

Joint Program with AT&T Allows Labs to Procure Quality Components at a Lower Cost

An ever-tightening defense budget belt has prompted many Labs projects to find less costly ways of doing business while still meeting customer requirements. Sandia's nuclear weapon command and control program is no exception, thanks to a new joint component program with AT&T.

Called the AT&T Total Quality Management (TQM) Program for Procured Electronic Components, the program allows Sandia organizations to choose commercially available electronic components from an AT&T parts base of more than 3,000 integrated circuits (ICs) and 500 families of discrete semiconductors and other components — totaling more than 30,000 components.

The result, says Bob Baker (5172), head of a nine-member team that initiated the program, should be better products at a reduced cost to Labs customers. "For decades, industry has provided Sandia with custom-made electronic components for weapon systems, but at a premium," says Bob. "Now that we're buying fewer and fewer weapon components, we must find ways to use components that are commercially available."

Quality of Commercial Components Improves

In recent years, says Bob, the quality of commercially available electronic components has risen to a level comparable to or better than that of Mil Spec ("Military Specification") or SA ("Sandia Apparatus") components — components "qualified" for weapons use by DOE or DoD. This change in quality can be attributed to industry competition and a variety of new commercial applications for high-quality electronics, such as computers, cars, and communication systems.

But the traditional method of qualifying each component and its supplier for weapons use involves extensive component testing and strict production line controls. The cost of qualifying a single component type averages about \$150,000. That means that a system requiring 300 new electronic components could cost Sandia about \$45 million just to qualify its components.

The AT&T program ensures that components meet the highest standards for quality and reliability by requiring its various suppliers to establish self-imposed quality controls. Because AT&T purchases so many electronic parts (about 2.5 billion a year), its suppliers are under contract pressure to meet the AT&T standards consistently.

"Sandia's component procurement needs are limited and irregular," says Bob, "but AT&T's large volume requirements obligate suppliers to provide



ASSEMBLING a Secure Recode System (SRS) system board are lead design engineer Nadine Miner and design support technician Shawn Leslie (both 2312). High-quality electronic components for the SRS are being ordered by Allied-Signal from an AT&T parts base of more than 30,000 commercially available components. Commercial uses for high-quality electronic systems include computers, cars, and communication systems.

high-quality electronics consistently. By joining forces with AT&T, we know we are getting the highest-quality goods at a competitive price."

Sandia's participation in the AT&T program was sparked two years ago when Sandia designers were developing a new Secure Recode System (SRS) for the Air Force. Because several hundred electronic components needed to be tested and qualified for the system, projected development costs were

(Continued on Page Four)



LAB NEWS

VOL. 44, NO. 4 SANDIA NATIONAL LABORATORIES FEBRUARY 21, 1992

A Shifting Focus and Changing Roles for the DOE Laboratories — See Page Six

Co-hosted by Sandia

Conference Examines Status of Women at DOE Facilities

Women working in technical fields at 30 DOE facilities around the country convened in Livermore recently for the second annual DOE Review of Laboratory Programs for Women. The meeting, which drew 140 participants, was co-hosted by Sandia National Laboratories and Lawrence Livermore National Laboratory (LLNL).

Sandia President Al Narath kicked off the conference with some thoughts on the changing

corporate culture in America.

"We are living in a time when change is occurring at a rate that none of us has ever experienced," said Al. "These changes pose incredible challenges; there are a lot of problems facing us. But I also see opportunities to move some things forward that have needed to be moved for a long time.

"It's encouraging to see women in ever larger numbers having increased influence over what happens in the workplace. I take great pride in the strides that women at Sandia have made. Comparing the number of women managers and executives at Sandia to those in management 10 years ago shows that we have made real progress.

"We need to continue making progress in that direction, and I am optimistic that we will. We need all the talent in this nation we can get."

LLNL Director John

Nuckolls also shared some opening remarks at the conference:

"The coming demographic changes in our workforce will provide an opportunity for the renewal of our laboratories. Overcoming the often subtle barriers to women's success in science and engineering will require a sustained commitment.

"The challenge is great and the potential rewards are enormous."

We must discover how to make exciting and challenging opportunities accessible to all of our employees. We must reduce the conflict between work and family lives. And we must work together on these problems as men and women to implement the required changes.

"The challenge is great and the potential rewards are enormous."

Room for Improvement

Joan Woodard, Director of Environmental and Manufacturing R&D Programs 6600, presented the results of the Sandians' Perspective survey as they apply to diversity, opportunity, equity, and mentoring: "Sandia, though not yet

(Continued on Page Three)



CHATTING WITH KEYNOTE speaker Mildred Dresselhaus of MIT (right) are (from left) Karen Scott (8526), Kim Mahin (8312), Pat Falcone (8532), and Jane Ann Lamph (8483).

This & That

Rip-Roaring Reading: "Rethinking Research" - The December 1991 issue of *Scientific American* includes a thought-provoking article titled "Rethinking Research" (pages 136-139), an examination of some basic changes in the way research is viewed and managed at our parent company. The very purpose of research at AT&T Bell Labs - long considered one of the finest research labs in the world - appears to be changing, and many research projects are being tied to AT&T's engineering and development teams, called business units.

The article quotes Paul Fleury, Sandia's new VP for Research and Exploratory Technology 1000 (he was director of Bell Labs' physical research lab when interviewed), and former Sandia Research VP Bill Brinkman, now executive director of Bell Labs' physics division. Now that Paul has completed a couple months here, we hope to talk with him soon about his plans and any new directions for Sandia research.

* * *

Feeling Superior! - Sooner or later, errors show up in every publication. Some readers love to circle those errors or otherwise highlight them, send them back to editors, and thereby feel just a little bit superior for catching someone else's mistake. Those of us in the publications business, in turn, get our kicks by finding errors in the "biggies," such as *Scientific American*. They're rare, but the article mentioned above contains the following analogy: "For many of these researchers, trying to find the boundaries is like playing blindman's bluff in a mine field." That old game is, of course, blindman's bluff, not bluff. Now, where did I put that editor's address?

* * *

Better, But Still "Dead Last" - Preliminary figures released recently by the New Mexico Highway and Transportation Dept. show that motor vehicle crashes in 1991 claimed 469 victims, 6 percent below 1990's death toll of 499. This is the second year in a row that the annual death toll has dropped, and that's great, but the sad news is that New Mexico still has the nation's highest per-capita death rate: 29.7 traffic deaths per 100,000 population. Maybe we'll get out of the cellar one of these years.

* * *

All in the Family - Spending a few days around my oldest brother several weeks ago reconfirmed something I've known for years - I get my "smart mouth" naturally. But I may have learned to control it a little better than he has. As his wife was leaving the house for an appointment with her beautician, he quipped, "Off to see the magician, eh?" When she returned, obviously proud of her "new do," Big Brother looked up and said, "Couldn't get you in today, huh?" What's truly amazing is that he's been making those kinds of remarks for 40 years or so, and this is only his second wife. I think he gets by with such remarks by also poking as much fun at himself as he does at the Mrs. He says his waist size is 36 inches, but the last time he went to buy pants he tried on some 38s and they felt so good that he bought 40s!

* * *

Tech Transfer Opportunity - Speaking of pants sizes, I think some Sandia chemist could do Americans a favor by working up a cooperative R&D agreement with a company to jointly develop a special laundry detergent that would prevent men's pants from shrinking during winter. I just hate it when that happens, and it happens about every year. •LP

feed back

Q: Does Sandia save money on health insurance premiums by not having to pay premiums for spouses who also work here?

A: Since April 1, 1986, all Sandia health care plans have been self-funded. A self-funded plan does not pay premiums to an insurance company. A contract is placed with a company to perform administrative services for the plan. This contractor processes claims and generates checks from a Sandia bank account. These services have two fee components: a charge per employee per month (which is less than \$2 per employee per month for the Medical Care Plan and less than \$1 per employee per month for the Dental Expense and Vision Care plans), and a charge for each claim that is processed. Sandia transfers funds to appropriate bank accounts as needed to cover the checks that are written.

Because Sandia self-funds the health care plans, there is no premium saved by having married couples file claims under only one employee. If married couples have no other dependents, each employee may enroll in the health care plans as single employees. When there are other dependents, it is necessary to declare one employee as the one with family coverage and the other employee as a dependent. This is to assure that family deductibles and out-of-pocket expenses are properly calculated.

Ralph Bonner (3500)

Q: Work with the base and city to build another entrance off Juan Tabo to service residents from the far Northeast Heights and mountain areas who are driving to facilities on the south side of the base. This will be an absolute necessity if the Air Force Space Systems Division moves to Kirtland. Use the gate entrance during duty hours only.

A: Sandia and DOE have been working with the Air Force and the city on several proposals for a second entrance from Eubank Boulevard. Many issues need to be resolved, plans developed, and funding approved before any decisions can be made. Rest assured that Sandia's interests will be part of any future growth on the east side of Kirtland Air Force Base.

Jim Jacobs (7800)

Q: Use more electric E-Z-GOs and construct solar cell/battery pack recharging centers at parking sites. Use excess solar cells from test programs at charging centers. Apply more solar energy technology to Sandia daily life.

A: Thank you for your concern. Your suggestion to increase the use of electric carts and recycle excess solar cells for recharging the carts is innovative. However, high maintenance and development costs associated with electric-powered carts make this idea unfeasible at this time. Electric carts generally require three times more maintenance than gas-powered carts. The average cost of the increased maintenance is about \$1,000 per year, not including battery replacements. This cost is twice that of gas-powered carts, including gasoline costs. Electric-powered carts are currently being phased out when they reach the end of their life span.

Based on further consultation with Power Sources Dept. 2520, electric vehicles require large currents to recharge the battery packs. This would require rather large solar arrays. Unfortunately, charging electric vehicles with solar arrays presents a problem: the time during which the electric vehicle is in use is also the time when solar arrays are most effective - the middle of the day. This problem could be overcome by storing daytime energy and using it to recharge the vehicle at night. This can be done, but funding is a problem and engineering is needed to make the system more efficient. In order to use this method, Sandia would need to replace its current electric fleet with newer, more efficient vehicles.

Jim Martin (3400)

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Card of Thanks

The family of Evelyn Miller wishes to thank everyone who contributed to her memorial fund. Your response was generous and very gratifying to us. A check has been sent to the United Scleroderma Foundation for research against this terrible disease. We thank you all so very much.

Warren Miller (6316)

Larry Carrillo (9331)

Congratulations

To Marguerite Kaminski and Bill Ling (4063), a son, Cody Alexander, Jan. 3.

To Tisha Brooks and Randall Romero (9351), a daughter, Arielle Danae, Jan. 31.

To Barbara Jones (3545) and Orlando Lucero, a daughter, Estrella Maria, Feb. 3.

To Carol Stein (6233) and David McTigue (1511), a son, Peter Francis, Feb. 5.

To Cathy and George (1277) Baldwin, a daughter, Emily Marie, Feb. 11.



(Continued from Page One)

DOE Conference

perhaps a model organization with regard to women, has in fact much to be proud of in its programs and actions with regard to women's issues. For example, our education programs, the *Sandians' Perspective* survey, our leave policy, our benefits, and recent focus groups are all activities that have drawn much interest from women at other sites."

