

SANDIA LAB NEWS



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SANDIA LABORATORIES

ALBUQUERQUE, NEW MEXICO
LIVERMORE, CALIFORNIA

OPERATED BY SANDIA CORPORATION FOR
THE U. S. ATOMIC ENERGY COMMISSION

Sandia-Designed Parachute Breaks Loading Record During Recent Test

A Sandia-designed 20-foot parachute established a new national record for dynamic pressure loadings on this size chute when it withstood 5500 pounds per square foot of dynamic air pressure, or a total of 100 tons, during a recent test at Tonopah Test Range.

The previous record of 4700 pounds per square foot was set earlier last year by Sandia with the same type of chute.

One of the unusual features of the record-breaking chute was the ablative coating of a silicon - rubber mixture painted on the 12,000-pound tensile strength lines to protect them from the high temperatures created by aerodynamic heating. The lines were exposed to approximately 500°F. when the chute was deployed at Mach 2.4 or about 1700 mph.

The special coating was suggested by W. B. Pepper (9324). The chute would have failed if the lines had not been protected from the heat. Nylon used in the construction of the chute starts to deteriorate at about 200°F. Another similar material will withstand temperatures to about 500°F., but it is approximately 10 times more expensive. The coating was first used in the previous record-breaking test.

The specially-designed ribbon parachute was developed to recover systems capable of deployment at high dynamic pressures. Sandia has conducted a parachute research program for the last 10 years to increase the capability of ribbon parachutes from subsonic speeds up to Mach 3.0 (2280 mph). W. R. Barton and D. Q. Matejka (both 9324) were instrumental in the initial design and testing of this chute.

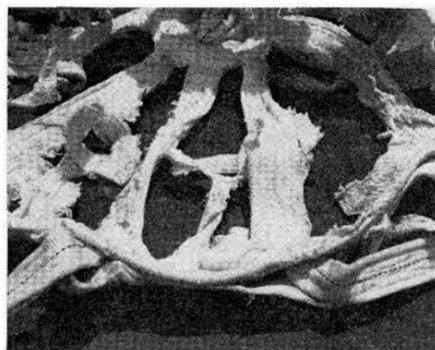
The parachute is constructed of special 2000-, 3000-, and 4000-pound tensile strength reinforced selvage ribbons. Increased material (beading) on the edge of the ribbon provides for structural efficiency and greater resistance to tearing.

During the recent test, the chute was reefed by a 12-foot line for two seconds after deployment before the reefing line was cut by Sandia's pyrotechnic reefing-line cutter (LAB NEWS, Oct. 6, 1967) to permit the canopy to billow out to its full diameter. The highest load recorded on

(Continued on Page Two)



RIBBON CHUTE used in recent test is shown draped over instrumentation payload after impact at Tonopah Test Range.



EFFECT OF AERODYNAMIC HEATING on an 18-inch-diameter pilot chute resulted in destruction of nylon panels that were between the radial reinforcing webs, which appear to be frayed ribbons in this picture. The pilot chute used in a test two years ago was not protected by an ablative coating. It failed in 1/200th of a second after it was deployed at about Mach 3.0.



SANDIA-DEVELOPED SPHERICAL ANTENNA used in a recent test is held by T. W. H. Caffey (7211), who designed the telemetry system. The antenna is potted in plastic to protect it from environmental conditions. The other spherical antennas shown in the picture are developmental models.

New Telemetry System Transmits Signals Through the Ground

An earth penetration test vehicle carried a telemetry package with a unique Sandia-developed spherical antenna to a depth of 78 feet beneath the surface while data were successfully transmitted to surface receivers. This is believed to be the first transmission of telemetry signals through the ground from such a vehicle moving at high speeds.

The system was used in a test vehicle dropped from an aircraft in conjunction with soil penetration studies made by the Terradynamics Division 9327 at Tonopah Test Range.

Six receivers located from 196 to 570 feet from the impact point picked up the signals to a degree that exceeded theoretical predictions. It was anticipated that signals from a telemetry package 50 feet underground would be received up to 225 feet from the impact point. Signal strength, however, was greater than anticipated because the penetration tunnel (course of vehicle through the soil) provided a low-loss signal path to the surface.

The advantage of a low-loss path afforded by the loosely-filled tunnel created by the fast-moving vehicle will be taken into consideration in future earth penetration tests. Telemetry signals retrace this path through the ground to the surface and then move through the air to the receivers.

Major components of the telemetry system are two thermal batteries, an accelerometer, a signal-conditioning amplifier, voltage-controlled oscillator, a solid-

state power amplifier that delivers about 344 watts into the antenna, and the spherical transmitting antenna.

The transmitting antenna consists of some 34 turns of copper wire around a sphere of polyurethane foam. An output tuning capacitor made of epoxy-filled silver mica is embedded within the foam sphere in such a way that there is no coupling between the antenna field and the capacitor's current. Potted in plastic, the radome-like unit is secured to the aft end of the test vehicle.

The system was designed by T. W. H. Caffey (7211). P. R. Littell (7214) developed the spherical layout of the antenna and W. R. Hale (7211) assembled and tested the telemetry package. O. D. May (4251-1) prepared the numerically-controlled machine-tool program for making the spherical foam antenna core. P. R. Wilkes (9327) was the systems engineer and W. B. Pafford (7212) was test engineer.

Enrollment Period for Out-of-Hours Courses Starts Next Week

Enrollment period for the spring semester of Sandia's Out-of-Hours Program is Jan. 15-26.

Twelve new courses have been added to the program for the next semester. A total of 80 courses will be offered to Laboratory employees during non-working hours to assist them in keeping up with the latest changes in science, technology and skills.

Among the new courses are optical properties of solids, approximation theory, introductory elasticity, metallurgy of welding, brazing and soldering, and stochastic processes.

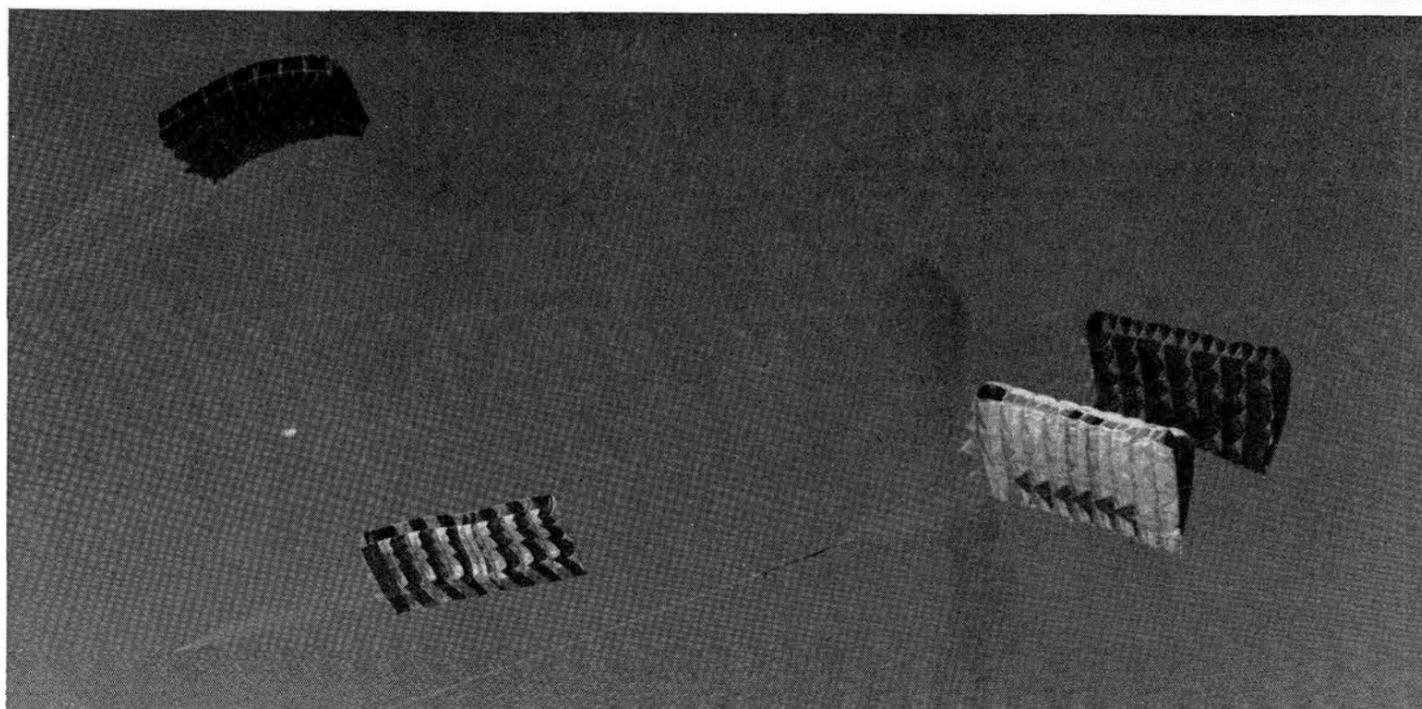
The new spring catalog listing courses in math, physics, electronics, mechanical technology, drafting and a number of courses for secretaries has been distributed to employees. It contains enrollment cards and instructions. Classes will start the week of Feb. 12.

