

VELA Satellites Set Longevity Records

Revolving around the Earth in near-circular orbits 60,000 nautical miles high — a third of the way to the moon — are several VELA satellites that have set a record on continuous operation in space. The last two were launched in April 1970.

"Sandia has been involved in the VELA program since its inception in the early 1960s," says Brick Dumas, head of Space Systems Department 7310. "The purpose of the VELA satellites is to support the Limited Test Ban Treaty by detecting nuclear bursts, both in the Earth's atmosphere and in space — that is, above the atmosphere. Early satellites could detect bursts in space only. Sandia designed the on-board data processing and logic systems for these early satellites. The burst-detecting sensors were the responsibility of Los Alamos. On later satellites, Sandia designed the downward-looking sensors to detect atmospheric bursts.

"These VELA satellites probably hold the endurance record for complex operating instrumentation in space. They've operated longer than anything else in space I know of. Sandia's role in the VELA program also included qualifying the equipment for space and integrating it with the satellite. Sandia-designed logic processes sensor data on board the satellites."

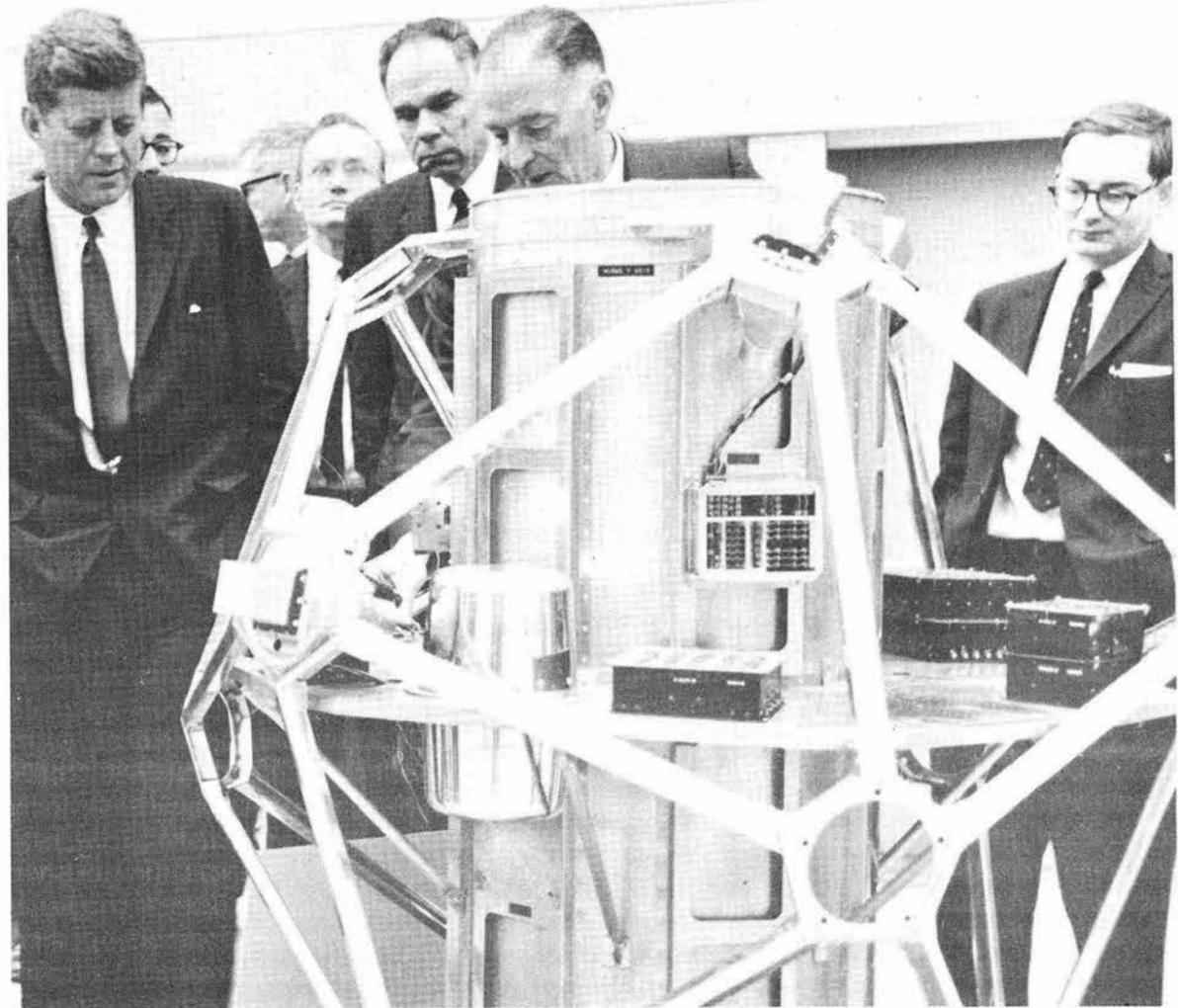
A complete VELA payload consists of two spacecraft mounted in tandem. The Titan III-C booster places the satellites into an elliptical orbit of 9100 by 60,300 nautical miles, called a "parking" orbit, where they are separated and placed into a 60,000-nautical-mile circular orbit. Each satellite takes 4½ days to complete its orbit.

"Two days after the first satellite was boosted by its injection motor up into the final 60,000-nautical-mile orbit, the second satellite was similarly positioned," says John Mitchell, head of Sensor Systems Division 7323. "For the last 19 years, there have been VELA satellites orbiting the Earth.

"The downward-looking sensors of the experimental satellites in the early 60s looked at the Earth only once every 4½ days because of the way they were oriented. Later satellites are designed with onboard attitude controls so they're always looking at the Earth.

"The electronic techniques we developed for VELA were later adapted for use in USO — Unattended Seismological Observatory — a program of unmanned, close-in seismic stations that would help eliminate ambiguities in detecting and analyzing seismic impulses from underground nuclear detonations vs. earth tremors. USO's successor is NSS — National Seismic Station — a modern version of unmanned seismic observatories for remote locations. These stations, developed by Department 0320, transmit data directly to a satellite that then relays the data to a central processing station. The older USO collected data on magnetic tapes, which then had to be retrieved manually."

Adds Brick: "Sandia is currently involved in furnishing instrumentation systems of various types and complexity for several different satellite programs."



PRESIDENT KENNEDY inspected a mockup of the VELA satellite on Dec. 7, 1962, while on a visit to Sandia. Next to Kennedy, in the foreground, are Glen Seaborg, AEC chairman, and S.P. Schwartz, president of Sandia.



EXAMINING a small model of the VELA satellite are Bill Goldrick (0323) and John Mitchell (7323), both of whom have had a long association with the program.

Come Out Tomorrow

All Sandians are invited to a 30-minute groundbreaking ceremony at the site of the Technology Transfer Center tomorrow at 11 a.m. Senator Domenici, Representative Lujan, and Mayor Kinney will attend. President Dacey will officiate.

Retiree Picnic Set May 26

Annual Sandia Retiree Picnic and get-together is scheduled May 26, 4-7 p.m. in the Coronado Club patio. Some 2400 invitations were mailed last week to retirees in 40 states and two foreign countries.

In addition to the Club parking areas (with handicap parking in front), retirees may use parking space at the Que Pasa recreation center and the Base hospital. A shuttle bus will operate from these lots on "B" street to the Club patio entrance and return. Sandia Security will direct traffic.

Sandia's Large Staff will visit with retirees during the event.

Antojitos

Hawaii or Havaii? "It's Havaii." Thanks. "You're velcome." Having recently returned from a week in the island paradise, I'm now, of course, an expert. Herewith, My Insights, or Life in the Fast Lein:

--The word "aloha," with the accent on the final syllable, is most useful. It means, tourists are told, "Hello," "Goodbye," "I love you," and, apparently, "We're sure having fun now, aren't we, Martha?" It is also useful in differentiating between tour guides and tour groups--the former must say it first, the latter second and (if it's not loud enough to the guide) a third and fourth time. After the 92nd experience with this ritual, I came to suspect that the guides are uttering a low "ha!" under their collective breaths.

--Dominant images: Swaying palm trees, swaying hula dancers, and swaying tourists (in the wind, to the music, and with the mai-tais, respectively).

--Waikiki is as typical of Hawaii as downtown Los Angeles (there is a downtown LA, isn't there?) is of California.

--At any given moment, there are more Mainlanders (haoles) and Japanese vicariously reliving brave deeds at Pearl Harbor than there were living them on Dec. 7, 1941.

--Tourists who visit the east side of Kauai, 10 miles from a mountaintop that is the wettest spot on earth (460" of rain a year), persist in complaining that they're getting wet.

--In spite of Hawaii's being populated primarily (it would appear) by tourists, I saw very few out-of-state cars.

--New Mexico, take note: Hawaii, according to the TV weather reports, doesn't have winds. But it does have "trades"--and the trades often travel at 15 to 25 mph. Very hard to tell from winds, actually.

--Volcanoes National Park: sulphur belching, steam venting, lava like black gravy on simmer--desolation everywhere. And a tourist asking a park ranger, "How do you shut this all down at night?"

--Poi is perfectly palatable (assuming your palate has no taste-buds). Well, actually, it's not so bad if mixed with real food--in very small ratios--say, 1 ppm.

--The Hawaiian alphabet is noticeably impoverished--five vowels (pronounced as in Spanish) plus H, K, L, M, N, P, and W. Since there aren't enough letters to go around, the rule of thumb is "the smaller the place, the longer the name." It's fun to pronounce some of them--Aiea, Kaaawa (that's Kah-ah-ah-wah), Na-williwilli, Punuluu.

●BH

Savings Bond Participation Now at 91%

With data from 6700 cards reported, preliminary results of the current U.S. Savings Bond drive show 91 percent participation, according to Dick Andes (0110), Sandia Savings Bond committee chairman.

"About 87 percent of Sandia's employees were participating in the Savings Bond program at the start of the drive," Dick says. "These new figures show a four percentage point increase. The new market-based interest rates now paid by Savings Bonds make them a very attractive investment -- this must account for the increase. I'm confident that the upward trend will continue as the remainder of the cards come in."

One hundred percent participation was reported by three directorates whose campaigns are complete -- 1500, 1800, and 3500. Organization 6000 reports 100 percent participation, and 1000 reports 99 percent. Organizations 100, 300, and 400 report 95 percent.

"My thanks to everyone who participates in the Savings Bond program," Dick says. "We're elated with the results. Final figures will be published in the next LAB NEWS."

LAB NEWS editorial offices are scheduled to move from MO125 into the north end of Bldg. 814 (just east of the Base Cafeteria) tomorrow. Photographer's darkroom, the studio, and all phone numbers are unchanged.

Congratulations

Lucy Tabor (1124) and Jim Schwank (2144) married May 7 in Albuquerque.

Chester (3418) and Loretta Chavez, a son, Cameron Abraham, May 2.

Sympathy

To Bob Manhart (3151) on the death of his father April 30 in Denver.

To Al Angel (3435) on the death of his mother, May 1.

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RETIREE DAN PARSONS displays finished 1/8-scale radio-controlled DeHavilland Hornet, a British WWII interceptor which he flew recently at a model builder's meet in Phoenix. A long-time R/C enthusiast (LAB NEWS, Sept. 1981), Dan spent six years "off and on" designing and building the Hornet. He reports, "it flies beautifully."

Take Note

John Martin (8161) ran the Boston Marathon on April 18, his third run in Boston and the 36th marathon he's run in the past six years. John covered the 26-mile, 385-yard distance in three hours and 26 minutes. The Boston Marathon has been staged 87 times and is the oldest and best known of all U.S. runs.

LAB NEWS is looking for Sandians from Livermore who witnessed (or who were stationed nearby) the signing of the Japanese surrender on Sept. 2, 1945, in Tokyo Bay. At least three Sandians were there, and any others are asked to contact LAB NEWS at 2-2447.

Sandia Livermore's resident public information guru, Barry Schrader (8212), recently traveled to Northern Illinois University to accept their Journalism Department's top alumni award. Barry was selected from more than 2000 of the department's alumni to receive the 1983 Donald Grubb Distinguished Journalism Alumni award. Barry graduated from NIU in 1963 and joined Sandia in 1979 after serving as editor of the *Tri-Valley Herald* and the *Valley Times*.



