

Underground Waste Mapping Is Goal of Sandia-MTI Joint Effort

A cooperative research and development agreement (CRADA) between Sandia and Mechanical Technology Inc. (MTI) promises to put Labs-developed sensor technology into systems that map and inspect waste environments such as underground storage tanks.

MTI, headquartered in Latham, N.Y., is developing a system for DOE that will map underground wastes stored in tanks. The system also will be used to provide reliable three-dimensional maps of nuclear waste storage or reactor facilities.

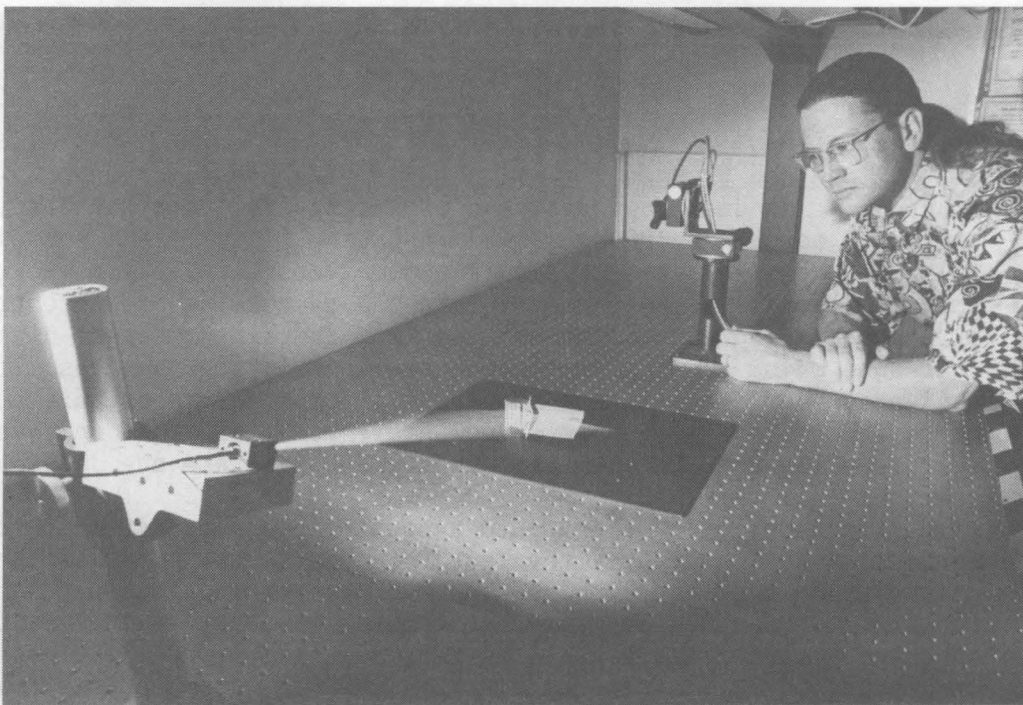
Colin Selleck of Intelligent System Sensors and Controls Dept. 1611 and Larry Ray of Intelligent Systems Dept. 1671 are working on Sandia's end of the sensor system for underground wastes.

The task, Colin explains, is to get accurate measurements in an environment where it's not safe for people to go. "One problem," he says, "is how to calibrate the sensor system, which includes two pan-and-tilt units, each with a laser and miniature video camera. We developed an algorithm that allows in-situ calibration. That algorithm is enough of an advance that Sandia has applied for a patent."

Reflected Laser Light Reveals Surfaces

The mapping system works by capturing reflected laser light from the surface of the waste with a charge-coupled device camera, calculating three-dimensional information from the image data, and fusing the data into 3-D computer models of the tank environment.

The project is part of Labs research into sensors and associ-



LASER LIGHT shines on a turbine blade, as Colin Selleck of Intelligent System Sensors and Controls Dept. 1611 demonstrates the principles of a Sandia system expected to be integrated into a commercial system through a joint effort with Mechanical Technology Inc. of Latham, N.Y. A small camera mounted on the pan-and-tilt unit near Colin's hand detects reflections from objects being examined. (Photo by Randy Montoya)

ated intelligent machine technologies supporting a DOE program to develop ways to quickly and safely clean up and protect the environment.

Under the sponsorship of DOE's

Office of Environmental Restoration and Waste Management, Sandia is seeking to develop intelligent machines for cleanup tasks that would be hazardous (Continued on Page Seven)

DOE, Sandia Brief Potential Bidders on Labs M&O Contract — See Page Four

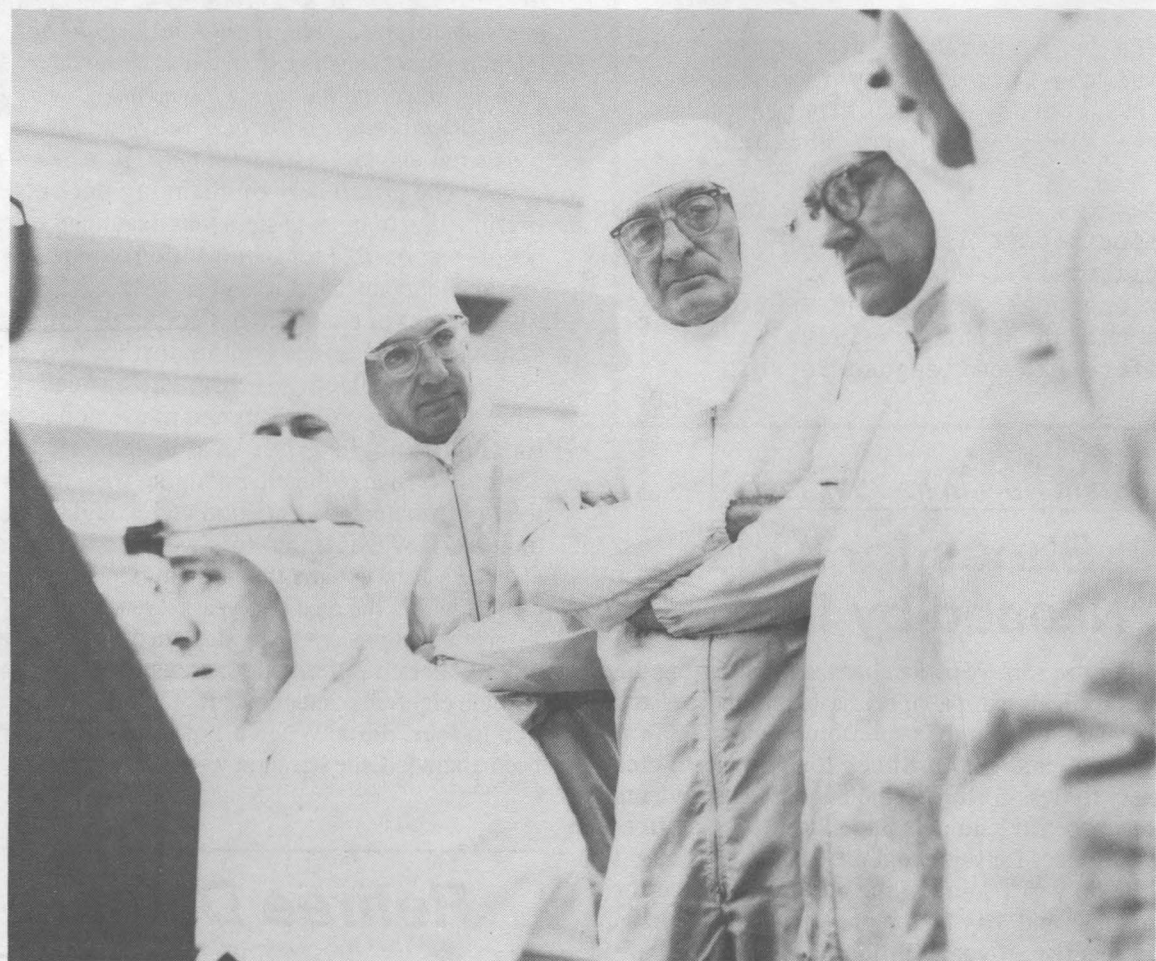


LAB NEWS

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SANDIA NATIONAL LABORATORIES

NOVEMBER 13, 1992



NEARLY 30 YEARS AGO, Sandia managers visited the "white room" at US Gauge in Sellersville, Pa., to learn the latest about the super-clean manufacture of permissive action link (PAL) switches, developed by the Labs to prevent unauthorized use of nuclear weapons. The need for an even more particle-free manufacturing environment led to Willis Whitfield's (ret.) invention of the laminar-flow clean room. Ned Godshall (1325), who saw the "white room" as a boy of 7, explains that two of the six people visible or partly visible in the photo are Leon Smith (third from left), who retired as a director in 1988, and former Sandia President Monk Schwartz (fourth from left, now deceased). The visit, Ned says, occurred in December 1962, just before President John F. Kennedy visited the Labs. Kennedy was interested in the PAL, and the Sandians made the trip to be sure that they had the most current information. (See story on page six.)

Report from the Money Man

Labs' FY93 Budget Up Five Percent

A few ups and a few downs, but altogether they add up to "up" for Sandia's FY93 budget. Figures provided by Paul Rosenkoetter (180), Manager of Resource Planning and Analysis, show the FY93 operating budget at \$1.344 billion, up more than five percent from FY92's \$1.276 billion.

Reflecting the 1992 restructuring, Sandia's budget is now organized according to the Labs' three sectors: Defense Programs (DP), Work for Others (WFO), and Energy and Environment (E&E). When the operating budget is considered by sectors, all three show increases — DP and WFO up slightly, and E&E up substantially. However, the DP budget is still the largest by far, with the WFO and E&E budgets similar in size.

The FY93 budgets for the three sectors and the amount and percentage of increase over FY92:

- Defense Programs, \$750 million — up \$2.4 million, about 1 percent
- Work for Others, \$300 million — up \$8.3 million, almost 3 percent
- Energy and Environment, \$294 million — up \$57.3 million, more than 24 percent

The Ups and Downs

The DP sector reflects most of the major ups and downs. The big ups are in technology commercialization (up \$30 million) and verification and control technology (up \$24.2 million). The major downs are in research and development (down \$36 million), testing (down \$6.8 million), and production and surveillance (down \$10.3 million). The biggest change outside the DP sector is in the E&E sector — in the environmental (Continued on Page Four)

This & That

Alone and Unwanted - NOT! - DOE's preproposal conference for prospective Sandia management and operating (M&O) contractors last week attracted more than 300 people representing 77 different entities. Many folks represented large companies and universities, but some were from smaller organizations perhaps interested in teaming or subcontracting arrangements. However, it's obvious from checking the list on page five that some major outfits are interested in managing the Labs. It's been estimated that it will cost about a million bucks to prepare a competitive proposal, so it's reasonable to assume that only serious suitors will be in the hunt for long. Proposals are due Jan. 4.

* * *

Tough Choice - Taking into account the shaky reputation of my source, I can't guarantee the truth of this story, but what the heck - it's a good story! As it goes, when DOE was trying to determine who should be on its source evaluation board to select the new Sandia M&O contractor, a retired Sandia manager was asked if he might be interested in serving on it. He declined, saying that it would be like dying, going to heaven, and being asked to choose a second husband for his widow!

* * *

Surprised, but Not Shocked - That probably best describes my reaction after interviewing Paul Rosenkoetter (180), Manager of Resource Planning and Analysis, recently about Sandia money matters. Our new budget is up about five percent over FY92 (see page one) even though some Sandia managers were projecting a downturn about six months ago. I'm surprised at the increase, but not shocked, because I know how hard many folks - management and staff - have worked to keep our budget healthy. Thanks to all of them from me and all of my creditors.

* * *

The "Re-" Penalty - We Sandians have been through a lot of "re's" in the past few years - reorganizing, restructuring, renumbering, and renaming. I can't reveal his identity (he has a big mortgage and says his kids need shoes), but one Sandian has suggested that all Sandia Management Council members should have to go through a personal legal name change every time Sandia is re-somethinged. Might be a good idea, plus have them deliver the incoming mail for a month or so afterward!

* * *

Barney and the Beast - On the Milepost page (page 10) is a 15-year service anniversary photo of Barney Doyle (1111) pictured "mind-melding" with the 15-year-old PDP-11/34 computer that his organization still uses. It's one of the oldest computers around the Labs that's still in service, Barney says, and maybe the very oldest. Sandians?

* * *

Happy Feet - That's what Sandians can help guarantee for some needy youngsters by participating in one of the true holiday traditions at the Labs - the Shoes for Kids campaign (see story below). The campaign has provided thousands of pairs of shoes to Albuquerque-area children since it began back in the 1950s.

* * *

When Is a Virtue Not a Virtue? - Being prompt is certainly a virtue, but one Sandian took it too far (literally) when he showed up at a meeting in San Diego recently - exactly one week before the meeting was scheduled to begin. I won't embarrass him in print by giving his name, but I'm betting it'll be a while before his colleagues let him forget about this little boo-boo. ●LP

feed **li**back

Q: Recently, a Federal Express parcel was received at Sandia, processed five days later, and delivered to me two days after that. Because we needed this item urgently, the shipping company had it delivered Federal Express; Sandia then took one week to deliver it to Building 890.

We certainly need some way of getting materials urgently needed in a timely manner.

A: This envelope should have been processed, taken to the Mail Room, and delivered the afternoon of the day it was received. This is our normal procedure if the envelope is properly addressed, as you say it was.

Our regular Federal Express receiving clerk was on vacation the week you experienced this problem, but we did have employees covering that position. I must apologize for any inconvenience we caused you, and I assure you we will keep a closer watch on Federal Express envelopes in the future.

Dick Shepardson (7600)

Q: Now that Sandia has only three levels of management, why do we have four-digit organization numbers?

