

THE ATOM

Los Alamos Scientific Laboratory

September, 1966



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THE ATOM

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COVER:

Spectacular sunsets, such as this, relieve the sometimes bleak landscape of the Nevada Test Site. Photograph by Bill Jack Rodgers.

LOS ALAMOS SCIENTIFIC LABORATORY HAS BEEN DESIGNATED A REGISTERED NATIONAL HISTORIC LANDMARK

In the Historic Sites Act of 1935, Congress declared "it is a national policy to preserve for public use historic sites, buildings and objects of national significance for the inspiration and benefit of the people of the United States."

Such an historic site, soon to be dedicated a registered National Historic Landmark, is the Los Alamos Scientific Laboratory, according to the declaration of the U.S. Department of the Interior earlier this year.

To mark the site, a small log and stone structure is being built to house an official landmark plaque. Situated on Trinity Drive, on the south shore of Ashley Pond, the landmark is near the spot where the components of the first nuclear weapons were assembled some 21 years ago in a stone ice house formerly used by the Los Alamos Ranch School. In addition, the site

was chosen because it is near the Lodge, former hotel and one-time Ranch School headquarters, which will be retained for historical purposes. The location also is in the immediate area which at one time contained the administrative and various important technical buildings of the Laboratory. An exact duplicate of the plaque will rest in the LASL Museum and Science Hall on South Mesa.

Much of the credit for the establishment of LASL as a National Landmark goes to Harold Agnew, weapons division leader at LASL, who first suggested such a possibility to Secretary of the Interior Stewart Udall early in 1965.

At the suggestion of Charles C. Campbell, Atomic Energy Commission area manager at Los Alamos, and Homer Pickens, local AEC conservation officer, some of the construction materials which are being

used in the landmark structure carry with them historical significance.

A number of rocks from the ice house were contributed by Dale Holm of K-1, who purchased the edifice several years ago to use as material for building his Barranca Mesa home. In addition, rocks will be used from the recently razed Central School. The logs which are being used have been taken from old Camp Hamilton, a camp much used during the days of the boys' ranch as a stopping-off place for pack trips. The camp was located near the new Bayo Sewage Plant. Some material will also be taken from the Anchor Ranch buildings, used as ranch headquarters by a privately-owned estate of the early days, along with some material from several homesteaders' cabins in this area.

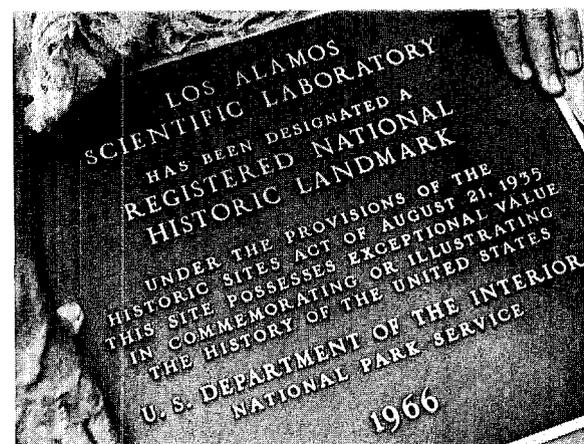
Photographs of the Boys' Ranch School days and old Tech Area 1 will be mounted on the north side of the landmark facing Ashley Pond, while a copper plaque listing some of the accomplishments of LASL will be visible directly below the landmark plaque on the south side facing Trinity Drive.

After a dedication ceremony, upon completion of the landmark structure, LASL will be added to the Registry of National Historic Landmarks, all of which possess "exceptional value in commemorating or illustrating the history of the United States."

Location and building materials for landmark have historical significance.



Plaque will be mounted on landmark.



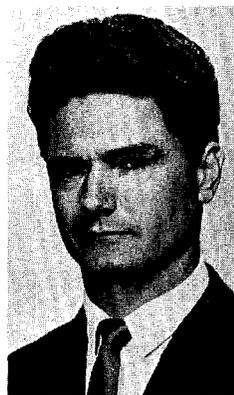
short subjects

Zelma Ruse, who had been in the PER-4 Laboratory cafeteria for the past ten years, retired August 12. She and her husband, C. R. Ruse, who retired from Zia eight years ago, have no definite plans beyond staying in Los Alamos and enjoying their mobile home.

Anna Abbott, GMX-4, retired August 19. She hired on at LASL in 1952 with graphic arts, and in October of the following year transferred to GMX-8, where she worked until moving to GMX-4 in July, 1958. After her husband, AEC Fire Chief A. C. Abbott, retires, they'll move to Ruidoso to make their future home.

Edgar S. Bills, a member of group T-1 since October, 1954, retired July 29. Bills joined the laboratory with the now extinct group A-11 on March 10, 1947. He transferred to the business office in July, 1952, and also served for a short time in the personnel department before moving to T-1.

Dr. Raymond K. Sheline, consultant to P-2 and frequent co-author on numerous LASL papers, has been singled out for excellence as a teacher. A professor of chemistry and physics at Florida State University, he was named Distinguished Professor of the Year for 1966-67.



Robert G. Wenzel, P-2, will take a six-month leave of absence beginning October 1 to work at the Instituto de Energia Atomica in Sao Paulo, Brazil. While there, he'll assist the Brazilian Atomic Energy Commission in the design, assembly and testing of a neutron spectrometer. Norris Nerson, P-2, returned last year from a similar assignment there. Wenzel received his B.A. degree in physics from the University of California, Berkeley, and his M.S. degree, also in physics, from the University of New Mexico earlier this year.

Jane Hall Named to General Advisory Committee

Dr. Jane H. Hall, assistant director of the Los Alamos Scientific Laboratory, was appointed early this month by President Johnson to the General Advisory Committee of the Atomic Energy Commission. She will succeed Dr. Darol K. Froman, whose term on the committee expired July 31.

The General Advisory Committee was established by the Atomic Energy Act of 1946 to advise the AEC on scientific and technical matters relating to materials, production, and research and development. The committee consists of nine members who are appointed from civilian life by the President, each for six-year terms. The committee elects its own chairman.

Dr. Hall, the first woman member ever appointed to the GAC, previously served as technical secretary of that committee from 1956 to 1959. She received her B.S., M.S. and Ph.D. degrees in physics from the University of Chicago in 1937,

1938 and 1942, respectively. After serving as a physics instructor at the University of Denver in 1942, she joined the Metallurgical Laboratory of the University of Chicago

to work as a research associate in physics. In 1944 and 1945, she did research in health physics at E. I. Du Pont de Nemours and Co. in Richland, Washington. In mid-1945, she returned to the Metallurgical Laboratory as assistant to the acting director of the metallurgical project at Argonne Laboratory.

Since arriving at Los Alamos in November, 1945, Dr. Hall has worked in the weapons and physics divisions. She was alternate group leader for the team that designed and constructed "Clementine," the world's first plutonium fast reactor. In 1950, she became assistant technical associate director and four years later was appointed to her present position of assistant director.

Also appointed to the GAC with Dr. Hall were Dr. Edwin L. Goldwasser, who succeeds the late Dr. John H. Williams, and Dr. Norman F. Ramsey, Jr., who was re-appointed to the committee.



Dr. Jane Hall

Two Technicians Named to New Technical Scholarship Program; Will Attend UNM

Two Los Alamos Scientific Laboratory technicians will enroll full time at the University of New Mexico, Albuquerque, this month through a new "Technical Scholarship Program" established by the Atomic Energy Commission.

Robert Newell, MP-2, will work toward his bachelor of science degree in electrical engineering, while John Pritchard, CMB-6, plans to complete a bachelor of science degree in physics. Both men have been studying at the Los Alamos Graduate Center of the University of New Mexico and plan to complete their degree requirements by June, 1968.

Started this year on a "pilot" basis, the Technical Scholarship Program permits selected employees



Newell

Pritchard

of AEC contractors to study full time—and on full salary—for their bachelors' degrees. The two LASL men are among 10 named by an AEC selection panel to participate in the program. Other participants represent Argonne, Brookhaven and Oak Ridge National Laboratories and Lawrence Radiation Laboratory.

Newell, an electronic technician, has been with LASL since August, 1964. Pritchard, a 1951 graduate of Los Alamos High School, is a powder metallurgy technician and has been employed by the Laboratory since January, 1962.

44 From LASL Participate in DOD-AEC Non-Nuclear Safeguard Exercise in Pacific

A non-nuclear safeguard exercise scheduled to begin soon in the Pacific area will involve some 44 Los Alamos Scientific Laboratory personnel.

The joint Department of Defense-Atomic Energy Commission exercise is expected to begin in mid-September and conclude in mid-October. It will be conducted by Joint Task Force 8 and is similar to one held last November.

Arthur N. Cox, J-15, has been named associate scientific deputy for the exercise, while Neel W. Glass, J-16, will be commander of Test Group 8.1.1—LASL's section of JTF-8.

New Mexico's senior U.S. Senator, Clinton P. Anderson, who is a member of the joint congressional committee on atomic energy, announced recently that an estimated

563 persons from facilities in New Mexico would participate in the exercise.

During the forthcoming exercise, B-52 aircraft will drop instrumented test-simulators while other aircraft in the drop area simulate gathering nuclear effects data. Several instruments and test simulator-equipped rockets will be launched from Johnston Atoll and from a U.S. Navy ship as part of the exercise.

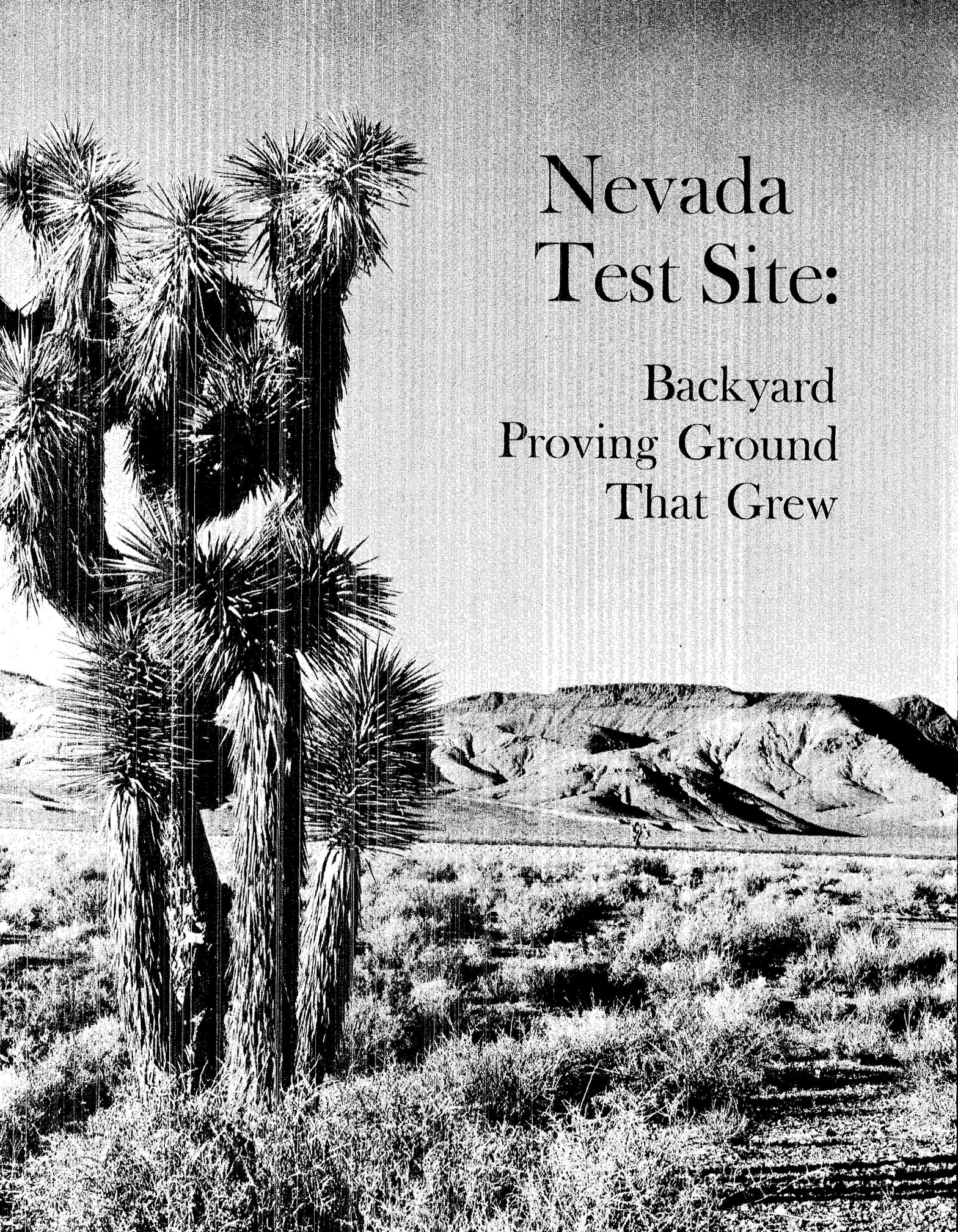
No nuclear weapons are involved in any phase of this practice exercise.