THE NEXT FRONTIER

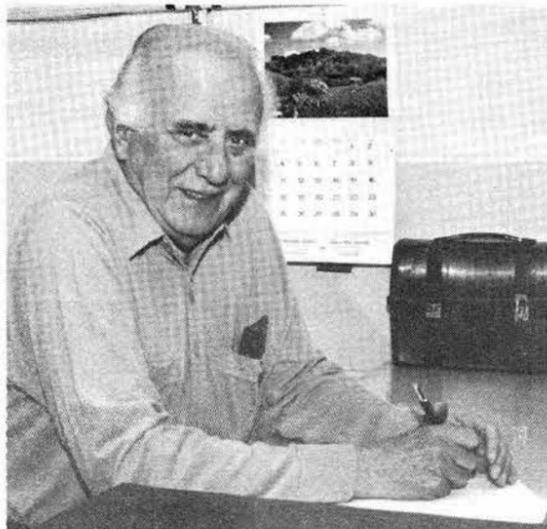
The ideas of superspace and plurality of universes are not new. But for the first time these ideas are becoming accessible to scientific discussion, which is to say we can foresee proving them either true or false. The more we learn about the early universe, the more we will be able to eliminate some theories about its origin, and about any prior realm from which it sprang, and the more we will be able to strengthen other ideas.

There is a certain historical impetus behind this development. We have gone from recognizing a single Earth to recognizing many planets, from one Sun to many suns, from one galaxy to many. In each case, those who advocated the larger view of things proved to be right. Whatever else is in the character of nature, as we see it unfolding into ever more abundant vistas before our patient inquiry, we find that it does not economize on its size and richness.

After 50 years, the Big Bang universe of galaxies already seems a little constricted, naggingly inadequate. We seem to be approaching the next great step outward. We peer today as through a barely open door at a prospect of universes without end, great and small, familiar and incomprehensible, in numberless profusion. Valid physical questions face us for which our physics is utterly inadequate. This can only be a sign that we stand at a great frontier of science, one that will form a cutting edge of inquiry for generations to come, with results we cannot guess.

Alan MacRobert in *Sky and Telescope*

Retiring



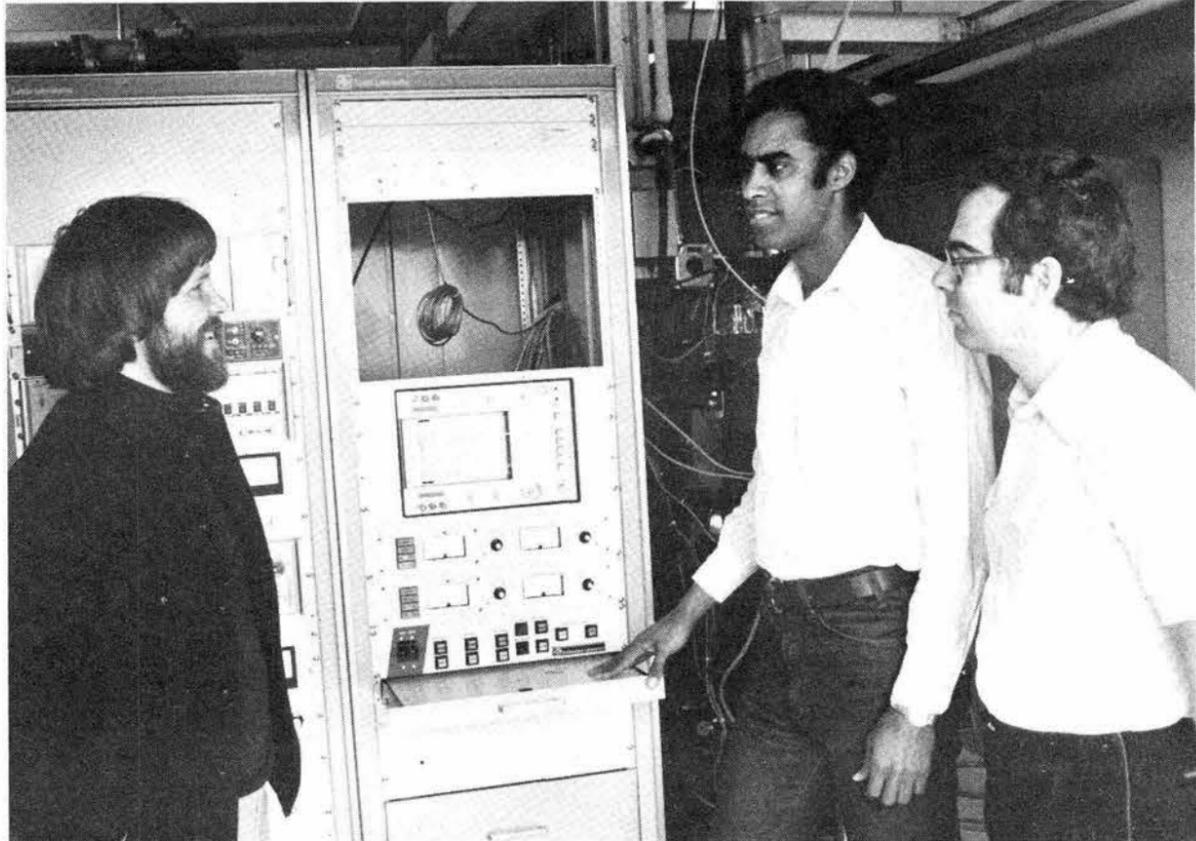
John Barnhouse (8414)



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RESEARCHER Mel Branch, (University of Colorado) center, discusses his project with Jim Miller (left) and Dave Chandler (both 8513).

At CRF

Researcher Studies NO Pollutants

A University of Colorado faculty researcher is spending a six-month sabbatical at Sandia's Combustion Research Facility. He's conducting fundamental research that could eventually help reduce or eliminate that all-too-familiar haze of reddish-brown nitric oxide (NO) pollutants from coal- and oil-fired combustion systems.

Associate Professor of Mechanical Engineering Mel Branch chose the Livermore facility for his investigation because of the availability of the advanced computer-modeling and diagnostics capabilities and state-of-the-art research apparatus Sandia offers. He was also influenced by contacts with the CRF staff while he was on the faculty at UC Berkeley.

"The facility here is unique and is growing in visibility," Mel says. "It could very well be the world's best experimental research facility in combustion fundamentals. It is a very valuable asset for university faculty to be able to use."

Working with Jim Miller (8513) and Bob Kee (8331) on the computational side and with Bill McLean and Dave Chandler (both 8513) in the low-pressure flame facility, Mel ultimately hopes to generate new understanding of nitric oxide pollutants. The results will be published jointly by Mel and his Sandia colleagues.

Nitric oxide forms from trace nitrogen species present in most fuels, including petroleum products, coals, and other hydrocarbon compounds. To investigate how it forms, Mel plans to use a flat flame, which

is a very well defined environment. To this he will add hydrogen cyanide, one of the intermediates formed from fuel-bound nitrogen. He will then study the chemical reactions and, with the aid of Sandia's computers, correlate these measurements with numerical models of the flame.

"If we learn more about the paths for formation of nitric oxide, then we may be able to minimize its formation and alter the combustion process accordingly," Mel says. One approach is to burn the mixture first with an excess of fuel, a condition that often suppresses the formation of nitric oxide. Later, oxygen is added. This procedure not only allows tailoring the burning to minimize the nitric oxide, a big contributor to urban air pollution, but also improves the efficiency of the combustion process.

To support his experiments in the low-pressure flame facility, Mel is also developing codes for computer control of the experiments. To determine the concentrations of various chemical species at given locations within the flame, he will use a mass spectrometer; to detect some of the unstable intermediates, he plans to take advantage of advanced laser spectroscopy techniques.

Sympathy

To Carl Lundbom (8273) on the death of his father in Greensburg, Penn., April 16.

To Dwight Soria (8257) on the death of his father in Livermore, April 18.

Supervisory Appointments

PAUL DRESSENDORFER to supervisor of Advanced Microelectronics Development Division 2144, effective April 1.

Paul has been with this same organization since joining the Labs in October 1978. He received his BS in physics from Cal Tech and his MS and PhD in solid state physics from Yale.

Paul is a member of IEEE and the American Physical Society. He is a licensed pilot and, in addition to flying, enjoys backpacking and skiing. He and his wife Lori live in SE Albuquerque.

JIM GIACHINO to supervisor of Systems Analysis and Computer Applications Division 3734, effective April 16.

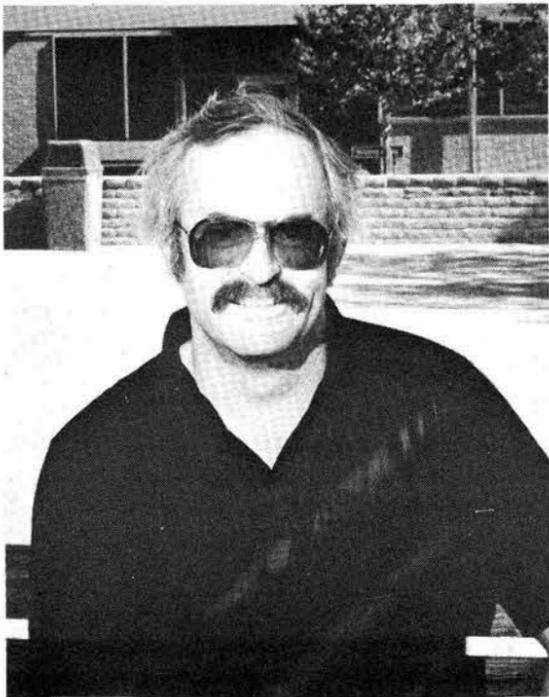
Jim first joined the Labs in 1964; he worked in the purchasing organization for nine years and then left Sandia. Jim was the purchasing agent for the Public Service Company of NM until 1978 when he returned to Sandia. For the past three years, he has worked with Systems & Appraisal Division 3416.

Jim received a BS in accounting from Oklahoma State and his MBA from the University of Oklahoma. He also earned an electronics diploma from T-VI. Jim is a member of the Purchasing Management Association of NM. He enjoys gardening, hiking, and jogging. He lives in NE Albuquerque.

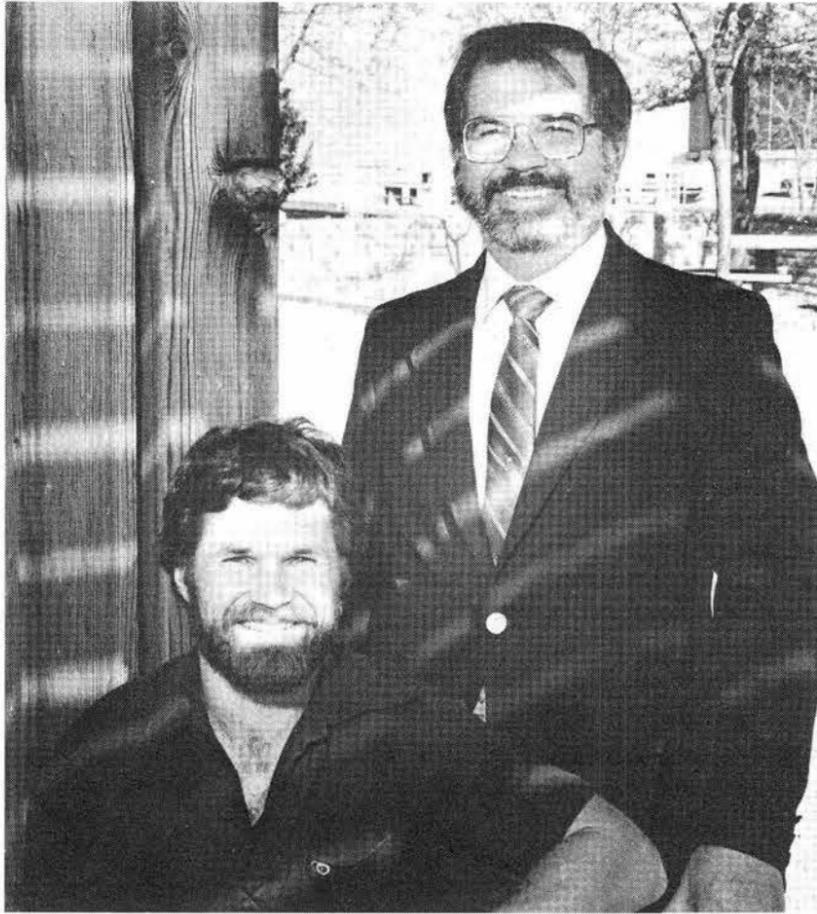
DENNIS ROWLEY to supervisor of Library Systems Design Division 3142, effective April 16.

