancer than today.

For unlike our ancestors, whose chances of surviving cancer were virtually hopeless, today half of those who get cancer could be saved with early diagnosis and prompt treatment. Except for lung cancer, cancer rates in general are leveling off and in some cases declining — evidence that the relentless battle against the disease is being won, however slowly.

Unfortunately, however, while half of all those who develop cancer could be saved, not all of them are. Actually, only a third are being saved. According to the American Cancer Society some 88,000 cancer patients will die needlessly this year.

The reason? Failure to obtain early detection and treatment.

According to doctors, early detection and treatment is the front line on which every individual must wage his war against cancer today.

The ultimate victory against the disease will probably take place in the laboratories and universities where doctors and scientists are searching for the cause and cure of cancer. The American Cancer Society this year alone is spending over \$11 million for research. But until that victory comes, the battle must be fought by each and every individual, and they alone have the power to make the odds on their survival.

Why Early Detection Is Important

Typically, cancer begins as a localized disease — most of the time on the surface of some tissues such as the mouth, the lining of the stomach, or deeper in the tissues of the breast or elsewhere.

For a time such cancers typically remain at the site of origin. While it remains thus confined, it is known as **carcinoma in situ** — that is, a cancer in its original site.

After a time some of the cancer cells penetrate beyond the surface and invade the underlying tissues. This is called "invasive cancer." They still continue to grow but continue to remain more or less in a mass. So long as the living cancer cells re-

main where the disease started it is said by doctors to be "localized." Chances of successful treatment at this point are still good.

Beyond this point, however, the chances are greatly reduced. For the cancer cells become detached and are carried through the lymph channels or blood vessels to many parts of the body. Doctors then call the disease advanced. Death from the disease at this stage is almost inevitable, although not necessarily quick.

For unknown reasons, some cancers grow and spread slowly while others grow and spread rapidly — some so rapidly that they are incurable. The problem is to detect the cancer before it has spread so that it can be removed by surgery or destroyed by radiation.

While the chances of cancer increase with age, the disease can develop at any age — even among children. And while many people tend to think of cancer as primarily a disease of the aged, the American Cancer Society reports that half of all cancer deaths are among persons under 65.

More men than women die of cancer and this has been the case since 1949. The ratio is about 54 men to 46 women. Cancer is also the leading cause of death for children of school age — most of them victims of leukemia. Last year cancer took the lives of more than 4700 children.

Physical Checkups Important

Early detection and prompt treatment offer at present the best hopes for survival from cancer, and doctors recommend that every person have at least one complete physical checkup every year, whether or not a medical problem is suspected. In addition, it is the wise person who is alert to cancer's danger signals and who reports his suspicions immediately to the doctor. In many cases cancer signals can be deceptive — patterning themselves after less serious illnesses, but only a doctor can make the distinction. When cancer is suspected, it's better to be sure early — than sorry later.

Here listed are some of the more common sites for cancer for both men and women along with some of the early warning signs:

Breast — Leading cause of cancer deaths among women. Lends itself to early detection through the technique of regular breast examination, and many are detected by women themselves. If discovered in the local stage, it is about 92 per cent curable.

Lung — By far the leading cause of cancer deaths in men. It is increasing at an alarming rate and is now 10 times as prevalent as it was 10 years ago. It is the wise

man who gives up smoking since mounting evidence points to a correlation between lung cancer and cigarette smoking. Smokers should include a chest x-ray as an important part of annual physical checkups. Even with periodic examinations it is difficult to diagnose lung cancer for sure. Only about five per cent of all cases are being cured today. There are three main reasons for this low rate of cure (1) Since it is located within the chest, the cancer can neither be seen nor felt; (2) symptoms or complaints are often noted late in the course of the disease; and (3) many of the cancers that originate in the lung show rapid growth. Symptoms are difficult to detect, but a persistent cough or lingering respiratory ailment should be reported to the doctor promptly.

Colon and Rectum — Most common type of cancer in both men and women, striking some 73,000 Americans each year, of whom 40,000 die. However, three out of four patients could be saved by early diagnosis and treatment. Key to early diagnosis is an examination with the proctoscope as part of the health checkup. Change in bowel habits or bleeding are signals for an immediate visit to the doctor.

Bladder — About twice as frequent among men as women and usually found in persons over 55 years of age. Blood in the urine is a symptom of bladder cancer as well as other less serious ailments. Other signs include back pain, disturbances in urination such as increased frequency, burning and other discomfort. Some 67 per cent of the cases could be cured if found in the local stage.

Mouth — The lower lip, tongue, and inside of the cheeks are common sites of cancer. First noticeable as a small sore, lump, or hardened area. Any sore, fever blister, or gum boil that does not heal within several weeks should be examined by a doctor. Chances of successful treatment are excellent when the diagnosis is established early.

Larynx — The most obvious warning sign is persistent hoarseness. Other symptoms include sensation of a sticking feeling in the throat, discomfort when swallowing, and a swelling or lump in the neck. Cure rates for early larynx cancer are high.

Stomach — A common site of cancer, especially among men. Earliest warning is usually a mild but persistent indigestion. Other symptoms include loss of appetite, frequent heartburn, repeated vomiting, vomiting that contains blood, or dark tarry blood in the bowel movement.

Prostate — This gland is a common site for cancer among men 50 years or older. Symptoms include blood in the urine, or difficulty, discomfort, or increased frequency in urination. Surgical treatment offers a good chance of cure if cancer is discovered before it spreads beyond the gland itself.

Uterus — Second most common site of all cancers among women. May occur at any time during adult life, but most commonly between the ages of 30 and 55. First warning of uterine cancer usually is any abnormal discharge or bleeding from the vaginal tract. Since the application of "pap" smears, this cancer has been on the decline. Every adult woman should have a "pap" smear as part of her annual physical examination.

Obviously many of these symptoms for cancer are common to other less serious ailments as well. Therefore, an awareness of any of these symptoms should not be a cause for alarm, but it should be a cause for concern. And it is the wise person who calls these symptoms to the attention of his or her doctor and does not wait until the next physical checkup.

The American Cancer Society urges all adults to do two things:

1. Have a medical checkup annually, no matter how well you feel.
2. Know cancer's danger signals and go to your doctor immediately if one of them lasts longer than two weeks.

There are now 1,200,000 Americans alive today who have developed cancer and have been cured. In addition, there are 700,000 cancer patients diagnosed and treated within the last five years who will live to enter the ranks of those pronounced cured.

It is cause for hope.

For nearly every cancer case, there is a time when cancer can be caught and cured. For many this time may occur next year, or 10 years, or 20 years from now. For some, the time may be now.

Take Note . . .



Samual McAlees, supervisor of Re-entry Aerodynamics Section 7421-2, will lecture on "Re-entry Environment" May 7 at the University of New Mexico.

His talk is part of a lecture series on solids. The discus-

sion will include a theoretical analysis of the acceleration loads and heat transfer rates experienced during re-entry of a vehicle into the earth's atmosphere.

Persons not enrolled in the course may attend the individual lectures, presented at 4 p.m. in Rm. 2, ME Bldg.

Sandia's auditors will sponsor a dinner-dance at Four Hills Country Club on May 8 honoring E. M. Shonka, manager of Auditing Department 4120, who will retire June 30.

Tickets and further information may be obtained from Earl Simonson (4122). The deadline for reservations is May 1.

Recently-elected officers of American Legion Post No. 13 were Charles A. Monroe (4614-2), vice-commander; Flavio Gonzales, Jr. (4212-3), member of the executive board; and Robert Durand (2625-2), district executive committeeman.

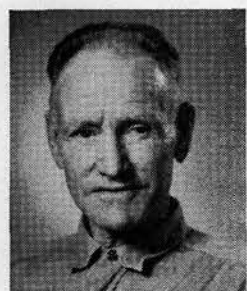
Crawford MacCallum (5411) will have a leading role in the initial production of a new drama group in Albuquerque called the "Old Town Studio."

The first presentation, on May 1, is called "A Happening," and is described as a panorama designed to stimulate the audience's senses. Four plays are planned through the summer—each to run for a month but only on Fridays, Saturdays, and Sundays.

The studio is located at 2033 Central NW. Tickets will be sold at the door before the performance (at 8:15 p.m.).