Department of Defense and AEC personnel compose JTF-8, which is the organization responsible for maintaining this country's readiness to perform testing in the environments now prohibited by the limited nuclear test ban treaty. The

Administration informed the Senate that this test readiness capability would be maintained when it submitted the limited nuclear test ban treaty for approval in 1963.

The purpose of these exercises is to assist in maintaining facilities, resources and personnel proficiency in a state of readiness to resume promptly nuclear testing in the atmosphere, if necessary.

The official AEC announcement of the upcoming exercise stated, "The United States earnestly hopes that the limited nuclear test ban treaty will never be abrogated, and that its atmospheric nuclear testing capability will never have to be used. It is nonetheless essential that such a capability be maintained, in the interest of national security," the announcement said.



Nevada Test Site:

Backyard
Proving Ground
That Grew

Sixty-five miles northwest of Las Vegas, Nevada, lies an area that has seen more nuclear detonations than any other place on earth. The Nevada Test Site—shared by lizards and rattlesnakes, scientists and engineers—had seen 278 announced nuclear explosions as of June 30, 1966.

For the Los Alamos Scientific Laboratory, the Nevada Test Site provides a suitably remote area in which more than 100 permanently-assigned LASL employees and numerous occasional “commuters” can conduct scientific experiments. For Nevada, the Test Site represents employment for more than 9000 persons and a monthly payroll in excess of \$6,000,000. For the nation, NTS represents an efficient and effective means of maintaining and upgrading our nuclear deterrent.

Although NTS was originally conceived as a “backyard” proving ground for nuclear weapons development, its role has been greatly expanded in recent years. Now nuclear detonations in Nevada are conducted for peaceful as well as military purposes. In addition, a number of programs requiring isolated locations and specialized facilities are based within the Site. One such program makes use of large prompt critical reactors for both reactor and weapons research.

The entire southwest corner of the Test Site has been set aside for the testing of nuclear systems in Project Rover—this country's nuclear rocket development program. This part of NTS is now known as the Nuclear Rocket Development Station (NRDS) and is managed by the Space Nuclear Propulsion Office which is a joint effort of the Atomic Energy Commission and the National Aeronautics and Space Administration.

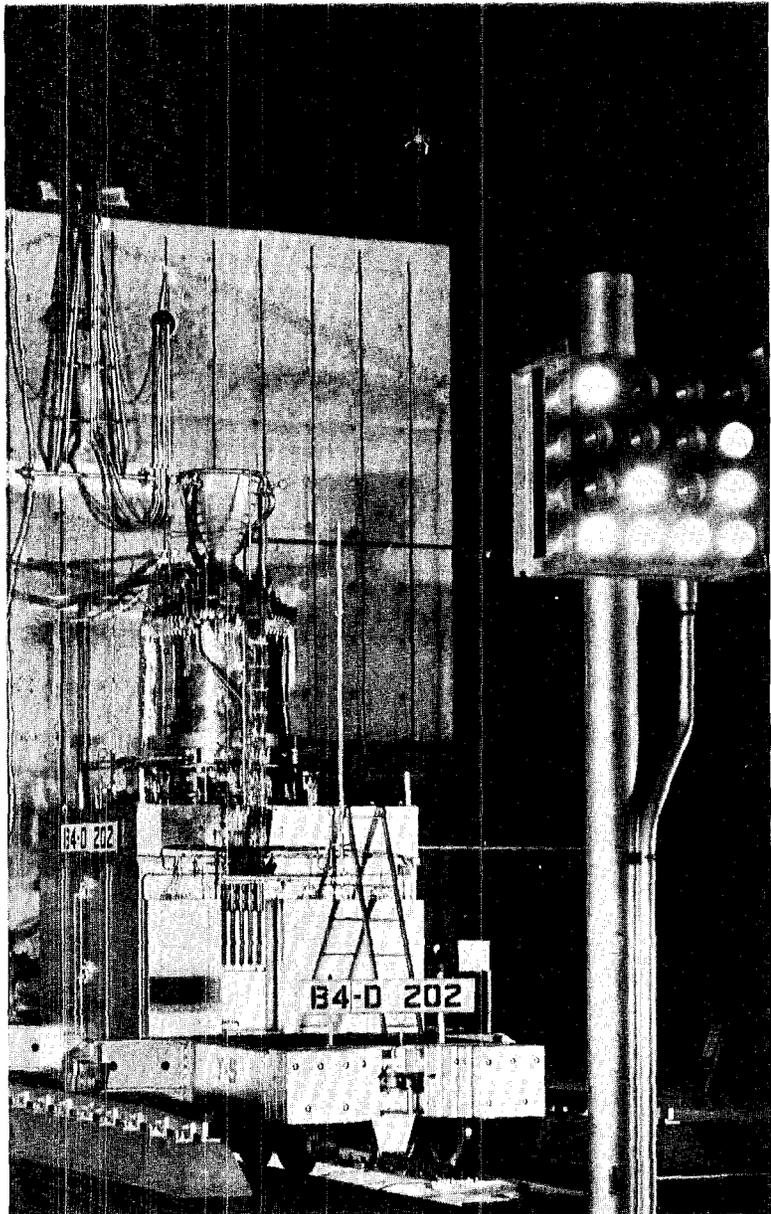
Los Alamos has an almost proprietary interest in NRDS since Project Rover had its inception at LASL. In 1958, the Laboratory selected the site and built the first test installations out of which

NRDS was developed. The area in which NRDS is located is named, some say appropriately, Jackass Flats.

The first Rover reactor, Kiwi-A, was tested on July 1, 1959, in Nevada. By the end of 1964, seven additional Kiwis had been tested at Jackass Flats. In 1965, LASL began testing advanced nuclear rocket reactors of the series known as Phoebus. Reactor technology developed

by the Laboratory will be used in the NERVA (Nuclear Engine for Rocket Vehicle Application) program.

The Nevada Test Site came into existence in December, 1950, when some 640 square miles of the old Las Vegas Bombing and Gunnery Range were set aside as the Nevada Proving Grounds. In the ensuing years this continental testing area



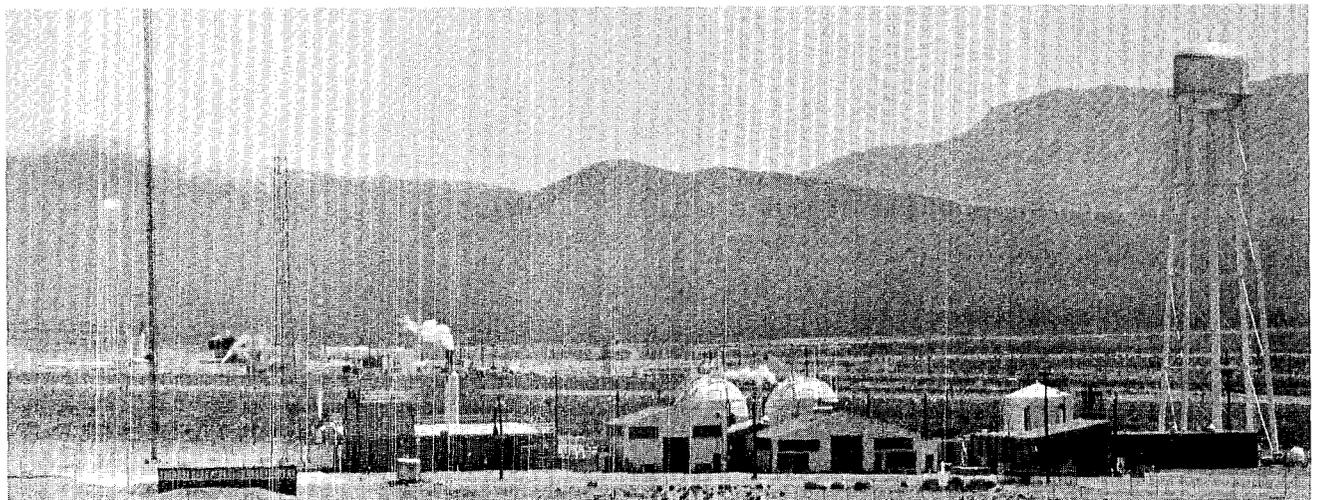
Kiwi reactor sits on test cell at NRDS. Between 1959 and 1964, eight Kiwis were tested.

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Buses line up awaiting checkout procedure as they leave NRDS at the end of the day.

Phoebus reactor undergoes test at NRDS. LASL reactor technology will be used in Nuclear Engine for Rocket Vehicle Application (NERVA) program.



NTS . . .

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more than doubled in size to its present 1350 square miles and also received its present name.

Terrain of the Test Site is typical of southern Nevada, consisting of ranges of hills and mountain peaks interspersed with desert valleys draining into normally dry lake beds. Because of its isolation and expanse, NTS is ideal for nuclear testing purposes.

On January 27, 1951, the first nuclear detonation at NTS occurred with the air drop of a Los Alamos device. The first test series, known as Ranger, was completed in February, 1951, after five air drops.

Since that time the Test Site has seen a variety of nuclear tests. In addition to air drops, detonations have occurred from balloons, towers, ground level, shallow underground and deeply underground. In 1953, an atomic artillery shell was fired from a cannon and successfully detonated. In 1957, an air to air nuclear missile was launched and detonated over the Site.

Today, the various programs at the Site are supported by facilities costing more than \$140,000,000 (not including expendable test facilities) of which about \$70,000,000 has been spent for NRDS development.

More than 2000 persons normally are housed during the week in men's and women's dormitories at Mercury and at forward area camps. However, most of the Site's 9000 workers commute daily from Las Vegas. The largest single employer is Reynolds Engineering and Electric Company (REECO) which is responsible for camp operations, maintenance, some construction and various other support operations. REECO presently has more than 5000 employees.

Nuclear tests at NTS are conducted for the Department of Defense and the three AEC nuclear weapons design laboratories—Los Alamos Scientific Laboratory, Lawrence Radiation Laboratory and Sandia Corporation. During test operations, there is a continual coming and going of scientists and engineers from these laboratories.

Newcomers to the Test Site normally check in at Mercury, a headquarters and base support camp located about five miles north of U.S. Highway 95 which runs from Las Vegas to Reno. The stretch of U.S. 95 between NTS and Las Vegas is a four-lane divided highway. Mercury provides office space, overnight living quarters, utilities, mess halls, recreation facilities, motor pool, laboratory facilities and administrative offices for test organization personnel.

Between U.S. 95 and Mercury is Camp Desert Rock, a former military installation used to house

troops taking part in military exercises involving nuclear detonations in the 1950's. Now largely deserted, Camp Desert Rock once housed more than 5000 troops at a time. It was added to the Test Site in 1964, and its 5000-foot air strip now serves both NTS and NRDS.

A tour of NTS invariably begins at Mercury. As the map shows, Mercury is in Area 23 near the southeast corner of the Test Site. The firing and test areas for nuclear experiments at NTS are numbered from 1 through 12 and from 15 through 20. Like Topsy, this numbering system "just grew" and there is no particular rhyme or reason for it, either from the standpoint of geographic proximity or sequence of development. Nonetheless, it is quite useful.

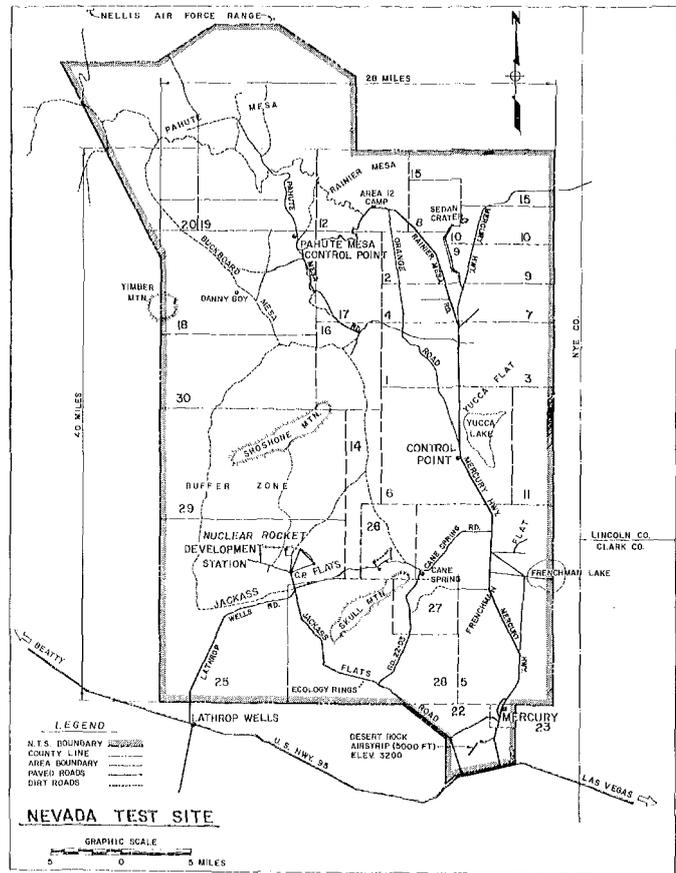
From Mercury, the road leads to Frenchman Flat where the first Nevada nuclear tests were held in 1951. Since then, this area has been used chiefly for military and civil defense effects tests. Numerous engineering structures — a railway bridge, electrical power installations, pressure valves, etc.—as well as a variety of houses and warehouses were built on the dry Frenchman Lake to study the heat and blast effects of nuclear detonations. Various tests have left many of them in a rather woebegone state. Much of the structural steel, after having been carefully monitored for its radioactivity for several years, has been removed as salvage.

