

LAB NEWS

VOL. 27, NO. 18

SEPTEMBER 5, 1975

SANDIA LABORATORIES • ALBUQUERQUE NEW MEXICO • LIVERMORE CALIFORNIA • TONOPAH NEVADA



IN ALASKA, in August, the sun hardly ever goes down. This photo was taken on the Kenai Peninsula around 10 in the evening. Sandians were checking out a

volcanic island off the coast last month in a magma research experiment. Additional photos on page 5.

Seismic Sensors Seek Magma on Volcanic Island

DEAN RUSK is the familiar figure with President Sparks. The former Secretary of State is a member of the General Advisory Committee on Arms Control, which came to New Mexico last month to visit Los Alamos and Sandia. The committee heard presentations in the Weapon Display Area of Bldg. 892 by Mr. Sparks, Jack Howard (2), Orval Jones (1700), Jerry Hood (1510), Dick Wayne (8365) and Don Dickason of ALO Security.



In pursuit of scientific knowledge, Sandia Labs has explored the stratosphere, gone to the depths of the oceans and, at one time or another, Sandians have set foot on most parts of our small world. A recent Labs expedition to a small uninhabited island off the coast of Alaska is thus not totally exotic. But, to the three Sandia participants, Augustine Island, if not the most remote, has to be one of earth's less congenial places.

The three, Miles Leeman and Larry Billmaier of Sensor Systems Division 1735, and Ed Stout of Mobile and Remote Ranges Division 9414, travelled to this volcanic island last month in support of a University of Alaska energy experiment. Arising from Sandia's ongoing magma energy research project, the experiment sought to explore the use of seismic sensors as a means of characterizing a molten body — the magma — underlying the earth's crust. Because Augustine Island is an active volcano, the magma is known to underlie the surface. It is thus a good proving ground upon which to learn whether seismic sensors, picking up signals from explosive charges, can indeed characterize the magma.

This straightforward objective appears to

(Continued on Page 4)

Afterthoughts

ORNL/HNL/ORNL--This item appeared in Union Carbide's Nuclear Division News: "It's Oak Ridge National Laboratory again! In both the House of Representatives and the U.S. Senate, bills have been passed to restore the name of the Laboratory." Period. No background, no editorial comment. In case you've forgotten, Oak Ridge was renamed the Holifield National Laboratory not too long ago with customary fanfare. Chet Holifield had been an early principal in the Congress on AEC matters. Too bad, Chet --looks like you've run into a little name dropping.

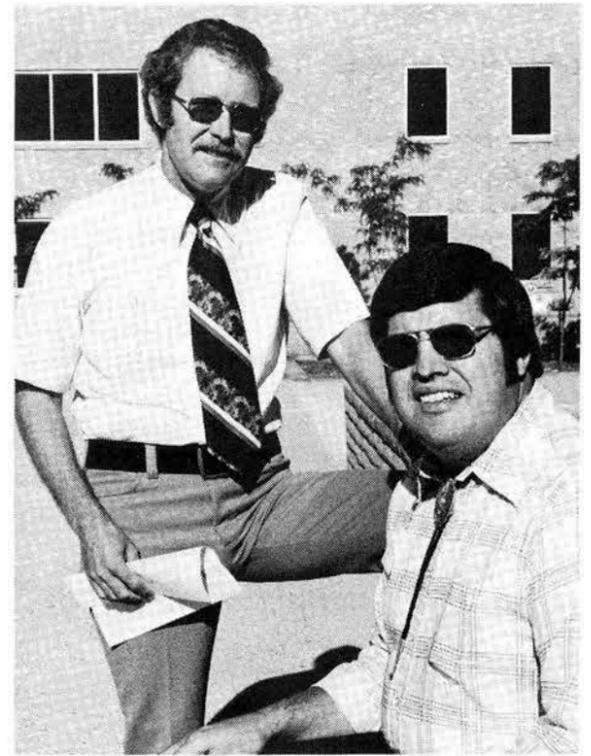
* * *

The way to run a railroad--One wonders sometimes why the Japanese lost WW II (aside from The Bomb). Their technological prowess enables a citizen to board a train in Tokyo and seven hours later to detrain in Hakata, distance 670 miles. Called Shinkansen, the new trains attain speeds of 130 mph and are designed for an ultimate top speed of 160 mph. Point to point averages are 100 mph. Trains like that would put Albuquerqueans in Los Angeles in 8½ hours, in El Paso in less than 3 hours, in Salt Lake in 6½ hours, and in San Francisco in 12 hours. Coupled with railroad cars that could tote the family car as well, such trains would revolutionize travel. Fuel consumption would go down, fewer people would be killed on the highways, and Dad would be spared the stupefying monotony of those hundreds of miles behind the wheel.

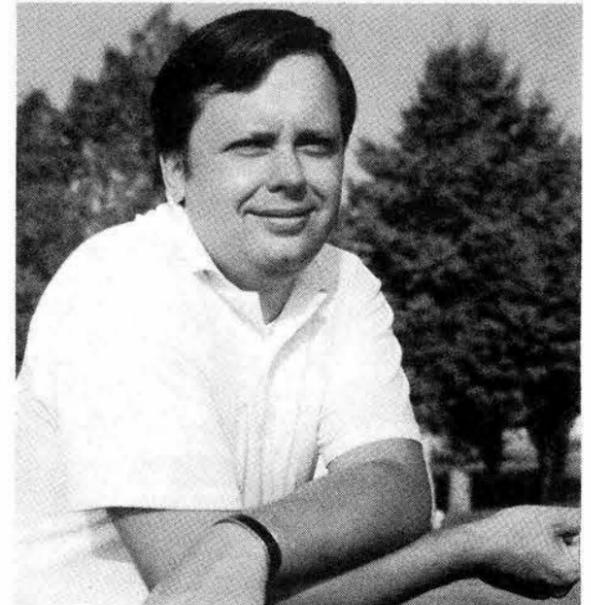
Realistically, such a development will probably never take place here. Although our nation became an industrial colossus largely on the basis of aggressive and innovative railroad development, our railroads today seem to have only one imperative--a determination to rush headlong into the 19th century, carrying freight only.

* * *

Equal rights & booze--On Central Ave. there's some significant number of saloons with signs to this effect: "Unescorted Ladies--Drinks 25¢." One is led to deduce that an unescorted man or, for that matter, an escorted man doesn't qualify for the cheap booze. EEOC, ACLU, NOW--where are you when something really important comes up? *js



Jim Leonard (5712), left, and Thad Werner (3141-1)



Bob Luna (5443)

Supervisory Appointments

JIM LEONARD to supervisor of Solar Total Energy Project Division 5712, effective Sept. 1. Since joining Sandia in February 1956, Jim has worked in weapons systems engineering, aerospace nuclear safety, SNAP program management, exploratory systems development and, since April 1974, in solar energy projects.

Jim received his BS in ME from Ohio University and has done graduate work at UNM. He is a member of the International Solar Energy Society and the Albuquerque Civic Light Opera Amigos. His leisure time activities include golfing, backpacking and skiing. Jim, his wife June, and their three children live at 7304 Vista del Arroyo NE.

* * *

THAD WERNER to supervisor of Library Process Section 3141-1, effective Aug. 16. Thad came to the Labs in January 1962 as a messenger in the mailroom. He later worked with the drawing reproduction division and, in 1964, transferred to computer operations. Thad worked the graveyard shift in the computer area and attended the University of Albuquerque during the day under Sandia's Educational Aids Program; he received a BS in business in 1968. Since 1969 he has been a programmer/systems analyst in the technical library.

Thad's chief interests away from the job are hunting and camping. He and his wife Donna and their five-year-old daughter live at 2104 Marie Park Drive NE.

BOB LUNA to supervisor of Waste Management and Environmental Research Division 5443, effective Aug. 1. Since joining the Labs in July 1965, Bob has worked in the field of weapons safety — atmospheric transport and diffusion predictions, most specifically, and the interpretation of data from the PAGE (Plutonium Aerosol Generation Experiment) Project. He also helped in the development of computer codes for predictions of atmospheric dispersal of pollutants.

Bob earned a BS from Rutgers University and his MSE, MA and PhD from Princeton. He is a member of AIAA, ASME, AMS and the American Association for the Advancement of Science. He spends much of his leisure time raising fruits and vegetables. Bob says he has a good crop of grapes and for the first time is going to try to make wine; he's a member of the New Mexico Wine and Vine Society.

Bob, his wife Maureen, and their three children live at 4809 Northridge Ct., NE.

ENERGY SAVINGS

COMPARED WITH USAGE IN BASE PERIOD - JULY 1972 THRU JUNE 1973
CURRENT REPORTING PERIOD ENDING JULY '75

	BASE PERIOD	MWH	% SAVED
ELECTRICITY	1975	73082	20.8%
STEAM PLANT FUEL EQUIV. OIL	1975	19805	11.8%
VEHICLE MILES	1975	1,872,000	24.1%

LAB NEWS
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LAB NEWS

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&
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bill laskar does picture work
gerse martinez lends a hand
&

lorena schneider reports on livermore

Recognition for Jack Wilson Comes in Twos

Not once but twice, Jack Wilson, supervisor of Standards and Calibration Section 8413-1, has been recognized for recent contributions.

While in Los Angeles as program speaker at the International Trade and Metric Conversion Seminar, Jack received an award for his work in implementing the metric system within the U.S. Merchant Marine and the maritime industry. As chairman of California's Metric Committee and metric advisor to the American National Standards Institute, Jack also serves as consultant to various educational organizations.

En route from the Los Angeles seminar to Livermore, near Kettleman City, Jack witnessed an accident involving a large truck-trailer and a station wagon. All seven occupants of the wagon, including five children, were injured, as well as the truck driver.

For his help at the accident, Jack received a letter of appreciation from the California Highway Patrol. A portion reads, "You stopped and offered assistance to the injured displaying unusual skill and unselfishness. It is people like yourself that make our work easier."

A veteran instructor in first aid and accident prevention, Jack carries a first aid kit in his car, sizeable enough to handle most highway accidents until professional medical attention arrives. "The drug store variety of kit just doesn't include the necessary materials to do the job," he claims. "You definitely need larger bandages and compresses, additional means for cleaning wounds, and splints."

"I've used my first aid training many times, but this is only the third highway accident in some 25 years," continues Jack. "This one is clearly another case for seat belts. None of the victims was wearing a belt and, as a result, three hit the windshield and a fourth was thrown through the rear window."

THE NATIONAL
MARITIME COUNCIL

AWARDS THIS CERTIFICATE OF APPRECIATION TO

Jack L. Wilson

In recognition of outstanding cooperation in furthering the objectives of The Council towards the building of a stronger, more competitive and modern United States Merchant Marine



CHAIRMAN
NATIONAL
REGIONAL
BOARD
MAY



NATIONAL MARITIME COUNCIL AWARD and a "thank you" from the Department of California Highway Patrol for Jack Wilson (8413-1).

STATE OF CALIFORNIA - DEPARTMENT OF HIGHWAY PATROL
DEPARTMENT OF CALIFORNIA HIGHWAY PATROL
SACRAMENTO, CALIFORNIA 95833
June 11, 1975

Mr. Jack Wilson
4020 Quince Court
Livermore, California 94550
Dear Mr. Wilson:

On June 6, 1975, Officer William H. Hill was involved in the operation of an ambulance which was transporting a patient to the hospital. The ambulance was involved in a collision with a station wagon, which was carrying five children and a driver. The ambulance was unable to stop in time and the children were injured.