Hans Baerwald (5132) will lead a group of New Mexico Mountain Club members and visitors on a hike up Mosca Peak in the Manzano Mountains, on Saturday, Apr. 25. The hikers will meet at 8 a.m. at the Western Skies, and proceed to 4th of July Canyon, whence the hike up the peak will begin. Information is available from Hans, tel. AX 8-1526.

Retiring

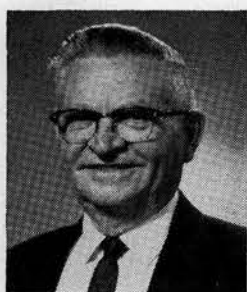


William M. Lansdell (4574) will retire Apr. 30 after 11 and a half years employment with Sandia Corporation.

Although he and his wife will continue to live at 902½ La Vega Rd. SW, they will spend considerable time at their cabin at Blue Water. Mr. Lansdell plans to build a second cabin there this summer—when the fish aren't biting.

The couple has one living son, seven grandchildren, and five great-grandchildren, all in Albuquerque.

Mr. Lansdell enjoys gardening and tending his fruit trees.

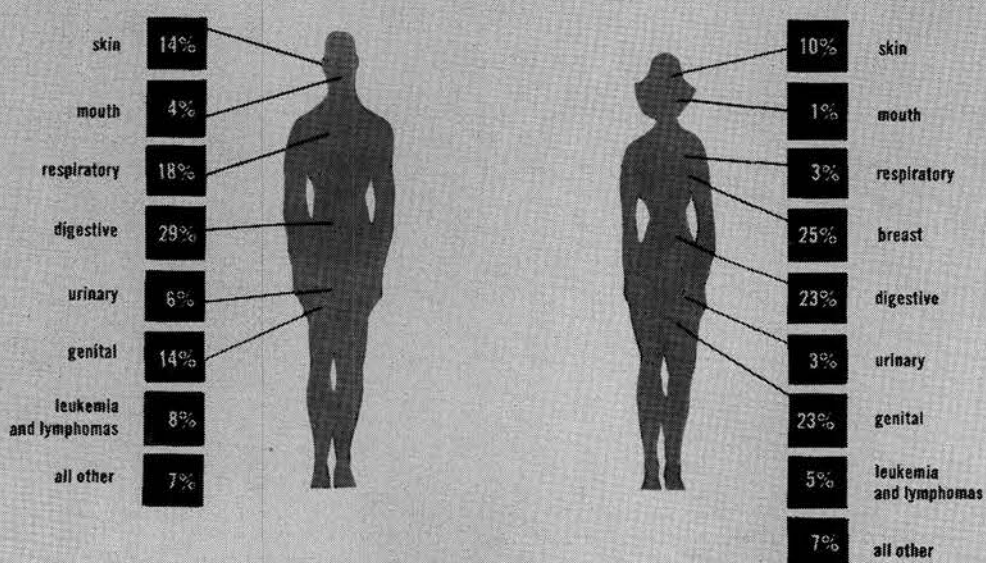


Roy D. Nix of Packaging Section 4624-2 will retire Apr. 30. He's been a Sandia employee, and a member of Section 4624-2, since Oct. 2, 1951. Before coming to Sandia, Roy worked for General Motors.

After retirement, he plans to do "the usual thing"—some travel, including a trip to the Ozark Mountains; and some fishing.

Mr. and Mrs. Nix will continue to reside in Albuquerque at 436 General Stilwell, N.E.

CANCER INCIDENCE BY SITE AND SEX



HE Studies to Show Possibility of Nuclear Excavation for Projects

First of a series of experiments using chemical explosives set in patterns, part of a Sandia Laboratory cratering study, was detonated at Tonopah Test Range this week. The study, conducted by L. J. Vortman of Underground Physics Division 5412, will provide information on charge burial depths and spacings required to obtain desired crater configurations.

The study is part of the Plowshare Program which investigates the feasibility of using nuclear detonations for peaceful purposes.

Detonations this week used four 64-lb. charges spaced at the corners of a square pattern. Resulting crater will be compared against data from a single explosion buried much deeper in the soil, an experiment performed some time ago.

"This study will provide information, on a model scale, which might be useful to decide how to dig a harbor with nuclear devices," Mr. Vortman says. "A harbor could be excavated using a large single device buried very deep," he continued. "But it might be more desirable to have a large shallow area excavated by a number of small detonations."

"Results will also help us evaluate the feasibility of using nuclear explosives to remove the overburden from ore deposits to permit open-pit mining operations."

A series of 36 experiments, each using four chemical charges, is planned. Ralph C. Holland and Carl D. Northam (both 7221) are the Field Test project engineers responsible for placing and firing the charges.

Sandia Authors

Current or forthcoming articles by Sandia authors in technical journals include the following:

R. C. Heckman (1124), "Electrical Properties of the Cerium and Gadolinium Hydrogen Systems," May 15 issue, *Journal of Chemical Physics*.

G. J. Simmons (1531), "A Combinatorial Problem Associated with a Family of Combination Locks," May-June issue, *Mathematics Magazine*.

K. E. Sutton (3244) and F. O. Carleton (3133), "The College Recruiter: A Critique," April issue, *Journal of College Placement*.

D. H. Anderson (5132), "Chemical Shifts of Pb^{207} in Perovskite Ferroelectrics," Vol. 40, Page 1168, 1964, *Journal of Chemical Physics*.

P. A. Nicovich (4412), "The Positional Tolerance Controversy—Diameter or Radius?" April issue, *Graphic Science*.

B. T. Kenna (1122) and P. K. Kuroda of the University of Arkansas, "Technetium in Nature," Vol. 26, No. 4 (April), *Journal of Inorganic and Nuclear Chemistry*.

L. P. Wilson and R. L. Buckner (both 1111), "Mechanical Properties of Certain Low-Melting Point Alloys," March issue, *American Society for Metals Transactions Quarterly*.

A. T. Fromhold (5151), "Space Charge in Growing Oxide Films. IV. Rate Effects Deduced by an Averaging Technique," June 1 issue, *Journal of Chemical Physics*.

H. H. Mabie (1322) and C. B. Rogers (7622), "Transverse Vibrations of Tapered-Cantilevered Beams with End Loads," March issue (No. 3), *Journal of the Acoustical Society of America*.

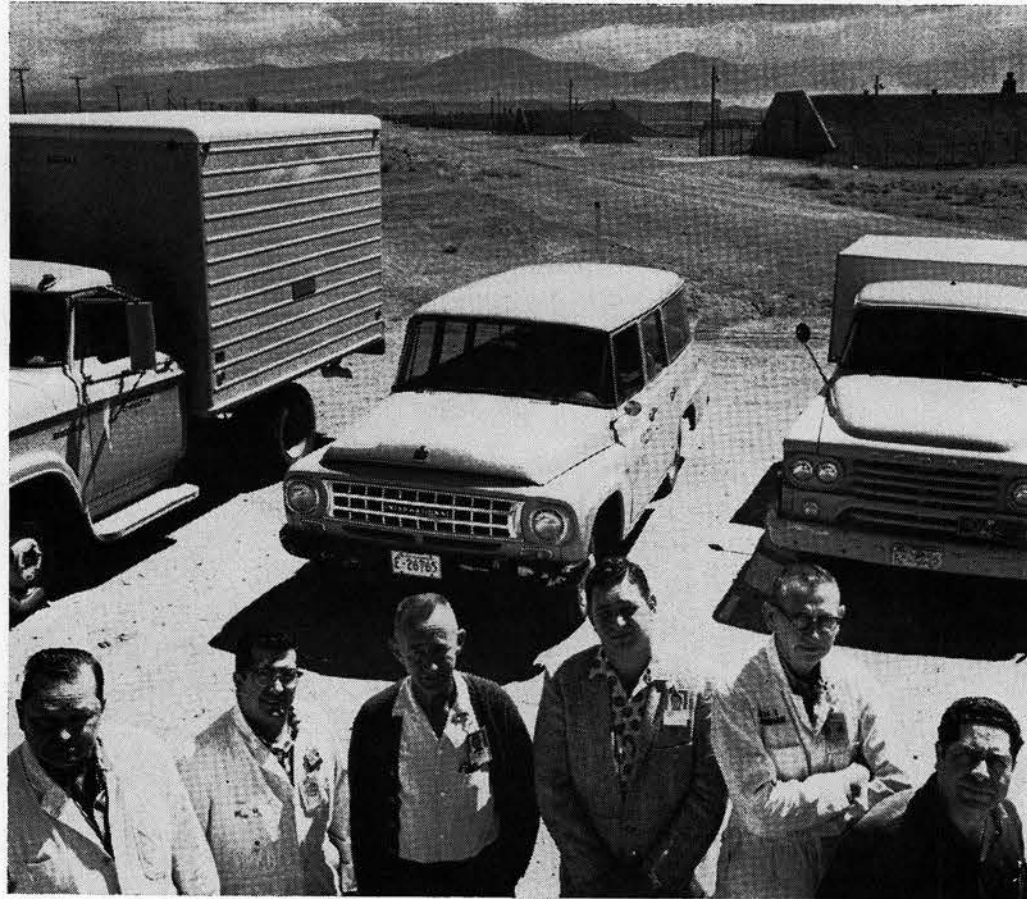
J. L. Wentz and L. Z. Kennedy (both 1113), "The Primary Pyroelectric Effect in the PZT 95/5 Ceramic," June issue, *Journal of Applied Physics*.

