

# Sandia Instruments on Mission to Study Poles of the Sun

A little bit of Sandia is 135 million miles out in space, hurtling toward Jupiter at 60,000 mph.

Two solar wind spectrometers on board the Ulysses spacecraft, launched last October from the space shuttle, carry data processing, power supply systems, and mechanical housing designed at Sandia. Both spectrometers survived the launch and are now functioning properly, reports Joe Chavez, Supervisor of Sensor Systems Div. 9231.

The spectrometers are part of a package of 11 experiments on a mission to study the sun. The experiments represent the combined work of 120 investigators from 44 research institutions in 12 countries.

The brains of the spectrometers — in the form of circuit boards with microprocessors and memory chips that store and process data, interface with the spacecraft, control the power supply, and count incoming solar particles — were designed and built at Sandia. Sandia handled the instrument packaging, power supplies, digital electronics, flight software, and radiation hardening.

Sandians who helped design the spectrometers include Harvey Temple (9116) and Fred Wymer (9231), who worked on the high-voltage power supply; Terry Ellis (9231), who was involved in the design of the low-voltage power supply and ground support testing equipment; George Peterson (9213), who was involved in the design of the mechanical packaging; and Joe, who designed the digital electronics and the flight software.

## European Styling

Built by the European Space Agency (ESA), the Ulysses spacecraft will be the first to escape the predominantly two-dimensional gravitational forces of the solar system, traveling out of the rotational plane of the planets around the sun. This will enable the spacecraft to fly over the poles of the Earth's nearest star, giving scientists their

## Pick Up, Kick Off

# Next Phase of Strategic Planning Under Way

Early this week, three groups picked up where Sandia's 1990 Strategic Plan left off and kicked off the next phase — definition of the Labs' strategic intent and core competencies.

"What we're doing now evolves naturally out of that first phase a year ago," says President Al Narath. "That phase resulted in clear statements about our corporate values, about the changed environment in which we operate, about the broadening of our mission, and — on the global scale — about some of our desired outcomes and objectives.

"As discussed in the Plan's Foreword, that first phase provided guidance; it set a strategic  
*(Continued on Page Six)*

## Sandia General Information Booklet Available

The 1991 Sandia general information booklet is hot off the press, and employees can get one.

The 24-page illustrated guide to Sandia programs, facilities, and statistics is available to aid Sandians in communicating with visitors, vendors, customers, and others about the Labs' diverse roles.

Single copies are being sent to all Sandia supervisors. Other Sandians can get copies by sending a self-addressed internal mailing envelope (9-by-12 inch) to Public Information Div. 3161 (no phone calls, please). If you need multiple copies, call Div. 3161 on 844-8066.

first three-dimensional view of the sun.

"In order to get enough change of momentum to leave the ecliptic, the spacecraft has to slingshot around Jupiter," explains Joe. Jupiter's immense

**"In order to get enough change of momentum to leave the ecliptic, the spacecraft has to slingshot around Jupiter."**

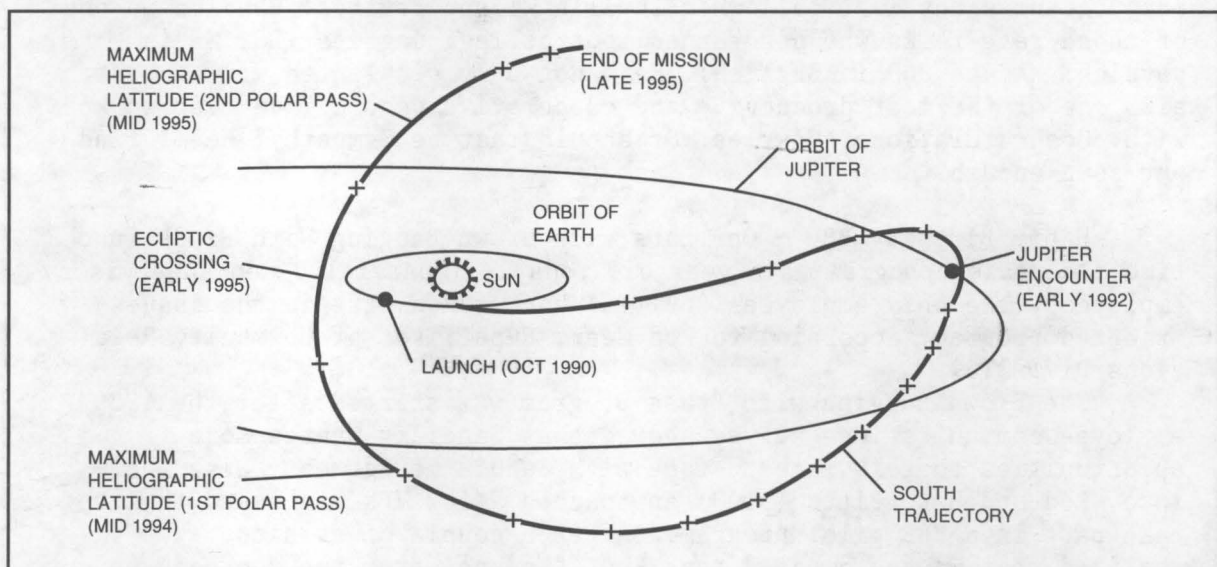
gravitational field will fling the spacecraft out of the plane of the solar system and toward the south pole of the sun. After making a four-month flight over the south pole beginning in June of 1994,

Ulysses will continue in a polar orbit and begin to approach the star's north pole in June of 1995.

Along the way, various scientific instruments will study the solar wind, the sun's magnetic field, its corona, solar radio noise, plasma waves, solar X-rays, cosmic rays, cosmic dust, interstellar gas, and gamma ray bursts. And for an added bonus, sometime during the journey, the sun's magnetic poles are expected to flip, a little-understood phenomenon that occurs every 11 years.

## Learning How the Sun Works

By studying the solar wind, scientists hope to learn more about how the sun works. "And since  
*(Continued on Page Four)*



TO REACH THE SUN, Ulysses will slingshot around Jupiter. The planet's immense gravitational field will fling the spacecraft out of the plane of the solar system and toward the south pole of the sun. After a four-month flight over the south pole in mid 1994, Ulysses will begin to approach the sun's north pole in mid 1995.



# LAB NEWS

VOL. 43, NO. 4

SANDIA NATIONAL LABORATORIES

FEBRUARY 22, 1991



DESERT STORM FAMILY FUND Volunteers — Janey Carroll (left, 3543) and Debra Babb (3545) were among about 25 Sandians, 10 Sandia Labs Federal Credit Union employees, and other Albuquerque area folks who staffed phones during last week's telethon on KOB-TV, channel 4. The telethon ran Sunday and continued Monday through Friday evenings and raised about \$57,000 to benefit the families of service men and women serving in Operation Desert Storm. The \$57,000 figure is expected to grow considerably after other contributions are mailed in from Sandians. Information sheets and special return envelopes were distributed to Albuquerque Sandians last week. The idea for the fund, which benefits military dependents throughout New Mexico, came from a group of concerned Sandians. The fund is being coordinated by United Way of Greater Albuquerque. (Photo by Mark Poulsen, 3162)

# This & That

**Risky Business** - Those of us in the publications business know that there are only about 16 million ways to mess up. Most LAB NEWS readers are familiar with two regular items that have been run for many years - "Congratulations" (in which we print names of employees recently married or who have new bundles of joy) and "Sympathy" (in which we print names of employees who have recently experienced deaths in their families). Retired LAB NEWS editor John Shunny was in several days ago and mentioned an issue many years ago in which the headings on the two items were mistakenly switched. Ouch! Ouch! Ouch!

\* \* \*

**Shirley, We Won't Do That Again!** - To ensure that we never make another such mistake (famous last words), I recently appointed LAB NEWS writer Charles Shirley as LAB NEWS Assistant Editor, a position that's been vacant since last fall when Phyllis Wilson retired. Charles is one of those rare folks who has earned four college degrees (BS, MS in physics; MA and PhD in English). He's not only a talented writer, but also one of the most productive and cooperative people I've ever worked with. Congratulations, Charles. Or should that be Sympathy? He'll find out soon enough.

\* \* \*

**Happy Birthday BBB** - Our Labs-wide Brown Bagging With Brass lunch-time discussion program is a year old today. Almost 1,100 non-supervisory employees (the only employees invited) have taken part in the issues-oriented program, according to Rod Geer, Supervisor of Community Relations Div. 3163.

The Brown Bagging with Brass program was started after the 1989 employee communications survey showed that Sandians wanted more opportunities to talk face-to-face with Sandia management. With that info, Rod and Herb Pitts (3100) approached a few VPs and asked them to take part in a BBB pilot program. "After a couple of sessions, we realized that we had a hit," says Rod. "We know from the feedback we get that it's an effective and satisfying communications tool. It's also a pretty frugal program that doesn't consume a lot of time for the invited employees or the host [a position rotated among members of the Sandia Management Council]."

\* \* \*

**Big Profit Potential** - Standing in line at the Kirtland Post Office early this month, I overheard the clerk tell a customer that the office was completely out of one-, two-, three-, and four-cent stamps that so many folks needed to add to their stock of 25-centers. The next customer stepped to the window and proudly announced that he had plenty of four-cent stamps because he had bought them right after the new 29-cent first-class rate was announced. The fellow behind me was desperate, loudly offering, "I'll give you a dime apiece for those babies." No deal, though. The other guy gave a smug little smile and walked away.

\* \* \*

**OK, Who Has 'Em?** - Speaking of mail, I hate to complain about our internal mail service because the folks in Mail Services Section 3154-4 usually do such a fine job. But I simply must speak up. For the eighth year in a row, I didn't receive a single valentine in the company mail. How they get lost every year is a real mystery! ●LP

Headed by Al Chernoff

## DOE Establishes Kirtland Area Office

DOE's Albuquerque Operations Office Manager Bruce Twining has established a Kirtland Area Office (KAO) to provide better oversight of Sandia, the Inhalation Toxicology Research



AL CHERNOFF

Institute (ITRI), and Ross Aviation.

KAO will report to the AL manager's office as the other area offices do, says Twining, to provide day-to-day oversight.

"There used to be a Sandia Area Office, but it was abolished," Twining says. "About three years ago,

MSD [AL's Management Support Division] was given an area-office-like role, and Al Chernoff was asked to direct both the division and the area office functions."

### Office at Wyoming and Gibson

Twining has named Chernoff as the new KAO area manager. He will be located in Kirtland Bldg. 20200 (at the intersection of Wyoming and Gibson) with several DOE branch offices.

KAO's Administrative Branch will be in Sandia Bldg. 802. A KAO on-site representative will also be at Sandia, Livermore.

Sandia President Al Narath says, "We welcome this new arrangement. We've always enjoyed working with Al. Having the area office will be mutually beneficial as we carry out our national mission. And on a personal note, congratulations to Al on his new assignment."

### 'Jump Start' Encouraging

One of Chernoff's first big jobs is working with Sandia in preparation for the Tiger Team visit beginning April 15.

"Sandia has already begun its 'jump-start initiative,'" he says, "which involves carefully reviewing more than 700 sites regarding conduct of operations and compliance with environmental regulations. The reviewers will visit each facility." Chernoff says he is encouraged by Sandia's self-corrective actions.