Joan added that many DOE sites have initiated new programs and are "developing very aggressive postures regarding the solving of issues for women and minorities at their sites. I view that as one of our greatest challenges at Sandia — ensuring consistent, positive, and aggressive implementation of existing programs across the Labs, as well as creating new programs where appropriate."

The two-day program featured six working groups:

- Point-of-Contact Working Group — discussed the needs of a baseline data system to follow the status of women at DOE sites. The system



AMONG THE SANDIANS participating in the conference were (from left) Judy Tejada (8484), Victoria Levin (8541), Nancy Freshour (7825), Celeste Rohlfing (8341), Rose Ann Poloncasz (3511), and Joan Woodard (6600).



SANDIA PARTICIPANTS included (from left) Vickie Rodgers (3511), Jan Williams (6600), Shannon Lytle (35), Ellen Evans (1200), Patricia Falcone (8432), Lois Johnston (8316), and Sandra Bowers (8484). Glenda Gentry (8343) was also a delegate but is not in the photo.

will help identify facilities that might be emulated by others for "best practices," as well as review the need for programs that support "quality of life in the work environment."

- K-6 and 6-12 Grades Working Groups — made recommendations concerning actions DOE might take to support elementary and secondary education, particularly with the goal of improving female performance in math, science, and engineering courses. The group also discussed the need to identify more visible role models.

- College Working Group — discussed ideas for summer internship programs and recruiting programs that will encourage women to pursue careers in math, science, and engineering.

- Career Management Working Group — made recommendations on mentoring and diversity training.

- Retraining/Reentry Working Group — addressed the special needs of reentry college applicants, ranging from mentoring to family support,

including such issues as child care during university retraining.

Recommendations Going to DOE

The working groups spent five hours deliberating on a set of recommendations to DOE. The final document will be available from Educational Outreach offices in both Albuquerque and Livermore after it is approved by DOE.

Participants who attended from Sandia, Albuquerque (in addition to Joan) were Ellen Evans (1200), Nancy Freshour (7825), Rose Ann (Continued on Page Four)

Fun & Games

Mike Ferrario (5375) got a hole-in-one at the Las Positas Golf Course in Livermore on Jan. 19. It was on the sixth hole, a 172-yard shot made with his 4-iron.



SANDIA LIVERMORE NEWS

Path to Success

Professor Calls for Commitment from Top Management

In her keynote address at the DOE Review of Laboratory Programs for Women, MIT Professor Mildred Dresselhaus emphasized the importance of a commitment by top management to create a supportive environment for women.

Besides that, three other elements are necessary to build a successful workplace environment for women: an emphasis on job productivity and accomplishment rather than adherence to inflexible working conditions; recognition of the importance of "critical mass" in numbers of women in the workplace in order to fully utilize their talents; and a policy for dealing with harassment.

Dresselhaus is currently chair of the National Research Council Committee on Women in Science and Engineering, as well as a member of both the National Academy of Sciences and the National Academy of Engineering.

In addition to her talk, she discussed workplace issues in a separate session with a group of Sandia women.

"Numbers speak," said Dresselhaus. For example, she noted, one study traced the path of a single cohort of US students who were high school sophomores in 1977. They were equally distributed by gender (two million boys and two million girls). At each level of education, more

women dropped out of science and engineering disciplines than men. Ultimately 9,700 students received PhDs in natural sciences or engineering; of those, only a few hundred were women.

Once in the workplace, she said, women often have a less clear understanding of the rules for advancement and recognition than do men. She cited evidence indicating that women's achievement may be constrained when there are not enough other women around, and suggested networks and support groups, enhanced mentoring, and clear definition of the rules for advancement as ways to help women be more effective.

Job assignments are another key to success in the workplace, Dresselhaus said. Just like men, women cannot advance in technical careers without the experience and opportunity of challenging work assignments. Dresselhaus recounted that her own daughter, after earning two degrees in engineering from MIT in 1980, was initially assigned to copying blueprints because her supervisor had no previous experience with women engineers. Only after she got a new supervisor who gave her a substantive assignment was she able to demonstrate her abilities.

Another problem is that women can get discouraged, said Dresselhaus. When they aren't

taken seriously and face subtle inequities day by day, many drop out.

Negative feedback to students about poor workplace environments may have led to reduced engineering enrollments of women in recent years, she said. But Dresselhaus added that this is probably an oscillation, that the climate in the workplace will become more hospitable, and that women will earn engineering degrees in greater numbers.

Regarding government's role, Dresselhaus noted that the main achievement of legislation has been to focus on entry-level opportunities, thus getting women in the door. Real success comes when the workplace allows women to demonstrate their talents and "management begins to focus on maximizing the utilization of those talents. That's when good things start to happen.

"We've made a lot of progress in the workplace," she added. However, she noted that the expressions of women in the audience during her talk confirmed that "we've got a long way to go."

Asked why a young woman should go into science today, Dresselhaus responded, "Because it's fun. Of course, it's hard work, but it's fascinating and exciting. I love it." •

(Continued from Page One)

Components

prohibitively high.

Sandia's solution was to procure the SRS components through the AT&T program, saving the time and cost of qualifying them internally. About 98 percent of the components needed for the SRS were available directly from AT&T suppliers. Allied-Signal, the DOE production agency for the program, is now successfully ordering SRS components through the program, says Bob.

Labs Contributes Technically, Too

To participate, Sandia pays a small portion of the total cost of the AT&T program (approximately 10 percent) along with AT&T's other components customers, including several AT&T factory locations. Sandia's share of the cost amounts to about \$600,000 — the cost of qualifying about

Component Program Is Mutually Beneficial, Says VP Heinz Schmitt

Heinz Schmitt, VP of Engineering Design and Development 2000, comments on the new joint component program between AT&T and Sandia:

"In the past, component activities at Sandia have been primarily based on the needs of DOE Military Applications. The joint program with AT&T offers Sandia an opportunity to expand the engineering services and product base of the Labs' weapon components program to organizations Labs-wide. The improved product availability and lower costs this arrangement offers will be useful for broader applications across all Labs sectors.

"Sandia and AT&T will both benefit from this program," he continues. "The arrangement includes exchanging information between the two partners about component technologies. Sandia will contribute in the areas of reliability assurance and advanced failure analysis techniques. From AT&T's Quality Management and Engineering approach, we expect to learn about vendor qualification as well as learn from AT&T's applications experience and extensive data base."

Labs Organizations Encouraged to Participate

Sandia organizations that use high-quality electronic components are encouraged to take advantage of the AT&T TQM Program for Procured Electronic Components, which makes available a parts base of more than 30,000 components, says Bob Baker (5172). An analysis of vendor data, production removal rate data, and field failure return data for most of the electronic parts is available through AT&T. For more information, contact Bob on 5-9862 or Ray Bair, Manager of Microelectronics Products Dept. 2370, on 4-1912. Ray is the point of contact with AT&T for the program.

four components individually — notes Bob.

The Labs also contributes to the program technically. "Sandia has a lot of technical expertise and analytical capability in this area," he says. "AT&T has indicated that it wants, and welcomes, the Labs' technical input into the program."

In addition, says Bob, the joint program supports a national objective spelled out in a report by the Center for Strategic and International Studies in Washington, D.C., which calls for the

The cost of qualifying a single component type averages about \$150,000.

integration of industrial and military technologies to help improve US economic competitiveness. Sen. Jeff Bingaman co-chairs the committee that issued the report, titled "Integrating Commercial and Military Technologies for National Strength."

"This program shows that Sandia, along with AT&T, is working toward a national objective, that of joining our resources with industry to achieve national strength," says Bob.

Heinz Schmitt, VP of Engineering Design and Development 2000, and Bill Kastning, AT&T's VP of Quality Management and Engineering, formalized Sandia's participation in the program Dec. 5 at a Sandia signing ceremony.

Kastning will return to Sandia next week (Thursday, Feb. 27) to discuss potential partnering opportunities between Sandia and AT&T. "We intend to acquaint Bill with the three business sectors at Sandia and show him examples of activities in our newly structured Components Center," says Heinz.

Members of the team that initiated Sandia's



HEINZ SCHMITT (right), Sandia VP of Engineering Design and Development 2000, and Bill Kastning, AT&T VP of Quality Management and Engineering, formalized Sandia's participation in a new AT&T program for procuring electronic components during a Dec. 5 signing ceremony at Sandia. The two are involved in ongoing discussions about opportunities for other joint programs between Sandia and AT&T.

participation in the program include Bob, Al Farmer (2312), Jim McKenney (2372), Janet Sjulín (341), a representative from DOE Albuquerque and one from DOE Kansas City, and three representatives from Allied-Signal, Kansas City. ●JG

Take Note

The New Mexico Engineering Foundation, as part of its continuing engineering education program, is sponsoring a one-day seminar titled "Solid and Hazardous Waste in New Mexico: Management, Cleanup, and the Law." The seminar will be held April 1 at the BDM conference facility near the Albuquerque International Airport from 9 a.m. to 4:30 p.m. Presentations will be made by representatives from the New Mexico Environment Department, DOE, and Sandia. Topics include environmental laws and regulations, compliance and management costs, and programs in place to correct environmental problems. The fee is \$20 for New Mexico Society of Professional Engineers members, \$30 for non-members, and \$10 for students. For more information, contact Robert Rea on 766-7422.

(Continued from Page Three)

DOE Conference

Polonczak (3511), Vickie Rodgers (3511), and Jan Williams (6600).

Delegates from Sandia, Livermore included Patricia Falcone (8532), Glenda Gentry (8343), Lois Johnston (8316), Victoria Levin (8541), Celeste Rohlifing (8341), and Judy Tejada (8484).

Sandians who helped organize and plan the conference included Jane Ann Lamph (8483), Kim Mahin (8312), Mary Rivenbark (8534), Karen Scott (8526), Judy Tejada, Sandy Ferrario (5361), Glenda Gentry, Celeste Rohlifing, Ellen Evans, Gloria Zamora (4500), Dorothy McGarrah (8211), Sandra Bowers, Carol Caldwell (8543), Victoria Levin, Virginia Holtzclaw (8543), Gloria Christensen (8011), Sherry Angelini (8531), Cynthia Richards (8535), Jack Bishop (8535), Karen Hoexter (8526), Kristy Sibert (8534), Sheila Akins (8441), Alice Johnson-Duarte (8542), and Lois Johnston. Many others helped during the conference. ●BLS

Continued Commitment

Special Team Will Implement Progress

As a result of the DOE Women's Conference, a new Process Management Team (PMT) at Sandia, Livermore will spend the next year promoting the progress of women at the Labs and education outreach programs to girls.

In fact, the team members' individual involvement and commitment was an unambiguous way for the steering committee to select a limited number of attendees from the 30 Sandians who helped plan and organize the conference.

To pick the official conference delegates (only six could attend from each DOE facility), the steering committee attached a questionnaire to VP John Crawford's letter endorsing Sandia's participation. It solicited volunteers (both men and women) who were willing to make a one-year commitment to a PMT that would help make the recommendations from the conference become reality in the workplace. Besides participating in the conference, the volunteers agreed to:

- Communicate the recommendations to employees at Sandia, Livermore.
- Implement and follow the progress of the recommendations.
- Develop action plans to improve the quality of life for all Sandians.
- Interface with the Sandia, Albuquerque Women's Committee.