It was a mistake to retain the same numbering scheme upon restructuring, because we have also undergone an extensive reorganization. The unfortunate consequence is that very few employees still have the same organization number, but many have numbers that used to belong to another group, so everyone is confused - especially the mailroom. This is not a trivial problem, as anyone who has missed a deadline because of late mail can attest.

Here is my suggestion: Designate departments by letter. For example, Dept. 7162 might become Dept. 71-K. This has several advantages. First, there is one character per management level, so the system is less ambiguous and makes more sense. Second, the first two characters can be retained, so it isn't a total break from the old system ("7100" becomes "71"). That makes it simple to memorize. Third, and probably most important, everyone (especially the mailroom!) will be able to tell at a glance whether someone is using an up-to-date organization number. That means fewer mistakes in mail addressing and delivery, and more productive employees who don't miss deadlines.

A: The possibility of changing our current organization number system was examined by the people responsible for organization numbering at the time reorganization was in process.

The cost of changing our corporate computer systems was the primary reason that the four-digit system was retained. All corporate business systems were originally designed to use and accept four digits (not letters or an alphanumeric mix). The cost to change the programming was conservatively estimated at \$1 million and would take six months. It was felt that this would not be cost-effective for systems that would be undergoing change within the next two years anyway.

New systems are being designed (several have already been implemented) to use a much more flexible eight-character code, rather than being limited to four digits. When all of the systems have been upgraded, the question will be re-examined.

Paul Stanford (100)

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Program Now in Its 35th Year

Shoes for Kids Needed by Dec. 4

For the 35th year, Sandians are supporting the Shoes for Kids campaign held each holiday season. This year's campaign is sponsored by Sandians in Orgs. 300 and 5000. Shoes for Kids provides money for less-fortunate, elementary-age students to buy shoes at Kinney's Shoe Store, which offers special prices for this program. These shoes might be the only gift some of the children receive for Christmas and may be the only new pair of shoes they receive all year. Children most in need are selected by teachers and principals from several local elementary schools. A nice pair of shoes can be purchased for \$25, but any amount is welcome. Donations should reach Liz Scott-Patterson (5501) by Dec. 4. Campaign volunteers are also needed. To help, call Liz on 5-9108 and leave a message. Employees or retirees who donate \$25 or more will receive a thank-you card from one of the children. If you donated \$25 or more last year and did not receive a card, call Liz. She has several cards from last year's campaign still left to distribute.

Retiree Deaths

James Reed (68).....Sept. 5
Arthur Machen (79)Oct. 4
Claude Baca (82).....Oct. 4
Albert Barton (88).....Oct. 10
Albert Rodriguez (78)Oct. 17
Abraham Metzgar (65).....Oct. 19
Albert Mares (67).....Oct. 26
Robert Crompton (76).....Oct. 27



At One Institute: 250 Scientists, One Copy Machine**Sandians See Scientists' Hardships in Former Soviet Union**

A letter from the American Physical Society recently came to John Vitko, asking for money to support the work of scientists in the former Soviet Union. "A few months ago," says John, a member of Program Development 8102, "it might have ended up in my circular file. Now, I'm going to do something about it."

The reason: what John observed when he became one of the increasing numbers of Sandians taking business trips to the last place on earth many of them expected to see — Russia and other parts of the former Soviet Union. Another recent visitor



CATHEDRAL SQUARE in Moscow's Kremlin: Andy Boye (9225, left) and John Vitko (8102) take a break from technical discussions of global ecology to view historical sites of the former Soviet Union.

from Sandia/California who likewise found his perceptions changed was Dave Brekke of Environmental Protection Dept. 8642.

John attended a high-level Workshop on Global Ecological Monitoring, and Dave participated in an exchange set up to examine aspects of nuclear safety, radiation protection, and environmental management. John is program manager for Sandia's Global Change Research Program. At the workshop he attended during the Aug. 7-16 trip, one of the possibilities discussed was the US

"Scientists earned salaries that ranged from the equivalent of 40 to 50 US dollars per month."

employing a satellite system that could fill both defense and ecological missions.

The workshop was co-chaired by Edward Teller, Director Emeritus of Lawrence Livermore National Lab, and the vice president of the Russian Academy of Sciences. It opened with a letter of welcome from Russian president Boris Yeltsin and featured daily press conferences. John and his Russian counterpart led the session on space-based remote sensing. Also attending was Andy Boye (9225) from Sandia/New Mexico. Andy and John later toured a satellite electronics facility in the Ukrainian city of Kharkov.

Dave's Aug. 3-16 journey covered even more



ground, crowding visits to four ministries, seven institutes, two hospitals, and two nuclear power stations into a strenuous two-week trip.

The Sandians returned with vivid impressions of a country going through tremendous stress and change. The depressed economy struck both the Sandia visitors. John notes, "Scientists earned salaries that ranged from the equivalent of 40 to 50 US dollars per month."

Hardship, Despair Obvious

Dave says, "A lot of people on the street were very poor. Their hardship and despair were obvious. In St. Petersburg — a major urban center of 5 million people — I was surprised that 40 percent of people live in communal apartments, where between two and thirty families share the bath and kitchen facilities.

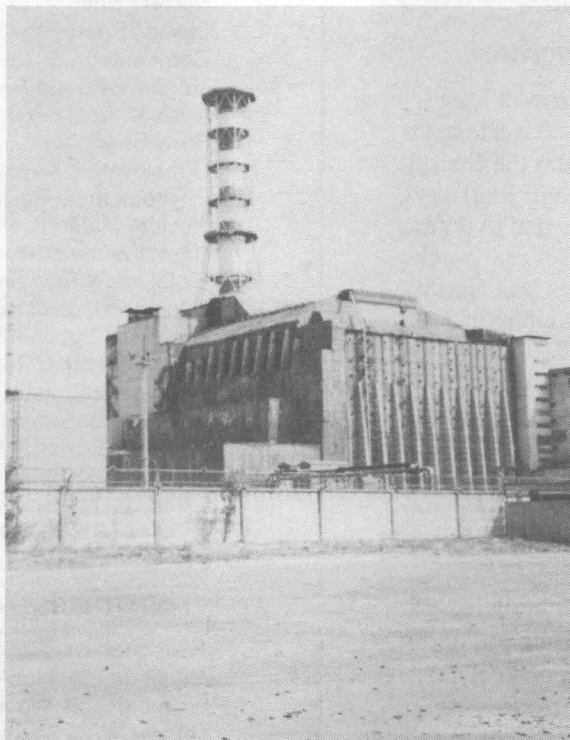
"The trip made me appreciate what we have here. Things that we take for granted, such as copy and fax machines and personal computers, are extremely rare there. I saw one institute of 250 scientists, for example, that relied on the use of one copy machine."

Transportation also was not to be taken lightly. "We couldn't just hop on a car, train, or bus to get

"I saw dolls and bicycles on the street [at Chernobyl], yet the area was empty and decaying."

to our destination," explains John. He outlines the logistics of one trip: "We were scheduled to take a train, but they didn't have enough berths for us. Next, we were going to take a bus, but they couldn't guarantee enough gasoline. Finally, they took us to an airport, where our plane was sitting next to military planes on the runway."

Both scientists also felt that they had entered a time warp of technology and social issues. John says, "I was surprised at the extent of their ecological problems. They are facing large-scale industrial toxic-waste issues that are much more severe than what we have here. The reality is that they make a fair amount of toxic materials and haven't had to comply with stringent guidelines such as exist in the US."



UNIT Number Four at Chernobyl, seen here, is now infamous for release of radiation into the atmosphere.



ENTRANCE TO CHERNOBYL nuclear power plant, one of the places visited by Dave Brekke (8642), is marked by this plaque.

Dave stresses that he, too, saw the people living with technology that is 20 to 30 years behind the US. He adds quickly, "I had to control the temptation to judge. I wasn't invited to audit, inspect, and judge, but to exchange ideas, observe, and work toward international goodwill."

Dave says his most moving and somber experience was traveling into the 30-kilometer area surrounding Chernobyl. "The area was totally evacuated, like a nuclear ghost town. I saw dolls and bicycles on the street, yet the area was empty and decaying."

Benefit Is Two-Way

Neither Sandian felt that the information transfer was benefiting only the members of the former Soviet Union, today's Commonwealth of Independent States.

Dave explains, "We bring technological advances to the table, but they have much to share with us. For example, Chernobyl was the largest reactor accident in the history of the world. Six years after the accident, we are only beginning to get groups together to study the effects of the disaster. What is learned will benefit the entire scientific community."

John adds, "On a practical level, we could learn something from how they launch satellites. On a humane level, we will all benefit if we can stop the spread of ecological problems.

"Their attitude," John continues, "seemed to be 'We have talent — how can we collaborate technically on this problem?'"

In fact, they say, the most important things they brought back with them are intangible. John explains: "It was an invaluable experience in terms of opening one's perspectives. I got a first-hand chance to see how a small amount of effort here can have a large impact on the world." ●

Congratulations

To Cathy Hagar (1951) and Bill Houf (8745) married in Brentwood, Oct. 3.

To Diana Wilson (1901) and Jerry Friesen (1952) married in Pleasanton, Oct. 10.

Got a Question or Suggestion?

Employees who have suggestions for improvements at Sandia or who need quick answers to Feedback questions are encouraged to telefax their suggestions/questions to the Employee Communications Dept. 7162 at (505) 844-0645. For additional information about how the system works, call Janet Carpenter (7162) on (505) 844-7841. She can also provide printed Feedback forms if you cannot locate one where they are stocked in common areas throughout the Labs.

Proposals Due in Two Months

More Than 300 Hear Briefings on Sandia Operations at DOE Preproposal Conference

Videos, viewgraphs, and a bus tour of the New Mexico facilities gave potential bidders on the new Sandia management and operating (M&O) contract a two-day glimpse of the Labs' activities and layout last week.

More than 300 people representing 77 entities — mostly companies, but a few universities and individuals — sat through a day and a half of briefings at the Albuquerque Convention Center. About one-third of them took the bus tour on the afternoon of the second day.

"The conference came off without a hitch," says Dennis Krenz, chairman of DOE's Source Evaluation Board (SEB), the group evaluating proposals for a new M&O contractor. "The presentations were well prepared, and we got a lot of questions, which indicates there was a lot of attention and interest in what was being said."

Labs Transition Executive Lee Bray (30) agrees. "A great deal of work, including many hours of preparation, by people from both Sandia and DOE, went into the planning of this conference, and it showed," he says. "The conference



THREE BUSLOADS of prospective bidders on the new Sandia M&O contract got a drive-through tour of Labs facilities last Thursday, at the end of a two-day preproposal conference to acquaint them with Sandia facilities and work. The tour wound through, or up to, all five technical areas, including the Solar Power Tower and some test facilities in the Coyote Canyon complex.

was right on or ahead of schedule both days, and the presentations were crisp and informative. I think everyone was pleased."

In addition to hearing presentations describ-

ing the Labs and its work, attendees heard presentations on how the DOE source evaluation process is performed, an overview of the request for proposal (RFP), the role of DOE's Kirtland Area Office, and DOE's nuclear weapons mission.

Attendees were invited to submit questions on various aspects of the RFP, the draft contract and provisions that prescribe what the proposal should include, as well as negotiable points, such as compensation for the contractor.

Most questions were answered during the conference. All questions will be answered in writing and will be included with additional information in an amendment to the RFP that will be sent to all potential bidders.

Weapons Still Primary Focus

The briefings made it clear that although the Cold War has ended and missions such as technology transfer are a growing part of Sandia's work, nuclear weapons responsibility will continue to be a primary focus for the foreseeable

(Continued on Next Page)

(Continued from Page One)

FY93 Budget Up Five Percent

restoration and waste management budget (up \$29.9 million). (See sector budget chart at right for detailed FY92 and FY93 figures.)

Why the big decreases in some DP areas? Paul explains, "There is just not as much funding now for research, development, and testing of nuclear weapons. We are certainly going to have our continuing stockpile support programs, but developing new weapons and putting them into the stockpile is slowing down substantially. We don't have any Phase 3 [development engineering] projects scheduled now. The R&D we are doing is on advanced concepts for possible future weapons stockpile improvements, safety, command and control, etc."

"On the other hand," Paul continues, "there is great concern about the proliferation of nuclear weapons in third-world countries, so verification and control technology is a growth area at Sandia. Also, Congress has transferred a lot of defense-related R&D money into the technology commercialization area to allow us to do more cooperative work with industry to improve our nation's economic competitiveness. Sandia is perceived to have a very good working relationship with industry, and we're making great strides in this area."



PAUL ROSENKOETTER

Active Hiring Program

The Labs' other big growth area — environmental restoration and waste management — is budgeted under the Energy and Environment Sector, and Paul says more employees may be needed to do the Labs' work in this area. (Several weeks

ago at the Management "Road Shows," E&E Sector Leader Dan Hartley [6000] presented revenue projections showing growth continuing in E&E up through FY96.)

"We closed out FY92 at about 8,450 employees," says Paul, "and we expect to close out FY93 at about 8,550. So, we're definitely going to have a hiring program this year to bring in some new folks to replace those who retire or resign."

The FY93 operating budget of \$1.344 billion does not include major construction projects, capital equipment purchases, or general plant projects. The FY93 budget for these items is about \$155 million.

Looking too far ahead in his business is risky, Paul acknowledges, but he's not a doom-and-gloomer. "Some of our programs undoubtedly will decrease in the future," he says, "but with the broad technical capabilities that we have — along with our excellent reputation — we're going to play a major part in technical issues that are important to this country. I'm not pessimistic about our prospects for the future — just the opposite, in fact."

