



SCOUT HONOR — A. J. Clark, Jr., supervisor of Aerospace Nuclear Safety Division II, 7412, (left) was honored recently by the Manzano District, Kit Carson Council, Boy Scouts of America. He was presented with a certificate of outstanding service for six years' work as Explorer Advisor for Explorer Post 87, Sandia Base. With Mr. Clark are S. P. Schwartz, Sandia Corporation President, and G. A. Fowler, Vice President, Development, both active in the Boy Scout organization. Mr. Clark helped charter Post 87, and led field trips.

G. A. Fowler to Present Paper At U. N. Conference

Glenn A. Fowler, Vice President, Development 7000, has accepted an invitation to present a paper at the Third United Nations International Conference on the Peaceful Uses of Atomic Energy. The conference will be held at Geneva, Switzerland, Aug. 31 through Sept. 9, 1964.

"Aerospace Safety of Isotopic and Reactor Power Sources" is the title of Mr. Fowler's paper. The conference agenda will primarily be concerned with nuclear power and reactor technology. The Atomic Energy Commission has the responsibility for organizing the United States' technical participation in the conference. One hundred technical papers will be submitted by the U.S. to the conference.

Mr. Fowler's paper will describe the aerospace nuclear safety program being performed by Sandia Corporation for the Division of Reactor Development of the AEC. The safety program includes analytical modeling, research investigation, ground tests, and reentry flight tests, all designed to obtain information essential to the assessment of the safety plan for a specific aerospace nuclear system.

Underground Physics Division Participates in Nevada HE Experiments

Sandia Laboratory's Underground Physics Division 5412 is participating in the first of three non-nuclear detonation experiments in a Department of Defense research program, scheduled at NTS earlier this month. Two other detonations are scheduled for spring and early summer.

M. L. Merritt, supervisor of Division 5412, is serving as Program Manager and Consultant to the Chief, Defense Atomic Support Agency. He is also Scientific Director for Field Command, Weapons Effects Test. He is being assisted by T. J. Flanagan of Operations Section II, 7251-3.

Each of the chemical (TNT) high explosive detonations will be of 20 tons yield. No radioactive materials or tracers will be used.

The high explosive charges will be detonated on the surface to obtain data on earth motion and cratering effects as part of an over-all DOD program of nuclear cratering research.

Employees and Families Invited for Saturday Visit To Sphere of Science

The Sphere of Science will be open Saturday, Mar. 14, for employees and families, according to Community Relations Division 3143. The exhibit will be open from 9 a.m. until noon.

A film, "The Sandia Story," will be shown at 9:15, 10:00, 10:45, and 11:30 a.m.

Background Radiation In Albuquerque Shows No Sizeable Change

Since June 1961, when Sandia Laboratory's Pulsed Reactor Facility went into operation and October 1962 when the Sandia Engineering Reactor started operations, background radiation in the Albuquerque area has increased no measurable amount, according to Environmental Health Division 3311.

Background radiation in the Albuquerque area averages 260 millirems annually. A millirem is a unit of radiation measurement. Denver's background radiation averages 300 millirems annually and in Pocos de Caldas, Brazil, the annual average is 7000 millirems.

This is natural radiation and it originates from cosmic rays and earth minerals. It has been with us since the dawn of time. It is in the air we breathe, the food we eat, and the ground we walk upon.

"Comparing man-made radiation with natural radiation is interesting," Harold L. Rarrick, supervisor of Health Physics Section 3311-2, says, "because man has learned to control radiation so well that the effect of radiation released by a nuclear plant is less than the natural radiation from the materials used to build the house you live in."

The Dresden Nuclear Power Station near Chicago adds only 1/2 millirem to Chicago's natural background radiation level of 140 millirems. Half a millirem is only 1/14,000th the radiation that exists naturally at Pocos de Caldas, and only 1/1,000,000th of the average radiation from a life-saving cancer therapy treatment.

Harold points out also that the radiation from a whole body diagnostic X-ray amounts to 25,000 millirems, 5,000 millirems from a dental X-ray, and 100 millirems from a chest X-ray. The potassium contained in the food you eat averages 40 millirems annually, and living in a brick home gives you 35 millirems of radiation annually.

The Atomic Energy Commission limit of radiation exposure for occupational workers is 5,000 millirems annually.

"Thanks to our ability to control the atom and the safeguards employed at reactor sites, man-made radiation exposes the general population to much less radiation than they get from natural sources," Harold says.

RECENT recipients of Certificate of Professional Data Processing, presented by Data Processing Management Association, are Phil H. Arnold, supervisor of Applications Oriented Systems Section 7624-1, left; and Norman A. Smith of Sandia's Administrative Programs Section 7623-1, at right.

SANDIA CORPORATION

LAB NEWS

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

VOL. 16, NO. 5 / FEBRUARY 28, 1964



AEC Spending \$9 Million For Construction at Sandia Laboratory

Construction projects totaling nearly \$9 million either are in progress or are scheduled to begin soon at Sandia Laboratory, the Atomic Energy Commission announces.

Officials of the AEC's Albuquerque Operations Office and Sandia Area Office said new construction during the remainder of the fiscal year 1964 will total some \$6,600,000. When this total is added to some \$1,600,000 for former FY work now nearing completion, and to the FY 1964 construction now underway, the over-all total amounts to \$8,956,650.

Upon completion of the \$9 million program, the value of Sandia Laboratory's government-owned structures and equipment will have climbed to about \$125 million.

In addition, \$760,000 in construction projects will be undertaken at the Tonopah Test Range.

Major project listed in the construction program is a \$3,780,000 Development Laboratory building, to be designated Bldg. 807, which will adjoin Bldgs. 805 and 806. The three-story building will be occupied by research, development, and support personnel. It will resemble the other two buildings and provide about 42,000 sq. ft. of usable floor area. Bids will be invited in July and construction is tentatively scheduled to begin in September. The building will measure almost 300 ft. in length and 83 ft. in width. An estimated \$400,000 in building equipment is included in the cost estimates.

Cecil Morrisett (4543-3) is the Plant Engineering Department project engineer for Bldg. 807.

Other major buildings, valued at \$500,000 or more, planned for construction during FY '64 include a \$620,000 addition to Bldg. 605 which houses the steam plant; a project for \$540,000 which will include both an Explosive Preparation Facility in Area II and an Explosive Chemistry Facility in Coyote Test Field; and a \$500,000 addition to the Technical Library Bldg. 804.

The Explosive Preparation Facility in Area II will be assigned to the 5100 organization but used by all Sandia organizations having need for machining and shaping explosives. The Explosive Chemistry Facility in Coyote Test Field will be used

by Development 1000 organizations. The Tech Library expansion will house the Classified Reports activities of Technical Information Department 3420.

Construction of the three buildings is scheduled to begin next June. Carl Whitcomb is the project engineer for Bldg. 605, Ken Harper is handling the explosive facilities, and John Snowdon is the Tech Library project engineer. All are in Design Division 4543.

A \$260,000 Radiography Facility for 7300 (an addition to Bldg. 860), a \$122,000 Rain and Salt Spray Facility in Area III for 7300, and \$82,000 field trailer checkout facility near Bldg. 880 for 7200 and 7300, road paving and site improvement work in Areas III and V totaling \$194,000, and nearly \$328,000 in minor construction jobs round out the coming projects.

Design Division 4543 project engineers are Ken Harper, Radiography Facility; A. W. Dennis, Rain and Salt Spray Facility; and John Snowdon, Field Trailer Checkout Facility.

Eight modification and minor construction jobs in the amount of \$732,000 are now underway in the FY '64 building program. Most have already started and are scheduled for completion in June of this year. Largest of these is a \$200,000 Electromagnetic Radiation Facility (Bldg. 872) for 7300 due for completion in May.

Other projects under this program include an Explosive Receiving and Packaging Building (\$140,000) for 4600; air conditioning modification in Bldg. 802 (\$90,000); and Instrument Laboratory addition to the Wind Tunnel Bldg. 865 (\$65,000) for Department 7420; a modification to the mezzanine in Bldg. 892 (\$43,000) to house 7200 personnel; an air lock and compressor room to be used by 4200 in Bldg. 841 (\$25,000); and an addition to 7300's Radiant Heat Facility in Area III (\$18,600).

Miscellaneous minor construction work totaling an estimated \$160,000 also is in progress.

Two major Environmental Testing 7300 projects which began in 1962 and 1963 that are rapidly nearing completion are the \$720,000 Dynamic Shock Facility and the \$700,000 Hydraulic Centrifuge. Both facilities, located in Area III, are scheduled for completion this spring.



(Editorial Comment)

There Must Be A Better Way

In 1912 an American naturalist working in Labrador noticed that meat left out of doors in wintertime not only froze quickly, but lasted longer and tasted better than foods frozen slowly. He developed artificial quick freezing of foods and marketed his products.

In 1929 the naturalist who lived in Labrador sold his frozen food company for \$22 million.

An 18th-Century Parisian named Jean-Jacques Perrett got tired of having his face cut by his barber. He thought: why not place a wooden guard over the razor blade so that only a small portion of the edge protruded? Thus was born the safety razor. Today the industry has expanded to the point that one company alone spends some \$30 million a year just to advertise its razors and blades.

The simple paper clip was an invention that almost revolutionized procedures in offices. This tiny wire device made millions for its manufacturers. Helpful as it was, it slipped. Then someone put corrugation on the clips. The man responsible for this development also reaped huge financial rewards.

We may never hit it big like the inventors of quick-frozen food and paper clips and our inspiration may not be far-reaching as the safety razor development.

But if we stop, look, listen, and think, we may be responsible for coming up with some ideas that are truly worth while. If we analyze our jobs with an eye for improvement, chances are good there is a more productive way, more efficient way, or just plain better way to do them.

How To Get More Out of Your Income Tax Refund

When you make out your 1963 tax return (Form 1040), take a look at line 23 on the bottom of the page. It gives you the option of taking your refund in U. S. Savings Bonds instead of a check for the total amount.

There are two big advantages:

1. Taking your refund in Savings Bonds gives you an easy way to hang on to it.
2. When your bonds mature, your refund becomes 33 1/3 per cent bigger. You get back \$4 for every \$3 invested.

Some people even get a nice red, white, and blue feeling from knowing that they are helping their country's future at the same time they are providing for their own.

Think it over when you ask for your refund this year.

Sandia Skiers Are Among Throngs At Winter Olympics

A firsthand view of some of the events at the Ninth Winter Olympics was enjoyed by Stan (4212-2) and Jo Ann Urevitch (2310) during their recent trip to Europe.

They traveled with other sports enthusiasts by jet direct to Nuremberg, Germany (their original destination, Munich, was "fogged in"). Before the start of the Olympics, they skied at Kitzbuehl and St. Anton am Arlberg, both famous Austrian resorts.

"In Kitzbuehl," Stan said, "our hotel room was directly above the one in which Goering had been captured."

They arrived at Innsbruck the day before the start of the Winter Games, which gave them an opportunity to meet members of the American delegation, to see some of the foreign competitors at practice, and to locate the sites of the individual events which were spread throughout the area.