Since 1958, only one nuclear detonation has occurred at Frenchman Flat.

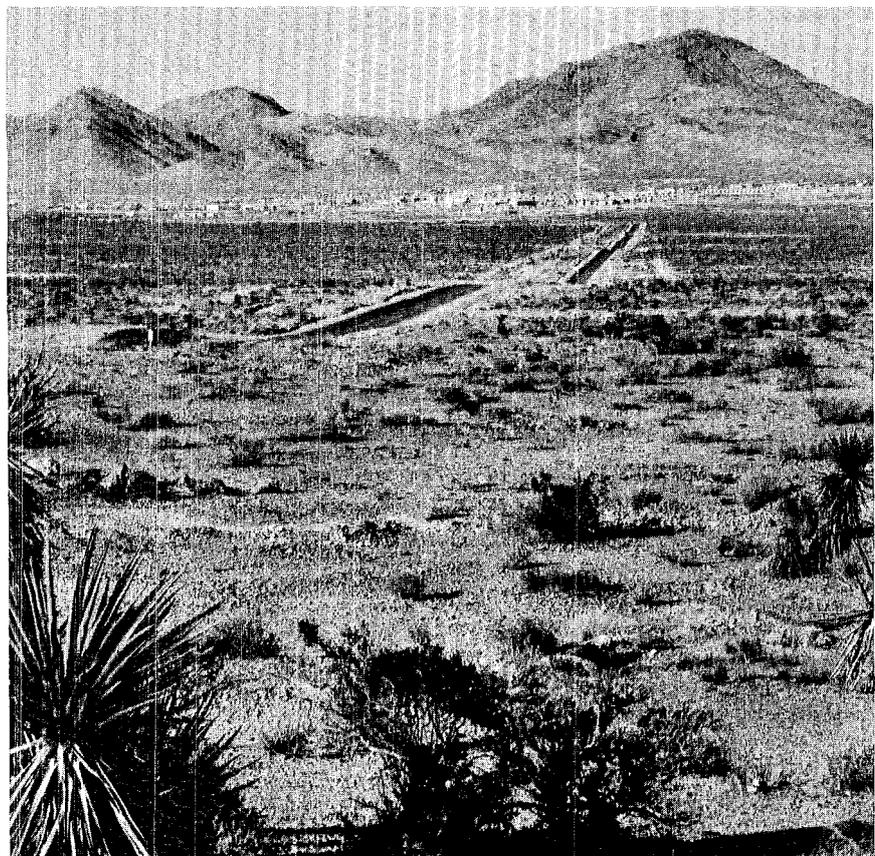
The next point of interest on Mercury Highway is the Control Point, 20 miles from Mercury. Situated on a saddle with excellent views into both Frenchman and Yucca Flats, the Control Point is the spot from which all nuclear shots except those in Pahute Mesa are fired. Close by the Control Point is Yucca Lake, which has an 11,000-foot landing strip on it.

From the Control Point, Mercury Highway leads into Area 3 on Yucca Flat. When LASL personnel

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Mercury, five miles from U.S. 95, is headquarters and base support camp for Nevada Test Site.





Gnarled chunks of a building foundation are mute evidence of the effectiveness of a nuclear device.

NTS . . .

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go to Nevada for nuclear tests, chances are excellent that this is where they are heading, since almost all Los Alamos tests occur in this area. This is a main testing area which was used for atmospheric testing during the 1950's. Since 1961, however, all testing in this area has been underground.

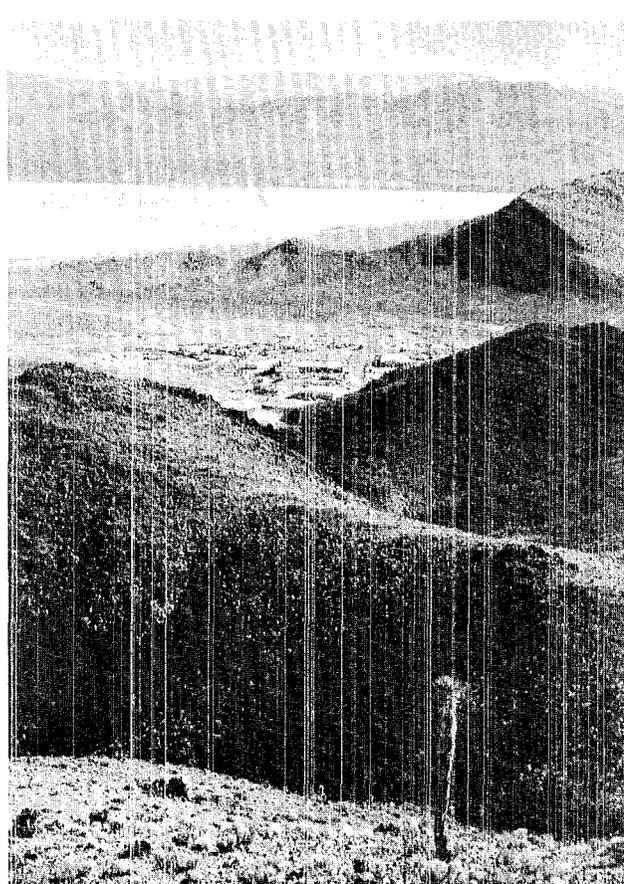
Tests in Area 3 are now conducted at the bottom of long vertical shafts drilled to varying depths. Because the soil in Yucca Flat is a loose, gravelly type known as desert

alluvium, the tests usually cause cave-ins at the surface which often form rather large saucer-shaped depressions.

Across Mercury Highway from Area 3 is Area 1, used by the AEC for continuing studies in animal ecology. The remains of "survival town"—a community built for civil defense effects tests—are also in this area. Unfortunately, "survival town" didn't survive too well: it was pretty well knocked to pieces by a 29-kiloton blast in May, 1955.

Area 7, north of Area 3, was used for balloon shots in 1957 and 1958.

Control Point 1, between Yucca and Frenchman Flats, is spot from which most nuclear shots are fired. Dry Yucca Lake in background contains an 11,000-foot landing strip.



More recently, it has been used for underground detonations.

Across the highway from Area 7 is Area 4—formerly the home of the BREN tower, which was moved this summer and re-erected in Area 28, near the entrance to NRDS. This tower is the tallest structure on the Test Site and certainly one of the highest in the country. It is 1527 feet high—55 feet taller than the Empire State Building. BREN stands for Bare Reactor Experiment, Nevada. In one experiment, controlled radiation from a reactor on the tower was used to irradiate Japanese style houses in an effort to ascertain amounts of radiation experienced by residents of Hiroshima and Nagasaki.

Mercury Highway continues into Areas 9 and 10, both of which are primarily used by Lawrence Radiation Laboratory. Area 9 is another of the chief testing areas for underground detonations. From the air, it, like Area 3, presents a complex of drilling rigs, scientific equipment, and subsidence craters amid a criss-cross maze of roads on the desert floor.

A number of atmospheric tests were conducted in Area 10 between 1951 and 1955. More recently, it has been the scene of underground experiments conducted as a part of the Plowshare program to explore the peaceful uses of nuclear explosives.

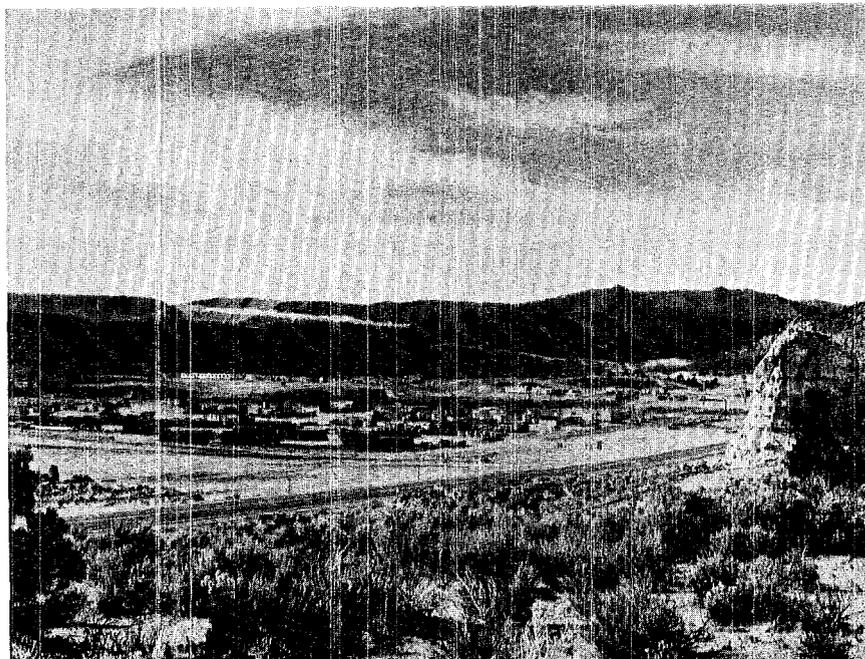
The most spectacular single feature of the Test Site is located in Area 10. This is the Sedan crater, 1280 feet in diameter and 320 feet deep. It was created July 6, 1962, by the detonation of a 100-kiloton thermonuclear device buried 635 feet beneath the desert.

Although most underground tests—the only kind now conducted—are at the bottom of deep vertical shafts, a few are conducted in tunnels drilled into the sides of mesas. Most of this work has been done in Area 12, the site of Rainier Mesa. Indeed, the first completely contained detonation at NTS occurred in 1957 in a tunnel bored into Rainier Mesa.



Loose, gravelly soil in Yucca Flat caves in after underground tests, forming huge craters. Drill rig at top of photo prepares shaft for another test.

Pahute Mesa, some 70 miles from Mercury, is used for underground tests, some more than 4500 feet deep. Control point, center, is used for firing tests in this area.

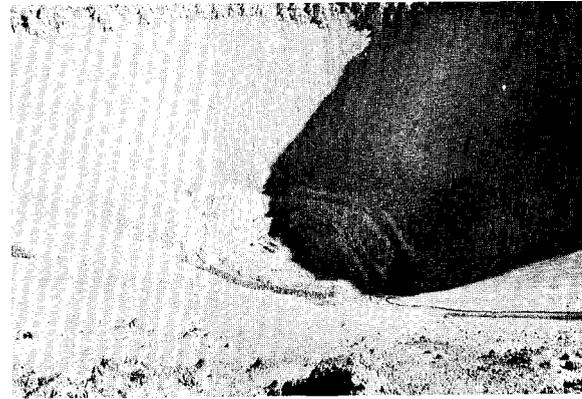


The Area 12 camp, located about 40 miles from Mercury, is second in size only to Mercury. It provides eating and sleeping facilities for miners working in the nearby tunnels and also for men working on the 7500-foot-high Rainier and Pahute Mesas.

Pahute Mesa, located in extremely rugged and remote country some 70 miles from Mercury, is the newest testing area at NTS. It is being developed to handle higher yield nuclear detonations to be conducted very deep underground. Some of these tests will occur at depths in excess of 4500 feet. Although nuclear detonations with yields of several kilotons have occurred at Yucca Flat, neither it nor Frenchman Flat is considered suitable for testing devices with still higher yields, hence the need for Pahute Mesa.

Areas 16, 17 and 18 of the Test Site are in remote undeveloped mountain country. The Department of Defense uses Area 16, while Areas 17 and 18 have been used for Plowshare cratering experiments.

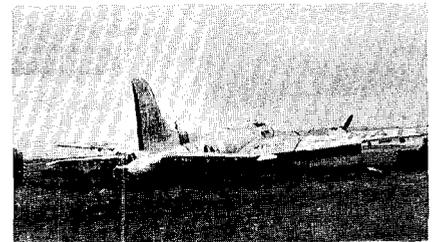
A great many interesting anecdotes can be told about the Test Site. Regulars as well as knowledgeable visitors, though, still speak with awe of the saga of the "Yucca Lady," a World War II B-17 Flying Fortress. The plane was flown into the Test Site for the first series of tests in 1951-52. After being exposed to the effects of a number of nuclear detonations, it was towed



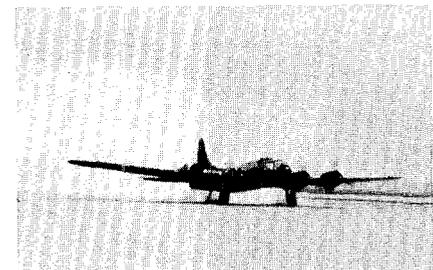
Sedan crater—1280 feet across and 320 feet deep—was created during underground 100-kiloton thermonuclear detonation in 1962.