•LP

Sandia National Laboratories FY92 and FY93 Funding by Sectors (Dollars in Millions)

DEFENSE PROGRAMS (DP) SECTOR	FY92	FY93
DOE Weapons Programs		
Research and Development	410.6	374.6
Testing	49.0	42.2
Technology Commercialization	8.3	38.0
Inertial Confinement Fusion	31.4	30.0
Production & Surveillance (P&S)	143.3	133.0
Program Direction	5.0	2.5
Sub-Total Weapons Programs	647.6	620.3
Other DOE and WFO Programs		
Verification & Control Technology (Including DOE Intelligence)	49.9	74.1
Nuclear Safeguards and Security	11.2	12.6
Reimbursable Intelligence	18.4	20.0
Reimbursable CRADAs	2.6	5.0
Reimbursable P&S	18.0	18.0
Total DP Sector	747.6	750.0
ENERGY & ENVIRONMENT (E&E) SECTOR		
Fossil Energy — Coal, Gas, Petroleum	7.7	11.8
Nuclear Energy R&D	5.2	7.2
Electric Energy Systems & Storage	6.5	6.2
Geothermal	5.3	7.6
Magnetic Fusion Research	5.1	5.6
Nuclear Waste Fund	17.4	22.7
Solar Energy	29.5	34.0
Conservation & Renewable Energy	8.0	12.2
Environmental Restoration & Waste Mgt.	87.7	117.6
Nuclear Materials Production	0.7	0.8
Basic Energy Sciences	22.1	25.0
Biological & Environmental R&D	0.7	0.8
Superconducting Super Collider	0.0	0.1
University Support & Tech Transfer	0.9	3.5
New Production Reactors	7.3	4.0
Strategic Petroleum Reserve	2.7	2.2
Minority Economic Impact	0.7	0.7
Misc. DOE Energy Programs	0.5	1.0
Nuclear Regulatory Commission	14.4	16.0
Other Energy Reimbursable Programs	14.4	15.0
Total E&E Sector	236.7	294.0
WORK FOR OTHERS (WFO) SECTOR		
Reimbursable Work for Other Federal Agencies ..	284.8	292.8
Reimbursable Non-Federal Entity	0.1	0.2
Reimbursable Work for Integrated Contractors ..	6.8	7.0
Total WFO Sector	291.7	300.0
TOTAL	\$1,276.0	\$1,344.0

(Continued from Preceding Page)

Preproposal Conference

future — especially stewardship for the stockpile.

"There are still nuclear weapons out there," says Krenz, "and as long as nuclear weapons are deployed, it's a large responsibility."

President Al Narath was the first Sandia speaker, welcoming the potential bidders with an overview of the Sandia portion of the conference. While highlighting the changing mission of the Labs, he also pointed out the continuing role in nuclear weapons.

"As long as the nation requires nuclear weapons for our security, we will retain part of this awesome responsibility," Al says.

Sandians' briefings addressed the three major sectors of Labs work: Defense Programs, Energy and Environment, and Work for Others (WFO). Following is a brief summary of each presentation:

Virgil Dugan — Director, Planning and Staff Support Center 4500: Presented general overview of Sandia facilities and budget; organizational structure, including primary work within sectors; management system; and integration of the basic functions to create a productive work environment.

Charles Tapp — Director, Quality Improvement and Primary Standards Center 4300: Explained Labs' commitment to quality initiatives, customer focus; objective is to be a national leader



Transition Executive Lee Bray (30, left) chats with DOE's Dennis Krenz during a break in the preproposal conference at the Albuquerque Convention Center. Krenz, a former Sandian, is serving as chairman of the Source Evaluation Board, which developed the criteria governing bid preparation and submission.

in quality and quality processes.

Larry Greher — Senior Attorney, General Law Center 210: Described Sandia Corporation and its functions as the corporate entity; described Labs activities conducted by AT&T; described Labs activities patterned after AT&T.

Ralph Bonner — Director, Human Resources Center 7500: Described Labs personnel in terms of recruitment, assignments, educational and professional achievement, etc.; compensation and other benefits; employee involvement in community activities.

Melodie Eyster — Director, Financial Services Center 150: Outlined the lab's funding sources and process; financial management practices; the budget process; financial profile by program allocation; auditing process.

Jim Jacobs — Director, Facilities Program Management Center 7010: Described Sandia's physical facilities in terms of space, value, purpose, and management; facilities construction program; impact of Environment, Safety, and Health (ES&H) program on facilities management.

Joe Stiegler — Director, Environment, Safety, and Health Center 7700: Explained ES&H programs at Sandia; described complex of ES&H requirements of various government agencies and their impact on Labs work; described Tiger Team findings and corrective actions.

Jim Martin — Director, Safeguards and Security Center 7400: Explained mission of protecting classified material and safeguarding property inside and outside security areas; described laws and regulations governing the protection work; described workforce and variety of methods employed.

Bob Zaeh — Director, Purchasing and Materials Management Center 7200: Discussed the Labs' purchasing processes and the regulations and directives that govern them; described efforts to buy from small businesses and minority-, woman-, or disadvantaged-owned businesses; described special needs and costs of procurement.

Dan Arvizu — Director, Technology Transfer and Industrial Relations Center 4200: Revisited Sandia's original mission and how technology developed for that is becoming increasingly important to US industry; talked about cooperative research and development agreements and described some representative examples; described changes in intellectual property rights.

Peter Mattern — Director, Core Competencies Support Center 1010: Described Sandia's expertise in materials and materials processing, high-performance computing, microelectronics and photonics, engineering sciences and physical simulation, and pulsed power technology; described how this expertise was developed in weapons work and now also is being deployed to support US industry.

Ruth David — Director, Development Testing Center 2700: Described the Labs' cycle of research, design, testing, and development, and

how the process relates to final product; described Sandia's extensive test facilities and their importance to this work; talked about prototyping and manufacturing capabilities; discussed Sandia's work in advanced manufacturing technology.

Dennis Hayes — Director, Center for Defense Programs R&D Coordination 5600: Described the Labs' broad range of defense programs activities and traditional role in the nuclear weapons program, including "cradle-to-grave" responsibilities for US nuclear weapons; described subdivisions of defense programs; discussed full integration of product-development cycle; described future work in changing world environment.

Joan Woodard — Director, Environment and Transportation Programs Center 6600: Described Labs' involvement in seeking solutions to ensure energy security, environmental quality, and economic competitiveness; discussed programs addressing variety of energy research, nuclear and other hazardous waste management, and environmental restoration.

Sam Varnado — Director, Work for Others Sector Support Center 9900: Described the Work for Others sector, including why and how it works; discussed nature of the work and its sponsors; outlined the portfolio of WFO programs; talked about financing of projects; explained the legal and regulatory foundation for WFO.

Ron Detry — Director, Engineering Services Center 8200: Gave an overview of the California lab, including its purpose, history, size, and facilities; talked about its unique missions, as distinct from its role as an extension of the New Mexico lab; described its new Integrated Manufacturing Technologies Laboratory and the Combustion Research Facility; described its ES&H and environmental restoration work; described employees' involvement in community and educational affairs. ●HK

Companies, Universities Attending Sandia Contract Preproposal Conference

Following is a list, released by DOE, of the 77 entities that registered for the preproposal conference. Most are obviously companies or universities; the two individuals listed did not indicate any organizational affiliation:

Affrex Ltd., Albuquerque Chamber of Commerce, Allied-Signal, AT&T, Babcock & Wilcox, Battelle, BDM, Burns & Roe, Business Environments, Calspan Corp., Coleman Research, Computer Sciences, Cortez III Service, CWM Federal, Digital Corp., Dyncorp Government Services.

East Mountain Law, EEC Inc., EG&G Inc., F2, Fluor Daniel, General Atomics, General Physics Corp., Georgia Tech Research, Greenhorn & O'Mara, HARC, HLP Consultant, Robert Hymer (self), IBM Corp., VA, ICF Kaiser, International Technical Corp., IT&T Federal Service.

Jacobs Engineering, Johnson Controls, K-TECH, Kelly Anderson Associates, Keystone International, KMI Services, L&M Technologies, Lamb Associates, Lewis W. Shutt & Associates, Lockheed Env. Systems, Lovelace Scientific Research (LSR), LORAL, MAC TECH.

Martin Marietta Corp., Mason & Hanger, Midwest Research Institute, Morrison Knudsen Corp., New Mexico State Univ., North Carolina State Univ., Pacifica Services Inc., Protection Technology, Proteus Corp., Hilary J. Rauch, Raytheon, RDA/LOGICON, Rockwell International.

Russell & Associates, SAIC, Scientific Ecology Group, Space Mark Inc., SRI International, Stone Medstra, Support Systems Inc., Systematic Management, Texas A&M Univ., TMC Inc., TRW Systems, UNC Analytical Services, Univ. of New Mexico, Univ. of Arizona.

Univ. of Pacific, Univ. of Texas, Wackenhut Services, Waste Management Environmental, Westinghouse Electric.

Card of Thanks

To all the Sandia Labs employees who provided hope and support to Barbara Ortiz in her fight against cancer:

The Ortiz family cannot adequately express our appreciation and thanks to all of you wonderful individuals for all you did for Barbara and her children in her time of need. Barbara never gave up hope of conquering her illness and always felt that she also had a great amount of spiritual support from her co-workers at Sandia Labs.

To all the Labs employees who helped in Barbara's struggle for a better future for herself and her family, and to those who accompanied us at Barbara's services and funeral, we, her family, are greatly indebted. Thank you all for your kindness and generosity, and please accept this delayed but sincere expression of gratitude.

The Ortiz Family

Looked on Early Clean Room with Wonder

Sandia Engineer Recalls Link between Pennsylvania Company and Sandia That Made Microelectronics History

For a Sandian who grew up in a small eastern Pennsylvania town, the old saw "What goes around comes around" has new meaning.

Ned Godshall, an engineer in Silicon Technologies Dept. 1325, was 7 years old when his father showed him a mysterious room that would affect not only his career but the careers of everyone who works in an industry that requires a superclean environment. (See photo on page one.)

What the wide-eyed youngster saw that day was an early version of a "clean room," the mainstay for achieving particle-free environments required in manufacturing microelectronic and

The 7-year-old's father took him to see a "new and very expensive room within a room."

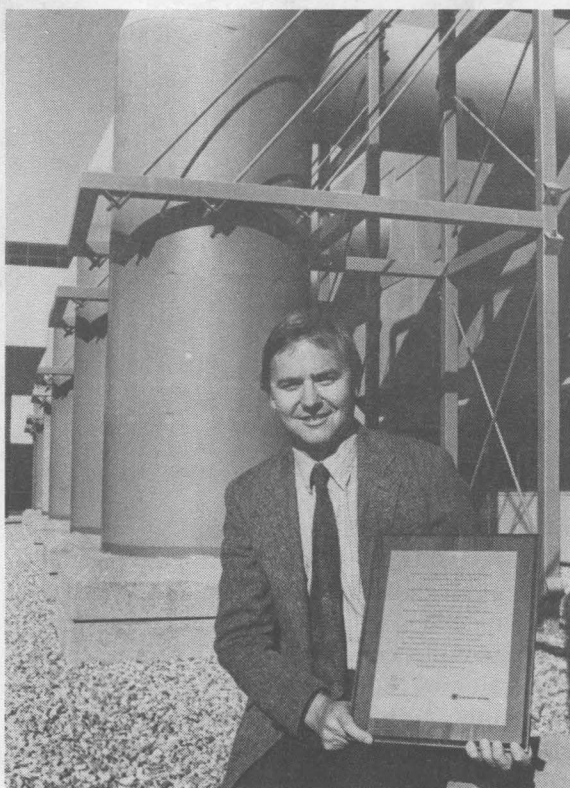
micromechanic components. Of course, young Ned had no way of knowing that he would grow up and go to work in the Sandia Microelectronics Development Laboratory that evolved from the strange room he saw in 1959.

In a ceremony held recently at US Gauge Division of Ametek, Inc. in Sellersville, Pa., Ned described how his career was linked by a Pennsylvania manufacturing company and a national laboratory 2,000 miles apart.

"I grew up in Perkasie, just north of Philadelphia, and my father, Henry Godshall, worked at US Gauge in nearby Sellersville. One Saturday in 1959, Dad took my brother Keith and me to work with him to see this new and very expensive room within a room," Ned recalls.

Viewed in Father's Arms

"I remember it only had a window in the entrance door," says Ned, "and I wasn't tall enough to see inside, so my father lifted me up. It was all white inside, and everyone at the company



PLAQUE IN HAND, Ned Godshall (1325) gets ready to return to Sellersville, Pa., to mark where Willis Whitfield's (ret.) invention of the laminar-air-flow clean room was sparked by a need for a particle-free manufacturing environment. Ned is seen here outside the Microelectronics Development Lab (Bldg. 858), where current technology depends on this kind of clean room.

called it the 'white room.' Today it would be called a clean room."

Thirty years after Ned saw the strange "white room," the LAB NEWS published an article about Willis Whitfield's invention of the laminar-air-flow clean room and the major impact it has had. The article mentioned that Willis, now retired,

was called upon to help with a Sandia project because of manufacturing problems they were experiencing "in a small town in Pennsylvania."

"Although I had worked at Sandia for more than seven years, it was not until I read that article that I realized the connection between US Gauge and Sandia's invention of the laminar-air-flow clean room," Ned says.

Components Required Clean Room

He explains that in the late 1950s and early '60s, Sandia contracted with US Gauge to develop and manufacture components for nuclear weapons. To support this work, US Gauge built one of the first clean rooms in the country. However, microcontamination problems caused by dust particles too small to be seen continued to cause concern to engineers of both US Gauge and Sandia, and Willis visited the US Gauge clean room in 1959 to evaluate the problem.

"That visit resulted in Willis Whitfield's radically different concept. Rather than trying to seal the special rooms even more tightly, he suggested constantly flushing the rooms with massive quantities of highly filtered air," Ned explains.