"We thought we were fortunate to have reserved seats for the official opening ceremony. Then we discovered that 150,000 tickets had been sold for the stadium, which only holds 60,000," Stan said. Their bus and other vehicles had to park at least a mile from the stadium—an uphill walk all the way. Although the Urevitchs got to the stadium two hours ahead of the designated starting time, they never did get to their seats. "People were jammed together so tightly no movement was possible, and others were hanging off trees, telephone poles, anything. But the ceremony was very impressive, with the Americans, Russians, and Canadians making the best appearances," he added. Another high point the opening day was seeing the USA-USSR ice hockey game.

They noticed that policemen from throughout Europe had been called in to help with the crowds during the Games. Each wore a nameplate stating which languages he spoke.

"We found the Austrians to be most wonderful people. Although we left Innsbruck at 6 a.m., all the hotel help—even those normally working only evenings—lined up along the stairway to wave 'goodbye' to our group. It certainly made us feel good," Stan said.

From Innsbruck they traveled to St. Moritz, Switzerland, the site of one of the previous Winter Olympics. "In Austria," Stan said, "the natives were complaining



ATTENDING the ninth Winter Olympics in Innsbruck, Austria, was the main feature of Jo Ann and Stan Urevitch's recent trip to Europe.

of the snow shortage because they couldn't ski all the way to their doorsteps in the village. The snow in St. Moritz was fantastic, and everyone did ski to their doorsteps." Many guests continue to dress formally for dinner at the large hotels in St. Moritz. Their group received permission to dine informally in their ski clothes, but only tucked away at a corner table.

Next stop, Munich, where "Fasching" (the pre-Lenten festivities) was underway. They had time to visit a number of the sights in that south German city before leaving for Frankfurt and home.

As for Jo Ann—she's the one on the local ski slopes wearing the custom-made Austrian ski outfit.

PAGE TWO

LAB NEWS

FEBRUARY 28, 1964

Congratulations

Mr. and Mrs. Jack Chavez (2625), a daughter, Pamela, Feb. 5.

Mr. and Mrs. R. L. Nogel (1432), a son, Craig Scott, Jan. 23.

Mr. and Mrs. R. P. Stromberg (1322), a daughter, Marcella, Feb. 7.

Mr. and Mrs. James Carmody, III (4233-2), a daughter, Yvonne Natalie, Feb. 10.

Mr. and Mrs. N. A. Sigmon (7253), a son, Michael Allen, Feb. 12.

Mr. and Mrs. R. H. Braasch (2423), a daughter, Heidi, Feb. 14.

Mr. and Mrs. C. W. Boots (1113-2), a daughter, Cynthia Faith, Feb. 12.

Mr. and Mrs. L. N. Umble (1510), a daughter, Kimberly Louise, Feb. 16.

Service Awards

15 Year Pins



A. J. Max
7254
Mar. 1, 1949

John Kirby, Jr.
2134
Mar. 2, 1949

Salome Ramos
4514
Mar. 2, 1949

Andres Sanchez
4575
Mar. 2, 1949

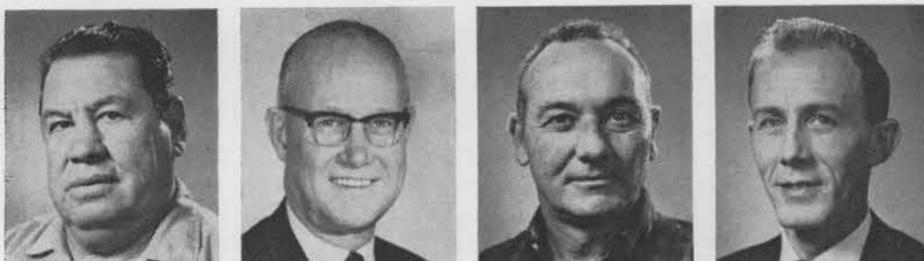


William B. Fears
2134
Mar. 3, 1949

Jose B. Jojola
4514
Mar. 3, 1949

Richard C. Porter
2413
Mar. 7, 1949

Edward L. Johnson
3419
Mar. 7, 1949



Flaviano Sanchez
4573
Mar. 7, 1949

Edward W. Baldwin
8210
Mar. 7, 1949

Armstead A. Arrington
4513
Mar. 9, 1949

J. R. Smith
2342
Mar. 10, 1949



Arlene Blazek (4432)

Take a Memo, Please

Take your good safety habits home with you. More accidents occur at home and off the job than occur on the job. Keep your guard up against safety hazards.

10 Year Pins

March

Walter A. R. Schmedt 4153, Beverly O. Strauch 4413, Elizabeth L. Trump 5420, Victor James Roh 1532, J. Morrison Houston 2332, Joyce D. Coffee 3126, William A. Flynn 3242.

Willard H. Farness 4511, Loradon L. Duben 1120, Bessie M. Roach 8232, Wilbur N. Leamon 2323, Tom C. Garcia 4631, Thomas T. Carbin 3242, James V. Rogers 1511.

William E. Walker 7423, William E. Andrews 2642, Frank R. Emig 4411, Manuel Silva 4575, Kyle B. Williams 4252, Jess Denton 4513, Louise A. Lewis 3421, Fidel B. Zamora 4611, Vonna J. Burroughs 4413, Carol E. Cowan 4431, and John C. Zimmerman 7253.

**SANDIA CORPORATION
LAB NEWS**



ALBUQUERQUE, NEW MEXICO • LIVERMORE, CALIFORNIA

Editor: Robert S. Gillespie
Sandia Corporation, Albuquerque, New Mexico

Editorial Offices
Sandia Laboratory
Albuquerque, New Mexico
Employee Publications
Bldg. 610
Tel: 264-1053

Livermore Laboratory
Livermore, California
Publications & Public Relations
Bldg. 912
Tel: Hilltop 7-5100, Ext. 2395

Permission to reprint material contained herein for other than governmental use may be obtained from the Editor, Lab News, Sandia Corporation.

The Story of Sandia

EDITOR'S INTRODUCTORY NOTE

Many people and reference files provided Author F. C. Alexander with data for this article. He wishes to make these acknowledgements.

James Oxnard and Frank Speakman, founders and operators of the old Albuquerque airport, gave freely of their time and information. Lt. Gen. Leslie R. Groves helped furnish information on the early activities of Sandia Base. Shelton A. Musser, Manhattan Engineer District officer, provided information on the selection of Sandia Base for weapons work.

Lawrence R. Hafstad, active during the war in the Applied Physics Labora-

tory of Johns Hopkins University, and Paul J. Larsen, the first director of "Z" Division of LASL, provided information on the founding of the Division.

Dr. M. J. Kelly, formerly of Bell Telephone Laboratories, helped provide information on the founding of Sandia Corporation. Kimball Prince, formerly General Attorney for Sandia Corporation, provided a complete account of Corporation contract negotiations.

Others who assisted by providing information were Sheldon Dike, James McCormack, Jr., Harley Rowe, Ralph Carlisle Smith, W. Alan Milne, and W. H. Witherspoon.

The site that was destined to be occupied by Sandia originally was open range land, traversed by Sandia Man and later by various Indian tribes. The initial facility to be built on the land was an airport, one of the first and—in its day—one of the finest in the Southwest.

Albuquerque Airport

In 1922 Frank G. Speakman arrived in Albuquerque to work for the Santa Fe Railway, and built a ranch home adjacent to what later became the Four Hills area. Being interested in transportation, he saw a developing need for airport facilities and in early 1928 teamed up with William Franklin to lease 160 acres of homestead land on the East Mesa for Albuquerque's first airport—located approximately where Sandia Tech Area I was later developed. Clyde Tingley, Mayor of Albuquerque, granted off-hours use of a city grader, scraper, and tractor, and, by April 1928, two clear-cut runways stretched over the mesa.

The field, although built with private funds, was named Albuquerque Airport in recognition of the help contributed by the City. The airport's logbook records that the first arrival was Ross Hadley, who landed at 10 a.m. May 15, 1928. Mr. Hadley flew in from Hollywood in a Stearman biplane, and was welcomed with the Southwestern cordiality that was to mark the field for later fliers.

A year before, an American youngster, Charles A. Lindbergh, had flown across the Atlantic. Among the crowd which welcomed Lindbergh at LeBourget Field in Paris was James G. Oxnard of New York. Mr. Oxnard became interested in air trans-

port and returned to the United States determined to pursue his interest in this work. Chance decreed that he would encounter Mr. Speakman at the Albuquerque Airport and become impressed with this field as a potential crossroads for air traffic.

Mr. Oxnard furnished additional financing for expansion and improvement. Land was purchased until the airport covered 480 acres. More runways were created and their surfaces treated. Buildings were erected—first an administration building, and then a small hangar with an adobe lean-to. Next, a restaurant called the Airport Inn was constructed, and finally a large hangar.

A decade of intensive activity then followed. Art Goebel, an expert pilot from Belen, N. Mex., surveyed east-west routes across the United States and recommended one through Albuquerque. Lindbergh flew this route and urged its acceptance and use by Transcontinental Air Transport (the Lindbergh Line), and eventually both TAT and Western Air Express used the Albuquerque Airport while competing against each other. Varney Air Lines, originating in Denver, used the field in its flights to El Paso.

In September 1931, a plane, piloted by James Doolittle (later to become a general in the Air Force), set a transcontinental speed record between Burbank, Calif., and Newark, N.J. Thanks, at least in part, to a quick seven-minute refueling at Albuquerque (the engine was kept running during this operation while the pilot sat on a wing and munched a sandwich), a cross-country flight time of 11 hours 15 minutes was established.

Competition between TAT and Western Air Express grew apace. Transcontinental Air Transport had the best weather forecasting and radio facilities (installed, incidentally, by Herbert Hoover, Jr., son of



the then President of the United States). Western Air Express leased space to Fred Harvey for a restaurant, and thus, users of the field had a choice of two eating places.

As engine power and landing speeds increased, pilots began to feel that the Albuquerque Airport was too close to the Sandia and Manzano mountains. Western Air Express was first to move, and built an airport on the West Mesa. Shortly afterward, the U.S. Postmaster General offered an air mail contract to TAT and Western Air Express on the condition that they merge to eliminate duplication of routes. They did so, in July 1936; called the merger Transcontinental and Western Air; and used the West Mesa Airport.

Albuquerque Airport (now unofficially called Oxnard Field to distinguish it from the West Mesa Airport) was, for a time, used for charter operation and flight instruction. Finally, even this business began to fade and the airport drifted into somnolence, guarded by a lone caretaker.

Wartime Use

Several months later the field was rudely awakened from its peaceful existence. The country was at war, and the runways could be of use. On Apr. 3, 1942, the Secretary of War (who then directed the Army Air Corps) declared his intention of taking about 1100 acres of land on Albuquerque's East Mesa for military purposes. This site included Oxnard Field.

The acquisition date was May 12, 1942, with the area to be used as an Air Depot Training Station to prepare aircraft mechanics and repairmen for service overseas in World War II. This operation was so urgent that some Air Service Command people arrived to get things under way before the final papers were signed.

Training was in full swing by June 1. Hutments, capable of holding six men, were hastily erected. Civilian Conservation Corps-type buildings, fabricated in four-ft. sections, were constructed on the spot or brought in from CCC locations.