Dennis joined the Labs in 1963 in the administrative programs organization. During most of his years at Sandia, Dennis has been a consultant on computer operating systems.

He received his BS in math from Trinity College (Hartford, Conn.) and his MBA from the University of Chicago. Dennis enjoys outdoor sports — water skiing, snow skiing, horseback riding. He is also nearing completion of a log home that he's building in the Manzano Mountains. Dennis and his wife Martha have two children.



DENNIS ROWLEY (3142)



PAUL DRESSENDORFER (2144) and JAMES GIACHINO (3734)

Program for Handicapped Honored

1983 Employer of the Year

Sandia has been selected as New Mexico's Employer of the Year for 1983 by the Governor's Committee on Concerns of the Handicapped. A plaque was accepted for Sandia by Ray Powell (3000) and Bob Garcia (3500) at an awards luncheon in Santa Fe on April 13.

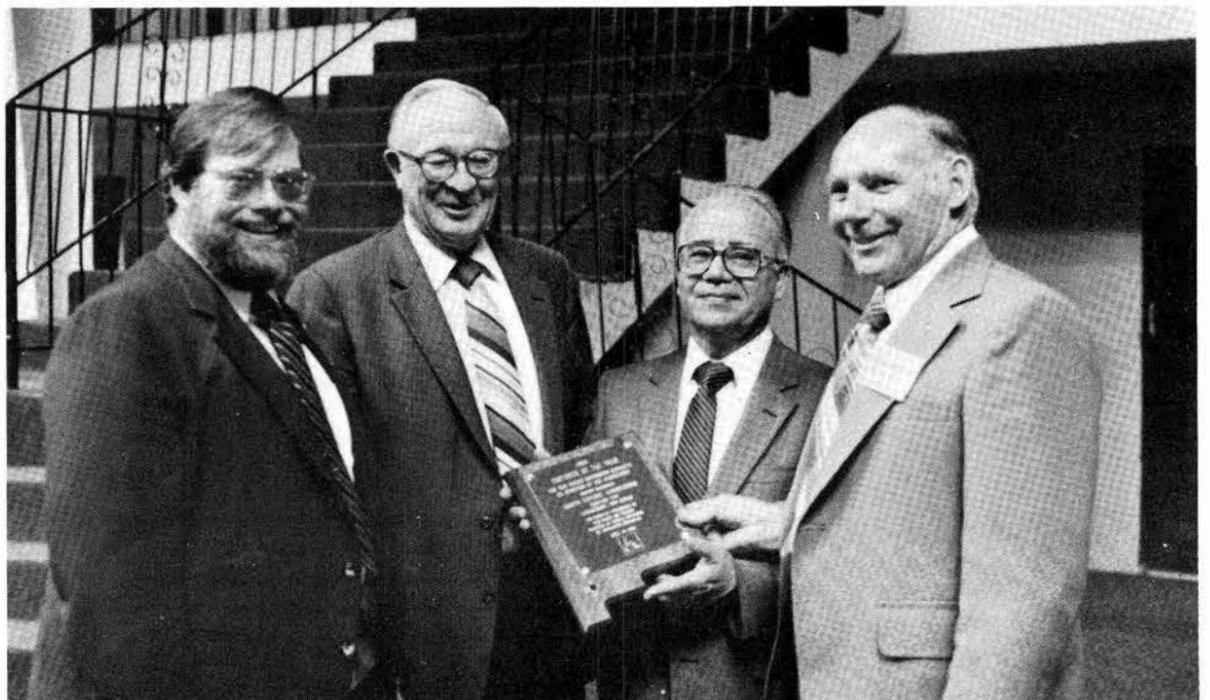
Sandia was nominated by Career Services for the Handicapped, a private, non-profit placement agency funded by United Way.

"Currently Sandia employs 13 handicapped people on a contract basis," says Frank Gallegos, head of Personnel and Employment Division 3533. "We work with Career Services to help the handicapped

gain experience and build a record so employers will not be reluctant to hire them.

"By working here on contract, they can gain the experience to qualify for jobs at Sandia and elsewhere. The program also provides us with a labor pool for temporary requirements. The 13 employees are placed in many different organizations — right now they're working in 3500, 100, 120, and 150. We've had a number of inquiries from more than a dozen states about our unique program."

Ann Griego (3533), Handicapped Program Coordinator, administers the program.



NEW MEXICO'S 1983 Employer of the Year award was presented recently to Sandia. Gathered around the plaque are (l to r) Chris Issengard (director, Career Services for the Handicapped), Ray Powell (3000), Bob Garcia (3500), and Myron Carson (chairman, Governor's Committee on Concerns of the Handicapped).

Willie Brown Takes Karate Meet

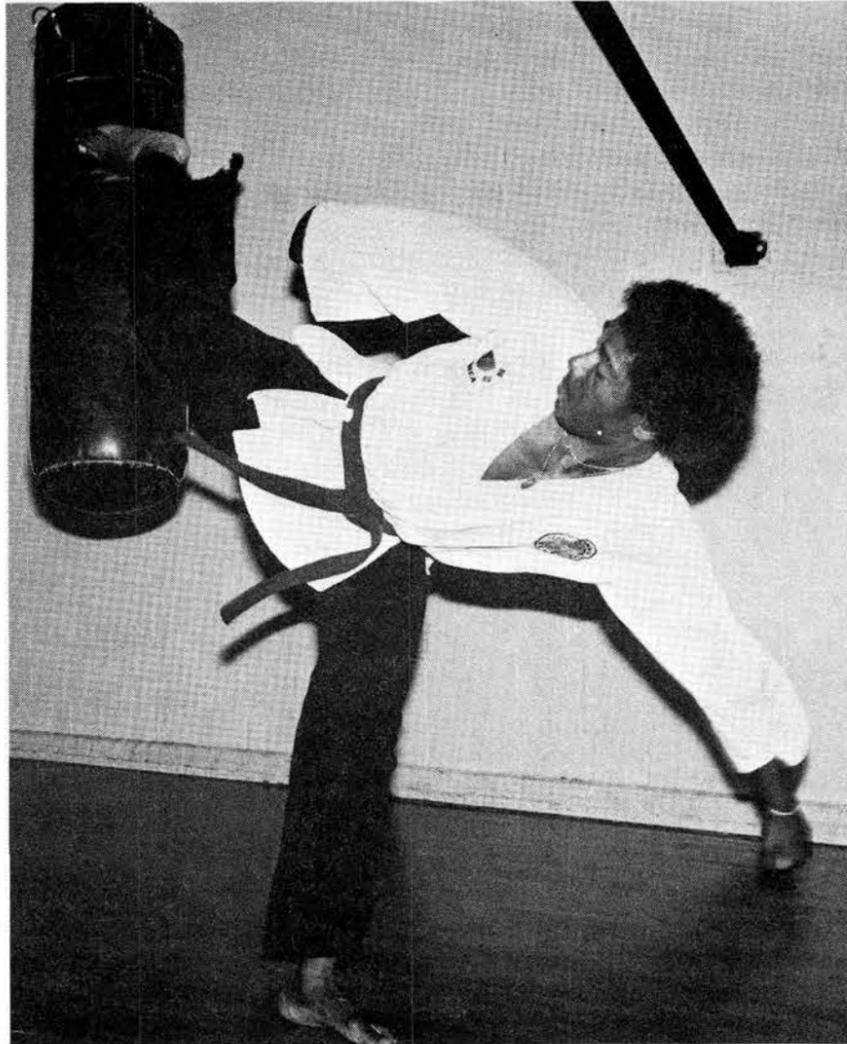
Willie Brown (3435) is an easygoing young man who smiles a lot as he checks your badge when you leave the Tech Area on your way home for the day. "Friendly" describes Willie. He is a very friendly Sandia security inspector who usually works the swing or graveyard shift. . .

Except when he is competing in the top brackets of first degree black belt karate tournaments in the Southwest. Recently Willie walked off with the championship in an amateur tournament in Denver, leaving 100 other entrants wondering what happened. Willie is all frowning and disciplined concentration on the mat — a quick, aggressive buzzsaw of chops, kicks, backhands, and powerhouse punches. After the Denver tournament, Willie's friends pronounced him ready to turn professional.

But Willie smiles. "In about two years," he says. "Maybe. I like to compete, like to stay in shape, and I enjoy the tournaments. I'm working on technique. I want to practice to the point where everything is instinctive — no thinking about what move to make next."

Willie works out about two and a half hours a day stretching, lifting weights, practicing technique, and taking on opponents at Choi's Taekwon Do, a Korean karate studio.

"Korean karate is the hard style," Willie says. "It's aggressive. Professionally, it's called kick boxing, and it's a popular sport drawing large crowds in the larger cities.



WILLIE BROWN (3435) smiles a lot except when he's concentrating on karate techniques. He wins amateur karate tournaments, the most recent in Denver.

But people get hurt. In amateur matches, the idea is not to hurt opponents but to score — a kick to the head is worth two points. It's an easy kick. The pros mean it. They kick

your head off."

While working out kicking the bag in the Base gym, Willie thinks about that. He thinks about that a lot.

Colloquium

What's New in Telecommunications

Remember HAL, the overbearing computer who decided it was smarter than mere humans and tried to take over the spaceship in *2001: A Space Odyssey*? Well, according to Robert Lucky, director of research at Bell Labs, someday HAL might very well have a less lethal but equally obnoxious little cousin named TEL. In fact, there will be a TEL in every home. In an (one hopes) imaginary dialogue, Lucky described a typical encounter between "Bob" and TEL. Bob comes home and wants to know what's on the tube that evening. "A highly acclaimed production of 'Boris Godunov'" responds TEL. "That's a bit heavy," says Bob, "and I've had a rough day." Sniffs TEL: "My data bank indicates you haven't watched an opera in three years."

And on it goes. TEL, it turns out, gossips with the neighbors' computers about who is watching blue movies. It snoops on Bob's electronic bank transactions and on its own schedules expensive sports events.

This highly amusing dialogue was the windup to a fascinating colloquium entitled "Current Directions in Telecommunications Research." Lucky presented an overview of the major areas of telecommunications research at Bell Labs. The two main areas described were light wave transmission (photonics) and microelectronics.

"In the next decade, long-haul telecommunications transmission will be light-borne in a fiber network," says Lucky.

"The future of Bell System communications will be optical."

Bell researchers have achieved a loss rate of 0.18 decibels per kilometer on fiber — a significant improvement over what was possible a decade ago. There is good potential, according to Lucky, for a transoceanic cable someday that will not require a single repeater. In fact, just last month Bell engineers tested a fiber cable that transmitted a signal 135 kilometers without a repeater — a record.

Lucky spoke of other exciting developments. He described a dramatic breakthrough in laser research that has stimulated systems work toward transmission systems of much greater capacity than are now available. For instance, one fiber will have a capacity of 1000 channels of 10 gigabits each — five orders of magnitude greater than is now being used.

In microelectronics, circuits are being made smaller and smaller. The number of circuits on a chip has doubled every year in the last two decades. Bell researchers have fabricated the smallest three-dimensional chip structure — less than 1 micron across. And the tops of individual filaments comprising this experimental structure are 100 atoms wide.

These developments can result in optical fiber networks, which might include voice recognition and artificial intelligence systems, reaching into every home — every household with its own friendly TEL.



Response to the VIA questionnaire was enthusiastic. Thanks to all who participated.

Here are some recent requests from volunteer agencies. If you are interested in any of them, call Karen Shane (4-3268).

YMCA is in the market for a business computer. The agency needs a consultant who can guide it through the maze of finding the computer that is appropriate for its needs.

MEALS ON WHEELS, a program to supply a hot daily meal to shut-ins, derives a portion of its income from paper recycling. A person with a vehicle is needed to collect heavy paper bundles from an existing route on Tuesdays and/or Fridays.

SANDIA RANGER DISTRICT is looking for volunteers to repair a fence in Embudo Canyon.