Today Sandia is recognized nationally for its semiconductor research and its world class facilities, such as the Microelectronics Development Laboratory. But it all started with the laminar-air-flow clean room.

To commemorate US Gauge's participation in the project that led to the revolutionary invention, Ned returned to his hometown area to present a plaque of appreciation to the company.

The inscription on the plaque points out that the clean room that resulted from Willis Whitfield's trip to US Gauge is "used throughout the world in the manufacture of pharmaceuticals, virtually all microelectronics and micromechanics, and used in many hospital operating rooms."

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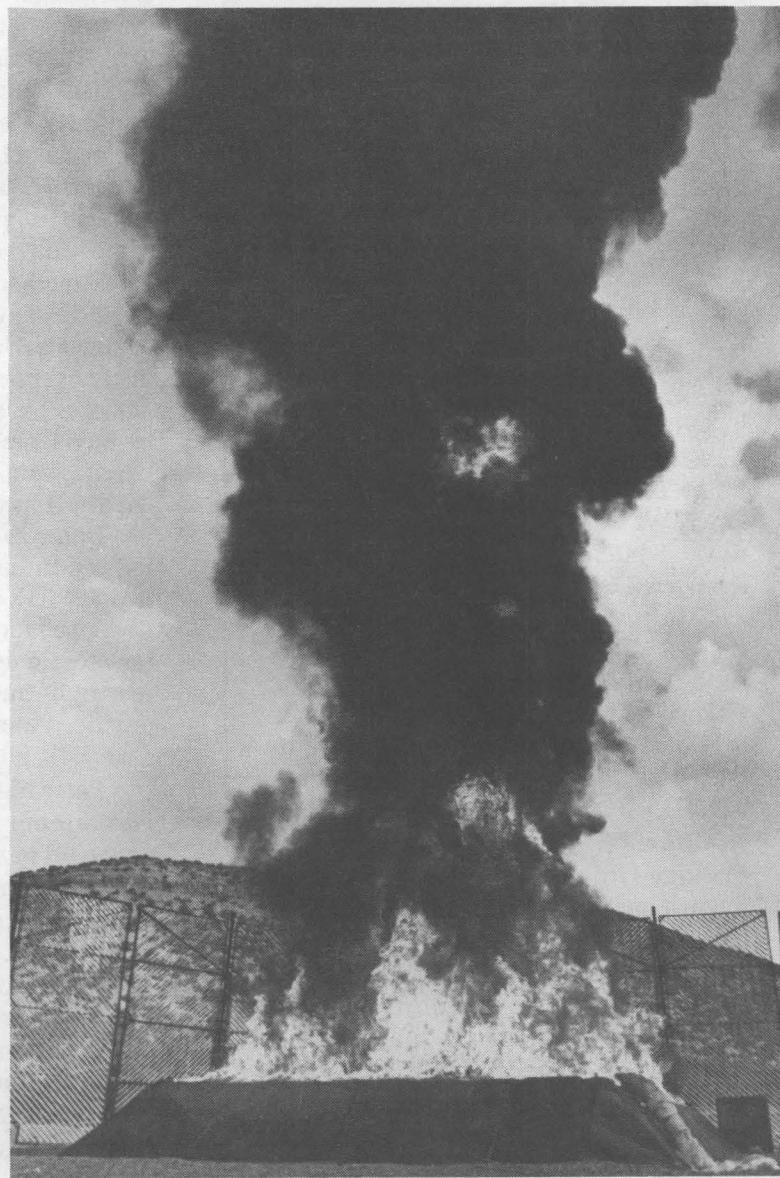
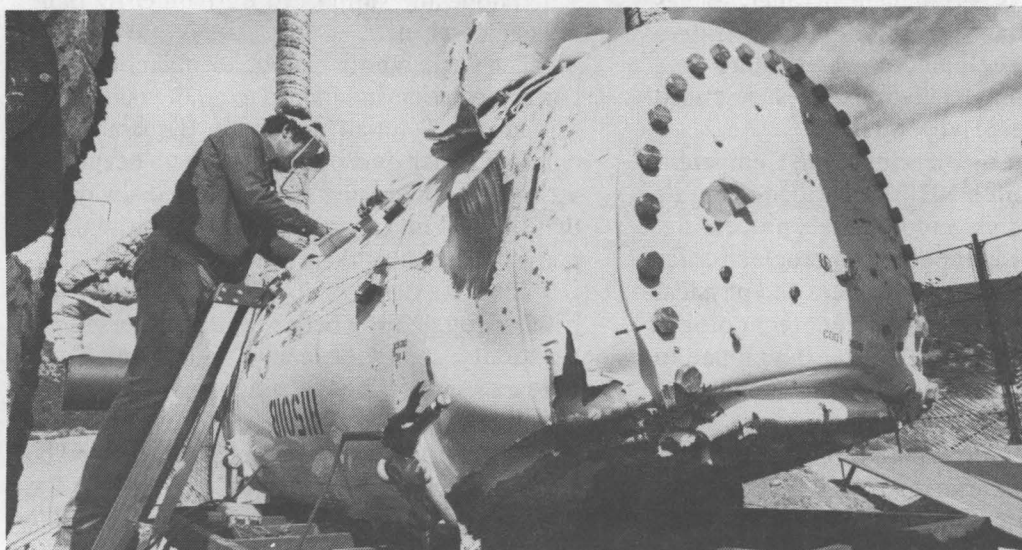
Crash It and Burn It

Hostile treatment at the hands of Sandia's test crews is the fate of a Sandia-designed shipping container for nuclear weapons. In the photo below, Dave Schulze of Thermal Test Team 2761-4 attaches thermocouples to an H5101B container for a test at the Lurance Canyon burn site. The container is already battered because of an impact test simulating a plane crash.

During a burn of some two hours (right), says Walt Gill (2761-4), the thermocouples on the outside of the container revealed an average temperature of 1,800 to 2,000 degrees F. But the temperature on the skin of the weapon mockup inside rose by only about two degrees during the burn. The thick insulating layer of redwood inside the metal shell was allowed to continue smoldering for a couple of days before a firefighting team applied its skills. By this time, the temperature inside had still risen by only 90 degrees F.

Walt and Larry Kent (2761-4) are engineers for tests done at the Lurance Canyon site. The crew includes Jerry Meloche and Bobby Strait (both 2761-4) and contractors Bill Jacoby, Wilford Valdez, and Walt Mayne. Ned Keltner is Supervisor of the Thermal Test Team.

The H1501B is a foot longer than the H1501A, explains test engineer John Liebenberg (5653), a member of the project team working on the DOE-funded container. That length lets it accommodate a B61 center bomb subassembly. One of a series of transportation-accident-resistant containers (TARCs), the H1501B was built by Allied Signal/Kansas City.



A Ten-Year Sandia Retiree Says . . .**A Satisfying Retirement Takes Some Effort**

by John Shunny

(former LAB NEWS Editor)

Editor's Note: If there's a more active retiree than John Shunny, I haven't met him or her yet. John "walks the talk" that he writes about here. Among his many other activities, John orders and stocks those popular Sandia logo souvenir items that we sell at the LAB NEWS — caps, T-shirts, coffee mugs, and knives. All "profit" from the sale of these items goes to the South 14 Village Project for helping needy families.

Chances are you'll one day walk out of the Sandia tech area a last time: You have just retired. Congratulations. Retirement is as dramatic a change as leaving high school for college, college for a new job, or a single existence for marriage.

I retired in 1982. One of my early discoveries was that the 40-hour, five-day-a-week job — in which we spend

The bonanza of available time is your reward and, possibly, your dilemma.

most of our adult life — is a considerable imposition. That sounds flippant and obvious, but until you experience the total control of your time, you'll continue to view the 40-hour, five-day work week as the norm. It isn't. It's just one of several modes of handling time.

The bonanza of available time is your reward and, possibly, your dilemma. In retirement, people fall into one of two categories: those who successfully manage the abundance of time, and those who don't. If you're in the former group, you're reasonably content; if in the latter, you're probably bored, restless, vaguely unhappy.

I think these last 10 years have given me a few insights into retirement, some of which may be of value to future retirees. I pass these along in the full knowledge that they're the experience of one: what's good for John may or may not apply elsewhere.

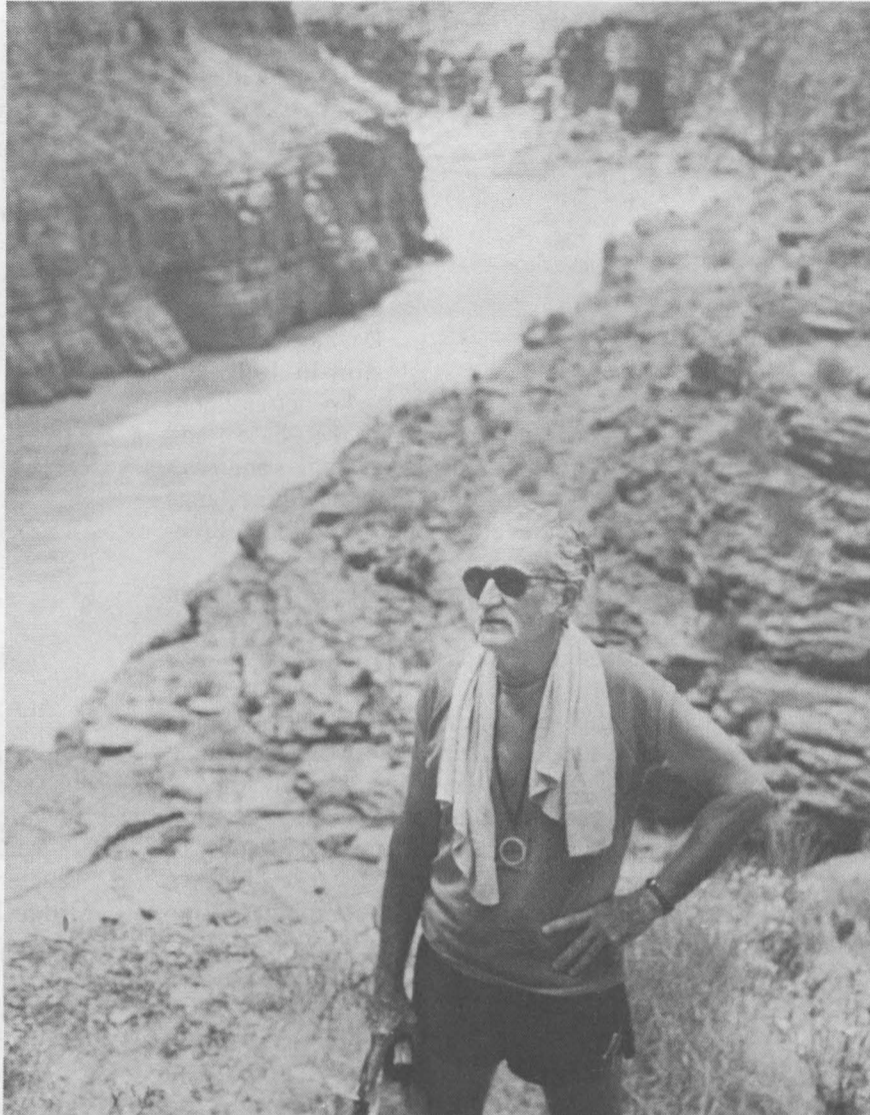
You Need More Than Fun and Games

A popular view of retirement is that from here on in, it's all fun and games, an unending round of titillation — golf, fishing, travel, socializing, TVing, theater, museums, gardening, skiing, bird watching, playing pool, and so on. I enjoy many of these activities . . . but they're not enough. If you've pursued a career that offers intellectual stimulation, certainly true of most Sandians, then you comprehend the satisfaction of having met that challenge.

I wrote and edited for the LAB NEWS; it was the best and most rewarding job in a variegated career. I continue to write in retirement, occasionally for publication, but chiefly for intellectual stimulation. You might observe that it's easy for this guy to pontificate about working his craft, admittedly a portable one, once he has left Sandia. True, but I incline to the view that most of the clever people at Sandia could exercise their expertise off the job, if they put their minds to it.

In this vein, let me mention a perquisite of age 65, which I reached two years ago. At UNM, senior citizens can take courses for \$5 a credit hour (vs. the usual \$65 an hour). During the last year, I've been auditing courses in Spanish at \$15 a semester, enjoying as much intellectual stimulation as I can handle. And it's fun to be a part of the student population; that's an education in itself.

While stimulation of the mind is critical in retirement, another element — the physical — is also critical. When we enjoy good health, we tend



IN THE CANYON — Each year, retiree John Shunny organizes a raft trip down the Colorado River in the Grand Canyon. (Photo by Ray Mosteller, 9332)

to accept it as a given. But as one ages, things physical generally go downhill, sometimes imperceptibly, sometimes abruptly.

Taking Charge of Your Health

To remain healthy and robust, I believe that an older person should go beyond the simple, prudent measures that sane people follow with respect to smoking, drinking, eating, sleeping, and other habits of everyday living. The older person should take an active responsibility for his or her health and become well-informed about it rather than rely solely upon a physician for information. These days, physicians are a busy, tightly scheduled lot, and they depend largely upon your description of

*(Continued from Page One)***Waste Mapping**

for human operators to perform. Sandia researchers say the systems that they and other DOE labs are working on as part of DOE's Robotics Technology Development Program would perform the tasks faster and more cost effectively than existing robotic systems. DOE will use such technologies to help remediate sites where nuclear weapon work has resulted in radioactive and other contamination.

A priority project is the remediation of single-shell tanks used to store waste materials such as those at the plutonium and uranium processing plant at the Hanford site near Richland, Wash. A crucial step in this process is mapping the surface of waste material and structures inside the tank. Sandia teamed with Oak Ridge National Lab to successfully field-test a prototype system in a waste silo at the Fernald Environmental Management Project earlier this year.