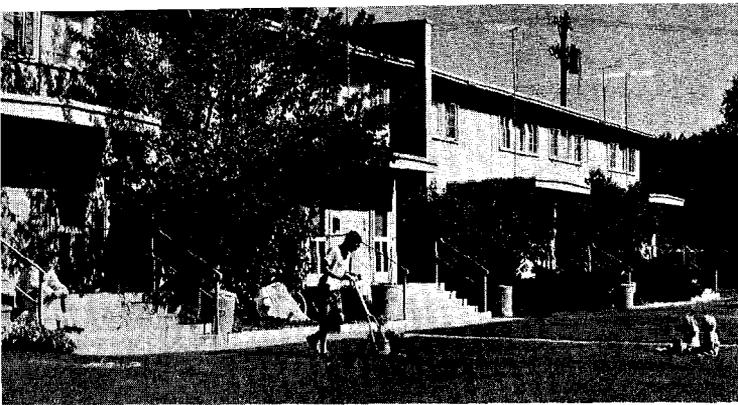
to the edge of Yucca Lake to "cool off" with other scrap.

And scrap was what it appeared to be. Nonetheless, shortly after it was sold as salvage in January, 1965, a buyer appeared who stated he was going to restore the B-17 and fly it away. Old-timers at NTS were incredulous and not a few wagers were made that it couldn't be done. But on May 14, 1965, the "Yucca Lady" once again took to the skies. Fourteen years after ending one career, the old bomber left the Test Site to begin a new one—as a tanker used to spray national forests and other lands.



"Yucca Lady" was sold as salvage, and her flying days seemed to be over, but she was restored to something approximating her World War II condition and roared off into the wild blue yonder.





Ownership is imminent for occupants of multiple dwellings as transfer process continues in Los Alamos.

Impending Apartment Sale Brings Many Questions

By **BARBARA STORMS**

A lot of questions and very few answers seem to be the primary result of the AEC's information bulletin on the purchase of Los Alamos apartment buildings issued to all apartment dwellers last week.

Both John Schroer of the AEC's Disposal Branch and Bill Dunn of the FHA's Department of Housing and Urban Development have been swamped with calls concerning technicalities in the formation and operation of cooperatives and the sale of apartments but neither claims to have many of the answers.

Provisions for the sale of buildings to cooperatives are established in Section 58 amending the Atomic Energy Community Act of 1955 which bases its specifications for co-ops on Sec. 213 (a) (1) of the National Housing Act. Some of the regulations are unclear or conflicting. There has been no precedent for this type of sale, since apartments at Richland and Oak Ridge were offered to outside investors.

Hope for an end to the confusion hinges on the arrival of an FHA cooperative expert from Washington who is expected to spend a couple of weeks in Los Alamos sometime around the end of September.

Meanwhile, residents are mulling this situation, outlined in the AEC bulletin:

About October 21, all but two government-owned apartment

buildings will be offered for sale, either singly or in blocs, to legally organized cooperatives composed of a majority of the bona-fide occupants of the building in question. The cooperatives must be non-profit and organized for the primary purpose of providing housing for their members. Unlike previous priorities in housing sales here, seniority by length of occupancy does not apply.

If any buildings remain unsold after being offered to these first-priority holders, a later offer will be made to holders of a second priority, i.e., co-ops made up of fewer than a majority of occupants.

But the clincher, not made crystal clear in the bulletin, is that the "majority" ruling is an AEC requirement only for the certification of priority. Before either first or second priority can be exercised, the purchasing co-op must be composed of 100 percent of the occupants of the building. This ruling virtually eliminates apartment rentals in Los Alamos except for the two buildings being retained by the government for summer students.

According to the AEC's rule, all present occupants of a building must be given "an equal opportunity to join the cooperative" but if an occupant should choose not to join, the co-op will be forced to acquire another member and potent-

ial occupant before purchase can be made. Just what arrangements will be required for evicting non-member occupants is one of the questions still unanswered by local officials.

Co-op regulations require that members own and occupy only one dwelling unit and a departing member must find a buyer for his apartment before his obligation to the co-op is ended. Initially, all co-op members must be project-connected.

Apartment buildings will be offered for sale singly or in blocs as classified in the appraisals announced earlier this year. Two-bedroom Chapel apartments, for example, are being offered as a bloc of seven buildings containing a total of 72 units; all of the 1950 one-bedroom apartments are being sold in groups of three buildings with 20 units each.

The quads, however, are being offered singly—but an AEC priority regulation prohibits their being purchased that way. The rule requires that a cooperative have a minimum potential membership of eight and be applying for no less than eight units. This means that to buy a quad the occupants of at least two such buildings must form a co-op with a minimum of three occupants of each, assuming both buildings are fully occupied.

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LASL Talent Scouts Open Hunting Season

It's talent-hunting season again, and the talent scouts of the Los Alamos Scientific Laboratory are preparing to pack up and fly to college campuses throughout the country.

But, unlike football scouts, the LASL recruiters are not looking for a hefty linebacker or a 10-second halfback—unless he also is a Ph.D. physicist or an M.S. chemist.

The fall campus recruiting for LASL begins with a visit to Case Institute of Technology Oct. 24 and winds up Dec. 6 to 8 at New Mexico State University. During the six-week interim period, Lab recruiters will visit 34 colleges and universities.

Bob Meier is group leader of PER-2 (field recruiting) and will be one of eight men in the personnel department making the 12 recruiting trips. These excursions for new talent are normally between one and two weeks in duration with visits to several campuses in a particular geographical area.

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Talent Scouts . . .

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Two men compose the usual recruiting team—a personnel representative and a technical representative.

"We try to get a tech rep who is an alumnus of one or more of the schools to be visited," Meier said, "and who is familiar with the work being conducted at Los Alamos."

LASL usually conducts 30-minute interviews as a team although occasionally when there is a heavy schedule they will break up for single interviews.

Meier, who has been recruiting for the Lab since 1953, says it is better to talk to the graduate students in the fall and the undergraduates in the spring. "Besides, some schools won't let us talk to their seniors until spring," he added.

The first step in college recruiting is to schedule the visit with the school. This normally must be done a year in advance.

"For example," the group leader pointed out, "the University of California at Berkeley can handle 18 companies per day during the time they permit for fall recruiting. So the schedules must be compiled far in advance.

"Sometimes the schedules must be re-arranged to try to schedule schools in the same geographical areas together in the same time period," he added.

After a visit is set, an informational questionnaire is filled out by PER-2 and returned to the school. This form asks such questions as: What kind of people do you want? How many vacancies do you have? What is your salary range? Fringe benefits? What length of interview do you require? These questionnaires are returned to the school



Personnel representative Loyd Cox interviews prospective employe.



together with packets of information about Los Alamos and the Laboratory.

"We often get requests from societies or professional fraternities at the school to have someone talk to their group while we are on the campus," Meier said. "So this is taken into consideration in selecting the tech rep. However, it's sometimes hard to get the man we want as tech rep because he is busy. We may break up a two-week trip by having one tech rep the first week and another the second."

After the schools receive the informational sheet, the students are notified by various means—campus newspapers, bulletin boards or faculty advisors—that there will be a recruiter from LASL on campus on a certain day. The students then sign up at the placement office for their interviews.

"The main functions of the campus recruiter are to ascertain if the students have the type of academic background we want and whether we offer what they want. And if so, to sell them on LASL."

Lab recruiters eliminate some, such as the candidates who desire to go into sales or production, which is not available in Los Alamos. Or if he has low grades, he will probably be discouraged, Meier said, especially if he wants to go into research. The Laboratory seeks the most highly qualified people available and, of course, no candidate is ever eliminated because of race, creed or color.

"Some, I'm sure, eliminate us for a variety of reasons such as location," he added.

There is much competition for the available talent, recruiters report, with some job seekers interviewing as many as 25 different companies. The aerospace and aircraft companies with laboratories are big competitors of LASL, as are General Electric, RCA, Bell Labs, electronic firms and others which compete nationally.

The reason for LASL's recruiting is twofold, Meier explained. "We have a low turnover rate of about five per cent a year," he said. "However, five per cent of 1500 staff members is 75 people, and staff members are not easy to come by." In addition to turnover, Meier also noted there has been a small but steady expansion at LASL through the years.

Overall, the Lab fares well in its recruiting efforts.

"If we interview 20 candidates and give them all applications, we normally get about 10 or 11 applications returned. On the basis of the most recent recruiting statistics, one of every five persons who submits an application receives a job offer. And the acceptance rate of staff members offered jobs is about 70 per cent."

In addition to campus recruiting, LASL also recruits through professional society meetings, technical schools, hotel recruiting, technical journal advertising and newspaper advertising.

College recruiting time is a busy season for LASL personnel department. From left are Bob Hayden, personnel representative, secretaries Linda Longley and Joyce Harvey and personnel representative Lynn Wilson.

Ken Wilson, PER-1 group leader, checks an employment application with Marlice Helland, PER-2 dispatch clerk.





Geoffrey Watts (left), Robert Lang and Bill Hansen (right), all N-4, check out electronics for the Rube Goldberg drive mechanism.

Probing the Secrets of the Sun

By VIRGINIA LEES

The sun keeps her secrets well, but two groups of LASL scientists are making elaborate preparations for probing some of them.

A flurry of activity, already under way for several months, will reach its climax on November 12 at precisely 14 hours, 18.87 minutes (Greenwich time), 445 miles due east of Buenos Aires, Argentina. There, some six miles above the Atlantic Ocean aboard LASL's flying diagnostic laboratory, an NC-135 jet aircraft, one group of LASL scientists will train a maze of instruments on the sun. Meanwhile, at Rio Grande at the southeastern tip of Brazil, another contingent from LASL will fire five instrument-loaded rockets toward the sun.

Why the critical timing and locations? Because the sun will at that moment be in total eclipse. And with precise navigation, the airborne scientists will almost literally chase the eclipse, nearly doubling the time it can be studied in totality. From the aircraft, the eclipse will be total for three minutes and four seconds, while from a stationary position on the ocean's surface, time of totality will be less than two minutes.

While the sun has an almost incalculable influence on the earth, ironically, its brightness has hindered scientists in learning more about it. So a total eclipse presents a rare opportunity for scientific study—even for just slightly more than three minutes' time. There

will not be another solar eclipse with a period of totality long enough to make such an expedition worthwhile until March 7, 1970.

The airborne scientists will concentrate their observations on the sun's corona, the thick gaseous layer that surrounds the body, or photosphere, of the sun. Since the corona is only one-millionth as bright as the sun itself, it can be studied only during total eclipse when the moon blocks out the interfering brilliance of the photosphere.

Because the sun's activity—manifested mainly by sunspots—seems to repeat in cycles of about 11 years, scientists want to get data throughout the cycles. The shape of the corona is closely connected with the 11-year cycle: during maximum sunspot activity, the corona seems to be more or less circular with few long protruding "rays", while at minimum sunspot activity, the corona is more elongated, with protruding streamers.

In May, 1965, when LASL scientists made an eclipse expedition to the south Pacific, it was a period of "quiet sun", with almost no sunspot activity. At the time of the forthcoming November eclipse, sunspot activity will be increasing toward its maximum. Therefore, similar observations made during the two eclipses can provide valuable comparisons.

Arthur Cox, J-15 group leader, will be in charge of the 20-man scientific crew aboard the NC-135 participating in Operation SEX—Solar Eclipse Expedition.

Studies of various coronal phenomena will be made by three teams, headed by Donald H. Liebenberg, CMF-9, Robert R. Brownlee, J-15, and Paul Rudnick, J-16.

Liebenberg, with team members Marvin Hoffman, J-12, Lucien Black, J-16, and J Division Leader William Ogle, will man a cumbersome-looking piece of equipment with the unlikely name of Really Urbane Big Experiment Grouping on Lines Describing Bright Emissions, Red, Green—the "Rube Goldberg."

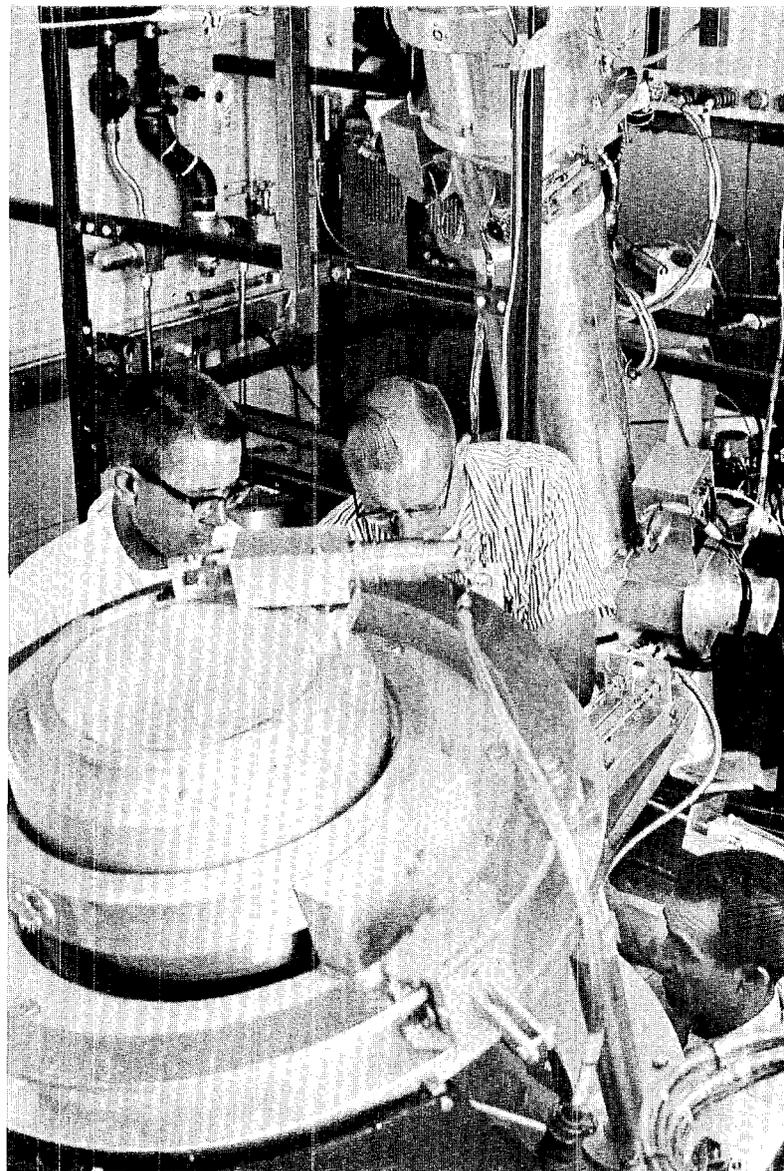
Using a 10-inch telescope with an 80-inch focal length, a photographic interferometer, a photoelectric interferometer and a photometer, the Rube Goldberg is designed to, in effect, take the temperature of the corona and ascertain the abundance of certain elements that comprise it.