AMONG THE 200-PLUS cars on display Sunday, May 22, at the New Mexico State Fairgrounds will be these four owned by Sandians. From left are Terry Bisbee (2615) and his '55 Chevy Bel-Air, Ed Constantineau (1251) and his '57 Ford Crown Victoria, Dave Hebron (1234) and his '24 Ford Model T, and Dave Johnson (1264) and his '58 Ford Custom 300. Some 28 car clubs, members of the New Mexico Car Council, are participating, each representing lovers of a

particular breed of car. Terry, for instance, is a member of the Classic Chevy Club; Dave Hebron, the Tin Lizzies of Albuquerque; and Ed and Dave Johnson, the Fabulous Fifties Ford Club. Other groups are showing antiques, classics, hot rods, Corvettes, Terraplanes, Thunderbirds, Z-cars, and more. Tickets are \$2 at the gate, \$1 from car club members before the show.

Fun & Games

Arts and Crafts — Sandians are eligible for a number of classes starting next week at the Arts and Crafts Center, Bldg. 954 KAFB-West. Black and white photography, oriental watercolor, pottery, and basic oil painting are the classes offered. For more information, call 4-0222.

Bowling — Reyes Chavez (7474) is organizing a mixed league of 10 teams to bowl Wednesdays at 8:30 p.m. at the new Base bowling center on KAFB-East. If interested, call Reyes on 836-4069.

Motorcycle Racing — The seventh annual Oh My God 100 desert race is set for 8:30 a.m. on May 22 at a new location 42 miles northwest of Bernalillo off NM 44. Deadline for entries is May 17. Entry blanks are available in the LAB NEWS office. The event is sponsored by Southwest Off Road Enterprises.

Love-a-Trail — Volunteers for the Out-

door and the U.S. Forest Service are seeking volunteers at least 16 years old to perform trail maintenance in the Pecos Wilderness area during July and August. Workers will sign up for one- or two-week stints with a food allowance of \$8 per day and live in the wilderness they're working on. For more information or crew job applications, send a self-addressed stamp envelope to: Pecos Trail Crew, Pecos Ranger District, P.O. Drawer D, Pecos NM 87552. Deadline is May 31. Anyone interested in being a supervisor (all summer at \$150-\$200 per week) should call the Ranger Station *today* for an application (505/757-6121).

Tennis — The Sandia Tennis Association plans several tournaments and tennis clinics this summer. Challenge ladders for men/women and mixed, both singles and doubles, are currently active. To join the fun, call Max Sandoval (0314), 4-6877.

Basketball — The Sandia Basketball As-

sociation is now organizing its summer 10-team league to play Tuesdays and Thursdays from 5:30 until 6:30. All Sandia and DOE employees, their spouses, and adult dependents are eligible. Roster forms are available from Luis Abeyta (7531), 4-8732. Team registration fee is \$100. Deadline for enrolling is June 1.

Therapeutic Massage — A new class starts May 17 in Room B-5 at the Coronado Club from 7-9 p.m. and meets for two more Tuesdays — May 24 and 31. The class provides instruction in the basics of a relaxation technique. Cost is \$13 per couple (limit 10 couples) and is due by noon May 17 to enroll. Call the recreation office, 4-8486, for details.

First Aid — The recreation office at the Coronado Club has literature (a government FDA pamphlet) on first aid supplies appropriate to keep in the home medicine chest. For a copy, call 4-8486.

Q. In light of the many benefits, such as better health, less absenteeism, increased productivity, and higher morale, would it be possible for Sandia to implement a fitness program for employees?

A. Sandia has a strong interest in maintaining the health of its employees. In the past few years we have added a diet consultant to the Medical Organization's staff, provided courses and seminars on smoking and health maintenance, and — through the Coronado Club — made available classes in aerobics and jazzercise. Also, as new buildings have been erected or old ones re-

modeled, we have installed showers and lockers for employees who jog or bike to work or who exercise during the lunch period.

H.M. Willis—3100

feed n'iback

Q. After work, employees cross H Street at Gate 16 to the watertower parking lot one

and two at a time. Therefore, traffic exiting from the parking lots north of Bldg. 880 moves extremely slow and backlogs badly. Why not ask the guard (or post a sign) to hold people until a group of 10 to 12 has accumulated? Traffic would flow more smoothly.

A. We tried a guard for a short time and found no improvement in traffic flow. Pedestrians are gone within a few minutes and traffic flows freely by 4:37. The intermittent flow of vehicles past Gate 16 also gives motorists from the water tower an opportunity to enter the road.

R.W. Hunnicutt — 3600

Take Note

Tech writer Necah Furman (3151) did her part to uphold the Texas Literary Tradition during a conference by that name at the University of Texas Austin recently. She discussed the historian Walter Prescott Webb, one of the "Holy Trinity" of Texas letters (along with J. Frank Dobie and Roy Bedichek). Necah's book on Webb, which grew out of her doctoral work in American Studies, was nominated for a Pulitzer Prize. Even so, she reports that she received fewer requests for autographs than did Larry McMurtry. Necah joined Sandia last year.

A flyover by the New Mexico Air National Guard is among the attractions at the May 17 unveiling of the National Atomic Museum's newest exhibit — an F105 Thunderchief nuclear strike fighter plane. Speaking at the dedication ceremony will be Maj. Gen. James Young (USAF ret.), who commanded an F105 group based in Thailand during the Viet Nam conflict. The dedication begins at 10:30 a.m.

Harold Gottlieb (0324) has a mystery on his hands — or, more precisely, in his head. He bicycled home from work on April 14, but somewhere during the trip he apparently had an accident. He did get home but with a concussion that erased all memory of what had happened to cause it. Anyone who witnessed a biker in a red jacket involved in an accident on that date on a route from Sandia, across the Los Altos overpass, to his home near Chelwood and Comanche is asked to call Harold on 4-1095.

The University of New Mexico Hospital, a statewide center for children's health care, will be one of the recipients of the Children's Miracle Network Telethon on May 28 and 29. The telethon, a 21-hour nationally broadcast event originating from the Osmond Family Entertainment Center in Utah, will benefit children's programs in 28 hospitals around the country. The Osmond Foundation selected the UNM Hospital as the single recipient in New Mexico.

Numerous stars will perform during the telethon and, during the local programming, the audience will have an opportunity

to see the many ways the UNM Hospital contributes to the lives of children. The telethon will be broadcast by KOB-TV.

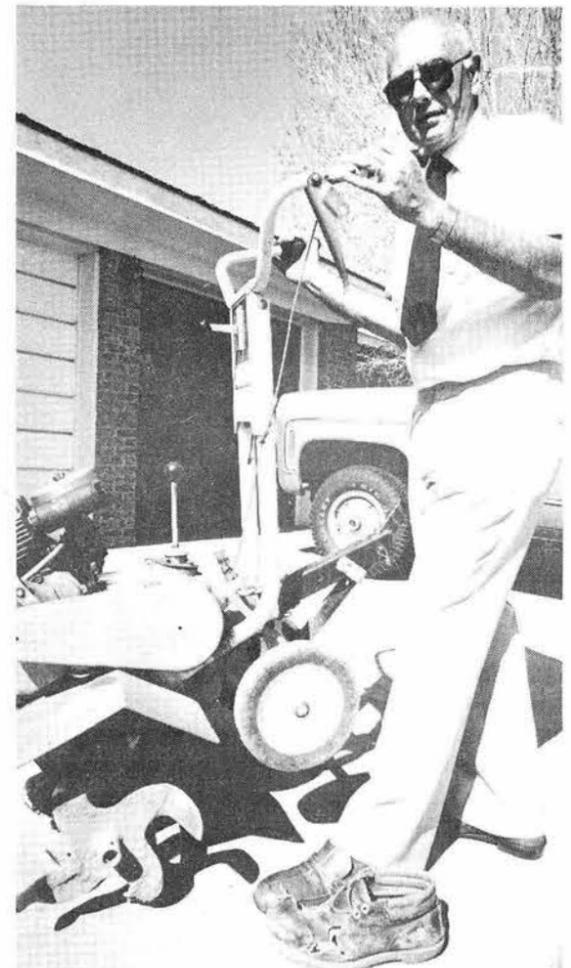
Dave Bennett (9415) has been elected to the Board of Directors of the National Rifle Association. The announcement was made last week at the NRA annual meeting in Phoenix. Dave was chairman of the national nominating committee last year and is currently a member of the junior programs committee. On the state level, he is executive officer for legislative affairs and is a past president of the NM Shooting Sports Association. Dave also served as chairman of the technical advisory committee for the Albuquerque Shooting Range State Park, which opened last fall.

A new visitor center at the Very Large Array radio telescope observatory opened recently at the site south of U.S. 60, 52 miles west of Socorro on the Plains of San Augustin. The visitor center contains exhibits describing radio astronomy and the role of the Very Large Array, how it works, and samples of recent research accomplished with the VLA. The visitor center is open to the public seven days a week from 8:30 a.m. till dusk, and features a self-activated slide show in its auditorium and a completely self-guided tour of the grounds. The observatory is funded by the National Science Foundation and operated by Associated Universities Inc.

Richard Flores of Automated Data Support Division 7543 presented an invited paper, "The Use of Desk Top Computers for Data Acquisition," at the 7th Annual Mexican-American Engineering Society Symposium held May 3-5 in Ventura, Calif.

Men have feelings too! The thoughts, feelings, and experiences of the divorced/single male will be discussed at the Singles Fellowship meeting on May 14, 7:30 p.m., at the Church of the Risen Savior, 7701 Wyoming NE. More info from Frank Ostermann (2629) at 822-0524.

New Cumbres & Toltec Scenic Railroad brochures are available at the LAB NEWS office. Stop by M0125/814, or call 4-7841.



KARL WAIBEL (0130) shows us a safety shoe that saved his foot. He had borrowed a rototiller and was getting with it in his garden when the machine locked into reverse and backed him against a block wall. The blades cut into his shoe but not his foot. He did suffer a large bruise on his leg. If you own a Sears recent-model rototiller, call 800-435-5117 (a toll free number) and find out about a conversion kit that prevents a lockup in reverse.



The fierce jalapeño pepper has been tamed. While searching for virus-resistant peppers, Benigno Villalon developed a jalapeño variety with low levels of capsaicin, a flavorless chemical that scorches the mouth. "Our crossbreeding produced a pepper that tastes just like a jalapeño but is only a third as hot," says Villalon, a plant pathologist at Texas A&M University. "I have to say that I prefer it. I like hot peppers, but the regular jalapeño is too painful."

— Science 83

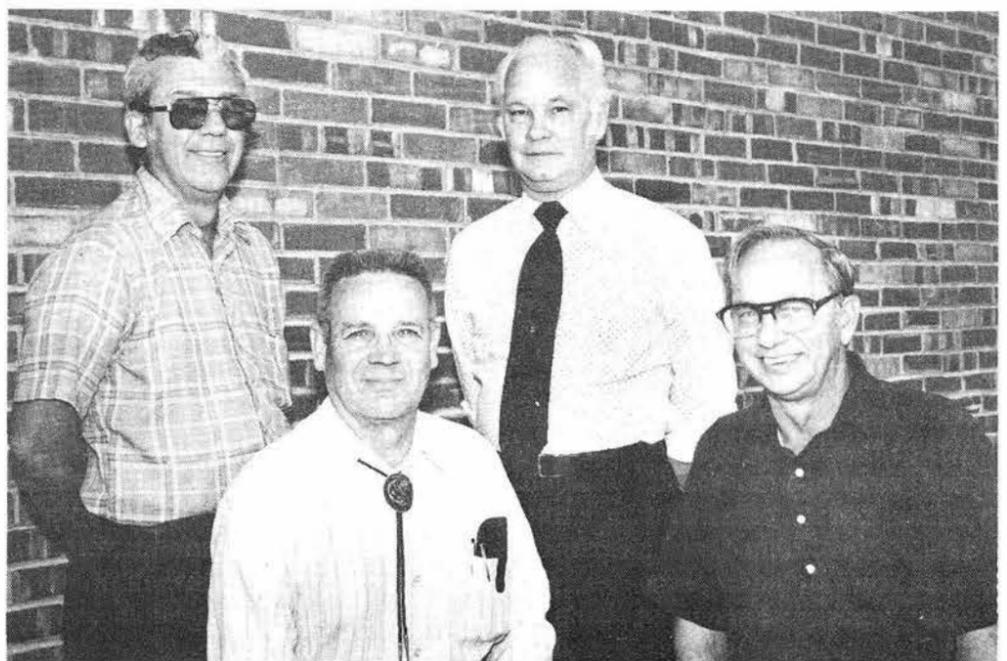
Retiring



Dottie Bliss (3141)



Bill Caldes (7530)



Dick Schreiner (3412), Einar Forsman (2522), Ivy Dunn (2124), and Ed Peterson (7481).