Some of his near-term goals, Chernoff says, are to:

- Get successfully through the Sandia Tiger Team visit.
- Help Ross Aviation become more cost effective and to continue to provide quality service.
- Give ITRI the support it needs to maintain its programs.
- Help Sandia, Livermore clean up the site on the basis of the recently completed Tiger Team action plan.
- Assist Tonopah Test Range in developing a structured program with proper oversight to help comply with environmental concerns.

Now that Chernoff is KAO manager, the acting director of MSD is Andy Gonzales. ●

### Medical Corner

## Turbulent Times

"A lot of us feel that we live in the greatest time and greatest country in history, but the Gulf War and other uncertainties make the times seem more turbulent and unpredictable than ever," says Arlene Price (3300), Sandia psychologist. "It helps to talk about your concerns. I'm here to assist Sandians, especially during these difficult times. Let me know if you would like to talk with me one-to-one or in a small group." Arlene can be reached on 5-8729.

## LAB NEWS

Published Fortnightly on Fridays

SANDIA NATIONAL LABORATORIES

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LIVERMORE, CALIFORNIA 94550  
TONOPAH, NEVADA  
NEVADA TEST SITE  
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Sandia National Laboratories, a prime contractor to the US Department of Energy, is operated by Sandia Corporation, a subsidiary of American Telephone and Telegraph Co.

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## Take Note

Every Saturday for the last three years, Richard Petersen (7532) and his son Jared have taken their recyclable aluminum to Reynolds Aluminum recycling centers, and it has paid off in more than the usual price per pound. Richard recently won \$5,000 in Reynolds' Great American Outdoors Game, a six-month national promotion encouraging recycling.

\* \* \*

Recent retirees not shown in LAB NEWS pictures: Lawrence Bennett (7545), Lawrence Gallo (5248), Diana Holdridge (1421), Herman Kaneshiro (7473), Helen Lucero (2818), Benjamin Roscoe (2565), Phyllis Wilson (3162), Elizabeth Ramirez (3426), Patricia Ahr (7851), James Constant (7413), Wynona Durham (2800), Joseph Flanagan (3153), Francisco Gurule (2522), Doris Jackson (3155), Lawton Miller (9145), Lillian Katzenstein (3423), Barbara Nielson (3522), Donnie Papineau (7815), Orlando Rodriguez (7818), Urbano Salas (3428), and Socorro Silva (3301).



**Major Cost Savings for Sandia/DOE Shops**

# Floppy Disk Beats Paper Tape in Machine Control

In the early 1980s, Jim Hopwood (8541) put his finger on a weakness of numerically controlled machine tools: the too-high error rate of a "mechanical finger" system that sensed holes in punched paper tape.

Jim and Bruce Affeldt's (8484) work on a replacement system — which uses floppy disks rather than paper tape — helped increase the efficiency and reliability of machining parts at DOE laboratories. It also helped launch a private business.

"This contribution demonstrated Sandia's commitment to technology transfer long before it was encouraged by DOE and Congress," says tech transfer officer Mike Dyer (8300A). "The interaction helped a two-person business develop into a major supplier of an important component in numerically controlled machines."

Now employing 100 people, Greco Products of El Cajon, Calif., has sold more than 15,000 sys-

**"We had to stop talking every time a train passed."**

tems, called CNC Minifiles, to machine shops and major machine builders throughout the world.

Jim, now an electrical safety engineer, was involved in instrumentation design in the early '80s. He was looking for ways to bypass the "mechanical fingers" that read codes recorded as holes in paper tape. Tapes were used to control precise movement of machine tools.

All too often, data input errors would occur, particularly on long part programs. This would require starting over again — or worse, scrapping the entire machined part. In addition, the paper tape required hours to punch and frequently contained data errors that had to be corrected.

The bottom line was wasted time and money.

**Small Ad, Big Results**

Strictly by chance, Jim spotted a small trade-magazine ad for a replacement process that eliminated the error-prone paper tape system. Jim soon was on a plane to Southern California to discuss the advancement with Vito Greco, who had placed the ad.

Jim laughs about their first meeting: "Greco and his son, his only employee, worked out of an

**A 1982 Sandia report listed 12 advantages of the floppy-disk system over punched tape.**

old house next to a railroad station. We had to stop talking every time a train passed."

However, the idea was solid. Jim agreed to help the Grecos design the prototype. After a year that included a few bad starts, a half dozen trips back and forth, and long after-work hours spent on refinements, the new system was up and running.

Jim designed the interface electronics, which are adaptable to any model of numerically controlled equipment by setting miniature switches on a single wiring board. Another major contribution came from Bruce, a numerical control programmer, who designed the coding process software.

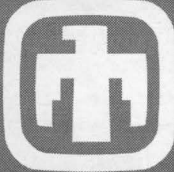
In a 1982 Sandia report, Jim listed 12 advantages of the floppy-disk system over the punched-tape process. Major improvements, for example, are that it can record in three minutes the same data that used to take 45 minutes to punch.

**Faster and Cheaper**

The basic floppy-disk system, which sells for about \$2,300, saves about \$10,000 a year per machine, compared with paper tape. Other advan-



HOLDING A CNC Minifile punched tape emulator, Bruce Affeldt (8484) stands with Jim Hopwood (8541) in front of a numerically controlled milling machine in the Sandia, Livermore machine shop.



## SANDIA LIVERMORE NEWS

tages: it has faster data transfer time, eliminates all errors associated with data input, and drastically reduces storage space needs. These improvements add up to major cost savings for Sandia shops.

During recent years, the system has undergone revisions, changing from a 5-1/4 to 3-1/2-inch floppy disk with new options. But the system still operates on the same principles developed 10 years ago.

About 30 such systems are used at Sandia, Livermore for building prototype parts and fixtures, and dozens more are operating at other DOE laboratories that work with machine tools.

Jim credits Sandia's forward-looking work philosophy, which allowed him to work on side projects on his own: "We operated on a low-budget, low-key basis and supported a needed improvement by contributing our expertise."

Bruce describes the satisfaction that comes with filling a need and helping someone get started with a business. And, he adds, "I still get a kick whenever I go someplace and see people using the system that we designed here."

Jim has also aided the welding industry by making significant improvements in automated

**Each \$2,300 system saves about \$10,000 a year.**

welding equipment controls and instrumentation. Although he has received no financial gain, he has transferred his work to manufacturers.

"Often our work seemed to put us in a position where off-the-shelf purchased equipment lacked the performance needed for the required welding processes or machining operations," Jim says. "So we had the perfect opportunity to make significant contributions in these industries." ●

**"What Do You Think?" —  
This Week's Question:  
Albuquerque – Livermore  
Teamwork — See Page Five**

## Supervisory Appointment

DWIGHT SORIA to Supervisor of Preventative Maintenance Section 8513-2.

Dwight began working at Sandia, Livermore in September 1966 after four years in the Air Force, where he served on ground crews for B-52 bombers and KC-135 air refueling tankers. His



DWIGHT SORIA

and refrigeration systems.

Dwight has a certificate in supervision from Chabot College.

He and his wife Patricia have one daughter and live in Pleasanton. Among his free-time interests, Dwight enjoys slow-pitch softball and is an old-movies buff.



**Lots of Re-Signing Going On****Parking Changes Reward Customers, Non-Management Sandians**

1. Show your clients you care about them.
2. Reward the Sandians who get to work early.

Those basic rules of customer and employee relations underlie the current reallocation of reserved parking slots at most of Sandia's Tech Area gates in both Albuquerque and Livermore.

**Goals of the project:**

- Retain a few slots in the nearest-the-gates locations for handicapped and medically restricted Sandians.

- At least at the main gates, reserve the second-nearest slots for clients, customers, and other visitors.

- Allow early-arriving Sandians to park nearer the gates.

- Reduce by 25 percent the number of slots reserved for department managers and above (a quarter of that group is not on site on a typical day).

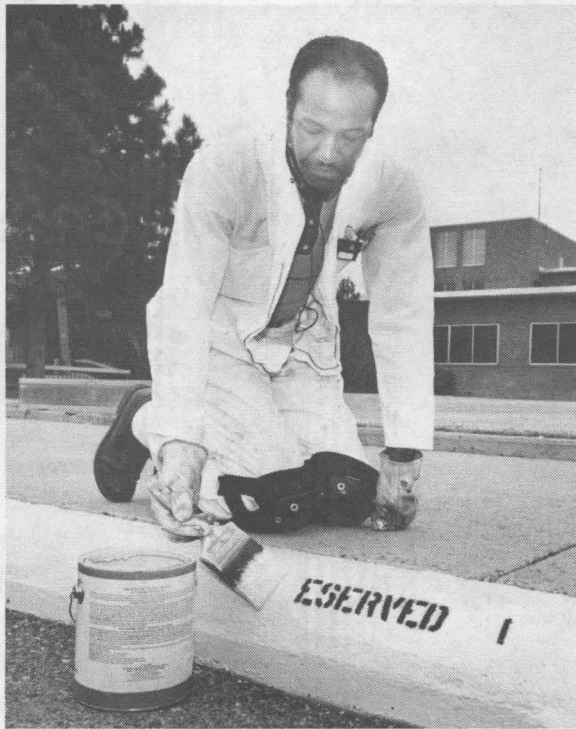
- Put those slots in good, but not prime, locations.

- Do away with individually numbered slots for management.

- Retain current numbers and general locations of carpool, second-shift, government-vehicle, and "employees-on-official-business" slots.

The changes, authorized by the Sandia Management Council last month, reflect a new focus on Sandia's visiting customers, a "delight-the-customer" focus heightened by across-the-Labs training in Quality Awareness and PQMI (Process Quality Management and Improvement).

"Our visitors are important," says Larry Bertholf, Director of Quality Improvement 7300. "We value visits by members of DOE and other federal agencies. More and more often these days, we're visited by representatives of universities and private industry with whom we're working to develop R&D partnerships. And our



EVEN THE PRESIDENT gives up his individual parking slot as Sandia changes to a new arrangement favoring visitors and early-arriving employees. Manson Smith (7813) makes it official by painting out Al Narath's designation in a lot near Bldg. 800.

suppliers are providing us the tools and equipment we need to operate.

"We want to show all these people that we appreciate their visiting us. Close-in parking is one way to make a good impression early in their visit."

"The change also reflects the belief that all of our people deserve equal access to close-in parking," says Dan Hartley, VP of Corporate

Change Management Org. 5. "The 'first-come, first-served' principle is a small step, but it shows management's commitment to an important direction.

"Other companies across the country have successfully used a change in parking policy to underscore the need for more important, but less visible, changes in corporate culture. We're hoping that Sandia will benefit just as much as they have."

The task of slot juggling was coordinated by Joe Archuleta, a Facility Customer Representative in Project Management Div. 7823 and head of Sandia's Traffic Liaison Committee. "I've received excellent cooperation from the project team involved," says Joe. "So we expect the task to be completely finished by Monday, March 4. With enough good weather to allow all the weekend repainting we need, we may be finished even earlier."

After a shakedown period, the traffic committee will check the parking lots to ensure the right mix of slots. For example, the number of visitor slots might go up or down, depending on typical usage.

Sandians on the project team include Garland Tilley (3437), who is issuing the stickers for vehicles approved for parking in management-reserved areas; Gus Arellano (3215), who handled safety concerns; Carlos Medrano (7821), who assisted with overall planning for the changes; Jim Winters (7813), whose group of painters "re-signed" the small lots; and Elwin Schaefer (7845), who furnished drafting resources. ●BHawkinson(5)

**Sympathy**

To Tony Jojola (7473) on the death of his mother-in-law in Isleta Pueblo, Jan. 25.