Because enrollment in the courses is offered on a first-come basis, interested employees are urged to register as soon as possible. Last semester there were 2500 enrollments in the Out-of-Hours Program as compared with about 1600 the preceding semester.

The program provides job-related courses not offered at local high schools or universities. It is administered by Employee Training and Education Division 3132.

Credit Union Meets Jan. 25

The annual meeting of the Sandia Laboratory Federal Credit Union will be held at 5:30 p.m. on Thursday, Jan. 25, in the Coronado Club ballroom. Included on the agenda is the election of four members to the Board of Directors and one member to the Credit Committee. Any questions raised from the floor will be discussed. There will be refreshments and gifts for members attending the meeting.



THREE DIFFERENT PARA-FOILS are shown gliding above Tonopah Test Range during a recent test of design characteristics. More like gliders than parachutes, the all-nylon Para-Foils maintain their shape by ram air pressure. They may be used to keep objects aloft for an extended period or to control the descent of rocket payload systems. Light lines shown extending from the Para-Foils to the left of the picture are suspension lines that are attached to a nylon tether cable. The Para-Foil at the top left has a 22-foot span with a 176-

square-foot wing area. Hanging beneath it is a small stabilizing parachute. The one in the lower left is twice as large. It has a 44-foot span, or a total wing area of 704 square feet. The Bi-Foil at right has two wings with a total area of 154 square feet. The two single Para-Foils were fabricated at Sandia to incorporate design changes suggested by W. B. Pepper and H. E. Widdows (both 9324). Sandia's Para-Foil development program has been underway for about two and a half years.

Editorial Comment

It's Your Life—But . . .

It has been said many times but it is still worth repeating: smoking does affect one's health and life expectancy.

The U.S. Public Health Service reports that emphysema, a respiratory ailment definitely aggravated by smoking, disables one out of every 14 working men over 45.

"A man who smokes a pack or less of cigarettes a day has twice the risk of heart attack of a non-smoker. The more he smokes the higher the risk." (From annual report of American Heart Association.)

The Public Health Service analyzed the over-all picture, disease by disease, and found the following charged to the effects of cigarettes:

- 300,000 extra coronary conditions
- 1,000,000 extra cases of chronic bronchitis
- Nearly 2,000,000 extra cases of sinusitis
- More than 1,000,000 extra cases of peptic ulcer

The apparent cause-effect relationship between cigarette smoking and lung cancer has been cited in previous reports from the office of the U.S. Surgeon General.

And yet despite these warnings, Americans smoked more cigarettes in 1967 than ever before, according to information released by the Agriculture Department. These figures show an increase of 11 billion cigarettes over the previous record year, 1966.

Why the increase in smoking despite all the warnings? Perhaps the CBS television program will offer some answers.

National Smoking Test

To Be Broadcast January 16 on CBS-TV

"The National Smoking Test," the latest of a continuing series of test-the-viewer broadcasts on questions of national concern, will be televised in Albuquerque Jan. 16 from 9-10 p.m. on KGGM-TV.

The CBS News production will test the public's knowledge and attitudes about cigar, cigarette and pipe smoking. The

questions will concern the dangers of smoking, how the habit is formed and why, and what diseases are attributable to smoking. From their answers, viewers will be able to make a personal evaluation of their own smoking habits.

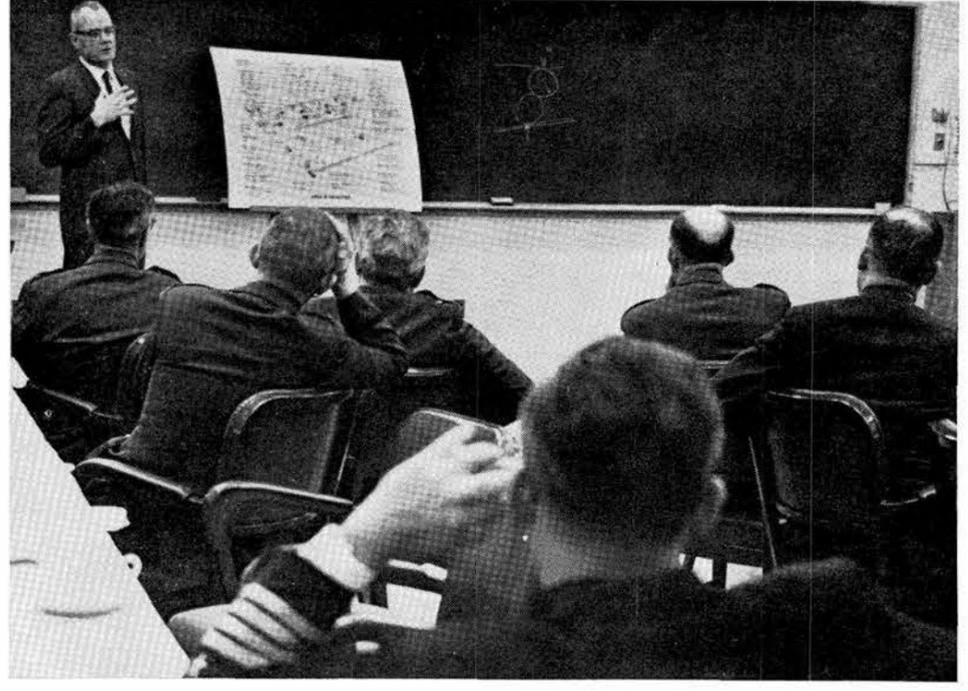
Previous broadcasts have dealt with driving, citizenship, health and income taxes.

Official Test Form

How you feel about smoking:	8. _____ <input type="checkbox"/>	17. _____ <input type="checkbox"/>
1. Agree <input type="checkbox"/> Disagree <input type="checkbox"/>	9. _____ <input type="checkbox"/>	18. _____ <input type="checkbox"/>
2. Agree <input type="checkbox"/> Disagree <input type="checkbox"/>	10. _____ <input type="checkbox"/>	Total Score <input type="checkbox"/>
3. Agree <input type="checkbox"/> Disagree <input type="checkbox"/>	11. _____ <input type="checkbox"/>	
4. Agree <input type="checkbox"/> Disagree <input type="checkbox"/>	12. _____ <input type="checkbox"/>	OPINION (NO SCORE)
What you know about smoking:	13. _____ <input type="checkbox"/>	
5. _____ <input type="checkbox"/>	14. _____ <input type="checkbox"/>	II. _____
6. _____ <input type="checkbox"/>	15. _____ <input type="checkbox"/>	III. _____
7. _____ <input type="checkbox"/>	16. _____ <input type="checkbox"/>	

Your smoking profile—why you smoke:

A <input type="checkbox"/>	G <input type="checkbox"/>	M <input type="checkbox"/>	_____ <input type="checkbox"/>	_____
B <input type="checkbox"/>	H <input type="checkbox"/>	N <input type="checkbox"/>	_____ <input type="checkbox"/>	_____
C <input type="checkbox"/>	I <input type="checkbox"/>	O <input type="checkbox"/>	_____ <input type="checkbox"/>	_____
D <input type="checkbox"/>	J <input type="checkbox"/>	P <input type="checkbox"/>	_____ <input type="checkbox"/>	_____
E <input type="checkbox"/>	K <input type="checkbox"/>	Q <input type="checkbox"/>	_____ <input type="checkbox"/>	_____
F <input type="checkbox"/>	L <input type="checkbox"/>	R <input type="checkbox"/>	_____ <input type="checkbox"/>	_____



MILITARY LIAISON COMMITTEE to the Atomic Energy Commission recently attended technical briefings at Sandia and toured some facilities in Technical Area III. The Honorable C. Walske, chairman of the Committee and Assistant to the Secretary of Defense for Atomic Energy, and some 16 high-ranking military officers, most of whom are Committee members or alternates, participated in the program. R. A. Bice, vice president 7000, is shown briefing the group on the tour route following a luncheon.

**Can You Verify Your Age?
Acceptable Documents Needed**

Can you prove your age? It always sounds silly when someone asks that question. Of course you know your birth date. But do you have documents verifying your age, or are you merely relying on your own knowledge or the date you stated on a driver's license?

When a person reaches normal retirement age and is ready to file for Social Security or Medicare, satisfactory evidence of age is necessary, but even before then Sandia requires similar documents from its employees.

When an employee reaches age 55, proof of age is required by Prudential Insurance Company of America under terms of the contract with Sandia for administering the Retirement Income Plan. Prudential needs this information because the cost of annuities is based on the exact age of the employee.

The best proof is a birth certificate or hospital report certified by the proper county or state records office, or a baptismal record showing date of birth and issued before the individual was five years old.