Twelve Sandians volunteered for the team. The steering committee selected six attendees. The other six volunteers attended the conference as coordinators or liaisons.

The PMT met for the first time Jan. 22. Members are Sandra Bowers (8484), Patricia Falcone (8432), Sandy Ferrario (5361), Beth Fuchs (8246), Glenda Gentry (8343), Karen Hoexter (8526), Victoria Levin (8541), Mary Rivenbark (8534), Cynthia Richards (8535), Celeste Rohlifing (8341), and Judy Tejada (8484). Team members represent a cross-section of programs and job classifications.



Full-Time Sandians — Part-Time Cops**Six Sandians Are Volunteer Albuquerque Police Officers**

Officer Marty Gonzales had difficulty reading the temporary license tag in the rear window of the vehicle in front of him, so he turned on the police car's flashing lights and pulled the vehicle over.

The driver had no license and no proof of insurance. Marty's partner, Officer Tye Morgan, inspected the temporary vehicle license taped to the window and found the date had been altered to extend beyond its 30-day legal limit. A computer check showed the driver had a suspended license, numerous unpaid citations, and three DWIs, but there were no warrants for her arrest.

Officer Morgan confiscated the car's temporary tag. Meanwhile, Officer Gonzales wrote citations and informed the driver and her passenger that they would have to lock the vehicle and leave it parked until they got a valid license tag.

This scene is not particularly unusual for Albuquerque Police Department (APD) officers, except for the fact that Officer Gonzales is a full-time Sandia employee in Division 5826. He is one of six Sandians who are currently volunteering as APD reserve officers.

'Great to Have Volunteer Help'

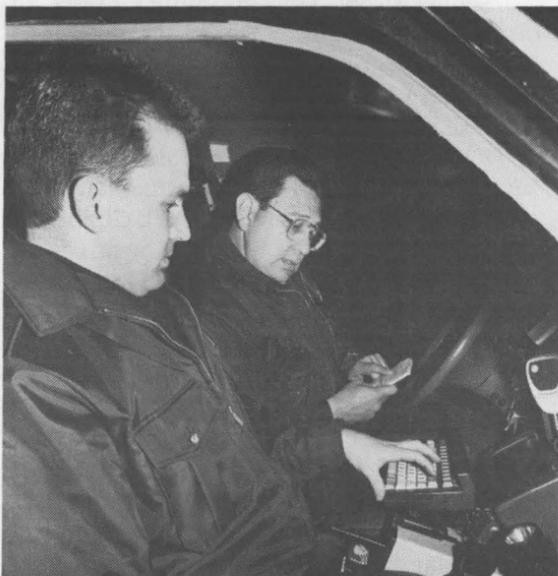
Officer Morgan, Marty's partner on this particular night, has been with APD for two years. He likes having a reserve officer patrolling with him. "I started out as a Sheriff's Department reserve," he says. "I thought it was a great program. We're really shorthanded in the APD, so it's great to have volunteer help."

Other Sandians currently in the program include Joe Abbin (5100), Jim Blankenship (3401), Phil Forbes (5021), Paul Justice (3435), and Kent

'Now that I'm a reserve officer I guess you could say I have the best of both worlds.'

Parsons (2310). Three other Sandians have participated in the recent past: Carolyn Lucero (3422), Bill Talley (9534), and Susan Wilson (3435).

This is Marty's second "tour of duty" as a reserve officer. In fact, except for an APD policy 15 years ago that turned down applicants with glasses, Marty might be a full-time police officer today. He scored high on his police academy exam, but was told his vision wasn't good enough. So Marty applied at Sandia and was offered a job. Two weeks later APD called back and said it had reconsidered his application, but Marty was happy at Sandia.



CHECKING THE TAG — APD Officers Tye Morgan (left) and Marty Gonzales check a vehicle license tag number using a computer terminal inside an APD squad car. Marty, a full-time Sandia employee in Division 5826, is a volunteer reserve APD officer.



VOLUNTEER APD OFFICERS — These six Sandians currently serve as Albuquerque Police Department reserve officers. They are (from left) Jim Blankenship (3401), Phil Forbes (5021), Marty Gonzales (5826), Paul Justice (3435), Kent Parsons (2310), and Joe Abbin (5100). "It's a chance for me to give something back to the community," says Joe, "and I think it's good for the police to have contact with people from outside the department."

"Now that I'm a reserve officer I guess you could say I have the best of both worlds," Marty says. "I'm happy to be at Sandia and I still get to be a cop."

Marty's interest in police work has had one other effect. Two years ago his son Michael graduated from the APD academy and is now a field officer.

"I'm pleased that he became a police officer," Marty says. "I was a reserve officer when Michael was young. He has told me that influenced him. One day when I was on duty, my wife and Michael happened to drive up to an intersection where I was giving a traffic ticket. Michael said seeing me in my uniform that day was the first time he ever really thought of me as a police officer, and it was the first time he thought about what police do."

On Hold for a Time

Soon, though, Marty decided that his Sandia job and raising a family took too much time for him to continue in the reserves, so he put his reserve police work on hold until last April when he again graduated from the academy.

"Once police work gets in your blood it's hard to get it out," he says. "At home I often listen to a police monitor to keep track of calls. I go out on patrol as many as three times a week. This is defi-

nitely something you have to have a strong interest in. You never know what will happen on a shift."

Joe Abbin has been a reserve officer since 1983 after becoming aware of the program through a LAB NEWS article that told of the need for volunteers.

The contrast between Sandia and APD work is significant, Joe says. "Police work is exciting, but

'It fulfills a need for excitement in a constructive way.'

you need to have a strong interest in this type of volunteer work. You go from a trusting environment into one in which some people lie to you routinely and may even shoot you or stab you. You have to be aware of your surroundings and environment at all times.

"It's a whole other way of public service," continues Joe, "and it fulfills a need for excitement in a constructive way. It's a chance for me to give something back to the community, and I think it's good for the police to have contact with people from outside the department." ●ASTotts(3163)

**Reserve Officers Get Same Training**

Officer Helene Gould, who coordinates the reserve program in APD Chief Bob Stover's office, says the reserves go through the same screening and training process as full-time APD officers.

"It's an extensive process," she explains. "First there's a full background check, then a written exam and a physical agility test. If a candidate passes those, there's a psychological exam, a polygraph test, and a personal interview with the department's psychologist, who then makes a recommendation. After that, candidates go before an interview panel composed of department personnel and then to the chief's selection committee. The chief and his deputy chiefs make selections based on scores and

other factors. When all that's done, candidates go to the police academy for 16 weeks — three nights a week and all day Saturdays. An on-the-job training period follows in which they receive further instruction from a training officer before being assigned two-person duty with regular officers."

Once trained, the reserves are treated as APD officers and perform the same duties. They are required to do at least one eight-hour shift a month, but most — like Marty — go out more often.

Anyone interested in more information about the APD reserve program can call officer Helene Gould on 768-2200. Her office is in the Police Building at 400 Roma NW.

Labs and Headquarters Must Strengthen 'Family Ties'**DOE and Laboratories Prepare for Changes in Nation and World**

Shifting political relationships abroad . . . economic and environmental difficulties at home. As the nation and the world change, DOE must find new ways to contribute to national security, must even find new definitions of security. The DOE labs are inevitably a part of this process.

Those recognitions were at the heart of a "summit meeting" held in December, during which Secretary of Energy James Watkins, other senior DOE managers, and about 20 directors of DOE's laboratories discussed the future of DOE and the labs.

President Al Narath recently told Sandia managers about the outcome of the summit meeting and answered their questions. This article highlights the information that Al presented.

"It was clear to all of us," said Al, "that the principal objective was to find ways to strengthen DOE's mission. We agreed that DOE must emphasize, more than ever before, being a partner with other government agencies. We also need to enhance the relationship between DOE headquarters and the laboratories. To execute an expanded mission, we have to strengthen that family relationship."

The DOE labs do what few other institutions can. They work on large technical issues that unfold over decades. They have broad, interdisciplinary sets of core competencies. In nationally urgent matters, they can respond rapidly. In short, they're a critical asset for DOE and the nation.

Secretary Watkins and the lab directors discussed DOE missions and the labs' roles in four main areas: energy, defense, environmental restoration and waste management, and science and technology in the national interest.

Energy for US Progress

DOE's mission in energy is to conduct R&D aimed at less costly, more efficient methods of producing and using energy, thus helping the nation grow economically and improve its national competitiveness in environmentally sound ways.

DOE and the labs will develop an integrated

R&D approach to this mission, consistent with the national energy strategy. "Partnerships between the labs and industry will be a way of attacking major problems," said Al. International programs will be created to help developing nations and former Eastern-bloc countries adopt energy technologies that are efficient and environmentally acceptable. "The economic well-being of other nations affects our own economy," Al said.

Secretary Watkins plans a series of energy roundtable meetings involving DOE lab directors, industry managers, and DOE representatives. DOE will also hold public meetings in economically distressed areas, inviting representatives of industry and local and state government to explore contributions DOE might make to regional economies.

Defense Mission Will Shift Focus

The summit participants discussed defense missions in three areas: nuclear deterrence; non-proliferation, intelligence, arms agreements, and safeguards; and non-nuclear defense.

The nuclear weapon program will downsize, in both the stockpile and the number of new weapons. As the nuclear arsenal is "built down," the labs will help make sure the job is done in an

"Partnerships between the labs and industry will be a way of attacking major problems."

environmentally acceptable way. The weapons that remain must be survivable and meet all other mission requirements. R&D will place even more emphasis on the intrinsic safety and security of warheads.

The weapon labs' functions will be consolidated into a single integrated, cost-effective program — but one that retains competition where necessary. "DOE hasn't decided to have only one weapon lab," Al said. "But the labs — whatever number it turns out to be — will work as a unit for maximum efficiency, and will compete only where competition adds value." Technological leadership in developing Complex 21, the streamlined weapon complex for the next century, is to be a core mission of the labs. The labs' skills will also be put to work in environmental restoration and waste minimization within the defense complex.

In non-proliferation and related defense areas, DOE's mission responsibilities are technology and intelligence related to nuclear weapons, arms agreements, and non-proliferation of weapons of mass destruction. DOE expects the labs to assist the CIA's new Non-proliferation Center and to propose an integrated technology program for non-proliferation and related areas.

In non-nuclear defense, research is focused on high-technology military capabilities for the twenty-first century, using DOE science and technology to meet Department of Defense mission requirements. "It was very significant for us to acknowledge that this is a DOE mission," Al said. DOE plans to develop a broad partnership with DoD for utilizing US defense science resources.

Environment: An Integrated Program

DOE's mission in environmental restoration and waste management (ER/WM) is to carry out ER/WM activities at DOE sites and conduct R&D for more effective environmental protection and restoration. The summit participants agreed to develop a strategy for applying R&D resources to environmental problems in the DOE complex. Industry partnerships will also be created.

"One important idea," said Al, "is for the labs to apply some of their cleanup budgets to R&D that addresses their site-specific problems. This would have to be done with state and local governments' knowledge and support, because a high-



DOE FLAG now flies daily over Bldg. 800. Albert Alarid (3435) raises the flag given to Sandia by Secretary of Energy James Watkins at the December summit meeting.

tech approach might not yield direct results as quickly as conventional approaches. But it could pay off by developing new technologies to apply to other cleanup sites."