(Continued from Page One)

**Ulysses**

the sun is what sustains all of our life and provides nearly all of our energy, that's a very important topic," notes Joe.

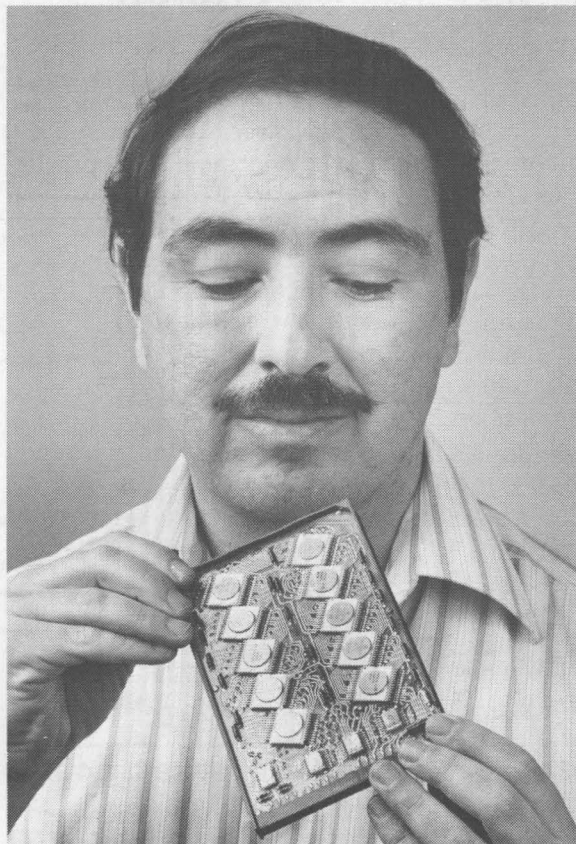
Though the sun is a star of only average mass and luminosity, its energy is awesome. According to an ESA film on the mission, titled "Ulysses: The Movie," the sun releases in one second as much energy as the United States might use in 30,000 years. Changes in the sun's output have profound effects on the Earth. Such changes have made possible the evolution of life on Earth, the transformation of lush valleys to deserts, and the advance of the Ice Ages in regions that were once much warmer.

"All measurements of the solar wind so far have been made from the same direction," adds Joe. "Earth's satellites are all in the same plane,

**The sun releases in one second as much energy as the entire United States might use in 30,000 years.**

so essentially, they see the same view of the sun that we see. What we've seen so far comes from the equator of the sun; Ulysses will give us an opportunity to see everything from a different perspective."

The Solar Wind Plasma Experiment should be able to measure changes in the properties of the solar wind as a function of distance from the sun and from the ecliptic plane. The solar wind is a gale of protons and electrons that form a hot, magnetized gas or plasma. It is believed to originate from dark spots on the sun, which generate solar flares that spew the plasma out into space.



JOE CHAVEZ (9231) examines a printed circuit board like one designed by Sandia for the Ulysses spacecraft, a mission now on its way to study the poles of the sun.

If, as scientists suspect, the solar wind is less twisted by magnetic fields at the poles than at the equator, it will be easier to study. The Solar-Wind Plasma experiment will help explain how electrons and heavier ions are generated by the sun's nuclear-fusion furnace, where temperatures and pressures at the core are so great that the nuclei of hydrogen atoms are fused to form helium.

"The spectrometers are already gathering data from the solar wind constantly and will continue to do so throughout the mission, which ends in 1995," says Joe.

**Proposed by Los Alamos Physicist**

Samuel Bame, a physicist at Los Alamos National Laboratory, is the principal investigator of the Solar-Wind Plasma Experiment. He proposed the two spectrometers — an ion spectrometer and an electron spectrometer — to analyze charged particles emitted from the sun. In fact, Bame was one of the earliest scientists to confirm the existence of a solar wind after it was first detected in 1962 by the Mariner 2 spacecraft on its way to Venus.

Built by Los Alamos, the spectrometers will act like a space version of a weather station, measuring the energy, number, and direction of particles in the solar wind blowing past the spacecraft. They will observe particles with energy levels of 1 electron volt to 35,000 electron volts.

Both spectrometers were turned on and tested for the first time last November. Scientists discovered a minor glitch in one of the ion spectrometer operating modes. They corrected it by changing the command sequence sent to the instrument to tell the high-voltage power supply to continue running while the instrument collected data on heavy ions.

Originally dubbed the International Solar Polar Mission, Ulysses was renamed after a contest in 1984. The winning entry, submitted by an Italian scientist, came from Dante's *Inferno*. The story tells of a Ulysses who becomes bored with everyday life and sets out to explore an "uninhabited world beyond the sun," referring to the world beyond Gibraltar, which at the time was completely unknown and unexplored. ●LD

**What Do You Think?****Sandians Offer Ideas for Saving Money, Time**

This is the fourth in a series featuring employee responses to questions posed by the LAB NEWS. The idea is to give Sandians an opportunity to suggest ways to make the Labs more efficient, more responsive, and perhaps a better place to work.

The current question: What is your best idea for saving Sandia money or time? The following responses were received. Only minor editing changes have been made:

Streamline the procedure for sending overnight mail such as Federal Express or Express Mail. The present system requires the sender to take the item personally to Shipping or Mail Services and fill out address forms. Why not have a system where the sender simply attaches the necessary information to the item, flags it as overnight mail, and places it in a regular local [Sandia] mail pickup box? This would save a lot of time for senders, and it also may streamline mail operations by sparing mail employees from additional interruptions.

Bob Kipp (5165)

Stop using EZ-Go carts. The number of carts in use has grown dramatically during the past few years, increasing traffic and costs. Removal of these carts would save money in several areas, including purchases, maintenance, fuel, and health care (walking is much more healthful than driving a cart with heart-stopping backfire tendencies). I realize it takes a few more minutes to walk across an area than to drive, but the time consumed in locating keys and carts and finding a parking space brings the time costs of driving quite close to those of walking.

Mary Kay Austin (7822)

We could save time and money by reducing the levels of Sandia management. In some cases, Sandians have seven levels of management above them — section supervisor, division supervisor, department manager, director, vice president, executive vice president, and president. This is not efficient, and we should reduce this outdated bureaucratic structure as soon as possible.

Name Withheld by Request

Sandia could profit from more effort in prioritizing work and managing resources. We can start by enhancing accountability for saving money and time. Encourage Sandians to assess costs and benefits of all activities, prioritizing them according to identified customer requirements, and negotiating with management to not do as many low-priority tasks as is feasible. Let's also recognize and reward good comprehensive planners (not "firefighters")

at every level of Sandia who use processes such as quality, project management, and strategic planning to address cost, performance, and schedule constraints, to minimize duplicated effort and waste, and to enhance the success of Sandia projects on the first try. Make it fashionable to save money and time!

Steve Goldstein (9020)

The chemical exchange program permits real money (and ES&H) savings. However, the amount of material sent to Property Reapplication that is still useful is appalling. I think we should start an equipment exchange that would allow everyone in the Labs to easily swap equipment that would otherwise be sent to Reapplication.

Bill Ballard (9341)

*Editor's Note: A member of the Sandia Barrier Busters team is currently exploring this idea with Property Reapplication Div. 3414.*

Often, materials and equipment are determined to be excess by various departments at Sandia. During cleanup campaigns, equipment is sometimes stacked outside buildings without protection from inclement weather before being transported to Property Reapplication. Many items are valuable and could be used by other departments if the items are not allowed to deteriorate. Sandia (and taxpayers) could save large sums of money if the surplus material could be protected and its availability made known to other departments.

Maurice Dillon (1275)

*Editor's Note: An ad hoc Sandia group, including representatives from the line organizations, is working to establish procedures to ensure that excess usable property is properly cared for, both before and after it is sent to Property Reapplication.*

Sandia should consider labeling equipment with its cost and date of acquisition. This practice may make individuals aware of the high value of items and cause them to use and handle the equipment with greater care.

Tom Hamilton (contractor)

**What Do You Think?****Next Question:  
About Cooperation  
Between Livermore  
And Albuquerque**

"Sandia is one laboratory." That phrase and variations are often uttered by Sandia's president and other members of management. As a practical matter, however, geography makes it difficult for Sandians to work together as a team. **What can be done to improve cooperation and teamwork between Sandians at Albuquerque and Livermore?** We hope to hear ideas from folks at both locations. Send responses to "Question," Division 3162, to arrive by noon on Wednesday, Feb. 27. If you prefer, responses can be faxed to 844-0645.

Please limit responses to 75 words, concentrate on presenting constructive ideas, and include your name, organization, and phone number with your response. We print names and organization numbers with the response unless you request otherwise, but we'll call you personally to verify that you submitted it before we go to press. If you tell us you do not want your name associated with your response, we will not reveal your name to anyone, but we still need your name to verify that the response is from a Sandian.

Suggestions for future questions are appreciated.

**Ridesharing Results****Survey Shows Many Sandians Commute with Co-workers**

Ridesharing statistics for Albuquerque Sandians are in and tabulated, and the results are encouraging, says Linda Stefoin (3543), Albuquerque's Commuter Assistance Coordinator. Linda sent more than 6,500 surveys out last month to characterize employees' commuting styles. More than half were returned.

According to the returned questionnaires, an estimated 30 percent of Albuquerque Sandians share a ride, walk, or ride a bike to work regularly. The Association for Commuter Transportation, a private association that tabulates figures for commuting habits of employees across the country, considers that figure an excellent percentage, Linda says.

"These results are exciting," says Linda. "It is important to note the positive things Sandians are doing, without pressure or special incentive, for the good of the city and the overall environment."

Still, the other 70 percent of the responders indicated they ride alone to work, which suggests there's still room for further economy. Also, Linda warns, although the number of surveys returned (3,413) represents a large percentage of Sandia's population, the actual percentage of Sandia ridesharers could be slightly lower than the informal survey indicates.

The questionnaire results show that 69.5 percent of Albuquerque Sandians who responded drive alone, 14.1 percent carpool, 7.3 percent bicycle, 6.1 percent ride buses, 1.9 percent ride in vanpools, 0.7 percent walk, and 0.4 percent ride motorcycles.

In addition, the survey prompted more than 1,700 requests for information about ridesharing, such as bus schedules and names of other Sandians interested in carpooling. If only a fraction of those people begin ridesharing, says Linda, the numbers will improve significantly.

For each mile driven, the average vehicle emits 2 grams of hydrocarbons, 15 grams of carbon monoxide, and 2 grams of nitrogen oxide. Those numbers can be divided by the number of individuals in a carpool or vanpool, says Linda, and can be eliminated for walkers or bikers.

Responders gave several reasons explaining why they don't share a ride to work, including child drop-off and pick-up, lack of a set schedule, school attendance, and unusual residence locations. Many said they would consider ridesharing if they could find someone with a similar schedule, if the price of gas went up, or if they could find someone with similar child responsibilities.