If neither of these is available, two other types of documents are required, preferably those established before age 11. Included are school records, U.S. Census records, signed affidavit by physician or midwife in attendance at birth, bible or other family record, passport, delayed birth certificate, voting or registration records.

An affidavit recorded in the courts by your parent or other relative after you became an adult is generally not acceptable to establish your birthdate except as an additional item of evidence taken together with other documents which you may submit. In New Mexico this type of proof of age requires at least three affidavits attesting to where the person was born, the date born, and the parents' name. This could mean nine different signatures.

Next year several hundred Sandians will reach the age of 55. Most of these employees will have no difficulty providing the proper documents; for the remaining Mary Lee Peckumn in Employee Benefits Division 3122 has information and forms available to help obtain the required proof.

One source is the county or state office in which the birth may have been recorded. This location varies from state-to-state, and earlier records may be kept in a different office or town from more current records. A booklet summarizes this information and is available for reference in Division 3122.

Mrs. Peckumn also has the form required to obtain information from the Bureau of the Census. During the Federal Census in the years 1910, 1920, 1930, 1940, 1950, and 1960, the census takers obtained the age and place of birth of individuals. This information is acceptable as evidence of age and place of birth. In addition, a phonetic system, whereby names were filed by sound



THESE CARDS, held by Mary Lee Peckumn (3122), represent employees who should have documented proof of age available.

rather than by spelling, is available from the 1920 census.

"It is interesting that most schools have retained their records of past enrollment," Mrs. Peckumn says. "We recently requested information from a small grade school in New England. Our employee had attended this school immediately after World War I. The school authorities had the man's enrollment record and wrote, 'We also have his complete report card for grades I - VIII.'"

In contrast, a college in Texas had another employee's transcript but nowhere was there any record of a birth date.

A word of advice: if you anticipate any difficulty in providing acceptable documents, begin the groundwork now.

Events Calendar

- Jan. 12-13—Dorothy Lamour in "Hello, Dolly." UNM Concert Hall.
- Jan. 12-14—UNM Opera Workshop presents Gian Carlo Menotti's "The Bishop of Brindisi" and "The Medium," Recital Hall.
- Jan. 17—Albuquerque Symphony Orchestra with violin soloist Camilla Wicks. UNM Concert Hall.
- Jan. 18—Community Concert series presents the Vienna Academy Chorus. Civic Auditorium.
- Jan. 25-28, Feb. 1-4—"One Flew Over the Cuckoo's Nest." Old Town Studio, 1208 Rio Grande NW. For reservations tel. 242-4602.
- Jan. 27—Jose Greco and his company of Spanish dancers. UNM Concert Hall.

Sympathy

- To M. A. Bucklin (4614-2) for the death of his brother in Los Angeles, Dec. 22.
- To R. T. Sylvester (2561) for the death of his mother in Minneapolis, Dec. 22.
- To R. J. Beyette (7216) for the recent death of his father.
- To A. E. Kaping (4332) for the death of his father in Albuquerque, Dec. 24.
- To F. B. Baldonado (4614-2) and George B. Baldonado (4152) for the death of their brother in Albuquerque, Dec. 18.

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From Page One

Parachute Loading Record

the vehicle was 200 G's or about 200,000 pounds. Sandia's previous record was 130 G's or 143,000 pounds on the vehicle.

Parachute and vehicle were launched at a 30-degree angle over the range by two Nike boosters. The chute and payload reached an altitude of 11,500 feet above sea level.

Payload instrumentation for the test included a 10-channel telemetry system to record longitudinal acceleration, ram-air pressure, timer signals and other program functions.

The deployment system was designed by H. E. Widdows (9324). It was packed and installed by H. Lucero and D. C. Cronin (both 9324). E. R. Parsons (7214) was in charge of mechanical design and assembly of the recovery system. L. V. Day (7215) was the field test and telemetry system engineer. Tonopah Test Range personnel under R. C. Holland (7233) assembled the rockets and handled launch and recovery operations.

Take Note

A patent has been assigned to the United States Atomic Energy Commission in the names of Sandian Carl W. Schoenfelder of Materials Application Division I 8141, and Marvin M. Fein. The patent is for a process of producing neocarborane by concurrent dealkylation and rearrangement of alkylcarboranes. Work which resulted in the patent was done before Carl joined Sandia.

Tom Gleason of Graphic Arts and Presentation Services Division 8233 designed the new identification masthead of the REACTOR, the official monthly publication of the Livermore Chamber of Commerce. Tom's design retains the traditional nuclear, wine and western symbols of the City of Livermore.

Homer B. Sidlow of Project Engineering Division 8158 was one of the 1224 men and women who passed the 1967 Fall Bar Examinations in the State of California. It was the largest group of successful candidates in recent years. Included on the roster were 362 from the Bay Area, 111

of whom are from the Eastbay. Homer was admitted to practice law in California during ceremonies before the State Supreme Court held in San Francisco on Dec. 21.

The Mt. Diablo subsection of the American Society of Mechanical Engineers (ASME) will meet on Thursday, Jan. 25, at Hap's Restaurant in Pleasanton. Guest speaker, Robert D. Shoberg, president of Red Lake Laboratories of Santa Clara, will discuss high-speed photography.

R. E. Gott and R. W. Weaver (both 8142) will discuss "Reinforced Plastics and Filament Winding" at the fifth session of Livermore Laboratory's series of lectures on Modern Materials and Processes.

The presentation will be given twice in January—once on the 17th and again on the 31st.

The series is designed to help SCLL engineers keep up-to-date on the properties and uses of modern materials and to describe the capabilities and limitations of modern manufacturing processes.

Sandians Observe Progress On Future Recreation Area

Employees at Livermore Laboratory are watching the development of a water recreation area to be located five miles south of Livermore on Arroyo Road.

Object of their interest?

The construction of the \$24 million Del Valle dam project.

Since May 1967, 4.2 million cubic yards of earth have been moved to form a dam that measures 880 feet across the top and is as high as a 23-story building. By February 1969, water pumped from the south bay aqueduct will be forming a lake five miles long with 16 miles of shoreline. It is expected that the initial stage for the development of areas for swimming, boating, fishing, picnicking and camping will be completed by June 1971. By then, a predicted one million people are expected to use these facilities annually. Plans include stocking the lake with bass, catfish and varieties of sunfish.

As a part of California's State Water Project, the reservoir will serve several purposes. It will regulate the water in the south bay aqueduct, which siphons water from the Delta area (near Stockton) and carries it approximately 42 miles to a terminal point near San Jose. It will also be used in controlling flood waters and conserving water as well as providing a recreation area for Bay Area residents.

Construction efforts at the site today are concentrated on two tunnels located on the "water side" of the dam.

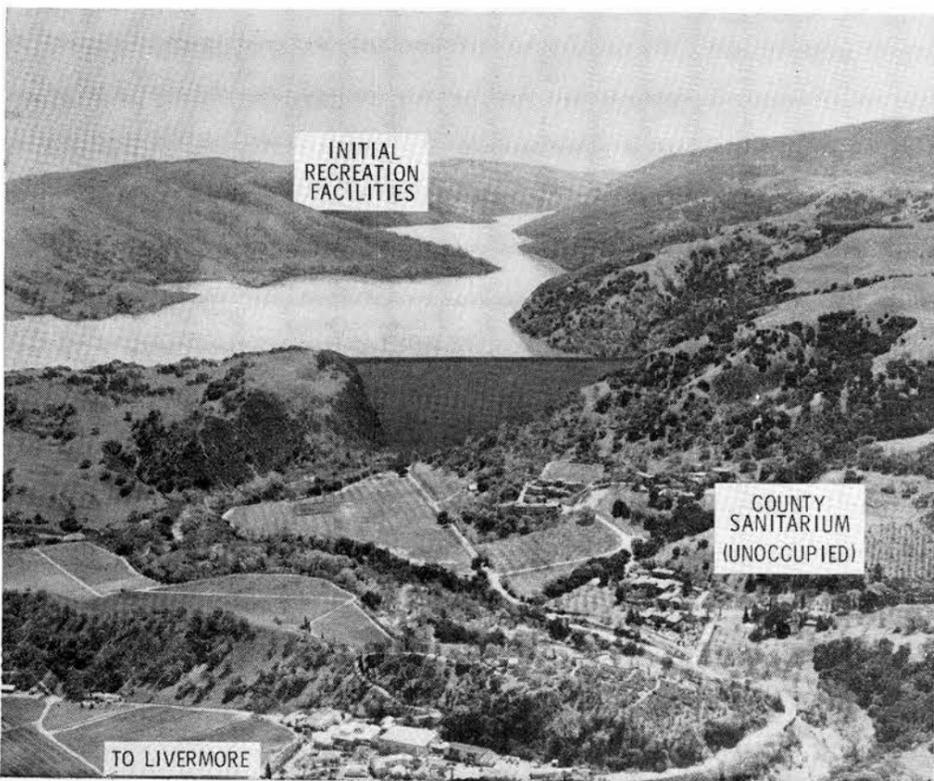
The first—the flood control tunnel—will prevent the dam from overflowing. During flood periods, water will enter a "glory hole," fall 140 feet, and flow horizontally for 2200 feet to the "dry side" of the dam.