The Air Depot Training Station grew rapidly and contained, at the height of its activity, almost 150 officers and over 2100 enlisted men. It was in operation until October 1943, and during the period of its existence, four Air Groups were trained, outfitted, and sent overseas. Machine shops were established to teach servicing, maintenance, and repair of aircraft. A bimonthly paper, *The Fourth Echelon*, was published, and the Station had its own 27-piece military band. It was in this era that the unofficial term "Sandia Base" began to be used by the construction engineers active in the erection of the facilities.

After the last training group had been shipped overseas, the Base became an Army Field. In this phase it was largely inactive, its buildings deserted, with a standby crew performing essential maintenance. Aircraft repair equipment left behind by the groups when they shipped out was crated, labeled, and forwarded to Fort Sam Houston, Tex., for storage.

Wounded pilots and crews began to be invalided home to the United States in some numbers by mid-1944. Many of these required surgery, and appropriate facilities were set up in a group of buildings on Gibson Avenue that had formerly housed the Sandia School for Girls, a private educational institution that had closed its doors at the start of the war. As patients im-

proved in health they were moved to barracks at the Army Air Field, thus creating the Army Air Force's Convalescent Center.

Toward the end of 1944, there was a diminishing need for the Center, and by April 1945, it was officially closed and the area again returned to the status of an Army Air Field. At this time, the first trickle of what was to become a flood of war-weary airplanes arrived, to be disposed of by the Reconstruction Finance Corporation (later called the War Assets Administration). Eventually, 2250 airplanes were gathered, including many famous veterans of raids deep into enemy territory. Aircraft which the Civil Aeronautics Administration would license for civilian use, such as trainers and transports, were sold to an eager public. Prices ranged from \$100 for a PT-17 to \$90,000 for a C-54. North American Aviation bought back a large number of their AT-6's, overhauled them, and resold them to many customers, including the Dutch and Chinese governments. A C-46 was sold to an individual in Florida who later used it in an unsuccessful revolution in Haiti.

The fuel from the airplanes, some 178,000 gallons, was trucked to Air Force depots for military use. Several types of airplanes were stripped of radios and instruments and an attempt made to sell this equipment to the general public.

The 1551 remaining aircraft were put up for bid and sold to a Denver firm in the fall of 1946. This contractor found that he could sell B-24 engines for use on airline DC-3's, but that other engines had little value except for scrap. He made a strong effort to sell the radios and instruments that had previously been removed but also found that they could not be sold at a profit.

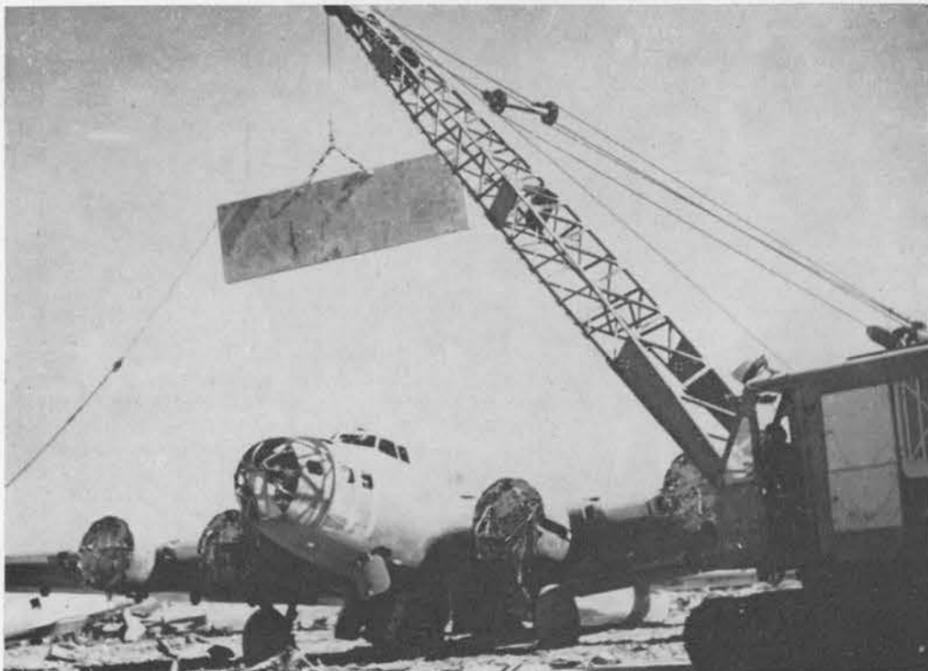
The tires, being unsalable, were removed from the planes and burned to prevent the sulphur in the rubber from contaminating the salvable aluminum. The planes were then chopped into sections by a guillotine consisting of a sheet of armor plate sharpened on the bottom edge. This was hoisted by a crane and dropped on a fuselage or wing. The sections were transferred to a continuously operating smelter and the aluminum melted off into billets which totaled ultimately 10 million pounds. Metal with a higher melting point was raked out of the ends of the smelter and sold as scrap iron, while wire in the planes was segregated for copper scrap.

The airport runways were used for the last time during these salvage operations, and as the field's radio had ceased its operation, the last few incoming planes were flagged in.

Sandia Origins, 1942-1945

In the fall of 1942, the Manhattan Engineer District, under the direction of Brig.

(Continued on Page 4)



PAGE THREE

LAB NEWS

FEBRUARY 28, 1964



Continued from Page Three

The Story of Sandia

Gen. Leslie R. Groves, was formed as a highly secret agency to develop atomic energy for military purposes. During the search for an isolated spot in which atomic weapons could be developed, assembled, and tested, Dr. J. Robert Oppenheimer, who had been selected to head this portion of the project, suggested that the central New Mexico area, with which he was familiar, be considered. This was a location also preferred by General Groves.

Several sites were examined, including one near Jemez Springs, but the final selection was the Pajarito Plateau, northwest of Santa Fe. This area included land occupied by the Los Alamos Ranch School, which had been founded by the grandfather of three members of the Church family who later were employed at Sandia. The land was acquired by the Army and the school closed.

As had been done at other atomic establishments, General Groves selected an existing organization to handle the operation. Dr. Ernest O. Lawrence, who had been a member of the first American committee established to investigate the possibility of creating a nuclear explosive, was in charge of atomic work at the University of California, an organization already active in Manhattan District work. An agreement was reached with the University to

Retiring . . .

Ted J. Saselli, transportation dispatcher in Transportation, Ground Maintenance, and Material Handling Section 8222-3, will retire the end of February after seven and a half years at Sandia.

Mr. Saselli came to Sandia from the Lawrence Radiation Laboratory at Livermore where he worked two years in the motor pool.

Long time residents of Livermore, Mr. and Mrs. Saselli now reside at 11655 Tesla Rd. They plan to move to San Francisco soon where Mr. Saselli will spend most of his time working with a son-in-law in an established printing business.

Although Mr. Saselli expects to occasionally continue his hobbies of hunting and fishing, he is looking forward to getting back to work.



Audie J. Cowan, boiler operator in Steam Plant Refrigeration & Painting Section 8222-1, retired Feb. 19 after six and one half years at Sandia. He was one of the first employees hired at Livermore Laboratory, joining the company in October 1957.

Before coming to Sandia, Mr. Cowan worked as a boiler operator for five and a half years at the Camp Parks Air Force Base near Livermore.

Mr. and Mrs. Cowan will make their home in Riverbank, Calif. Their address will be Rt. 1, 5372 Litt Rd., Modesto.

The Cowans' two boys and one girl are all married and living in California. Their son-in-law, Carl DeCeasar, works in 8243-5.



ALBUQUERQUE ARMY AIR FIELD in 1947. The war was over, combat planes were no longer needed, and 2250 planes were brought to the air field for storage and disposal. One C-46 was purchased and later was used in a revolution in Haiti.

direct the technical aspects of weapon development, and the Los Alamos Laboratory was born. The "Hill," as the Laboratory became known, started operating early in 1943, with a handful of scientists and a proposed roster of a few hundred people, but it was not long before there were over 3000 people at work in this mountain hide-away.

Some idea of the speed with which development proceeded can be gained from the fact that, by the fall of 1943, design and development of atomic weapons had reached the point where plans for full-scale tests could be started. Two external shapes represented the bomb concepts of that time. For security reasons, these models were called the "Thin Man" and the "Fat Man," respectively, and at times telephone conversations concerning bombers to carry these weapons were made to sound as though a plane was being modified to carry U.S. President Roosevelt (the Thin Man) and British Prime Minister Churchill (the Fat Man). The Thin Man was later modified and renamed "Little Boy."

In October 1944, the Army formed the 509th Composite Group, a special atomic combat unit to test and deliver the bomb. This unit was located at the Wendover Army Air Base near the Bonneville Salt Flats in Utah. The operation was given the code name of W-47, and the special B-29's assigned to this command were called Silverplate airplanes. Then there ensued an intensive period of ballistic testing by W-47, with some of the drops being made at a Naval Auxiliary Air Facility at Salton Sea, Calif., to provide experience in bombing sea-level targets. During these tests, which were almost continuous toward the end, the bombs evolved into final combat units. Shortly afterward, the 509th Composite Group moved to Tinian Island in the Marianas to prepare for the final action against Japan. A small but workable group was left at W-47, should need arise for replacements.

Project A, or Alberta, which was organized by the Los Alamos Laboratory in March 1945 to assure that the bomb was a practical airborne military weapon, directed the attention of many Los Alamos people to locations away from the Hill; and travel, both to W-47 and to Tinian, became of increasing importance. It became logical, with increasing traffic in weapons hardware, to attempt to avoid the costs, difficulties, and time delays involved in transporting materials and equipment from Albuquerque or Santa Fe up to the Hill and the finished product back down again. The closest large airport to Los Alamos (with more than lightly loaded DC-3 capacity) was Kirtland Field at Albuquerque, and it became evident that a base operation near Kirtland would be useful — a place where materials could be temporarily stored and personnel could be temporarily quartered.

General Groves directed that operating space be found near Kirtland, and, in June 1945, it was learned that Albuquerque's old Oxnard Air Field was available, and the saga of Sandia Laboratory was about ready to begin.

Oxnard Field was formally transferred from the Air Technical Service Command to the U. S. Engineers, Manhattan District, on July 21, 1945, and a platoon of soldiers was moved down from Los Alamos to establish messing and housing facilities for the contingents that were to follow. As noted above, it was intended as an assembly and storage area, but events subsequently moved far too swiftly for these plans to take effect.

Medical Director Comments On Surgeon General's Smoking and Health Report

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

I have reviewed the Report of the Surgeon General's Advisory Committee on Smoking and Health. This report represents Phase I of a study and is limited to an objective and critical review of the relationship between smoking and health. Later, Phase II of the study will deal with recommendations for action.

The Committee members are a distinguished group of physicians and scientists. In my opinion, they have done a remarkably thorough job and have used considerable restraint in drawing conclusions. None of them had previously taken a public position on the questions at issue.

The Committee is careful to say that a mere statistical association does not necessarily constitute cause and effect and they specify when they believe a causal relationship exists. I would like to summarize some of their conclusions:

Cigarette smoking is causally related to lung cancer and is far more important than any other factor. This is not to say that cigarette smoking is the only factor.

Cigarette smoking is the most important cause of chronic bronchitis and its rela-

tive importance as a cause of chronic lung disease is much greater than air pollution or occupational exposures.