The interferometers will be used to measure the shape of two highly ionized iron coronal emission lines—Fe XIV, the "green line", and Fe X, the "red line"—to get an indication of temperature. They will also measure the relative intensity of the two iron lines, a calcium line (Ca XV) and the nearby continuum for those three lines.

An emission line is an electronic transition in the ionized atom which gives off light in a narrow region of the spectrum.

"By looking at emission line intensities, we can get a good idea about the abundance of these ele-

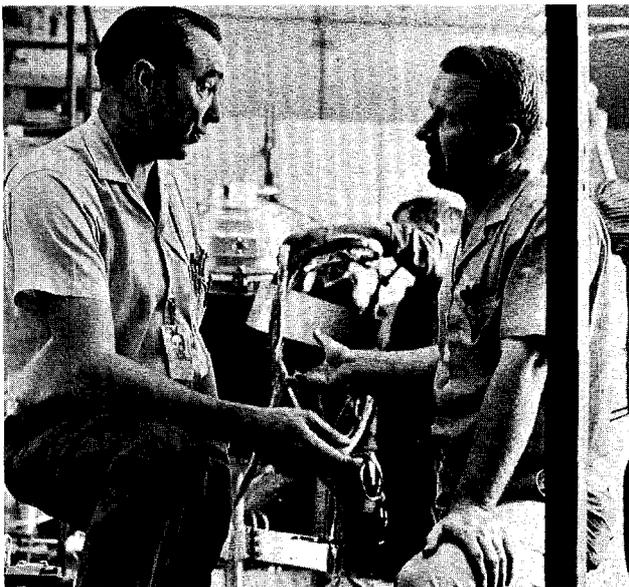
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Coronal camera experiment receives another tuneup after test flights last month. Left to right are Ed Ferdinand, SD-2, Robert Lang and Robert Lury, both N-4.



Robert Brownlee, J-15, right, discusses hydraulic system problems with Joe Perry, N-4.



Ray Gore, Bobby Strait and Geoffrey Watts test master control board for the hydraulic tracking system which will keep the LASL eclipse experiments locked on the sun.

Eclipse . . .

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ments in the corona," Liebenberg said. Since the emissions at given regions in the spectrum are due to particular atoms, such as iron or calcium, the strength of the emissions indicates the abundance.

Liebenberg's team will also use the Rube Goldberg to measure polarization of the lines and the continuum.

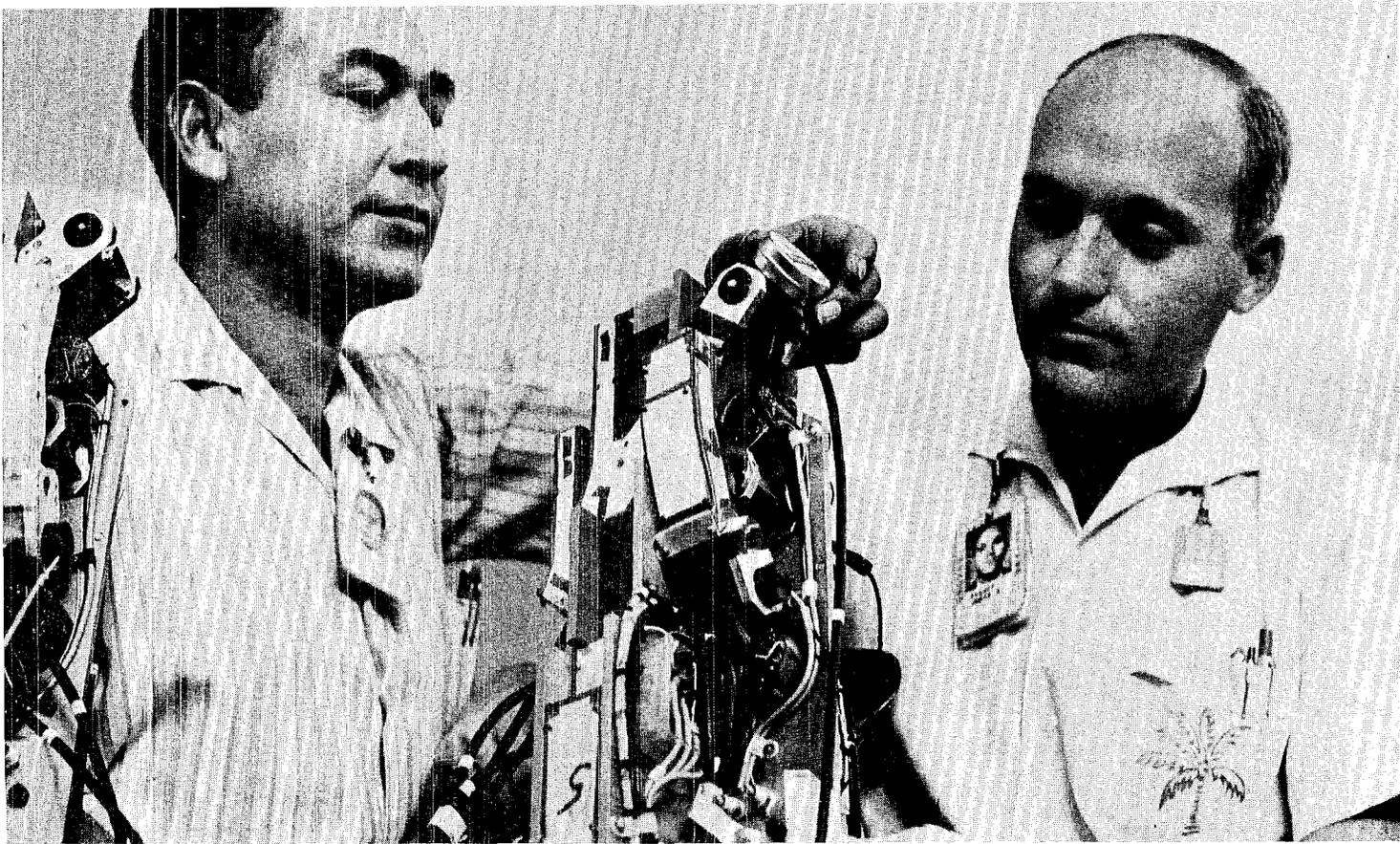
Brownlee's team will include Orville G. Winslow, GMX-8, Robert W. Peterson, J-16, and Theodore T. Scolman, J-8. With a 36-inch focal length camera, they will photograph the corona out to a distance of at least five solar radii from the surface of the sun. Exposure times will range from 10 milliseconds to 10 seconds. The exposures will be made through a broad band orange filter in three planes of polarization.

"By calibrating these photographs, scientists can ascertain the brightness of the corona, which, in turn, is directly related to the electron density of the corona and the structure of coronal streamers," Cox explained.

Rudnick and L. Dick Tatro, J-16, will use an emission line camera in which eight different 13-inch lenses will simultaneously photograph eight images on the same piece of film in order to get a better idea of the structure of activity in the corona. The eight images will include five emission lines—those of Fe XIV, FeX, Ca XV, Ni XIII and Ni XV—and three nearby continuum regions.

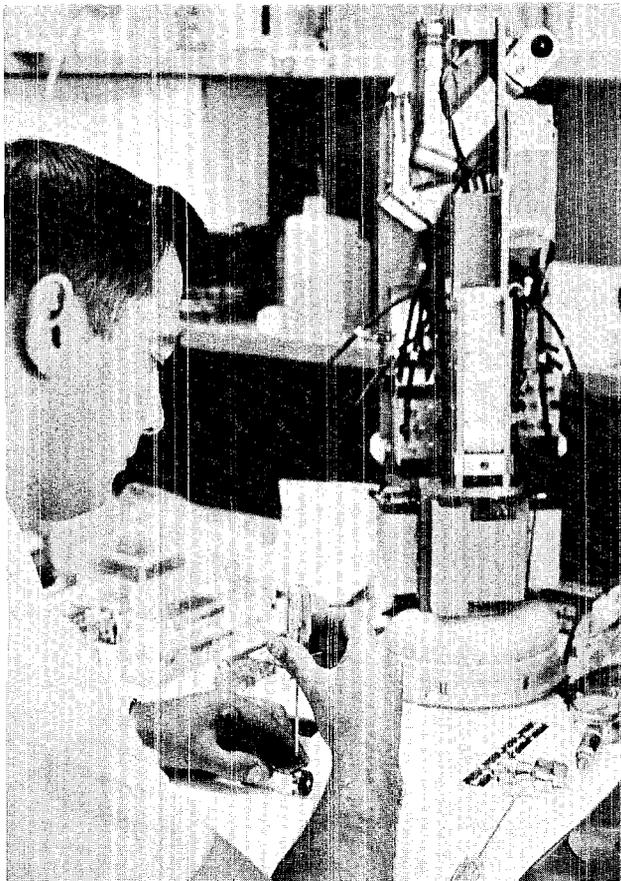
Other members of LASL's airborne scientific team include Ralph Partridge, J-DO, and Bobby G. Strait, N-4, both working with the eclipse tracking system; Dwight Stephenson and Mike Alton, both from J-8, in charge of data recording; Walter Wolff, J-8, aircraft engineering; Robert Lang, N-4, hydraulic systems; and John E. McCloud, D-10, documentary photography. Besides the LASL men aboard the plane, there will be two scientists from the Sandia Corporation, one from Edgerton, Germeshausen and Grier, Inc., one from General Dynamics, Fort Worth, and two Argentinian scientists. A seven-man Air Force crew will operate the plane.

In addition, ground support will be provided by



Russell Youngblood and James Bergey, both P-1, use a low level radioactive source to make final calibration of eclipse rocket payload.

Ralph Garza, P-4, places pressure window on Geiger counter used for x-ray detection.



Eugene Lamkin, D-8, who will process film; and B. C. Lyon, J-DO, advance man for the LASL contingent. "Many other LASL people have been very helpful in working on this eclipse mission," Cox said, "particularly personnel from J division and N-4."

Besides the eclipse studies, the scientific crew will also make cosmic ray studies, both en route to and from Buenos Aires and on two flights out of Buenos Aires after the eclipse. Peterson will be in charge of the cosmic ray missions.

In preparation for the eclipse expedition, three "local" practice flights with all equipment on board have already been made from Kirtland Air Force Base, Albuquerque, where the NC-135 is based. Eclipse equipment has been removed while the plane is used this month in test readiness exercises in the Pacific—its main purpose. Meanwhile, personnel in N-4, who have built the hydraulic tracking systems, will give the equipment a preliminary checkout, and by the end of October it will be re-installed for the eclipse expedition. Additional practice flights are scheduled for November 6, 8 and 10 from Ezieza airport, Buenos Aires, base for the eclipse mission. The LASL plane will leave Albuquerque for Buenos Aires November 2 and will return about November 22.

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Eclipse...

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In addition to the LASL flying laboratory, four other aircraft are scheduled to fly eclipse missions, including the two other Atomic Energy Commission readiness aircraft instrumented by the Sandia Corporation and by Lawrence Radiation Laboratory, a plane from the Air Force Cambridge Research Laboratory and a plane from the National Aeronautics and Space Administration.

The second contingent of LASL eclipse-chasers will stay on the ground and let their instruments do the flying.

A team of four from P division—Doyle Evans and Harold Argo, P-4, James A. Bergey and Russell Youngblood, P-1, along with 16 men from the Sandia Corporation, will set up operations at a beach site near Rio Grande, Brazil, some 400 miles east of Buenos Aires.

From there, they will launch five Nike-Tomahawk rockets carrying LASL instrument packages toward the sun. The five payloads will be identical, each containing eight fixed station crystal spectrometers to measure x-ray emissions from the sun's corona. Launch times will be spaced to obtain readings in clear sun, partial eclipse and total eclipse.