Technology in the National Interest

A half-dozen categories make up DOE's — and the labs' — mission in science and technology for the national interest: basic research, technology R&D for US competitiveness, biosciences and health, space, transportation technology, and education. Some of these have long been recognized as DOE missions, but others — space, transportation, education — are new.

In basic research, the mission is to increase fundamental scientific knowledge in nuclear and particle physics and other physical and life sciences. The labs will participate in recommending research priorities. With input from the labs, DOE
(Continued on Next Page)

First Follow-up Meeting Held

Sandia accepted responsibility for organizing the inter-lab meetings called for by the lab directors' three-point program (see main story). Virgil Dugan (4500) is carrying out that responsibility.

"We had the first meeting last month," Virgil says. "Each lab sent a representative, most at the associate director level. Charles Tapp [4300] briefed the group on the principles of our quality program, and everyone then worked at developing a common set of understandings about quality in the DOE labs. It was a tough process, but we wound up with a set that we could all agree to.

"The representatives are to share those understandings with their labs and start putting them to work in various functional areas — purchasing, facilities, budgeting, and similar organizations at each lab."

The next meeting is planned for early April. "We can already see the value of these meetings," says Virgil, "but exactly how we organize them in the future is still being worked out."



COOPERATIVE RESEARCH with industry was emphasized in summit discussions of DOE labs' future roles, as was R&D for environmental problems. Here, Joe Kubas (2742) tests breaking strength of soldered joints for a project that combines those summit aims — a Sandia-Motorola collaboration whose purpose is to eliminate use of ozone-depleting solvents.

(Photo by Mark Poulsen, 3162)

Continued from Preceding Page

will encourage international discussion of new research facilities.

To bolster national competitiveness, DOE and the labs will promote technology transfer. "We want to focus on a small number of areas where we can have a big impact," Al said. "We don't want to fritter away our resources." A limited number of critical-technology areas will be identified where partnerships with industry will be most effective.

Plans include streamlining the process of setting up CRADAs (Cooperative R&D Agreements) and other industry partnerships, and increasing the labs' flexibility and discretion for conducting collaborative research.

In biosciences and health, DOE labs can offer unique capabilities to researchers in areas such as computational and structural biology, medical imaging, and genome research. Working with the National Institutes of Health, DOE will identify research areas where it is appropriate for the labs to be involved.

In space science and technology, DOE will sponsor research where the labs can significantly affect progress — for example, nuclear propulsion and power, recoverable resources and renewable energy, remote sensing, and radiation shielding. Formal R&D agreements will be explored with NASA, DoD, other government agencies, and the private sector.

In transportation technology, DOE's traditional R&D areas are energy efficiency and environmental acceptability. In partnership with the Department of Transportation, DOE plans to extend research to areas such as safe packaging, security systems, systems simulation and analysis, magnetic levitation, and intelligent highways. This work is expected to include teaming with industry.

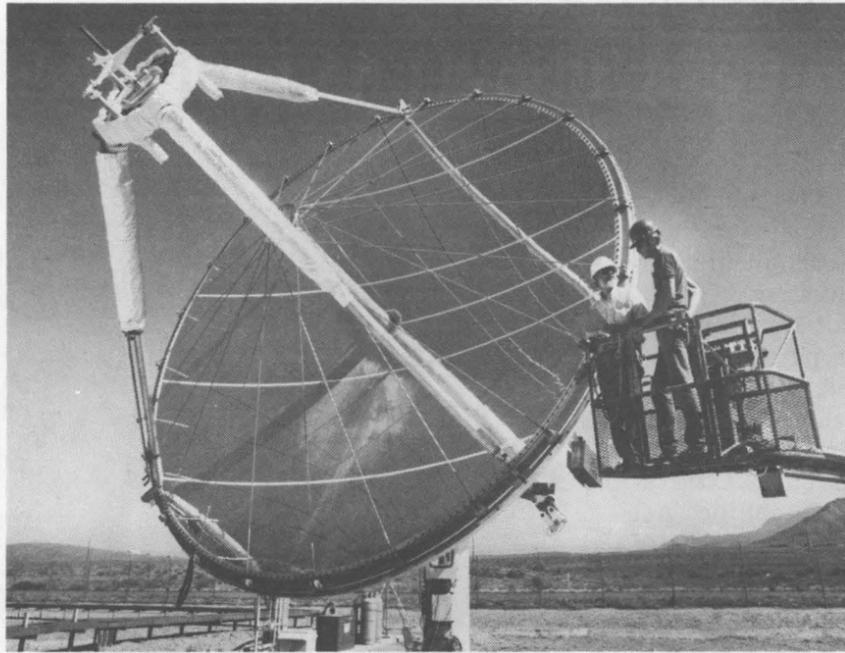
In education, DOE supports the improvement of math and science education at all levels, in partnership with other federal agencies. Every DOE activity will include education as a small but essential component. DOE will broaden partnerships with the National Science Foundation, the Department of Education, professional societies, and the private sector.

What the Labs Can Do

Al also described discussions about the performance of the labs. Current problems have inhibited their performance, he said. Environmental and



MATERIALS RESEARCH — Ramona Myers (2472) injects polyurethane encapsulant into an aluminum mold, employing a technique that produces void-free parts. Sandia's expertise in materials science and applications could contribute to DOE's efforts in technology R&D for national competitiveness. (Photo by Russell Smith, 3153)



SOLAR ENERGY R&D — Tom Mancini (left, 6216) and Jake Van der Geest (teacher and work-study participant) help install a stretched-membrane parabolic dish at Sandia's National Solar Thermal Test Facility. The 7-meter (23-ft.) dish — which has shown promise as a relatively lightweight, economical reflector for solar thermal systems — is an example of technology that could contribute to the nation's energy needs. (Photo by Randy Montoya, 3162)

other standards continue to become tougher, while the public do not understand relative risk levels and increasingly object to actions that carry even small risks. The labs are still dealing with the legacy of past management practices, particularly in environmental matters. Within the "family" of DOE and the labs, tensions cause people and organizations to behave in ways that threaten the success of DOE's mission. Watchdog organizations

"All the labs and their sponsors are working together toward a common purpose."

and groups opposed to nuclear technology in any form can take advantage of such behavior. To overcome these problems, teamwork between the labs and with DOE must be improved.

"The labs' operational performance has not met DOE's expectations," Al said. "That has shown up in Tiger Team and other audits. We also haven't been properly sensitive to the environment that DOE has to operate in — political, economic, and social." For decades, he said, the labs received funds as an "entitlement," and it has been slow and painful for them to change to an existence justified by excellence.

As a result of these difficulties, an arm's-length relationship has evolved between DOE and the labs, one in which DOE doesn't trust the labs and feels it has to exercise rigid control and oversight. The labs aren't sufficiently involved in formulating DOE orders, the orders are over-detailed, and cost-benefit tradeoffs aren't considered seriously — omissions that cause inefficiencies, make it difficult to control costs, and threaten staff morale.

"The lab directors agreed to take the initiative in changing this picture," said Al. "We pledged to

"The best way to compete is to be a leader in creating partnerships."

Secretary Watkins that we would operate the labs with greater management formality, discipline, and accountability. We will apply 'bench-marking' and self-assessment and will act on the basis of measurement, not anecdotes."

A three-point program defined by the lab directors consists of the following: (1) Affirm the labs' commitment to the success of DOE in pursuit of its missions. (2) Continuously improve program performance, ES&H (environment, safety, and health), and business practices. (3) Hold regular meetings of lab representatives to share lessons they have learned in the quest for continuous improvement (see "First Follow-up Meeting Held," page six).

The lab directors also offered DOE several suggestions. DOE could establish a way to recognize labs' progress. A DOE "common sense

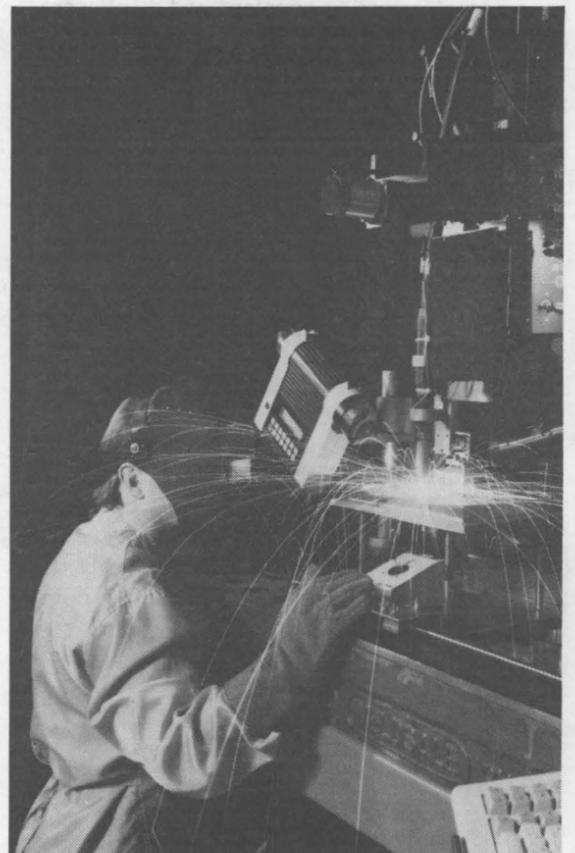
council" could be formed to resolve major issues, validate performance criteria applied to the labs, and investigate changes that could benefit DOE and the public. And, said the directors, DOE could involve the labs in its process of developing orders.

Vision Must Be Nurtured

"In my estimation," Al said, "the summit was a resounding success. The team really came together — the lab directors and DOE people as well. We can see a vision of a better future emerging. But the vision must be nurtured. That means a lot of work." It's important for the labs to take the initiative, he said, warning that DOE's attention may be diverted by the political environment of a presidential election year.

"What makes this period exciting," Al concluded, "is that, for the first time I can remember, all the labs and their sponsors are working together toward a common purpose. Because resources will continue to be limited, there will continue to be competitive pressures. The best way to compete is to be a leader in creating partnerships and teaming arrangements, and making the whole add up to more than the sum of the parts. I want Sandia to be a leader among leaders."

•CS



INDUSTRIAL WELDING processes could be improved by Sandia research, potentially increasing US industry's global competitiveness. Here, Rick Blum (8312) welds metal as diagnostic equipment checks the work. Sandia researchers are also working on computer simulations of welding processes. (Photo by Cary Chin, 8275)

The Americans with Disabilities Act

Facility Improvements Planned for Sandians with Disabilities

According to the National Institutes of Health, roughly one in six Americans now has some permanent disability that affects either mobility or sensory, cognitive, or communication abilities. Many more suffer temporary disabilities from injuries or illnesses during their lifetimes.

Although almost 43 million Americans are known to have such disabilities, physical barriers often hinder their access to workplaces or public facilities, such as malls or restaurants. To protect the rights of this minority against discrimination by employers or owners of public places, Congress enacted the Americans With Disabilities Act (ADA) in 1990, considered by many to be one of the most important pieces of civil rights legislation in decades.