The other—the conservation tunnel—will be used to remove and replace water from the aqueduct. Control valves for this tunnel will be beneath the center of the dam.

Visitors to the site can park their cars at and view the construction from the dam's observation point.



FLOOD WATER INTAKE under construction at Del Valle Dam near Livermore will release water from the reservoir during periods of high runoff in Arroyo del Valle. Water falling into this "glory hole" will drop 140 feet before turning 90° and traveling 2200 feet to the other side of the dam.



ARTIST'S RENDITION of Del Valle dam site near Livermore shows the body of water that will be formed by the earthfilled structure when it is completed in February 1969. Included in the \$24 million project—part of California's State Water Project—are plans for a recreation area which can handle a predicted one million people annually by 1971.

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SCLL Participates in New UC-Davis-Bell System Engineering Program

If you were a college senior again—about to start your first job—how many of the following questions do you think you could answer?

- What will I actually do with my time during a typical working day?
- How much time will I spend in analysis?
- How much effort will go into selling my ideas to others?
- How often (if ever) will an idea of mine be used?
- How much of what I have learned in college will be applied?

Members of the Bell System recruiting team and the University of California at Davis have worked out a program to answer these and other questions as an integral part of the University's required senior course, "Professional Responsibility of Engineers." Prof. John D. Kemper of UC/Davis' College of Engineering feels that an explanation of a recent graduate's actual day-to-day involvement is of great significance to the course and will enlighten the student to some of the realities he will be facing when he graduates.

Arlyn N. Blackwell (8110) and Michael L. Auman (8158) are representing Livermore Laboratory in the program. John P. O'Neil (8212) is the SCLL coordinator.

The Bell System, including Sandia, Western Electric, and Pacific Telephone and Telegraph, will be providing three teams, consisting of two speakers each, in the following areas of engineering: research and advanced development, product development for manufacture, and management development.

In each case, the principal effort of the team will be a presentation by a recent engineering graduate. The second member of the team is present primarily to answer questions beyond the experience of the first, concerning the broader aspects of company operation and policy.

Arlyn and Mike will participate as members of the team which relates engineering to research and advanced development. In this area, emphasis is on work close to or at the frontier of our developing technology and involves exotic and/or sophisticated projects.

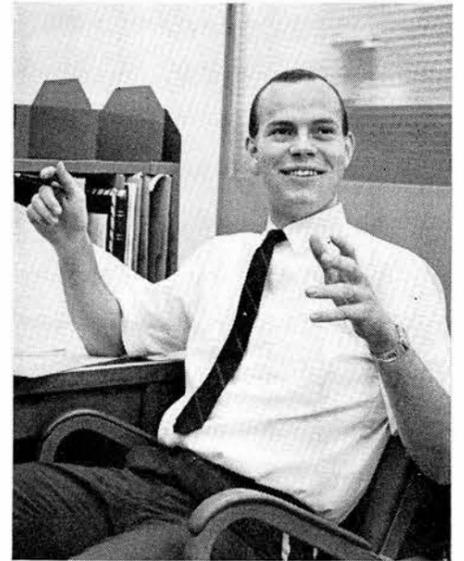
A June 1967 graduate in mechanical engineering from UC/Davis, Mike is assigned to a project engineering division at SCLL. He will present a hypothetical design and then explain his everyday problems and work habits in bringing the design from the drawing board to its completion.

"I'll be addressing a group of seniors in a course I took when I was at Cal/Davis," says Mike, "trying to relate and explain what happened when I went to work—some of the experiences I had. It is hard to imagine something like this when all you've had is 15 years of schooling. Even in summer work you don't get a thorough understanding since the work you do then is usually oriented toward your three-month work period.

"So, mainly I'll concentrate on the experiences I have encountered and the problems I was faced with—learning the system, etc., because each company does have its own system. Then I'll be talking a good deal about design engineering itself," he added.

Following Mike's presentation, Arlyn, who is manager of SCLL's Engineering Analysis Department, will answer any questions which may arise concerning Laboratory operation, policies, recruitment, management trends and so on.

Another team will discuss engineering

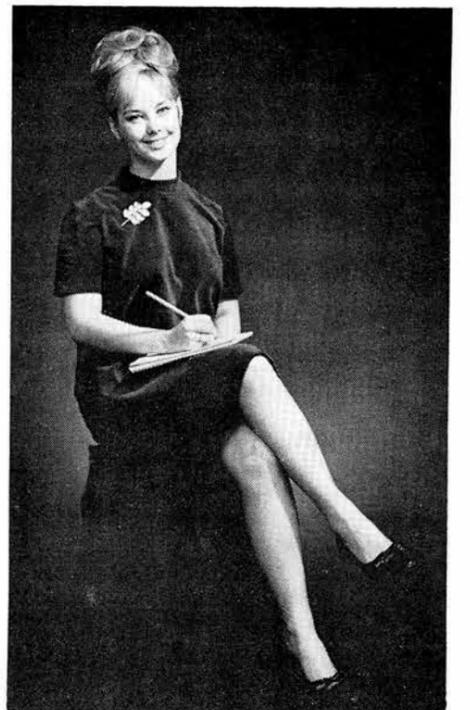


MECHANICAL ENGINEER Michael L. Auman (8158), a 1967 graduate from the University of California at Davis, explains a hypothetical design he will use to present some of his Livermore Laboratory experiences to senior engineering students at Davis

as it is applied to product development for manufacture, emphasizing development rather than manufacturing, and appropriately includes representatives from the Western Electric Company. The decision-making role of the engineer and the enormous economic considerations which intertwine with the technical considerations will be stressed.

The remaining team will present the management development or administration type of engineering. According to Prof. Kemper, it is difficult for most students to see how a new graduate can go immediately into an assignment labeled "management"; in particular, they don't see how this area would be reflected in their day-to-day activities during the first few years on the job. The recent graduate on the team, in this case from the Pacific Telephone and Telegraph Company, will be one who has already moved into an assignment that the students can all agree is clearly one of management. A recounting of the route that took him there, and what he actually did in his various assignments, will be of real value.

The program is scheduled for the winter quarter term at the University and will be repeated during the spring quarter term.



Holly B. Williams (8235)

Welcome . . . Newcomers

Nov. 16 - Dec. 22

California	
Walter E. Brock, Pleasant Hill	8112
Carolyn J. Jody, Castro Valley	8117
*Nancy M. Martin, Livermore	8235
Monte C. Nichols, Livermore	8141
Massachusetts	
Stanley W. Zehr, Cambridge	8142

*Denotes rehire

Sympathy

To Lina Harbo (8114) for the death of her mother in Hibbing, Minn., Dec. 10.

To Wes Hodges (8241-1) for the death of his mother-in-law in Albuquerque, Dec. 10.

Take A Memo, Please

"Concern for man himself and his fate must always form the chief interest of technical endeavor; never forget this in the midst of your diagrams and equations."—Albert Einstein



GRAND CHAMPION ARABIAN MARE Wilseyna and owner Art Redlinger (4211-1) pause after a brief exercise session on the Redlingers' Gay-AR Arabian ranch in Corrales. The feed barn in the center is one of three which border six paddocks.

Prize-Winning Arabian Show Horses Take Up Art Redlinger's Leisure Time

About 1000 ribbons and 25 trophies attest to the prize-winning horses Art Redlinger (4211-1) and his wife have had for the past 11 years. Their current pride is Gay-AR Wilseyna, judged grand champion Arabian mare at the State Fair in 1967.

Just 16 years ago, Art hesitatingly rode a horse for the first time. Today six purebred Arabian horses frolic in the paddocks on the Redlingers' four-acre Gay-AR ranch in Corrales. Developing the prizewinning bloodlines of their present string of Arabs is the result of acquiring many horses and breeding selectively.

Before they moved to Corrales two years ago, Art and his wife had up to 34 grade (unregistered) horses on their 1000-acre ranch in the Manzano Mountains. By breeding the grade horses with purebred Arabs, they gradually developed a string of 20 half-Arabian horses. Then they sold 23 of the horses to buy a purebred Arabian mare.

Next the Redlingers hauled the purebred mare and her daughter to California where the mother was bred to a stallion that was the sire of the most champions in the U.S. for a seven-year period. The daughter was mated with the son of the sire of champions. From these breedings, the Redlingers got two stallions. Additional breeding yielded two mares, one of which is Wilseyna.

All of Art's Arabs are registered with a Gay-AR prefix to their names. "Gay" is from Mrs. Redlinger's first name (Gaylo) and "AR" are Art's initials. Art regrets not starting to register their horses with the prefix earlier. If they had, he says 27 of the 157 one-half and purebred Arabs listed in the 1966 state directory of Arabian horses would have carried the Gay-AR designation.