Your active involvement in this situation, in the form of stopping and offering assistance to the injured, was most commendable. It is for this reason that we are pleased to present you with this certificate of appreciation.

Very truly yours,
W. H. Hill
SACRAMENTO, CALIFORNIA

LIVERMORE NEWS

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Supervisory Appointment



DON RICHARDSON to supervisor of newly created Modification Section 8257-3, effective Aug. 16.

Don has been a structural technician in Plant Maintenance since joining Sandia/Livermore in October 1962. Previously, he worked for various firms in the midwest and the Bay Area including six years at FMC Ordnance Plant and three years at International Steel Company, both in San Jose.

Completing his apprenticeship training with the Illinois Central Railroad Shops in Waterloo, Iowa, he became a journeyman machinist welder in 1940. During WWII, he was with the Headquarters and Service Company of the U.S. Army Combat Engineers for almost three years, serving in the Philippine Islands and in the occupation of Japan.

Off the job, Don enjoys fishing, camping and travel-trailing throughout the country. He and his wife Dianne live on Broadmoor Street in Livermore.



LEAP '75 PLANS UNDERWAY — Poster for this year's Livermore Employees' Assistance Plan campaign is displayed by committee chairman Bill Ryan (8264) and Jyme Waidler of the United Way of the Bay Area, formerly the United Bay Area Crusade. The name change represents a move by local United Way organizations around the country for a more uniform identification. LEAP campaign starts at Sandia/Livermore on Sept. 22

Continued from Page One

MAGMA RESEARCH

have been met. A considerable body of seismic data was collected by the Sandians during their stay on Augustine and, after analysis, the data will likely reveal whether it is possible to use seismic sensors to define magma pools.

* * *

The island assignment proved to be both adventuresome and arduous for the three Sandians. Scheduled to be run in 10 days, the experiment and its wrap-up lasted three weeks. Most of that time was spent by Leeman, Billmaier and Stout on the small island, together with 15 people from the University of Alaska. The entire crew lived in, or out of, a small Butler-type metal building with three-level bunks. When the wind blew — and this part of the world is home to the infamous williwaws — the building shook and rattled like a tambourine, making sleep impossible.

There was no fresh water, except that toted in by boat. After two weeks Billmaier, seized by a hygienic fit, plunged into the cold salt waters of an inlet. He may recover.

The creaky LCT that wallowed them over the 80 miles of open water to the island turned back once because of heavy seas. On the next try, the LCT made it to the island but ripped open a bottom section as it came into the beach. All hands then worked to midnight unloading the LCT's cargo through the chilly surf.

A key recorder failed to work and, after a heroic weekend effort here at the Labs, a replacement was flown in from Albuquerque in three days. Late in the second week, the shots were completed and the Sandians were packed up. But weather held the LCT on the mainland for three more days. When it did arrive, the cargo had to be reloaded by wading through waist deep water. Then, backing out, the rudder jammed on a rock; it had to be repaired *in situ* during low tide. The weather turned foul again and all hands marked time for another two days. Finally, the LCT departed Augustine, but not before the Sandians spent a sleepless night aboard, waiting out high seas.

The University of Alaska crew is making plans to return to Augustine Island next February, when sunlight is locally regarded as a strange celestial phenomenon. Billmaier, Leeman and Stout haven't volunteered for the expedition yet, but everyone figures they're just playing hard to get. • js

SPECIAL AWARD WINNERS of the 26th International Science and Engineering Fair spent a week at Sandia Labs recently for an energy orientation. Emil Kadlec (5712), left, discusses solar reflectors with Randy Elliott, Duncan (OK) High School, and Bentley Ousley, Dora (MO) High School. ERDA sponsored the visit of the 15-year-old students, their parents and science teachers to Sandia as an award for their winning ISEF projects.



JACK KING (far right), head of ERDA's Office of Public Affairs, visited Sandia last month for briefings and to talk with George Dennis (left), director of ERDA/ALO Public Affairs Division, and Ted Sherwin, manager of Sandia's Information Department (3160). Ted holds model of vertical axis windmill. While in Albuquerque, King addressed a luncheon meeting of public relations and media representatives, outlining the information dissemination task ERDA faces.



FROM THE Atomic Weapons Research Establishment (AWRE) in England comes E.T. Court (left) to explore the intricacies of a Labs capacitor winder. Charles Tapp, manager of Electronic Technology Department 2430, is host.



M.J. Sagartz and M.J. Forrestal (both 9324), "Motion of a Stretched String Loaded by an Accelerating Force," June '75, pp 505-506, JOURNAL OF APPLIED MECHANICS.

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E.W. Cassidy (4211), W.H. Chandler (4212) and R.J. Edelman (4200), "Breaking Down Classification," June '75, PERSONNEL MAGAZINE.

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C.H. Seager (5155) and R.K. Quinn (5154), "D.C. Electronic Transport in Binary Arsenic Chalcogenide Glasses," Vol. 17, No. 3, JOURNAL OF NON-CRYSTALLINE SOLIDS.

H.J. Sutherland (5163) and J.E. Kennedy (5131), "Acoustic Characterization of Two Unreacted Explosives," Vol. 46, No. 6, JOURNAL OF APPLIED PHYSICS.

J.G. Kelly (5242), et al, "Induced Deactivation of Naphthalene Triplets by *cis*-piperylene," Vol. 21, No. 4,

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C.W. Frank (5811), "Observation of Relaxation Processes Near the Glass Transition by Means of Excimer Fluorescence," Vol. 8, No. 3, MACROMOLECULES.

R.P. Clark and F.W. Reinhardt (both 2523), "Phase Diagrams for the Binary Systems CaCl₂-KCl and CaCl₂-CaCrO₄," Vol. 12, No. 3, THERMOCHIMICA ACTA.

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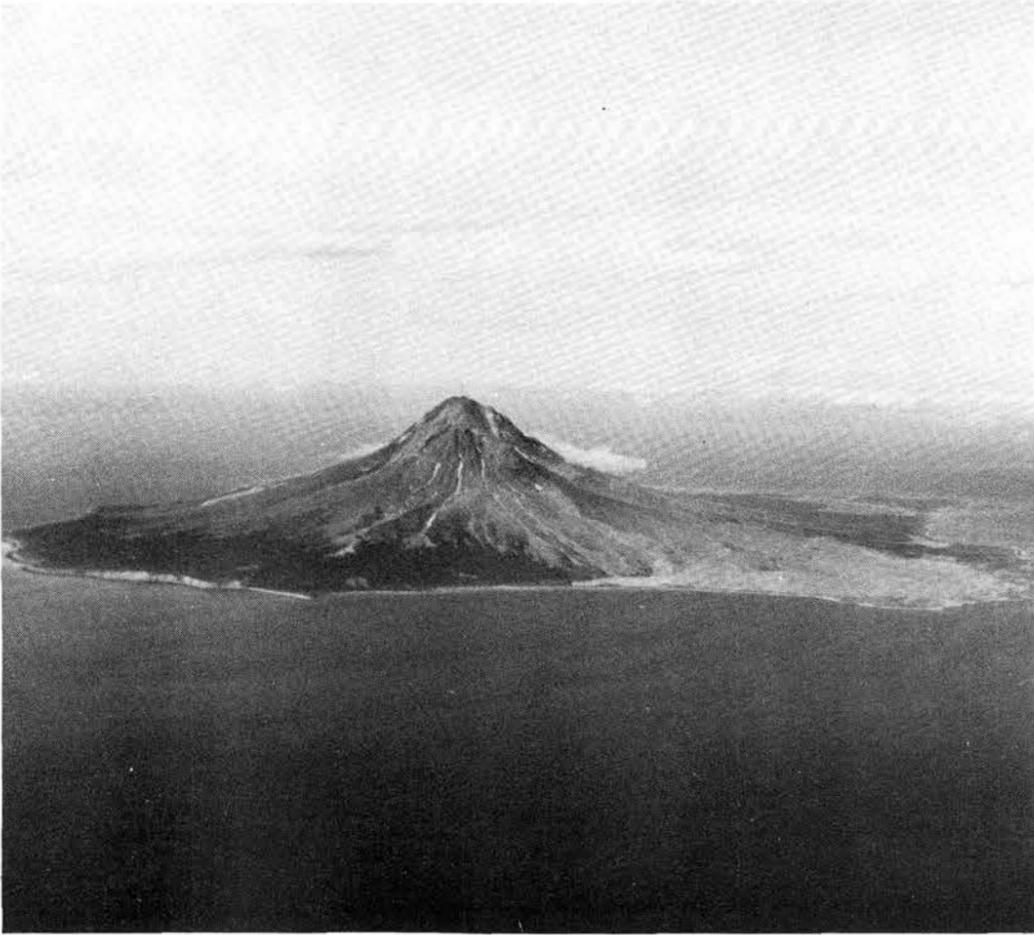
J.P. Van Dyke (5151) and G.A. Samara (5130), "Thallous Halides: Pressure Dependence of the Energy-Band Structure and the Insulator-Metal Transition," Vol. 11, No. 12, PHYSICAL REVIEW B.

K.D. Bergeron and J.W. Poukey (both 5241), "Relativistic Space-Charge Flow in a Magnetic Field," Vol. 27, No. 2, APPLIED PHYSICS LETTERS.

H.J. Stein (5112), "Optical Absorption in Ge and Si After Proton Bombardment at 10 K," Vol. 46, No. 7, JOURNAL OF APPLIED PHYSICS.

T.A. Dellin (8342) and C.J. MacCallum (5223), "Photo-Compton Currents Emitted from a Surface," Vol. 46, No. 7, JOURNAL OF APPLIED PHYSICS.

R.R. Eaton (5644) and D.E. Larson (5625), "Symmetry Plane Laminar and Turbulent Viscous Flow on Bodies at Incidence," Vol. 13, No. 5 AIAA JOURNAL.



Sandians in Alaska

MAGMA research experimenters (above from left) Ed Stout (9414) Miles Leeman and Larry Billmaier (both 1735) stand before Mt. Augustine, a volcanic peak off the Alaskan coast (note aerial, upper left). Seismic sensors and other equipment are shown on island beach (below) after unloading from LCT. The landing craft (far left) was loaded with the expedition's gear at the mainland town of Homer. Seismic test sought to define magma pool underlying mountain's surface. Other photos: totem poles and calving glaciers (left) are vintage Alaska. August is dry season so chains are needed only on four wheels (bottom right).



Geronimo & An Early Use of Solar Power

"The sun rises and shines for a time, and then it goes down, sinks, and is lost. So it will be with the Indian..." So spoke the Apache chief, Geronimo, while imprisoned at Ft. Sill, Okla.

The Apache first appeared in Texas during the 16th Century and was driven west into New Mexico and Arizona by the Comanches. They adapted to the arid southwest as no other people were able to do and, for many years, lived more or less at peace with the Spanish colonists. Open warfare between the Apache and the white man dates from an incident in the year 1837, when the Indian fell victim to deception. Four hundred Apaches and their leader, Juan Jose, were invited to a gathering at a dry lake bed south of Santa Rita (N.M.), site of extensive copper workings. While they inspected an offering of gifts, a hidden howitzer was fired into their midst. Americans and Mexican soldiers finished them off.