A sensor system capable of providing such measurements is needed for this process, and no such commercial systems exist.

MTI, a manufacturer of advanced products for

your condition. If you complain of a sore throat, neglecting to mention some dizzy spells, your physician will likely treat the throat and send you on your way.

To be well informed so that you can have a meaningful exchange with your doctor doesn't take four years of medical school. Anyone can check out medical texts directed to the layman from the public library. For that matter, you can

While I immensely enjoyed my work at Sandia, this thing called retirement is better.

even consider taking EMT (Emergency Medical Technician) training; it's interesting, it's rigorous, and someday you may find it a life saver.

You can smoke not at all, drink little, eat wisely, sleep well, feel well, and be pronounced healthy by your doctor. But a few want to feel even better, physically more capable, and we're the ones you see each morning or evening walking, jogging, or biking. I refer, of course, to the dread "E" word — exercise — and it comes in many forms, with walking/jogging/biking being perhaps the most popular.

Physical activity and aging have a crucial connection: The older you become, the more imperative it is that you remain physically active. In the absence of physical activity, old muscles and, to some extent, old organs atrophy at a more rapid rate than young ones.

This doesn't mean you have to adopt a regimen of five-mile runs — the operative word is "moderation." And any activity is better than no activity. My mother, age 93 and recovering from a broken hip, walks daily to the local shopping center, perhaps a block and a half — just about right.

Every week or so, at the Credit Union on base, I encounter someone from the days when I was an active employee. He or she will say, "How's retirement?" and I'll reply, "It sure beats working." The friendly inquiry doesn't seek a lengthy explication any more than does a "Hi, how's it going?" But the fact is that while I immensely enjoyed my work at Sandia, this thing called retirement is better. But you do have to work at it. ●

the test/measurement and defense/aerospace markets, also has developed a structured light sensor system for profiling surfaces at the micron level. MTI and Sandia will work together to integrate their technologies into a specialized product for the environmental restoration of single-shell tanks.

The objective of the joint effort is a prototype system that automatically will provide a surface map of the waste material, inspect the walls of the tank, and locate hardware inside the tank. The Sandia-MTI CRADA is a one-year agreement.

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Sympathy

To Charlotte Johnson (5512) on the death of her father in Albuquerque, Oct. 7.

To Suzanne Visor (7613) on the death of her brother in California, Oct. 17.

To Lilith (Sam) Baker (9334) on the death of her daughter in Albuquerque, Oct. 18.

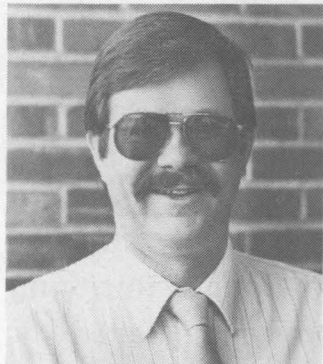
To Irene Schulte (6516) and Edna Pederson (7032) on the death of their brother in Albuquerque, Oct. 19.

To Larry (1955) and Chris (7701) Tolendino on the death of his father and her father-in-law in Los Lunas, Oct. 24.

Supervisory Appointments

SAM MILLER to Supervisor of Testing and Device Modeling Team 1325-1.

Sam joined Sandia's Nonvolatile IC Technology Division in 1984. He worked on optimizing fabrication processes and developing data retention



SAM MILLER

screening procedures for the 16K nonvolatile memory used in the Code-Activated Processor (CAP). In 1988, he transferred to the Microelectronics Technology Division, where he continued work on nonvolatile memories. His contribu-

tions to the development of various types of nonvolatile memories include developing electrical characterization and analysis techniques and device physics models of their operation.

Sam has a BS in physics from Missouri Southern State College, an MS in physics from the University of Missouri, and a PhD in physics from Iowa State University. He has received "best paper" awards at the International Cryogenic Materials Conference, the Nonvolatile Semiconductor Memory Workshop, and the Nuclear and Space Radiation Effects Conference.

Sam enjoys outdoor activities and reading. He and his wife Debbie live in the NE Heights.

MARY PRICKETT to Manager of Division Quality Coordination Dept. 2003.

Mary joined the Labs in 1986 as a member of the Quality Assurance and Audits Division, where she developed a five-module INTEC course focusing



MARY PRICKETT

on quality assurance education for all levels of Sandia management.

She transferred to the Advanced Fuzing Development Division in 1989 and managed the Army reimbursable test and quality programs as a member of the

Follow-On-To-Lance Project Team. She then worked as the quality engineer for the tritium shipping container program. Mary also worked on the overall Short Range Attack Missile-T test plan.

She joined the Transportation Support Department in 1991 and was project leader for the Configuration and Quality Project in the Transportation Systems Center. She wrote the Quality Program Plan for all work done in the Center for DOE/TSD (Transportation Safeguards Division). She also supported a number of production programs for the Center and TSD.

Mary has a BS in industrial engineering from California Polytechnic University and an MS in industrial engineering from the University of Arkansas. Before joining Sandia, she worked for AT&T in Fort Smith, Ark. She is a member of the Institute of Industrial Engineers and the American Society for Quality Control.

She enjoys youth soccer activities, baking, reading, and hiking. Mary and her husband Steve have twin sons and live in Albuquerque.

MARK ROSENTHAL to Manager of Advanced Weapon Projects Dept. 5167.

Mark joined the Labs in 1982 as a member of the Switching Devices Division, where he was the MC2935 Trajectory Strong Link Switch component engineer. He transferred to the Advanced Mechanical Systems Division in 1984 and was lead design engi-



MARK ROSENTHAL

neer on the Strategic Earth Penetrator Weapon. From 1986 to 1987, Mark was Sandia technical liaison at the DOE Strategic Petroleum Reserve Project Office in New Orleans. He joined the Penetrator Weapon Development Division in 1987 and was design engineer for advanced penetrator concepts. In 1988, he transferred to the Phase 1 and Phase 2 Division. He led several studies and projects, including ones dealing with the Short Range Attack Missile (several models) and the Follow-On-To-Lance.

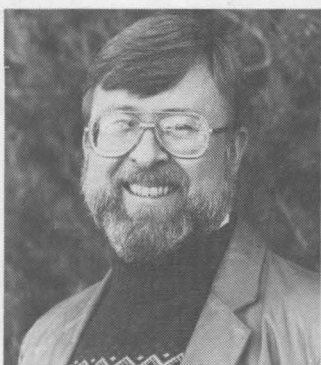
Mark has a BS in mechanical engineering from the University of California at Irvine and an MS in mechanical engineering from the University of Illinois. Before joining Sandia, he worked for Lawrence Livermore National Laboratory. He is a member of the American Society of Mechanical Engineers, currently serving as the New Mexico Section Executive Committee newsletter editor.

Mark was named a Distinguished Member of the Technical Staff in 1992.

He enjoys skiing, hunting, camping, hiking, mountain biking, and church activities. He and his wife Valerie live in the North Valley.

JEFFREY EVERETT to Manager of Space and Site Development Dept. 7921.

Jeff joined Sandia in 1981 as a member of the Environmental Research Division, where he did environmental assessments. In 1982, he transferred to the Safeguards Evaluation Division and developed security force tactics and testing methods. He was an International Atomic Energy Agency physical security course instructor. Jeff also



JEFF EVERETT

worked on the Nevada Test Site Area 27 upgrade. In 1985, he joined the Access Denial Technology Division, where he worked on Future Look: Non-Strategic Nuclear Force C3 Survivability. He transferred to the Advanced Command and Control Architecture Division in 1986 and continued to work on nuclear command and control.

From 1990 until his promotion, Jeff was on temporary assignment to the US Nuclear Command and Control System Support Staff in Washington, D.C. He was scientific advisor to the Director for weapon surety issues, and technical advisor to the Federal Advisory Committee on Nuclear Failsafe and Risk Reduction.

Jeff has a BS in biology and an MS in ecology from Pennsylvania State University. Before coming to Sandia, he was with the Allentown, Pa., Health Department. In July of this year, he received the Secretary of Defense Award for Outstanding Public Service.

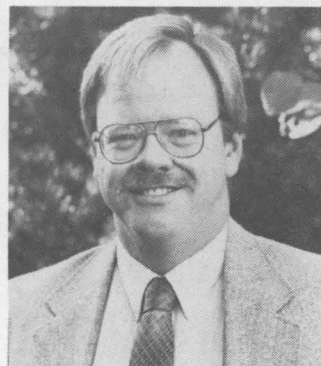
Jeff enjoys fishing, gardening, and raising and training blue tick hounds. He and his wife Terra have two daughters and live in the NE Heights.

ALAN NICHELASON to Manager of Quality and Administrative Support Dept. 1101.

Alan joined Sandia in 1984 as a member of the Administrative Policies and Procedures Division, where he was a systems analyst and wrote Sandia Laboratories Instructions. He was team

leader on the Document Production Study for the Purchasing Organization and conducted a cost study of Sandia's Education Program. He transferred to the Programmatic Support Division in 1987 and worked on year-end and month-end budget processing. While there, he participated in the Financial Migration Project. From 1988 until his promotion, he was administrative assistant to the Physical and Chemical Sciences Center.

Alan has a BS in business management/accounting from the University of Colorado and



ALAN NICHELASON

an MBA in management information systems from UNM. Before coming to Sandia, he worked for the Johnson and Lanphere law firm, Carbon Coal Company, and Hamilton Brothers Oil Company. He is a member of the American

Institute of Certified Public Accountants and the State Board of Accountancy in Colorado and New Mexico.

Alan enjoys teaching business courses at Webster University and hiking. He and his wife Midge have one daughter and live in the SE Heights.

MARJORIE WHIPPLE to Manager of Photovoltaic Technology Evaluation Dept. 6219.

Margie joined Sandia in 1985 as a member of the Facilities Engineering Design Division. She did mechanical design in support of Sandia's remote test sites on projects that included the Explosive Components Facility, Radioactive and Mixed Waste Handling Facility, Acoustic Test Facility, Area 4 Technical On-Site Inspection Project, and Repetitive High-Energy Pulsed Power Project.

She transferred to the Photovoltaic Technology Division in 1990 and worked on photovoltaic collector development and on evaluation of new photovoltaic products. Before her promotion, Margie managed Sandia's Photovoltaic Technology Evaluation Lab, an outdoor test facility.

Margie has a BS in mechanical engineering



MARGIE WHIPPLE

from the University of California and an MS in mechanical engineering from UNM. She is a member of the Society of Women Engineers, the Engineering Societies Presidents Council, and the American Society of Mechanical Engineers. In

1990, she received the YWCA Women on the Move Award in the engineering and high technology category. She is a member of Sandia's School Partnership Program at San Antonio Elementary School.

Margie enjoys volleyball, mountain biking, fishing, and teaching science to children. She and her husband John live in the East Mountain area.

Retiree Open House

The Labs is holding an open house in honor of retiree **Jay Anderson** (7713) in the Area 1 Cafeteria (Bldg. 861) on Friday, Nov. 20, from 2 to 4 p.m. Refreshments will be served. Friends and acquaintances are invited.



Sandia News Briefs

Jeffrey Everett Awarded DoD Outstanding Public Service Medal

Jeffrey Everett, Manager of Space and Site Development Dept. 7921, was recently awarded the Secretary of Defense's Outstanding Public Service Medal. The award recognizes his work during a two-year assignment as scientific advisor to the US Nuclear Command and Control System Support Staff under the Office of the Assistant Secretary of Defense for command, control, communications, and intelligence. During his assignment, Jeff provided program direction for the Failsafe and Risk Reduction study.

The citation accompanying the award, signed by Secretary of Defense Dick Cheney, reads: "His authoritative technical and policy recommendations to improve nuclear weapon safety, security, and control, and his ability to provide this key information to senior executives, were instrumental in assuring that the United States maintained sound nuclear weapons command and control."

Pair of Sandians Wins a Best Paper Award at X-ray Conference

A poster paper by Ralph Tissot and Ray Goehner of Chemical and X-ray Analysis Dept. 1824 recently won the Best Poster Paper Award for the X-ray Fluorescence Techniques and Instrumentation Session during the 41st Denver X-ray Conference.

The paper — titled "Diffraction Peaks in X-ray Spectroscopy: Friend or Foe?" — discusses X-ray diffraction peaks in the energy spectrum and ways to enhance or eliminate them for research purposes. The paper also proposes an instrument for simultaneous X-ray diffraction and elemental X-ray fluorescence analysis.

Energy and Environment Sector Plans Job Fair

The Energy and Environment Sector is planning a Job Fair for early January. The fair will provide an opportunity for Sandia staff and management to discuss and understand the rapidly growing E&E Sector programs and projects, staffing requirements, and potential job opportunities.

The fair is a new initiative to facilitate the goal of the integrated staffing process outlined in the Laboratories Strategic Human Resource Plan: getting the right person in the right job at the right time. Additional information will follow as the fair format is developed. In the meantime, questions are welcome — contact Marv Torneby (7531) on 4-2965 or Ken Hanks (6526) on 5-9370.

Sandia to Work with Flat-Panel Display Manufacturer

Sandia researchers will work with Photonics Imaging of Northwood, Ohio, to develop next-generation models of flat-panel video monitors. According to Michael Pendley of Scientific Computing Dept. 8117, the cooperative R&D agreement (CRADA) will allow Sandia to apply capabilities developed for the benefit of defense programs to a strategic US industry, helping make the US more competitive in this market.

Sandia will apply its expertise in scientific modeling of the interaction between materials and plasmas to improve the display efficiency and other parameters of color plasma display panels. The objective of the program is to develop a validated software system that can be applied to flat-panel display and manufacture.

The University of Toledo will be a subcontractor for Sandia, providing physics development support to the program.

Send potential Sandia News Briefs to LAB NEWS, Dept. 7162.