The string of six Arabs is insured for \$40,000. Art says an out-of-state breeder offered him \$18,000 for one of the stallions. After Art refused this offer, the same breeder countered with another proposal to purchase two-thirds interest in the horse at \$12,000. The Redlingers decided to retain full ownership.

Currently breeders in Nevada, Colorado, Oklahoma and New Mexico bring an aver-



ART AND GAYLO REDLINGER watch their six purebred Arabs from a patio beside their large rambling adobe home.

age of 35 mares a year to be bred to Redlingers' stallions.

Speaking about the rising popularity of the breed in New Mexico, Art estimates that there were 23 Arabian horse owners and less than 40 Arabs 14 years ago. Today he believes there are probably 200 purebred Arabs and more than 100 owners.

"Originally," Art comments, "we had a difficult time trying to get 60 Arabian horses for the State Fair competition. After we started promoting the breed, we had over 100 entries in the 1960 competition. We now average over 300 entries."

As grand champion mare, Wilseyna is now eligible for entry into the national championship class at the National Arabian Horse Show to be held in Albuquerque next summer. Entries in the national championship must either have earned at least one grand champion rating or three blue ribbons in three class "A" shows.

Art is a member and past president of the Arabian Horse Association of New Mexico and a member of the International Arabian Horse Association. He reports that the state group is planning 10 "fun horse shows," which will be open to all breeds, this coming year in addition to the all Arabian State Fair and National Championship shows.

Other Sandians who are members of the local Arabian horse association include R. F. Gentzler (7251), W. J. Haskell (9323), W. R. Lincoln (4511), R. B. Powell (3000) and R. C. Walter (2225).

Art says the coffee pot is always on at the ranch for Sandians who are interested in seeing the horses and the ranch on weekends.

Sandian Teaches ASM Course To South American Engineers

Two weeks spent teaching a course in High Temperature Metals to a group of engineers in South America is hardly a lazy type of vacation.

Maurie Karnowsky's (1131) recent sojourn in Colombia came about when the Colombian government made a request through the American Society for Metals for technical assistance for engineers employed by the nationalized petroleum industry. Maurie, Art Mullendore (1122) and Charles Stein (1131) taught this particular home-study course last spring in Albuquerque, and Maurie was asked by ASM to present the course in Colombia.

"High Temperature Metals" is the 16th home-study course developed by ASM, and this is the first time one of the courses has been presented outside of the United States. The subject matter is essentially an elementary study of the slow change of dimensions of a metal after prolonged exposure to load, known as creep. Factors affecting the rate of creep are also discussed.

The Empresa Colombiana de Petroleos Refineria employs about 1000 persons at Barrancabermeja and produces about 70 percent of the nation's gasoline. There are 170 engineers at the plant of which 26 were selected to take the ASM course. All 26 were graduate mechanical or electrical engineers and had studied two years in the U.S. "My students could read and write well in English, but their ability to converse in English was limited," Maurie reports. "Nevertheless, it was a humbling experience because I can neither speak nor write in Spanish."

The instruction consisted of two four-

Remember the Big Storm of '56? It Was Worse in Many Respects

Albuquerque's mid-December snow-wind-storm started many employees comparing this event with the great storm of Feb. 1, 1956.

To set the record straight, here is a comparison of actual conditions.

Meteorologist C. A. Olson (7221) reports that the December storm was probably the deepest storm system to hit Albuquerque. It was the most intense and of longest duration. The storm was spotted on Monday, Dec. 11, when a cold air mass (-40°F.) began flowing down from western Montana into the basin area of Utah. "I've never seen so many contours around a low pressure area. Hurricanes sometimes look like this on a weather map," Mr. Olson says.

A low pressure area existed on the west side of the Sandias, and high pressure conditions on the east. The east wind was 2500 feet thick and flowed through all passages of the mountains. Directly overhead was the south-southwest jet stream moving at 100 knots (that's fairly high) and laden with moist air. Snowfall is normally spotty in this type of storm, and the Rio Grande valley was the dry area.

The U. S. Weather Bureau provided further statistics:

Average Temperatures	1967		1956	
	20's - low	30's	10's - low	20's
Average wind speed	Dec. 13 — 34 mph	Dec. 14 — 30 mph	Feb. 1 — 20 mph	Feb. 2 — 24 mph
Snow depth	Dec. 15 — 2-3"	Dec. 16 — 2-3"	Feb. 1 — 3 1/2"	Feb. 2 — 1"

The 1967 storm was characterized by an average wind velocity exceeding 21 mph over a 72-hour period, moderately low temperatures, and light snowfall after the winds died. The 1956 storm combined strong winds, snowfall, and very low temperatures over a shorter period of time.

But statistics don't always tell the whole story.

1956 Blizzard

"Old timers" said the storm couldn't compare in intensity or inconvenience with the storm of '56. The day started with a slight breeze and a trace of snow, but by 8 p.m. hundreds of Sandians were marooned in their offices or, even worse, stalled on highways in snow-snarled traffic. Some were cold, many were hungry, almost all were worried.

The maintenance and security personnel were mobilized for emergency action by mid-afternoon, and employees who lived in outlying areas began leaving at 3 p.m. Others left shortly thereafter, if they could reach their cars. Employees who worked in Bldg. 892 recall joining hands to form a human chain to reach their cars in the lot

to the south of the tech area. Even then the battle was not won—many batteries were too weak to turn over the motor. One man had a unique problem: the wind had blown under the hood of his car and the motor was a solid block of ice.

At one time more than 300 cars were stuck in and around company parking lots because of drifts, icy roads and streets blocked by other vehicles. Maintenance personnel worked throughout the night with graders, wreckers, trucks and shovels to aid others on their way home.

Those who were stranded in offices or the Coronado Club at least were able to keep warm, but cigarette and candy vending machines emptied in minutes.

Conditions in the eastern part of Albuquerque were especially bad. Eight hours was not an unusual driving time to reach the Northeast Heights. A small home on Wyoming Blvd. played unexpected host to 60 stranded motorists. Yet when city buses quit running, two Sandia buses plowed down Central Avenue to get employees near their homes.

Those living in the Valley were luckier. Once they got off the Base, and onto lower land, the wind velocity dropped drastically.

The next morning, the wind had eased, but it was still cold. Streets were icy and drifts ranged up to six feet, but the worst was over.

High Winds of '67

The December storm of 1967 was a different matter. Many motorists complained of sand-blasted windshields, and power lines were down in some parts of the Northeast Heights and Four Hills area for several hours. But road conditions in town were not hazardous until Dec. 18 when several inches of snow fell. Employees living in surrounding areas, such as the Sandias, took their chances on whether the highway would be open or not. One resident of Ponderosa in the Jemez Mountains was snowed in on Dec. 12; even the mail truck couldn't get through to the mountain community that day.

Maintenance men encountered a variety of problems because of the high winds and low temperatures. Wind vibration on a low temperatures. The wire on a 44,000 volt power line was broken by the wind resulting in a single phasing of the power distribution system. Several three-phase motors were burned out before the trouble was discovered and the system was switched over to an Army emergency set up. W. C. Elskes (4511) says, "Army personnel certainly gave us a hand that night. A storm such as this is very demanding on any power system, and I feel it proved our systems are in pretty good shape."

The steam plant put out a maximum of 310,000 pounds of steam per hour to heat buildings in Area I, and major buildings of the military and AEC on Sandia Base. A sprinkler system in Bldg. 895-896 froze up when wind blew out a heater used to warm the water in the overhead pipes.

Potential Hazards

Plant Modifications Division 4513 had two and three crews cruising around Wednesday and Thursday to locate any potential hazards. The main problems were exhaust stacks, duct work, and sheet metal panels on temporary buildings. The damage was widespread but none was of major consequence. A small weather station transmitting house blew over, but when uprighted the instruments were still transmitting. Supervisor W. H. Martin says, "It was nasty working weather, but once we got everything tied down, it was a matter of keeping an eye open for any further problems."

Only a few frozen pipes were encountered by men of Maintenance Section B, 4512-2, and most of them were thawed out before the pipe broke. The heating systems in buildings presented a small problem. The thermostats are set to read outside temperatures, but they cannot take into consideration wind velocities which can send the "chill factor" dropping in a hurry. It was necessary to override the automatic controls to reach a comfortable temperature inside the buildings.

Maintenance Section D, 4512-4 was busy blocking doors. Hinges were sprung on many doors facing east, and repair was not possible until the winds died down.

All in all, both storms will be remembered for many years.

Congratulations

Mr. and Mrs. G. A. Villane (1545), a son, Scott Joseph, Dec. 20.

At the end of the course, Maurie presented each participant with a diploma. In turn, the Colombian students gave Maurie a special diploma addressed: "Para el Sr. Karnowsky de sus amigos. . ."