Linda said several Sandians showed their concern about two issues: lack of a safe bike entrance at the Eubank gate and lack of enforce-

ment of carpool parking rules. Linda says a study is under way with the city, KAFB, and Sandia to rework the Eubank gate without causing traffic problems. She also advises Sandians to contact Capt. Garland Tilley (3437) about any carpool parking violations. ●JG

**Earnings Factors  
November 1990**

Long-Term Savings Plan for Management Employees (LTSPME)	Earnings Factors
AT&T Shares	.9448
Government Obligations	1.0133
Equity Portfolio	1.0690
Guaranteed Interest Fund	1.0071
South Africa Restricted Fund	1.0613

**Long-Term Savings and Security Plan (LTSSP)**

AT&T Shares	.9446
Guaranteed Interest Fund	1.0070
South Africa Restricted Fund	1.0625
Equity Portfolio	1.0692
Employer Stock Fund	.9470

(Continued from Page One)

## Strategic Planning

direction to help activity committees, organizations, and individual Sandians initiate their own strategic thinking and planning. None of us has seen all the progress inspired by that Plan, but we've all seen some of it.

"Now the time is right to hammer out a definitive statement of our strategic intent — the challenge to be met," Al continues, "and to couple that intent with our core competencies — capabilities in terms of skills and drives and facilities that make Sandia unique, and therefore valuable to the

nation." (See "Expected Outcomes," this page).

Unlike the 1990 Strategic Plan, crafted only by the SMC (Sandia Management Council) in a series of marathon meetings, the new phase will involve two other groups as well. The overall process was developed by a Process Management Team headed by Gerry Yonas, Director of Laboratory Development 400.

"Definition of strategic intent and core competencies — we call it 'Phase 1A' for short — will take us from Feb. 18 to about April 9," says Gerry. "The work to define our strategic intent is certainly part of the SMC's responsibility for Labs leadership, but we've formed two other cross-Labs groups, the Input Group and the Output Monitor

Group, that will help us define requirements for both 'strategic intent' and 'core competencies.' That's what we all worked on this week."

Part of the definition of strategic intent involves Sandia's response to the nation's needs. Some raw data to be considered here includes the lists of national problems gathered by SMC members and Change Ambassadors in surveys of Sandians and non-Sandians (see "Change Ambassadors Face Future," this page).

### Surrogates for Sandians

In addition to helping define requirements, the Input Group will work independently of, but in parallel with, the SMC to identify the core competencies that should be enhanced or nurtured to support strategic intent. Charter for the Input Group includes an admonition to garner unconventional ideas from across the Labs. Near the end of the cycle, both the SMC and the Input Group will subject their lists of core competencies to the Output Monitors.

The dozen or so Output Monitors will act as surrogate customers for the planning process; essentially, they will represent all Sandians. In fact, they will have the right and the responsibility to tell the SMC or the Input Group to "do it over again" if an outcome doesn't meet the agreed requirements.

Once the SMC and the Input Group meet the requirements for core competencies, the SMC will reduce the two lists to four to six Labs competencies. ●BHawkinson(5)

### Predicting Problems of 2001-2011

## Change Ambassadors Face Future



**Managing Change**

The three Es — environment, energy, and economy — will cause

(or continue to cause) the nation its greatest headaches 10 to 20 years from now.

That seems to be the most common view among the 3,261 people (about half of them Sandians) surveyed recently by Sandia's 380 Change Ambassadors (CAs). Sixty percent predicted problems in one of those three categories. The CAs were completing one of their first homework assignments for their sponsor, Corporate Change Management Org. 5.

"We're delighted with the response," says Jo Ann Romero (5), who heads the CA project. "Collectively, the CAs are already showing that they're action-oriented and eager to contribute to Sandia's change efforts."

Mirroring the survey that members of the SMC (Sandia Management Council) had conducted in January, the CAs gathered more information that may be valuable to the new phase of strategic planning (LAB NEWS, Jan 25).

Each CA asked five Sandians and five non-Sandians this question: "What major national problem is likely to concern you 10 to 20 years from now?" The assignment focused on one of the Change Ambassadors' roles — that of serving as information conduit up, down, and across the Labs.

Information from the SMC and CA surveys will serve as raw data for the next phase of Sandia's strategic planning effort (see "Next Phase of Strategic Planning Under Way," page one).

CA Heather Allen of Statistics, Computing, and Human Factors Div. 7223 categorized the 3,261 responses and constructed the following table:

Category	National Problem	Responses	Percent
Environment	general (e.g., safety of, destruction of, education about, manage, research)	306	26%
	toxic/non-toxic waste management	189	
	global warming/greenhouse effect	70	
	pollution/environmental restoration	195	
	water quality/resources, air quality	76	
Energy	general (e.g., concerns for future, independence, continuing research)	192	18%
	developing alternatives (e.g., fossil fuels, wind, solar, nuclear)	296	
	conservation/availability	52	
	lack of a national energy policy	33	
Economy	general (e.g., taxes, losses of jobs, cost of war, loss of middle class)	101	16%
	national debt/budget deficit/banking system	211	
	growth/competitiveness/strength	98	
	social security system	63	
	decline in the standard of living/inflation	60	
Social Issues	general (e.g., large welfare class, decline of individual freedoms, child care)	51	8%
	world stability/hunger/poverty/homelessness	50	
	world peace	66	
	decline of morals and ethics	44	
	increase in crime/violence	26	
	family stability/decline of the family	37	
Education	general (e.g., cost, competition with other countries, quality)	145	7%
	preparation for a technical society/reduce tech. illiteracy, advance tech.	71	
Defense	general (e.g., no conflict-resolution scheme, maintain defense capabilities)	71	5%
	shift from a nuclear to non-nuclear defense posture — management or regulation?, SDI, treaty verification, status of nuclear weapon complex	48	
	proliferation of weapons of mass destruction, fear of nuclear war	37	
Health Care	general (e.g., adequate/affordable/available for all)	139	5%
	medicine (e.g., improved technology and research)	31	
Other	population (e.g., increasing size, effect on world resources)	84	15%
	Middle East (e.g., war/long-term effects, stability, religious conflicts)	81	
	drug problems/drug interdiction	69	
	transportation (e.g., effective/efficient/competitive/rapid long distance)	64	
	politics (e.g., bureaucracy, lack of leadership, strategic plan, strength)	56	
	science & technology (e.g., development of more efficient/effective manufacturing processes/continuing research, superconductor technology)	43	
	space program - national labs should take an active role in nation's programs	38	
	miscellaneous	36	
	terrorism	32	

### Nutshell Definitions

## Phase 1A Expected Outcomes

Strategic intent? Core competencies? Articles in management literature go on for pages. In a nutshell, an oversimplified nutshell, strategic intent refers to a global goal that provides direction for decision-making and leads to an obsession with meeting that goal — with "winning" — at all levels of the organization.

The goal of the Apollo program — to put a man on the moon in the '60s — was a strategic intent. So was Canon's — to beat Xerox.

A strategic intent must be sustainable over at least a decade or two. It must grab an organization's attention, motivate it by communicating the value of the goal, leave room for individual and team contributions (it's "clear about ends" but "flexible as to means," says management expert C. K. Prahalad), and serve to guide resource allocations.

Core competencies provide access to a wide variety of customers and customer needs. They make a significant contribution to the benefits a customer receives — and perceives. And they represent a unique expertise, one that is difficult for competitors to imitate. Lists of meaningful core competencies are short — containing probably four to six fundamental ones.

First order of business for the Strategic Planning groups is to tailor these two key definitions to the Sandia environment.

### Congratulations

To Gina (6413) and Michael (6463) Rightley, a son, Eric Edward, Nov. 26.

To Marilyn Sprague (3435) and John Orlovsky (3435), married in Las Vegas, Nev., Jan. 20.

To Mary and Mat (9123) Sagartz, a son, Stephen Marion, Feb. 8.



**Customer Satisfaction: Job One****Ex-Sandian Addresses US Economic Competitiveness**

Technology developed at the national laboratories during the last five decades can share responsibility for bringing the Cold War to an end and for deterring a global nuclear confrontation, says SEMATECH President Bill Spencer.

Spencer, former Director for Sandia Microelectronics Development, toured Sandia microelectronics facilities and visited with Labs managers on Feb. 6. While here, he addressed Sandians at a colloquium in the Technology Transfer Center.

His talk, titled "Quality, the Bridge to the Customer," focused on the laboratories' changing contributions to national security. Although R&D in technology and defense has been of primary importance to national security in the past, he says, issues of national economic competitiveness will take precedence in the coming decades.

"Products, driven by rapidly advancing technology, are maturing faster," Spencer says. "Also, increased foreign competition and a new global market mean we need to get on with global competitiveness. If we don't, I believe the well-being of our nation is in question."

The solution, he says, is to respond to and meet customer requirements more quickly and efficiently. At Sandia, rapid response means rapid prototyping and development.

"We no longer have time to do research, development, engineering, manufacturing, marketing, sales, and finally service," says Spencer. "We must now move toward a team mindset and do all of these at once."

Such company-wide coordination of activities can be achieved through a total quality manage-



TOURING the Microelectronics Development Laboratory is Bill Spencer (center), SEMATECH President and former Sandia Director. During his Feb. 6 visit, Spencer spoke at a Sandia colloquium, where he told employees that the Labs quality initiative can help increase US global economic competitiveness. Spencer is accompanied by Harry Saxton (2100, left) and Doug Weaver (2130).

ment plan (TQM), similar to TQM plans initiated at some of the nation's most successful companies, he says. This plan should include training for every employee, consistent communication about quality, an emphasis on teamwork, structured changes in management behavior, and a focus on customer requirements and employee suggestions.

Spencer came to Sandia, Albuquerque from Bell Labs in 1973 and served as Director of Microelectronics Development until 1978, when he became Director of Systems Development at Sandia, Livermore. He left Sandia in 1981 to become director of the Xerox Company's Palo Alto Research Center, and then served for several

years as Vice President for Research at Xerox. Last November, he became President of SEMATECH, a non-profit consortium of private companies and government groups whose goal is to restore US leadership in semiconductor manufacturing.

Sandia has several cooperative agreements with SEMATECH. One major agreement calls for the Labs to develop a national center here. Called SETEC (Semiconductor Equipment Technology Center), its mission is to help companies that manufacture IC processing equipment to improve the reliability of existing equipment and develop more advanced equipment. ●JG

**Steady Progress Reported****Environmental Restoration and Waste Management Activities**

Despite local news reports that Sandia failed to meet its FY90 environmental restoration and waste management milestones, Gordon Smith, Manager of Environmental Programs Dept. 3220, says that steady progress is being made in required, long-term activities.

All 139 sites identified by Sandia environmental professionals as "problem" or "potential problem" locations have been evaluated. Extensive evaluation of the existence and extent of potential contamination is now under way to determine the most effective means of remediation.

Local news articles have correctly stated that none of the missed milestones poses a health risk, Gordon says. However, they did not explain why the milestones, as defined in DOE's Environmental Restoration and Waste Management Five-Year Plan, were not achieved.

Details about unmet milestones:

● **Complete Construction of Tech Area III Sewer Line** — The new sewer line to connect Tech Area III with the city sewer system is scheduled for completion in May. A published DOE deadline for the line's completion by September 1990 was in error; Sandia did not receive DOE authorization to proceed with construction until July 1990.

● **Chemical Waste Landfill Cap** — The landfill received its last waste in 1985. As part of the closure, Sandia submitted a plan to the New Mexico Environmental Improvement Division calling for a soil/clay/plastic/rock cap over the landfill. The plan was submitted in May 1988 and has not yet been approved by the state. Last summer, as reported to the news media by the Labs, traces of a common solvent, trichloroethylene (TCE), were found during groundwater monitoring tests near the site. This has further delayed placing a cap over the landfill because it would interfere with TCE remediation, which Sandia and the state are now addressing.