Leadership of the tribe passed into the vengeful hands of Mangus Colorado. He immediately cut off supplies being shipped to the mines from Chihuahua and, as food ran out, miners took off on the old trail to Chihuahua. Many were ambushed along the way, and thus began a savage war that was to last 50 years.

Leaders following Mangus Colorado included Cochise, Victorio, Nana, and later Geronimo, Natchez and Chatto. The Apaches fought with blind fury and displayed no mercy. At one with the terrain, the elusive Apache warrior was a master of ambush, and possessed a remarkable ability to endure heat and to survive without water.

But treachery, massacres, atrocities and ambush were not limited to the Apache. The U.S. and Mexican armies and many American and Mexican civilians were equally ruthless. Some frontier men were devoted to killing Indians and were obsessed with their hatred. And deceit on the part of Americans played a role — in 1874 Mangus Colorado was lured into an Army camp on the promise of a parley and then arrested. During the night, a guard held his bayonet over the campfire and plunged the red hot weapon into the chief's leg. When Mangus leaped up with an agonized cry, he was shot and killed. The official report said he died "while attempting to escape."

The government's war of extermination began after the Civil War, and atrocities mounted on both sides. Gen. George Crook took command of the Department of Arizona (which included New Mexico territory) in 1871. After trying negotiation, to which the Apache responded with 54 attacks within a year, Gen. Crook conducted a campaign that brought the Apache under control. He hired Apache scouts, trained his troops in survival tactics, and made them as mobile as the Indians by using mules fitted with pack saddles — each was able to carry 320 pounds of supplies. The soldiers were given one order — if a trail was found, follow it, no matter how long, until the Indians were compelled to



GEN. MILES believed this heliograph demonstration helped convince Geronimo to give up.

fight. The constant pressure wore the Indians down. Most consented to be placed on reservations, and the territory became quiet for a time.

After Gen. Crook left in 1875, deceit and corruption resumed as thieving contractors, dishonest Indian agents, whiskey peddlers and gun runners surfaced. The Apaches became restive, and shortly the territory was again embroiled in bloody battle. The government asked Gen. Crook to return and end the war. His reputation for fairness served him well as he listened to Indian grievances. Through his efforts most of the Apaches returned to planting crops and raising stock.

A group of 500 Chiracahuas, led by Geronimo, Chatto and Natchez, refused to surrender, however. From their retreats in the Sierra Madre Mountains they led continuous raids over the border and tried to enlist other tribes in their revolt. In 1883, U.S. troops were allowed to cross the border into Mexico in pursuit of the hostiles; again Gen. Crook used Apache scouts and pack trains to gain the surrender of 285 of the Indians, but he was unable to subdue Geronimo.

Enter Gen. Nelson Miles, the Army's most successful Indian fighter with a record of victory over the Kiowas, the Comanches, the Sioux, the Nez Perces and other great plains tribes. Now, given the job of defeating Geronimo, Miles studied Crook's methods and decided that ordinary soldiers were no match for the Apache. Taking only picked men, Miles organized a "flying column" that would be employed in hot pursuit missions and placed it under the command of Capt. Henry Lawton, an experienced desert fighter. Besides these, he had some 5000 additional soldiers and 500 Indian scouts in the command. Desert areas were closely watched by this army. Guards were stationed at water holes, mountain passes and food areas. The cavalry was used in scouting parties and long pursuits. The flying column under Capt. Lawton was given the chore of pursuing the Indians south of the border.

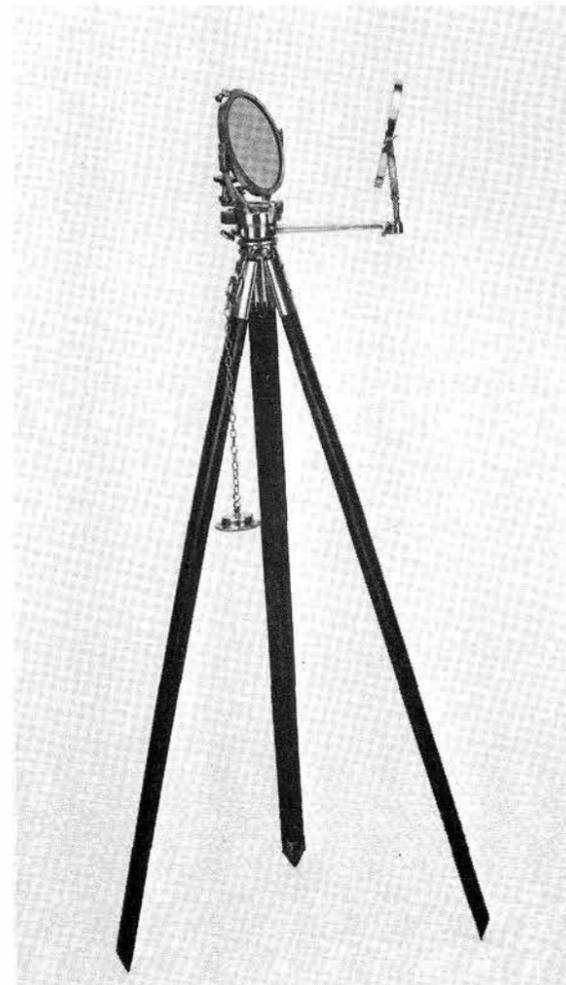
But the most important innovation of this campaign was the heliograph. (The telegraph was useless because the Indians cut down the poles and made off with the wire.) The heliograph, invented by a British scientist, had been used successfully in India.

Its design was simple: two mirrors with a sighting rod mounted on a tripod plus a screen or shutter interrupting the flashes. With the sun in front, its rays were reflected directly to the receiving station. With the sun behind, its rays were reflected from one mirror to the second mirror, then to the receiver. Flashes were long or short, corresponding to the Morse code. It was made to order for the Southwest.

Gen. Miles established 27 heliograph stations on mountain peaks 25 to 30 miles apart. Indian movements were flashed from one station to another; other military messages were transmitted; there were even weekly weather reports. So expert were the heliographers that they once transmitted a message 800 miles in less than four hours. Their logs recorded 2264 messages transmitted during five months in 1886.

The instrument sealed Geronimo's fate. Capt. Lawton and other commanders were continually informed of his movements. He was harried without cease, and when one flying column had to drop out because of exhaustion, another took its place. For three months, Geronimo and Natchez with 20 warriors, encumbered by their women and children, were hunted by 5000 soldiers, 500 Indian scouts, hundreds of civilians, and Mexican soldiers.

Contact with Geronimo was finally made by Lt. Gatewood, who escorted the chief to Capt. Lawton. Geronimo would surrender to the highest authority in the territory — Gen. Miles — and, as a pledge, sent his brother to Fort Bowie. Gen. Miles traveled the 65 miles from Fort Bowie to Skeleton Canyon on the border between Arizona and Mexico where the Indians and Capt. Lawton's troop were camped. He was disturbed because Natchez remained in the hills, and he explained to Geronimo the folly of fighting against the military with all its advantages of communication and transportation.



HELIOGRAPH on display at the Smithsonian Institution.

Dick Hodges Collects Cameras



Since he was 13, Dick Hodges — technical photographer in Division 3171 — has used cameras to earn a living, and he has used many. They range from his first Kodak folding rollfilm camera through the workhorse Graphic four-by-five to the superautomated and versatile 35mm systems used today. So becoming a collector of cameras has a certain logic.

“I started in photography when cameras were bulky things — 8x10 sheet film was standard in the studio,” Dick says. “Tripods were necessary as well as the black focusing cloth which the photographer tossed over his head so he could see the image on the camera’s ground glass. Film speed was slow and exposures were long. Photographic technology has come a long way.”

Dick’s camera collection documents this progress. He has several Eastman Kodaks manufactured in 1902, forerunners of the famous “Brownies.” His oldest camera uses glass plates, obviously built before 1900 when film with a celluloid or plastic base was introduced. This camera has no manufacturer’s label or date.

“The fascinating thing about these old cameras is the beauty of the craftsmanship,”

Dick says. “Most were assembled by hand and have wooden bodies and, after all these years, most of them still work. Within their limitations, they make beautiful pictures. In the old days a photographer had to be a meticulous craftsman with the camera and in the laboratory. He had to pay attention to every detail and do it right. There was no room for error. Today, the entire process can be automated.”

Among the collection are tiny “novelty” cameras, special purpose designs such as one that resembles a pocket watch. “It takes eight pictures on a round piece of film about the size of a silver dollar,” Dick says. “It still works. I cut a piece of film to size and tried it.”

Dick has no favorites among the collection.

“Like a classic car nut,” he says, “I love ’em all.”

Are they valuable?

“It depends,” Dick says, “on how badly the buyer wants an item. If there’s no market, then there’s no value. On the other hand, a Leica — Model B goes for \$2500 or so. And you could have bought one of those for \$195, new, back in 1930.”

GERONIMO surrendered to Gen. Miles on Sept. 3, 1886.

“We watch your movements and send messages over the tops of these mountains in a small part of one day,” Miles told Geronimo, “and over a distance which it would take a man mounted on a swift pony 20 days to travel.” Miles then directed a heliograph operator to send a message to Geronimo’s brother at Fort Bowie. Within a short time, the message came back that the brother was well and waiting for Geronimo.

Geronimo sent a runner to Natchez to tell him that he was in the presence of a power he could not understand and that Natchez was to come in quickly. Afterwards he stated he had seen flashes on the mountain peaks but placed their origin with spirits, not men (from an article by Gen. Miles, “On the Trail of Geronimo,” *Cosmopolitan Magazine*, 1911). General Miles personally escorted Geronimo and Natchez to Fort Bowie. The small group of Apaches were later removed to reservations in Florida and eventually to Fort Sill, Okla.

So ended 50 years of war. Gen. Miles attributed much of his success in it to the heliograph — an instrument so simple, so little known, and so little used that few remain in existence today. • nt



DICK HODGES (3171) displays camera collection.



B-17 Vets Recall

Wanted
B-17 FLYERS & CREWMEN who flew in the great war, for LAB NEWS article. Call John 4-1053.

We ran this ad a few issues back after noting an article in Frontier Airlines flight magazine that consisted of interviews with some of their employees who had flown in B-17's. Their experiences in the legendary bomber made interesting reading. Expecting maybe five or six calls, we got 22. We ran out of space before we ran out of good stories.

Clyde Dunlap (1714) was a flight engineer based in England.

"We got hit by flak on a raid against Dusseldorf. It was our 15th mission. The plane was crippled, but our pilot managed to get us back over the coast. Then we were attacked by three ME 109s. We shot down all three — I got one of them — but they got us and we had to ditch in the North Sea. It was February and a storm was making huge waves. The pilot put her down and, as she hit, the tail broke off. I managed to get out and on the wing, releasing the one life raft that was intact. All 10 of us were alive, but the heavy seas held up our rescue. Finally, after three hours in the freezing water we were picked up. It was too late for five crew members — they died of exposure.

"The strain that air warfare places on a person is unbelievable. More than once I'd be catching some sleep and would be awakened by the sobs of another airman in the barracks, bawling like a baby."

Russ Foster (3712) piloted 33 missions out of Italy.



"That's right, the tension before and during the missions would be tremendous. I felt lucky being the pilot because I always had something to do, while the rest of the crew had

to just sit and take it. The inactivity on a mission was hard to handle psychologically, particularly for ball-turret and tail gunners who were alone in cramped quarters.