Facilities Management Directorate 7800 has assembled a task force, called the Sandia Accessibility Advocacy Team (SAAT), that is now finding ways to improve access to Sandia facilities for em-

According to the National Institutes of Health, one in six Americans now has some permanent disability.

ployees and visitors with disabilities, according to Steve Yesner of Facilities Safety and Environmental Engineering Div. 7853. The team includes Facilities staff members with expertise in planning, design, and maintenance.

Removing Barriers

To improve access, the team will help bring the Labs into compliance with Title III of ADA, which requires that places of "public accommodation" be designed, constructed, or altered in accordance with a set of ADA guidelines for accessibility. It also requires that barriers to accessibility and communication in existing public places be removed if feasible.

Steve says examples of such public places at Sandia include eating facilities, auditoriums, large conference rooms, classrooms, reception and waiting areas, information counters, and display areas that are open to public access.

Other goals of the team include establishing uniform requirements for accessibility to Sandia facilities, informing Labs organizations about accessibility issues, and identifying needs through



AT THE TOP of a new wheelchair ramp in front of Bldg. 836, Blase Gaude (5021, left) and Wayne Burton (7845) discuss recent facilities work that has improved accessibility to the building for people with disabilities. A sensor above the ramp triggers automatic foyer doors, and a button inside the building opens the doors as well. Before the new ramp was installed, the steps in the foreground were major obstacles for employees with disabilities.

dialogue with disabled employees and disability awareness groups in the community.

Facilities has already completed several projects aimed at improving accessibility to Sandia facilities. Last summer, several walkways, Mardix booths, and parking lots were upgraded in and near Tech Area 1.

Glen Cheney, VP for ES&H and Facilities Management, says he hopes the new SAAT team will help promote an enlightened attitude among employees about accommodating people with disabilities as well as establish Sandia as a leader among DOE facilities for accessibility issues.

SAAT team members include Steve, Carol

Meincke (7821), Wayne Burton (7845), Kenneth Ludwick (7813), and team leader Vin Davis (7841). Mike DeWitte, Manager of Facilities Construction and Environmental Engineering Dept. 7850, is the team's sponsor.

Problems With Accessibility? Here's Who to Call

Vin Davis (7841) is the point of contact for the Sandia Accessibility Advocacy Team. If you or your visitors need disability accommodations, or if you identify a Sandia facility that is causing problems for employees or visitors with disabilities, contact Vin on 4-7703. In addition, the Disability Awareness Program Committee, chaired by Geri Albright (3511), provides guidance for prospective employees and serves as a point-of-contact for employees with disabilities. Geri's phone number is 5-9911.

Take Note

The Defense Nuclear Agency is celebrating its 45th anniversary with a dinner/dance on the evening of Saturday, March 14, at the Sheraton National Hotel in Arlington, Va. Present and past Headquarters, Field Command, and Armed Forces Radio Biology Research Institute employees and their guests are invited. The cost is \$30 per person, \$60 per couple. March 6 is the cutoff date for ticket sales. For more information, contact Kay Peterson or Dell Jarrett (KAFB) on 6-8629.

A "Positive Discipline Techniques" workshop will be offered by Parentcraft on Wednesday, March 11, from 5:30 to 7:30 p.m. Cost is \$10 per person. Registration is by mail or phone: Call 243-2551 or write Parentcraft at 1503 University Blvd. NE, Albuquerque, NM 87102. Free child care is available. Workshops will be held at the Family and Children's Services, Inc., facility at 1503 University Blvd. NE. Parentcraft is a division of Family and Children's Services, Inc., a United Way agency that provides information and support services to parents, educators, and professionals working with children. Call Linda Rengel at Parentcraft on 243-2551 for more information.

Supervisory Appointments

GERALD RECORD to Supervisor of MDE (Manufacturing Development Engineering) Liaison Div. 3719.

Gerry came to Sandia in November from AT&T Little Rock Works, where he was manager



GERALD RECORD

for Purchasing and Transportation (P&T). P&T at Little Rock supports AT&T computer systems; manufacturing in Little Rock and McAllen, Tex.; distribution in Little Rock; and repair and service functions in Memphis, Tenn. Since 1964,

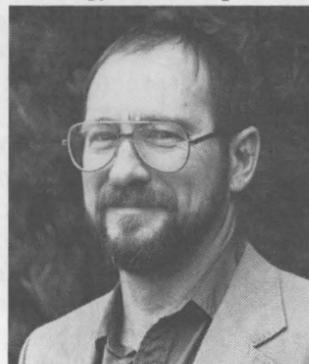
Gerry has also had AT&T purchasing assignments in Oklahoma City; Baltimore; Orange, Conn.; and Kansas City, Mo.

He has a BA in marketing and an MBA in finance from the University of Missouri at Kansas City.

Gerry enjoys playing golf. He has four children and lives in NE Albuquerque.

JIM FISH to Supervisor of Pollution Prevention and Environmental Monitoring Div. 7725.

Jim joined the Labs at Livermore in 1978 as a member of the Solar Technology Division, performing systems analysis on thermochemical storage for solar electric plants. In 1981, he transferred to the Reactor Containment Safety Studies Division in Albuquerque, where he researched and developed molten core containment devices. He transferred to the Process Research Division in 1983, studying thermochemical transport of solar energy. In 1988, he joined the Solar Distributed Receiver Division, where he researched solar-driven devices to



JIM FISH

destroy hazardous materials. In 1989, he transferred to the Environmental Programs Division to develop a pollution prevention program.

Jim has BA and MS degrees in chemical engineering from Rice University and a PhD in the same field from Princeton University. He was a National Science Foundation postdoctoral fellow at the Instituto de Investigaciones Electricas in Cuernavaca, Mexico, before joining Sandia. He is founder and member of the board of the Public Lands Action Network, a national group working on reform of public land ranching. In 1988, he received the Bureau of Land Management national "Take Pride in America" award.

Jim enjoys wine-making and outdoor activities. He is a freelance writer and photographer, and lives in Placitas.



Sandia News Briefs

AT&T Technical Journal Devoted to Sandia Technology Transfer

Technology transfer at Sandia is the topic of a recent issue of the *AT&T Technical Journal*, a technology journal published six times a year by AT&T Bell Laboratories. The November/December issue examines the Labs' technology transfer program and the contributions Sandia is making to US industry.

Eight papers authored by Sandians are published in the issue, with an introduction by Venky Narayana-murti, retired VP of Research and Exploratory Technology, and Dan Arvizu, Director of Technology Transfer and Industrial Relations 4200. Topics include intelligent manufacturing systems, environmentally conscious manufacturing, radiation-hardened microelectronics, X-ray lithography, strained-layer semiconductors, massively parallel computing, personnel identification and digital signatures, and physical security technologies.

Olen Thompson, Manager of Technology Transfer Applications Dept. 4210, says the journal is regularly distributed to 26,000 AT&T employees and 10,000 people in industry, universities, and government. Copies of the issue have been distributed to Sandia supervisors and above and are available for review at the Technical Library.

Legislature Thanks Sandia for Helping Evaluate Computer System

Merle Benson of Operating Systems and Development Services Div. 3124 recently received a memo of appreciation from the 40th legislature (second session) of the State of New Mexico. The memo thanks Los Alamos and Sandia researchers for helping New Mexico's general services department evaluate its central computer resources.

Merle says he and four Los Alamos researchers spent six weeks in Santa Fe analyzing the state's central computer information system. Because the department plans to add four new, large software applications to the system, the network's information capacity was in question. The team's final report concluded that the system could handle the additional software applications, and it delineated the costs required.

The evaluation was provided to the state government at no cost.

Gover Named First Competitiveness Fellow by IEEE

James Gover of Semiconductor Programs Div. 1351 has been appointed by the Institute of Electrical and Electronics Engineers (IEEE) to serve as the first IEEE US Competitiveness Fellow. These Fellows fill advisory roles to the federal legislative branch in Washington, D.C., developing legislation to improve US industrial competitiveness.

On Jan. 20, James joined a five-member team on the staff of Sen. William Roth (Delaware) that is identifying ways to use the nation's R&D expenditures to boost US industry. James is the team's technology expert. The team also includes experts on tax, trade, defense, and Asia.

In 1988, James served as an IEEE Congressional Fellow on the House Science, Space, and Technology Committee. During his term, he helped draft a report titled "Technology and Its Impact on the National Economy." He has also been vice chairman of the IEEE's US Competitiveness Committee. IEEE is an international society with approximately 315,000 members.

Sandian Wins 'Best News Story' Award from AT&T Newsletter Readers

Sue Lampson of Personnel Information Systems Div. 3532 was honored recently by readers of *Communication Link*, a quarterly newsletter published by AT&T's Human Resources Information Systems Division for human resources specialists at AT&T locations nationwide.

Readers voted one of Sue's stories, published in July 1991 and titled "SWAT Team Tackles Data Quality," as the "Best News Story" for 1991. The article provided information about a new AT&T team responsible for finding and correcting data problems in AT&T's human resources information system.

The award, in part, recognizes the article's focus on customers, says Phyllis Remolador of AT&T's Human Resources Information Systems office. Sue is also a member of *Communication Link*'s support team; she periodically contributes to and helps edit the newsletter.

Hickox Named Associate Editor of ASME Journal

Charles Hickox of Thermal and Fluid Engineering Div. 1513 has been named associate editor of the *Journal of Heat Transfer*, the thermal sciences journal of the American Society of Mechanical Engineers (ASME).

Charles' responsibilities will include evaluating technical papers involving porous media for possible publication in the journal.

Send potential Sandia News Briefs to LAB NEWS, Div. 3162.

Medical Corner

Can We Talk — How's Your Self-Esteem?

by Arlene Price, 3300

Self-esteem — is it the greedy self-interest of a "me" generation, or a quality of hardiness, optimism, and self-confidence that helps us meet life's hardships? No matter how we define it, self-esteem involves how we think and feel about ourselves and how these thoughts and feelings lead us to approach life.

One view is that our self-esteem depends on how well we feel we measure up to community standards of success and status. According to this view, we are composed of three parts — a spiritual, material, and social self. We judge all aspects of ourself, including our bodies, traits, abilities, possessions, family, friends, jobs, and hobbies. Our degree of self-esteem depends on how well our achievements meet our aspirations, as assessed by the standards of society around us.

Another view suggests that we measure ourselves by how well we fulfill ideals we have set for ourselves. Our self-appraisal depends partly on whether we let failures — real or imagined — damage our feeling of our own value. In this view, different people emphasize different facets of life. For some, the most important thing is how well one does a job; for others, it's being loved and accepted by family and friends; for still others, it's meeting ethical or religious standards; for others yet, it's being powerful and influential.

Despite differences in defining precisely what self-esteem is and what factors lead to strong self-esteem, most psychologists agree that the basic ingredient is being able to face up to life's challenges in the areas most important to us. I hope that understanding a bit about the sources of self-esteem will help you think about how you measure your own self and will point you in the directions where you would like to excel.

Sandia Medical sponsors activities that can help you improve your self-esteem. The TLC program offers classes in stress management, feeling good, and other esteem-building areas. For one-to-one counseling, the Employee Assistance Program includes the Alcohol/Substance Abuse Program and the Psychology Service. For further information, call me on 5-8729.

Welcome

Albuquerque — Jake Aragon (3426), Freddie Davis (6429), Julie Kesti (3144). Other New Mexico — Mona Lisa Davenport (3426), Jonathan Halpern (7731), Joseph Padilla, (3426).