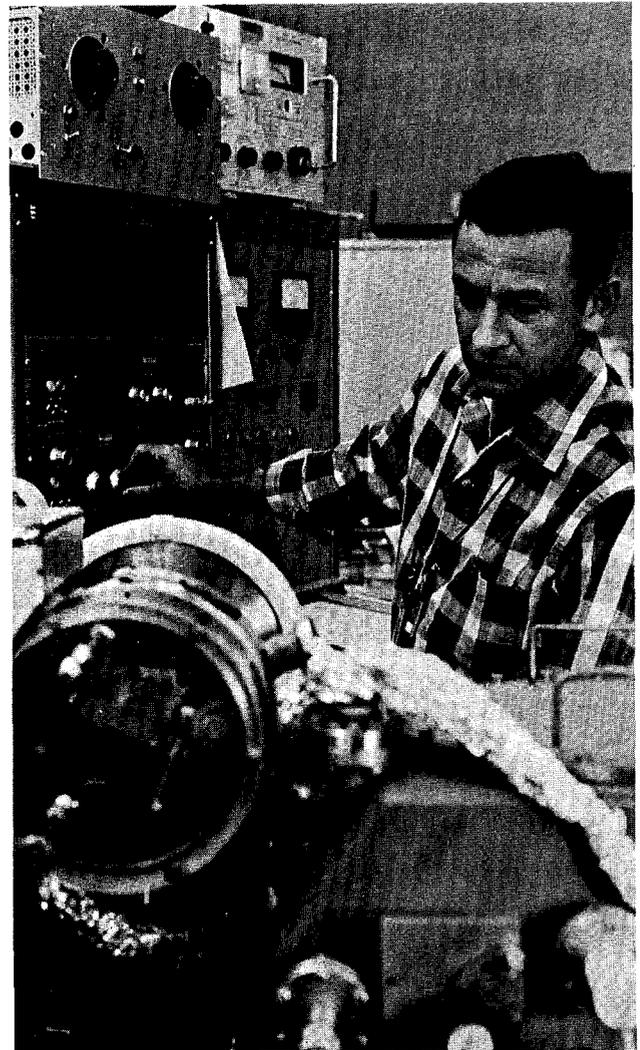
Each of the eight spectrometers in each instrument package is focused for one particular x-ray emission line from highly ionized carbon, nitrogen and oxygen atoms in the corona. The spectrometers have been refined to the point that they can detect one out of every 10,000 x-rays of a particular wave length—enough to give scientists the data they need.

The x-ray emission measurements provide information about the density and temperature of the corona, as well as giving scientists a better picture of the "background" with which instruments in the Vela nuclear detection satellites must contend.

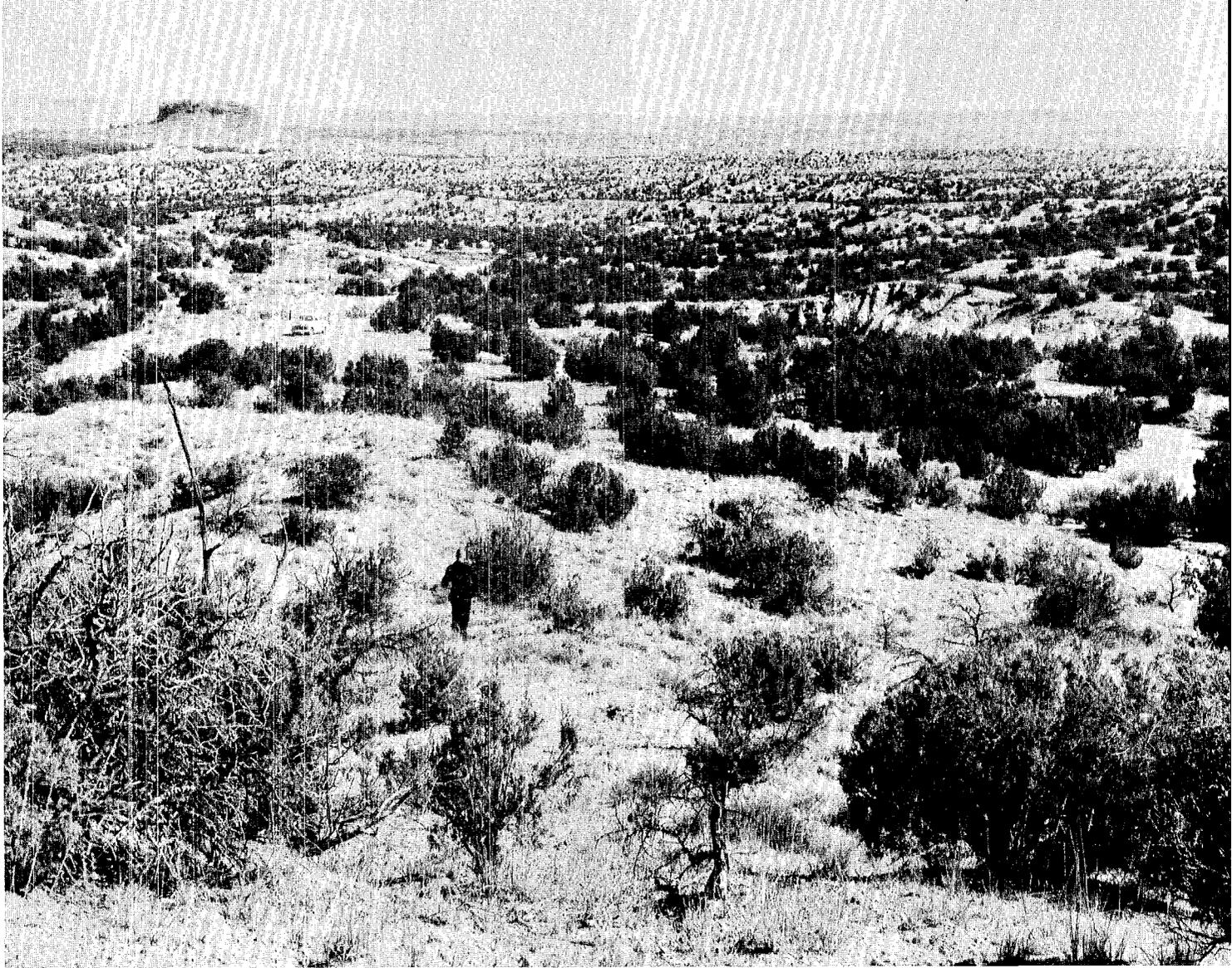
LASL personnel are designing and building the instrument packages for the rockets, and the Sandia Corporation is responsible for providing launch facilities, rockets, telemetry and launch personnel. The launchers were shipped to Rio Grande last month, and on-site construction is under way.

The Nike-Tomahawks are designed to shoot 250 kilometers almost straight up and then pitch over to point their instrument payloads directly at the sun. Three successful pre-eclipse test shots were made in August from Kauai, Hawaii, to check out the pointing control system, a source of trouble on the May, 1965, eclipse expedition. During both tests, the sun tracker kept the payloads pointed to within one-eighth degree of the center of the sun.

In addition to the LASL-Sandia Nike-Tomahawk launches, rockets will be launched from the Rio Grande site by NASA, the Defense Atomic Support Agency and the Brazilian government.



Doyle Evans, P-4, uses an x-ray vacuum spectrometer to calibrate efficiency of crystals used in the rocket payload x-ray detectors. Five identical payloads will be launched aboard Nike-Tomahawk rockets from a beach site near Rio Grande, Brazil.



The area of the proposed housing development appears bleak to many. But to others it offers a view which was a major factor in the decision to buy.

Right-of-Way Snag Stymies Buckman Hills Development

Crossing Indian land today is a trifle harder than it was in the 19th century, a group of Los Alamos people are discovering.

One hundred years ago vast areas of Indian lands were crossed by pioneers enroute to gold fields and by settlers who "squatted" on the real estate and developed homes and farms. Today, members of the Buckman Hills Landowners Association are unable to get sufficient right-of-way for a road 1.5 miles long.

And the 64 kilobuck question appears to be: Who is responsible for obtaining the land?

The problem arose more than four years ago when a group of Los

continued on next page



Buckman Mesa (left) is the major landmark in the area and lends its name to the hoped-for future community.

Buckman Hills

continued from preceding page

Alamos residents petitioned the U.S. Bureau of Land Management to open a parcel of federal land 12 miles east of Los Alamos near Buckman Mesa.

The property was opened under the Small Tract Act of 1938. This act makes it possible for any citizen once in his lifetime to obtain from 1¼ to five acres of certain federal land for residence, recreation, or business purposes at never less than the appraised fair market value.

The BLM in March, 1962, began selling the property—although one official says the agency did so reluctantly. An important point to

note is that the prospectus for the sale said access to the property was available from Santa Fe via unimproved roads and also that efforts were underway by the Santa Fe County Commission to obtain access to State Road 4.

There were 509 tracts available—ranging in size from 2.5 to 5 acres—and 81 of these were sold for an average price of slightly more than \$150 per acre. Most of the tracts were sold to Los Alamos people, who planned to build a home and commute to the Hill. However a number were sold to persons in other states who apparently planned to sell the tracts for a profit at a later date.

But it appears now that no profit will be made. Nor will any homes be built, unless something gives.

Joe Dion, ENG-4, was one of the original purchasers and is currently access road committee chairman of the Buckman Hills Landowners' Association.

Dion said that one week before the sale the Indians of the San Ildefonso pueblo closed and locked the gate across the old Buckman road which runs from State Road 4 to the planned Buckman Hills development.

This road crosses Indian land and the Indians did not want a public road running through their property. They said the road would isolate a portion of their land.

"The lots were purchased on the assumption that if there was anything wrong with the access the sale wouldn't have been held," Dion said.

The purchasers investigated an alternate route to SR 4, since to travel from their property to Los Alamos via Santa Fe would be a journey of 53 miles.

One suggested alternative was to follow an old railroad bed around the mesa and along the east bank of the Rio Grande. However this route would be 3-4 miles longer and cost at least four times as much to construct.

The chairman of the Santa Fe County Commission, Gilbert Ortiz, M&R, said it would not be safe or practical to construct the road around the mesa.

"Too expensive," he said.

"The Santa Fe county road fund only runs about \$350,000 per year and there are other priorities ahead of Buckman Hills," Ortiz said. "We will be glad to blade the old Buckman road to State Road 4 if the right-of-way can be acquired."

Ortiz said the county commission feels the BLM should acquire the estimated 13 acres of land needed for the right-of-way on the old Buckman road.

"They (BLM) made the sale and got out and left the people stuck without access to State Road 4," he added.

Ortiz said the commission feels the BLM should be able to get together with the Bureau of Indian Affairs and obtain the right-of-way, since both are federal agencies.

However, W. J. Anderson, state director for the BLM, takes strong exception to this statement.

"The bureau is not in a position to obtain this right-of-way," Anderson said. "We can't go in and take land away from the Indians to give to them (landowners' association).

"We told the Los Alamos people to consider other lands when they petitioned for this property but they used Congressional pressure to put the property on the market, and we did. Now it's up to them to get the right-of-way."

He continued, "When the land was sold it had — and still does — 'equal opportunity of access' for all people whether they live in Santa Fe, Los Alamos or St. Petersburg,



Joe Dion, ENG-4, an original purchaser of a Buckman Hills plot, is chairman of the committee attempting to obtain an access road.

Fla. If they want a more convenient route they will have to go to the people concerned and obtain the land. It is a problem of local road construction at the local level.

"We told them all this before they went in. We are willing to work with them in any way we can, but we can't confiscate Indian property and give it to someone else."

Dion has engaged in extensive correspondence with federal officials in Washington, D.C., and with U.S. Sen. Clinton P. Anderson, D-N.M., regarding the situation. Dion said no concrete results have been ob-

tained, although Sen. Anderson said he would look into the problem.

In the meantime the property owners are understandably concerned and many would like to sell their land. But the chances of finding a buyer are extremely slim if access is unavailable.

The only consolation for the property owners is that the land is presently on the Santa Fe county tax rolls as "inaccessible grazing land" and is valued at \$3.50 per acre for tax purposes.

Dion's tax bill on his five-acre tract last year was 65 cents.

Dads . . . and Lads Pack to Lake

By WILLIAM REGAN

High on the north flank of Wheeler Peak, New Mexico's highest point, and not far from where the Texans and their Suzukis play in Red River City, lies an alpine gem of a lake called Lost.