"Vienna was our toughest target — lots of flak. Our base was a tent city set in the mud of south Italy. When the war ended we had enough missions to be sent home, but we were drafted to ferry 10th Mountain troops in our B-17's to North Africa"

Barry Gilkes (3171) operated the top turret guns.



"Our ship was the Earthquake McGoon, but on a max effort mission to Dresden another crew got it and they flew beside us in formation. I was in the top turret looking at

them when suddenly they took a direct hit. Four from the crew of 10 managed to get out before the ship exploded. I found out later that two of the four were killed by civilians when they landed.

"In March '45 over Berlin I heard the pilot repeatedly calling for the navigator, but there was no response. So I left the turret to

go forward — the copilot had been killed by flak and had a death grip on the controls. The pilot was trying to keep the plane in formation and, at the same time, was fighting to free the controls from the grip of the copilot. I finally was able to pull him away, and we made it back safely."

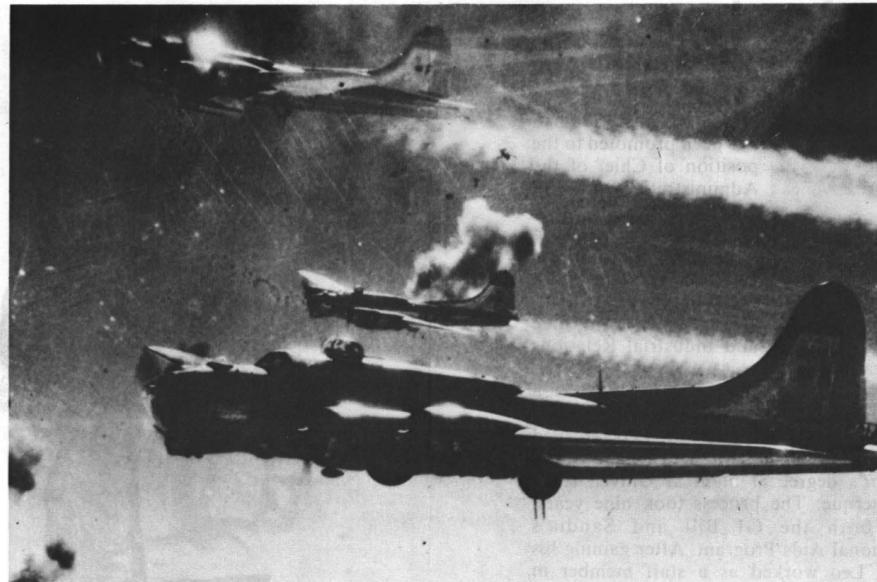
Ed Connelly (3721) served as navigator.

"I was fired up by all the Air Force wild blue yonder stuff before we got into combat. Then we had our first mission over France, we were hit, one crew member was hurt badly, and I wasn't quite so enthusiastic after that.

"Our 12th mission took us to Berlin. We lost one engine to flak and were attacked by ME 109's. A second engine developed a windmilling prop — then came the order to bail out. I couldn't get the hatch open up front, so finally jumped out through the bomb bay. From all that noise and confusion I was suddenly in quiet, just drifting down in my chute. Then an ME 109 came at me and I figured I'd had it, but he just made a couple of photo passes, probably to confirm his kill.

"From the plowed field where I landed and was captured, I was taken into a small town where I met up with Riley, our tail gunner. The burgomeister — like a town mayor — had a pistol and he was pretty upset with us. He accused us of bombing women and children and continually threatened us with his pistol. German civilians were killing a lot of downed airmen in those days and we were plenty scared. He marched us through town to the local jail and the townspeople spit on us and were shaking their fists at us. After a while a Luftwaffe officer showed up to take us in tow, and I don't know when I've been so glad to see anyone.

"Eventually we landed in Stalag Luft III in East Prussia with ten thousand other airmen. Then, in early '45 the Russians started coming. We knew they were approaching because we'd get the news on BBC on a concealed radio and we could hear the artillery. So one night about 10 the Germans came in and told us to pick up and move out, right away. We marched and rode trains, and a week later ended up just outside



FLYING FORTRESSES in action over Germany in 1944. Flak (note puffs) was generally considered a greater threat than enemy fighters. More than 3000 Forst were downed during war.

Nuremburg. About that time the heavy bombers were hitting the city — B-17's and 24's during the day, the RAF at night and Mosquito bombers in between. Spent flak was falling all over the prison camp and the spectacle of the entire city in flames was overwhelming. We were all pretty flakey after days and nights of this, including the guards.

"In late March of '45 we were again evacuated and spent the next 30 days marching to another prison camp north of Munich. Then one morning we were ordered inside the barracks. A little while later we heard some rifle fire, then it was over. Patton's 3rd Army had liberated the camp. It was April 29, 1945, one year to the day since we had been shot down."

Dick Marmon (3616) was a "toggler."

"During saturation bombing only the lead plane in our squadron would have a bomb sight. We'd watch him let go, then flick a toggle switch to release our bombs. On our third mission outside Paris, we were severely hit by flak, but no one was injured. We made it back to England, but when we landed our brakes were gone and the plane just kept on rolling until it hit the mud at the end of the

runway and flipped. We counted 167 holes in the plane. Later, we got a three-day pass to London and had just arrived at the Regents Palace Hotel and were figuring how we were going to take the town apart that night when a buzz bomb hit the hotel. It blew our door and windows out, but no one was injured.

"On our 15th mission, to Hamburg, there were three holes in the plane and one in me — a piece of flak in my backside. I was conscious and didn't want morphine in case we had to bail out. After four and a half hours we made it back, but the worst trip was the GI ambulance from the plane to the hospital. I was ultimately returned to the states via a British hospital ship. The mush (porridge) they served was about the consistency of steel belted radials."

These are the other respondents to our ad: Jake Sandoval (9553); Kip Blossom (1739); Charley Clendenin (2633); Charley Abeyta (ret'd); Joe Shelby (3644); Buck Buchanan (ret'd); Keevin Moriarty (4121); Ed Barraclough (ALO); Bob Forton (9344); Wally Boyes (3171); Floyd Ganyard (2432); Norm Berg (9526); Dennis Murphy (9522); Milt Madsen (1752); Bob Guerin (4152); and Larry Johnson (1523). They shared in an adventure whose memories 30 years later are still fresh.



B-17'ers whose exploits are described gather under the Atomic Museum's B'52 for this photo: kneeling, Dick Marmon (3616) and Clyde Dunlap (1714); standing, Russ Foster (3712), Ed Connelly (3721) and Barry Gilkes (3171).



CLYDE DUNLAP (1714) is second from left, bottom row, in this classic photo taken in front of B-17. On 15th mission, plane went down in North Sea; five perished.

Gene Frye Builds Sail Boat

A sailboat racing under the wind is a beautiful thing to see. It's difficult for a landlubber to understand the special feeling that a sailor has for his boat — the mystique that surrounds the workings of the jib, the boom, the keel, the main sail.

Gene Frye (3623) has been a sailor since he was nine years old when he and his brother rowed a small rowboat across Springfield Lake in Ohio, cut a sapling for a mast, and rigged it with a bedsheet swiped from their mother's linen closet.

As a teenager, Gene built a large sailing canoe, and through the years he shared a number of boats with relatives or friends. After moving to New Mexico he became restless, so 16 years ago he built a 19-foot sailboat to sail at Elephant Butte and Conchas. He kept it 10 years as his four children grew up enjoying weekends of sailing, sleeping on board, and camping on shore.

Gene sold the boat and bought a factory job.

"It was a satisfactory boat," he says, "but it wasn't my boat. I decided to build another one. This one was to incorporate everything I knew about boats and sailing. It was going to be light, fast and strong enough to withstand heavy seas."

That was three years ago. Ark II, a reality now, is indeed beautiful. Before starting construction Gene drew detailed plans. He built three scale models refining his ideas.

The hull of Ark II is fiber glass. Gene first constructed a wooden male mold of the hull, then built up the layers of glass cloth and resin over this. Most of the hull is about 1/4-inch thick except at that point where the mast and the keel intersect. Here, stainless steel braces

are encased in the fiber glass — as much as one inch thick.

To balance the 22-foot mast and give stability to the boat, Gene used a 3/4-inch thick steel keel with a streamlined lead weight at the bottom. This 420 lb. keel retracts (by winch) into a slot in the hull when in shallow water. Under full sail, the keel extends five feet beneath the hull. Trap doors drop to prevent turbulence in the keel cavity.

The deck, cockpit and cabin are constructed of plywood covered with fiber glass. Fittings and hardware are either stainless steel or aluminum. Stainless steel or bronze fasteners were used in the wood construction.

Large areas under the two bunks in the cabin and under the floor in the cockpit are filled with polyurethane foam. The boat can't sink. The keel will prevent it from tipping over — it is a very safe boat.

Gene designed the sail controls so that one person can handle them from the cockpit. The jib (forward sail) can be furled within five seconds. The nine-foot boom can easily be controlled with lines that fasten to a self-locking and quick-releasing cleat that Gene designed.

At first, Gene planned on buying a trailer to haul the boat but investigation of prices convinced him that he could buy a welding outfit, build a trailer, and save money. And the welding machine came in handy for the stainless steel fittings in the boat. Much of the material was purchased at the Sandia salvage yard.

The boat was launched a year ago at Elephant Butte. It was a windy day so Gene and his youngest son (now in college) had an opportunity to wring it out.

"It is a beautiful performer," Gene says, "better than I'd hoped for." • dg



GENE FRYE (3623) built his 18-ft. fiber glass sail boat to be light, strong and fast. Incorporating many novel design features, the boat can be controlled by one person in the cockpit.



KINDERGARTEN TOYS for Christina Kent Day Nursery, a United Way agency, were purchased by Sandians out of the 1974 ECP reserve fund. The reserve fund is used for emergencies or for specific requests from United Way agencies for items outside regular budgets. The fund — \$1933 — was used to purchase items ranging from wheelchairs to filing cabinets for 13 United Way agencies.

Among 13 Agencies

ECP Reserve Fund Being 'Well Spent'

Thirteen agencies of the United Way who received special allocation of the 1974 reserve fund report that the funds are being well used.

Here is the way the reserve fund was allocated:

Albuquerque Association for Retarded Citizens — Furniture	\$130.00
Christina Kent Day Nursery — Kindergarten Supplies	120.65
Chapparral Home and Adoption Services — Washing Machine	175.75
Martinez Town House of Neighborly Services — Drinking Fountain	150.00

Salvation Army — Dishes and Blankets	100.00
Albuquerque's Boy's Club — Photo Paper and Supplies	100.00
Albuquerque Hearing and Speech Center — File and Chairs	126.50
Family Counseling Service — Filing Cabinet	100.00
Rehabilitation Center — Filing Cabinet	90.00
Suicide Prevention and Crisis Center — Training Film	145.00
Cerebral Palsy Hydraulic Lift	386.00
Visiting Nurse Services, Inc. — Steel Master File	160.00
Multiple Sclerosis — Wheelchair	150.00
	\$1,933.90



LOS NOVICIOS Craft Guild's Third Annual Show runs Sept. 12-13 at the Coronado Shopping Center. The 70 booths of macrame, glass, ceramics, jewelry, weaving, etc. include work by these three Sandians: Lee Garner (3151), rope collages; Roscoe Champion (5712), plywood intaglios; Mack Ralls (9522), nail art. Show runs 10 to 9 Friday, 10 to 6 Saturday. More information at 821-2179.