● **Implement Wastewater Data Automation** —

Because of capital equipment budget limitations, the system was not installed in FY 1990. However, a lease-to-purchase action for the system has been approved and an order placed. Installation of the system, which will permit real-time monitoring of sanitary sewer wastewater, will begin this fiscal year.

"Cleaning up environmental sites is difficult, tied to complex federal requirements, and very time-consuming," says Gordon. "We intend to evaluate and clean up, where needed, each of the 139 sites, to follow environmental practices that meet or exceed the requirements of existing laws, and to anticipate future regulation to the extent possible." ●WKeener/RGeer(3163)

**AT&T Money Market Account Program**

During late February, Sandia employees, retirees, and their immediate families will be offered an investment opportunity in AT&T Capital Corporation's AT&T Money Market Account Program.

This offering is being extended to Sandians because of Sandia's status as an AT&T subsidiary. The offering will be mailed to home addresses directly by AT&T Capital Corp. Sandia itself has no involvement with this program. No administrative or information functions will be provided by Sandia, and no costs will be borne by Sandia; all questions regarding the offering or the prospectus should be directed to AT&T Capital Corp. on 1-800-848-1018.

Additionally, only eligible AT&T employees who are paid through an AT&T payroll system may use the payroll deduction feature of this plan (payroll deduction **not available** to Sandia employees).

**Expect Personal Tiger Attention**

*This is the fifth in a series of "helpful hint" columns as we strive to improve our ES&H performance and prepare for the DOE Tiger Team visit beginning in mid April.*

**TIGER TEAM TIPS**



First, consider the story of Ray Schaum (113). Working in Livermore during the Tiger Team inspection

there last year, Ray fully expected to be questioned by a "tiger." He was questioned by three.

Two of the tigers followed lines of questioning completely unexpected by Ray, who knew Sandia procedures and processes and believed in them. Ray quickly learned that if Sandia methods weren't completely consistent with DOE orders, they didn't count. That is one reason for the Improvement and Compliance Initiative under way to put new Labs-wide policies, programs, and procedures into place. Now Ray is in Albuquerque, waiting for another chance to talk to the tigers.

Next, consider these statistics. The expected size of the Albuquerque-based Tiger Team is 100 people. The team's "office hours" are nominally 13 hours a day, seven days a week. That's a possible total of 54,600 team work hours during the team's expected six-week stay at Sandia, Albuquerque.

If each tiger spends about a quarter of his or her time performing one-on-one interviews, the team could dedicate more than 1-1/2 hours of interview time per Albuquerque-site employee or contractor.

The message, says Dody Hoffman (3740), who heads the new team taking care of Tiger Team logistics: "Each one of us had better be prepared to meet at least one of the tigers while they are here."



# Supervisory Appointments

THURMAN "T. J." ALLARD to Supervisor of Digital Subsystems Div. II 2312.



T. J. ALLARD

T. J. joined Sandia's undergraduate full-time education program in 1977 after graduating from high school. He joined the One-Year-On-Campus program in 1981 and was assigned to the Electronic Subsystems Division, where he worked on the automatic permissive action link code-

handling system and the B61 programmers and interface control units. He transferred to the Command and Control Division in 1988, where he worked on the secure recode system.

He has a BS in electrical engineering from UNM and an MS in electrical engineering from Purdue University. He's a member of IEEE.

T. J. and his wife Heather have two children and live in the NE Heights.

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JUDY MOORE to Supervisor of Digital Subsystems Software Div. 2315.



JUDY MOORE

Judy joined the Labs in 1981 as a member of the Applied Mathematics Division, where she did cryptography research, consulted on command and control issues, designed and analyzed permissive action link (PAL) code management, and designed code and key management

for the T1582 PAL controller. In 1990, Judy transferred to Command and Control Division I and

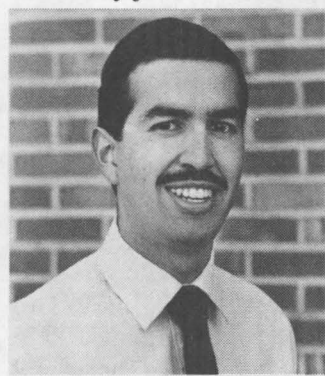
continued code and key management for the Secure Recode System. She was project leader for the software upgrade of the T1565 Headquarters Code Processor and the Tactical Secure Recode System Proof of Concept.

She has a BA from North Texas State University, an MS from Texas A&M University, and a PhD from New Mexico State University, all in mathematics. Before coming to Sandia, she worked for RCA and was a high-school teacher. She's a member of the American Mathematical Society, the Mathematical Association of America, and the International Association for Cryptologic Research.

Judy enjoys sewing, gardening, running, and skiing. She sings with the Enchanted Mesa Chorus (Sweet Adelines) and is a ham radio operator. Judy and her husband Larry (5128) have one child and live in NE Albuquerque.

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HENRY ABEYTA to Supervisor of B90 Test Div. 5133.



HENRY ABEYTA

Henry joined the Labs in 1981 as a member of the Strategic Systems Division in Livermore. He provided thermal analysis supporting the Advanced Ballistic Reentry Vehicle ABRV (later the W87/MX) program and did packaging studies for the Trident II and strategic earth penetrator

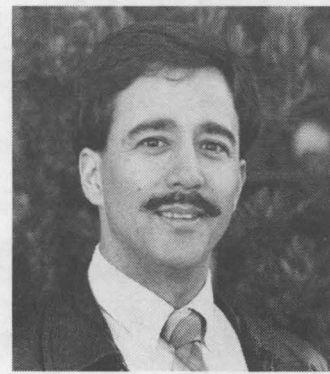
programs. In 1983, he transferred to the Trident II AF&F (arming, fuzing, & firing) Development Division in Albuquerque, where he did AF&F studies and production agency coordination. He has also done abnormal environments analysis and test coordination. Henry transferred to the B90 Mechanical Division in 1988, where he had design responsibility and was a project engineer.

He has a BS in mechanical engineering from UNM and an MS in the same field from Stanford University. Before joining Sandia, he worked for the Air Force Weapons Lab.

Henry works with educational outreach programs and enjoys church and family activities, tennis, jogging, and reading. He and his wife Darlene have two children and live in the NE Heights.

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ERIC DISCH to Supervisor of Systems Test Equipment Design Div. I 7265.



ERIC DISCH

Eric joined the Labs in 1981 as a member of the Systems Test Equipment Design Division, where he did electronics design and software maintenance for centrifuges and electronics design on the STE-B83 system tester. He transferred to Digital Subsystems Div. I in 1985, where he

did electronics and software design for a prototype of an advanced secure container. He was project leader and electronics designer for the cryptographic subsystem of the Secure Cryptographic Unit. He was also project leader and electronics designer on a satellite communications system. In 1990, Eric joined Electronics Subsystems Div. I, where he was project leader and electronics designer for an advanced computer architecture.

He has a BS in electrical engineering from UNM and an MS in electrical engineering from the University of Kentucky. Before joining Sandia, he worked for IBM in Lexington, Ky.

Eric enjoys fishing, camping, gardening, and softball. He and his wife Cathy have two daughters and live in NE Albuquerque.



## Sandia Collectors

# Collections Trigger Memories for Nick DeReu and Lee Garner

Nick DeReu (5153) collects caps and Lee Garner (3151) collects lunch pails. They aren't only caps and lunch pails hanging on a wall. They're memories for the collectors and those who see the collections.

Remember Gomer Pyle, Paladin, the Six Million Dollar Man, the Flying Nun, Joe Palooka, Wagon Train, and the Partridge Family? They're memories included in Lee's collection of 550 lunch pails hanging on the walls in several rooms of his home. Old movies, cowboys, heroes, toys, puppets, and old TV shows that haven't been on the air in years are represented in the collection.

"I began collecting lunch pails as something for my kids to do at flea markets and garage sales," says Lee. He got so involved that he started a newsletter about lunch pails. He hopes his lunch pails will end up in a museum some day.

Lee also collects battery-operated toys and Indian artifacts.

Nick's caps hang on walls in a spare bedroom. They represent sports teams, farm implement dealerships, feed stores, bars, companies, and special events. His collection of 493 includes several from Sandia. Nick started collecting when he was a high-school freshman in Illinois.

Folks from farming communities probably re-

member picking up a new cap from the local implement or seed dealer each year. Nick's first cap was from Wyffel's Hybrids seed-corn dealership.

"When someone sees my collection," Nick says, "they often offer a cap they picked up on vacation or in some unusual place." Nick is always on the lookout for unusual caps. He has one that has a stuffed tequila worm attached.

"The only time I wear a cap is when I play softball," says Nick.

If you have an unusual collection, the LAB NEWS would like to know about it. Call the LAB NEWS on 4-7841 or send a note to Div. 3162.

●JW



A MAN OF MANY HATS — Nick DeReu (5153) dons his Sandia cap in front of his collection of 493 caps.



LEE GARNER (3151) holds a Beatles lunch pail worth about \$500. He picked it up at a flea market for fifty cents.



**Landslides, Floods, and Rickety Bridges****Sandian's Winter Vacation Rivals a Hollywood Adventure Movie — without Stuntmen**

When Gene Roseth (9242) packed his truck and headed south to Mexico for a two-week winter vacation, he knew he was in for a unique adventure. He packed extra canned food, gasoline, and bedrolls in preparation for almost any calamity. But just as soon as he pulled out of the driveway that morning, he had that nagging feeling that he had forgotten something. Much too late, he realized he had forgotten his stunt double.

Gene and his traveling companion, Trudi Martinez, planned to stay a few nights in Chihuahua, drive 200 miles south to Bahuichivo, and ride a train south to Los Mochis along the western

**Much too late, he realized he had forgotten his stunt double.**

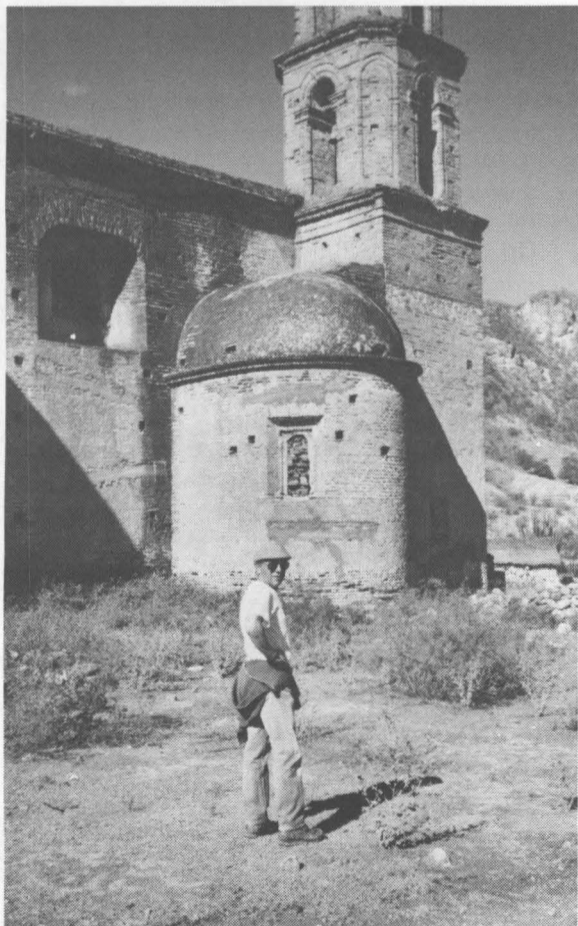
edge of Rio Urique, one of Mexico's four barrancas (deep terraced canyons). Each of the four barrancas is comparable in size to the Grand Canyon. The train ride, a tourist favorite, runs along some of Mexico's most scenic country and is noted for its winding trek through 87 tunnels.