In coronary heart disease the causative role of cigarette smoking is not proven but the report goes on to say that the Committee considers it more prudent to assume a causal relationship than to suspend judgment until no uncertainty remains.

Based on their extensive study of the data available, the Committee states, "Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action."

The Committee gives attention to the factors involved in the tobacco habit. They conclude that the habitual use of tobacco is related primarily to psychological and social drives, reinforced and perpetuated by the effect of nicotine on the body. The habit is best broken by interrupting the psychological drives rather than by any medication.

The decision whether to smoke or not rests with each individual but I seriously urge that you give careful consideration to the findings and conclusions of the Surgeon General's Advisory Committee.

AEC/ALO Awards Security Performance Recognition for 1963

Fifteen administrative units of the Atomic Energy Commission's Albuquerque Operations Office have been presented "Silver Chip" Awards for outstanding security performances during 1963.

Completing the year without a security infraction were the ALO Headquarters Offices of the Chief Counsel, the Patent Attorney, Information, and the Commission's local Divisions of Plans and Analysis, Quality Assurance, Operational Safety, Organization and Personnel, Finance, and Nuclear Materials Management. Also cited was the Administrative Services Branch of ALO's Office of Operations.

In addition, two local area offices of the Albuquerque Operations complex received "Silver Chips." They are the Sandia Area Office, and the South Albuquerque Area Office.

The "Silver Chip" is a small statuette of a chipmunk, which has been chosen as the security symbol for ALO.

Sandia Authors

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

William Van Dusen (5323), "Evidence for Positive Ions in the Radiation Chemistry of Liquid Hydrocarbons," Issue No. 36, *Discussions of the Faraday Society*.

Theodore Hailperin (5426), "Best Possible Inequalities for the Probability of a Logical Function of Events," forthcoming issue, *American Mathematical Monthly*.

A. T. Fromhold (5151), "The Uhlig Model of Oxidation Kinetics," Dec. 28, 1963, issue, *Nature*.

K. J. Touryan (7421), "Density Distribution over a Moving Circular Plate in Free-Molecule Flow," March issue, the *American Institute of Aeronautics and Astronautics Journal*.

N. J. DeLollis (1112), "Adhesive Bonding—Advantages and Application Procedures," January issue, *Assembly Engineering* magazine.

W. E. Warren (5152), "A Note on the Bending of Rhombic Plates," January issue, *Journal of the American Institute of Aeronautics and Astronautics*.

E. H. Beckner (5153), "The Flow of a Hydrogen Plasma Through a Transverse Magnetic Field," April issue, *Physics of Fluids*.

PAGE FOUR

LAB NEWS

FEBRUARY 28, 1964

Take Note . . .

Phil H. Arnold, supervisor of Applications Oriented Systems Section 7624-1, and Norman A. Smith of Administrative Programs Section 7623-1 have been selected to receive the Certificate of Professional Data Processing. The award is presented by the Data Processing Management Association.

To be certified, Phil and Norm were required to complete successfully a comprehensive examination in the fields of computer concepts and equipment, mathematics, statistics, and accounting.

Last year, D. K. Robbins (7624) and H. E. Anderson (1443-1) received certification.

A. R. Luedecke, General Manager of the Atomic Energy Commission, has announced the appointment of Brigadier General Delmar L. Crowson, U. S. Air Force, as director of the AEC's Division of Military Application, effective Feb. 17. General Crowson succeeds Major General Austin W. Betts, who has served in this position since Jan. 15, 1961.

General Betts has been assigned to the Pentagon as Special Assistant to the Chief of Research and Development, Department of the Army.

Bids will be opened about Mar. 12 for work on a one-story reinforced concrete and masonry addition to Bldg. 860, the Atomic Energy Commission reports. The 4800-sq.-ft. addition will house an X-ray Radiography Facility for Environmental Testing Organization 7300.

The work is to be completed within 210 days and has been set aside for small business firms only. Ken D. Harper (4543-3) is the Plant Engineering Department project engineer.

Several Sandians have been elected to offices in the Albuquerque chapter of the New Mexico Society of Professional Engineers.

P. R. Owens (4133) will serve as secretary for the coming year, Walter F. Scott (1555-2) will be state director, and Wayne A. Sebrell (1542-2) was re-elected treasurer.

The Albuquerque chapter was established in 1946 and has about 300 members.

Joe T. Black (1542-2) was also recently elected first vice president of the NMSPE. The state group is affiliated with the National Society of Professional Engineers.

On Feb. 29, the Coronado Club will present its annual Golden Nugget Night, an evening in which Club members and their guests can try their hands at a variety of games of chance—using "scrip" instead of money.

The evening will include a group of door prizes, and dancing to the music of the Rex Elder Combo.

Public to Hear Story Of New Mexico's Spaceport Proposal

New Mexico Gov. Jack M. Campbell's Scientific Advisory Committee will repeat a presentation made last October to officials of the National Aeronautics and Space Administration in Washington, D. C. The presentation will be made for New Mexicans Friday, Mar. 6. Purpose of the presentation is to show the advantages of using White Sands Missile Range in New Mexico as the "spaceport" for the Gemini and Apollo moon exploration programs.

The presentation will be made at a dinner meeting in the ballroom of the New Mexico Union, University of New Mexico, at 6:30 p.m. The dinner is sponsored by the Albuquerque Chamber of Commerce, New Mexico Department of Development, and Albuquerque Industrial Development Service. Invitations are being issued by the Chamber, telephone 243-2201.

The Scientific Advisory Committee is headed by Dr. Victor H. Regener of the University of New Mexico Physics Department. Members of the committee are from UNM, New Mexico State University and Texas Western University.

Glenn A. Fowler, Vice President, Development 7000, served as a consultant to the committee.

Promotions

Ernest R. Dunaway (1113) to Staff Assistant, Technical
F. N. Rebarchik (1113) to Staff Assistant, Technical
Shary D. Holmes (1121) to Staff Assistant, Technical
Arlen R. Baldwin (1332) to Staff Assistant, Technical
Jack R. Simpson (1332) to Staff Assistant, Technical
Herbert H. Dykema (4413) to Staff Assistant, Draftsman
Warren G. Medley (4574) to Janitor
Alfredo Chavez (4574) to Cleaner
Eulalio P. Trujillo (4234) to Potter
Frank R. Garcia (4574) to Lampman
Dorothy C. Pratt (4234) to Assembler
Gibson R. Guernsey (4253) to Machinist
John R. Farner (4254) to Machinist
Thomas B. Hobart (3413) to Messenger
Barbara A. Rothwell (3126) to Secretarial Stenographer
Lydia I. Trujillo (3126) to Secretarial Typist
Helen S. Sanchez (4431) to Typist
Marcella M. Hightower (4135) to Typist Clerk
William H. Brown (3427) to Document Clerk
Patricia L. Anderson (2112) to Record Clerk
Niel J. Pezzillo (4432) to Reproduction Service Clerk
Dollie C. Harris (3421) to Library Assistant
Jannie L. Crawford (3453) to Record Clerk
Alice R. Jarvis (3453) to Record Clerk
Opal D. Noel (3453) to Record Clerk
Marilyn A. Overton (3453) to Record Clerk
Ina Alice Tipton (3453) to Record Clerk
Florence H. Archuleta (4432) to Document Clerk
Cloy B. Knock (4431) to Service Clerk
Neil B. Gholson (3452) to Computer Operator
Evelyn C. Schwanke (7536) to Service Clerk
Verna Ann Clark (4234) to Assembler
Ruth Evelyn Gustin (4234) to Assembler
David J. Sanchez (4432) to Reproduction Equipment Operator
Robert C. Garcia (4511) to Helper-Trades
Ivan L. Wright (4511) to Helper-Trades
William E. Farrar (4631) to Technician
Patricia A. Childers (3427) to File Clerk
C. F. Trimble (2112) to Record Clerk
Doris L. Mortensen (7241) to Data Reduction Clerk
Peggy J. Gillham (4152) to Accounting Clerk
Martin L. Dieter (7331) to Senior Clerk
Carole Lou Celoni (8123) to Computer Facility Operator
Calixto Sifre Soto (7325) to Lab Assistant
Supervisory Lateral Transfers
R. L. Peurifoy, Jr. from 1310 to 8120
B. E. Barker from 8142-1 to 8144-1
R. H. Johnson from 8161-2 to 8144-2
G. V. Bjork from 8231-3 to 8144-3
K. E. Mead from 1121-2 to 1112-3
H. E. Montgomery from 1113-1 to 1111-2
R. V. Norvill from 3112 to 8234
W. H. Chandler from 3111 to 3112
T. L. Daniel from 3113 to 3111
G. H. Mauldin from 1314 to 1313
R. A. Dawirs from 1531-2 to 7253-5
C. A. Ashby from 2000/4138 to 3223
E. M. Hodges from 2134-2 to 2121-3
G. C. Hartman, Jr., from 2121-3 to 2134-2
H. C. Strauss from 4314-2 to 4315-1

Welcome Newcomers

Feb. 10-21

Albuquerque
Elaine A. Coons 4333
Eugenia L. Flickinger 3125
LaRoyce J. Moseley 4135
*Evelyn E. Ratcliff 3126

Arizona
Gail V. Barton, Phoenix 1533

California
Jimmy D. Mote, Richmond 5133
*Charles C. Thacker, Jr., Covina 1112

Indiana
Richard J. Sons, Crown Point 7334
Allen R. Stemm, Elkhart 2123

Kansas
Larry K. Johnson, Topeka 1533

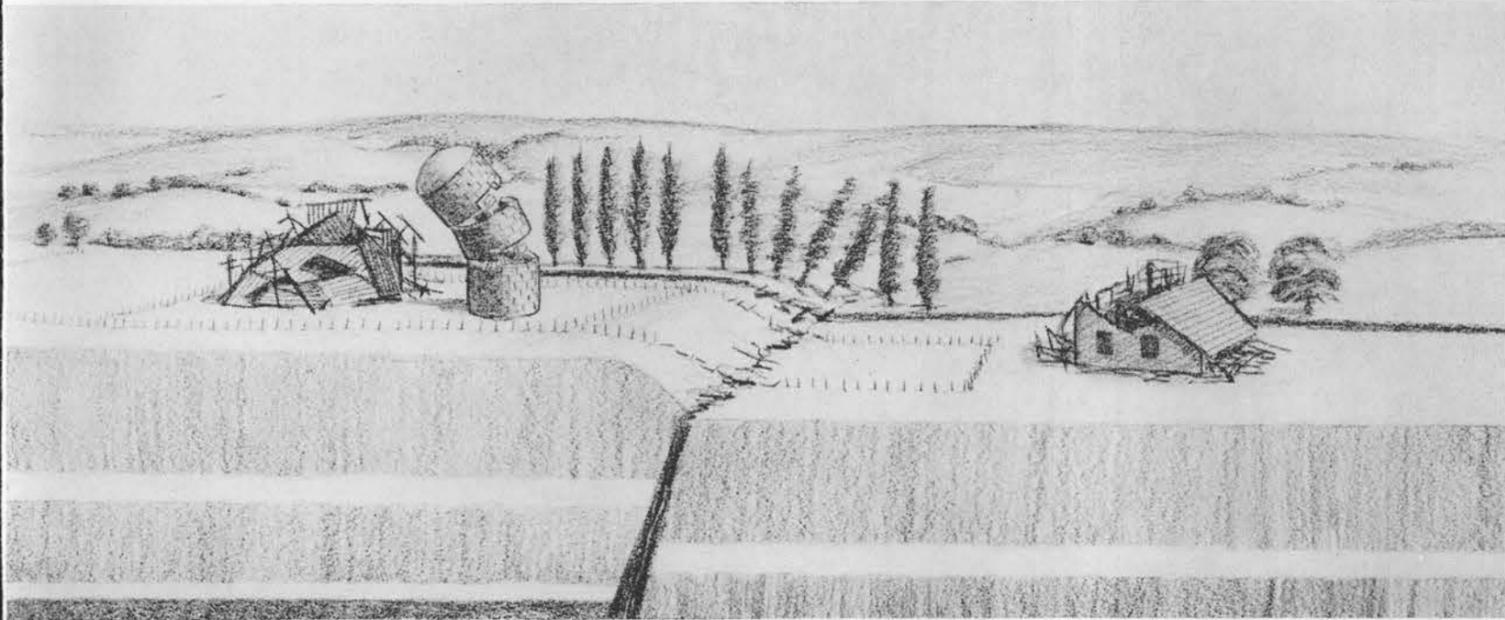
Texas
Harvey M. Johnston, Fort Worth 2136
Robert L. Davis, Fort Worth 2136