F. A. Philgreen (4214), "Dielectric Properties and Phases of Some $Ga_2O_3-Nb_2O_5$ Ceramic Compositions," January issue, *Journal of the American Ceramic Society*.

Cozine Elected Officer Of ASME Sub-Section

Ralph Cozine (8154-2) has been elected vice chairman of the Mt. Diablo sub-section of the San Francisco Section, American Society of Mechanical Engineers (ASME). Ralph, who has been a member of ASME for the past five years, served on the sub-section's executive committee as a director for the past year.

PAGE FIVE
LAB NEWS
APRIL 24, 1964



Explosive Handlers Work 17 Years Without Incident

"We're proud of our safety record," Cecil C. Gulley (4614-1) commented recently. "The section hasn't had a lost-time accident in its entire history, or in the 17 years I've been at Sandia."

Such a record is impressive in itself, but its doubly so when you consider the fact that the men of Section 4614-1 receive, store, move, and control all of the explosives and explosive devices used at Sandia Laboratory and by the Albuquerque Operations Office of the AEC.

"Explosive Services Section processes some 1200 line items each month," Cecil continued. "There are about 115,000 pieces of explosives in storage in Area 6000, ranging from rocket motors to matches and squibs."

Cecil began working with explosives as an employee of Hercules Powder Co. in 1939. He and the other members of his section have many years in their field, and have a healthy respect for explosive materials.

* * * * *

Explosives at Sandia are stored in the 6000 igloo area in a group of magazines which are dispersed and designed to minimize hazards, with special lighting equipment and handling facilities. The explosives are categorized and stored according to their compatibility. At all times, the section adheres strictly to the precautions of the Ordnance Safety Manual.

These safety precautions enable personnel to control variables which otherwise might be dangerous. The men wear safety glasses, and grounded booties and wristlets while working with explosive materials. Twice monthly, safety representatives from Technical Service and Support Section 3211-2 visit the explosive storage area and inspect it for potential dangers. The men of Section 4614-1 discuss their activities with the safety inspectors to determine the safest way of getting things done. They also hold periodic safety meetings on their own.

"Procedures for handling explosives invariably follow strict regulations," Andy Blain, supervisor of Explosives and Material Handling Division 4614, continued. "Our procedures for shipping explosives are typical of other routines we use in receiving, storing, and moving them."

* * * * *

A typical day for the section will involve either a request for movement of explosives to the various technical areas, or a request for packaging and shipping of explosives. To assure that the packaging and shipping meets all I.C.C. regulations, Packaging Engineering Organization 1554-3 provides the section with specifications or written instructions for shipment.

A new explosives administration building is under construction in Area 6000, and Section 4614-1 expects to occupy it this summer. "Besides providing us with a center of operations, the new building will locate us nearer to the receiving and storage area," Andy concluded.

EXPLOSIVES STORAGE Area 6000 is the scene of operations for personnel of Explosives Services Section 4614-1: (l to r) Henry Carthel; Matt Bustos; Cecil Gulley, section supervisor; James Davis; Eugene Monahan; and E. C. Montano. They handle all explosive materials at Sandia Laboratory.

ASQC to Honor Sandia Author for Outstanding Article

John W. Moyer (7253) will be honored by the American Society for Quality Control during its annual convention May 4-5 in Buffalo, N. Y. John will receive the 1963 Brumbaugh Award. This award is presented to the author of the paper published in *Industrial Quality Control* judged to have made the greatest contribution to the development of industrial applications of quality control.



John's article, "Workmanship—The Key to Improving Quality," appeared in the July 1962 issue of the journal. It is available as a Sandia Corporation reprint, SCR-517.

John has been at Sandia Laboratory since February 1960. He came here after graduation from the University of Nebraska with a Master's degree in Industrial Engineering. He earned his Bachelor's degree in Mechanical Engineering from the same school in 1958.

He worked in the Quality Assurance organization almost four years before his present Field Test assignment.

John is active in the local chapters of ASQC and the American Institute of Industrial Engineers. He is a member of Sigma Xi, scientific research honorary; Sigma Tau, engineering honorary; and Pi Tau Sigma, mechanical engineering honorary.

ASME Administrative Committee To Be Here for Awards Banquet

The New Mexico Section of the American Society of Mechanical Engineers will host a meeting of the ASME Region VIII Administrative Committee here May 6-7. Concurrently, the annual awards banquet of the local section, installation of new officers, and a student chapter conference will be held.

Delegates are expected from Utah, Colorado, Wyoming, Idaho, and Montana as well as from New Mexico, according to E. H. Copeland (7331), chairman of the New Mexico Section. E. H. Draper (1000), is ASME vice president for Region VIII and John W. McKiernan (7419) is Region VIII secretary.

The Regional Student Conference will be held Friday and Saturday at the University of New Mexico. Regional delegates and students will tour Sandia Laboratory's Area III.

Don Williams (7311) is in charge of arrangements for the Regional meeting and the Area III tour. Other delegates to the Regional meeting will include Mr. Copeland, R. A. Bice (2000), J. P. Myers (4213), A. J. Clark (7412), and G. C. McDonald (1550).

Highlighting ASME activities during the week will be the New Mexico Section Annual Banquet and Installation of Officers. The event will be held Wednesday evening, May 6, at the Cole Hotel, beginning with a social hour at 6 p.m.

The program will include awards to members of the New Mexico Section and the UNM Student Section, promotion of R. W. Henderson, Vice President, Weapon Programs, to ASME Fellow, and remarks by Elmer O. Bergman, president-elect of the national ASME organization.

New Mexico Section officers to be installed include J. P. Myers (4212), chairman; C. L. Carpenter (1513), vice chairman; W. A. Gardner (7300), secretary; C. E. Runyan (4220), treasurer; and Capt. D. G. Jones, director.

Speaker for the banquet will be Maj. Jack E. Steel, bionics specialist, Air Force Research Center, Dayton, Ohio. He will discuss, "Extremely Foreign Technology or What Every Engineer Should Know About Birds and Bees."

Guests are welcome. Reservations may be made through L. H. Stradford (1552), ext. 264-6166. Deadline for reservations is Monday, May 4.

PLAN MEETING — Members of the American Society of Mechanical Engineers make plans for a Region VIII committee meeting, student conference, and annual banquet of the ASME New Mexico Section. From left are Don Williams, Jr. (7311), arrangement chairman; E. H. Copeland (7331), New Mexico Section chairman; E. H. Draper (1000), Region VIII vice president; and J. W. McKiernan (7410), Region VIII secretary.



Naval Reservists Get NASA Briefing

Four Sandia employees, with seven other members of the Naval Reserve Research Division, Albuquerque, attended the second NASA-MSC Seminar at Houston, Tex., Apr. 3-5.

Attendees from Sandia included Lt. C. J. Mauck (7214-2), Commanding Officer; LCDR Robert R. Harnar (2122-2); LCDR G. W. Hosking (2122-2); and LCDR J. M. Houston, USN, Ret. (2332-2).

The group was given a briefing on the mission and overall responsibility of the Manned Space Center, on the current and future facilities of the center, and on the Gemini and Apollo projects.

White Water Experts To Race in Rio Grande

The 7th Annual Rio Grande White Water Race will be held near Pilar, N. Mex., May 2-3. Boatmen from New Mexico and Colorado will participate in a slalom event on Saturday and a 4-and-one-half-mile downwater event on Sunday.