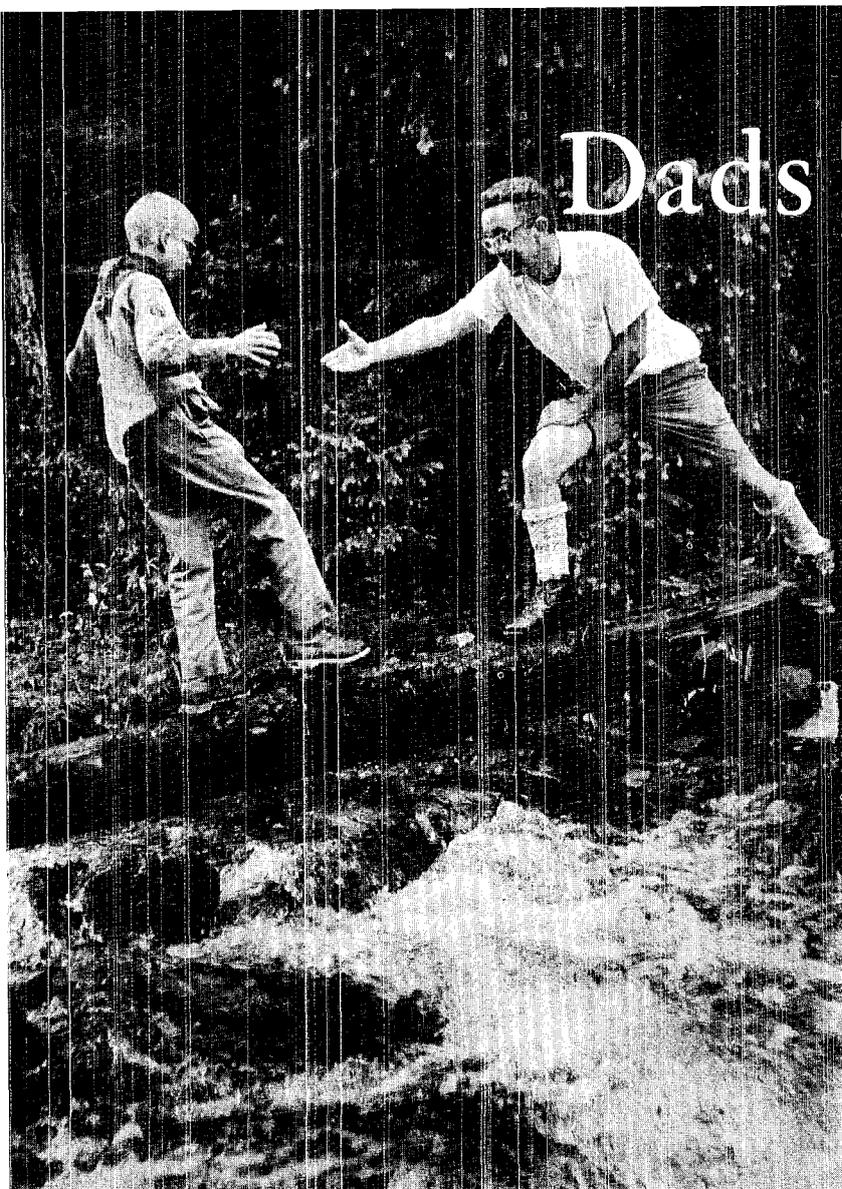
Long a favorite with many Los Alamos fishermen, Lost Lake is appropriately named—to a heavily laden backpacker, it seems to always be over one more steep ridge. This was the goal for some LASL dads and their lads from White Rock Boy Scout Troop 326 on a recent three day backpacking trip.

Assistant Scoutmasters, Jim Stapp, GMX-7, and Vernon Kerr, H-4, led a party of 12 scouts and five fathers through the forest of advertising signs at Texas' Red River colony, to Road 58's end at Ditch Cabin, and up-up-up on foot to make camp near timberline at the 11,200 foot mark.

John Ramsay, GMX-8, a veteran of the University of Wisconsin Hoofers Club, and son, Bryan, set the pace for the last quarter mile, arriving at the lakeside camping area at dusk on a Friday night. Darkness and complete fatigue arrived together with the last stragglers.

Early Saturday and far through the day, the fishermen, both boys and their fathers, surrounded the lake. Apparently, the trout were unaware that they were surrounded and few surrendered. Sunday was good turn day for the scouts when they policed the area around the lake cleaning up debris left by previous campers with litter-bug tendencies.

The group returned to White Rock late Sunday afternoon. Others making the trip were: Ted Walters, Pat Hodson, Tim Locke, Steve Elliott, Bill Spencer, John Boone, Mario and Marlin Martinez, Lee Stapp, Bryan Ramsay, Mark Regan, Donald Locke, GMX-7; and Bill Regan, PUB.



John Ramsay was anchor man for Lee Stapp and others on this log bridge.



Together



Steve Elliott, John Ramsay, Jim Stapp, Vernon Kerr and Ted Walters enjoy campfire and community singing.

Early morning sun spotlights the smoke of breakfast fires.



an alpine gem

Lost Lake



Fishermen, like Mark Regan, surrounded the lake.



A few trout surrendered to Ted Walters, Steve Elliott, Lee Stapp and Mario Martinez.



Don Locke moves out for return trip.

Varenna Lecture Series, Varenna, Italy, June 27-July 9:

"Characteristics and Experimental Program for an 800 MeV Proton Linear Accelerator" by Darragh E. Nagle, MP-4.

Symposium on Separated Orbit Cyclotrons and Beam-Cavity Interactions, Oxford, England, July 8:

"The Current Status of the Los Alamos Meson Facility Project" by D. C. Hagerman, MP-2 (Invited paper)

Third Research Reserve Seminar in Applied Research, Sandia Base, Albuquerque, N.M., August 9:

"Materials Development at the Los Alamos Scientific Laboratory" by J. M. Taub, CMB-6. (Invited paper) CLASSIFIED MEETING

Eleventh International Symposium on Combustion, Combustion Institute, Berkeley, Calif., August 14-20:

"A Shock Wave Study of Recombination in Near-Stoichiometric Hydrogen-Oxygen Mixtures" by R. W. Getzinger, GMX-7.

"Post Induction Kinetics in Shock Initiated H_2-O_2 Reactions" by C. W. Hamilton and G. L. Schott, both GMX-7.

"The Effect of Oxygen Atoms on the Vibrational Relaxation of Oxygen" by J. H. Kiefer and R. W. Lutz, both GMX-7.

One Hundred Twenty-Sixth Annual Meeting of the American Statistical Association, Los Angeles, Calif., August 15-19:

"Multivariate Quantal Response Analysis Using Regressing Methods" by R. K. Zeigler and R. H. Moore, both T-1.

"On Further Characterization Properties of the Exponential Type Families" by A. S. Goldman, Gonzaga University, and R. K. Zeigler, T-1.

Twenty-Fourth Annual Meeting of the Electron Microscopy Society of America, San Francisco, Calif., August 22-25:

"Modified Techniques for Preparing Specimens of Alpha-Active Materials" by D. L. Douglass, CMF-5.

The Technical Side

International Symposium on "Why and How Should We Investigate Nuclides Far Off the Stability Line," Lyskeill, Sweden, August 21-27:

"Neutron Cross-Section Measurements on Radioactive Nuclides Using Neutrons from an Underground Nuclear Explosion" by W. K. Brown and B. C. Diven, both P-3.

"Beta Decay of Some Cerium Isotopes Far to the Neutron-Rich Side of Stability" by D. C. Hoffman, J-11, O. B. Michelsen, Institutt for Atomenergi, Norway, and W. R. Daniels, J-11. (Invited paper)

"Dependence of Nucleosynthesis Abundance Calculations on the Mass Law" by P. A. Seeger, W-8. (Invited paper)

"Production of Heavy Elements in a Recent Los Alamos Thermonuclear Test" by D. C. Hoffman, J-11.

American Physical Society Meeting, Mexico City, Mexico, August 29-31:

"Energy Flow in Isotopically Disordered Binary Lattices" by D. N. Payton, III, Marvin Rich, and W. M. Visscher, all T-9.

"Recent Developments in Proton Linac Particle Dynamics" by D. A. Swenson, MP-4. (Invited paper)

"Triton Inelastic Scattering from Ni^{64} , Zr^{90} , and $Sn^{116, 118}$ " by E. R. Flynn, P-10, D. D. Armstrong, and A. G. Blair, both P-12.

"Energy Dependent Effects in the (t, He^4) Reaction on Zr^{90} " by D. D. Armstrong and Allen G. Blair, both P-12.

"Differential Cross Sections for the 4.43 MeV Gamma Ray Produced by 6.0 and 7.5 MeV Neutron Scattering from ^{12}C " by D. M. Drake, P-DOR, Henri Conde, P-3, and J. C. Hopkins, P-DOR.

"Elastic Scattering of Fast Neutrons from Deuterium" by J. D. Seagrave, J. C. Hopkins, and P. W. Keaton, all P-DOR.

"Gelfand Bases of the Unitary Groups and Some Simple Physical Applications" by J. D. Louck, T-9. (Invited paper)

Tenth International Conference on Low Temperature Physics, Moscow, USSR, August 31-September 6:

"Thermal Expansion and Compressibility of Solid He" by E. R. Grilly, CMF-9.

"The Dielectric Constant of He^3 " by E. C. Kerr and R. H. Sherman, both CMF-9.

"Separation of He^3 from He^3-He^4 Mixtures" by R. H. Sherman, CMF-9.

"An Automatic Superconducting Flux Pump" by H. L. Laquer, K. J. Carroll, and E. F. Hammel, all CMF-9.

"Dissipation in the Flow of the Helium Film" by W. E. Keller and E. F. Hammel, both CMF-9.

"Dissipation and Critical Velocities in Superfluid Helium" by E. F. Hammel and W. E. Keller, both CMF-9. (Invited paper)

Inter-Union Symposium on Solar-Terrestrial Physics, Belgrade, Yugoslavia, August 29-September 2:

"Vela Satellite Observations of the Bow Shock and Magnetosheath" by H. V. Argo, J. R. Asbridge, S. J. Bame, I. B. Strong, all P-4, and A. J. Hundhausen, T-12.

"Vela Satellite Observations of the Solar Wind Ions" by A. J. Hundhausen, T-12, J. R. Asbridge, S. J. Bame, and I. B. Strong, all P-4.

Three Laboratory Employees Die



Alvin Embry, Hill resident and J Division staff member since 1946, died August 19. He had been associated with the weapons testing program for the past 20 years.

Embry, 53, was born in Baker, Oregon, and received his B.S. degree in electrical engineering from the University of Utah in 1939. Before coming to Los Alamos,

he was a design engineer with General Electric in West Lynn, Massachusetts.

Always interested and active in civic affairs, Embry was a member of the first Board of County Commissioners of Los Alamos County. He was also a charter member of the local Geological Society.

Embry is survived by his widow, Margaret, and six children. Also surviving are his mother, Mrs. Iola Embry, and two brothers and two sisters.

Funeral services were held August 23 at the Los Alamos Church of Jesus Christ of Latter Day Saints. Interment was at the Guaje Pines Cemetery in Los Alamos.

Herman A. Rothman, Jr., 51, an SD-1 employee, died August 18 in Espanola. Rothman, a native of Indianapolis, was employed by General Electric, San Jose, California, before coming to LASL in January, 1948.

He is survived by two sons and a daughter; his parents, Mr. and Mrs. Herman A. Rothman, Sr., of Indianapolis, and a brother, also of Indianapolis.

Services were held Monday, August 22, with burial in Sacred Heart Cemetery in Espanola.

Clifford C. Cummings, 47, an N-3 design draftsman, died August 16 at the Los Alamos Medical Center after a prolonged illness.

Born February 4, 1919, in Whites, Washington, Cummings attended Gray Harbor Junior College, Aberdeen, Washington, and Western Washington College of Education, Bellingham. He was employed by the Naval Shipyard in Bremerton, Washington, prior to coming to Los Alamos in March, 1956, when he hired on with GMX-9.

Cummings is survived by his wife, Jo, and five children, Corlaine, Trent, Lowell, Mark and Jolie Ann of Los Alamos; his parents, Mr. and Mrs. Paul Cummings of Stanwood, Washington, and a brother, Loren.

Burial was in Guaje Pines Cemetery.

Apartment Sales. . .

Continued from Page 10

As in previous housing sales, the successful priority purchaser will receive an automatic discount of 15 per cent of the appraised value of the property, and an additional ten per cent discount can be had if the co-op wishes to waive the indemnity provision of the Atomic Energy Community Act.

In applying for first priority, cooperatives will be required to submit to the AEC a list of the names, addresses and employers of its members, the chapter and article of the New Mexico statutes under which it is organized, a copy of its articles of incorporations, by-laws, occupancy agreement with each member, subscription agreement with each subscriber, and evidence that

all project-connected occupants have been given equal opportunity to join the co-op.

Co-ops will have 30 days after the general offer is made in which to file application for priority with the AEC. Once certified for priority, the co-op must provide the AEC with a complete list of its members, their addresses and employers at least one week before the closing date for the sale.

As of September 1, only two cooperatives were on the books at the State Corporation Commission in Santa Fe—the professionally-sponsored Los Alamos Community Homes, Inc., and Cooperative Housing of Los Alamos, Inc.—although many other groups are reported to be in various stages of organization.

Once organized, members of a cooperative calculate the amount of down payment to be collected from each member in order to have the capital assets required at mortgage closing time, and they prepare a schedule of monthly carrying charges applicable to each unit, calculated to meet the estimated annual operating expense. Each member signs a lease-type agreement to pay these charges. The agreement usually specifies the required maintenance to be performed by the co-op as well as those which are the responsibility of the individual member. The cooperative makes arrangements for management of the project, either by a professional management organization or by an executive staff composed of co-op members.

what's doing

SPORTSMEN'S CLUB: Turkey Shoot, September 25.

KIWANIS KIDS DAY: Saturday, September 24. Sponsored by Los Alamos Kiwanis Club. No charge. Mad Hatter's Tea Party, 10 a.m., Los Alamos Inn; Pet Parade, 1 p.m., Diamond Drive-Canyon Road parking lot; Athletic Events, 10 a.m., Sullivan Field.