Returned from Leave
Nancy L. McAllister 3122
Raleigh L. Pickering 2413
* Denotes rehired

PAGE FIVE

LAB NEWS

FEBRUARY 28, 1964



FOUR AUTHORITIES have agreed that it is not possible to cause a natural earthquake (above) by the underground detonation of nuclear explosives (below). Experts point out that there is little similarity between the destructivity of underground explosions and of natural earthquakes resulting from a slow accumulation of elastic strain deep in the earth culminating in a sudden release of energy when rock strata underlying the surface of the earth rupture.

There's no connection . . .

Natural Earthquakes And Underground Nuclear Tests

Four authorities on ground shock, replying to questions posed by the Atomic Energy Commission, have concurred in the opinion that shock waves from underground nuclear testing—even if explosive forces should considerably exceed any detonations which have been conducted at the Nevada Test Site—offer little or no hazard to public safety, and are not expected to cause damage to property outside the Test Site.

They agreed that it is not possible to cause a natural earthquake by the underground detonation of nuclear explosives. They said that while it is possible theoretically that a natural earthquake—already poised to occur—could be "triggered" by an underground nuclear detonation, this would require such unusual circumstances that the possibility is extremely remote.

The authorities whose opinions were sought are Thomas H. Pearce of the U. S. Coast and Geodetic Survey, Dr. Perry Byerly, Dr. G. W. Housner and Dr. Roland F. Beers.

Mr. Pearce has been observing ground shock effects of nuclear detonations since 1946 and since 1952 has been Chief of the Special Projects Party established by the USC&GS under contract with the Atomic Energy Commission and the Department of Defense to carry out a seismic safety program. In this activity he has had extensive technical experience in recording and observing effects of underground nuclear detonations.

Dr. Beers, formerly professor of geophysics and head of the Department of Fuel Resources at Rensselaer Polytechnic Institute, Troy, N. Y., is head of Roland F. Beers, Inc., of Alexandria, Va. This firm is under contract to AEC to predict effects of underground nuclear events in regard to containment and ground motion. Dr. Beers also serves as consultant to the Ground Shock Subcommittee of the Nevada Test Site Planning Board.

Drs. Byerly and Housner are members of the Nevada Operations Office Panel of Safety Consultants, whose members were nominated by the National Academy of Sciences.

Dr. Byerly is professor of seismology at the University of California in Berkeley. Dr. Housner is professor of engineering at California Institute of Technology at Pasadena. He specializes in the response of structures to ground motion.

The experts pointed out that there is little similarity between the destructivity of underground explosions and of natural earthquakes resulting from slow accumulation of elastic strain deep in the earth culminating in a sudden release of that energy when rock strata underlying the surface of the earth rupture. The man-made earth shocks have severe effects in a very localized area, while natural earthquakes affect blocks of the earth's crust measured in tens or hundreds of miles.

Since it is impossible to have a natural earthquake without having prior storage of strain energy—something that occurs over a period of years—a nuclear detonation could not "cause" a natural earthquake.

Theoretically, if a large enough explosion were fired in a region where a large elastic strain had accumulated in the rocks of the earth's crust over tens of years it might "trigger" a natural earthquake already poised to occur. If so, the energy of the quake would have two sources—the very minor share resulting from the explosion and the tremendous forces from the release of elastic strain accumulated over tens of years and due to natural causes. It would be necessary to conduct an explosion several miles deep in an earthquake-susceptible area to get near a zone where the stress was great enough for an incipient quake to be triggered by the explosion.

The experts agreed that in the extremely unlikely case that a natural earthquake were to be "triggered" by a man-made explosion, it could occur only:

Immediately after the explosion. (An earthquake occurring an hour or so later could not be considered to have been "triggered" by the nuclear detonation, and in fact would be considered to have no relationship to the prior explosion.)

In the same vicinity as the nuclear detonation. (There would be no possibility of its occurring far away.)

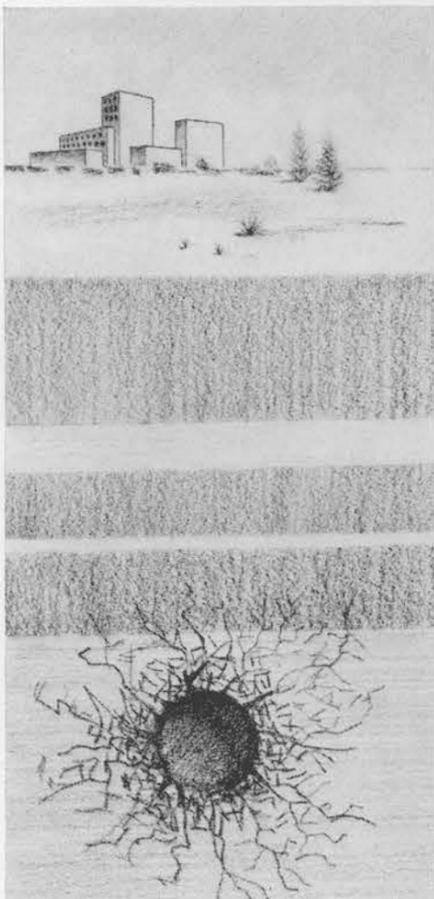
In a region of great strain. (If it is accepted that a natural fault movement could be started by the detonation, it might continue along the same fault line for tens of miles, but no separate natural earthquake would be set off elsewhere.)

The possibility of shock waves from an underground detonation at the Nevada Test Site causing property damage in Las Vegas is regarded as very remote. Of more than 100 underground detonations during the past two years only one—on Sept. 13, 1963—was felt in Las Vegas. It was measured at approximately .002 "g," only slightly above the .001 "g" which is accepted by many authorities as the threshold of perceptibility for humans, and 50 times less than the .1 "g" which is accepted as the threshold of property damage.

Dr. Beers pointed out that a person jumping from a four-in. curb receives a shock of about 500 times greater than the .002 "g" recorded in Las Vegas in the Sept. 13 detonation.

Predictions of distant ground shock effects from underground detonations have been subject to considerable uncertainties. This results from the fact that relatively little research has been conducted and because the transmission of earth shock is subject to many variables, being dependent on the complex and non-uniform makeup of the earth's crust.

The Sept. 13 Nevada Test Site detonation was felt in Las Vegas only by persons on the higher floors of buildings and on other elevated structures. To learn more about this and other phenomena in the effects of earth shock on people and structures considerable distances from the source, studies are being made by Dr. Beers' organization, and additional studies are under consideration.



Sandia Speakers

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

W. E. Warren (5152), "Singular Loadings in a Notched Half-Plane," Second Southeastern Conference on Theoretical and Applied Mechanics, Mar. 5-6, Atlanta, Ga. The co-author is T. P. Mitchell of Cornell University.

J. P. Burger (1122), "Polymer Molecular Weight Determination by High Temperature Vapor Pressure Osmometry," 15th Pittsburgh Conference of Analytical Chemistry, Mar. 4, Pittsburgh, Pa.

C. J. McGarr (4600), "Management Science in an Inventory Control System," New Mexico Purchasing Agents Association, Feb. 21, Albuquerque.

R. C. Colgan (3465-1), "The United Nations," New Mexico Convention of United Church Women, Feb. 12, Albuquerque.

K. C. Krogh (3131), "The People Problem in Sales," annual Albuquerque Distributive Education banquet, Feb. 11.

Fred Carleton (3133), "Selection of Peace Corps Volunteers," Advanced Management Association of Albuquerque, Feb. 17.

J. D. Shreve (5414), "New Science and Old You," Dexter, N.M., High School and Lions Club, Feb. 27.



EDISON DAY TOUR — C. G. Coalson (7325) explains operations of Sandia's Drop Tower Facility in Area III. Some 122 science students from Albuquerque, Belen, Jemez Springs, Cuba, Moriarty, and Los Lunas toured Area III environmental testing facilities and visited the Sphere of Science. The tour was part of the AEC's program to encourage science careers.



SCIENCE STUDENTS, visiting Sandia Laboratory during Edison Day Feb. 11, examine one of the special displays in the Sphere of Science. New exhibits include this tribute to Thomas A. Edison and a Whitfield Clean Chamber. Group also saw "The Sandia Story" movie and toured Area III. Edison Day arrangements were made by Community Relations Division 3143.

Seen on the Sandia Scene

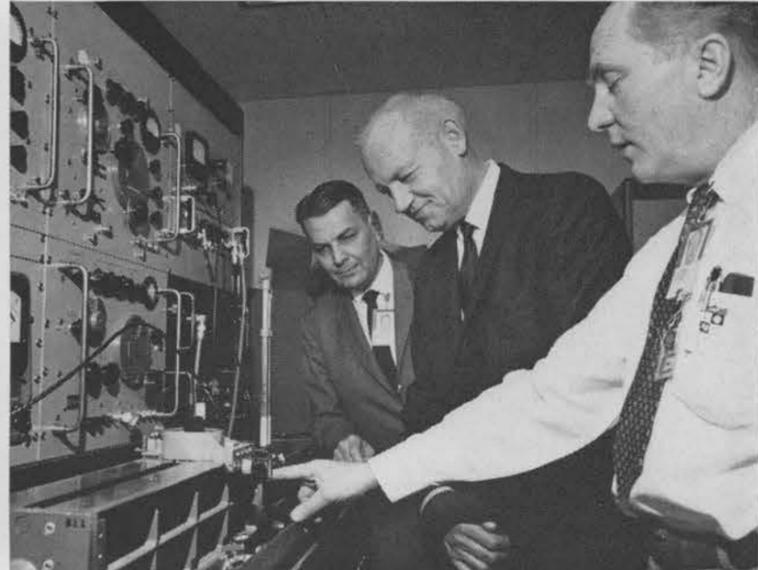
BASKETBALL ALL STARS — In the first row are (l to r) D. E. Gladow (7224), L. C. Chavez (4212), D. L. Mangin (1413), P. T. Loeper (4412), J. P. Brane (4413), and P. T. Lubeck (1442). Standing are W. D. McLachlan (5136), G. C. Baca (2643), L. H. Sanders (3311), D. W. Smith (1124), R. F. Gardner (4432), G. A. Lisotto (4412), J. F. Hudson (5311), and R. W. Clark (3111), head coach. S. R. Toledo (3122), not shown, was assistant coach. Team played in Inter-Base Tournament, defeated KAFB 70-58, but lost two to Manzano Base 70-67 and 75-64.