Favorite Old Photo



JOHNSTON ISLAND, about 700 miles southwest of Honolulu, is the scene of this photo in the island's new Officers Club (really just a shed with a bar) during the last US high-altitude nuclear test series — this month is the 30th anniversary of the final one. We felt it was time to celebrate following a test that got off only after a long series of delays. At left in the back row is Morgan Kramm, now retired, who was in charge of Sandia's activity on Johnston Island and later of many other Sandia programs. I'm standing next to him. In the front row, at right, is Don Shuster, now deceased, who was widely known in the Labs. (Any active or retired Sandians recognize anybody else in the picture?) These tests were part of the series in the Pacific called Operation Dominic. For a number of months in 1962, during that operation, we lived on Johnston Island, which is a little more than a mile long and maybe a quarter of a mile wide. There was just enough space for a runway, a taxiway, and rocket and missile launch facilities, with the living quarters alongside.

Tom Sellers, 9200

American Indian Heritage Week Marked at Kirtland

The annual American Indian Heritage Week will be observed on Kirtland AFB beginning Nov. 16. The theme for this year's observance is "Year of the American Indian: Providing Contributions for Change and Success."

An American Indian exhibit will be at the base library (on "F" St., about a block west of Wyoming Blvd.) through November. The display includes arts and crafts from the Indian Pueblo Cultural Center.

Other events:

Monday, Nov. 16 — Friends of the Albuquerque Petroglyphs will show a slide presentation, followed by a question-and-answer period. It will begin at 10:30 a.m. in the Coronado Club Zia Room.

Tuesday, Nov. 17 — Carolyn Elgin, President of the Southwestern Indian Polytechnic Institute, and Regis Pecos, Executive Director of the New Mexico Office of Indian Affairs, will present a workshop on cultural diversity in the workplace, beginning at 9 a.m. in the Del Norte Room at the East Officers Club. A question-and-answer period will follow.

Wednesday, Nov. 18 (11 a.m.), and Friday, Nov. 20 (10 a.m.) — Video presentations will be shown at the Command Presentation Center, Bldg. 20604. The videos are "Taking Traditions to Tomorrow," in which the American Indian Science and Engineering Society features contributions by Indian scientists, educators, doctors, and elected officials throughout the US, and "More Than Bows & Arrows," which shows contributions made by American Indians in all walks of life. Both are narrated by Pulitzer Prize winner Scott Momaday.

Thursday, Nov. 19 — The American Indian Heritage Week Luncheon will take place at the East Officers Club from 11 a.m. to 1 p.m. Special guests will include Dan Atsye of Laguna, delivering the invocation, and Patrick Baca of Sandia Pueblo, Secretary of Labor for New Mexico, who will deliver the keynote address. For ticket information, contact Capt. Lemoyne Blackshear or Vince Montoya on 846-7904, or Ruth Konst on 846-1327.

Friday, Nov. 20 — An American Indian Pow-Wow will be held at the east football field. Gourd dances will be from noon to 6 p.m., followed by the grand entry for the evening Pow-Wow dances at 7 p.m. Special guests for the gourd dances are the Navajo Code Talkers of World War II fame. Authentic Indian arts and crafts will be on sale at the Pow-Wow. Everyone is invited. •

Take Note

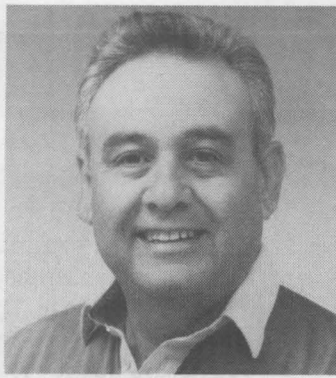
Nominations for 1993 YWCA Women on the Move Awards are now being accepted. The program was begun in 1985 to recognize women who make significant contributions to their community and organizations. It honors women who work toward the goals of the program — to improve the social condition of all people and eliminate ethnic and cultural biases. The program also acknowledges businesses and organizations that provide opportunities for women to achieve and excel. For nomination forms, call the YWCA on 822-9922. Deadline for submissions is Dec. 15.

The third annual Holiday Blanket Drive, sponsored by the United Way of Greater Albuquerque and Lovelace Medical Center, will be held from Friday, Nov. 27, through Friday, Dec. 18. People can drop off new or "gently used" blankets at any Lovelace location in Albuquerque or Santa Fe. The donated items will be cleaned and distributed to non-profit organizations through United Way's Gifts-in-Kind Program. For more information, call Kathy Anderson on 262-7771.

MILEPOSTS

LAB NEWS

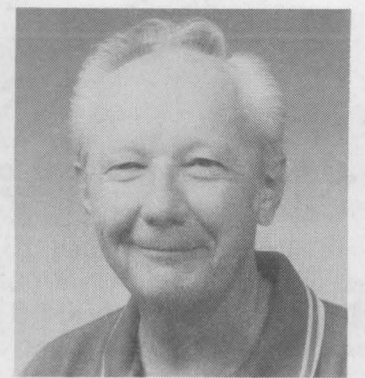
November 1992



Arthur Andazola
2522 30



Donna Coulter
6904 15



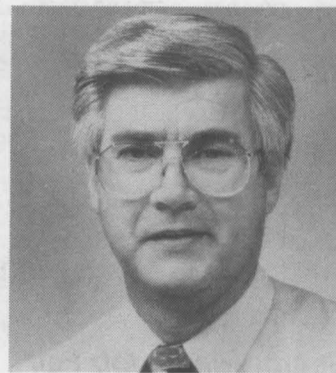
Milo Navratil
9305 35



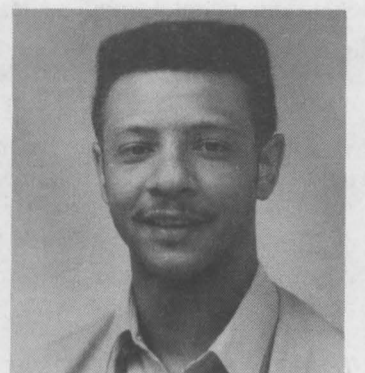
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Mary-Anne Mitchell
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Delmar Klinetobe
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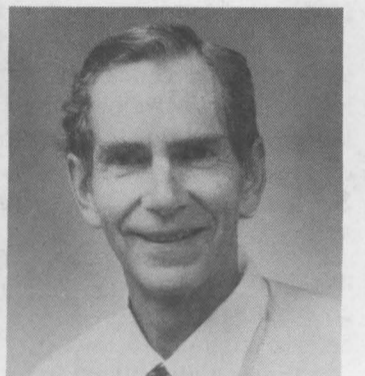
Larry Stevenson
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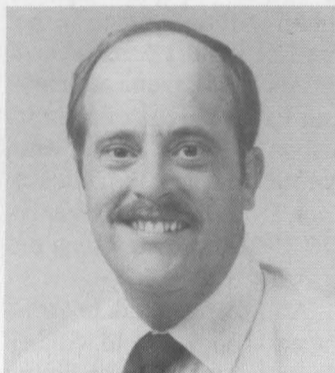
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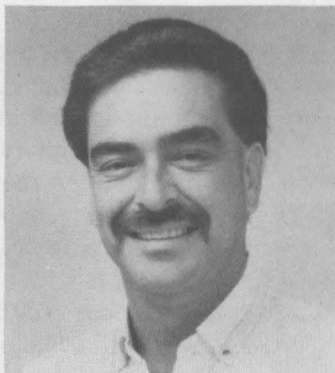
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Bill Chambers
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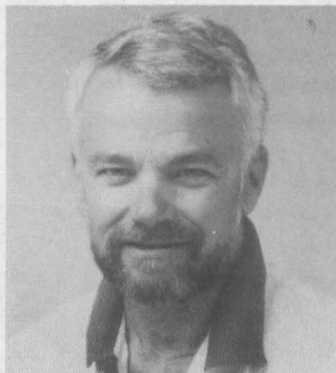
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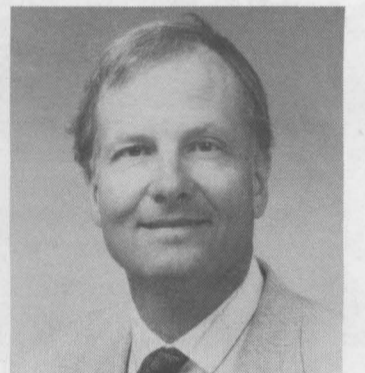
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Shanna Lindeman
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Donald Porter
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Dale Schaefer
1703 20



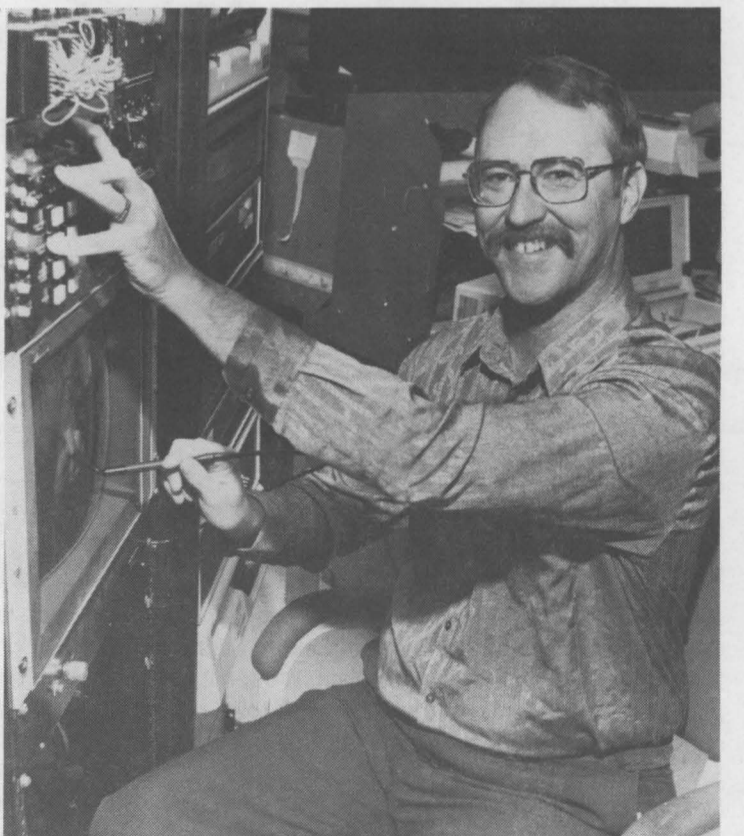
Steven Shope
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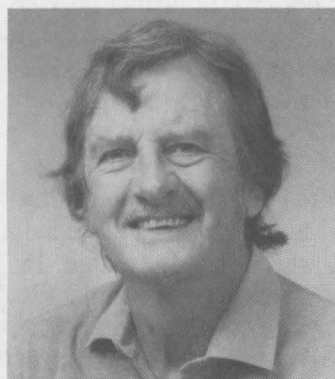
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Ray Hibray
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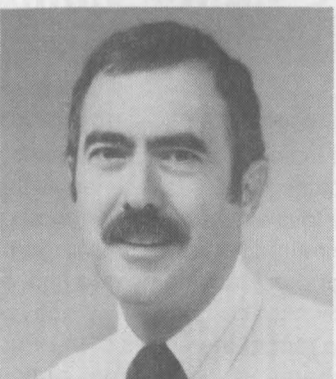
Barney Doyle
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Ed Hart
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Mike Stark
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Douglas McGovern
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Medical Corner

Adopt A Smoker for the Great American Smokeout

Smoking is related to 400,000 deaths a year in the US — 87 percent of lung cancer deaths and 33 percent of cardiovascular diseases are attributed to smoking. To help people kick the smoking habit, the American Cancer Society annually sponsors the Great American Smokeout. The 16th annual Smokeout will be Thursday, Nov. 19. Sandia's theme for the event will be "Adopt A Smoker."

If you're a smoker, the Smokeout is your opportunity to take the pledge to quit smoking for 24 hours. You can start anytime during the day, as

long as you don't smoke for 24 hours. Non-smokers can show their commitment to this cause by "adopting" a smoker — or more than one — and providing encouragement to help their adoptee(s) get through the day.

TLC action booths will be set up on Nov. 19 at these places and times: Bldg. 800, 8-9:30 a.m. and 11:30 a.m.- 1:00 p.m.; Bldg 822, 8-11:30 a.m.; and the Sandia Cafeteria, 11:30 a.m.-1 p.m.

The booths will have smoking cessation tips, Adopt a Smoker contracts, quit-smoking buttons,

and other information. Also, watch for the "Beat the Butt" luncheon specials to be served at the Sandia cafeteria and the Coronado Club.

If you want to quit smoking, plan to attend the 4-week smoking cessation class that will meet every Monday and Thursday from Nov. 23 through Dec. 17 at 12:30 p.m. in Medical Conference Room A (Bldg. 831). You may sign up by using the registration form on the back of the October-November *TLC Update*. For more information, contact Arlene Price (7035) on 5-8729.

UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS

Deadline: Friday noon before week of publication unless changed by holiday. Mail to Dept. 7162.