Elsewhere: New Jersey — Michael Siegal (1154).

Earnings Factors October 1991

Long-Term Savings Plan for Management Employees (LTSPME)	Earnings Factors
AT&T Shares	1.0384
Government Obligations	1.0099
Equity Portfolio	1.0149
Guaranteed Interest Fund	1.0071
South Africa Restricted Fund	1.0190
Long-Term Savings and Security Plan (LTSSP)	
AT&T Shares	1.0365
Guaranteed Interest Fund	1.0070
South Africa Restricted Fund	1.0203
Equity Portfolio	1.0148
Employer Stock Fund	1.0365

Earnings Factors November 1991

Long-Term Savings Plan for Management Employees (LTSPME)	Earnings Factors
AT&T Shares	.9355
Government Obligations	1.0105
Equity Portfolio	.9500
Guaranteed Interest Fund	1.0069
South Africa Restricted Fund	.9707
Long-Term Savings and Security Plan (LTSSP)	
AT&T Shares	.9354
Guaranteed Interest Fund	1.0069
South Africa Restricted Fund	.9693
Equity Portfolio	.9500
Employer Stock Fund	.9361

Earnings Factors December 1991

Long-Term Savings Plan for Management Employees (LTSPME)	Earnings Factors
AT&T Shares	1.0842
Government Obligations	1.0188
Equity Portfolio	1.1048
Guaranteed Interest Fund	1.0070
South Africa Restricted Fund	1.1222
Long-Term Savings and Security Plan (LTSSP)	
AT&T Shares	1.0845
Guaranteed Interest Fund	1.0070
South Africa Restricted Fund	1.1251
Equity Portfolio	1.1043
Employer Stock Fund	1.0842

MILEPOSTS

LAB NEWS

February 1992



Robert Varga
2744 25



Frank Conrad
9548 40



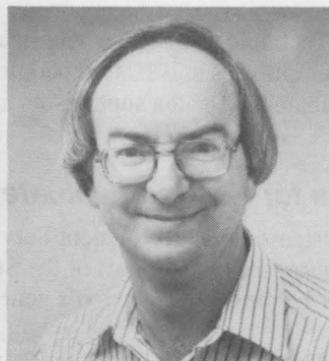
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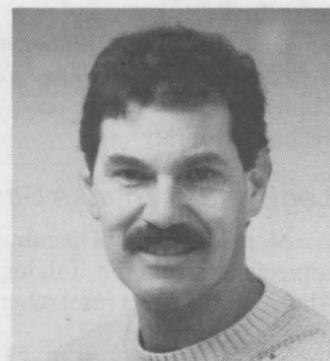
Ruth Brooks
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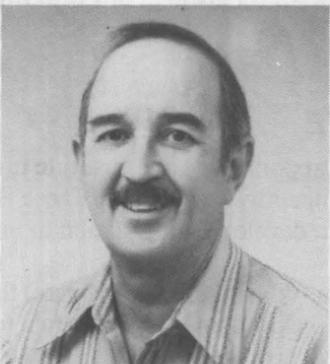
Sharon Jensen
6230 15



Doug Greenway
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Charlie Randour
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Jim Sanchez
3422 35



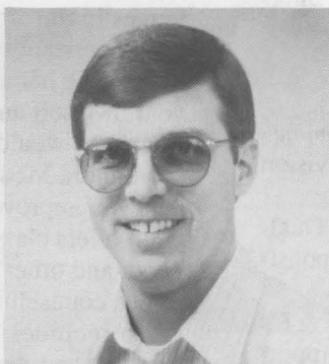
Rick Eisler
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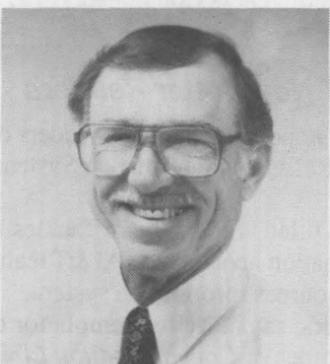
Doug Weaver
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Cecil Tafoya
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Joseph Roesch
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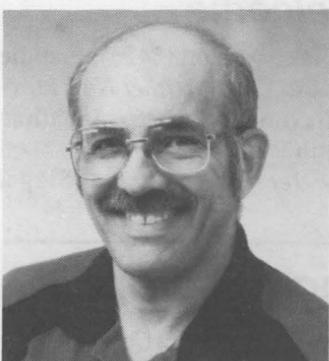
Ernie Ayers
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David Sealey
3437 15



Tex Samuelson
2714 35



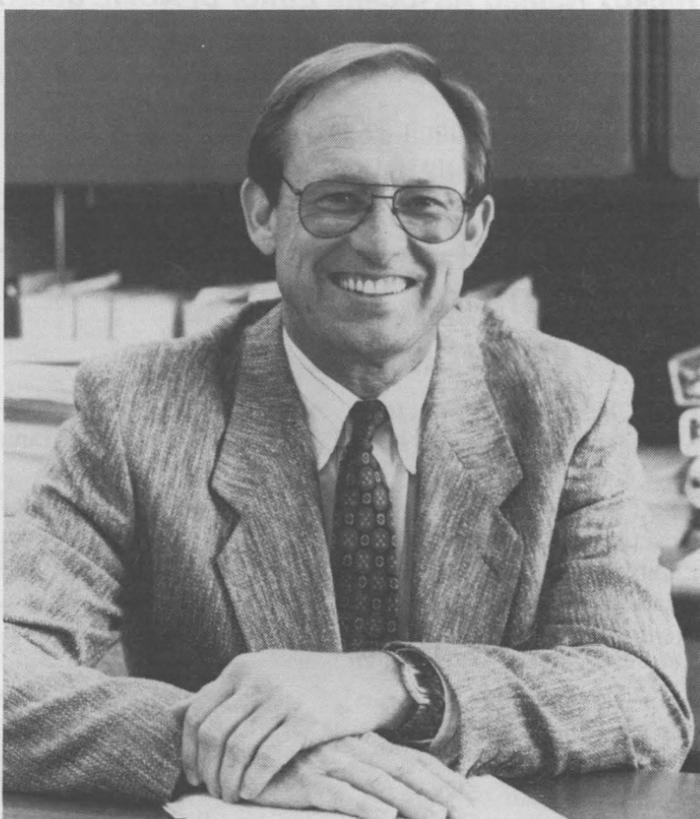
Bill Bonahoom
5126 20



John Fuller
2345 15



D. E. Barker
2712 25



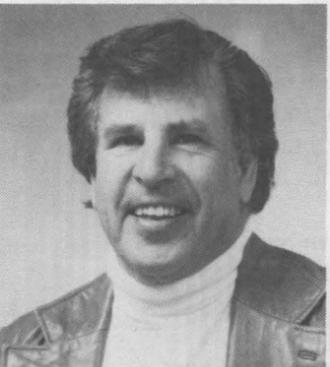
Tom Hunter
6300 25



Sandra Foster
3128 15



Don Scranton
7723 35



Leo Chavez
3421 35

Fun & Games

Boating — The Coast Guard Auxiliary is again offering boating safety courses in both power boating and sail boating. Classes will be held Tuesdays at 7 p.m. beginning Feb. 25 at the Armed Forces Reserve Center (400 Wyoming NE). Classes include information about marine engines, basic sailing, navigation, weather, Marlin-spike training, and trailering. Both courses last approximately 13 weeks. Instruction is free, but

there is a \$15 charge for the course text (first member of family only). Additional family members who attend pay only \$5 for work sheets. To register, call 292-5598, 897-1695, or 298-0116.

Hunting — The New Mexico Wildlife Federation will present a Big Game Hunting Regulation Update on Saturday, Feb. 29, from 6 to 10 p.m. at the Fraternal Order of Police Lodge (5900 Jeffer-

son NE). Big game hunters are encouraged to attend. The meeting begins at 6 p.m. with dinner and social hour; a speaker from the New Mexico Department of Game and Fish will talk from 7:30 to 8:30 about big game hunting regulations for 1992-1993. A sweepstakes drawing takes place at 8:30, and country/western dancing begins at 9. Cost is \$5 per person. For more information, contact the Federation on 299-5404.

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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.
13. "Work Wanted" ads limited to student-aged children of employees.

MISCELLANEOUS

ROYAL MANUAL TYPEWRITER, w/case, \$10; fondue set, \$10; pasta cutter & racks, \$25; bike rack, mounts on back of auto, \$15. Anderson, 897-2772.

SKI BOOTS, Salomon SX-90, size 340 (approx. size 9, w/4 independent fit adjustments), cost \$270 new, asking \$75. Schkade, 292-5126.

AKC SPRINGER SPANIEL, 1 yr. old, neutered male, free to good home in the country. Ernest, 293-1757, leave message.

SEARS CAPTAIN'S BEDS (2), w/2-drawer underdresser, bookcase headboards, & mattress boards, \$125. Owen, 299-3487.

FORMICA DINETTE TABLE, leaf, 5 Naugahyde chairs, \$125; pair of lined drapes, fit window 108" x 80", \$25. Spradling, 292-4680.

STEEL SHELVING ASSEMBLIES, heavy-gauge, \$30/ea. OBO. Silverman, 298-1308.

DP GYM PAC-5000, wall-mount fitness set, includes bench, leg extension, dip bar, w/16 5-kg. weights (expandable), \$250. Malczynski, 255-1794.

ELECTRIC RANGE, 30-in., works well, \$100; Toyota pickup parts: rear window, \$10; rear bumper, free. Ghanbari, 883-3819.

FULL-LENGTH MINK COAT, sable fox collar, size 8, cost \$5,500, will sell for \$3,500. Kassicieh, 292-0193 or 281-8320.

ELECTRIC TYPEWRITER, Olympia Professional, 17-in., w/word processor & spreadsheet, \$75. Black, 293-2755.

ANTIQUA OAK ICEBOX, White Mountain Grand, huge, excellent condition, \$500; Armstrong flute, \$125. Petersen, 275-7467.

QUEEN-SIZE WATERBED, bookcase headboard, light-brown pine, \$75; round dinette table, 4 chairs, \$50. Johnson, 898-5962.

DOLLS: porcelain antique reproduction, hand-painted & fully dressed. Lis, 822-1189.

BREAD MACHINE, almost new, \$100; non-locking ski rack for compact car, \$25; misc. unused software (WordStar 5.0, Quattro Pro, etc.), cheap. Guidotti, 884-7594.

FREE SHOP MANUALS: '61 Chev., '64 Chev., '70 Chev., '81 Cutlass, service & electrical. Coalson, 298-0061.

WOMAN'S GOLF CLUBS, Northwestern, 1 & 3 woods, 3, 5, 7, 9 irons, new in box, \$55. Kureczko, 281-8206.

LAPIDARY SYSTEM, w/motor & 2 diamond blades. Goodrich, 831-3334.

'84 FORD F-150 PICKUP MANUALS, complete set, \$16. Baney, 294-8970.

TWO GOOD USED TIRES, P-225/75R14, steel-belted radial tread, 2-ply polyester plus 2-ply steel, plenty of tread left, \$10/ea. Stamm, 255-2640.

SKI CAR RACK, w/lock, \$50; ski boots, size 10, 9, 5, \$25/ea. pr.; 4 x 12 x 1/2 sheet rock. Fenimore, 298-8052.