A. Y. POPE, manager of Aero- and Thermodynamics Department 7520, left, was a panel member recently on KNME-TV's "Great Decisions" program. Subject discussed was "France and the West — Will Atlantic Unity Survive?" R. C. Colgan (3465), right, is moderator for the weekly series aired on Channel 5 Thursdays at 7:30 p.m. and Saturdays at 3 p.m. and on Channel 4, KGGM-TV, on Sundays at 12:30 p.m.



MEMBERS of Western Electric Auditing Organization visiting Sandia Laboratory were briefed Feb. 19 on Aerospace Nuclear Safety and other aspects of Sandia's mission. H. E. Hansen, supervisor of Aerospace Nuclear Safety Division I, 7411, and J. P. Wakeland, Administrative Assistant—7400 discussed nuclear safety activities at Sandia and showed a film on RFD-1; H. C. Redding, supervisor of Accounting Division 4151, discussed Security Aspects of Accounting; and D. E. Irvin, supervisor of Community Relations Division 3143 was moderator for the briefing. The group was accompanied by K. W. Seaver, supervisor of Internal Audits Division 4123. Auditors are (l to r) A. P. McDermott, L. R. McGuire, J. E. Heffernan, and T. D. McKinnon. Mr. Hansen is at right. Other WE Auditors not pictured include J. M. Black, R. Glasser, T. H. Metzger, and P. S. Rhoads. Briefing was in Bldg. 880.



BELL SYSTEM Coordinator of Recruiting, H. W. Holmlin, center, examines the workings of comparator equipment with W. C. Hunter, manager of Physical and Electrical Standards Department 2410, left; and D. E. Fossum, supervisor of Microwave Standards Section 2412-2, during his visit to Sandia, Feb. 17. His itinerary at Sandia included a showing of the film, "Environmental Testing," and visits to other facilities in Department 2410, Metallurgy and Surface Chemistry Division 1121, the 7090 Computer, and the Sandia Engineering Reactor Facility. He was briefed on activities in these organizations by Mr. Hunter, J. C. Russell (1121), C. E. Katzenberger (7611), and C. A. Anderson (5331). Accompanying him on his visit was R. N. Reed of Sandia's Staff Employment Section 3151-1.

Rite of Spring Experienced By Sandia's Information People

Each year, teachers throughout the country make Spring an excuse. Plans are announced not only for field trips, but for "outside work" and "research projects" of one sort or another. The idea, one supposes, is to stir up minds and bodies filled with the leaden inertia of too many winter days in the classroom.

Sandia Laboratory's Public Information Division 3141 feels this annual Great Awakening with the accuracy of a barometer, but its reactions are brought on mainly by scores of letters which pour into the division offices, each of them carefully prepared and written out by diminutive—and sometimes not so diminutive—penmen.

It's easy to remember the entire process from one's own past; the teacher moving from desk to desk, filling the inkwell in the desk corner from a large and vaguely full bottle of ink, at the same time dispensing one (only one!) steel nib for the wooden penholder one had purchased at the dime store's school supply counter.

Then, sitting in the correct Penmanship Posture and recalling the hours of practice copying the letters and figures in the Palmer Handbook, one began the perilous task of copying one's letter on good paper—the letter previously composed, in pencil, in a Big Chief tablet. And the address, which was later laboriously copied on the envelope (after the teacher had approved the letter), seemed strangely foreign. . . .

At any rate, the whole great Rite of Spring (pun intended) is still safely established in the nation's classrooms, and here are excerpts from some letters that have come Sandia's way:

Dear Sir:

I would like to know what ingredients for making the type of gas you use in

the space rockets? I would like to know because our class has been studying about it during science class. . . .

Another student wrote:

Dear Sirs:

I am a high school student doing a research paper on atomic energy. Would you send me any information you have about it and anything you all (I'm a Georgia Cracker) are experimenting on. . . .

Another had this request:

Dear Sirs:

Please send me some information on the atom and Radioactivity. I would like these things for a science fair project. And if you have any old equipment that you don't want, please send it. Thank you.

A very interesting letter came, not from a student, but from a parent. His request, which was made on behalf of his daughter, could be the cause for Vague Forebodings:

Dear Sir:

I would appreciate it very much if you could offer us any assistance in completing a high school science project on atomic energy. My daughter must prepare a rather lengthy report on both the military and civilian uses of atomic energy. In addition, we must construct a model of an atomic bomb; fortunately, the school has not requested a working model. . . .

Seek Volunteers to Record Textbooks for Blind College Students

Volunteers who own tape recorders are urgently needed by the Braille Service of New Mexico.

A new service which records books for the blind is being offered for the first time by the society. Requests for this service are usually from college students requesting tapes of textbooks. Currently, the society is taping textbooks for two students at the University of New Mexico and one at New Mexico State University.

Mrs. W. A. Warren (a former Sandian and wife of W. A. Warren, 4341) is president of the Braille Service of New Mexico. "Persons volunteering for this service must be willing to follow a set, prescribed procedure in taping these textbooks," Mrs. Warren explains. She also points out the tapes must be made at 3/4 speed and that tapes are supplied by the Braille Service.

"Our society, which is a non-profit organization made up of volunteer workers, has a reputation of producing work of a very high standard," she continues; "therefore, we ask our volunteers to follow the taping instructions and also to proofread their material."

Persons interested in offering their time and use of their recorders are asked to contact Mrs. Eloda Nelson, the tape recording committee chairman, tel. 265-1183.

Seek Golfers for Employees' Association

Memberships are now being accepted for the 1964 Sandia Laboratory Employees' Golf Association. The season will open Apr. 11 with a tournament at the New Mexico Institute of Mining and Technology course at Socorro.

Andy Blaine (4614) is tournament director. Teams will be organized and regular league play will begin May 1.

Membership applications are available from Benefits and Services Division 3122, Bldg. 610. A \$2 membership fee is charged.

Sympathy

To M. D. Tucker (4131-1) for the recent death of his mother in Perryton, Tex.

To Lynn M. Barker (1124-2) for the death of his wife Shirley on Feb. 9.

To William Schuessler (2411-1) for the death of his wife Rosalie on Feb. 7.

To Mary H. Hall (7243-1) for the death of her brother in California on Feb. 11.

To Malcolm Ward (4518) for the death of his wife on Jan. 31.

W. G. Funk Named to New Mexico State Advisory Committee

W. G. Funk, manager of Sandia's Employment and Personnel Department 3150, was named a member of the New Mexico Advisory Committee on Scientific, Engineering, and Specialized Personnel on Jan. 27.

The committee performs an advisory function concerned with selective service registrants engaged in occupations in government and private installations throughout the state. The advice provided by the committee is considered by local Selective Service boards or the State Appeal Board in determining whether or not an individual should be deferred because he is essential to the national welfare.

"The committee makes recommendations on registrants whose activities are highly technical and beyond reasonable comprehension by lay people," Mr. Funk said.

Chairman of the committee is William Crew of Los Alamos Scientific Laboratory; vice chairman is Robert Thompson, ACF Industries; and administrative secretary is John P. Mitchell, Jr., personnel director of Presbyterian Hospital and a former Sandia employee.

PAGE SEVEN

LAB NEWS

FEBRUARY 28, 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

FOR SALE

- '63 FORD GALAXIE 500 2-dr. HT, PB, PS, auto. trans., \$60 below NADA wholesale at \$2200. Schulze, 242-8388.
- '62 PHILCO 30" pushbutton electric range, \$125. Smith, 256-0375.
- 3-BDR. MOSSMAN, 1 1/4 baths, complete electric kitchen, sprinklers, screened porch, furnace, cooler, fireplace, carpet, drapes, FHA appraised \$18,250. Meyer, 256-0042.
- LAWN MOWER, reel type, 18", recoil starter, grass catcher, \$25. Mancuso, 299-4279.
- 14' BOAT AND TRAILER; Toy Terrier and Chihuahua puppies; Kenmore washer; climbing ivy to give away. Cox, 510 Espanola NE, AL 6-1977.
- COSCO playpen w/nylon net, \$10; feeding table, \$10; 6-yr. crib w/mattress, \$17.50. Martell, 299-0833.
- RADIO CONTROL FOR MODELS; 50-54 MC band; Midas rec., \$35. Hercules transmitter, \$35. Lenz, AX 8-3872.
- HALF BURMESE-half Siamese kittens, \$10. Pierce, 268-6057 after 5:30 p.m.
- ROBERSON 3-bdr, 1 1/4 bath, paneled LR, fireplace, hw/floors, electric kitchen, utility room, attached garage w/work benches-storage, covered patio, walled. Smith, 299-6873.
- REFRIGERATORS: GE, 13 cu. ft., \$55; 7 cu. ft. Kelvinator, \$35. Monette, AX 9-3517.
- '59 SEAR'S Motor Bicycle, Med., \$110. Maes, 298-5809 after 4:30 p.m.
- CIVIL WAR MUSKET, 1845 muzzle loader, \$65; Civil War sword, \$16.50; revolver 1880 period, \$16.50. Smitha, 299-1096.
- '62 FORD V-8 RANCH WAGON, R&H, a/c, stick shift, OD, low mileage. Gellwicks, 299-3909.
- BENCH DRILL PRESS, \$40; Walker turner 1/2" cap. Lowe, 255-4719.
- '47 STINSON VOYAGER, 4 place, 30 hours since top major overhaul. Jarvis, AX 8-1113 after 6 p.m.
- '63 PARILLA WILDCAT CYCLE, 12 hp, cost over \$500, sell for \$350 or best offer. Ethernott, 298-5155.
- '61 FORD RANCH WAGON, R&H, new tires, low mileage. Salazar, AL 5-1301.
- BABY CAR SEAT, car bed, and stroller, all for \$7.50. Hill, 255-6538.