The course will be easily visible from Highway 64 from Pilar down to the Taos-Rio Arriba County line. Further information is available from Doug Smith (5135), president of Albuquerque White Water Club, tel. 299-7926.

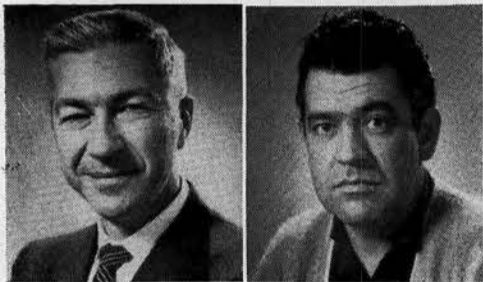
Service Awards

15 Year Pins



L. E. Davies
8110
May 2, 1949

Dora E. Elick
4432
May 2, 1949



S. A. Moore
1540
May 3, 1949

Alfredo Pena
3462
May 4, 1949



L. R. Wilson
4574
May 4, 1949

J. C. Hart
4620
May 4, 1949



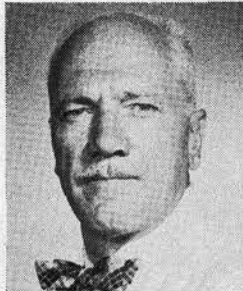
B. M. Langford
4231
May 5, 1949

10 Year Pins

May 1-31

Leroy G. Rainhart 1112, R. B. Middleton 2136, Naomi L. Myszkowski 3126, C. A. Sullivan, Jr. 1313, Anthony Toya 6021, Jeremiah F. Donovan 7224, Earl E. Minor 2122, Edward J. Newfield 2642.
Ernest E. Landavazo 4573, Joseph A. Woodley 4632, Clarence L. Kassens 7253, Thurman H. Moyer 2343, F. Mary Bacon 4432, Byron F. Murphy 5410, Eugene R. Frye 1112, Ivy E. Dunn, Jr. 2441, Harold Schulte 4413, Florence M. Bonnell 6020, George H. Johnson 7332, Harrison W. Young 2624, Robert C. Ezell 3465, Carl W. Kochmann 4224, C. J. Kentfield 4431.
Anne E. McCullough 4431, Donadieu Sonnier 4573, Samuel M. Cummins 2132, Fred A. Drummond 4233, John W. Budlong 7332, Edward J. Kurpiers 2413, Harvey D. Kubiak 2621, Dale R. Hanely 4211, Isabel L. Baca 4574, R. P. Noble 8122, and Jeanne R. Powell 8123.

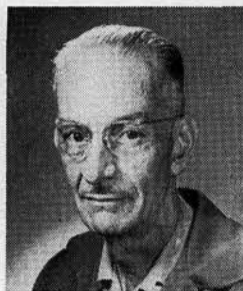
Deaths . . .



Ralph L. Holloway, a Sandia employee for more than nine years, died in a traffic accident Apr. 17. He was 56.

Mr. Holloway worked in Design Definition Section AI, 4411-1. Funeral services and burial were in Philadelphia, Pa.

Survivors include his widow, a son, Ralph Jr., of San Jose, Calif.; a grand-daughter; his mother and a sister, both of Penn.

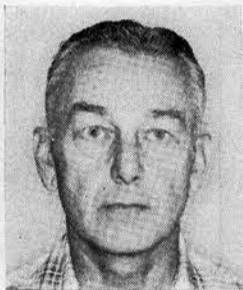


Howard Melling, a retired Sandia Corporation employee, died Apr. 19 after a short illness. He was 70.

At the time of his retirement in January 1959, Mr. Melling was a model and instrument maker. He had been

with Sandia seven years.

Survivors include his widow, six children, seven grandchildren, and a sister.



Frank (Fritz) Bennett, a Sandia employee for nearly 10 years, died suddenly Apr. 8. He was 50.

Mr. Bennett was a staff assistant in Methods and Audit Section 2343-1 at the time of his death.

Survivors include his widow; a son, Lawrence, stationed with the Navy in Newfoundland; and his sister, brother, and mother, all residing in Chicago.

Sympathy

To Tomas A. Baca (4575-1) for the death of his sister Apr. 6 in Albuquerque.

To Joe Guzman (7325-1) for the death of his father-in-law in Phoenix, Ariz., Mar. 2.

To Willard Rappleyea, Jr. (4212) for the death of his father in St. Charles, Mich., Mar. 30.

To L. R. Neibel (4330) for the recent death of his mother.

To W. E. Lew (4332-2) for the recent death of his daughter.

To D. E. Hurt (2561) for the recent death of his father.

To M. W. McMullen (3242) for the death of his father in Albuquerque, Mar. 21.

To Domingo B. Martinez (4575-1) for the death of his sister in Las Vegas, N.M., Mar. 29.

To Jose C. Valdez (4575-1) for the death of his mother in Denver, Colo., Apr. 1.

To Martha Spencer (3126-5) for the death of her husband on Apr. 1.

To Biliardo Sedillo (4575-1), for the death of his mother in Belen on Apr. 16.

Law Day, U.S.A.

'Observe the Law--- Key to Order, Justice, Freedom'

In 1958, the President of the United States proclaimed that May 1 of each year should be set aside for the observance of "Law Day, U.S.A." The observance was given additional authority in 1961 by a joint resolution of the Congress.

Law Day, U.S.A. is an effort of the legal profession, with the cooperation of leading business, educational, religious, and civic organizations, to bring about a deeper awareness of our system of liberty under law, in contrast to the denial of human dignity and rights under the communist system.

In his proclamation of Law Day, U.S.A. — 1964, President Johnson stated that, "Bringing a fuller awareness of these truths to all citizens, and particularly to young Americans, is the central purpose of the seventh annual Law Day U.S.A., on May 1, 1964. The theme of 'Observe the Law — Key to Order, Justice, Freedom,' will serve as a timely reminder that the basic values of our system can be maintained only through voluntary adherence

Sandia Takes Part In Rock Channeling Experiment at NTS

Five 20-ton charges of chemical high explosives buried in a row will be detonated simultaneously at the Nevada Test Site in June, the Atomic Energy Commission has announced. The experiment, evacuation of a channel in hard rock, is part of the Plowshare Program of developing peaceful applications for nuclear explosives. No nuclear explosives will be involved in this experiment.

Data obtained, however, will be useful in designing nuclear row charge excavation experiments. Of particular interest is whether explosions form channels in rock as they do in soil.

Technical direction of the project will be by Lawrence Radiation Laboratory. L. J. Vortman (5412) will be in charge of close-in air blast measurements and J. W. Reed (5414) will be in charge of micro-barograph measurements. Field Test project engineer for these Sandia programs will be A. M. Triest (7245).

A number of row charge experiments have been conducted using chemical explosives in a medium of lightly cemented sand and gravel (alluvium). Channels produced have several interesting and potentially useful characteristics — relatively smooth edges and bottoms, material thrown out falls to the sides and not to the ends making it easy to connect such channels, and the volume of the channels is greater than the volume of a series of overlapping single craters. Adjacent explosions reinforce each other.

Plowshare scientists believe that row charges will produce a similar channel in hard rock. Data from the experiment will contribute to a nuclear excavation technology.

TEACHERS attending the National Science Foundation Academic Year Institute, held in Albuquerque Apr. 9, visited several Sandia facilities. J. C. Moody, supervisor of Length and Mass Standards Section 2411-1, conducted the group on a tour of Sandia's Length and Mass Standards Laboratory.

to the rule of law in our daily lives."

The preservation of democracy is assured by the individual citizen's participation in the government; in the American system, this participation involves such activities as jury service, court testimony of a witness, election campaigning, informed voting, and active opposition to injustice. These activities assure that the power of the government remains vested in the people.

Law Day, U.S.A. — 1964 will be commemorated at Sandia Base with a no-host luncheon at the Officers' Mess, sponsored by the Field Command Judge Advocate's Office on Apr. 30. Master of Ceremonies for the luncheon will be K. F. Hertford, Manager, Albuquerque Operations Office, AEC. Guest Speaker will be Governor Jack M. Campbell.

Attending from Sandia Corporation will be S. P. Schwartz, President 1; R. W. Henderson, Vice President, Weapon Programs 100; R. B. Powell, Vice President, Personnel 3000; F. C. Cheston Jr., General Attorney, Secretary and Treasurer 6000; R. M. Betz, Patent Manager 6010; R. A. Ledogar, Attorney 6030; and T. M. Gemberling, Attorney 6040.