Leo Apodaca Joins SAO



A former Sandian has been promoted to the position of Chief of the Administrative Branch in ERDA's Sandia Area Office. He is Leo Apodaca, who left the Labs in 1968 to work with AEC/ALO in their Contract Compliance and Industrial Relations organizations.

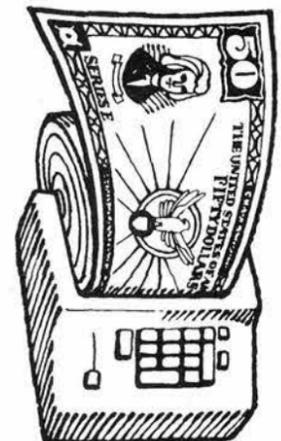
Leo came to the Labs in 1948 as a receiving clerk. After two years in the Air Force during the Korean war, Leo returned to Sandia and began working on his bachelor's degree at night at University of Albuquerque. The process took nine years, using both the GI Bill and Sandia's Educational Aids Program. After gaining his degree, Leo worked as a staff member in Methods until leaving for the AEC.

He succeeds Dick Malone in the Area Office. Dick become manager of the Area Office earlier this summer.

Events Calendar

- Sept. 5-6 — Albuquerque Dance Theater; Rodey Theater, 8:15 pm.
- Sept. 5, 7-18 — Albuquerque Little Theater: "Prisoner of Second Avenue," 8 pm.
- Sept. 5-7 — Old Town Studio: "Small Craft Warnings," 242-4602.
- Sept. 6 — NM Mt. Club, Upper Peralta Canyon (Jemez), hike 6-8 miles, Gulf Mart, 8 am.
- Sept. 6 — Museum of Albuquerque: Opening, "Ranching in New Mexico."
- Sept. 6 — Guiyermo Gallery, 1825 San Mateo NE: Opening for Luis Carlos Coelho, thru Oct. 1, 7-10 pm.
- Sept. 6,7 — NM Mt. Club, The Toltec Gorge, for info. Andy Metal 1-465-2736 (Cochiti Lake) 842-3431 work.
- Sept. 7 — Albuquerque Symphony: American Music Concert, City Plaza, downtown, 4:30 pm. Free.
- Sept. 10-21 — New Mexico State Fair, State Fairgrounds.
- Sept. 13 — Football: UNM vs Fresno State, 7:30 pm., UNM Stadium.
- Sept. 13 — State Fair Parade.
- Sept. 13 — NM Mt. Club, Crest to North Peak, hike 4 miles, Western Skies, 9 am.
- Sept. 18-21 — Classics Theatre Company: "Romeo and Juliet," 8:15 pm on 18-20; 2:15 pm on 21st, Popejoy Hall, 277-3121 or 293-7301.

Count on it.



Take stock in America. Buy U.S. Savings Bonds.



THIS HAPPY BRIGADE smiles because it's over — the La Luz Trail race up to Sandia Crest. Mark Percival led the pack of Sandians over the 7½ mile course with a brilliant 1:15 time. Seated, from left, Alonzo Yeppa (9712), Rube Urenda (2326), Percival (2411), Henry Dodd (4751), Larry Johnson (1523) & Al Arsenault (9550); standing, John Shunny (3162), Bill Kass (5834), Bob Fox (2325), Joe Abbott (2112), Pete Richards (5132), Irv Hall (1223) and Stewart Kohler (2326). Race attracted 108 entrants.

Recreation Notes

FUN & GAMES

SGA (Women) — Winners of this month's Scotch Foursome Tournament: Betty Chappell and Z. Griffith (both ret.), low gross; Lillian Mancuso (3321) and Ted Garcia (2632), low gross runner up; Reba Garrison (5710/5720) and Ken Flynn (1535), low net; Clara Gearhart (3141) and Ralph Campbell (3171-1), low net runner up; Eva Marie Franks (5721) and Dave Renninger (9653), low putts.

In the Par 3, 36-Hole Tournament held Aug. 9 and 16th, winners were: Betty Chappell, low gross and Barbara Ford (2124) runner up; Alice Smith (3141), low net and Eleanor Kelly (4213), runner up; JoAnn Oswalt (2430), low putts.

* * *

Ice Hockey — The New Mexico Amateur Hockey Association has approved formation of senior and junior hockey leagues in Albuquerque. Teams and leagues, now being formed, have openings for all ages and skill levels. Play and practice are held at Tingley Coliseum. Practice begins in October, with games beginning in November. For more information, call Richard Rodgers, 265-6165 or send your resumé to: Ice Hockey, P.O. Box 4690, Albuquerque, 87106.

* * *

Horseshoes — The Labs' Horseshoe Association held their 1975 tournament and retiree Bill Sweatman retained his title. Results are: Class A — Bill Sweatman and Leo Bressan (9532), runner up; Class B — Robert Schuch (5226) and James Reed (3647), runner up; Class C — James Fisher (2635) and Howard Shaw (9717), runner up.

In the doubles competition, winners were Robert Schuch and Dan Padilla (1247), with Leo Bressan and Joe Baldonado (3645) runners-up.

* * *

Sandia Bicycle Ass'n. — Someday you may wish to bicycle out of town and you will find that the paved shoulders of our interstate highway system offer the most direct and, sometimes, the only route. Unfortunately, it's illegal at present to ride a bike on these shoulders, which is why Walt Joseph (1713) and Don Bliss (9623) are now collecting

signatures. A petition has been prepared, addressed to the State Highway Commission, asking that bikers be permitted to ride on the shoulders in rural areas, i.e., outside the city limits. Sounds reasonable, and if you care to sign up, contact Walt or Don, or come to the LAB NEWS office.

An excellent article appears in the July-August issue of *American Scientist* entitled "The Energetic Cost of Moving About." The author, V.A. Tucker, examines animal locomotion, including that of humans, from a physiological basis and concludes that "... walking and running are extremely inefficient forms of locomotion. Much greater efficiency is achieved by birds, fish — and bicyclists."

* * *

Boating — Coast guard Auxiliary members Earl Simpson (4152) and Ben Gardiner (3621) are offering several courses on boats and boat safety this fall. On Sept. 9 and 17, Basic Skills & Seamanship begins at 7:30 p.m. in the Coronado Club (one course being offered twice). On Sept. 11, Principles of Safe Sailing gets underway, also at 7:30 in the C-Club. Class sessions are held on the same night each week. These popular courses fill rapidly, so call Earl, 298-1735, or Ben, 298-0016, if you wish to enroll.

With some ten thousand boat owners in Bernalillo County alone, and eight drownings in boat mishaps this year on New Mexico waters, the need exists for savvy boaters. "Skipper's Outboard Special" is a 17-minute, 80-slide presentation on pleasure boating safety that is offered by Sandia Safety for use at organizational safety meetings. Call Harold Jeblick, 4-3246, to schedule the presentation. A display of boat safety equipment may now be seen in the elevator foyer of Bldg. 802.

Speakers

T.L. Pace (9420), "Sandia Laboratories Telemetry," Biannual Meeting of the Telemetry Group of the Range Commander's Council, July 23, Albuquerque.

H.H. Patterson (1730), "Alaska and the Arctic," July 10, Los Altos Kiwanis Club; and July 21, Caravan Shrine Club, Albuquerque.

N.J. DeLollis (5813), "Metrication and International Standards," Caravan Shrine Club, July 14.

G.E. Brandvold (5710), "Sandia Laboratories," KAFB Hospital Staff briefing, July 16.

R.W. Harrigan (5717), "Solar Energy," Rio Grande Kiwanis Club, July 21.

E.H. Copeland (9343), "River Rafting," Northwest Kiwanis Club, July 23.

J.F. Jordan (D.H. Baldwin Co., El Paso) and G.A. Samara (5130), "Very Low Cost Thin Film Cds-Cu₂S Solar Cell Development using Chemical Spraying"; G.A. Samara, "Integrated Photovoltaic-Thermal Solar Energy Conversion Systems," National Solar Photovoltaic Program Review Meeting, July 22-25, Los Angeles.

C.H. Seager (5155), "Solar Energy Prospects," Seminar, Union Carbide Corp., Aug. 1, Oak Ridge, Tenn.

C.M. Tapp (2430), "Available Materials and Processes for Thin Film Hybrids," Univ. of Pittsburgh Seminar of Hybrid Microelectronics, Aug. 11-13, Pittsburgh.

W.G. Perkins (2413), "Qualitative Depth Profile Analysis of Metal Hydride Films, Using an Ion Microprobe Mass Analyzer," Tenth Annual Conference on Microbeam Analysis, Aug. 11-13, Las Vegas, Nev.

R.J. Eagan (5846), "The Influence of Dissolved Water on the Properties of Alkali and Alkali Aluminosilicate Glasses," Gordon Research Conference, Aug. 11-15, Wolfboro, N.H.

W. Herrmann (5160), "Computational Rock Mechanics," The South African Bureau of Mines; The South African Institution of Mechanical Engineers; The University of the Witwatersrand; and the South African Council for Scientific and Industrial Research, Aug. 12-16, Johannesburg, South Africa.

D.O. Lee and W.P. Schimmel (both 1543), "Focused Solar Collector Analysis with Axially Varying Input Due to Shadowing from Adjacent Collectors"; Schimmel and Lee, "Synergistic Effects of Shadowing in a Solar Collector Matrix"; S.C. Levy (2523), "Temperature and Shock Testing of Lithium-Organic Electrolyte Batteries," 10th Intersociety Energy Conversion Engineering Conference, Aug. 17-22, Newark, Del.

M.A. Sweeney (5241), "Cooling Times and Parent Masses of Degenerate Dwarfs," American Astronomical Society, Aug. 18-20, San Diego, Calif.

M.A. Duguay (5214), "Soft X-Ray Lasers," Invited presentation, Gordon Research Conference on Laser Interaction with Matter, Aug. 18-21, Tilton, N.H.

A.K. Hays (5215), G.C. Tisone and J.M. Hoffman (both 5212), "100 M Watt KrF Laser at 2484 Å"; M.A. Duguay (5214), invited presentation, "Discussion of Soft X-Ray Lasers Pumped by Photoionization"; J.B. Gerardo (5210), "VUV Noble-Gas-Dimer Lasers"; A. Owyong (5214), "A Two-Beam Interferometric Technique for Studying the Nonlinear Susceptibility, X₃," Gordon Conference on Nonlinear Optics and Lasers, Aug. 18-22, Plymouth, N.H.

G.A. Fisk (5215), invited presentation, "Application of Molecular Beam Techniques to the Study of Energy Transfer in Unimolecular Systems"; J.A. Panitz (5114), invited paper, "Single-Atom Mass Spectroscopies"; G.E. Pike (5155), H.O. Pierson (5834), A.W. Mullendore (5825) and J.E. Schirber (5150), "Super-conducting Thin Film Niobium Carbonitrides on Carbon Fibers"; F.L. Vook (5110) and S.T. Picraux (5111), invited paper "Lattice Location Studies of Gases in Metals"; R.S. Blewer (2413), invited paper, "Depth Distribution and Migration of Implanted Low Z Elements in Solids Using Proton Elastic Scattering"; Elements in Solids Using Proton Elastic Scattering"; P.M. Richards (5132), invited paper, "Magnetic Resonance Studies of Linear Chain and Layered Systems"; D.R. Anderson (5813) and H.M. Barnett (2316), "A Systems Approach to Choosing the Correct Polymer for Encapsulation of an Electronic Package," American Chemical Society Meeting and various topical symposiums, Aug. 24-29, Chicago.