- '61 CORVAIR RAMPSIDE pickup, 4-speed, heater, 25,000 miles, NADA List \$1355, sell for \$1250. Sparks, 344-9054.
- BLOND VENEER CEDAR CHEST, \$10; baby bathinet, \$5; infant car seat, \$3. Duliere, 298-1992.
- '53 BUICK SPECIAL Model 40, one owner, 80,000 miles, needs front-end bushings, \$200 or best offer. Butler, 299-1316.
- CROSLEY 17" console model TV, wood cabinet, \$45, push lawn mower, \$3. Yingst, AM 8-2896 after 5 p.m.
- '62 FORD GALAXIE 500 4-dr. sedan, stick shift, OD, 10,000 miles, R&H, \$1850. Phillips, AX 8-0541 after 5 p.m.
- 15' DE VILLE CAMP TRAILER, \$895. Dickerson, 299-3449.
- '61 VOLKSWAGEN CAMPER w/luggage rack, ladder and side tent, \$1495. Newman, 298-2323.
- 3 TOY FRENCH POODLES, no papers, \$40. Whately, 864-4983.
- '55 CHEV. 4-dr., V-8, AT, original owner, \$395. Dodge, 344-6662 after 4 p.m.
- IRCO CERAMIC KILN, extension rim and supplies, \$40. Melick, 256-6449.
- UPRIGHT PIANO, \$110. Benavidez, 255-9946.
- 3-BDR. HOUSE, hw/floors, built-in range-oven, walled, landscaped, on cul-de-sac near schools, bases, shopping, \$300 less than FHA appraisal or sign 2-yr. lease. Patterson, 299-6590.
- REFRIGERATOR, medium size, \$55. Anderson, 877-1554.
- FREEZER, 17.2 cu. ft. upright Coldspot, \$150; RCA Whirlpool refrigerator, \$100. Graham, 299-4871.
- '60 FALCON 4-dr., stick shift, \$750. Krahling, 268-8126.
- 26" GIRL'S BICYCLE, balloon tires, \$10. Yarbrough, 255-4087.
- WELSH COMBINATION BABY CARRIAGE and car bed, \$5; Bendix auto. washer, \$25. Tuthill, 298-0265.
- 3-BDR. HOME, near University, 2000 sq. ft. living area, southwestern landscape, FHA loan available. Devor, 256-6541.
- DINING ROOM SET, drop-leaf table, 2 extra leaves, pads, 4 chairs, buffet, best offer. Weart, 298-0614.
- '54 WILLYS UNIVERSAL JEEP, recently overhauled, metal cab, tow bar and hubs, \$695. Turner, 268-7076.
- DINETTE SET, formica top, 4 chairs, \$35. Scebold, 299-6091.
- '59 FORD GALAXIE 500, PB, PS, AT, R&H 4-dr., will take smaller or older car in trade. Morgan, AL 6-7994.
- UPRIGHT PIANO, blond finish, \$150. Gonzales, 242-6750.
- MOTOR SCOOTER, 1960 Vespa, wind-shield, buddy seat, luggage box. Streeter, 298-3566.
- PORTABLE STEREO-PHONO, Columbia 1010, tan, diamond needle. Byers, 268-3019.
- 2-BDR. HOME, SE Heights, built-in range-oven, hw/floors, carpeting, near schools, shopping, bases. Mann, 1300 Hermosa Dr. SE, AL 5-8049 evenings.
- TWO ACRES, North Valley, \$1999 cash; '64 VW Microbus 221 model, 339 actual miles, \$1999, leaving for school. Trybul, AX 8-3325.

NEXT

DEADLINE
FOR SHOPPING CENTER ADS
Friday Noon, Mar. 6

- '63 CHEV. Bel-Aire station wagon, R&H, V-8, OD, will consider older car in trade. Netz, 282-3607.
- EMPIRE PERIOD library table, mahogany, refinished, \$85; 2 Cosco stools, \$10 ea.; tools, scrap silver, turquoise for jewelrymaking, \$20; Thor gladiron, \$50. Ogden, 242-8351.
- '51 HENRY J, 6-cyl., heater, standard transmission, \$95. Schwiwer, 243-1963.
- FLOOR LENGTH PINK FORMAL, small size, almost new, \$25. Johnson, 268-4410 after 5.
- WASTE KING garbage disposal, \$25. Montoya, 344-8416.
- DOUBLE BED, bookcase headboard, 2 night tables, blond finish, \$35; grey wool rug and pad, 8'x9', \$10; blond 21" TV, needs picture tube, make offer. Duvall, 299-8744.
- NEW 2-speed, 4000 cfm evaporative cooler, \$100; 1949 Jeepster, \$300; Gonset Super-12 converter, bumper mount, antenna, \$60. Ernst, 268-9414.
- 3 BDR. Del Laurence brick, paneled den, two fireplaces in large family room. Bachand, 299-5167.
- STEREO TAPE system, Viking 1/4 track record and playback deck with recording and playback preamps. Souther, 299-2964.
- FHA APPRAISAL, \$12,500, \$400 down, 3-bdr, corner lot, AC, patio, sprinklers, carpet, drapes throughout. McCreight, 1000 Maxine NE, 298-4695.
- TIRES, TUBELESS General 7.50x14 B.W. 80% to 50% tread, four, \$45; two, \$25; old fashioned dresser, \$10. Stuart, 299-9190.
- RCA 45 rpm record player, \$30; 3-piece living room set, reddish brown, 3 tables, 2 large lamps, complete price \$140. Smythe, 242-1503.
- 3-BDR PUEBLO, Coronado Crest, built-ins, central heat, carpeted, refinance, cash or low down to FHA, \$13,250. Saviteer, 298-1430.
- EMERSON TV, 21" console model, mahogany veneer cabinet with swivel casters, \$50. Stark, 1334 Marron Cir. NE, 299-5953.
- DRAPES, 12' x 8', white w/black-gold design; Englander duo-divan; Catalina room air conditioner, 2 blower, 3-speed. Farner, 299-6007.
- DINETTE SET, blond oak table and 4 chairs, \$20 or best offer. Batchelor, 299-4831.
- '62 IMPALA sport coupe, 23,000 miles, will trade down. Two-speed Exercycle. Jamma, AX 9-5797.
- 8 LOTS in Sandia Memory Gardens. Reasonable. Reyets, 299-0932 after 5 p.m.
- FARMALL cubtractor, hydraulic, blade, etc. Concrete mixer and motor. Two-wheel homemade 4 x 10 cargo trailer. Elliott 264-6938.

- ANTIQUE handguns: 2—.41 Remington double Derringers \$40 and \$50, .32 short S&W bootleg pistol \$35, .22 Remington-Elliott ring derringer \$40, Manhattan Navy percussion revolver \$55. Mattox, 268-5554.
- GE ELECTRIC range, 1963 model, used 5 months, width 30 in., automatic timer on oven with pushbutton burners. Fanson, 298-5746.
- MOUNTAIN HOME, Sandia Knolls, 2-bdr, den, fireplace, fenced area, barn and corral, \$16,500. Kenderdine, BU 2-3147.
- 16' FIBERGLASS boat, completely equipped, 60 hp motor, and trailer. Used 4 times. \$1395. Paboucek, 298-0205 after 5 p.m.
- HOOVER, tank type, \$15; mahogany dining room set, upholstered 4 chairs, extra glass top for table, \$66. Vencill, 299-2951.
- JEEP pickup FWD with \$2300 worth of new parts. New '51 Merc. V-8 engine, R & H. Must sell, \$895. Redic, 2414 Madeira NE.
- LOAD LEVELER air-lifts for auto or truck, hose included, \$15; Draw-Tite trailer hitch for '58-'59 Ford, \$5. Scalf, 298-1409.
- 3-BDR ROBERSON, den, 1 1/4 bath, fireplace, carpeting, drapes, stove, AC, garage, patio, refinance or cash to 4 1/4% Gl. Barton, 299-3738.
- SLIDE PROJECTOR, \$25; two photofloods, incl. bulbs, \$5; stereo tape recorder, \$145; hi-fi record changer w/base, \$25. McIntire, 298-6145.
- MOUNTAIN LOT, half acre with 100' frontage on Frost Road, \$1000. Cunningham, 344-9841.
- MOBILE HOME, 8' x 46', 2-bdr., automatic washer, bunk beds, tub w/shower, \$1450. Cafferty, 898-3102.
- IDEAL-TONG reloading dies, .30-06, 38 special, .22 Hornet, \$7 each; 2 handles \$3 each; .06 full length sizer, \$2. Doleshal, BU 2-3237.
- SKI BOOTS, size 9 1/2, Dolomite, hand-made in Italy. Forsyth, 299-8483.
- BED DIVAN with matching chair and ottoman, rose color. Nice for rental. \$35. Cooper, 2946 Manzano NE after 6 p.m.
- '60 FORD station wagon, 4-dr, 6 cyl., R & H, 48,000 miles. Heimer, 299-4501.
- ADMIRAL TV-phono-radio, \$20, full size violin, \$15; electric roaster, \$10; table model radio-phono, \$5. Gilpin, AX 9-1100.
- '51 JEEP station wagon, 6 cyl., OD, R&H, 7.10x15 snow tires. Hunke, 299-4557.
- LADY'S black White Stag ski pants, size 14, used once, \$8; boy's black leather jacket, size 16, \$7. Costello, 256-9702.
- "VOICE of Music" hi-fi, blond console, \$250 new, sell for \$65. O'Meara, 10206 Candelaria NE, 298-1157.
- ALL-STATE motorcycle, 10 hp, old but clean, \$200; '53 Studebaker, classic 2-dr. coupe, \$325. Chandler, 298-5069.
- MOSSMAN resale, 3-bdr, 1 1/4 baths, room for den, double garage, AC, landscaped, redecorated, near schools. Wheeler, 2920 Arizona Pl. NE, AL 6-7284.
- DRYER, electric, rebuilt and guaranteed, \$35. Elliott, AL 6-7909.

- ELECTRIC CLOTHES DRYER, 3 yrs. old, 220 volt, Kelvinator, working order and in use, \$70. Lindsay, AX 9-7454.
- '62 FORD GALAXIE 500, std. transmission, OD, R&H, new license, 10,000 actual miles, \$1875. Phillips, AX 8-0541.
- BUTANE/PROPANE TANK, automotive type, 23 gal. cap., 14" O.D. x 39" long. Gubbels, 298-3528.
- '62 VOLKSWAGEN CAMPER w/detachable tent, equipped w/ice box, Coleman stove, table and benches, storage, closet, sleeping space, 20,000 miles. '64 license. Miller, 298-1994.
- ROLL-AWAY BED, 3/4 size, \$20; service for 8 china, \$15. Newman, AX 9-2729.
- SKIS, plastic bottoms, metal edges, safety bindings, w/poles, \$25. Gutscher, 298-6563.

WANTED

- JOIN OR START car pool from Holiday Park to vicinity bldg. 892 or 880. Lujan, 299-4820.
- WRECKED OR WORK OUT TR, any model or year, for parts; .38 snubnose. Pritchard, 268-9618.
- TO CARE FOR CHILD, age 2-5, my home, 4904 Burton SE. Wilburn, 268-1568.
- USED CONCRETE WALL BLOCKS; 4" sewer pipe; 8" form lumber; 16-20' extendable ladder; crow bar; small mortar boat. Collins, 268-3612.
- SNARE DRUM. Becker, 299-2539.
- SET of men's golf clubs for left-hander. Ogden, 242-8351.
- PRE-SCHOOL age children to care for in my home during day, Belhaven area, 1417 Boatright Dr. NE. Farner, 299-6007.

FOR RENT

- 8 ACRE, South Valley, 2-bdr. house, modern, excellent corrals, \$50/mo. plus care of livestock and crops. Schoen, 256-7640.
- NEW 1-BDR brick apts., furnished, carpeted, electric kitchen, huge closet, private patios, utilities paid, \$110. Southerland, 221 Charleston NE, 268-1318.
- LARGE 2-BDR unfurnished apt. with fireplace, stove, refrigerator, \$115. Weinberg, 945 Louisiana SE, 268-4728.
- UNFURNISHED HOUSE, 3-bdr, \$80 a month. Guest, 210 Texas NE, 345-0077 after 5:30 p.m.
- 3-BDR, carpeted front room, \$90/mo. Silva, 4605 Glendale NW, CH 3-2371.