Service Awards

20 Years



G. M. Austin
4514



E. L. Bolton
4332



J. A. Christopher
4613



R. L. Siglock
8254



L. A. Smoll
2442



M. S. Suazo
4623



R. L. Thomas
7270

15 Years



W. H. Barbier
2566



Evelyn Buchanan
3126



L. A. Fjelseth
5624



F. A. Goss, Jr.
1342



Dorris Hankins
7111



J. A. Harrell, Jr.
7334



R. C. Holman
2525



L. M. Larsen
2545



F. E. Moore
8121



W. B. Pepper, Jr.
9324



C. A. Scott
8146

10 Years

Jan. 12-25

Dorothy Hummer 4363, R. E. Garin 2225, Margaret Jarvis 3126, R. A. McClure 4615, B. S. Biggs 8000, T. P. Ortega 4513, T. M. McMahon 4518, and Dorothy Hoeke, 9300.

Promotions

Stanley L. Love (2125) to Staff Associate Technical
Kermit A. Cooper (8252) to Staff Associate Drafting
Merton O. Jackson (5133) to Staff Assistant Technical
Calixto Sifre Soto (7342) to Staff Assistant Technical
Joseph Lobato (2222) to Staff Assistant Administrative
Filiberto Sanchez (4574) to Janitor
Margarito Griego (4574) to Cleaner
Richard C. Bryant (4221) to Helper
Herminio P. Molina (4513) to Helper
Marion P. Apedaca (4224) to Specialties Technician
Bruce R. Higgins (4221) to Pattern Maker
Charles J. Davis (4512) to Carpenter
James H. Walker (4512) to Carpenter
James B. Trentham, Jr. (4231) to Technician
Yvonne J. Sandoval (3126) to Typist Clerk
Louis D. Archuleta (3415) to Mail Clerk
Mary R. Jaramillo (2552) to Stenographer Clerk
Virginia O. Chavez (4135) to Typist Clerk
Delia Quintana (4613) to Typist Clerk
Antonia M. Barnhill (2552) to Teletypewriter Operator
Barbara J. Frazier (3126) to Secretarial Stenographer
Joyce J. Tholburn (3126) to Secretarial Stenographer
Mary E. Abeita (3126) to Typist
Frances G. Bertalucci (3428) to Document Clerk
Dolores C. Chavez (4135) to Senior Clerk
Ida L. Burch (2526) to Service Clerk
James C. Reitz (8223) to Technician
Lennox B. Green, Jr. (8226) to Inspector
Tolly A. Vincent (8124) to Secretarial Typist
L. Alice Rogers (8148) to Data Processing Clerk
Lillie M. Radtke (9230) to Secretary
Frankie J. Potts (7341) to Laboratory Assistant
Lorella M. Salazar (3110) to Staff Member Administrative
Rudy Baca (4541) to Staff Member Administrative
Robert E. Hutchison (7122) to Staff Associate Technical
Robert R. Bailey (2114) to Staff Associate Administrative
Louis F. Jacot (6011) to Staff Associate Administrative
Rodman D. Golding (1132) to Staff Assistant Technical
Alan L. Richards (8117) to Staff Assistant Administrative
C. Ruth Harshe (2212) to Staff Assistant Drafting
Federico Salas (4574) to Janitor
Raymond K. Sandy (4224) to Specialties Worker
Lewis R. Blackman (4224) to Molder and Assembler
Jose P. Salazar (4224) to Molder and Assembler
Jose M. F. Sena (4224) to Molder and Assembler
Gilbert T. Leyba (4231) to Technician
Thomas R. Halleck (8222) to Laborer
Ted L. Hebebrand (8245) to Shipping and Receiving Clerk
Ann W. Dunsworth (3126) to Typist Clerk
Opal D. Walker (3126) to Typist Clerk
Aurora F. Romero (4623) to Record Clerk
Linda O. James (3126) to Secretarial Stenographer
Dorothy Taylor (4372) to Stenographer Clerk
Ann Faught (4622) to Service Clerk
Mona Krehwisch (8235) to Secretarial Typist
Keith A. Oatney (8117) to Computer Operator
Ernest J. Bennett (8117) to Computer Operator



CHRISTMAS CHARITY project of Sandians (Division 2126) at Amarillo, Texas, included providing food and clothing for two families. Assisting with the project were Harry E. Morris and Dorothy Lee Patterson.

Amarillo Employees Also Share Christmas Cheer

Christmas was a more meaningful holiday for 19 families in the Amarillo, Texas, area through the efforts of employees of Pantex Plant.

Sandians in Stockpile Sampling Operational Division 2126 participated in the activity by sponsoring two of the families which included three adults and 17 children. Harry E. Morris and Dorothy Lee Patterson (both 2126) served on the Christmas project committee.

Plant-wide cash contributions totaled \$2267.44. Donations of other items and discounts or wholesale prices offered by many business firms added several hundred dollars in value to the cash amount received.

Each family was provided two barrels of food plus new and used clothing for each member of the family. Other items donated included a refrigerator, washing machine, heater, and bed. One teenage girl received special treatment—her front tooth was capped.

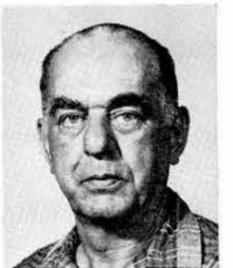
Welcome . . . Newcomers

Dec. 11 - Jan. 5

Albuquerque	
*Rolyn E. Baack	2441
B. Joy Devolk	3126
Coleta Gott	4372
Ernest W. Hamby	2231
Joe M. Holcomb	4574
Sadie O. Knight	3241
*Laura Mae Kurtz	3252
Imelda P. Maes	3126
I. Christine Northam	3126
*Arlene M. Padilla	4312
D. Michael Spencer	4632
Idaho	
James G. Prather, Idaho Falls	7112
Michigan	
Patrick J. Roach, Detroit	9325

* Denotes rehired

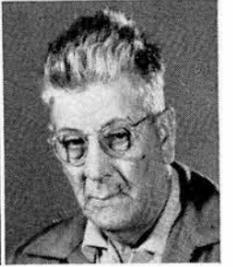
Deaths



C. A. Leemhuis



Bertha Merrill



W. H. Weaver

Clarence A. Leemhuis, a retired Sandia employee, died Dec. 28 from injuries received in an automobile accident. He was 63.

He started at Sandia in November 1948 and worked as a technical staff assistant, primarily in research organizations, until he took early retirement in July 1965.

Survivors include his widow.

Bertha M. Merrill, a retired Sandia employee, died Dec. 28 after a long illness. She was 58.

She had worked in test data reduction and mathematical services during her 15 years at Sandia. At her retirement in August 1964, she was supervisor of a data reduction section in Field Testing.

Survivors include her husband, Jack Merrill (9232).

William H. Weaver, a retired Sandia employee, died Jan. 3 after a long illness. He was 75.

He worked at Sandia from November 1948 until May 1957 in shipping and packaging organizations.

Survivors include his widow, three sons and four daughters.

Authors

G. L. Morrisroe (2522), "Information Retrieval—Engineering's Big Problem," winter issue, ASTME Student Quarterly.

D. W. Sasser and M. L. Slater (both 5262),

"On the Inequality $\sum_{i=1}^n x_i y_i \leq \sum_{i=1}^n x_i \cdot \sum_{i=1}^n y_i$ and the Van Der Waerden Permanent Conjecture," Vol. 3, No. 1, JOURNAL OF COMBINATORIAL THEORY.

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JANUARY 12, 1968

SANDIA LAB NEWS

SHOPPING CENTER

CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday. A maximum of 125 ads will be accepted for each issue.

RULES

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

FOR SALE

CARS & TRUCKS

- FORMULA VEE, completely race prepared, \$1795. Denison, 255-3535.
- '67 RAMBLER Rebel 770, 4-dr. sedan, 6-cyl., AT, 4000 miles, below Blue Book. Isidoro, 877-4440.
- '59 CHEVROLET Belair 4-dr. sedan, 6-cyl., stick-shift, R&H, new front tires. Officer, 256-0337.
- '61 FORD 4-dr. Country Sedan station wagon, 320-engine, AT, PS, PB, AC, \$800. Rueb, 268-5237.
- '62 RAMBLER Classic wagon, 6-cyl., ST, radio, white, \$550. Grothaus 298-3007.
- '54 GMC Carryall, new paint, AT, R&H, 3 seats, \$250. Gels, 298-2059.
- '67 VW fastback sedan, under 8000 miles, best offer & take over payments of \$69.53/mo. Capes, 268-0067 after 5.
- '64 CHEVROLET IMPALA, 327 V8, 2-4 brl. carbs., 4-spd., posi-traction, Hurst shifter, R&H, etc. Berg, 265-7106.
- '56 BUICK Special 4-dr. sedan, new brakes-water & fuel pump; R&H, \$200. Schrader, 256-6955.
- '60 T-BIRD HT, power, original owner. Burrell, 299-0233 after 5:30 work days.
- '65 FORD LTD, \$2170. Gallo, 298-1089.