Neal Vinson Heads Common Cause

Retiree Neal Vinson was recently elected to chairmanship of the 1700-member Common Cause of New Mexico, part of the national Common Cause organization. Common Cause is a nonprofit, nonpartisan citizens' lobbying organization that works to improve the way federal and state governments operate.

"Access," Neal says, "is our primary concern. Private citizens need access to elected officials. The way it works is the private citizen comes last when the official schedules appointments. In the meantime, the professional lobbyist representing a Political Action Committee (PAC) that made a generous contribution to the official's campaign gets immediate attention.

"There's another kind of access," Neal continues. "And that's access to political office by relatively poor candidates. Campaigning is expensive, and a candidate must have contributions to mount a successful campaign. It is difficult for a candidate not to accept contributions from a PAC, and it's difficult to ignore a PAC lobbyist after a contribution has been accepted. There's a debt, a favor owed."

Common Cause was instrumental in the creation of public financing of presidential campaigns — the box on the income tax form that earmarks \$1 to finance the election. Each major candidate for president receives a portion of these funds based on a

formula determined by a national elections board.

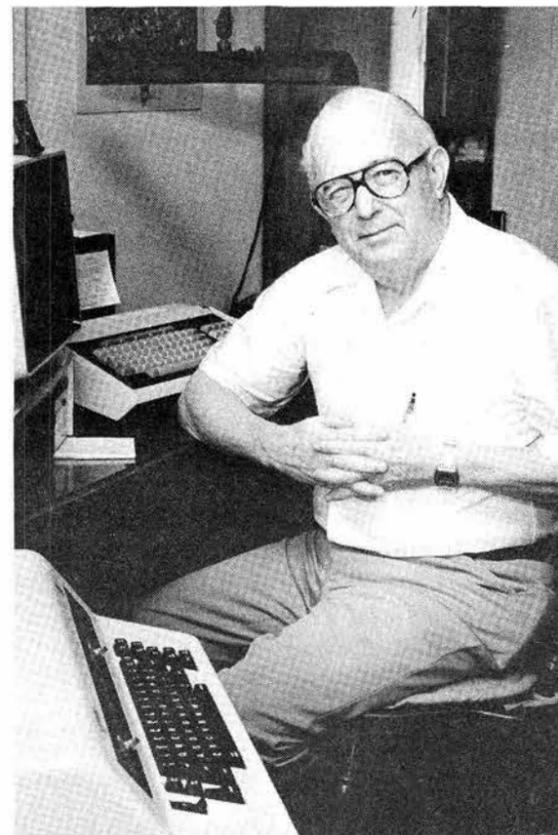
"Such a system could be created for other elections — U.S. Congress, state legislators, governors," Neal says. "This would eliminate some of the pressures of PAC contributions to candidates — the candidate would owe his primary loyalty to private citizens and good government. Putting such a system into operation is a goal of Common Cause.

"This does not mean that private contributions to candidates should cease — it simply means that a candidate could keep his loyalties intact and independent."

Common Cause is also concerned with issues such as disarmament, environmental protection, and government integrity plus a wide range of other issues.

"The American political system must be kept responsive to the needs of the American people," Neal says. "Sometimes it takes a watchdog group to keep the system honest."

Neal retired from Sandia in 1978 after 26 years in field engineering, military liaison, and environmental test facility design. He served in the Arizona legislature prior to WWII and, during the war, held U.S. Army assignments in military government in France and Germany. He served in Korea in the Chemical Corps, retiring as a major. In 1978, Neal served in the New Mexico legislature, appointed to fill the unexpired



RETIREE NEAL VINSON is chairman of Common Cause of New Mexico.

term of David Rusk when he became mayor of Albuquerque.

"I keep active in retirement," Neal says. "Obviously, I enjoy the political process and the work of Common Cause."

Anyone interested in more information about Common Cause is invited to call the group's office, 266-2800. Annual membership dues are \$20.

Colloquium

Medical Effects of Atom Bombings Described

In a recent colloquium, Dr. Kelly H. Clifton of the University of Wisconsin discussed "Long-Term Biomedical Effects of Exposure to the Atomic Bombs, Hiroshima and Nagasaki." He summarized the results of an epidemiological study carried out by the Atomic Bomb Casualty Commission (ABCC) established in Hiroshima and Nagasaki in 1946 under the direction of the U.S. National Academy of Sciences and funded by the AEC. In the early 1970s, ABCC turned over all its records to the newly formed binational Radiation Effects Research Foundation (RERF) funded equally by the United States and Japan.

The ABCC was staffed principally by Japanese personnel from the medical faculty of Tokyo University because the main work consisted of interviewing people who had survived the blasts. The largest number of Americans on the Commission at any one time was 50, along with a few Australians.

From among the 370,000 survivors of the Hiroshima and Nagasaki bombings, 109,000 participated in the Life Span Study, based on periodic personal interviews and questionnaires. Of these, 20,000 people in the Adult Health Study underwent complete medical examinations every two years. RERF also conducted studies of 54,000 children and of a smaller group that was *in utero* at the time of the blast.

"The really bad thing we discovered was the increase in a variety of cancers, particularly leukemia and breast cancer,"

says Dr. Clifton. "Leukemia is relatively rare but in irradiated people there is a high incidence of the disease. Females in the 10-to-19 age group at the time of the blasts show a higher risk of breast cancer than do older women. The subsequent incidence of breast cancer in girls under 10 at the time indicates that the quiescent breast tissue of young girls has a higher sensitivity to radiation exposure than in older girls and women.

"Studies of pregnant women in the 1947-1954 period show no detectable increase in gross abnormalities in children of survivors and no increase in miscarriages. There was a higher than average incidence of microcephalic children and other children who lagged developmentally, but these problems were due more to embryological damage than to genetic factors. We also found a large number of microcataracts that didn't progress and were due to that one instant of irradiation."

Dr. Clifton observes that 20 percent of the Japanese population normally dies of cancer, and among the atom bomb survivors the rate is 21 percent. But the survivor group does not include many high-dose people; those who received the really high doses were close to ground zero and died from the blast or its immediate effects.

"This is the biggest epidemiological study ever undertaken," says Dr. Clifton, "and it forms the basis for radiation limit recommendations used throughout the

world."

After the colloquium, Dr. Clifton responded to a question about the social ostracism that some survivors have been subjected to by other Japanese: "Yes, it's true that a stigma was attached to survivors and their offspring, but that has largely faded away. Most marriages in Japan are arranged and there was a fear of genetic damage. Many survivors hid their origins but now they and their children are proud of being from Hiroshima or Nagasaki. Besides, survivors get an advantage in medical insurance so it's to their benefit to identify themselves."



The perennial Australian cultural rivalry between "provincial" Melbourne and Sydney with its "media mafia" is explored by writer Max Harris in the newsmagazine *The Bulletin* of Sydney. "Australia," he says, "consists of two and a half ... metropolitan cultures — Melbourne and Sydney, with Brisbane with half a chance in the next decade ... Sydney nourishes the more frivolous, trendy, decorative, fashionable, and shallow art manifestation. Such creative substance as it acquires ... comes from the seduction of the hard-edged energies of Melbourne artists, writers, playwrights, and intellectuals in a migration process." "Sydneycentricism" exists, says Harris. Still, Melbourne "should shrug off the slights of any real or imagined Sydney media mafia," taking comfort in the "superior quality of Melbourne's intellectual energies. Sydney fiddles while Melbourne burns."

World Press Review

Boating the San Juan: Easy & Fun

by John Shunny (Ret.)

I've boated a bunch of whitewater rivers in the West — the Colorado in the Grand Canyon, the Colorado below Moab, the Snake in Idaho, our own Rio Grande — but until last year I had never navigated the San Juan. Rising in the San Juan mountain range north of Wolf Creek Pass in Colorado, the San Juan River drops into New Mexico and is the chief feeder to Navajo Dam. Below the dam, it passes through Farmington and Shiprock, turns northwest through the Four Corners area, then flows westward through Utah's rugged canyon country until it meets Lake Powell some 75 air miles from Four Corners. Before Lake Powell came along, the San Juan continued westward until it met the Colorado River.

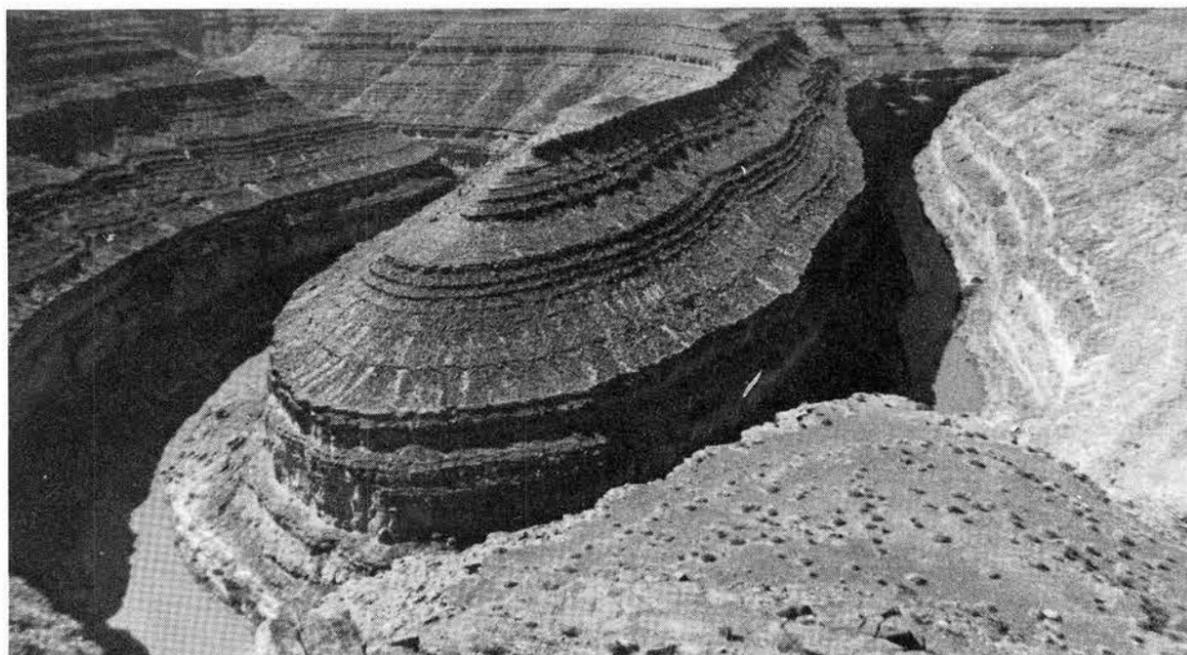
I can report that the San Juan is a super river trip, one that especially commends itself to the first-time boater because of the mildness of its rapids. We did the 56 river miles between Mexican Hat and Clay Hills Crossing and encountered only one rapid of significance (Government Rapids). Even this one was fairly tame (perhaps a 3 on the Grand Canyon scale where boat-eaters like Crystal and Lava Falls rate 8-10). Further, you can walk around the rapids if you choose, and the water temperature — should you dump — is fairly warm. (A problem in the Grand Canyon is the fridity of the water — 50 degrees, even in summer. If you dump, you find yourself eager to get out fast.)

Moreover, the San Juan offers magnificent canyon scenery, with many inviting side canyons to be explored by hiking. We camped on sandy beaches, selecting camp sites that gave us whatever proportion of sunlight and shadow we desired. Bugs were few. I suspect you can drink the water, but it resembles the stuff almost thick enough to plow that we have in the Rio Grande so we carried our own.