Torrential rains caused them to miss their train, however, and they were forced to alter their plans. Only later did they discover their good fortune. The missed train encountered a landslide and derailed. The bridge behind the train collapsed, and rain kept rescue crews from reaching the passengers for several days. The train staff was forced to butcher and cook a cow for the passengers to eat.

**The Adventure Begins**

The unseasonable downpour continued, so Gene and Trudi decided to travel east and south into Barranca de Batopilas, another of the four barrancas. They would drive to the small town of Batopilas, hike 10 miles to Satevo, spend a few nights, and then hike back to the truck.

"Just traveling along the top of the barrancas in a train wasn't enough for us," says Gene. "We



GENE ROSETH (9242) poses in front of the mysterious cathedral at the bottom of Barranca de Batopilas, one of Chihuahua's four Grand Canyon-sized barrancas. Jesuit priests are assumed to have built the cathedral in the 16th century. The inhabitants of Satevo use boards and stones to keep the structure from falling.



CAUTIOUSLY CROSSING a Hollywood-style foot bridge on the road to Satevo, Mexico, is Trudi Martinez, Gene Roseth's (9242) traveling companion. Gene replaced missing planks and tested rotten wood before crossing over to take Trudi's photo.

wanted to go down into the canyons and see the landscape and the people who live there. It's like traveling back in time three centuries."

But as they inched down the steep northern side of the barranca on a road barely wide enough to contain the truck's tires, they happened upon an adventure of their own. A rockslide covered the road in front of them, blocking their path, and a boulder crashed into the side of Gene's truck, leaving a basketball-sized hole in each side of the camper shell.

The downpour continued, and later that afternoon a rushing waterfall blocked the road, hurling mud and rocks down the mountainside. The road was too narrow to back up, so they were forced to spend the night in the damaged camper shell perched precariously on the mountain side.

"I was afraid at that point," says Gene. "I must have slept about 30 minutes that whole night. Every few minutes I could hear landslides echoing off the canyon walls all around us."

The next morning, after the waterfall subsided, the pair worked their way down to the bottom of the canyon in the truck. When they arrived in Batopilas, tired and shaken, they rested for a few days, taking in the woody canyon scenery.

In Batopilas, they met an American researcher named Richard Fisher, who was studying a mysterious cathedral in the nearby town of Satevo.

**"What I saw happening to the canyon people is a tragedy."**

The cathedral was built during the 16th century, but its builders remain a mystery. Fisher suggests a band of Jesuit priests may have built the three-domed cathedral. But the immensity and complexity of the structure suggests that it would have required a nearby brick-firing kiln, which has not been found.

Gene and Trudi spent New Year's Eve in Batopilas and spent New Year's Day hiking to Satevo. As they came within sight of the tiny town, however, they found a rickety movie-style foot bridge standing between them and the town (see photo). Gene replaced missing planks and tested rotten wood with his toe as he and Trudi crossed the bridge. When they finally arrived, the two spent the

day meeting the town's inhabitants, mostly mestizos and a few tourists, and touring the cathedral.

**'Incredible Poverty'**

Gene says his mood that day was sobered by the poverty of the canyon people. "I knew the people were poor," says Gene, "but I wasn't prepared for the incredible poverty they experience every day. I saw children running across the street without shoes and it made me think of how much we take for granted."

One of Gene's fascinations soon became the Tarahumaras, a native Indian tribe whose name translates roughly to "mountain runners." The Tarahumara, Tara for short, live in caves or mud huts in the canyons and are noted for their ability to run up and down the steep mountain trails.

Gene says the Tara culture is suffering from the encroachment of modern culture. Although they are shy people who typically stay away from tourists, they come in contact with civilization along the river or in the towns where they sell their blankets and baskets.

"The huge timber industry and the marijuana growers in the region are forcing the Taras off of their land," says Gene. "Increasingly, they need food and other supplies to stay alive. Several other tribes in the area have become extinct. In time the Taras will probably become extinct as well."

Gene's empathy for the people he met is so great, he is organizing an informal relief fund for all the canyon people (Taras and mestizos). He says he will return to the barrancas with food and clothing, but he won't distribute clothing to the Taras because he says their culture and native dress are already being infiltrated by western dress. He believes it's OK to give the Taras food, however.

"What I saw happening to the canyon people is a tragedy," says Gene. "I want to return and help them if possible." (Anyone interested in contributing clothing or non-perishable food to Gene Roseth's barranca relief "fund" can contact him on 296-8842.)

Although his Mexico adventure would have frightened a movie hero, Gene says he will return to the barrancas as soon as possible because he enjoys the Spanish culture and the friendly people. He hopes to make the trip this spring during Semana Santa, or "Holy Week." ●JG

## NEWS BRIEFS

### DOE Alliance Hosts Waste Management Conference

San Juan, Puerto Rico, will be the site of the 1991 Waste Management Conference hosted by the DOE Science and Technology Alliance, a consortium made up of DOE laboratories and minority universities, including Sandia, Los Alamos National Lab, Oak Ridge National Lab, New Mexico Highlands University, North Carolina AT&T State University, and Fundación Educativa Ana G. Méndez in San Juan. The conference will be held April 24 through 26.

Researchers from universities, industry, and the national labs will speak, and representatives from the Environmental Protection Agency (EPA) and the Puerto Rico Environmental Quality Board will discuss environmental legislative issues. Topics include waste minimization, chemical substitution, robotics, environmental restoration, solar detoxification, and technology transfer issues in waste management.

"We hope to exchange waste management knowledge and contribute to solutions for waste management problems," says Nestor Ortiz (3200), conference steering committee member. "We also hope to transfer some of the national labs' technology to industry and universities and collaborate with them on future R&D projects."

Ken Holley (3511), conference liaison for Sandia, says paper abstracts for the conference can be sent to him before March 8. Call Ken on 5-8714 for further information.

### Labs Apprentices Sought

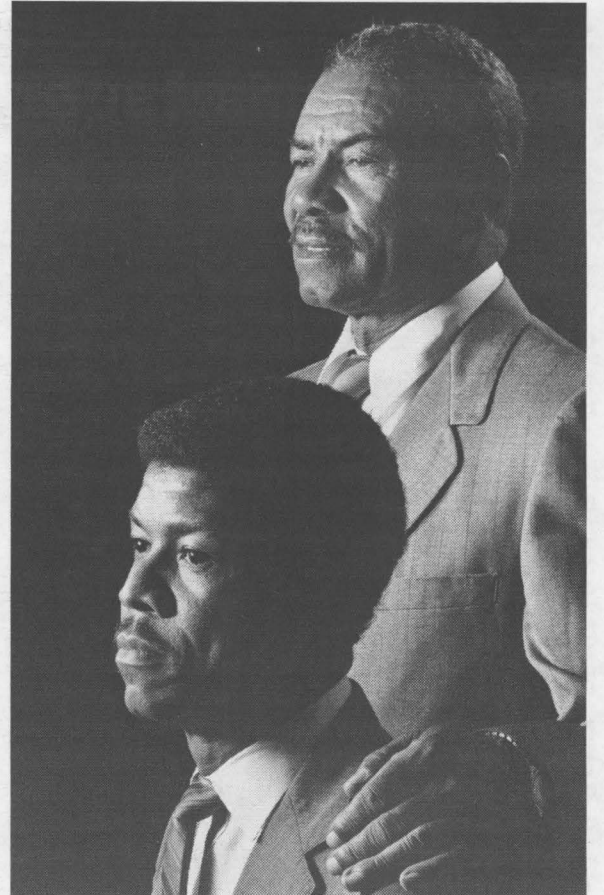
Since 1969, Sandia's mechanical, structural, and electrical apprenticeship program has provided training in the facilities-related trades. The five-year program provides apprentices with both classroom instruction and on-the-job training from experienced Sandia tradespeople. After completing their five-year apprenticeships, many apprentices become Sandia mechanical technicians, structural technicians, or electricians.

Harriet Morgan, Supervisor of Personnel and General Employment Div. 3533, says Sandia is now recruiting individuals to fill apprenticeship positions from inside and outside the Labs. She encourages qualified minorities, women, and physically impaired persons to apply. She expects successful applicants to be hired in the fall of 1992. Sandia will also establish a pool of eligible applicants to fill openings anticipated through the fall of 1993.

Applicants must have US citizenship and a high school diploma and must be between the ages of 18 and 30 (the age requirement for applicants with active military service can be extended by up to five years to reflect the number of years of service). In addition, applicants must pass a test administered by Sandia, meet the job's physical requirements, undergo a DOE security investigation, and complete a pre-employment screening for drugs and controlled substances.

"We are encouraging Sandians to spread the word," says Susan Harty (3533), employment coordinator. "In the past, many of the applicants for this program have been friends and relatives of Sandians."

Applicants from outside Sandia must register at the New Mexico Dept. of Labor, Albuquerque Labor Services Center, at 501 Mountain Rd. NE. On-roll employees may apply through the post-and-bid process. Positions have been announced on Labs bulletin boards and in the *Weekly Bulletin*. Applications are being taken March 11 through 22 only. For more information, contact your Personnel Representative or Susan on 4-4258.



ROLE MODELS — Jessie Waddles (ret., standing) and Basil Steele (5249) are among five New Mexican black community leaders honored by the NAACP and Delta Sigma Theta sorority as part of Black History Month. Jessie is being recognized as a self-made businessman who built a successful real estate business by buying rental houses one at a time. He worked at the Labs as a janitor, materials handler, and then truck driver between 1953 and 1984. Basil, a member of Sandia's Black Outreach Committee, is being recognized for his volunteer work as a tutor with the Albuquerque Public Schools and other educational programs.

(Photo by Randy Montoya, 3162)

## feed *back*

*Q: Driving on base with my motorcycle, I was stopped by the guard and informed that my DOT/SHCA-approved helmet (about \$90) plus safety glasses was persona non grata on base, and that I had to wear a full face-shield helmet for base access.*

*Is this for real? Or is it one more example of capricious and arbitrary rule-setting by the military? It seems to me they could at least publicize such changes in advance in various on-base media.*

**A:** USAF Motorcycle Helmet Regulation 127-7, Change No. 1, was issued Dec. 19, 1989. This change requires all employees riding motorcycles on Air Force installations to wear "impact-resistant goggles or a full face shield attached to the helmet." Also, the helmet must meet the standards of the Snell Memorial Foundation, American National Standards Institute, or Department of Transportation. This information will be published in the *Sandia Weekly Bulletin*.

Jim Martin (3400)

*Q: The process outlined in the LAB NEWS Nov. 16 for the post-and-bid system for part-time job assignments is straightforward and effective. However, one step was omitted that I think should be added. After bidders submit responses, there is no way for them to know the status of the bid until they are called for an interview or a notice is published withdrawing the offer. It should be required that people who publish positions acknowledge receipt of bidders' names and advise bidders of the selection process.*

*Some background: I have bid on postings and been left uninformed about the positions. Often, positions are posted in the belief that a job or contract is going to come to Sandia. Respondents are frequently not advised that the positions are*

*dependent on many factors or that responses are being held until work begins. It is very disappointing to bid on a posting and never know if your name was received. Bidders should be treated with courtesy.*

**A:** When an employee bids on a job through the internal post-and-bid system, Personnel provides the selecting supervisor with a list of all bidders, their Employee Placement Reports, and other related materials. The selecting supervisor is responsible for screening employees, choosing bidders for interviews, and making and documenting the actual selection.