LOST AND FOUND

- LOST—man's black leather gloves w/ rabbit fur lining, turquoise and silver earring; man's blue scarf w/white dots; man's black billfold, lady's brown pigskin glove; man's wallet; 2 blue notebooks w/thunderbird; lady's 3/4 length tan wool and mohair gloves; man's prescription glasses w/black plastic frames. LOST AND FOUND, ext. 264-2757.
- FOUND—lady's green jersey hat; man's tan pigskin gloves. LOST AND FOUND, ext. 264-2757.

How Safe is A Nuclear Reactor?

More and more reactors are being built throughout the world. These reactors cannot explode as an atomic bomb explodes. They are designed to contain radioactivity and if necessary they may be quickly shut down. This second in a series of articles on reactor safety tells how fission products are controlled in a reactor and of the constant checking on reactor safety.

Part Two

In normal operation of civilian power reactors, the radioactive fission products whose release must be guarded against are retained within the reactor in several ways.

The first barrier to their escape is the inherent ability of the nuclear fuel to retain most of the radioactivity from the fission products that build up within the fuel as the reactor continues to operate.

Next comes a sheathing, or cladding, of stainless steel, aluminum or other material which is placed around the fuel. This cladding has two functions: (1) to protect the fuel from corrosion by the water or other coolant which is used to carry the reactor heat away from the fuel to a steam generator or turbine so it can be put to work; and (2) to help keep the fission products confined within their birthplace in the fuel.

The next barrier is the reactor vessel, sometimes called the pressure vessel, which surrounds and contains both the reactor fuel, core, and coolant and is intended to withstand all pressures likely to be developed inside the reactor.

Surrounding the reactor vessel is a thick layer of lead or concrete which is known as the reactor shielding. The shielding protects reactor personnel from radiation from within the reactor.

But suppose the reactor does not operate normally? What happens if there is an accident?

Analyze Accidents

Designers of power reactors are required to analyze the various kinds of accidents that conceivably could happen to their reactors—including a so-called "maximum credible accident"—and then to engineer their plants so as to safeguard against them.

Most of today's civilian power reactors—and the large civilian power plants planned for the near future—use or will use water to remove heat from the reactor core.

The maximum credible accident assigned to water-cooled reactors is loss of the core cooling water through a major break in the coolant piping connected to, but outside of, the reactor pressure vessel.

Such an accident is regarded as extremely unlikely.

But if it should happen, the nuclear fuel could overheat and melt, and the fuel cladding could melt. The cooling water, as released through the break, could flash to steam. Large quantities of radioactive fission products could be released from the melted fuel and be carried by escaping steam and water through the break in the piping.

To contain this escaping steam, engineers commonly enclose water-cooled power reactors with giant, over-all coverings called containment shells or use other methods for suppressing the pressure of the steam and containing the fission products that might escape from the core.

Containment Shell

The containment shell, generally a dome-shaped cylinder or sphere of welded steel, frequently reinforced with concrete, covers not only the reactor pressure vessel, but all the pipes, pumps, valves and other parts of the reactor system that form the path for circulation of the reactor coolant.

Another type of containment known as a "pressure suppression system" is in use on some water-cooled civilian power reactors. In this system, the central feature is a partially water-filled, completely airtight pressure vessel. Any surge of steam created by a reactor accident would be led into this tank where water would condense the steam, thus effectively suppressing the pressure.

In other civilian power reactors operating at lower pressure, such as those where liquid sodium, gas or other non-water coolant is used, the containment may be a "minimum leakage" building. In such buildings, the atmosphere is kept at lower pressure than that outside the structure so that any leaks in case of an accident would be "inward" into the building instead of outward into the atmosphere.

Checking on Reactor Safety

How can we be sure that all civilian power reactors are designed, built and operated with all these safety precautions kept uppermost in mind?

How can we check to make sure that everything that should be done actually is done so that reactors are as safe as it is possible to have them?

This is the job of the Regulatory Staff of the Atomic Energy Commission, which is charged by Congress with responsibility for review of safety matters before any power reactor can be built or operated in this country.

A utility which hopes to build a power reactor must apply to the Atomic Energy Commission for a construction permit. The application then is reviewed by the AEC's Division of Licensing and Regulation in a study covering the safety aspects of the project, including the type of reactor to be built, its design, construction and proposed operation.

Also included in the study is a review of a safety analysis report which the company must submit. The report identifies

accidents which theoretically might occur in the reactor and describes how the company proposes to guard against them.

Any major reactor project is then referred to the AEC's independent Advisory Committee on Reactor Safeguards, a statutory committee established by Congress.

After the ACRS' study, the project is reviewed at a public hearing before an AEC hearing examiner or an Atomic Safety and Licensing Board. Expert testimony is taken and witnesses may be cross-examined. Members of the public may take part in this hearing.

Construction Permits

If the decision of the AEC hearing examiner or the Atomic Safety and Licensing Board is favorable, a construction permit may be granted for the reactor after review of the proposed project by the AEC's Commissioners. Later, another full review, including a public hearing, may be held before an AEC license to operate the plant is granted.

During construction of the plant, a frequent and rigorous schedule of AEC inspection is maintained as one safeguard against poor techniques and workmanship. Another safeguard involves extensive testing of the reactor's components and systems under conditions equal to and usually more severe than those likely to be encountered in actual plant operation.

Operators for the reactor must take intensive training in its operation and pass comprehensive written and oral examinations before receiving AEC licenses which permit them to run the plant. Advance written procedures are prepared for all operation practices and strict adherence to the procedures is required. The reactors then are visited periodically by the AEC's Division of Compliance to make sure that they are being operated in compliance with the AEC operating license and written operating specifications.

No change having any major safety significance may be made in operation of a nuclear power reactor—say a change to a higher power level or modification of an important safety system—without advance approval of the AEC.

The third and last in this series of articles reports on a reactor that was deliberately destroyed to increase understanding of reactor performance in case of an accident. Also reported is the reactor safety record in the United States.

Two Disabling Injuries Recorded in One Week At Sandia Laboratory

Two accidents last week downed Sandia Laboratory's safety figures.

On Feb. 14, a carpenter and a co-worker were waiting for transportation at the south end of Bldg. 887. They had just walked through the steel roller door and a third employee, seeing them leave, pushed the "close" button. The carpenter decided to re-enter the building as the door came down. He didn't see it, and the door struck him on the head.

At the time, the blow seemed negligible and the carpenter continued on the job. However, during the next few days, he experienced pain in his neck and back.

He checked with Clinical Medicine Department 3330 and was referred to a clinic for additional examination. He was hospitalized. The blow on the head had aggravated an old back injury.

On Feb. 15, an electrician was replacing the holding chain on a light fixture in Bldg. 846 when he fell off a 16-ft. aluminum "A" ladder. He fell approximately 12 ft. onto the concrete floor. He was taken by Corporation ambulance to Lovelace Clinic for treatment.

The employee suffered abrasions to his left arm, left leg, and left side of head, and a fracture of his right thumb. He was hospitalized, but has returned to work.

Supervisory Appointments

JAMES R. MEIKLE to manager of Engineering and Research Support Department 2640.

Jim has been at Sandia 14 years. In 1950 he was promoted to supervisor of Electrical Assembly Division and six years later was transferred laterally to Systems Programming and Administration, Division B, 2632, which he has headed since then.

Previously, Jim worked for Radio Corporation of America in Indianapolis, and three years for the U.S. Naval Ordnance Plant in Indianapolis in production of radars and computers.

He has a BS degree in education from the College of St. Joseph, Albuquerque, and studied electronics, mathematics, and physics at the University of Chicago.

He served three years in the Army during World War II.



HERBERT A. ZENGER to supervisor of Safety Engineering and Environmental Health Division 8242, Livermore Laboratory.

Herb came to Sandia at Livermore in February 1959 as a safety engineer. His work has been in the fields of industrial and



high explosives safety.

Before joining Sandia he worked four years for the Lawrence Radiation Laboratory at Livermore. His previous employment was with the Westinghouse Corporation at Sunnyvale, Calif.

Herb graduated from Oregon State University at Corvallis in June 1952, where he was awarded his BS degree in industrial engineering. He has since completed night school courses in electronics at the Contra Costa Junior College in Pleasant Hill, Calif.

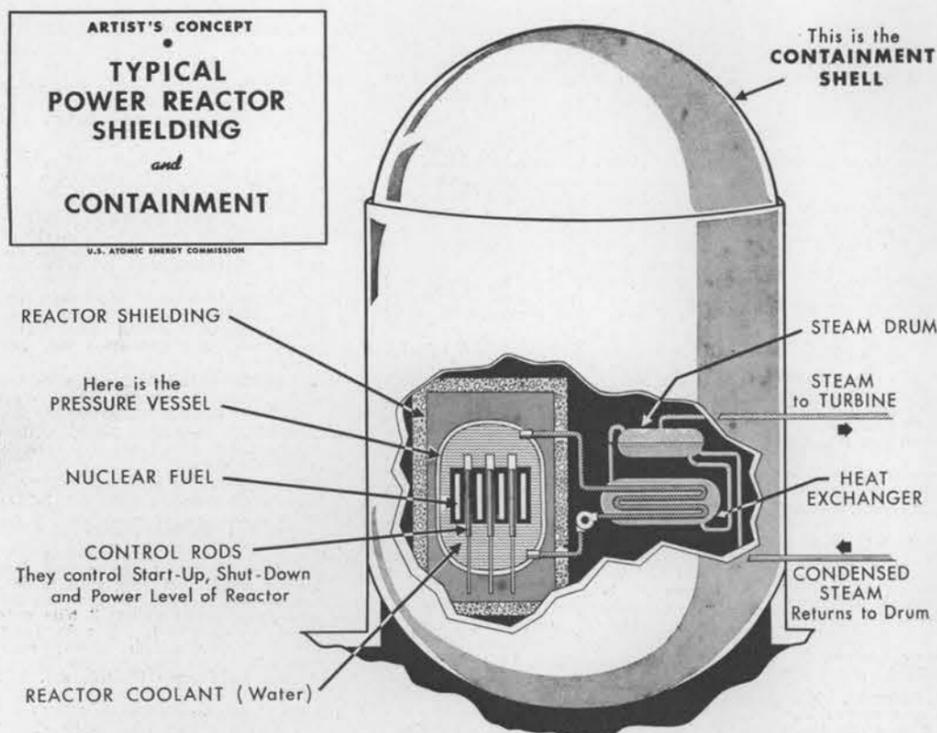
During World War II, he served as an electrician's mate with the Navy in the Pacific Theatre.

Herb is a member of the American Society of Safety Engineers.

PAGE EIGHT

LAB NEWS

FEBRUARY 28, 1964



Sandia's Safety Record

Sandia Laboratory
HAS WORKED
350,000 MAN HOURS
OR 10 DAYS
WITHOUT A
DISABLING INJURY

Livermore Laboratory
HAS WORKED
181,000 MAN HOURS
OR 35 DAYS
WITHOUT A
DISABLING INJURY