LITTLE THEATER: First production of the season, "The Moon is Blue," Friday and Saturday, September 23 and 24, Los Alamos Civic Auditorium. Tickets available at the box office of the auditorium, \$2 each. Season tickets available from Kay Anderson, 2-3510. For reservations call Joan Dare, 8-4938.

LOS ALAMOS CHORAL SOCIETY: Every Tuesday evening at 7:45 p.m., Pueblo Junior High School band room. All interested new singers invited to beginning rehearsals.

LOS ALAMOS FILM SOCIETY: "Casanova 70," an Italian comedy. September 21, 7 and 9:15 p.m., Civic Auditorium.

OUTDOOR ASSOCIATION: No charge, open to the public. Contact leader for information about specific hikes.

Sunday, Sept. 18, up Pajarito Mountain, down Valle Canyon. Betty Hansbury, leader.

Thursday, Sept. 22, night hike. Ken Ewing, leader.

Saturday and Sunday, Sept. 24 & 25, overnight backpack, Pecos Baldy Lake. About 20 miles; 3000 ft. Ken Ewing, leader.

Tuesday, Sept. 27, night hike. Dibbon Hagar, leader.

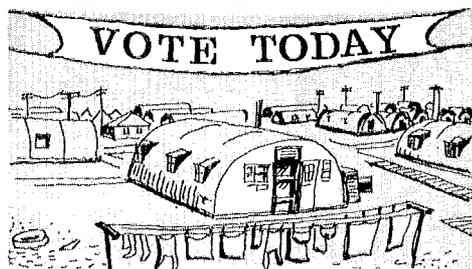
PUBLIC SWIMMING: Los Alamos High School Pool, Adults 35 cents, children 15 cents. Saturday and Sunday 1 to 6 p.m., Monday, Tuesday, and Wednesday, 7:30 to 9:30 p.m.

EXHIBITIONS: Museum of New Mexico, Santa Fe, buildings open 9 a.m. to 5 p.m. Tuesday through Saturday; 2 p.m. to 5 p.m. Sundays and holidays.

Fine Arts Building—1966 Southwestern Fiesta Biennial Exhibition, closes September 18; Henry C. Balink Retrospective Exhibition, opens at September 25 reception; The Artists' Record (from the permanent collection-northern New Mexico artists), closes September 30; "500 Years of Print Making," (a group of original prints given to the Museum by the Carnegie Corporation), closes September 18.

Museum of International Folk Art—New Mexico Craftsmen's and Afro-Arabic Exhibition, closes September 30.

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years ago in los alamos

Culled from the Sept., 1946, files of The Los Alamos Times by Robert Y. Porton

Community Center Plans Approved

Major General Leslie R. Groves, chief of the Manhattan District, has approved plans for a community center, estimated to cost \$1,396,000. Work on the center is expected to begin this fall. Included will be a building for newspaper, radio and welfare offices; theater, bank, bowling alley, recreational center, drug store, market, filling station and garage. A telephone building will be situated on the east side of Ashley Pond.

Schoolrooms Overcrowded

With 482 pupils on hand, and a total of 500 expected to be attending classes by October 1, Los Alamos school officials are pondering the problem of overcrowded classrooms.

Pupils of the third and fourth grades have overflowed into the dayrooms of Dormitories T-262 and T-265, according to F. Robert Wegner, school superintendent. He said that this situation is only temporary, until the additions to the high school now being built, are completed.

Seeman Leaves, Gee New CO

Col. L. E. "Skip" Seeman, commanding officer, received orders that he is to be transferred to Washington, D.C., it was learned this week. He has been in Los Alamos since November, 1945.

Col. Herbert C. Gee will take over as commanding officer. A West Pointer and overseas veteran, Gee has been in charge of the military operations division in the office of the chief of the Manhattan Project. In that capacity, he has been a frequent visitor to Los Alamos and was most recently here to investigate complaints on the new housing plan.

Record Turnout in Council Vote

Los Alamos voters turned out in record numbers to elect a new eight-member town council. A total of 1,591 ballots were cast, representing about 35 per cent of the Hill's eligible voting strength. Among the candidates elected were Robert J. Van Gemert, John R. Balagna, Mrs. Marguerite Schreiber and William L. Strohecker.

Mat Shows Return to Hill

With flying tackles, full nelsons and leg locks, professional wrestling grunted and groaned its way into the fall season in Theater Two Wednesday night. To the shrill screams of the feminine fans and sideline instructions of male enthusiasts, the mastodons threw each other all over the ring and at times even carried their heated battles into the rows of spectators.

new hires

Robert L. Holmes, Albuquerque, N.M., J-11

Kathleen M. Urban, Santa Fe, N.M., GMX-1

Roberta J. Peterson, Los Alamos, ENG-3 (Casual)

Pita G. Cordova, Los Alamos, PER-4 (Casual)

Priscilla J. Clark, Los Alamos, PER-1 (Casual-Rehire)

Enloe T. Ritter, Baltimore, Md., P-DOR

Craig S. Smith, Espanola, N.M., CMB-8

Dennis H. Gill, Austin, Texas, J-8

Mique S. Talcott, Bedford, Mass., ENG-DO

Jack W. House, Albuquerque, N.M., NRDS J-9

Willard H. Beattie, Long Beach, Calif., W-7

Richard A. Hemphill, Richland, Wash., ENG-6

Mervin G. Mahler, Fort Bragg, Calif., M/R-1

Tamara J. Worthington, Denver, Colorado, GMX-1 (Part-time)

Erma M. Gibson, Los Alamos, H-DO (Casual)

Louisa I. Bishop, Los Alamos, GMX-4

Janis M. Dye, Espanola, N.M., Bus. Off. (Rehire)

Layle K. Zongker, Tempe, Ariz., J-14

Myrna L. Mutchler, Los Alamos, P-4

Virginia S. Lees, Newark, Delaware, PUB

William P. Frye, Amarillo, Texas, J-8

Nancy L. Koski, Duluth, Minn., CMB-1

Eugene T. Teatum, Berkeley, Calif., W-4 (Rehire)

George A. Clayton, Kansas City, Mo., ENG-2

Phillip J. Brashear, Fairfield, Calif., J-7

William J. Carter, Baltimore, Md., GMX-6 (Rehire)

Eugene W. Boettcher, Milwaukee, Wisc., SD-2 (Rehire)

James F. Van Hecke, Jr., Los Alamos, AO-7

George J. Igo, Upton, Long Island, N.Y., P-DOR (Rehire)

John E. O'Brien, Santa Fe, N.M., AO-5

Walter J. Bettinger, Littleton, Colo., N-3

Roland A. Jalbert, College, Alaska, H-1

Frances M. MacRoberts, Los Alamos, T-1 (Rehire)

George E. Tubb, Dallas, Texas, MP-2

Gilbert Garcia, Santa Fe, N.M., PER-4

Pervy L. Myers, Albuquerque, N.M., ENG-1

Ruth I. Giles, Los Alamos, GMX-11

John K. Hayes, Berkeley, Calif., T-5

Floyd A. Moore, Los Alamos, SP-DO.

Reserve Officers Tour LASL

U.S. military reserve officers from throughout the country toured the Los Alamos Scientific Laboratory in early August.

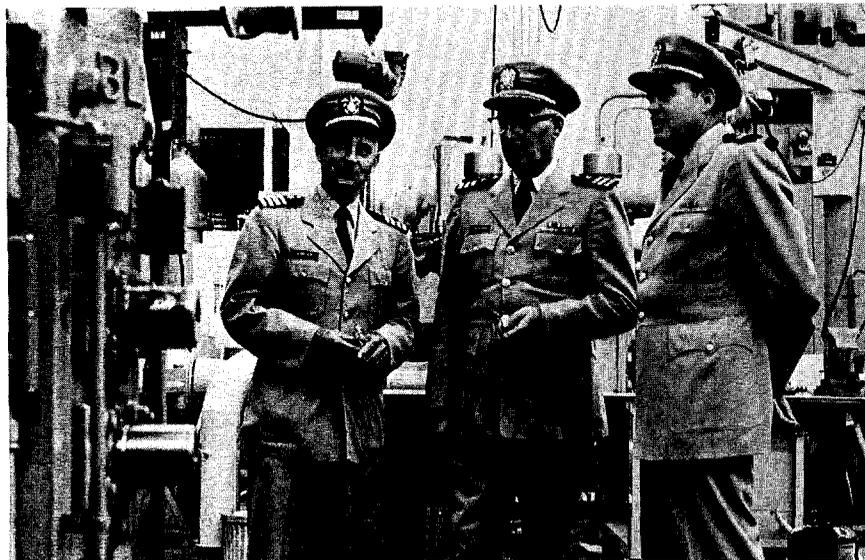
The tour of the Lab areas—plus the townsite—was part of the third annual Research Reserve Seminar in Applied Research, which is sponsored by the Office of Naval Research in Washington, D.C.

Under this program, certain selected reservists—normally with a science-oriented civilian occupation—are chosen to fulfill their two-week active training duty requirement by attending the seminar.

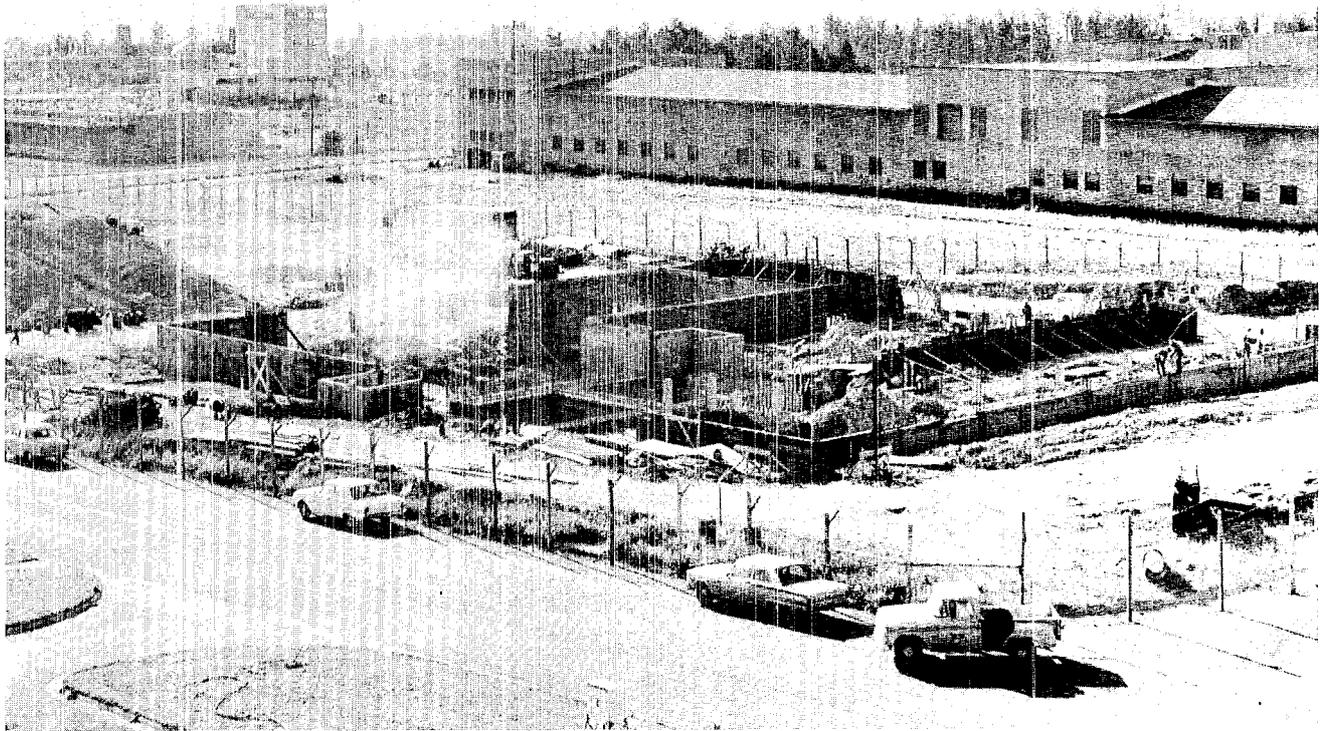
The group consisted of 55 Navy officers, six Air Force and two Army. In addition to LASL, other sites visited in New Mexico during the two-week period included Sandia Base, Kirtland Base, the Defense Atomic Support Agency, Lovelace Clinic and the University of New Mexico, all in Albuquerque; Holloman Air Force Base near Alamo-

gordo and the New Mexico Institute of Mining and Technology in Socorro.

Hosts for the seminar were Naval Reserve units in Los Alamos and Albuquerque.



Military visitors at the Laboratory during seminar for reserve officers included, from left, Capt. Robert J. Lanter, of Los Alamos; Comm. J. H. Van Alsbury, Santa Fe; and Lt. Edwin F. Johnson, Albuquerque.



Construction is under way on the 25,000 square foot weapons test support facility, a one story building located between the Administration and CMR buildings. All of group J-7 and the sections of groups J-14 and J-16 now located at Anchor Ranch will move into the new building.

About the Back Cover . . .

A familiar landmark, the grey water tank located west of the Lodge, is being dismantled for relocation near the twin water tanks in the Western Area. This tank was erected in early 1947 as a part of the expanded community water system.



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