P.J. Chen (5131), M.F. McCarthy (National Univ. of Ireland) and T.R. O'Leary (Regional Tech. College, Cork, Ireland), presentation made by McCarthy, "Thermodynamic Influences on the Growth of One-Dimensional Shock Waves in Deformable Dielectric Materials with Memroy"; J.W. Nunziato (5131) and L.T. Wheeler (Univ. of Houston), presentation made by Wheeler, "Some Recent Results in the Linearized Theory of Chemically Reacting Elastic Solids," Symposium on Physical Fields in Materials Media, Society of Engineering Science and the Polish Academy of Science, Aug. 24-30, Warsaw, Poland.



MILEPOSTS

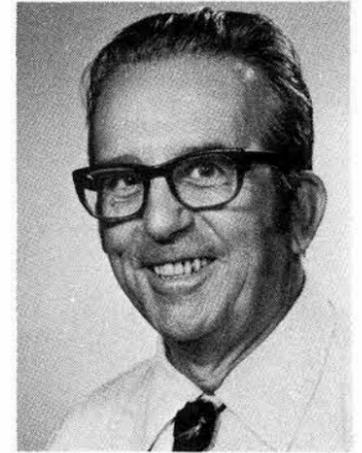
LAB NEWS

September 1975



Bob Byrd - 9550

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Joe Asturias - 1247

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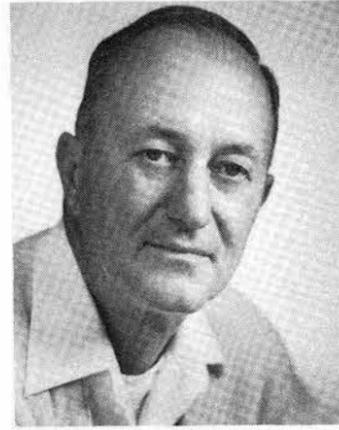
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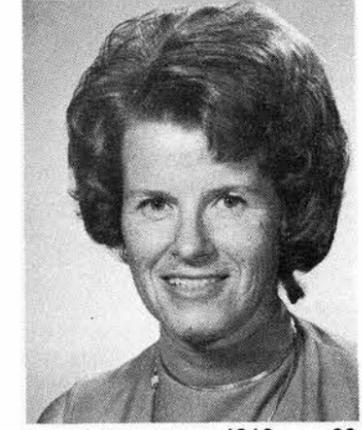
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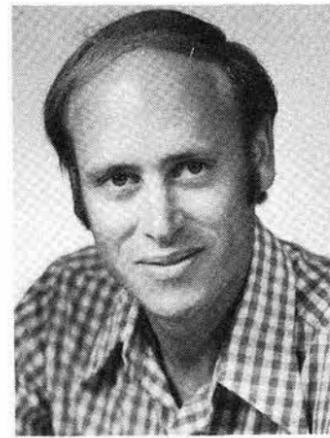
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Jean Langston - 4210

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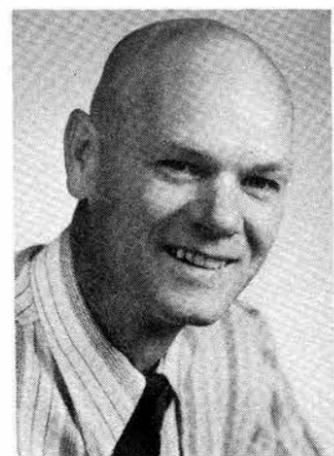
John Benapfl - 8323

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Jake Gonzales - 3644

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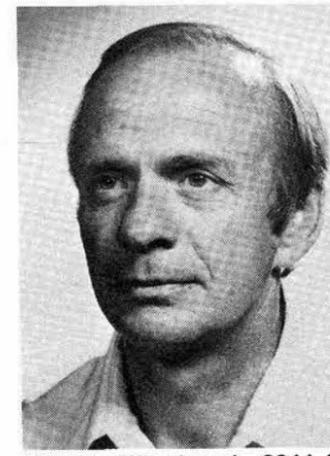
Gene Angvick - 8412

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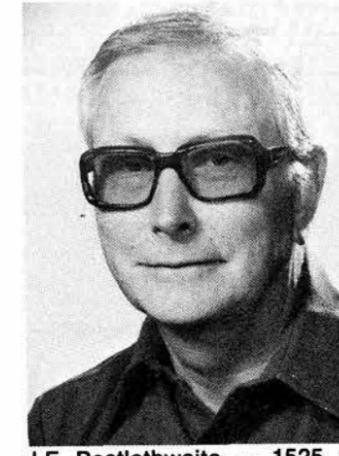
R.N. Carpenter - 9344

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Malcolm Woodward - 9344

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J.E. Postlethwaite - 1525

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Alice Rogers - 8113

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Noel Kent - 9552

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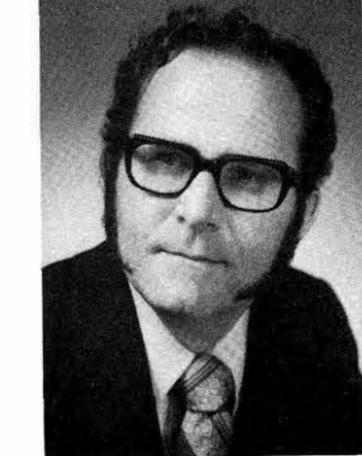
Delores Guist - 3623

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Sesario Cordova - 9713

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Norm Wagner - 8323

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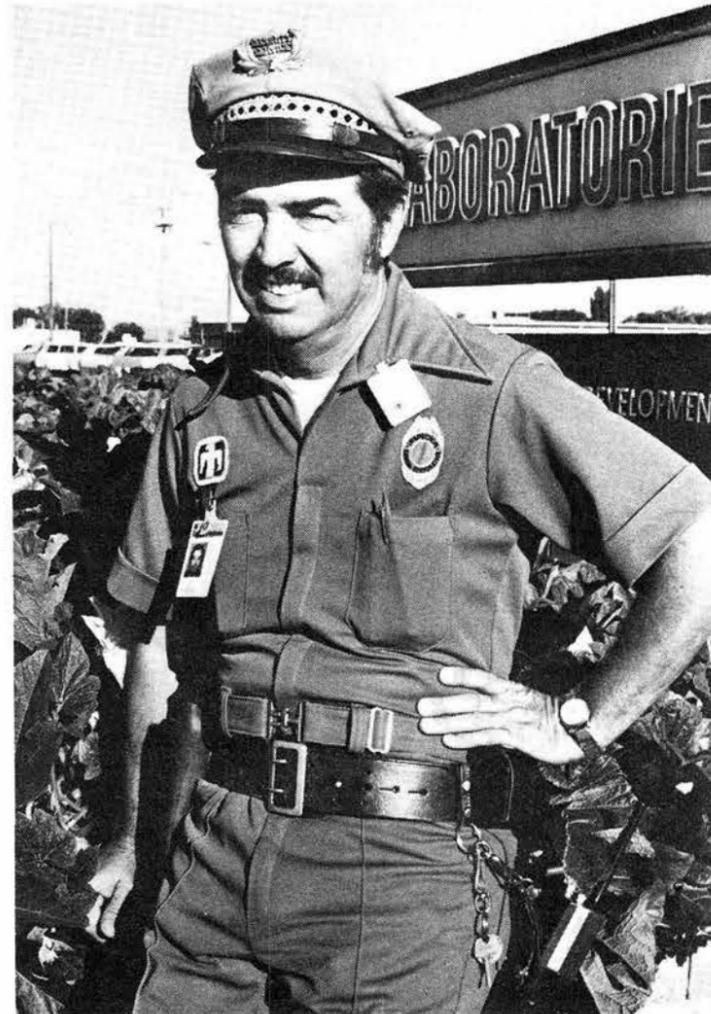


Bob Stromberg - 5717

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Eugene McGuire — 5211 10



Ted Varoz - 9550

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Arthur Ahr — 2645

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Edna Baca — 3141

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Joseph Suknot — 3613

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William Lynch — 2323

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Edgar Downing — 9742

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Phyllis Wilson — 3161

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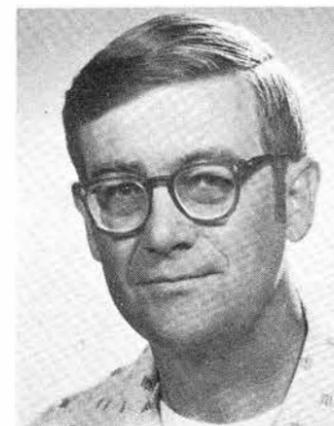
Ralph Campbell - 3171

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Aurora Baca — 3152

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William Roady — 5642

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Donald Greene — 3645

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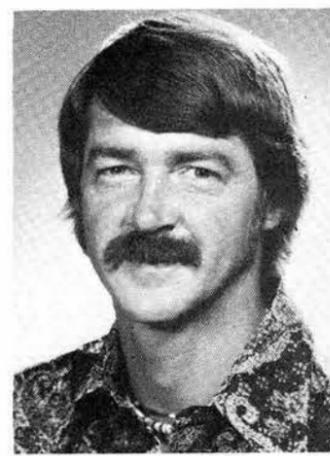
Dean Kuehl — 2411

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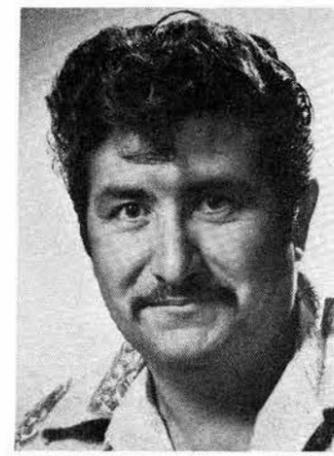
Marlyn Sterk — 5725

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Kent Bowen — 1243

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Rosendo Saavedra — 2344

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Carleton Pennington - 3621

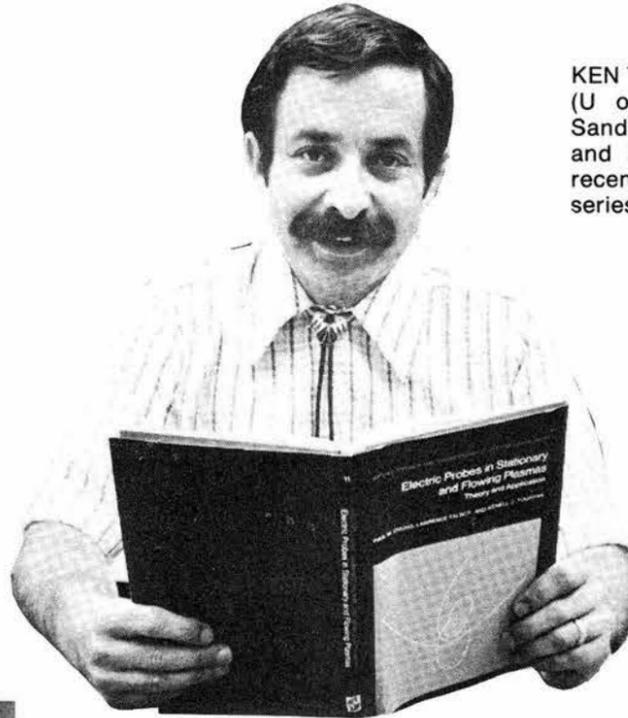
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Federico Salas — 3647