The responsibility for notifying bidders of their status also rests with the selecting supervisor. Chapter K, page 8 of the Personnel Manual specifies that "unsuccessful candidates should be told by the selecting supervisor that they were not selected . . . this may be accomplished in any practical way, for instance, by phoning or personally contacting each candidate, or at least those interviewed." Because of the large volume of bidders for some positions, supervisors are encouraged by their Personnel Representatives to notify bidders not interviewed via a written memo and those interviewed but not selected via a telephone call. If you have bid on a job and a long time has passed without feedback, it is acceptable to call the supervisor or Personnel Representative to check the status of the posting.

Personnel is unable to give formal confirmations or updates to bidders because of the volume of post-and-bid listings. Nearly 1,000 jobs are posted and nearly 10,000 personnel actions processed each year. It would be neither practical nor efficient for Personnel to contact bidders at each stage of the process.

Ralph Bonner (3500)

### Acquainting Employees with Labs

## 'Management Town Meetings' Scheduled

A schedule has been announced for the next five "Management Town Meetings," the new in-house program to improve communications and give Sandians a behind-the-scenes look at activities that are shaping the future of the Labs.

The meetings, which all Sandians are invited to attend, will begin at 9 a.m. on Friday mornings. Attendees should bring their badges because most of the meetings will be closed to non-Sandians to encourage a free and deliberative exchange of views.

The inaugural meeting on Feb. 8 featured Gerry Yonas, Director of Laboratory Development 400, who talked about "Forces for Change."

Following is the schedule of speakers and dates:

- March 29 — ES&H Vice President Glen Cheney (3) will discuss last-minute Tiger Team preparations at Sandia facilities in Albuquerque, the Tonopah Test Range, and Kauai Test Facility.

- April 12 — Dan Hartley, Vice President for Corporate Change Management (5), will discuss Sandia's change management programs.

- May 17 — Paul Robinson, Director of Systems Analysis 9400 and a former US arms control ambassador to Geneva.

- June 14 — Heinz Schmitt, Acting Vice President of Defense Programs 5000.

- July 12 — Dan Arvizu, Department Manager of Technology Transfer and Industrial Relations 410.



## Take Note

The American Lung Association is sponsoring a "Freedom from Smoking Clinic" starting Thursday, Feb. 28, from 7 to 9 p.m. at the American Lung Association of New Mexico office (216 Truman NE). Enrollment is limited and registration is required. Cost is \$50. For more information, call the Lung Association on 265-0732.

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Sandia was among 140 government and private organizations and agencies that received awards at the National US Savings Bond Campaign Leadership Conference in Washington, D.C., last month. Ray Reynolds (5120) accepted one of 125 1990 National Honor Roll Awards on Sandia's behalf. Sandia's 1990 Savings Bond allotments totaled \$3,349,512, an increase of 8 percent over 1989.

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The Asian Leadership and Outreach Committee (ALOC) was recently formed at Sandia, headed by chairperson Pauline Ho (1126). The ALOC is chartered to serve as a forum for Asian American Sandians. Membership is open to all Sandians of Asian ancestry. For additional information, contact Pauline on 4-3759.

Twice a year the Albuquerque Office of Senior Affairs and UNM Continuing Education sponsor a class that emphasizes topics of interest to retirees, those about to retire, and people who assist a senior citizen. The seven-week class discusses Social Security, Medicare, supplemental health insurance plans, community-based services, nursing home insurance, guardianship, wills, and funerals. The classes are from 10 a.m. to noon on Saturdays beginning March 2. To register, call UNM Continuing Education on 277-6542. Ask for Course No. 609. The fee is \$10.

### Retirement Seminar

Boettcher & Company is presenting a retirement seminar titled "Your Retirement Plan Assets — An Educational Seminar" on Wednesday, Feb. 27, from 4:45 to 6:15 p.m. at the Coronado Club. Topics include tax treatment of retiree benefits, retirement benefit options and rollovers, estate tax on retirement benefits, and retirement investment portfolios. For more information, contact Rick Salmon or Heidi Hardin on 881-5400.



OOPS! MASKED MAN Andrew Silva (7813), shown here, was mistakenly identified as Robert Silva in the last issue of the LAB NEWS. He says his co-workers have been calling him Robert ever since. But as we can all clearly see, the man in the photo is definitely Andrew Silva. Apologies to Andrew, and to the real Robert Silva (5122).

## UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS

**Deadline: Friday noon before week of publication unless changed by holiday. Mail to Div. 3162.**

### Ad Rules

1. Limit 20 words, including last name and home phone.
2. Include organization and full name with each ad submission.
3. Submit each ad in writing. No phone-ins.
4. Use 8 1/2 by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per category per issue.
8. No more than two insertions of same "for sale" or "wanted" item.
9. No "For Rent" ads except for employees on temporary assignment.
10. No commercial ads.
11. For active and retired Sandians and DOE employees.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.

### MISCELLANEOUS

- ADMIRAL REFRIGERATOR, 21 cu. ft., w/ice maker, \$200; Whirlpool microwave oven, \$50; RC10 radio-controlled car, w/extras, \$250. Anderson, 883-2647.
- PERSONAL WORD PROCESSOR, Smith Corona PWP-100C, full editor, typewriter, & printer functions, 18 mos. old, w/manuals, \$450 OBO. German, 247-2882.
- CHEST FREEZER, 8.2 cu. ft., \$250; stereo receiver, \$65; couch, \$75; king-size waterbed frame, \$80; all OBO. Howard, 839-9203.
- IBM PC/XT 20MB hard disk drive, controller card, \$200. Carson, 281-5115.
- REESE PICKUP TRAILER HITCH, cost \$150, sell for \$70. Revels, 344-3033.
- WOMAN'S HIKING BOOTS, Danner, all leather, size 7-1/2 A, new, \$50. Gruer, 296-8163.
- THREE-MONTH MEMBERSHIP, Tom Young's Health Club, \$60. Trembl, 292-9219.
- MAYTAG WASHER & DRYER, gold, \$100/both. Miller, 281-3936, leave message.
- ENCYCLOPAEDIA BRITANNICA, 15th edition, 1983, includes 1984-85 yearbooks, \$400 OBO; National Geographic (1982, 84-85) and Discover (1986-90) magazines, free. Sorenson, 892-6823.
- CHILDREN'S CLOTHES: large box full of boy's infant & toddler clothes, \$35/all. Mayer, 299-8524.

- JENNAIRE COOKTOP, \$200; Kohler kitchen sink & faucets, \$175; expandable game table & chairs, \$100; king-size hide-a-bed, \$175; Thermador built-in oven, \$500. Kjeldgaard, 268-8835.
- POOL TABLE, Brunswick, 56" x 103", 1-in. slate, \$1,500 OBO. Aragon, 298-9616.
- MINIATURE DACHSHUNDS, AKC-registered, 2 black & tan, 1 red, males, \$200/ea. Simmons, 293-9294.
- LOOM, 24-in., 4-harness, table model, w/table, \$150; Inkle loom, box type, \$35; barrister bookcase, old, \$40. Strance, 298-0258.
- GRAY BILINEAR FOR CB RADIO, 300 watts, \$150; super-single waterbed, bookcase headboard, blond oak, \$150 OBO; waterbed sheets, \$15. Tyree, 296-7115.
- BASSET HOUND, male adult, free to good home. Geerts, 292-3861.
- FULL-SIZE BEDROOM SET, French provincial, 2 chests, 1 hutch, headboard, mattress, box spring, yellow & white, \$100 OBO. Williams, 821-2048.
- LEATHER COUCH, off-white, 85-in. long, 2 yrs. old, \$700 OBO. Atkins, 821-7989.
- EIKI 16mm MOVIE PROJECTOR, optical sound, \$250; 16mm editing equipment (viewer, guillotine splicer, etc.). Eley, 255-2617.
- RUGER MARK II, .22-cal., w/hard carrying case, soft holster, new. Bronkema, 821-2119.
- HOCKEY SKATES, 2 prs.: CCM Rapides, size 9-1/2, \$40; CCM Mustangs, size 7-1/2, \$30. Goodson, 265-2080.
- QUEEN-SIZE PLATFORM BED, Oriental style, w/nightstands by Brunhardt, cost \$2,500, sell for \$1,000. Smith, 275-8185 after 5 p.m.
- CITIZEN 5800 PRINTER, for IBM PC, 9-pin dot-matrix, 180 CPS, NLQ, \$100. Imbert, 294-8176.
- SECTIONAL, beige Naugahyde; sofa, raspberry-pink floral, 92-in.; trundle bed; 2 avocado vinyl-covered swivel chairs; crib. Leeman, 299-9149.
- GOLD COINS, silver dollars, early US coinage; Bragg lithographs; electronic equipment. Duncan, 281-8792.
- SPEED QUEEN WASHER & gas dryer, \$250. Cook, 296-3064.
- DISH SET, 9 new settings (plates, cups, saucers), \$45. Tripp, 822-8580.
- ELECTRIC TYPEWRITER, \$60; exercise bike, \$30; large formica-covered bar w/4 stools, \$150; maple double-bed frame, \$75. Kruse, 271-8930.
- DARKROOM EQUIPMENT, complete, enlarger, trays, timer, filters, \$275. Hof, 299-0926.
- HAYES SMARTMODEM, internal, 1200 bps, \$30. Shirley, 821-0480.

- CERAMIC TILES, more than 400, 12" x 12", brown-on-tan pattern, \$300. Danneels, 292-1548.
- ANTIQUE BED SET, white canopy, w/twin mattress & box spring, matching dresser/mirror, \$300 OBO. Tuck, 299-2079.
- FIREPLACE WOOD, mixed, w/kindling, more than 2 pickup loads, \$110; meat slicer, Rival, electric, 6-in. blade, still in carton, \$40. Hole, 255-1444.
- SOFTWARE, IBM-compatible, unopened: Norton Backup, \$69.70; COPYIPC 6.0, \$18.35; Windows 3.0, \$59.93. Mogford, 898-1416.
- COUCH, \$75 OBO. Borgman, 299-6010.
- ENCYCLOPAEDIA BRITANNICA, complete set, w/atlas, \$400 OBO; GE garbage disposal, \$20. Prusak, 296-1571.
- GOLF CLUB SET: 3, 4, 5, 6, 7, 8, 9 irons; 1 PW; 1 SW; 1, 3, 5 woods; 10 mos. old; \$150. Lujan, 299-4820.
- OAK COFFEE TABLE, square w/4-pane glass top, \$100. Simmons, 891-2475.
- BABY CRIB, ChildLine, w/mattress, \$65; Gerry backpack carrier, \$7. Almquist, 294-5651.
- ELECTRIC RANGE, GE, almond, 6 mos. old, \$150. Jackson, 292-5035.
- WURLITZER SPINET ORGAN, w/automatic rhythms, \$600. Rael, 345-2084.
- ANTIQUE SATIN DRAPES, ivory, 128" x 84", \$65; 2 pair celery-green drapes, 94" x 84", \$40/ea.; brass traverse rods, \$18. Biffle, 293-7043.
- BABY CRIB, dark stained wood, adjustable bed height, single-side drop rail, \$80. Hinkebein, 299-2481.
- RIMS & TIRES: 4 high-performance light-alloy rims (wide) w/high-speed low-profile tires for BMW cars, \$750 OBO. Carson, 281-5115.
- DOUBLE-MIRRORED DRESSER, 72" x 19.5", w/2 mirrors 51" x 21", \$75. Stanley, 255-3083.
- ALFALFA, high-quality, price depends on amount bought and delivery fees. Montoya, 883-8127, leave message.