Ad Rules

1. Limit 20 words, including last name and home phone (the LAB NEWS will edit longer ads).
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

- RYDER TOW DOLLY, commercial grade, w/light kit for car in tow, \$575. Jeffrey, 294-4676, leave message.
- SHOPSMITH, multi-purpose wood-working system, model 500, excellent condition, very little use, \$895. Coleman, 884-5009.
- COUCH & CHAIR, brown & beige tweed, good condition, \$100/couch, \$35/chair. Valles, 299-4381 after 6 p.m.
- M CLEAN WIRE WHEELS (4), reversed, 15x10, all chrome, w/225 50 tires, excellent condition, worth \$1,100, sell for \$850 or trade up on Dayton's. Montoya, 272-8150 (home) or 857-1754 (pager).
- CELSIUS HUMIDIFIER/EVAPORATIVE AIR COOLER (swamp cooler), portable, new, paid \$150 in July, sell for \$75 OBO. Davis, 255-2084.
- S&W 669 PISTOL, Leopold spot scope, Nikon 10x50 binoculars, Minolta X-370 camera, Chinon 8mm camera, Zenith 12-in. TV. Jimenez, 296-9256.
- KENNEL, 8'W x 20'L x 6'H, 2 gates, \$375 OBO. Claussen, 293-9704.
- PENTAX SUPER PROGRAM, 35-70, 70-210 zoom lenses, filters, Sundak auto 30DX flash, cases for camera & lenses, \$250. Mazze, 299-4568.
- "MISS PIGGY GYMNAST," by Henson, 12-in. tall, soft-sculpture doll, new; Atkins bicycle carrier, 65cm tall, 45cm wide. Wagner, 823-9323.
- SOLID OAK CHINA HUTCH, \$125; Noritake china, 50 pieces, Maplewood pattern, \$75; Samsonite luggage, 5 pieces, make offer. Bear, 881-7128.
- SONY BLACK & WHITE VIDEO CAMERA & reel-to-reel record & playback unit, \$50. Smith, 299-6873.
- INFINITY RS 6000 LOUDSPEAKERS, 42-Hz to 44-KHz +/-3dB, 35- to 200-watt RMS, like new, paid \$760, asking \$450. Hietala, 867-9577.
- SOFA SLEEPER, queen-size, pub style, oatmeal color, good condition, \$275. Smith, 281-9360.

- SHOP MANUAL, for '89 Grand Am, \$15; frame trailer hitch for '92 Olds 88, Pontiac Bonneville, Buick LeSabre, \$40. Holmes, 292-0898.
- CROSS-COUNTRY SKIS, 190mm, \$25. Dietz, 821-0336.
- FISHER-PRICE HIGH CHAIR & changing table/dresser, excellent condition, \$35/ea.; Rock-a-Roo, backpack, & crib hammock, \$10/ea. Fletcher, 293-4204.
- CHILDCRAFT CRIB'N'BED, honey oak, w/mattress, converts between crib and bed, excellent condition, originally \$650, \$300 OBO. Reno, 296-6290.
- THAYER COGGIN COUCH, med.-blue, 3 cushions, 84-in., good condition, does not fold out into bed, \$100. Pendall, 265-3008.
- HEATER, Williams natural gas wall furnace, 24,500-Btu output, good condition, \$75 OBO. Weber, 268-1195.
- COMPUTER, Packard Bell 1992, 8 mos. old, complete, plus desk & extras, call for information. Rael, 884-4778.
- RIVAL ELECTRIC MEAT SLICER, still in box, used twice, model 1030V, \$40 OBO; brown sofa, no stains, \$75 OBO. Dixon, 298-5617.
- EXERCYCLE, recliner style, \$35; Easy Glider exerciser, \$35; oak computer desk, \$75. Patrick 265-4569.
- CAMPER SHELL, Leer fiberglass, for Chev. S-10 short-bed, bought in Sept for \$950, asking \$750. Gabaldon, 865-9767.
- GARAGE DOOR OPENER, \$50; sectional rattan couch, \$50; 1/2-hp planer motor, new, \$50; '68 Gibson J50ADJ guitar, \$900. Hastings, 881-6789.
- PINBALL MACHINE, Bally Hi-Deal, w/key & service manual, looks excellent, but needs adjustment/work, \$300 as is. Blackledge, 294-6030.
- CANON AE-1 CAMERA, 50mm lens w/UV filter, AE-1 flash, & case, rarely used, \$275; new 6" x 6" chimney brush, \$15. Moonka, 291-9266.
- CHOW/LABRADOR DOG, found, affectionate, black, housebroken, 16-in. tall, free to good home. Wagner, 292-5638.
- DOG CARRIER, for large dog, used once, purchased from American Airlines at \$100, sell for \$50. Emerson, 275-7026.
- ELECTRIC TYPEWRITER, Royal "Aristocrat" w/hard case, \$25. Woods, 884-4224.
- SEWING MACHINES (2), Singer Touch & Sew, zig-zag & decorative stitches, all attachments, excellent condition. Seyfer, 292-0179.
- C-64 COMPUTER, color monitor, printer interface, color printer, 2 modems, trackball, drawing pad, robotic workshop, software, \$500. Cordes, 299-0511.
- TURBO PASCAL 6.0, new, manuals, \$45; push-type lawn mower, w/catcher, \$50. Harris, 822-0236.
- WASHER & DRYER, Kelvinator, almond, like new, \$325; DP Universal gym, new \$580, sell for \$275; CalSpa 8-person hot tub, \$2,800. Mounteer, 897-2708.
- SCOUT II PARTS: springs, shocks, drive shaft, & transfer case; Jacobs computer ignition system for GM internal coil HEI. Brooks, 299-1884.
- UPRIGHT FREEZER, large, \$175; Kenmore apt.-size refrigerator, auto-defrost, \$150; Tappan microwave, \$150; all good, clean condition. Romero, 299-3296.

- BARRECRFTER SKI RACK SR-84, fits all vans, mini-vans, & suburbans, locking, easy-slide loading, used twice, \$75. McMullen, 298-2801.
- BUMPER POOL TABLE, octagon, \$200; 3-pc. sofa set, earth tones, woven plaid, \$150, Wards washer & dryer, stackable, \$100. Gregory, 299-8029.
- ORGAN, excellent condition, plays different background instruments on organ which sounds like a band, \$599. Haynes, 293-9208.
- THE GREAT PIGEON GIVEAWAY: for kids only, choose from Old Dutch Capuchini, Silver King, or Rollers. Vandermolen, 296-9397.
- CHILD'S CROSS-COUNTRY SKIS, \$15. Hudson, 884-7621.
- ELECTRIC BLOWER, Craftsman, w/vacuum attachment; chain saw, Craftsman 2.3, 16-in. blade, w/carrying case; wheel chair. Pitti, 256-1629.
- SOCRATES EDUCATIONAL VIDEO SYSTEM, w/mouse, CAD, & geography cartridges, power supply, \$75. Macha, 298-6583.
- REFRIGERATOR, 17 cu. ft., \$195; toilets, \$25/ea; medicine cabinet, \$8; wood cabinet, \$12; 4,800 CFM evap. cover, \$8/ea; whirlybird cover, \$6. Baca, 271-2962.
- CRIB & MATTRESS; king-size waterbed, complete, w/bookcase headboard, 6 drawers, & ski-stow; baby scale; more. Cocain, 275-9505.
- SIBERIAN HUSKY, "Tasha," med.-size, 1-1/2 yrs. old, beautiful, spayed, gentle, friendly, good w/children, well-mannered, free to good home. Scholl, 823-9119.

Deadline Change

The next LAB NEWS will be published Dec. 4. Deadline for ads and other submissions is noon, Tuesday, Nov. 24.

- YAMAHA KEYBOARD, excellent condition, \$50; carpet, 3'9" x 8' and 4'3" x 14', beige color, plush, \$15 & \$25. Miyoshi, 821-9118.
- DAYBED FRAME, white, w/brass trim, \$50; single mattress, almost new, \$50; camp stove, \$25. Schmale, 265-7580.
- REFRIGERATOR, new; sectional sofa; king bedroom set; queen waterbed; dining room table, w/6 chairs. Vitto, 897-2242.
- SPORT SKIS, K2 PS6.7, w/Tyrolia 560D bindings, 175cm, 2 yrs. old, well-maintained, \$140. Fine, 281-2116.
- STAIR STEPPER, heavy-duty, very stable, gym quality, \$250; heart-rate monitor, \$40; sit-up seat, \$10. Paul, 299-6387.
- DOUBLE BED, \$40; rocking chair, \$10; bookshelves, \$10; end table, \$5; brass headboard, \$10. Morris, 292-1722.
- MAN'S LONDON FOG MAINCOAT, w/liner, size 40 regular, like new, \$60. Stein, 299-8875.
- FINISHED OAK CABINET DOORS (2), 16"H x 11-5/8"W, hardware included, plus a few small oak boards suitable for framing, \$15 OBO. Freyermuth, 299-2053.
- TWIN BED, box spring, & new, never-used mattress, white wicker headboard, \$175; white French provincial desk, 7 drawers, \$75. Strascina, 294-0305.
- SOLOFLEX WEIGHT MACHINE, w/butterfly & leg extensions, excellent condition, \$750. Biffle, 293-7043.

- DRAFTING TABLE, w/attached desk, \$80 OBO. Chavez, 298-7969.

TRANSPORTATION

- '90 VOLKSWAGEN WESTFALIA VANAGON GL, pop-top camper, sleeps 4, refrigerator, stove, sink, demand water system, etc., excellent condition, \$18,000. Parsons, 298-3053.
- MAN'S BICYCLE, Free Spirit, 10-spd., \$25. Collier, 299-0182.
- '69 CHEV. 3/4-TON PICKUP, w/overhead camper, good condition, \$1,550 OBO. Henfling, 869-4119.
- MAN'S BICYCLE, 20-in., 15-spd., Shogun Alpine GT, perfect for 5'3" to 5'5" person, excellent condition, \$75 OBO. Davis, 255-2084.
- '82 FORD MUSTANG, T-top, standard transmission, silver w/red interior, \$1,200. Meyer, 821-0123.
- '83 TOYOTA COROLLA, 97K miles, AC, new stereo & speakers, very reliable, great student car, red, \$2,000. Spires, 275-3655.
- '88 FORD AEROSTAR XL MINI-VAN, AT, PS, PB, AC, 65K miles, luggage rack, good condition, \$6,975. Wanya, 891-0018.
- REPOS: '89 Pontiac Grand Prix, approx. 30,300 miles, AT, AC, PW, PB, CC, PS, AM/FM stereo. '89 Pontiac Grand Am, 4-cyl., approx. 67,600 miles, 5-spd., AC, AM/FM stereo; bids accepted through Nov. 17, 1992; we reserve the right to refuse all bids; subject to prior sale. Sandia Lab FCU, 293-0500, ext. 344.
- BIKES: man's X-Country \$50; man's 10-spd., \$25; woman's 10-spd., \$35. Dietz, 821-0336.
- '90 OLDS CALAIS, very low mileage, in storage since 1991, fully equipped, like new, \$9,200. Rael, 884-4778.
- '79 MERCURY COUGAR XR7, 111K miles, power everything, sunroof, new exhaust system, outstanding condition, trailer package, \$1,800. Stuart, 265-7315.
- '89 MAZDA 626, 5-dr. sedan, turbo, loaded, excellent condition, mileage, & acceleration, all service records, scheduled maintenance, \$9,100. McCampbell, 294-8238.
- '88 DODGE CARAVAN SE, 2.5L engine, cruise, tilt-wheel, 2 captain's chairs, AC, PS, AM/FM, 59K miles, clean. Dillon, 256-0076.
- '86 CHEV. S-10 BLAZER, excellent condition, new tires & battery. Beck, 299-4786.
- '69 FORD F-100, 1 owner, original paint, engine immaculate, white, 73,500 miles, see at Base lot, \$3,995 OBO. Dixon 298-5617.
- BMX BICYCLES: boy's 20-in., black, good condition; Schwinn Thrasher, \$40; Royce Union, \$35. Molecke, 296-5850.
- '91 FORD MUSTANG 5.0 LX, AT, 13K miles, perfect condition, garage-kept, extended warranty, \$12,000 OBO. Meyer, 897-7951.
- '85 OLDS TORONADO CALIENTE, low mileage, excellent condition, sunroof, leather interior, other extras, \$4,000. Sabre, 821-7841.
- ITALIAN RACING BICYCLE, Ciocc, 54cm, Shimano 600, clipless pedals, racing wheels, new campy rims, Record hubs. Alarid, 292-3812.
- '69 CORVETTE 350/350, T-top, 4-spd., PS, PB, AC, good tires, runs great, very good condition, extras, \$15,000. Wilde, 281-4511.

- '89 GMC VANDURA CONVERSION VAN, w/ TV & VCR, excellent condition, 50K miles, \$11,000. Horn, 293-8462.
- BOY'S BICYCLE, Schwinn, 10-spd., \$70. Harris, 822-0236.
- '77 OLDS CUTLASS, 113K miles, AC, PS, PB, AM/FM cassette, excellent mechanical condition, interior good, body fair, \$1,300 OBO. Maurer, 294-5128.
- '89 CORVETTE COUPE, red, AT, Bose, leather, power seats, bronze glass top, low miles, Alpine CD, radar. Lenhart, 898-1200.
- '90 MITSUBISHI PICKUP, 4x4, 20K miles, AM/FM cassette, V-6, chrome rollbar w/lights, AC, custom seat, 5-spd., warranty, excellent condition, \$8,300 OBO. Lytle, 821-8974.
- '80 HONDA ACCORD LX, hatchback, 5-spd., AM/FM cassette, PS, PB, AC, good engine, new brakes, \$1,050 OBO. Daniel, 821-2935.
- '79 TOYOTA FJ-40 LANDCRUISER, 4-WD, AM/FM cassette, new front-end suspension, new red paint, excellent condition, \$6,900. Freyermuth, 299-2053.
- '56 FORD 1/2-TON PICKUP, classic w/lots of potential. Christensen, 884-8257.