Nuclear Society To Present Lecture Series at LASL

Trinity Section of the American Nuclear Society will present a series of unclassified technical lectures at Los Alamos Scientific Laboratory on Apr. 29. The series, titled "Nuclear Activities in Albuquerque," will be held at the Administration Building Main Auditorium from 1:15 to 4:45 p.m.

Last year at this time, LASL made a similar presentation at Sandia Laboratory. This year's presentation is an effort to acquaint LASL personnel with nuclear activities in the Albuquerque area.

G. A. Fowler, Vice President, Development 7000, will discuss "The Aerospace Nuclear Safety Program at Sandia Corporation," and J. W. Easley, Director of Radiation Physics 5300, will speak on "Radiation Effects Studies and Facilities at Sandia Corporation."

Other speakers on the program will include Col. M. E. Sorte, USAF, Deputy Director of the Air Force Weapons Laboratory, KAFB, "Air Force Weapons Laboratory Activities at KAFB"; Col. Chas. Stewart, USAF, Director of Nuclear Safety, KAFB, "Air Force Directorate of Nuclear Safety Activities at KAFB"; and W. T. Geyer, Director of Engineering, ACF Industries, "Nuclear Engineering Activities at ACFI."

John Colp (7412) is chairman of the program committee for the presentation. Current officers of the Trinity Section include D. M. Ellett (1541), chairman; A. H. Hasenkamp (5331), secretary; and P. D. O'Brien (5332), treasurer. Joint Technical Council representatives include W. H. Schmidt (5331), and R. M. Jefferson (5332).

Information about the meeting is available from any of the current Trinity Section officers.



Sports Car Fans Help Stage Benefit Racing Event

Behind-the-scene workers at the 10th annual Fort Sumner Races on May 2 and 3 will include a number of Sandia sport car enthusiasts.

Jack Shoup (1430) will be chief of scoring and W. J. Denison (1512) will be the chief steward. One of the race's co-chairmen is Dave Berry (4431). Leon Day (7215) is in charge of communications and Lloyd Melick (1422) is on the publicity committee.

Ruth Shoup (2323) is the race secretary and in charge of registration. Jim Hudson (5311) is on the flag team. Jim Phillips (2451) is the pit steward and will be assisted by Dave Nokes (2451). A driver's school run in conjunction with the race will have as its instructor Ken Haynes (5332).

The course is 3.2 miles long. On Saturday there will be three five-lap races, and on Sunday, four 12-lap races. Reservations may be made with Ruth Shoup for the barbeque on Saturday night.

The races are sponsored by the Rio Grande Chapter of the Sports Car Club of America and the Fort Sumner Lions Club (to finance its charitable activities).

Congratulations

Mr. and Mrs. M. D. Elifritz (1423), a son, Andrew Dwaine, Mar. 27.

Mr. and Mrs. C. J. Cron (1122), a son, Christopher John, Mar. 31.

Mr. and Mrs. L. E. Terry (1433), a son, Philip Bret, Mar. 31.

Mr. and Mrs. W. R. Reynolds (1513), a son, Kevin Ray, Apr. 4.

Mr. and Mrs. T. F. Long (4136), a daughter, Christine Marie, Apr. 3.

Mr. and Mrs. R. S. Sonnenberg (1523), a daughter, Diane Carol, Apr. 5.

Mr. and Mrs. Julian Bartlett (7331-3), a daughter, Tracie Leigh, Apr. 6.

Mr. and Mrs. J. E. Uhl (7324), a son, Christopher Eugene, Apr. 6.

Mr. and Mrs. E. C. Reilly (3462), a son, John Andrew, Apr. 16.

Mr. and Mrs. C. R. Andes (4152-2), a daughter, Tracy Lynn, Apr. 18.

Mr. and Mrs. E. L. Hollar (1124), a son, Kevin Lyle, Mar. 13.

Mr. and Mrs. Jack Davis (3411), a son, Bart, Mar. 16.

Mr. and Mrs. Henry Street (4211-1), a son, Henry Kelso Jr., Mar. 19.

Mr. and Mrs. W. B. Estill (1122-2), a daughter, Mary Ellen, Mar. 19.

Mr. and Mrs. F. N. Coppage (5323), a son, Arthur Thomas, Mar. 19.

Mr. and Mrs. P. D. Shoemaker (4413), a daughter, Bonnie Jean, Mar. 19.

Mr. and Mrs. H. A. Plumer (4254), a son, Gregory, Mar. 23.

Mr. and Mrs. C. A. Davidson (2621), a daughter, Christine Marie, Mar. 25.

Mr. and Mrs. Donald Hester (5322), a son, Clinton Douglas, Mar. 28.

Mr. and Mrs. Reynaldo Gonzales (4611), a son, Richard, Mar. 29.



Brian Finley Writes Lyrics for New Recording

Brian Finley, supervisor of Salary Job Evaluation Section 3111-1, has written poetry for some time. Recently, he tried his hand at lyrics for a song.

The result, called "They Followed the Wind," and sung by the "New Mexicans," a group which includes several other Sandians, has been recorded and will be released in Albuquerque soon.

"'They Followed the Wind' is written in the folk song idiom," Brian says. "It recounts the experience of Coronado and his men as they made their way into this area from Mexico."

MEMBERS of "The New Mexicans," singing group which recently recorded album of folk songs and spirituals entitled "Something Different," include (l to r) C. E. Abraham (5422), D. L. Rost (3211), C. H. Purdue (2442), and B. H. Finley (3111). Mr. Finley wrote lyrics for "They Followed the Wind."

The group which sings the selection, directed by Norman Russell Bell, includes Brian's wife, and Calla Crepin (3421), C. E. Abraham (5422), N. A. Beauchamp (5411), R. E. Bertrand (4413), E. E. Minor (2122), C. H. Purdue (2442), R. N. Rose (3122), D. L. Rost (3211), and F. F. Taylor (3465).

"They Followed the Wind" is one of an album of 12 songs issued by QQ Recordings.

PAGE SEVEN

LAB NEWS

APRIL 24, 1964

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

FOR SALE

MOSSMAN 3 bdr., 1 1/2 baths, double garage, room for den, recently redecorated, new wool carpet, AC, FA heat, 4 1/2%. Wheeler, 256-7284.

3-BDR, 1 1/2 bath, \$1000 new carpeting, all rough-ins, disposal, utility room, landscaped, requires \$450 down at FHA appraisal. Forner, 255-9897.

HELENE CURTIS commercial hair dryer, \$18. Hart, 256-2811.

LOTS, NE location. Dunaway, 299-1422.

MOTORCYCLE, Allstate, 175cc, generator disconnected (now running off battery), \$150 or best offer. Chandler, 298-5069.

'59 FORD 1/2 ton-6 cyl. pickup, 4-speed, short, wide box. Fifer, 344-9814.

WILSON baseball shoes, size 10 1/2, \$5; \$14 Nakomis catcher's mitt, \$5; tennis shoes, size 8 1/2, \$1.50; new face projector, \$1.50. Costello, 256-9702.

BANJO with case, Joe B. Rogers, Jr. head, \$95. Ray, 299-5278.

'63 RAMBLER Classic 550, 4-dr., auto. shift, radio, 8300 miles, blue; 1958 Thunderbird, yellow, black & white interior, new tires. Far, 299-7232 after 4 p.m.

2-WHEEL utility trailer with steel bed, 4x6; used lawn mower, 18" gasoline reel type, new cutting blade, \$20. Miera, CH 3-1826.

GERMAN shepherd, AKC registered, 18 months old, house-yard-and-obedience trained, \$55. Schreiner, AM 8-4159.

ELECTRIC stove, \$100; brown rug 9x16, \$25; baby bed, complete, stroller, car seat, training chair, \$20. Glenn, 2832 Dakota NE, AM 5-0647.

'56 RAMBLER station wagon and 1958 Cushman Eagle motor scooter. Harper, 256-1657 after 5 p.m.

TWO foot lockers; 1 large trunk; 2'8"x6'6" screen door and hardware; 10'x14' cotton rug. Burrell, 299-0233.

CRAFTSMAN 10 in. radial arm saw. Daniel, 299-4761.

'61 MUSTANG Thorobred motorcycle, 12 1/2 hp, 2800 miles, speedometer and other extras, emerald green, \$635 new, asking \$300. Henderson, 255-1941.