### TRANSPORTATION

- MAN'S BIANCHI BICYCLE, 12-spd., \$225; woman's bicycle, 5-spd., \$50. Anderson, 883-2647.
- CATALINA 25-FT. SAILBOAT, extras, for cruising or racing. Gruer, 296-8163.
- '86 TOYOTA CELICA GT, AT, PS, PB, cloth interior, \$7,000 book value, sell for \$6,200. Rodgers, 275-0669.
- '82 TOYOTA COROLLA, 2-dr. sedan, one owner, AT, AC, 88K miles, \$3,000 lump sum. Perea, 298-3258.
- '82 YAMAHA MOTORCYCLE, 650 turbo, \$1,000. Smith, 275-8185.

### REAL ESTATE

- 2-BDR. HOME, 1 bath, garage, walled yard, covered patio, hardwood floors (carpet-covered), landscaped, Parkland Hills. Kent, 256-1221.
- 4-BDR. HOME, 2-1/2 baths, 2,730 sq. ft., formal living room, formal dining room, family room, 2-car garage, \$136,900. Lucero, 293-4266.
- LAND: 1 acre in Forest Lakes, near Durango, appraised at \$9,000, sell for \$6,995; 4 acres in Socorro, \$14,995. Meyer, 821-0123.
- 2-BDR. MOBILE HOME, '84 Cameo, 2 baths, 14' x 72', located in Four Hills Park. Fisher, 275-3904.

- 2-BDR. TOWNHOUSE, Academy & Eubank area, 1,700 sq. ft., 2-car garage, fireplaces, 1-3/4 baths, new hot tub w/deck, security, \$103,500. Joyce, 822-1154.
- 3-BDR. ADOBE HOME, 2-level, 2,450 sq. ft., 2-car garage, 2 kiva fireplaces, skylights, in Corrales, \$160,000. Wagner, 877-9398 or 898-3903.
- 2-BDR. TOWNHOME, 1,450 sq. ft., 2-story, 2-1/2 baths, fireplaces, private yard, assumable 8%, low equity, near Tramway and I-40. Brandt, 275-1059.
- 3-BDR. MOBILE HOME, 1-1/2 baths, 1,440 sq. ft., large storage area, Vineyard Mobile Home Park. Rael, 345-2084.

### WANTED

- HOUSEMATE, male, share 3-bdr., 2-bath house, full kitchen & laundry, utilities included. Howard, 839-9203.
- METAL-FRAME WINDOWS, w/glass & screens for opening, need various sizes. Stuart, 345-6358.
- AUTO BOOSTER SEAT, Gerry Double Guard only, in good condition. Rogulich, 298-5261.
- PLAYERS for fantasy baseball league. Turner, 294-9674.
- MOTORHOME, modest size, to rent for 3-week period in fall of 1991, would consider custom van. Cocain, 275-9505.
- HOUSESITTING, free long-term house-sitting, references available, will care for home and pets while you are away. Gentry, 275-9648.
- ROOMMATE, share 3-bdr., 2-bath home, w/hobby work area, in Sandia Knolls area. Tafoya, 281-1454.
- SPINNING REEL, old Zebco Cardinal 4. Krause, 299-0931.
- BABY ITEMS: furniture & accessories, in good condition, baby arriving in April. Ross, 299-3023 after 6 p.m.

### LOST AND FOUND

- FOUND: 2 keys in Bldg. 887 parking lot, call to identify. Rhoden, 4-9120.

### SHARE-A-RIDE

- VANPOOL: Corrales and Rio Rancho vanpool is offering a free 2-week trial period for any new rider. Durand (891-3251), Boatman (892-3570), or 4-RIDE.



**Coronado Club Activities**

## Tonight's Fiesta Features 'Free-Joles' (Beans)

GET 'EM WHILE THEY'RE HOT! Friday, Feb. 22, C-Club members get free frijoles, along with tacos, enchiladas, green chile stew, rice, and tortillas (\$2 for guests). Also, DJ Chuck "Favorites" Avery is back on stage with rock-and-roll tunes from your teens. Music and Mexican food buffet begin at 5 p.m. Reservations recommended (265-6791).

MARCH ON IN to the C-Club Friday, March 1, when the Isleta Poor Boys play toe-tapping country and western tunes and the kitchen staff serves its usual tasty entrees. Dinner selections include prime rib, poached halibut (both two-for-one priced \$15.95), broiled salmon steak, filet mignon, and deep fried shrimp (\$8.95 each). Make reservations please.

TEA TIME — On Sunday, Feb. 24, and Sunday, March 3, the Club's hearty brunch buffet is open from 10 a.m. to 1 p.m. On the 24th, a special tea dance featuring Bob Weiler and Los Gatos will be held after brunch from 1 to 4 p.m. Buffet fare includes eggs, omelets, potatoes, bacon, baron of beef, turkey, ham, vegetables, salad, green chile stew, desserts, and juices (\$5.95 for adults, \$1 for children 4 to 12 years old, and free for kids under 4).

SHARK ALERT — T-Bird Card Shark membership is growing, and Jim "Jaws" McCutcheon, Sharks organizer, says new members are welcome. Next month's meetings are March 7 and 21 (always the first and third Thursday of each month) from 10 a.m. to 3 p.m.

## Fun & Games

Scuba Diving — Certified divers and interested non-divers are invited to participate in an eight-day, seven-night Cozumel Caribbean adventure. Round trip airfare from Albuquerque, unlimited diving, pool, beach, other water tours, and food and beverages are included for \$1,123/person (double occupancy). Depart April 21 and return April 28. For information, call Tom McConnell (9235) on 268-3109 or Darlene Myre on 884-5235.

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Boating — The Coast Guard Auxiliary is again offering boating safety courses in both power boating and sailboating. Classes began Feb. 20 and are held Wednesday evenings at 7 p.m. at the Armed Forces Reserve Center (400 Wyoming NE). Both courses continue for approximately 13 weeks. Instruction is free, but there is a \$15 charge for the course text (first member of a family only). Additional family members who attend pay \$5 for work sheets. To register, call Ben Gardiner (ret.) on 298-0116, Earl Livingston on 897-1695, or Bill Hudson on 292-5598.

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Golf — The first Sandia Golf Association (SGA) tournament is March 16. The new by-laws require that all SGA members must be members of the USGA-sanctioned Sun Country Association. Currently, only two public courses in the city permit you to join Sun Country without joining their own golf associations — Tijeras Arroyo and UNM South. The other city courses require you to join their associations. Prices for both are as follows: Arroyo Del Oso, \$20; Los Altos, \$25; Ladera, \$20; Puerto Del Sol, \$15. The total cost at Tijeras Arroyo including the Sun Association membership is \$26 and \$45 at UNM South. If you have questions, call any current SGA board member.



## Events Calendar

Events Calendar items are gathered from various sources. Readers should confirm times and dates of interest whenever possible.

Feb. 22-24 — "Othello," New Mexico Repertory Theatre presentation of Shakespeare drama; 8 p.m. nightly, 2 p.m. matinees Sat. & Sun.; KiMo Theatre, 243-4577.

Feb. 22-March 15 — "2,000 Years of Contemporary New Mexico Ceramics," eclectic assortment of ceramics intended to demonstrate visual diversity and draw together the history of New Mexico ceramics; 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues. (gallery talk March 5 with Acoma Pueblo potter Mary Lewis Garcia, 5:30 p.m.); UNM Jonson Gallery, 277-4967.

Feb. 24 — Series for the Arts Concert: Stanley Gutierrez and Vicente Saucedo join their talents in a classical guitar interpretation of folklore music of the Mexican Revolution, sponsored by UNM Continuing Education and the International Classical Guitar Institute; 3 p.m., UNM Continuing Education Conference Center (1634 University Blvd. NE), 277-2931.

Feb. 24 — The Shanghai String Quartet, presented by the June Music Festival of Albuquerque; 4 p.m., Simms Arts Center, Albuquerque Academy, 888-1843.

Feb. 27 — Enhancement Series slide/lecture presentation: Marta Weigle talks about her book "The Lore of New Mexico"; 1:30 p.m., Albuquerque Museum auditorium, free, 243-7255.

March 2 — 14th Annual Guest Artist's Series: New Mexico Jazz Workshop presents the David Grisman Quintet; 7:30 and 10 p.m. (2 shows), Sunshine Theatre, 255-9798.

March 3 — Albuquerque Philharmonic Orchestra, with guest Robert Nagel (New York Brass Quintet), performing Mozart's "Symphony No. 33 in B-flat Major," Aaron Copeland's "Appalachian Spring," and Edward Grieg's "Piano Concerto in A Minor"; 2 p.m., Heights Cumberland Presbyterian Church.

March 4 — Lecture Series: Pablita Velarde of Santa Clara Pueblo, "My Life and Art"; 10 a.m., Indian Pueblo Cultural Center Theatre, 298-1428.

March 8-9 — Classical Concert Series: "The Prayer of Christ Ascending to the Father," from "L'Ascension" by Messiaen; and "Requiem" by Verdi; New Mexico Symphony Orchestra and Chorus; 8:15 p.m., Popejoy Hall, 842-8565.

March 8-30 — "Rosencrantz & Guildenstern Are Dead," Tom Stoppard comedy about Hamlet's college chums who are hired to spy on him, Theatre-in-the-Making performance; 8 p.m. Fri. & Sat.; CenterStage, 260-0331.



## Take Note

The All Faiths Receiving Home annual membership event to welcome new and current volunteers will be held March 6 at Ann Taylor's home in Corrales from 11 a.m. to 1 p.m. For information, call Jill Creswell at All Faiths on 345-8938.

### Mental Health Roundtable

Sandia's Medical Department is sponsoring a lunchtime Mental Health Roundtable discussion about "The Psychology of Uncertainty" on Wednesday, Feb. 27, from noon to 12:45 p.m. in the Technology Transfer Center (Bldg. 825). Spouses are welcome. The guest speaker is clinical psychologist Karl Koenig, PhD, who will discuss some of the effects of uncertainties in everyday life and how to manage them. For further information, contact Arlene Price (3300) on 5-8729.

## Favorite Old Photo



ON THE FAMILY FARM in northern Iowa, my father, Clarence Hall (left) and a friend were getting ready to pick corn. My father was born in 1898, so this picture was probably taken about 1920. An excellent corn-husker could pick 100 bushels a day, though I don't know whether my father was in that class. The husker would grab an ear, strip the husk off with a "husking hook," and throw the ear over the side of the wagon. On the far side of the wagon a "bang board" is visible — the ear could hit this and then fall back into the wagon. The huskers might fill the wagon in a morning, then again in the afternoon. I can remember when horses were still used on this farm — our farm was the last in the area to switch to a tractor. — Irving Hall (6415)