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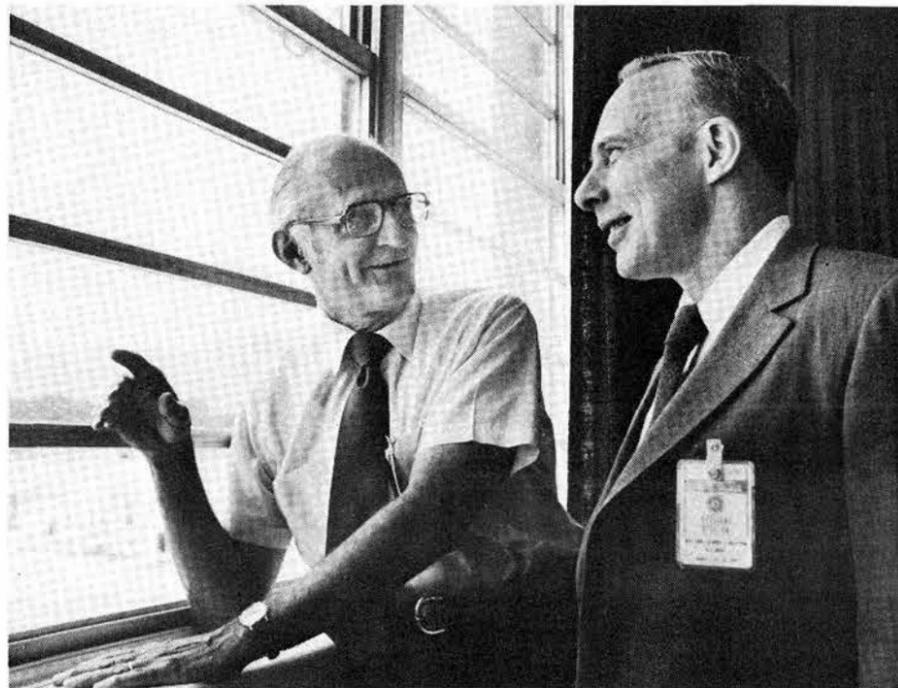
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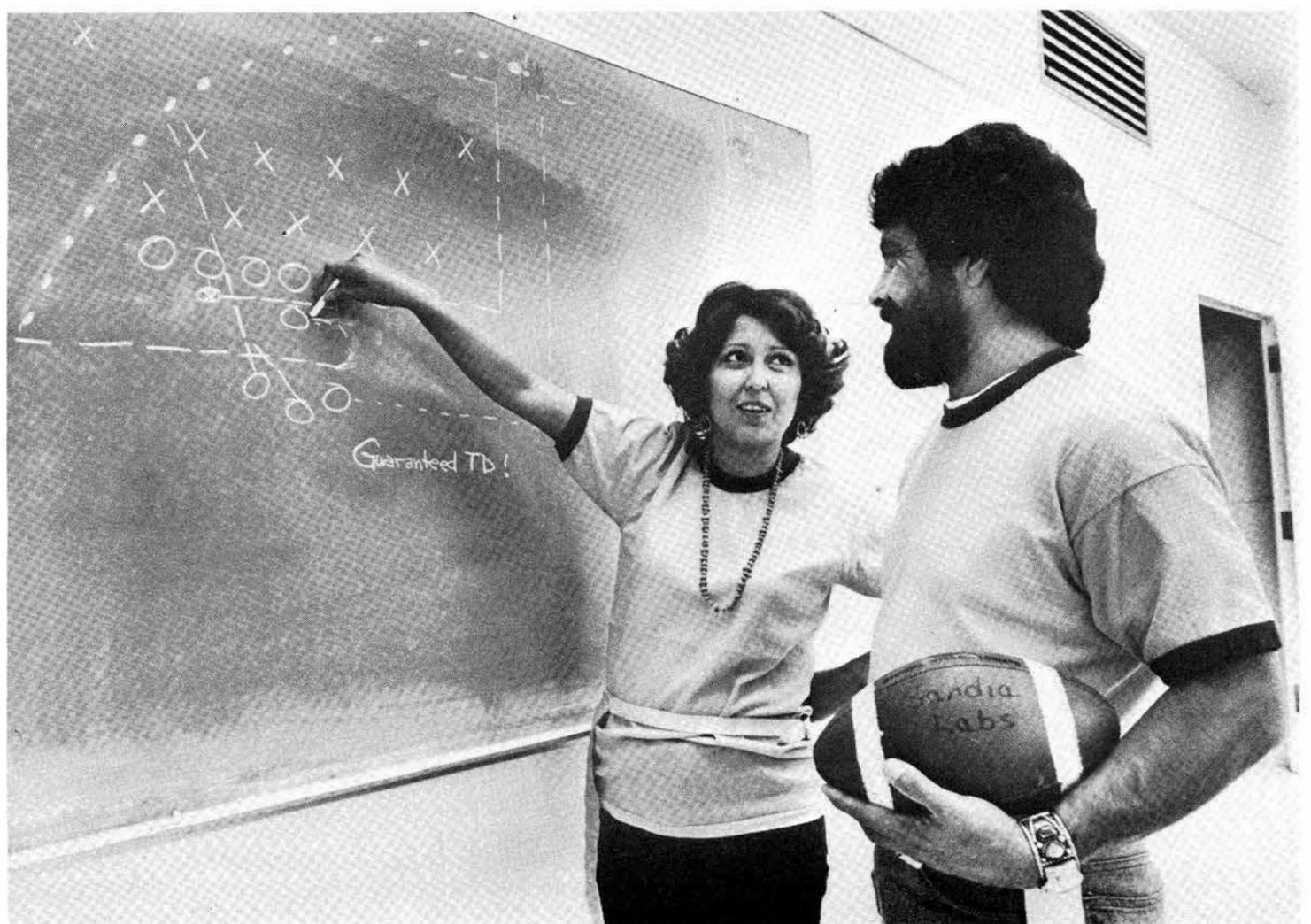
KEN TOURYAN (5640) is the author with Paul Chung (U of Ill.) and Lawrence Talbot (UC-Berkeley), Sandia Consultants, of "Electric Probes in Stationary and Flowing Plasmas - Theory and Application" recently published by Springer-Verlag as part of a series on applied physics and engineering.



JOHN GARDNER (3144) and Gene Ives (1560) and several others have put their heads together and come up with a Classics Theatre Company production of Romeo & Juliet, as it might have been performed at the Globe Theatre in London in Shakespeare's time. John directs, Gene acts. The show runs Sept. 18 - 21 at Popejoy.

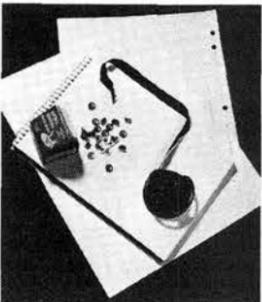
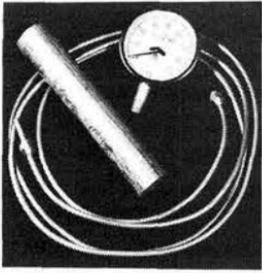


MAJ. GEN. JOSEPH BRATTON, who succeeds Maj. Gen. Earnest Graves as director of ERDA's Division of Military Application, spent two days at the Labs in late August. Pres. Sparks was his host. General Bratton becomes DMA director on Sept. 22.



BUDDY seems dubious, Rebecca seems convinced. Flag football play starts this month, and more Sandians are needed for the Labs teams. Call Buddy on 4-6730, or Joe Maez on 4-5689 for details or to sign up. Rebecca (4622) is a hold-out — says she wants a bonus.

Your Pocketbook Is Not The Only One That's Hurting



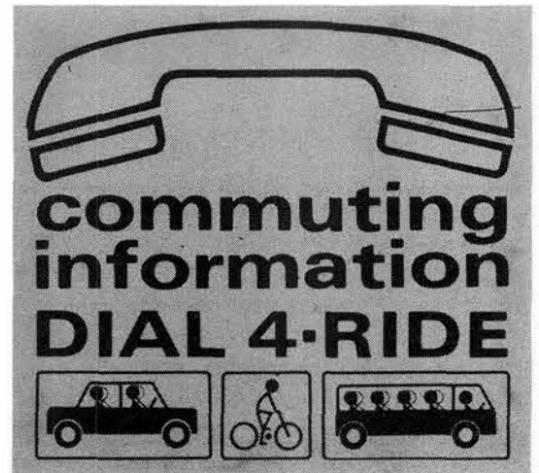
Inflation worries everyone, but mostly in a personal way — the cost of food, gasoline, entertainment. Transfer those thoughts about inflation to your office, lab or shop and consider what it has done to these Labs items: 1" steel tubing from \$1.03/foot to \$5.38/foot, a 422% increase; 1/4" copper tubing, from 12¢/foot to 21¢/foot, up 75%; and a pressure gauge, from \$5.25 to \$12.75, up 143%.

Stenopads are up from 35¢ to 50¢ each, a 43% increase, and Sandians use about 400 of them each month. Last year we paid 12¢ for a box of 100 thumbtacks; today that box costs 17¢ (up 42%). A typewriter ribbon went from 50¢ to 73¢ (up 22%), and a sheet of graph paper that was 13¢ is now 17¢ (30% increase). But the most startling statistic comes with file folders — a whopping 619% increase. Last year the folder cost 1.3¢; today it costs 9.7¢. Use those old folders over and over again!

Congratulations

To Theresa (5620) and Roger Blair, a daughter, Divonne Therese, Aug. 21.

To Dick (5832) and Georgia Rohde, a son, Paul, on Sept. 1.



Sympathy

To Henry Sisneros (3616) on the death of his mother, Aug. 18 in Albuquerque.

LAB NEWS
PAGE FIFTEEN
SEPTEMBER 5, 1975



JUNK • GOODIES • TRASH • ANTIQUES • KLUNKERS • CREAM PUFFS • HOUSES • HOVELS • LOST • FOUND • WANTED • & THINGS

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

RULES

1. Limit 20 words.
2. One ad per issue per category.
3. Must be submitted in writing.
4. Use home telephone numbers.
5. For Sandia Laboratories and ERDA 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.

MISCELLANEOUS

TWO CHEV. pickup 15" rims; Rattan headboard, twin size; basketball backboard, new; Early American highback couch. Bland, 265-6286.

ABOVE-GROUND pool, 18 x 4, complete w/vacuum, winter cover, \$350; thermo backed drapes, 75 x 84, blue on white background, \$10. Blechinger, 299-4890.

MINI-BIKE, 3 hp engine, centrifugal clutch, big foam seat, disc brakes, \$65. Stromberg, 255-6131.

STUDENT flute, Evette E flat, \$100. Jeffers, 299-7020.

DINING room table w/4 chairs, blond, \$60; kitchen table w/4 chairs, \$40; Royal std. typewriter w/stand, \$55; Sears exerciser jogger, \$55. Davies, 299-2115.

OFFICE style desk, 45"x28", wood grain top, locking file drawer, \$75. Baca, 268-0943.