ELECTRIC hand saw, \$20; plumbing tools, \$25; pipe fittings, \$15, portable cooler, \$10; seat belts, \$5; luggage rack, \$20. Kross, 255-3088.

PICTURE window glass, 1/4"x5'1 1/2"x4'7", \$7; outside pine door, 32" x 80" with three hinges and Schlage knobs attached and glass panel 21"x80", \$10. Kerns, 255-1450.

BAR BELL, 110 lbs., Healthways w/handles, complete \$18. Denish, 256-1559.

MONO Hi-Fi component set, black lacquer cabinet, \$125. Burkhardt, AL 6-3310.

'58 TRIUMPH roadster. Colquitt, AX 8-2113.

'57 OLDS 2-dr. HT, fully-equipped to include J-2 set up, Cooper, 4052-B Ward Place, Sandia Base, tel. 264-1297.

TWO adorable kittens, mother Siamese, need homes. Walter, 299-2900.

PLAYER PIANO, \$450. Murray, 344-5289.

HI FI, AM/FM tuner, 13 tube by Approved Electronics, \$30; Argus C-3 camera, case and flashgun, \$10. Vivian, 299-1785.

DAIMLER sports car, 1961, V-8, 150 hp, 25,000 miles. Curry, DI 4-7055.

SPEAKERS, walnut corner enclosures with 12" coaxial, \$120 for the pair. Stirbis, 299-5363.

'55 PONTIAC V-8 motor, transmission, rear end. Body total loss but will throw in. Make offer. Dunbar, UL 8-9556, after 6 p.m.

WOODEN FRAME screens for patio, two each 6'x8', one each 6'x6'. Will trade for steel window. Calvery, 255-9545.

'55 FORD fordor, \$125; Storkline baby bed with mattress, \$15. Windsor, 344-6557.

'63 FAIRLANE 500 white sport coupe, 260, V-8, bucket seats, R&H, AC, \$1,750. Touloumis, 255-3670.

5-PIECE dinette set, gray Formica table, orange buttoned chair bottoms, \$30. Hook, 255-1897.

FORD 8N tractor with front loader and plows, \$1000; swivel office chair; dish washer. Patterson, 299-6590.

BY OWNER, three bedroom and family room, 1 1/2 bath, new carpet, near Winrock, no down G.I. Mares, 7723 Robin NE, 299-6958.

'55 OLDS Super 88, 4-dr. hardtop, AC. Cummings, 298-5173 after 5 p.m.

JEEP, 1949 station wagon w/1961 6-cyl. engine, recent rings, valves, paint, \$150; camping trailer, 16', sleeps six, \$800. Harnar, 299-3400.

STEEL casement with frame window, approx. 50x40"; 4x8 12-ply plywood; 4 outside shutters, 50" long; size 37 western suede jacket. Dolhohn, 299-8107.

ALUMINUM blinds (green) suitable for a screened-in porch, varying in width—7', 5' and 3'. McMaster, 268-8062 after 5:15 p.m.

GAS RANGE, Maytag, \$25; electric range, GE, \$50. Sanchez, 256-1064.

HOME air conditioner, \$35. Pierce, 255-7923.

KENMORE washing machine, \$50. Kohut, 298-0695.

MASONIC RING, 32nd degree Scottish rite, diamond set, double-headed eagle crest, Fogg appraisal \$350, will sell for \$250. Davis, 299-9079.

CORNET and mutes, \$95. Hayes, 298-4682.

PORTABLE typewriter, Smith - Corona "Sterling," tabulator, \$45. Dossey, AL 6-0857.

'57 DODGE 2-dr. hardtop, auto. trans., licensed, make offer. Payne, 268-3184.

'55 DE SOTO, factory air conditioning, power steering, power brakes, 4-dr. sedan. Mikkelsen, 268-1485.

CUSTOM CHAPMAN, 3-bdr., den, approx. 1600-sq. ft., fronts on park, 10 min. to Sandia, double garage, 1 1/2 bath, sprinklers. Barnum, 299-4939.

'62 RENAULT Gordini, white, less than NADA. Randle, Placitas.

3-BDR., built-in electric stove, refrigerator, wall-in garage, AC, \$200 down, financing arranged. Curkendall, 298-4738 weekends or after 5 p.m.

'53 DODGE Coronet, 4-dr., auto. trans., R&H, \$100. Eden, 298-5182.

COLT .45 revolver, U.S. Army mod. 1917, 6 half-moon clips, 100 rounds ammunition, \$30. Drury, 282-3195.

SHOPPING CENTER

NEXT DEADLINE FOR SHOPPING CENTER ADS Friday Noon, May 1

OR SWAP, Sandia Knolls lot 115, power and water. Nogle, 299-3863.

'50 CHEVROLET, 4-dr.; two 8:00-8:20x15 snow tires, never used; one 15 in. Cadillac wheel. Brooks, 299-1884.

'60 FALCON wagon, 4-dr., stick shift, seat belts, R&H, AC, \$750. Holben, AM 5-0998.

'57 FORD V-8, 4-dr., stick shift with OD, \$350. Peet, 256-3049.

'60 INTERNATIONAL Travelall, V-8, automatic, 35,000 miles, AC, two gas tanks, equipped for trailer. Bice, 5717 Gilmer Pl. NE, 255-5613.

'60 CHEVROLET station wagon "Brookwood," power steering, ermine white, seat belts, 4-dr., \$995 (NADA price \$1155). Huff, 256-9426.

TAPE RECORDER, stereo model, Magic-Eye indicator; Kenmore rotssette broiler grill, timer & temp. control. Shinn, 8607 Los Arboles NE.

'59 RAMBLER Super 6, 4-dr. station wagon with overdrive, '64 tag, \$925. Gatlin, 255-5171 before 9 p.m.

HI-FI, Columbia console. Stoner, 299-6892 after 5 p.m.

ELECTRIC STOVE, 40" wide, white, \$69.50. Padilla, AX 9-0460.

VIKING II w/VFO, \$125; 2 meter rig, \$65. Cundy, 255-0381.

GLADIRON mangle, portable, \$25; Unger auto race, mounted, \$6; window auto AC, \$2; soapbox racer, \$14; wheels only, \$8. Adams, 256-7265.

.22 CAL. Ruger standard semi-automatic pistol with holster. Wilde, DI 4-6079.

PING PONG table and small evaporative cooler. Any offer considered. Breipohl, 256-3368.

SW VALLEY, 3-bdr., den, 26' LR w/vigas, 2 fireplaces, carpeted, 1 1/2 bath, double carport w/storage, 2000 sq. ft. Less than appraisal. Roth, CH 3-7049.

GAS RANGE, \$40; electric refrigerator, \$40; reel (push) lawnmower, \$15; Coleman icebox; used Remington auto-hone shaver, \$7. Letbetter, 246-1242.

ELECTRONIC counter chronograph, 5 decade 100 KC time base. Mages velocity measurements of bullets, \$65. Vaughn, 298-5919.

STUDENT airplane, T-craft BC-12D, new license, A-80 engine, 360 smoh, 1450 TT, \$1250. Lochner, 265-4037.

9'x12' umbrella tent, \$30. Hansen, 3119 Lykes Dr. NE, 298-0308 (after Apr. 27).

'63 COMET, custom 4-dr., 170 cu. ft. engine, 4-speed, R&H, other extras, in warranty, under book. Fisher, AX 8-0526.

BELT VIBRATOR, Walton Line design, Westinghouse. Anaya, 344-3245.

3-BDR., separate dining room, heated workshop, \$12,000. Rudeau, 256-2380.

BABY CRIB, deluxe, complete, cost \$60 new. Make offer. Adams, 264-2192.

17" TV Crosley console, wood cabinet, \$25; 2 tires, 6.70x15, some tread, \$1 each; crack and bottle capper, \$4. Ringst, AM 8-2896 after 5 p.m.

'59 RENAULT Dauphine; 1961 Studebaker Lark, 6 cyl., 4-dr. Corey, 865-9970.

SACRIFICE, Hammond chord organ, original price \$1000, asking \$495. Ricker, 256-2678.

NEW ZEBCO spin rod and reel, retails \$25, asking \$15; new Iona blender, retails \$30, asking \$20; double wardrobe, \$30. Mitcham, AX 9-8425.