- '55 PACKARD, AC, AT, PS, PB, etc., new tires, battery, overhauled transmission, 65,000 miles, \$250. Tolmie, 298-3903.
- '57 CHEV. sta. wgn., V8, 4-dr., AT, R&H, fresh major tune-up, original owner. Reynolds, 265-8905.
- '60 CHEVY PU, 4-spd., 6-cyl., fletside, 3 new 6-ply tires, rebuilt engine, new clutch, \$560. Gall, 264-7841.

MISCELLANEOUS

- TWO PLAY PENS, one round, one square, \$5 each. Colgan, 243-4882.
- MEMBERSHIP in Crossroads Flying Club, \$500 per share. Fly Cessna 182 for \$6.50 per hour dry. Doyal, 299-5688.
- '56 HARLEY DAVIDSON 165cc, \$50. Shock, 877-3728.
- SEMI-formal cocktail dress, silver & white brocade, worn once, size 5, \$20. Jones, 299-4900.
- '59 LARK wagon left door, tail gate, most windows, 2 bumpers, some interior parts. Scranton, 299-4902.
- KENMORE GAS DRYER, \$20; Ward's washing machine, \$25. Forsman, 299-5570.
- ICE AUGER, used 3 times, \$12. Sheaffer, 255-9473.
- KENMORE washer-dryer combination, \$75. Gurule, 898-3514.
- HONDA 305 scrambler, less than 2000 miles, \$550 or terms. Gum, 255-0452.
- '66 BELL & HOWELL, model 418 movie camera; power zoom, cartridge load, uses regular film, pistol grip, ThruLens meter, \$150. Geilenfeldt, 256-7532.
- APPALOOSA FILLY, 1 yr. old, \$200. Haskell, 865-7900.
- ANIMAL BED, new medium size; Wilson nzw table tennis set; tap shoes, girl's Capzio, size 7 narrow. Shead, 298-3373.
- MEN'S new cashmere and lamb's wool sweaters, sizes 40-44. Cash, 242-3721.
- 7:50 X 15 snow tires, \$15. Surface, 298-1394.
- MAPLE BED, dbl. size, firm mattress, box spring, steel side rails, 3 cross supports, \$50. Rynders, 299-3894.

- AKC registered German Shepherd puppies, champion bloodlines. Riley, 636-2154, Bosque Farms, after 6.
- PROFESSIONAL DRUM SET w/Tom-Toms, Zildjan cymbals, carrying cases, stool, \$750 value, trade for wood tools or \$300. Petersen, 265-1122.
- COMBINATION baby chest and wardrobe, \$15; twin mattress, \$5. Chemistruck, 299-7563.
- BASSET PUPPIES, AKC registered, 8 wks. old, males & females. Boyd, 247-9448.
- IRMA PISTOL, luger type, .22 caliber. Mitchell, 265-6081.
- MATCHING white Speed Queen auto. washer & dryer, best offer. Leeman, 299-9149.
- GUITAR, electric & amplifier, less than 1 yr. old, \$50. Thayer, 1424 Hoffman NE, 299-3127.
- RUGER Super "Single Six" convertible-.22 and .22 magnum, pearl grips, belt & holster, \$70. Curzi, 296-5386.
- '65 PRINCESS MOBILE HOME, 12'x55', front kitchen, 1 1/2 baths, 2 bdr., walnut paneling, carpeted, storm windows. Surran, 146 Vineyard Rd. NW, evenings & weekends.
- POODLES, champion lines, AKC reg., males, 8 wks. old, white, \$85; black 1 yr. old, \$125. Cotter, 268-5376.
- PUREBRED German shepherd puppies, make good watchdogs, have 5 males & 3 females. Carter, 877-1485.
- SALEM MAPLE twin bookcase beds w/springs & mattresses, \$50 for pair; child-size maple chifforobe, \$15. Morgan, 299-2850.
- 20 HP MERCURY outboard motor, about 1960 model, \$75. Falacy, 268-1257 weekends only.
- PIANO, upright; guitar; draperies for 12x8 and 9x8 area, white background. Summers, 299-4674.
- FREEZER, Kelvinator, 18 cu. ft. Gonzales, 299-1145 after 5:30.
- HERITAGE MOBILE HOME, 12x60 1-bdr., immediate possession, furn. or unfurn., many extras, landscaped, skirted, 40' awning. Morewood, 299-1344.
- KODAK M65 projector for either super or reg. 8mm movies; Sear's electric drive auto. exposure control 8mm camera built-in filter. Schafer, 299-6217.

- DIVAN, contemporary, 8', beige, \$90. Domme, 255-0133 after 5:30.
- ARA auto air conditioner, used 6 mos., orig. cost \$289, sell for \$125. Ortega, 877-2799.
- 427 CU. IN. FORD cylinder heads (complete) power steering assembly, Hurst shifter, 4-spd., Mustang & Cougar, all are '67 parts. Reiff, 265-7264.
- CHEST, 4-dwr., \$10; 24" girl's bike, \$12; occasional chair, \$8; baby feeding table, \$5; portable phonograph, \$3. Van Deusen, 299-4328.
- HI-FI phono radio combination, Newcomb tuner, 50-watt amplifier. Huston, 842-9049 after 7.
- FIREBOX for fireplace, under wholesale at \$65, 36" wide. Newcomer, 298-8217.
- SKI BOOTS, men's size 11 1/2 and ladies size 6 1/2; lg. car top carrier. Smith, 268-2141.

REAL ESTATE

- 4-BDR., den, 3 bath, brick Trend, fully landscaped. Minor, 299-2267 after 5:30.
- 2-BDR., carpet, garage, sprinklers, NE location, 1 blk. to elementary school, Jr. High nearby, \$81/mo., low equity. Pena, 268-4839.
- UNUSUAL: exposed beams, flintstone FR, 2 fireplaces, lg. recreation rm., 3 bdr., 1 1/2 baths, extras, Zia Fatima schools. Hill, 268-1420.
- 190' x 150' LOT South Valley between Arenal & Blake, 2 blks. east of Foothill. Benton, 877-2473.
- MOUNTAIN ACREAGE, 12 miles from Wyo. & Central north of 66, terms. Hoagland, 282-3825.
- GLENWOOD HILLS, custom brick, has panoramic view, basement, camper parking, fireplace, southwestern landscaping, buy 10% down, balance 6%. Smith, 296-1049.
- LARGE LOT, quiet N. valley neighborhood, city utilities. Smith, 344-2221.

WANTED

- MALE ROOMMATE to share furnished 3-bdr. house near Winrock, \$80/mo. Swartz, 255-6813.
- .38 CAL. revolver. Nielsen, 299-2919.
- RIDE from vicinity Constitution & Wyoming to 880 or 892 lots, car pool or individual. Devor, 298-9743.

- BABYSITTING—Hoffmantown area, high school girl, evenings & weekends. Sowell, 298-6031.
- PORTA-CRIB, also old 10-20 gal. aquarium. Aeschliman, 268-0079.
- BABYSITTING in my home on weekdays. Moseley, 298-0748.
- CHILD CARE IN my home. James, 298-6324.
- RIDE, vicinity of Yale/Princeton & Kathryn SE to 802. McClellan, 247-2513.
- BABYSITTING in my home weekdays, companion to 4-yr.-old boy. Peckum, 256-9581.
- RENT garage for boat storage. Gallo, 298-1089.

FOR RENT

- 2-BDR. HOME, drapes, carpet, range, refrig., washer, dryer, walled yard, available Jan. 15, 514 San Pablo NE. Barton, 256-3657.
- 2-BDR. APARTMENT, all electric appliances including heat; drapes, nylon carpeting, plenty closet & storage space, children & pets accepted. Bowers, 298-1992 after 5:30.
- 3-BDR., 1 1/2 bath, den, utility rm., carpeting, 6205 Zimmerman NE. Massey, 298-1468.
- 2-BDR. apartment, unfurnished, carpet, washing machine, 819 Louisiana SE, Apt. B. Glover, 298-7820.

LOST AND FOUND

- LOST—Black wool glove w/leather palm, brown leather folder w/clipboard, keys on chain w/green tag, Pontiac car key, black & silver ballpoint pen, dark gray hat, credit cards, turquoise nugget w/silver, tan Rayband case, ring of keys w/screw driver, black leather key case w/approx. 8 keys, ring w/5 keys, 2-blade pocketknife, GM key, brown left-hand leather glove, brown sport coat w/lecks of color, ring w/2 Mustang keys, blue Sheffer eversharp. LOST AND FOUND, tel. 264-2757, Bldg. 610.
- FOUND—Eversharp, black leather gloves, leather button, 2 keys on chain, 4 keys on wire ring, tan cloth glove, gray glove, contact lenses in black & white case, yellow-green scarf, black scarf, pearl necklace, purple daisy earring. LOST AND FOUND, tel. 264-2757, Bldg. 610.