TIRE, 7.75 x 15 on wheel, \$4; water skis, \$10. Guttman, 765-1217.

GIRL'S coat & hat, Curtsy, size 6/7, \$8; 1/3 sack plaster, free. Allen, 268-3654.

MALE poodle, black, needs good home, good natured. Wright, 298-1789.

ENGLISH saddle, Borelli, made in Argentina, saddle pad included, \$125. Lambert, 344-9012.

WEIGHT lifting set, \$18; pin ball machine, \$75; as-is turquoise & heishi jewelry & chokers. Houghton, 299-3386.

SLIDING metal closet doors, 60" x 80", 48" x 80", 36" x 80". Harrigan, 266-4143.

15 CU. FT. Sears refrig., green, \$50; spray type humidifier, control, \$20; trailer hitch for Ford van, \$5. Johnson, 298-4553.

GOLF clubs, ladies' 5 irons, 2 woods, bag, \$45; youth's 5 irons, 2 woods, bag, \$30. Burks, 821-0132.

3/4 ARABIAN filly, blue ribbon in NM Arabian Halter, entered in NM State Fair on Sept. 16. Traver, 294-2138.

LARGE antique vase, shaving cup/saucer, pictures, Chimayo rug, bar stools, TV, maple bed (dbl.) complete. Dossey, 294-1167.

YEARLING Hereford steers, \$130-\$180. Kurowski, 881-1859 or 869-2198.

'72 MOBILE home, Gold Crest, 14 x 70, 3-bdr., 2-baths, fireplace, skirted, 4-Hills, \$8800. Salazar, 883-0273.

PAIR of trailer view mirrors, fits all vehicles, used 1 time, \$10. Miller, 255-6838.

ST. BERNARD puppies, AKC registered, sire & dam both OFA Certified, \$75. Barnes, 898-2375.

'73 GO-KART, Margay Cheeta/4-wheel brakes, elec. starter/battery, raced 3 times, never wrecked, \$495. Simpson, 293-7923 after 6.

DIAMOND ring containing 3 stones. George, 268-7034 or 299-3466.

30" STOVE hood, \$3; 27" mobile home cable w/plug, \$15; snow chains, for intermediate vehicles, used once, \$13. Schubeck, 294-5666.

ELECTRONIC organ, Farfasa, rhythm section, tape deck, earphones, 1

yr. old, Cyrus, 898-4038.

TROMBONE, Olds, gold, no dents, \$100; baritone horn, Reynolds Emperor, gold, 3-valve, \$250. Rose, 298-4849.

AKC German shorthair pointer pups, champion blood lines, parents excellent hunters, \$75. See at 2828 Palo Alto NE. Marmon, 294-6197.

PUPPIES, mother registered miniature poodle, father unknown. Self, 296-4137.

CORNET & case, \$65. DeHaan, 268-6120.

REMINGTON model 1100, VR, modified, \$140; S&W CO2 pistol, .177 cal., \$27; girls' 10-spd. Columbia bicycle, \$70. Benson, 268-9727.

POLAROID auto. 210 Land camera w/case & polaroid model 268 flashgun. Harper, 268-8357 or 256-1661.

2 SEARS tires, L-78-16 steel belted, on Ford 5-hole rims, balanced, \$110; Maytag washer, \$65; Kenmore 220 volt dryer, \$15. Mattox, 296-4149.

18" YUCCA plants, \$2.50 each; 2 green breakfast set chairs, \$5 each; bathroom sink, \$15. Pope, 255-6702.

LAWNMOWER, 18", Wards, 6-blade, reel-type, gasoline powered, new \$170, sell for \$40. Weber, 299-1389.

GUITAR, Classical, nylon strings, w/hard case & book, \$25. Champe, 299-0066.

SILKY TERRIERS, whelped 7/8/75, sire, CH Ricknor Lord Robey, Dam Belle of Baby Doe line, three bitches, strong CH Pedigrees. Ussery, 296-0175.

LAWN FURNITURE, table, 2 benches, lounge & pad, \$25. Miller, 255-1838.

GOLF clubs, First Flight Golden Eagle woods, 1, 3, 4, \$45; MacGregor tourney irons, 9-3 plus Wilson 2 iron, \$30. Harley, 898-0594.

1 CORD of wood, pinion, \$45, 816 Marcella NE. Martinez, 299-3017.

SHAGGY DOG puppies, males, \$1 each or best offer. Hawkinson, 281-5239.

TRANSPORTATION

'70 HONDA street bike, ST-175cc, \$350. Chavez, 842-6374.

'72 YAMAHA Enduro 175, 3400 adult ridden miles, \$500. Young, 296-3502 evenings & weekends.

'74 VEGA, hatchback, 3-spd., radio, 12,000 miles, 1 owner. Russell, 296-4666.

'63 RIVIERA Coupe, original owner, 84,000 miles, PS, PB, AC, R & H, 401 CID engine, \$950. Longfellow, 299-7062.

WOMEN'S 3-spd. bike w/coaster brake & basket, \$40. Laursen, 294-0678.

'71 FORD Pinto, 47,000 miles, \$1500 or best offer. Sanchez, 266-2513 after 5.

'66 JEEP, CJ5, V6, 4-WD, hubs, rollbar, bucket seats, towbar, elec. winch, 9000 miles, \$2500. Andres, 255-3251.

'70 DODGE Challenger, black vinyl top, orange body, engine has 15,000 miles, AT, new tires, \$1700. Ramel, 298-7002 or 296-6964.

FOR SALE REAL ESTATE

3-BDR. home, 2-baths, carpeted, drapes, fireplace, den, birch cabinets, roofed patio, 1 car garage. Young, 296-3502 evenings.

'73 DBL. wide trailer, 74x24,

4-bdr., 2-baths, on 2 acres in Estancia, financed by Sandia Credit Union, \$20,000. Laws, 1-384-2743.

FOR LEASE with option to buy 4 bdrm. house in North Valley, heated garage, 1/2-acre, horses allowed. Lackey, 898-5175.

WANTED

SHOP manual for '69 Cadillac. Beck, 256-3350.

MOTORCYCLE helmet to fit 5 yr. old. Snelling, 268-5895 or 255-9081.

CARTRIDGES, singles or boxes, German, Japanese, Chinese & Italian from WW I & WW II, all types. Edgerley, 898-2983.

CEMENT mixer, 2-3 cu. ft. cap., will buy, rent, beg, borrow for about 90 days, 3308 Palomas NE. Gough, 881-2473.

FOR RENT

NEARLY new 2-bdr. mobile home just inside Tijeras Canyon, away from highway, beautiful view of city, \$160/mo., share utilities. McCampbell, 292-2762.

2-BDR., unfurnished, washer/dryer hookups, dishwasher, 4-plex, fully carpeted, on Chelwood NE. Smith, 266-7341.

LOST AND FOUND

LOST — White gold earring; keyring with 5 keys; black keyholder with 5 keys.

FOUND — Man's brown rim tortoise shell glasses; metal rim sunglasses; bifocals, Rx, black plastic frames. LOST AND FOUND, Bldg. 832, 4-3441.



IN HIGH STYLE, the Sanado Woman's Club rolls into a new year. Here, Betty Reuscher of the Club and Ralph Workman, owner of this '34 Bentley convertible coupe, are propelled into the future by their diminutive chauffeur. Women who would like to join them should contact Anne Tapp, 7433 El Morro NE. She'll point

out that current members of the Club will open their doors, arms, and opportunities to new members at a meeting on the 9th. Sanado has activities to satisfy any interest (well, almost any interest).

FRIDAY	SATURDAY
5 — HAPPY HOUR ROAST BEEF BUFFET Adults \$2.95 Under 12 1.95 Heinze '75 On Stage UP COUNTRY	6 — FAMILY VAUDEVILLE Show: Days' Puppets Movie: Best of Enemies Food @ 6, Show @ 7 Free to Members
12 — HAPPY HOUR NEW MEXICAN BUFFET Adults \$2.95 Under 12 1.95 Thomás & Marcia On Stage ERNIE & THE SAINTS	13 — SOUL SESSION 8:30 - 12:30 BROWN SUGAR Members Free Guests \$1 LOBO BUS



GOLDEN — tailed birds (genus: proudensis) known as Continentals will fly Club members and guests to New Orleans Dec. 19 on the first leg of the Conquistador Cruise. After a night at the Holiday Inn Superdome and a day in the French Quarter and all that jazz, they'll sail at midnight aboard the luxurious S.S. Freeport for Vera Cruz, Yucatan, and return Dec. 27. Air fare, ship fare, entertainment, transfers, taxes, most meals — the package for \$518 (dbl. occ.). Now that's a Christmas package that won't need exchanging.

RULE — out parking problems, traffic snarls, policeman snarls, and a lot of the lot misery attendant upon attendance at a Lobo game. Rule in a bus. C-Club/Wolfpack buses will depart the Club at 6:45 for the Fresno State game. 50¢ for members, \$1 for guests, fun for all.

THOSE — Days are here again. So are their fantastic puppets and marionettes (these have the same relationship as stalactites and stalagmites but move around more). Ron and Mary Kay pull strings to get what they want. They want you to have a good time. Then, there's this movie with David Niven, stiff-upper-mustached very British commander lost in the African desert with an Italian officer who would rather co-star with Gina Lollobrigida. So they don't get along. But they must. In the end, they probably get just deserts. It's called *The Best of Enemies*, and it's the finale of Family Vaudeville tomorrow night.

WITH — roast beef leading tonight's Happy Hour Buffet menu, it's got to be a rare (or well done) (prime maybe?) evening. Heinze '75, a couple of saucy lads, will provide a highly listenable background. Later, Up Country will set your shoes to dancing; try to be in them.

THE — snow hasn't fallen yet; neither have the skiers. But it's not too early for those of you planning to embrace the sport to get

ready. The C-Club Ski Club makes doing it right easy. They push technique and safety with their: binding checker, equipment workshops, Sandia Peak Walkdown (where you get to know the slopes from the ground up), Dry Land Ski School (which emphasizes physical conditioning prior to slope hitting), talks on local ski areas, ski mart (for cheap equipment), and discount lesson and lift tickets. For fun, a Fashion Show, a Dinner-Dance at Christmas, and several ski trips. Join (\$6 a family) at the meeting at 7 on the 16th.

GOLD — of the Gulf Coast. That's the shrimp slated for peeling at this month's #1 event (on the 20th). I'd recommend it without reservation except you've got to have one to get inside the door (soon; don't wait till the 13th). Fried chicken too for fowl lovers. Dance it all off later with a band your entertainment committee worked hard to book — they had to gather Together. Altogether it'll be an evening with real appeal. Members \$5.50, guests \$6.50.

MAKE — the Soul Session scene Saturday next. Brown Sugar is the main ingredient; add a little butter, scotch, and soda, maybe a few nuts. Beat well. Serve hot.

THE — Happy Hour next week features New Mexican foods, Old Mexican folksongs, and non-Mexican dance music. Splendid combination that.

RULES — of the Club: you wanna swim cheap next summer, you gotta be a member from the preceding September. For the summer of '76, that's now. If you don't become/stay a member, you'll end up next spring as the titular figure in that classic painting "September Mourn." Bare with us — what we mean is that a season ticket will cost much more for a non-continuously affiliated family than for a continuously (\$55 vs. \$10 this year).

MORE INFO — 265-6791.