SHOPPING CENTER

3-PC sectional turquoise; two walnut step tables, walnut coffee table; 5-pc. dinette set. Rutherford, 298-0773.

HO TRAIN layout, 4'x8', pike includes 9 switches, 40' track, 20 buildings, control box, 2 transformers, cost \$120, sell \$60. Schorr, 255-7234.

'62 PHILCO 30" pushbutton electric range, \$95. Smith, 256-0375.

TWO-BDR. HOUSE, faces University Golf Course, dining room, large kitchen, hw/floors, walled back yard w/5 fruit trees. Hamilton, 268-9787.

7'x8' WOOD garage door w/hardware, \$10; 8.25x15 truck tire and 8-hole wheel, \$10; Cub Scout uniform, size 10, \$7. File, 344-8853.

'57 OLDSMOBILE 98 2-dr. HT, full power. Capaldi, after 5 at 318 Mesilla NE.

'50 PONTIAC 4-dr., needs work, best offer; steel casement window w/screen, 36"x38", \$10. Schimke, 299-6375.

VIKING STEREO TAPE DECK and pre-amplifiers, \$210; or Voice-of-Music stereo tape recorder with \$40 in pre-recorded tapes, \$100. McIntire, 298-6145.

MARBERRY 3-bdr. and den, fireplace, 1 1/2 bath, 8' gate into back yard, drapes, carpet, a/c, other extras. Stuart, 299-9190.

'60 VW SEDAN w/or wo/radio and anti-sway bar. Thompson, AX 8-0946.

FOR TR CAR: custom trailer hitch, hand crank, new fan belt, and boot; also new Hydro-Flite jumping water skis. Rowley, 299-8419.

'64 PONTIAC TEMPEST LeMans conv., V8, 4-speed. Giolma, 242-5556 evenings or weekends.

3-BDR. MANKIN, walled, patio, lawns, sprinklers, carpeting, a/c. Long, 299-1416.

'59 VW SEDAN, radio, seat belts, \$850. Kidd, 299-0035, 11008 Elvin Ave. N.E.

MOSSMAN LONDONAIRE 3-bdr., large living room, 2-way fireplace, 1 1/2 bath, drapes, carpets, landscaped, 2819 Dakota, NE. Bustamante, AM 8-0532.

LOT near Penasco on the Rio Pueblo, excellent for summer cottage, near winter skiing. Scranton, 299-5720.

YELLOW HEAD PARROT, young, tame w/ cage, \$35. Matlack, 256-7371.

SET OF ENCYCLOPEDIA BRITANNICA, complete w/large dictionary, 2 year books, and stand, paid \$225, sell for \$100 cash. Montoya, 344-6222.

INNERSPRING MATTRESS and box spring set for double bed, \$15. Holmes, 299-4167.

'61 BUDDY MOBILE HOME 55x10 w/living room extension, newly carpeted, a/c, completely furnished, parked at Aloha Village Mobile Home Park. Hunt, 243-0162 or 268-4200.

'56 FORD 4-dr. w/new '58 engine 6, stick shift, \$250. Rush, 298-4521.

MATCHING DEN CHAIRS, \$10 ea.; also round two-tier coffee table, \$7. Chandler, 298-5069.

'57 MGA, Michelin X tires, new batteries. Oravec, 299-3247.

3/4 ROLLAWAY BED, \$25; .22 cal. rifle, 8-shot w/weaver scope, extra clips and cleaning kit, \$25. Rauch, 268-0232.

FRIGIDAIRE refrigerator, \$30. Nogales, 1100 Silver SE, CH 7-1178.

CRAFTSMAN vibrating jig saw, \$18; and Synco orbital sander and polisher, \$12. Reynolds, 299-7832.

'57 BUICK SUPER 4-dr., automatic transmission, R&H, a/c, other extras, low mileage. Vickers, 256-1418.

CUSTOM 3-BDR. HOME, den, fireplace, carpeting, drapes, a/c, built-ins, double garage, patio, landscaped, \$24,500; piano, modified upright, \$150. Amos, 298-4470.

FULL-SIZE SADDLE, quick change stirrups w/bride and blanket, \$60 or trade for tools, furniture or misc. Coalsen, 282-3208.

SHOPPING CENTER

BED, rollaway, 3/4 size, \$8. Stuart, 299-9190.

3-BDR. 1 1/2 bath, 26' living room, country kitchen w/bar, carpet, drapes, fireplace, double garage, \$104 monthly. Fisher, AX 8-2546.

'58 CADILLAC, 4-dr., HT, full power. Hare, 299-7137.

WARDROBE, plywood; gas range; refrigerator w/large freezer compartment. Schulteis, 268-0573.

ARGUS C-3 camera, complete filters, aux. lenses, polarizer, attachments, \$15; Sunbeam hand mixer, \$5; GE 12" fan, \$8. Dehon, 898-2219.

CLARINET AND CASE, B-flat Bundy, \$75; 2 men's sport coats, wool, size 42, \$5 ea.; laundry tubs, double, worktable top, on legs, \$7.50. Thayer, 1424 Hoffman Dr. NE, 299-3127.

OR RENT: 1 1/2 bath, den w/fireplace, double garage, sprinklers front and back. See at 10820 Cordova NE. Burns, CH 2-2407 evenings or weekends.

BEAGLE PUPS, 8 weeks old. Woodall, 299-6729.

'56 FORD 4-dr., big engine, AT, radio, new paint, seat belts, \$395. Driscoll, 298-4641.

'52 GADABOUT CHEVROLET, 4-dr., overhauled engine, diminutive gasoline consumption, heater, standard transmission, forest green, all for \$99. Weinreich, DI 4-9167.

'61 OLDS 2-dr., radio, PS, PB, \$1550. Pritchard, 268-9618.

DREXEL mahogany bed, dresser, \$40; Kuba stereo, AM-FM, extra speakers, \$175; antiques: small desk, 4 chairs, pictures, misc. Runyan, 255-6719.

FOR 1 YEAR LEASE, 3-bdr. brick home, den, FA heat, HWF, double garage, AC, 2728 Palomas NE. Hudson, 256-0564.

WANTED

RIDE FROM vicinity of Constitution and Louisiana to Area 3 gate. Flowers, 256-1656.

WILL CARE for child in my home on Sandia Base. Cook, 264-6393.

CEMENT MIXER, and 1/4-1/3 hp electric motors. Abrams, DI 4-8252.

A RIDE or join carpool from Euclid and Pennsylvania to Bldg. 840. Trujillo, 298-5264.

BERAUDIA grass sod or plugs. West, 299-6695 after 6 p.m.

TENOR saxophone, good condition. Vandl, AL 5-0685.

RIDE OR carpool from Hoffmantom area (Wyoming and Menaul) to Bldg. 838. Hawes, 298-8461.

CONCRETE mixer, small 4 to 6 cu. ft. Sears & Roebuck type. Vaughn, 298-5919.

JOIN car pool from Echo Ridge to Bldg. 802. Flower, 247-8028.

NAME of people living on Base who do professional clipping of poodles. Matlack, 256-7371 evenings.

FOR RENT

2-BDR. APT., unfurnished, 536 San Pablo SE, near base, \$75/mo. Puccini, 242-7137.

AVAILABLE JUNE 1, 3-bdr. furnished house, NE Heights, carpeting, built-ins, double garage, 3801 Douglas MacArthur NE. Tullar, 344-1443.

3-BDR., 1 1/2 bath, brick home, 940 Dakota SE, \$135/mo., water and garbage paid. Jiron, 268-8573 after 6 p.m.

LOST AND FOUND

LOST—Men's sunglasses w/plastic frames, man's Timex watch, Chevy II hubcap. LOST AND FOUND, ext. 264-2757.

FOUND—Ladies' white fabric glove w/pearl trim, 15-yr. SC tie clasp, ladies' sun-glasses w/gold trimmed plastic frames, car key. LOST AND FOUND, ext. 264-2757.



Value Engineering Education

Monday, May 4, will mark the start of Sandia Corporation's Value Engineering Education Program. At 7:45 a.m., 25 participants from various Sandia organizations, as well as invitees from Bendix Corporation, Kansas City and ACF, Albuquerque, will convene to begin a 40-hour workshop scheduled for four hours each day for two weeks.

E. L. Devor, J. M. Hueter, R. F. Phillips, and K. A. Sarason, all of Product Data Division 2563, will provide the training and workshop consultation, along with the assistance of D. L. Hughes and E. R. Servis of Technical Training and Education Section 3132-1. In addition, members of Sandia management will discuss various aspects of Value Engineering as guest speakers.