BUMPER POOL TABLE, professional, solid oak, w/game top, \$300; ping-pong table & accessories, \$30. Henderson, 884-8309.

TROYBILT ROTOTILLER, available now, nearly new, "pony" size for backyard gardens, includes furrower, bumpers, oil filters, etc., \$650. Barclay, 291-1301.

QUEEN-SIZE WATERBED, headboard w/beveled glass above book storage, mirror, waveless mattress, heater, padded rails, underbed drawers, \$250. Zender, 294-4145.

DOWN COMFORTER, excellent condition, queen-size, \$50. Armentrout, 294-4140.

SWING SET, 2 swings, glider, 4-person lawn swing, 8-ft. slide, approx. 5 yrs. old, \$100 OBO. McClaffin, 292-2852.

MAPLE DINING TABLE, Ethan Allen, w/2 leaves & 6 chairs, \$400. Henderson, 294-5164.

SCHNOODLE PUPPIES (schnauzer-poodle cross), extraordinarily cute, loving, friendly personalities, good parents, \$100/ea. Barnard, 256-7772.

AQHA GELDING, 14 yrs., 16 hands, gentle, good disposition, \$800. Beer, 828-2755.

JOHN DEERE TRACTOR, mower, snow blade, chains, etc., \$300; Lady Kenmore apartment-size washer, white, \$60; cat post, \$15. McAllister, 281-5188.

MACWORLD MAGAZINES, 1985 through 1990, free. Linnerooth, 299-6558.

SHOP MANUAL for '88 Ford Sable, \$30 OBO. Young, 296-1138.

QUEEN-SIZE WATERBED, \$150; double bedroom set, \$300; 1 pair Pevey column speakers, 4-10", \$500 OBO. Rhoden, 293-5301.

ANTIQUA CHERRY LOVE SEAT, \$295; picnic set, \$15; Zenith floor radio, \$90; headboard, \$15; buffet, \$265; fireplace tools set. Ramel, 821-0475.

SCHWINN AIR-DYNE EXERCYCLE, almost new, 381 total miles. Esch, 298-8914.

YAMAHA CLARINET, w/case & accessories, very good condition, \$140. Aragon, 888-3473.

KINETICO K-30 WATER SOFTENER, dual tank w/300# salt reservoir, cost \$1,900, asking \$750. LeGalley, 822-0676.

ELECTRIC WATER HEATER, 240-volt, 40-gal., \$50. Koenig, 294-2264.

ONE-OF-A-KIND WALNUT COUCH FRAME, handcarved by Albuquerque artist Federico Armijo, \$900 OBO. Geitgey, 821-5827.

QUEEN-SIZE BED, Sealy Comfort Guard, box spring, mattress, & metal frame, excellent condition, \$200. Henderson, 884-8309.

PROPANE FUEL SYSTEM FOR PICKUP, complete w/80-gal. tank, \$425; front axle for Wagoneer, \$100. Bentz, 299-3448.

GAMEFISHER ELECTRONIC TROLLING MOTOR, 12-volt, variable speed control, weights 9.5 lbs., great for small boat, raft, or canoe, \$65. Freyermuth, 299-2053.

GOLF SHOES, new, 1 pr. blue & white, 1 pr. all white, size 7N, all leather, \$22.50/pr. Michele, 298-8576.

BLUE DASH COVER for '87 Acura Legend, \$10. Hines, 821-8592.

SOLAR HEAT EXCHANGER, Zome-works Hugger, external wrap-around for 22-in. diam. tank, \$25. Hansche, 281-5623.

PAIR BOLIVAR SPEAKERS, 8-in., 3-way, in good condition, \$100 OBO. Harris, 299-4559.

UPRIGHT FREEZER, 21.2 cu. ft.; wheelchair; 22 automatic rifle w/200 shells, 8-power binoculars, man's 1-carat diamond ring, any good offer. Martegane, 884-4643.

MAGNAVOX COLOR TV, 19-in., \$100; "Best Buy" Swell K-2 speakers, \$425; suits, sports jackets, & ties, 38-40R. Norton, 299-3763.

ALUMINUM SLOT MAGS (4), w/tires, lugs, & caps, fit Ford or Dodge 14-in. rims, 2-195/70 plus 2-275/60, \$150 OBO. Zamora, 294-3737.

GOLF CLUBS & BAG, Wilson X31S, Taylor bag & stand, 2-PW, 1, 3, 5, metal woods, new, \$350. Savage, 296-0528.

NORDICA SKI BOOTS, size 9-1/2/10, excellent condition, \$35. Everts, 822-1767.

PAPASAN CHAIR, like new, \$50; king-size waterbed, beautiful, must see, a bargain at only \$400. Howard, 839-9203.

YAMAHA GUITAR, bookshelves, hide-a-bed couch, game board, picture frames, power lawn edger, wheelbarrow, AM/FM stereo record player. Mills, 299-2130.

QUEEN-SIZE WATERBED, w/6-drawer pedestal, bookcase headboard, includes padded rails, mattress pad, & sheets, will deliver, \$75 OBO. Henfling, 869-4119.

FREE FERTILIZER, composted horse manure, truckload quantities, you dig, great for spring gardens, clean to work with. Moore, 345-4030.

CUSTOM-BUILT WOOD HAMSTER/GERBIL PENS, 36" x 36" x 16" and 24" x 24" x 48", w/other related equipment, \$40; weight bench, \$45. McGee, 299-0661.

GERMAN SHEPHERD/CHOW DOG, free, 1 yr. old, male, active, very friendly, answers to Bandit, includes doghouse. Greenslet, 268-1162, 5-9 p.m.

DAYBED, white enamel, comforter, shams, & mattress skirt, med.-blue, \$100. Gallegos, 867-6284.

WOODEN ROCKING CHAIR, \$50; complete 1-gal. aquarium, \$10; 14-lb. Rhino bowling ball, \$50; scanner w/crystals, \$40. Parson, 291-8394.

80-200MM ZOOM LENS, 55mm skylight filter & case, Olympia or Pentax mount, \$60 OBO. Mesibov, 898-3725.

GAS STOVE, apt.-size, 4 burners, Wellbilt, \$40. Chavez, 842-6374 after 6 p.m. or leave message.

TRANSPORTATION

'80 HONDA STATION WAGON, AC, \$1,000. Maish, 898-8027.

'76 CADILLAC COUPE DEVILLE, low miles, all options, excellent condition. Carrillo, 292-7283 after 5 p.m.

'82 SUBARU WAGON, 5-spd., AC, high miles, runs great, \$800, might trade. Lenberg, 266-8988.

'82 NISSAN 280ZX TURBO, 81K miles, T-tops, alarm, fully loaded, excellent condition, black/gold, many extras. Sanchez, 275-5634.

'85 SOUTHWIND, 27-ft., excellent condition, very clean, w/18-ft. awning, AE9000, front air bags, stereo system, sleeps 6. Cianciabella, 268-7150.

BICYCLE, KHS TRI-ATHLETE, many custom components, \$500 OBO. Petersen, 275-7467.

BICYCLE, 24-in. Takara Racer, 10-spd., excellent condition, for small adult or teenager, \$65. Holmes, 292-0898.

ROAD BICYCLE, Centurion Accordo RS, Shimano components, excellent condition, great deal. Richards, 296-2272.

'84 CHEV. C-10 TRUCK, 4-spd., AC, 71K miles, very reliable, \$3,900. Kisner, 292-6082.

'86-1/2 TOYOTA SUPRA, AT, no turbo, 78K miles, one owner, excellent condition, under blue book, \$7,600 OBO. McKeever, 299-4050.

'90 DODGE COLT, less than 10K miles, excellent condition, always garaged, still on warranty, \$5,500. Torres, 865-8944.

'65 IMPALA, all original, PS, PB, AC, runs, \$2,500; '68 Fury convertible, 383, AC, not running, \$700; \$2,700/both. Pantoso, 892-3641.

'89 TOYOTA TERCEL, 49K miles, AC, 5-spd., 2-dr., AM/FM cassette, clean, \$4,850 OBO. Misak, 892-3033.

'65 CORVAIR 140 MONZA, 2-dr., less than 70K miles on original engine, \$1,800 OBO. Odom, 883-5068, evenings & weekends.

MEN'S BICYCLES: Dawes custom 10-spd., 23-in. frame, \$50; Schwinn Tempo, 12-spd., 25-in. frame, Shimano 105, \$275. McAllister, 281-5188.

FUJI ESPREE ROAD BIKE, large frame, 4 yrs. old, well-maintained, good transportation, \$45 OBO. German, 262-1721.

'89 NISSAN PATHFINDER, 4x4, all power, cruise, AM/FM cassette, 24K miles w/12K remaining on full warranty, \$14,600 OBO. Lopez, 293-2508 or 292-4455.

'89 HONDA ACCORD LX HATCHBACK, new tires, 93K miles, ski rack, one owner, \$3,200 OBO. Allen, 296-5129.

'87 ACURA INTEGRA LS, 2-dr., 5-spd., AC, PS, stereo-cassette, 30K miles, sunroof, silver, cruise, like new, \$7,500 firm. Roth, 344-7060.

'85 GMC SUBURBAN, AT, AC, cruise, carpet. Hansche, 281-5623.

MAN'S BICYCLE. Martegane, 884-4643.

'77 CHEV. CHEYENNE PICKUP, new battery, carburetor, windshield, PS, PB, needs work on AC, distributor, & brakes. Hendrix, 299-8872.

'67 CHEV. MALIBU, 289 V-8, rebuilt original engine, minor body damage, New Mexico family only owner. Clark, 296-3924.

'82 BMW 320i, excellent interior, AC, AM/FM cassette, runs great, must sell, \$4,000 OBO. Howard, 839-9203.

'82 VOLKSWAGEN QUANTUM, clean body & interior, runs well, perfect for college student, \$2,000. Pierce, 294-0871.

'89 CHEV. SUBURBAN, 3/4-ton, 454, Silverado, panel doors, tow package, tint windows, 25K miles, \$15,000 OBO. Puariea, 821-1108 or 299-6377.

'84 JAGUAR XJ6, excellent condition, \$10,500. Hamilton, 294-5850.

REAL ESTATE

3-BDR. HOME, very nice, 1 bath, hardwood floors, 1-car garage, 1,230 sq. ft., 3707 Veranda NE, \$69,900. Newsom, 889-8972 or 298-1766.

3-BDR. PRESLEY HOME, 2-1/2 baths, 1 yr. old, 20 min. from KAFB, Laurelwood NW, \$114,900. Kniskern, 298-9096.

2-BDR. HOME, 1 bath, hardwood floors, kiva fireplace, 1-car garage, refrigerator, range, washer, dryer, 213 Cagua NE, \$64,300. Gendreau, 268-3436.

3-BDR. HOME, pitched roof, 1-3/4 baths (remodeled), country kitchen, large covered patio, 2-car garage, fireplace, 1,551 sq. ft., \$94,900. Blankenship, 822-0516.

3-BDR. HOUSE, La Cueva High School district, well maintained, 1,585 sq. ft., 1-3/4 baths, security system, auto sprinklers, fireplace, more, \$105,500. Selleck, 823-2497.