Take Note



LIKE A MIRAGE to a weary traveler, Friday evening social hours at the Coronado Club beckon the TGIF crowd. Tonight, the Club's famous chuckwagon roast beef will be featured at the buffet. The mirage girl is Claudia Garlick (3126).

Chuckwagon Roast Beef Tonight

Coronado Club Famous Buffets Set For Next Three Social Hours

Famous Coronado Club buffets will be featured during social hours for the next three Friday evenings.

Tonight, it's the mighty chuckwagon roast beef for those with hearty appetites. Cost is \$1.75 for adults, \$1.25 for kids. Tommy Kelly and his swinging trio will be on the bandstand making happy music.

On Friday, Jan. 19, Sol Chavez and trumpet will sound the call for the Mexican food buffet, the kind New Mexicans like. The buffet costs \$1.25 for adults, \$1 for kids.

Seafood—all kinds—will be spread Friday, Jan. 26, for the social hour buffet. Bud Fischer will be on the bandstand.

Casino Night

This event is loaded with fun, games, good food, dancing and prizes. Play money will be used at the games of chance, but the big winners will collect real prizes. Admission is \$1 for members, \$2 for guests. French dip sandwiches will sell for 90 cents. The games start at 8 p.m. The Rhythm Masters will play for dancing from 9 p.m. to 1 a.m.

Accounting Meet Jan. 26

Leo Arellano (4153) will be a member of a panel discussing "Valuation of Capital Assets — Government vs. Private Industry" during the third annual New Mexico Accounting Seminar at the Student Union Bldg., University of New Mexico, on Jan. 26.

J. R. Mike Coleman (4131-4) is chairman of the seminar development committee and Fred E. Mitchell, Sr. (4131-4) is a member of the committee. Co-sponsors of the seminar are the Administrative Management Society, Federal Government Accountants Association, National Association of Accountants, N.M. Society of Certified Public Accountants and the accounting departments of the University of Albuquerque and the University of New Mexico.

Supervisory Appointment



CARL L. SCHUSTER, II, to supervisor of the newly-created Sensor Systems Division II 9235, effective Jan. 16.

Since joining Sandia in August 1956 he has been assigned to telemetry development

project groups. Currently in Experimental Systems Division 9231, Carl has been on temporary duty with the Defense Communications Planning Group in Washington, D.C., since July 1967.

He was on military leave of absence at Fort Monmouth, N.J., and White Sands Missile Range from May to November of 1957 and was commissioned a second lieutenant in the Army Signal Corps.

Carl received a BS degree in electrical engineering from the University of Illinois in June 1956 and an MS in electrical engineering under Sandia's Educational Aids Program at the University of New Mexico in June 1964.

The annual Christmas project of the United Unions (International Brotherhood of Electrical Workers — Local 1988, and International Association of Machinists — Local Lodge 1689) had a little extra something this year. The Sandians hosted the 250 students at Longfellow elementary school and in return the adults received a stack of "thank you" letters from the youngsters. The fourth graders wrote their letters and illustrated them with cut-outs from Christmas cards appropriate for the holiday season. The thoughts included the following: "I appreciate the dinner that you gave me and I wish you a Merry Christmas. I will dress neatly before (sic) the party" and "I appreciate the dinner. They had the best things I ever had. I am glad you payed (sic) for us."

The younger children did crayon drawings of the cafeteria, Christmas trees, angels, etc. Amid these artistic efforts one student managed to add five "thank you's" and another little girl penciled across the top of her drawing, "I like you Sirs, Judy." That pretty well summed up how all the children felt.

The two unions sponsored an additional Christmas party, on Dec. 23, at the Los Lunas Hospital and Training School. Santa Claus gave each of the 150 patients a sack filled with candy, peanuts and fruits. Ice cream and cookies were also served. Entertainment included a rock-and-roll band, a magician, a 30-member choir of teenagers, and a pianist who accompanied the patients as they sang carols. Chairman A. N. Chaves (4615) reports that the unions hope to take a rock-and-roll band to Los Lunas once a month.

Donald W. Johnson (9324) has been named a member of the Technical Committee on Aerodynamic Deceleration Systems of the American Institute of Aeronautics and Astronautics. The 19-member committee is one of several technical groups in AIAA. Its scope is the design and operation of aerodynamic deceleration systems—specifically parachutes, inflatable structures, para-rotors, etc.—for applications to aerodynamic deceleration of cargo, vehicles and crew members. The committee will meet Jan. 23 at the AIAA Aerospace Science Meeting in New York City. Don has been a member of AIAA since 1957.

Tryouts for the next Entertainment Center stage production, "How To Succeed In the Army Without Really Trying," will be held at the Center, Bldg. 204, at 1:30 p.m. Sat., Jan. 13. Also needed are personnel to work backstage. For further information, contact the Entertainment Director at 264-5721 or 264-8812.

Sunport Expansion Studied

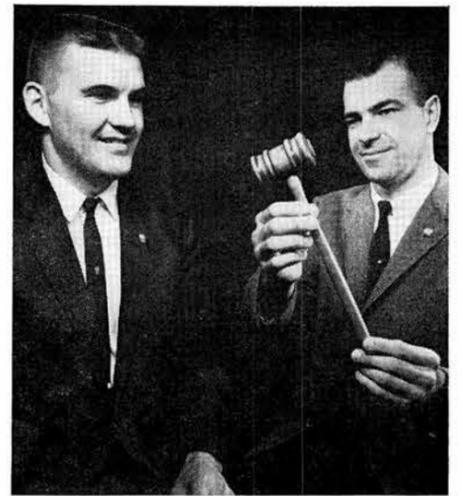
Sandians Named to Advisory Board

The development of air transportation facilities is one of the areas two Sandians will be studying as members of the new Albuquerque Airport Advisory Board.

Larry S. Johnson (1544) and Jack R. Spence (4363) were named to the board last month and will serve two-year and three-year terms respectively. The seven-member group was appointed by the Albuquerque City Commission to study several specific problems: the possibility of obtaining international status for the Sunport; the need for enlarged air cargo/freight and general aviation facilities; the feasibility of a separate Airport Authority; and the establishment of additional airline service. In addition, the board will help determine ways to keep the Sunport self-supporting.

Mr. Johnson has been at Sandia 11 years and since 1960 has been working on aircraft compatibility studies with both the Air Force and Navy. He travels frequently in connection with his job and is well-acquainted with most major airports. He is a mechanical engineer and is a registered professional engineer in Texas and New Mexico.

Mr. Spence is supervisor of Sandia's Traffic Division 4363 and has been concerned with passenger and freight transportation problems since 1925. He is a member of the National Defense Executive Reserve for the Department of Transporta-



PRESIDENT G. T. KUPPER (3114), right, accepts the Sandia Toastmasters Club's gavel from outgoing president Bill Emrick (5624).

G. T. Kupper (3114) was recently elected president of the Sandia Toastmasters Club 765. Other new officers are L. V. Feltz (9323), executive vice president; D. R. Kendall (2444), educational vice president; M. E. Mefford (3420), secretary; G. P. Beller (1500), treasurer; P. E. Gammill (1431), sergeant-at-arms; and N. F. Sinnott (7214), historian. They were inducted into office last week to serve through June.

Toastmasters is a non-profit, educational organization that provides its members with opportunities to improve their abilities to speak in public, conduct meetings and develop their executive abilities.

Employees interested in joining Toastmasters may contact one of the officers for additional information. The group meets every Thursday at 6:30 p.m. at Wyatt's Cafeteria.

Clint Purdue (2442) will moderate a session on "Computer-Aided Reliability Analysis" during the 1968 Annual Symposium on Reliability Jan. 16 in Boston. Clint is chairman of the IEEE CADAR (Computer-Aided Design, Analysis and Reliability) Council and the IEEE CARAD (Computer-Aided Reliability Analysis and Design) Committee.

Regular Tuesday evening meetings of the ANAF Club Chess Group will resume Jan. 16 at 7 p.m. The meeting features friendly competition as well as individual instruction to improve playing and drill for chess team competition. All personnel attached to Sandia Base, including Sandia Laboratory and AEC employees, are eligible for Chess Group membership. For additional information, contact J. W. Weihe (5250), 264-3743.

Sandia Safety Signals

Drugs Disposal

Additional thought on disposal of leftover drugs — flush them away. Do not throw them into a rubbish container. Not all children are "garbage pickers," but a strong wind or an animal can knock a container over and expose drugs to children.

Fire!

Not long ago, an employee in the laboratory at Texas Instruments, while carrying a glass bottle filled with acetone, slipped and dropped it. The fumes enveloped him and either a flame in the vicinity or an electric motor sparking ignited the acetone vapor and turned him into a torch. Recently an Albuquerque boy dropped a container filled with gasoline near a water heater and the fumes ignited and he was fatally burned. There are possibilities of slips and falls while carrying flammable liquids — so take care.



AIRPORT ADVISORY BOARD members Larry Johnson (1544) and Jack Spence (4363), right, discuss possible new air passenger and freight routes.