"Value Engineering is the newest and perhaps the most effective organized approach to reducing the costs of product and services without compromising reliability, schedules, and quality," Elmer Devor explains. "Applied through the process of analyzing true function to identify and eliminate unnecessary and excessive costs, Value Engineering also frequently

reveals major improvements to product manufacturability and performance, as well as improvements to operations."

PREPARATIONS for forthcoming Value Engineering Education Program are being made by instructors (l to r) J. M. Hueter, E. L. Devor, and K. A. Sarason, all members of Product Data Division 2563. Fourth member of the teaching team (not pictured) is R. F. Phillips (2563-1). Program sessions begin May 4, will continue through May 15.

Both President Johnson and Secretary of Defense McNamara have encouraged cost reduction programs designed to ensure that the government "get a dollar's value for every dollar spent." In a letter, dated Dec. 2, 1963, to 7500 defense contractors, President Johnson stated, in part, "I have directed the heads of all government agencies to accelerate immediately their efforts to operate their programs at the lowest possible cost . . . I am calling on you personally to assist me . . . in achieving further significant reductions in Defense expenditures . . . If you already have such a (cost reduction) program in being, then I call on you to accelerate, expand, and intensify this effort."

In a similar letter to defense contractors, Secretary of Defense McNamara states, "Some defense contractors now have formal value engineering programs and such contractors have been able to recommend hundreds of ideas to reduce costs of parts, components, and end items by as much as 50 per cent. I urge all contractors to stress such critical examinations . . ."

On Mar. 14, 1964, Glenn Seaborg, Chairman, Atomic Energy Commission, wrote to "Fellow (AEC) Employees," in part: ". . . we plan to press vigorously ahead with further steps to operate our programs at the lowest possible cost consistent with maintaining essential high quality and performance standards . . . I will be requesting selected contractors to accelerate their cost reduction programs . . . Today I call on you to participate in these efforts and to assume personal day-to-day responsibility for devising and proposing ways for improving performance and reducing costs in your assigned areas."

Members of the teaching staff have been trained in Value Engineering concepts. Jack Hueter and Ken Sarason participated in sessions at the University of Wisconsin in October 1963; Dick Phillips and Ed Servis attended a two-week workshop at Motorola, Scottsdale, Ariz., this month; and Elmer Devor was involved with Value Engineering at the General Electric Company before joining Sandia in 1958.

"Because of its prominent design and manufacturing development activities, Sandia Corporation should benefit greatly by the application of Value Engineering to its product and services as should other AEC contractors," Elmer concludes.

"I understand," he said, "that there are contracts in existence or are being produced whereby the performance of a satellite in orbit increases profit to the designer and manufacturer of the system and at the same time produces the benefits that good performance brings to the success of space projects."

President Johnson Asks . . .

A Dollar's Value for Every Dollar Spent

Mr. Schwartz first mentioned profit in the broad sense, namely, to derive benefit or to be of use or advantage.

He pointed out that there is a growing tendency toward incentive-type supplier contracts whereby a good product produces financial profit for the manufacturer and produces this profit in the form of good performance for the user.

Another area discussed by Mr. Schwartz was profit to the taxpayer resulting from the Administration's objective of getting a dollar in value for every dollar spent.

"I'm sure," he said, "we all applaud President Johnson's program which has been brought to the attention of industry in a letter such as was received by the President of Western Electric."

Mr. Schwartz quoted the letter:

"In addressing the Congress last week, I pledged my Administration to the utmost of thrift and frugality, and to get a dollar's value for every dollar spent."

"I have directed the heads of all government agencies to accelerate immediately their efforts to operate their programs at the lowest possible cost. The Secretary of Defense has already established a cost reduction program aimed at achieving annual savings of \$4 billion, through efforts now in process or planned by Fiscal Year 1967, and he has further committed his Department to realizing \$1.5 billion of these savings in the current fiscal year. More than 55c out of each Defense dollar is spent by its contractors. It is for this reason that I am calling on you personally to assist me and the Secretary in achieving further significant reductions in Defense expenditures."

"It is my desire that you establish an affirmative program of cost reduction in the performance of Defense contracts, both those which you now hold and those you may subsequently receive. If you already have such a program in being, then I call on you to accelerate, expand, and intensify this effort."

"I have asked the Secretary of Defense to take into account the accomplishments of contractors who successfully reduce the cost of Defense procurement, when making future source selections, and in determining profit and fee rates on non-competitive negotiated contracts."

"I have also discussed this program with the Director of the Budget and the Comptroller General."

"The Secretary of Defense's letter, elaborating this program is enclosed. It has my fullest endorsement. Sincerely, Lyndon B. Johnson."

This letter, Mr. Schwartz told the conference, was followed by one from Mr. McNamara for the Department of Defense with suggestions and recommendations for strong cost reduction programs. James Webb, head of the National Aeronautics and Space Administration, similarly identified the objectives of NASA with particular attention to buying at the lowest sound price compatible with NASA's reliability requirements, placing increased emphasis on incentives and reduction of operating costs.

"Industry has pledged full support to this program," Mr. Schwartz said. He then read several quotes from a letter to President Johnson from E. J. McNeeley, President of the American Telephone and Telegraph Company.

"The requests that you have made are both reasonable and sound, and the Bell System not only endorses your

action, but pledges wholehearted cooperation in attaining your objective.

"As you know, the Bell System is a unique organization composed of the Bell Telephone Laboratories, the Western Electric Company, our Associated Operating Telephone Companies, and the Long Lines Department, which operates the interstate long distance part of our business."

"All of these organizations have directed their efforts primarily toward one objective, namely, a communications system of the best quality at the lowest possible cost, consistent with a reasonable return on the investment involved."

"The Bell Telephone Laboratories has not only developed new, faster, and more reliable communication systems over the years, but has also made many basic research discoveries which have led to such components as transistors, traveling wave tubes, solar batteries, etc., which are now being used at great savings in costs to Government and civilian users alike."

"The Western Electric Company has had a formal cost reduction program since 1928."

"One measure of the results is that the general level of prices in Western Electric was 13% lower in 1963 than it was in 1950, despite increases of 78% in labor costs and 20-25% in material prices."

"In the field of quality control, Western Electric has been a pioneer, setting up a formal program in 1924. It applies the same high quality standards and techniques to Government contracts as it does to Bell System work, and in addition, it is sharing its knowledge and experience with the Air Force and others to help them obtain their quality objectives in other procurement areas."

To Mr. Schwartz, the key word behind the success of this program is "quality"—quality in design, quality in product, quality in performance.

"We at Sandia," he said, "operating on a no-profit basis, must be doubly aware of doing everything possible to get a dollar value for every dollar spent."

Stating that Sandia is placing much emphasis on the word "value" in all its respects (value analysis, value engineering), he reminded the listeners that value is more than a word—it is a state of mind, a cost conscious state of mind.

"It could be defined," he said, "as a scientific method of accomplishing a function at the lowest possible cost and of producing the highest quality product at the lowest expenditure of money." Mr. Schwartz pointed out that achieving better value does not mean reducing quality, or, in Sandia's case, reducing safety in the product for which the Laboratory has design responsibility.

"I do not feel," he said, "that there is any conflict between value or cost and quality for I sincerely believe that the quality product produces the most value per dollar spent."

Sandia Mail Section Supervisor to Lead Seminar for AMA

N. V. Tarnawsky, supervisor of Mail Services Section 3413-2, has been invited to be leader of an American Management Association seminar in New York City June 10-12.

The seminar is entitled "Improving the Mail and Messenger Service."

Mr. Tarnawsky's qualifications in leading a seminar on this subject are backed up by a survey of internal mail delivery at Sandia Laboratory conducted six months ago by Personnel Systems and Procedures Division 4112. The shortest delivery time between two buildings through regular Corporation mail channels was 55 minutes. The average was two hours, 59 minutes—which is very good time, particularly when you consider the size of Sandia's technical area.

Sandia's Safety Record

Sandia Laboratory
HAS WORKED
1,190,000 MAN HOURS
OR 34 DAYS
WITHOUT A
DISABLING INJURY

Livermore Laboratory
HAS WORKED
490,000 MAN HOURS
OR 91 DAYS
WITHOUT A
DISABLING INJURY