3-BDR. HOUSE, 1-3/4 baths, Tramway/Lomas, 1,650 sq. ft., huge country kitchen, open house Feb. 23, assumable, \$10,200 down, \$95,000. Bentley, 296-4982.

3-BDR. HOME, NE, 1,760 sq. ft., 1-3/4 baths, living/den, fireplace, 2-car garage, O'Keefe/Eisenhower/La Cueva school district, \$114,500. Roper, 292-2942.

WANTED

3.5-IN. DISK DRIVE for an Apple IIGS computer. Koenig, 294-2264.

CAMCORDER, in good condition, trade for Brazil Contempo rosewood & glass coffee table, 2 end tables. Stauffer, 344-5714.

MOVING BOXES & wardrobe boxes. Black, 293-2755.

ROOMMATE, male non-smoker, share 2-bdr. apartment in NE Heights, \$200/mo. plus 1/2 utilities. Clement, 880-1829.

METRONOME for music student. Douglas, 281-9843.

FILING CABINET, 2-drawer. Coleman, 884-5009.

MALE ROOMMATE to share 3-bdr. home, non-smoker, \$190/mo. plus 1/3 utilities, Eubank/Copper. Rhoden, 293-5301.

MOVING BOXES. Doran, 299-2635.

ROTARY TUMBLER and Flex-Shaft or jewelry making equipment, also rubber mold vulcanizer. Rodriguez, 296-3277.

QUEEN-SIZE FIRM MATTRESS/BOX SPRING, in good condition, and/or queen-size frame/headboard, dresser, nightstands. Beeler, 822-9485.

'84 OR NEWER 2-WD TRUCK, any make or model, wish to spend no more than \$2,500. Howard, 839-9203.

PROGRAMMER, versatile w/8-bit microprocessor, willing to assist w/a home project. Harris, 344-6640.

LOST AND FOUND

FOUND: DENTURES, turned in to Lost and Found in Benefits Div. 3543 on Jan. 22, found in parking lot outside Bldg. 823. Aragon, 4-9272.

LOST: COCOA-BROWN BELT for all-weather coat, no buckle, has clear buttons on reverse side. Bear, 881-7128.

Coronado Club Activities

For a Rousing Good Time, Join the Crowds at the C-Club This Evening

SOCIAL GET-TOGETHER TODAY — At the Cantina, from 4:30 this afternoon (Feb. 21) until everybody's exhausted from the fun, you can enjoy music, dancing, a complimentary buffet, and special drink prices. Sound good? See you there!

B-I-N-G-O was the name of the farmer's dog, but at the C-Club it's the name of the game every Thursday. Early-bird specials begin at 6:45 p.m., the regular games start about 7:15, and wild Nite Cap Bingo begins around 9:30. On March 5, you'll have a chance to win a \$250 shopping spree at Coronado Center, or maybe one of the jackpot specials.

TRIO GRANDE NEXT WEEK — Next Friday, Feb. 28, grab your best boots and fanciest hat and gallop on down to the Club, 'cause Trio

Grande will be playing for your listenin' and dancin' pleasure. Dinner will be served 6-9 p.m., with either roast prime rib or grilled halibut two-for-one priced at \$16.95. Or you can choose golden fried shrimp (\$9.95) or a buffet featuring baron of beef and baked chicken quarters for just \$6.95 — including ice cream and coffee or tea. The music starts at 7 p.m., and you can whoop it up until 11.

SUMMER WEATHER ADVISORY — It's not here yet, but it will be before you know it. Patio and pool passes are on sale in the SERP office (next to the C-Club main office), at the same price as the past two seasons. But if you purchase them before May 1, you'll get a discount. Don't let the heat catch you unprepared!

Take Note

On Friday, Feb. 28, UNM's Robert O. Anderson Schools of Management will host a day-long conference, "Oil and Gas '92: New Mexico, the Nation, the World," co-sponsored by the New Mexico Oil and Gas Association and the Independent Petroleum Association of New Mexico, at the Albuquerque Marriott. The conference will bring together national and international oil and gas executives to speak about a variety of strategic issues in the industry, including natural gas as a fuel for the future, world oil supply and global outlook, and the economic impact of environmental regulation. The registration fee of \$150 includes a copy of the conference proceedings. For more information or to register, call 277-0880.

Retiring and not shown in LAB NEWS photos: Thomas Latta (2726) and Joe Laval (3163).

Events Calendar

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

Feb. 21-22 — Nanfoule African Folklore Ensemble, Dance & Music Concert/Lecture, music and dance traditions of West Africa and next-day workshop and drum-making demonstration, planned in celebration of Black History Month, first event in the Explorations in World Music Series; Fri. concert/lecture 7:30 p.m., Sat. workshop/demonstration 11 a.m.-3 p.m.; Maxwell Museum of Natural History, 277-4404.

Feb. 21-22 — "Isn't It Romantic," comedy by Wendy Wasserstein about today's relationships among friends, lovers, and well-meaning mothers, involves the exploration of the contemporary feminine dilemma and the conflict between personal independence and romantic fulfillment; 8 p.m., Albuquerque Little Theatre, 242-4750.

Feb. 21-23 — "Waiting for Godot," tragicomedy by Samuel Beckett; 8 p.m. Fri.-Sat., 6 p.m. Sun.; Vortex Theatre, 247-8600.

Feb. 21-23 — "The Blood Knot," Athol Fugard's striking look at apartheid, two half-brothers — one light-skinned, the other dark — experience the effects of racism in their personal relationship, New Mexico Repertory Theatre presentation; 8 p.m. Fri.-Sat., 2 p.m. Sat. & Sun.; KiMo Theatre, 243-4500.

Feb. 21-March 7 — "Books Alive!" Theatre-in-the-Making brings literature to life for the whole family, books performed will be on sale at each performance; 2 p.m. Sat., CenterStage (3211 Central NE), 260-0331.

Feb. 21-March 14 — "Danny and the Deep Blue Sea," by John Patrick Shanley, a man and woman struggling with their inability to communicate are caught up in a hypnotic dance of violence, Theatre-in-the-Making presentation (recommended for mature audiences only); 8 p.m. Fri.-Sat., CenterStage (3211 Central NE), 260-0331.

Feb. 21-March 15 — Exhibit, "New Mexico Impressions: Printmaking 1880-1990," presents a survey of the traditional media of printmaking in New Mexico by some of the state's outstanding resident and visiting artists, the first exhibition to put such a wide variety of etchings, woodcuts, lithographs, and serigraphs into a historical context; 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues.; UNM Art Museum, 277-4001.

Feb. 21-March 15 — Exhibit, "E.I. Couse: An Image Maker for America," work of Eanger Irving Couse, one of the founders of the Taos Society of Artists and a well-known painter of Native Americans for the first three decades of the 20th century, lithographic reproductions of his paintings were used extensively by the Santa Fe Railroad for advertising; 9 a.m.-5 p.m. Tues.-Sun., admission charge, Albuquerque Museum, 243-7255.

Feb. 21-March 20 — Exhibit, "Star Axis," featuring drawings, models, and photographs of Charles Ross' monumental "Star Tunnel," a gigantic celestial observatory being chiseled out of a mesa near Las Vegas, N.M.; 9-4 p.m. Tues.-Fri., 5-9 p.m. Tues.; UNM Jonson Gallery, 277-4967.

Feb. 21-March 29 — Exhibit, "Santiago: Saint of Two Worlds," a photo historical exhibition devoted to the history and contemporary presence of St. James,

whose exploits (real or in folklore) have been celebrated in Spain, the US, and the Caribbean for centuries; 9 a.m.-5 p.m. Tues.-Sun., Albuquerque Museum, 243-7255.

Feb. 21-April 5 — Exhibit, "In the Company of Women," featuring works by women photographers from the mid-19th century to the present; 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues., 1-4 p.m. Sun.; UNM Art Museum, 277-4001.

Feb. 21-April 15 — Exhibit, "Played and Printed," exhibition of lithographs and monoprints made at Tamarind Institute by art students from Albuquerque, Cibola, Rio Grande, and Valley high schools, represents students' personal expressions after exploring social issues in selected art forms; 9 a.m.-5 p.m. Tues.-Sun., Albuquerque Museum, 243-7255.

Feb. 22 — President's Day Mardi Gras Masquerade Ball, benefit for the New Mexico Museum of Military History, music includes Big Band, Dixieland jazz, and classic rock; 7 p.m., Old Sunport Building (2920 Yale SE), 345-0037.

Feb. 22 — Baroque Concert, Chamber Orchestra of Albuquerque performs music of Handel, Geminiani, Vivaldi, Bach, and Sammartini; 8:15 p.m., St. John's United Methodist Church (2626 Arizona NE), 881-0844.

Feb. 25 — People of the Southwest Lecture Series: "Upper Rio Grande Matachines Dance," by Sylvia Rodriguez, Assistant Professor, UNM Dept. of Anthropology and Southwest Hispanic Research Institute; 7:30 p.m., UNM Anthropology Lecture Hall 163 (adjacent to the Maxwell Museum of Anthropology), 277-4405.

Feb. 27-March 7 — "Curse of the Starving Class," Obie Award winner by Sam Shepard, presented by UNM Dept. of Theatre and Dance; 8 p.m., Rodey Theatre, 277-4402.

Feb. 29 — Baila! Baila! International Dance Studios presentation of music, song, and dance highlighting Hispanic and Latin cultures, featuring guest artist Chuy Martinez, internationally known Spanish folklore guitarist and singer; 7 p.m., UNM Continuing Education Conference Center (University & Indian School), 880-1488.

Feb. 29 — Exhibit opening: "Then and Now: Pojoaque Pueblo in Perspective," lectures and performance by Pojoaque Pueblo Dance Group; 10 a.m.-4 p.m., Maxwell Museum of Anthropology, 277-4405.

March 1 — Symphony in the Sunshine Series: New Mexico Symphony Orchestra, featuring music by Schoenberg and Beethoven; 3 p.m., First United Methodist Church (4th & Lead SW), 842-8565.

March 2 — Monday Monthly Lecture Series: Merrill Quannie, Acoma/Hopi artist; 10 a.m., Indian Pueblo Cultural Center, 843-7270.

March 6 — Explorations in World Music Series: Chinese Music and Dance Concert by members of the Chinese-American Citizens Alliance of Albuquerque; 7:30 p.m., Maxwell Museum of Anthropology, 277-4405.

March 7-8 — "Three Pigs, Three Bears, and Nursery Mimes," collection of children's stories and rhymes, conceived and directed by Jeanne Porter Cole, Albuquerque Children's Theater presentation featuring pantomime, storytelling, and an original soundtrack by Jon Hull and Alan Stringer; 1 & 3 p.m., KiMo Theatre, 898-6679.



1992 SECRETARIAL COMMITTEE members took time out for a photo at the Tech Library mall recently. Committee members and the role of each are (front row, from left) Karen Smith (2360), recorder; Elena Holland (9230), chairman; Carol Amedeo (210), seminar co-chairman; (back row) Michelle Sault (3550), SWAPS (Secretarial Writing and Professional Standards) chairman; Jean Burstein (6320), seminar co-chairman; Diana Perea (1940), SWAPS committee; Madeline Griggs (5001), vice-chairman. Not pictured: Lola Orr (7810), SWAPS committee.