REAL ESTATE

- 2-BDR. MOBILE HOME, on 1/2-acre Conchas Lake view lot, 1 bath, furnished, pitched roof, must see, \$15,000. Shanklin, 275-9611.
- 3-BDR. HOME, Mossman, den, near San Pedro & Comanche, large lot, RV access. Schultz, 821-5158 or 291-1600.
- 3-BDR. MOBILE HOME, 2 baths, refrigerator, dishwasher, & sundeck, reduce to \$14,000 from \$17,000, must see to appreciate. Rael, 884-4778.
- 3-BDR. HOME, NE Heights, 1,467 sq. ft., solar hot water/heat, family room, fireplace w/woodstove, 2-car garage, new paint, Menaul-Chelwood, \$93,500. Ripple, 293-4718.
- 3-BDR HOME, 2 baths, approx. 2,350 sq. ft., spacious, den, playroom, study, great for family on budget, under appraisal, \$98,500. Padilla, 298-7324.

WANTED

- DOUBLE-SIZE 4-POSTER BED. Goodness, 281-3052.
- HOUSE TO RENT, w/ fenced yard, need Dec. 1. Olecksiew, 345-5012, leave message.
- TIRE CHAINS: Will trade my 15-in. tire chains for your 14-in. tire chains. Moyer, 881-3879.
- HOUSEMATE: UNM Valencia Branch student, 2-bdr.home, completely furnished, in Los Lunas, \$185/mo. + 1/2 utilities. Ellis, 866-0942 or 296-0575.
- VEHICLE: Ford Explorer XLT or Cadillac Sedan de Ville, 1992 model, very reasonable. Everts, 822-1767.
- WROUGHT-IRON SECURITY DOOR, black, 36-in. Sanchez, 873-2058.
- STORAGE SHED, cheap, condition & size unimportant. Wilde, 281-4511.
- ROCK TUMBLER. Burchard, 884-5424.



Coronado Club Activities

It's a Lucky Friday the 13th for Kids

KIDS' BINGO TONIGHT — All the kids will be lucky at Kids' Bingo tonight, Nov. 13, because any youngster playing bingo will get a free hot dog, popcorn, and soft drink with a \$2.50 bingo packet. And some will be extra lucky, because there are lots of fun prizes to win. A low-cost buffet is available from 5 to 8 p.m., and bingo begins at 7 p.m.

NEXT FRIDAY — Fiddlin' Doc Gonzales and the Orange Blossom Express return to the Club next Friday, Nov. 20, for an encore performance from 7 to 11 p.m. The folks who were at their Club debut a while back know what a fiddler the Doc is. The kitchen crew will fiddle up a fine menu, too: filet mignon or golden fried shrimp (two for \$14.95), or the all-you-can-eat buffet with chile-smothered chicken breast and baron of beef (\$6.95). Dinner is served from 6 to 9 p.m. Call the Club at 265-6791 and make your reservations.

SOME GOOD WORDS for the Club's brunches and tea dances: elegance, value, family atmosphere, and fine music. Some good food, too: scrambled eggs, bacon, crepes, waffles, ham, champagne . . . the list is just too long to finish. On Sunday, Nov. 8, Bob Weiler and Los Gatos will provide the tea-dance music from 1 to 4 p.m.,

after the 10 a.m.-1 p.m. brunch. Reservations required (265-6791).

THE HOLIDAY SEASON will be starting soon, and here are some words to the wise about getting ready: First, get your New Year's Eve tickets early — they sell out fast, and they're going on sale this Monday, Nov. 16. Once you're set for that always-popular party, mark your calendar for the traditional Thanksgiving buffet, Wednesday, Nov. 24, from 11 a.m. to 2 p.m. — members get a 10 percent discount. (The Club will be closed during the Thanksgiving weekend.) The annual Christmas party for kids will be Dec. 12, and the members' Christmas party will be Dec. 18, with the Isleta Poorboys on stage. Finally, the holiday close-down party will be Dec. 24, and (except for New Year's Eve) the Club will be closed from Dec. 25 through Jan. 3.

FIVE FOLKS TAKE TURKEYS will be the news after the Nov. 19 edition of the regular Thursday bingo, when there'll be some especially seasonal prizes. The prize money for most of the games has been increased, and the fun has never been better. So come on out just about any Thursday (check for Club closed dates during the holidays) and get a guaranteed good time.

Fun & Games

Rafting — Retiree John Shunny is organizing his sixth annual Grand Canyon raft trip down the Colorado River from Lee's Ferry to Lake Mead, May 28 to June 5. With groups, the outfitter discounts the price — \$1,175 for the nine-day trip vs. the usual \$1,400 to \$1,600. Great camping, hikes, and meals are included. For more information or to sign up, call John (mornings best) on 265-1620.

Dancing — Retiree Ginny Graham and the Silver Foxes, a group of senior citizens who prove that you don't need a partner to dance and have fun, are introducing their kind of line dancing fun to acquaint people with the activity and to prepare for the first State of New Mexico Line Dance Fest on June 12. To do this, the Silver Foxes want to touch base with anyone and everyone interested in being a part of this new dance trend. Seniors interested in learning or anyone else who wants information about the Line Dance Fest should call Ginny Graham on 836-2752, Henrietta Nieto on 836-8745, or Ann Jansak on 296-2983.

Congratulations

To Annette and Matt (7435) Torres, a daughter, Sarah Nicole, Aug. 6.
 To Tammie (155) and Ruben (2000) Muniz, a son, Nicolo Gregorio Blas, Oct. 18.
 To Carolyn Lange (124) and Steve Barnard (2412), married in Albuquerque, Oct. 17.

Events Calendar

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

Nov. 13-14 — Classics Series: New Mexico Symphony Orchestra and Chorus, guest conductor Kenneth Jean; 8:15 p.m., Popejoy Hall, 842-8565.

Nov. 13-14 — Miguel Caro's Mexican Fiesta Dance Troupe, folkloric dances of Mexico; 8 p.m., 2 p.m. Sat. matinee, KiMo Theatre, 764-1700.

Nov. 13-14 — "Visions of New Mexico," by Suzi Baltzer, drama about New Mexico history, presented by Albuquerque Children's Choir; call for times, Silver Bear (6921 Montgomery Blvd. NE), 881-6203.

Nov. 13-15 — Southwest Arts and Crafts Festival, 10 a.m.-9 p.m. Fri., 10 a.m.-6 p.m. Sun.; Manuel Lujan Exhibit Hall, NM State Fairgrounds, 262-2448.

Nov. 13-Dec. 13 — Exhibit, "The Intimate Collaboration: Prints from Teaberry Press," retrospective look at Teaberry Press; 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues., 1-4 p.m. Sun.; UNM Art Museum, 277-4001.

Nov. 13-Dec. 13 — "Reckless," comedy by Craig Lucas, author of "Prelude to a Kiss," directed by Allison Davis (7024); 8 p.m. Fri. & Sat., 6 p.m. Sun.; Vortex Theatre, 247-8600.

Nov. 13-Dec. 23 — "Muttonman Discovers Columbus," exhibition investigates Native American humor through cartoons drawn by Navajo artist Vincent Craig, 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues.; UNM Jonson Gallery, 277-4967.

Nov. 13-Dec. 23 — Exhibit, "Rio Grande Blankets/Frazadas del Rio Grande: Late Nineteenth Century Textiles in Transition," illustrates history and recent revival of Hispanic weaving; 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues., 1-4 p.m. Sun.; UNM Art Museum, 277-4001.

Nov. 14 — Holiday Arts and Crafts Bazaar, 9 a.m.-4 p.m., Cleveland Middle School (6910 Natalie NE), 884-8567 or 881-0050.

Nov. 14 — Collegiate Singers, directed by John Clark; 7:30 p.m., UNM Keller Hall, 277-4402.

Nov. 14 — Chile Lunch and Design Ideas Holiday Craft Demonstrations, noon-3:30 p.m., Albuquerque Garden Center (10120 Lomas NE), 296-6020.

Nov. 14 — Symphony of Trees Auction and Dinner, fund-raiser for the New Mexico Symphony Orchestra; 7:30 p.m., Winrock Mall, 883-6132.

Nov. 14-15 — "The Cat Princess," Albuquerque Children's Theater performance of award-winning children's play by Bill Hayden; 2 p.m., tickets available at Trespassers William Book shop and Sandy's Sundial, Albuquerque Little Theatre, 898-6679.

Nov. 14-15 — New Mexico Bead Society Annual Fall Bead Bazaar, 10 a.m.-5 p.m., Hilton Hotel (University & Menaul NE), 298-6026.

Nov. 14-15 — Collector's Showcase, antiques and collectibles; 10 a.m.-5 p.m., Creative Arts Building, NM State Fairgrounds, 883-6986.

Nov. 15 — Keller Hall Series: Sierra Woodwind Quintet, 4 p.m., Keller Hall, 277-4402.

Nov. 15 — Concert, Albuquerque Philharmonic Orchestra, guest artists Douglas and Ellen Campbell perform on French horn; 2 p.m., B'Nai Israel Ballroom, free, 296-5020.

Nov. 15 — Centennial Speakers Series: Wilma Mankiller, Principal Chief of the Cherokee Nation; 3 p.m., UNM Woodward Hall, 277-4402.

Nov. 15 — Fine Arts Series: Newman/Oltman Guitar Duo; 4 p.m., First United Methodist Church (4th & Lead SW), 243-5646.

Nov. 17 — Chamber Orchestra of Albuquerque directed by David Oberg, featuring Krzysztof Zimowski as soloist in performance of Johann Sebastian Bach's "Violin Concerto in E, BWV 1042," New Mexico composer Scott Wilkinson's contemplative and lyrical work titled "In Memoriam" (written in memory of several admired teachers and friends), and Tchaikovsky's "Serenade for Strings in C Major, Opus 48"; 8:15 p.m., St. John's United Methodist Church (2626 Arizona NE), 881-0844.

Nov. 19-21 — ASUNM Annual Christmas Arts and Crafts Fair; 9 a.m.-6 p.m., Student Union Building, UNM Campus.

Nov. 19-21 — "Fire and Illusion," newest work of the UNM Ballet and Flamenco ensembles; 8 p.m., UNM Rodey Theatre, 277-4402.

Nov. 19-22 — Indian National Finals Rodeo, the best Indian cowboys in the country compete for money, prizes, and the title of World Champion Indian Cowboy; call for times and information, NM State Fairgrounds, (918) 789-2408.

Nov. 20 — 3's Company, contemporary California dance company; 8 p.m., KiMo Theatre, 764-1700.

Nov. 20-22 & 27-29 — "Nutcracker Ballet," annual Christmas ballet tradition, presented by the New Mexico Symphony Orchestra, New Mexico Ballet Company, and UNM Ballet Company; 7:30 p.m., 2 p.m. matinees; Popejoy Hall, 299-7798 or 277-3121.

Nov. 20-29 — "Little Women," musical adaptation of Louisa May Alcott story; 8 p.m., Silver Bear (6921 Montgomery Blvd. NE), 881-6203.

Nov. 21 — Battlefield Band, traditional and contemporary Celtic music on tour from Scotland; 8 p.m., KiMo Theatre, 764-1700.

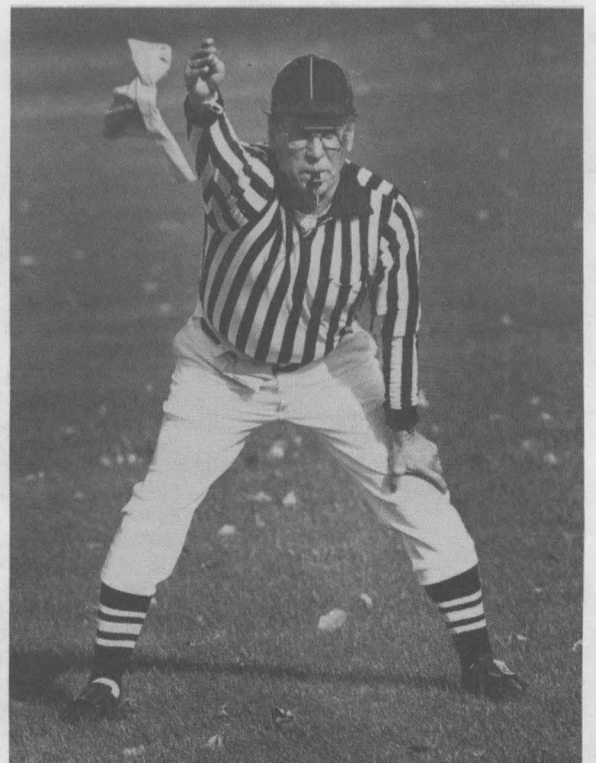
Nov. 21-May 21 — "Heritage of the Andes," exhibit depicting lifeways of the peoples of Ecuador, Peru, and Bolivia; 9 a.m.-4 p.m. Mon.-Fri., 10 a.m.-4 p.m. Sat., noon-4 p.m. Sun.; Maxwell Museum of Anthropology, 277-4404.

Nov. 21-22 — "Fibers Fantastic," fiber craft exhibit and sale, sponsored by Las Aranas Weaver's Guild; 10 a.m.-6 p.m., Albuquerque Garden Center (10120 Lomas NE), 296-6020.

Nov. 23 — UNM Percussion Ensemble, 8:15 p.m., free, UNM Keller Hall, 277-4402.

Nov. 26-Dec. 6 — "The Glass Menagerie," haunting drama by Tennessee Williams, New Mexico Repertory Theatre production; 8 p.m. Tues.-Sat., 2 p.m. Sat. & Sun.; KiMo Theatre, 764-1700.

Dec. 3 — Festival of Clarinet and Saxophone Ensembles, 8:15 p.m., free, UNM Keller Hall, 277-4402.



ORIE MONTTOYA (1811), veteran official of 30 years of high school and small college football and basketball games, was inducted into the New Mexico Officials Hall of Fame earlier this year. Orie retired from officiating after the 1991 football season but recently put his outfit back on for the LAB NEWS. Besides regular season events, he officiated in 28 district basketball tournaments, 30 football playoffs, five state football championships, five boys' state basketball tournaments, and two girls' state basketball tournaments. Orie estimates that he officiated at a total of 600 football games and 1,500 basketball games.