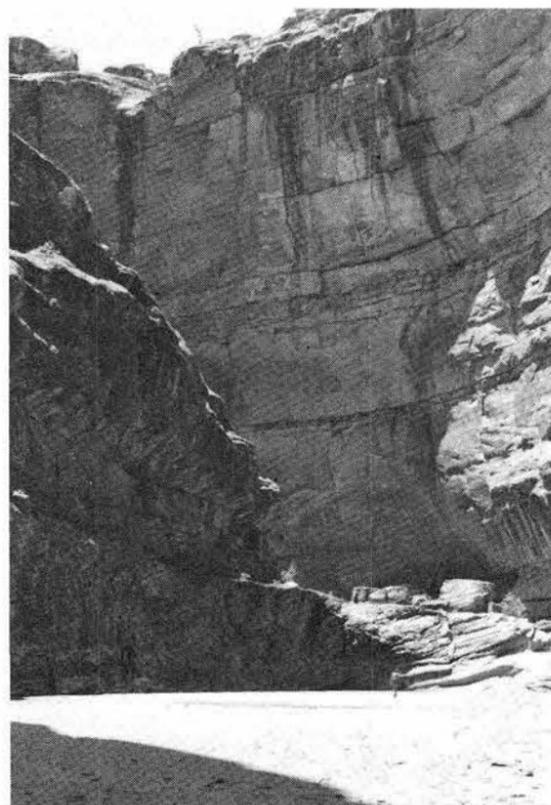
For people from Albuquerque, the time involved in staging a San Juan trip is relatively short. From here to Clay Hills Crossing, the take-out point where you leave one vehicle, is 380 miles. The return to the put-in point is 75 miles if you elect to launch at Mexican Hat. (You may also go upstream another 27 miles and launch at Sand Island, near Bluff, Utah.) Floating downstream with the four mph current, we averaged a leisurely 15 miles per day and emerged four days later.

Canoes, kayaks, inflated rubber boats with paddles and/or motors, and sportyaks all were seen. A group finishing when we did stated that one of their sportyaks overturned in Government Rapids — the driver must have worked at it. Quite a few commercial outfits operate on the San Juan, and you can be sure that very, very few of them overturn.

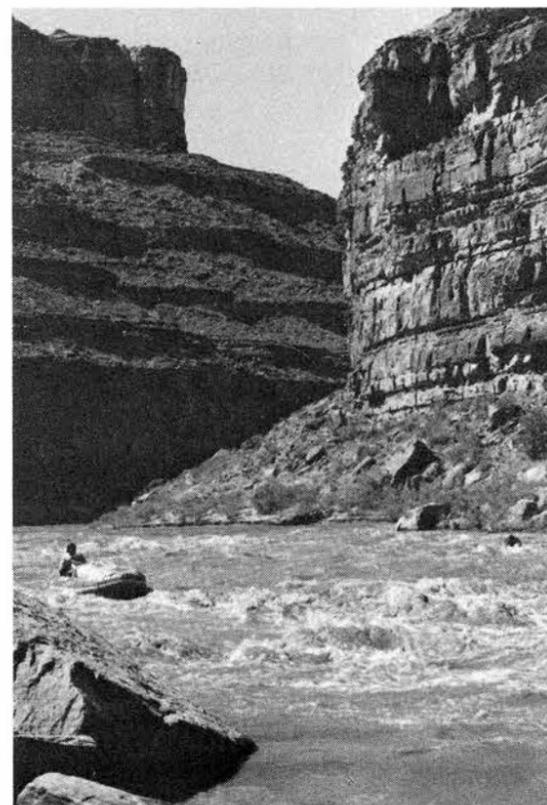
At this point I'd like to be able to conclude with a "Bon Voyage!" but there's one more detail: You need a permit to run the San Juan. Get it from the Bureau of Land Management (San Juan Area Office, PO



"THE GOOSENECKS" along the San Juan are geologically fascinating.



SCENERY is properly overwhelming. (Note tiny figure on far side of sandbar.)



THE WORST of the rapids is comparatively tame.

Box 7, Monticello, Utah, 84535; phone 801-587-2201). I suggest you call, and you just may be able to get the thing via phone. With the permit, BLM will send you many pages of stuff that assure you in the first paragraph that this is your land (and river) to enjoy and proceed to fill the remaining pages with behavioral pre- and proscription. One concludes we have become a nation of slob.

One more note: the river is highest in May and June. In other months, the water level is erratic and may fall below the minimum needed for boating — about 1000 cfs. Call the BLM Monticello office about water conditions at other times of year. (And call me, 265-1620, if you have other questions about running the San Juan.)



William F. Buckley's spy hero Blackford Oakes is an engineer. In *Saving the Queen* he explains that this is a very useful career — when he is asked his profession at a party, he need only mention engineering to avoid further conversation ("Both ladies asked the usual questions and Blackford reestablished, for the thousandth time, that one had only to say one was an engineer to catalyze that haze-in-the-eye behind which all attention wanders"). I've seen it happen all too often, and probably so have you. One of my more talented friends told me that when he worked at Bell Labs he had hit upon the solution of replying that he "worked for the phone company." Assuming that he climbed telephone poles or installed telephones, people were then very friendly to him.

— Robert W. Lucky in *IEEE Spectrum*

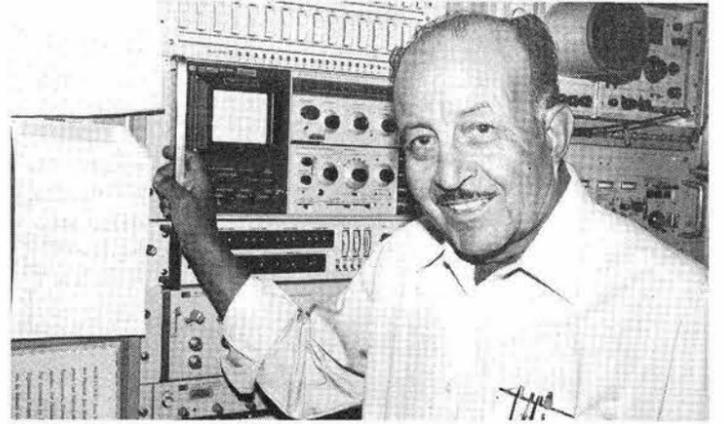
MILEPOSTS

LAB NEWS

MAY 1983



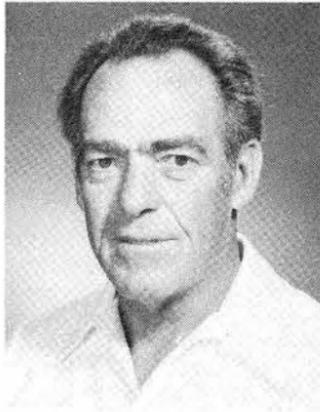
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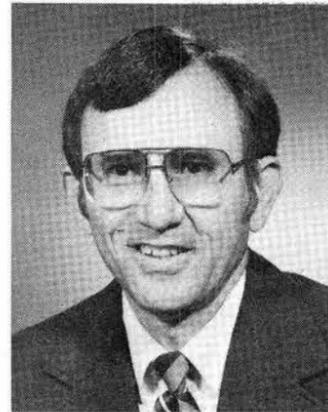
Adolfo Martinez - 7525 35



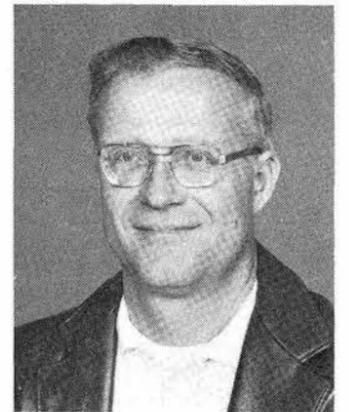
Kip Blossom - 7135 30



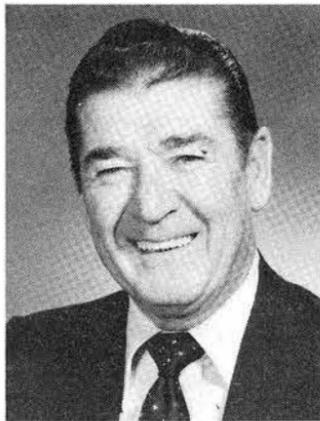
Jack Marceau - 2116 30



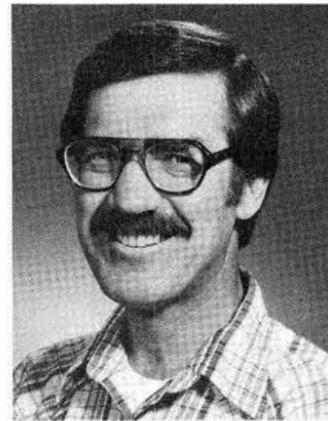
Bob Eldredge - 3543 20



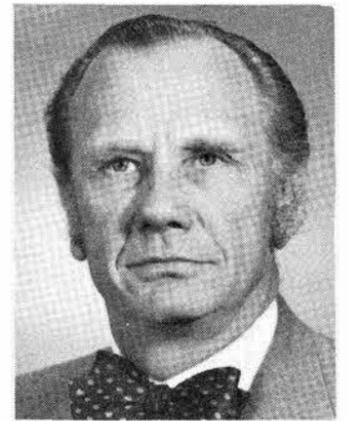
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John Wheeler - 3531 30



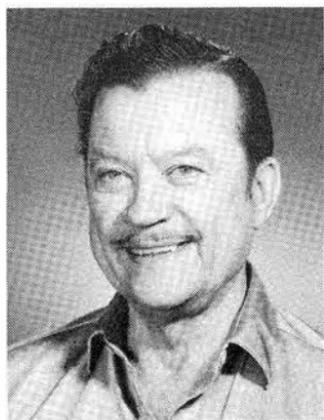
John Bagg - 9224 20



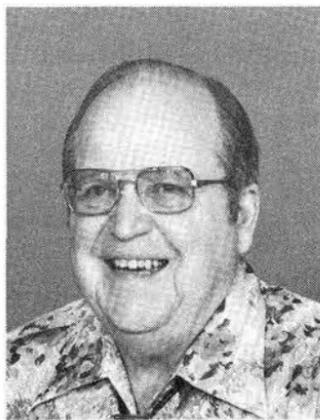
Gene Harling - 7100 25



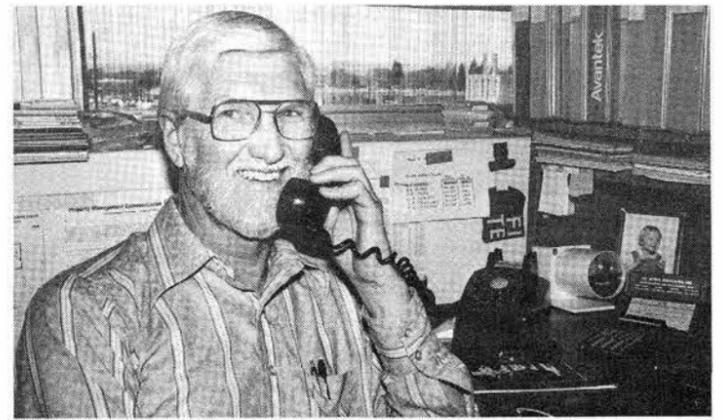
Henry Sorenson - 8463 25



Tom Stevenson - 9315 30



Bill Guntrum - 8412 30



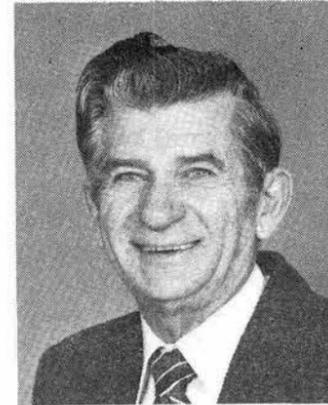
Gene Carter - 2342 35



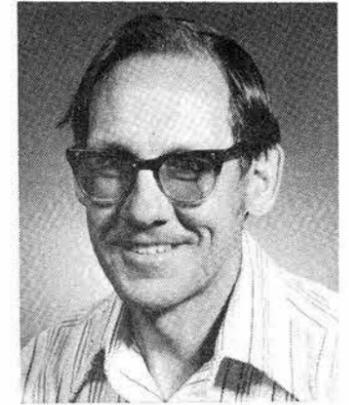
Jose Ortiz - 2631 20



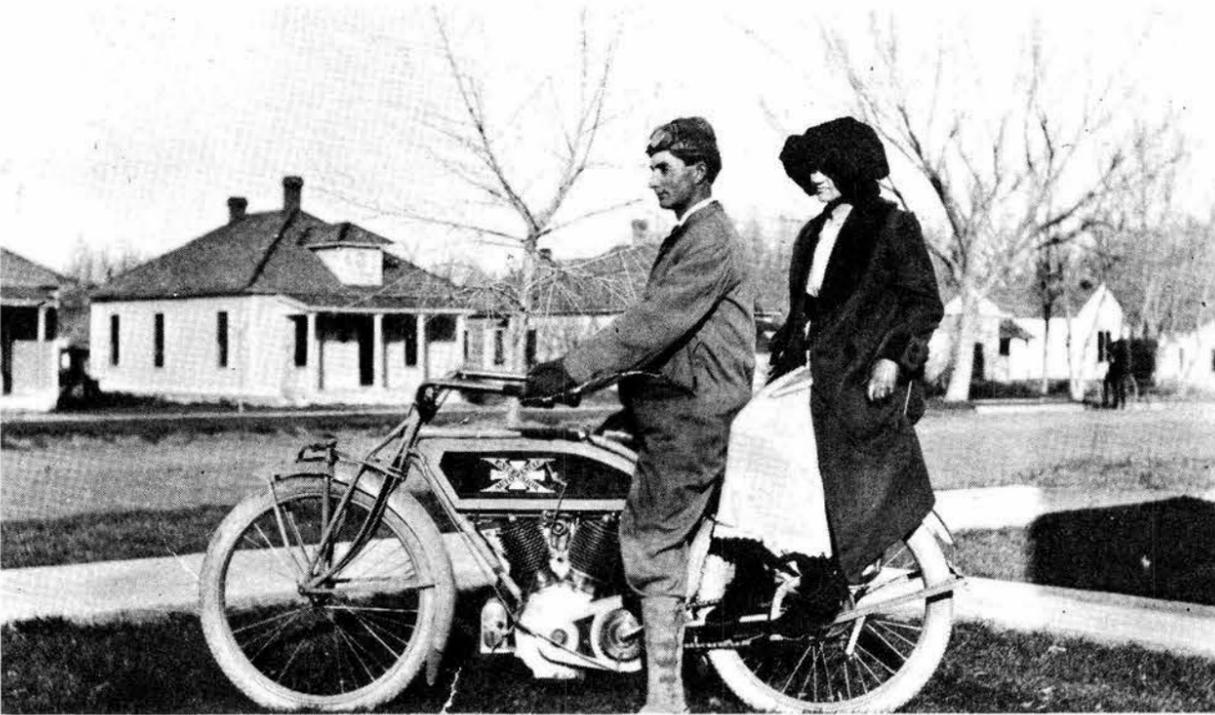
Arthur Jacobs - 3426 20



Emory Padgett - 8414 20



David Saylor - 2424 20



Favorite Old Photo

MY MOTHER AND DAD about the time they were married (1914) in Greeley, Colo. The Excelsior had no gears — getting under way required slipping the clutch. It took them the 50 miles to Estes Park many times.

Jack Williams (9213)

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5. For active and retired Sandians and DOE employees.
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7. No more than two insertions of same ad.
8. Include name and organization.
9. Housing listed here for sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

BEDROOM SUITE, king size, complete bed, triple dresser, nightstand, \$450/best offer; American Empire sofa, \$575. Finley, 292-0366.

FRENCH provincial bedroom set, twin/trundle/bunk beds w/mattresses & springs, nightstand, dresser, mirror, \$300; small loveseat, \$100. McConnell, 884-4345.

COLEMAN tent, American Heritage, 9'8"x7'2", \$75; marbleized ginger jar lamp, \$30; pedestal TV stand, \$18. Bliss, 296-3752.

TWO 10-spd. bikes; coffee table; DR table, extends from 1 1/2' to 8'. Eckley, 294-7650.

ORGAN, Fun Mate, rhythm, swing cord, upper & lower manual, etc., best offer. Renker, 293-3205 after 5.

EQUALIZER hitch receiver, fits Chevrolet pickups 1970-1983, \$140. Milton, 299-4586.

TORO rotary 21" rear bagger, hand propelled mower, 3.5HP, 4-cycle B&S, high torque, operator's manual included, 2 yrs. old, \$260. Strascina, 299-2285.

CAMPING cabin tent, 7'x9', never used, orig. cost \$203.25, sell for \$150. Menschel, 892-1112.

GE built-in range, elec., 36"; new Conn trumpet; BMX DeCoster bike; elec. guitar, solid body w/amplifier, Silverstone, make offer. Arana, 299-1214.

'69 CAMPING trailer, 18', new upholstery, 30-gal. water tank, stove, oven, flush toilet, heater, Roybal, 821-2279.

BED, twin size, w/mattress. Moss, 296-4109.

GREAT DANE pups, AKC reg., black w/white, 1 male, \$250; 1 female, \$150; avail. about May 18. Holt, 299-5943.

GE built-in elec. oven, \$75; GE port. dishwasher, butcher block top, \$95. Pavelko, 296-3346.

HEATHKIT electronic keyer HD1410, \$45. Nogle, 299-3863.

STORM WINDOWS, white, weather shield exterior mount, plastic frame, 3 ea., 24"x62", 5 ea. 36"x62", \$10 ea. Sutherland, 345-1183.

ONE X6K rim, 15", for Fiat, \$8; two P195/75R14 SB Uniroyal radial tires, both for \$35; four innertubes, 165-13, all for \$15. Cano, 296-6955.

SOUND DESIGN stereo receiver & 8-track player, Electroflex speakers, \$50. Paul, 296-6500 after 4.

SWIMMING POOL, 12'x24'x4', w/new pump, filter & cleaning accessories, \$600. Wronosky, 296-7265.

OCTAGONAL coffee table, \$100; end table, \$45; girl's 19" bicycle, \$30; boy's 19" bicycle, \$35; elec. smoker, \$30. James, 294-6837.

GARAGE SALE: May 21 and 22, 8-5, 428 General Stillwell NE, 4-family-sale, many items. Silva.

WATER PUMP, shallow water, w/pressure tank, \$75. Robles, 298-2456.

COUCH, \$40; daybed, \$20; coffee table, \$10; entertainment center, \$20; utility cart, \$10. Rarick, 293-0644.

STONEWARE dishes: Romany by Denby, dinner & salad plates, cups, saucers, water goblets, dessert bowls, oval platter. Strasburg, 299-4214.

AM/FM in-dash cassette w/auto. eject, locking fast forward, rewind, \$50; Jensen speakers, 4 1/2", 10 oz. magnet, \$25/pr. Magnuson, 821-5330.

NORGE natural gas clothes drier, completely rebuilt, new drive belt-bearing-lubrication, \$135 delivered. Tippy, 298-3758 after 6.

FUZZ BUSTER radar detector, reg. \$149.95, sell for \$100. Dubbs, 299-8350.

TWIN size bed w/frame, \$50; Coleman deluxe 2-burner camp stove, \$25. Baca, 296-8474.

TELESCOPE, Celestron 8" w/many accessories including Clave eyepieces, \$1200/best offer. Jon Norring, Livermore, (415) 447-0924.

CUSTOM TRAILER, lt. wt., 49x97x30, removable front, rear panels, extendable towbar, needs paint; extra tires, \$250. Stuart, 299-9190.

VIVITAR photo enlarger & misc. accessories, used briefly, \$50. Jones, 843-9645.

NEW starter golf set: 7 clubs, bag & balls, \$85; French provincial coffee table, \$35. Pinkerton, 255-2505.

FISHING FLIES, custom tied, std. patterns, \$7/doz. Swanson, 884-8650.

POOL TABLE, 8', 3/4" slate, w/accessories, \$250; china lavatory, 20", white, wall-mounted, \$15. Kepler, 298-5652.

ROCKWELL International table saw, \$100. Melick, 867-2860.

SOFA, blue & cream, 6', \$100; lamps, floor & table, \$25 & \$50. Kjeldgaard, 268-8835 after 5.

LAWN MOWER, push type, \$10. Rohwein, 298-8391.

SPANISH style den furniture: couch w/slate-top tables, wrought iron lamps, 3 matching chairs, Spanish oil painting. West, 299-6775.

AKC German Shepherds, male, 9 weeks, excellent pedigree, \$150 ea. Brown, 299-0315.

GE refrigerated air conditioner, 8500 BTU/hr., heavy duty, high efficient model, \$185. VanDenAvyle, 898-6474.

DOUBLE OVEN electric range, \$50. McIlroy, 299-4977.

ANTIQUE oak draw-leaf pedestal kitchen table & 4 solid oak chairs w/upholstered seats, back, \$440/OBO. Bagley, 821-8247.

32" FRENCH DOOR, 32" screen door, \$30 takes both; folding picnic grill, uses charcoal, \$10. Cox, 255-5657.

TRAILER for hauling older model Jeep, \$500; 50-gal. drums, 2 ea., \$10 for both. Falacy, 293-2517.

GRANDFATHER CLOCK, dark cherry, 3 chimes, moon dial, \$600; power reel mower, \$90. Jones, 299-9032.

WOMEN'S 3-spd. bicycle, \$40; girl's 20" bicycle, \$20; TV cart, \$20. Owyong, 294-1884.

DYNAMARK 22" rotary mower, no bag, \$20; Rockaway ping-pong table, \$25. Mead, 294-2298.

RACK for carrying bicycle on car rear, \$10. Hughes, 299-6674.

TRANSPORTATION

'81 FORD F-100 pickup, 302 V8, 4-spd., OD, PS, PB, 8' bed, 24K miles. Komarek, 265-4686 after 6.

BICYCLES: 3-spd. ladies, 10-spd. men's, \$80 ea. Gonzales, 883-4181.

'71 VOLKSWAGEN camper, 75K miles; rebuilt engine, suspension, brakes; new Michelin tires, \$2000. Koontz, 821-3910.

CATAMARAN, Prindle 16', w/trailer, \$2600 or best offer, will consider payments. Zeuch, 296-4969.

'71 CHEV. Vega, equipped for racing, modified 1978 350 engine. Arenholz, 298-1724.

'72 CUSTOM Triumph 650 Bonneville motorcycle, completely rebuilt & customized, many extras, \$2000. Gonzales, 344-4933.

BIKE, 82, SR, 12-spd., ridden 3 mos., many extras, \$220. Saxton, 299-8547.

'74 MGB convert., AM/FM radio, 4-spd. plus OD. Traver, 294-2138.

'79 MERCURY Capri, AM/FM cassette stereo, \$3100. Ramirez, 881-0128.

'74 MUSTANG, II, 4-spd., 4-cyl., 68K miles, \$1700/offer; '69 Yamaha AT1 125cc dirt bike, \$150/offer. Jones, 843-9645.

VW bug, '69 body, '73 rebuilt engine, best acceptable offer. Altwies, 292-3884 after 5.

'79 YAMAHA 650 special, black, windshield, helmets included, new chain, sprockets, \$1300/best offer. Mooney, 299-1774.

'58 CHEVROLET Impala convertible, V8, 348HP, 4-bar. carb., power top, Michelin radials. Halbegewachs, 268-1584.

'81 HONDA Civic 1500 DX, HB, 15K miles, AC, AM-FM stereo, sunroof, custom paint, \$5200. Kulju, 299-8182.

'81 HONDA 185XL enduro, 1150 miles, \$850 including helmet or best offer. Gurule, 292-4736.

HOBIE 14 sailboat w/trailer, \$1900. Melick, 867-2860.

'77 SCIROCCO (VW), 50K miles, new paint, louver windows, AM-FM cass., stereo, radials, \$3750 or make offer. Pierce, 883-2719.

'76 MAVERICK, AT, AC, PS, 6-cyl., 55K miles, \$1800. Rohwein, 298-8391.

'80 YAMAHA 650 Maxim, full dress, over \$1250 in options, \$2198. West, 299-6775.

'82 KAWASAKI, GPz 550, Unitrack suspension, 6-spd., less than 3500 miles, \$2175/OBO. Harrington, 292-7432.

'76 AUDI Fox, AT, AC, AM/FM, defoggers, radials, front-wheel drive, 65K miles, 30 mpg., \$2195. Neal, 294-3088.

21' REINELL BOAT, loaded w/extra equip., E-Z loader tandem axle trailer, \$9995. Falacy, 293-2517.

'80 SUZUKI GS 550E, plexifairing, Bates box, \$1550; girls 10-spd. bicycle, Sears, (Austrian), 270 miles, \$65. Bryant, 299-1292.

SAILBOAT, 18' trimaran, 11' wide, trampolines, very stable, fiberglass, trailer. Stacy, 268-6910.

'65 CADILLAC Fleetwood, \$1195. Stark, 298-6139.

MAN's 24" 3-spd. bicycle, \$30; woman's 3-spd. bicycle w/coaster brake by Shimano, \$35. Peters, 293-6356.

DUNE BUGGY, Sandrail, strong 1700cc, Protech frame, Bilsteins, sway-away, bugpack, steering brakes, quicksteer, quickshift. Hughes, 294-3021.

REAL ESTATE

REDMOND MH, landscaped, fenced, 2-bdr., 1 1/4 bath w/separate dressing room, located in Van Cleve park, 404 McDonald NE. Pawley, 296-2035.

NE, 3-bdr., 1 1/4 bath, den w/fp, \$74K, fixed rate assumable FHA, \$540/mo. or work out REC. Per-shall, 822-0814.

BRICK 4-bdr., convenient location, kitchen w/greenhouse window, 11 skylights, 1940 sq. ft. plus garage, \$85K, assume 8 1/2% VA or refinance. Wells, 294-1636.

IRRIGATED farm land in Bernalillo, approx. 2 1/2 acres, 15 mins. from Abq., \$39,500. Gonzales, 294-6823 after 5.

SE, 8 1/2% assumable, \$44K, 2-bdr., converted garage, lg. back yard, convenient location, wood floors. Hubbard, 842-9431.

1978 Castle MH, 14X72, 2-bdr., 2 bath, set up in Del Rey, 12 1/2% assumable loan, \$183/mo., \$2500 down, negotiable. Leili, 822-1667.

SANDIA PARK, 2 acres w/4-yr.-old, 3-bdr. house w/solar greenhouse & water heater, 80s. Davis, 281-1248.

MH, '81, 14x60' + 8X12' room, adult Four Hills Park, patio cover, carport, shed, price negotiable. Chandler, 293-3328.

2-BDR., 1 bath, Winrock Villas condo, inside & outside pools, assumable loan, \$48,500. Robinson, 883-4610.

HOUSE, Academy Hills, Territorial style built by Stone Co., 3-bdr., 2 bath, great room w/beamed ceilings, kiva fp, formal DR, \$109K, assumable loan. Shippe, 821-6581.

FIVE ACRES in Jemez Mtns., electricity, pure spring water, natural gas, Nat'l. Forest surrounding, ponderosa pine & meadow, \$48,500. Hughes, 299-6674.

WANTED

MUSIC program disks for Optigan electronic organ. Williams, 281-5586.

SUMMER student to house sit. Owens, 881-0815.

OLD phonograph records of 1920s & early 30s, exclusively jazz. Jon Norring, Livermore, (415) 447-0924.

HOUSE available, early July-mid August, near UNM, rent negotiable. Feibelman, 242-1946.

ELECTRIC trolling motor; CRT for Tektronix model 543B oscilloscope. VanDenAvyle, 898-6474.

.22 CA. Walther PP automatic, good working condition. Mead, 294-2298.

HOUSING for student summer work at Cochiti Dam or transportation from Abq. to Cochiti. Martin, 299-0410 after 6.

WORK WANTED

COLLEGE student available for painting & various yard work. Stephen Northrop, 884-4718

LOST

REWARD, lost 4/23 on softball field SW of Truman Gate: OD seabag containing bats, balls, etc., also LH glove. Chaba, 299-7578.

FOUND

LADIES watch in area of Bldg. 822, on May 5. Baca, 4-2372.

Spring Ball Tomorrow

TONIGHT beef or shrimp kabobs top the buffet menu while a country and western variety group called Shalako holds the bandstand. The buffet is served from 6 to 8 p.m. Special Happy Hour prices are in effect until 7:30 when the music starts. At 5:45 a special games event will be called in the main lounge. Next Friday, May 20, Frankie and the Corvettes play for dancing while a two-for-one crab dinner is served for \$11.50. For reservations, call 265-6791.

TOMORROW the big band sounds of the Billy Morris orchestra will fill the ballroom for the Club's annual Spring Ball. Chef Henry offers his famous Coquilles St. Jacques Mornay or, if this seafood delicacy is not for you, a serving of prime rib. Tickets to this dress-up affair are \$9. Call the Club office, 265-6791, *right now* for reservations.

NEXT TUESDAY, May 17, the Club offers a special two-for-one evening of dining featuring veal cordon bleu for \$10.95. In the candlelit dining room, pianist Alex Montoya plays your requests. Reservations from the Club office. Another two-for-one Tuesday is scheduled May 31 offering lobster or prime rib for \$12.50

PLAN NOW to spend the Memorial Day holiday, May 30, at the Club's grand opening party for swim season '83. Festivities start at 11 a.m. with fun and games for kids of all ages scheduled throughout the day. There'll be a western band under the gazebo in the afternoon with a swim season fashion show as an added attraction. Club members show their Club membership card for free admittance for themselves and their family, guests pay \$1. A special luncheon buffet line featuring barbeque sandwiches,



PIANIST ALEX MONTOYA plays your requests during Tuesday two-for-one dining at the Coronado Club. On May 17, the menu features veal cordon bleu, special for two at \$10.95. On May 31, try lobster or prime rib for two for \$12.50. Call 265-6791 for reservations.

French fries, and a soft drink for \$2 will be available. Other surprises are planned. Mark your calendar now.

TRAVEL — Now is the time to get serious about the Las Vegas trips scheduled this month — by bus May 29-June 1 for \$122 or by air May 29-31 for \$146. Sign up and make a deposit now at the Club office. The time is also growing short for a decision on the three-week China trip next September. Think about it and tell travel director Shirley McKenzie (2432) tonight in the Club lobby between 5 and 6.

Guarneri Quartet At June Music Festival

The forty-second season of the June Music Festival opens with the first of six concerts on June 1. Again this year, the resident musicians are the Guarneri String Quartet. Lee Luvisi, pianist, and Mitchell Lurie, clarinetist, will join the Quartet as guest artists.

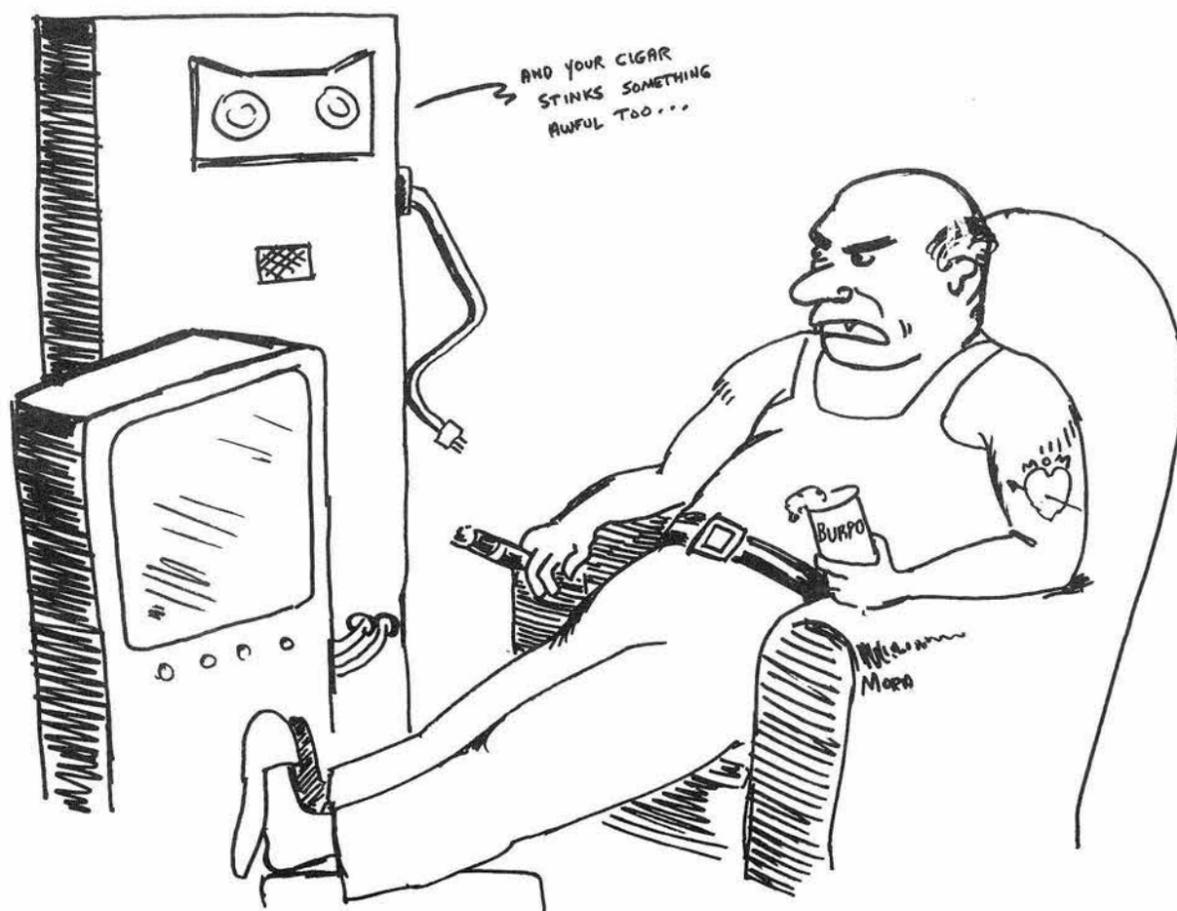
The concert schedule follows:

June 1	Beethoven	Guarneri
June 3	Mozart, Barber, Dvorak	Guarneri
June 5	Respighi, Brahms, Franck	Guarneri/ Luvisi
June 7	Mendelssohn, Martin, Beethoven	Guarneri/ Luvisi
June 9	Haydn, Brahms, Debussy	Guarneri/ Lurie
June 11	Lutoslawski, Mendelssohn, Tchaikovsky	Guarneri

The concerts will be at Woodward Hall, UNM, 8:15 p.m. A season ticket for all six concerts is \$40.10. Single tickets cannot be purchased before May 15 and, if available, will be \$8.60 for adults and \$5.60 for students. Ticket information may be obtained by calling 842-8565.

Events Calendar

- May 14-15 — Car & Airplane Model Show, Winrock Shopping Center, 883-6132.
- May 15 — "Canta, Nuevo México," a bilingual music and dance variety show by NM performers. Benefit for Leo Chavez. 2 p.m. and 4 p.m., KiMo.
- May 15 — Malcolm Dalglish and Gary Larsen Concert with Peter Sutherland, traditional Irish and American music, 8 p.m., KiMo.
- May 15 — Albuquerque Iris Guild Show, 12 noon - 6 p.m., Albuquerque Garden Center, 296-6020.
- May 19-June 19 — NM Water Color Society Art Show, Fine Arts Gallery, State Fairgrounds, 265-1791.
- May 20-21 — "Verdi Requiem," NM Symphony Orchestra and Chorus, with soprano soloist Martina Arroyo, 8:15 p.m., Popejoy.
- May 20-21, 27-28 — La Compañía performs García Lorca's "Bodas de Sangre" (Blood Wedding), in Spanish, 8 p.m., Nuestro Teatro, 256-7164.
- May 20-22, 27-29 — Classics Theatre's "Charley's Aunt," 8 p.m., KiMo.
- May 22 — Barbara Dane and Pablo Menendez Concert — blues, jazz and Latin American music, 8 p.m., KiMo.
- May 22 — Chamber Music Concert, 2 p.m., auditorium, Albuquerque Museum, 766-7878.
- May 22-June 18 — "Eating the Rind," group exhibition by five contemporary artists, free, Tues.-Sat., 11 a.m. - 4 p.m., Downtown Center for the Arts, 243-0531.
- May 24 — The Denver Center Theatre Company's "Quilters," a story of America's pioneer women as revealed in traditional patterns of hand-crafted quilts, with music, legends and histories collected from quilters; 7:30 p.m., KiMo.
- May 27-June 12 — "A Shot in the Dark," 8 p.m. Tues., - Fri.; 6 & 9 p.m., Sat.; 2 p.m., Sun., Albuquerque Little Theatre, 242-4315.



"Whaddyamean I can't drink beer during Masterpiece Theater?"