

Cloudy skies may help forecast global climate change

Sandia joins other atmospheric researchers in Oklahoma to gather radiation modeling data

By Nancy Garcia

California Reporter

Scores of researchers and support staff who gathered in Oklahoma in October were hoping they would encounter some bad weather.

These folks were assembled to measure how clouds soak up or reflect energy from the sun — data that should help improve computer models that predict global climate change. Clouds present a big uncertainty to these modeling efforts.

"Cloudy skies are so complicated, we don't have an accurate understanding of what really happens," says John Vitko of Sandia's Global Climate Change/Remote Sensing Office 8102 and director of the Atmospheric Radiation Measurement Enhanced Shortwave Experiment.

Clouds and sunlight

In the experiment, two planes fly like slices of bread in a "cloud sandwich," with a layer of smooth cloud between, measuring the sun's energy on both sides of the clouds stretched over Oklahoma and south-central Kansas.

Sunlight hitting the clouds may be absorbed significantly more than predicted by current climate models. This is important because these models are used to predict our climate and to understand how the earth may

(Continued on page 4)

Latest Prosperity Game focuses on problems of health care industry

By John German

Lab News Staff

A man with his right arm in a sling — call him Joe — wanders through a crowded room pleading "help . . . help . . . help." No one notices until he passes a table marked "Provider-2." A man stands, shakes Joe's good hand, and offers him a chair.

Joe, a soldier wounded in battle, describes his ailment. After a few minutes of negotiation, money changes hands. On his way to recovery but strapped for cash, Joe trudges back to a table labeled "Consumers" to report to his ailing cohorts.

All over the room, 100 other people are coaxing, haggling, and politicking their way through similar mock transactions as part of the first-ever Biomedical Technology Prosperity Game, an adaptation of the "Prosperity Games" model conceived two years ago by Pace VanDevender, Director of National Industrial Alliances Center 4700.

War games with a twist

The game "allows policy makers to work together to explore the complex problems faced by American industry and government," says Pace.

Prosperity Games are role-playing exercises that bring together technology policy makers to explore complex technical and policy issues surrounding particular industries. A major goal is to develop strategies and relationships that result in enhanced US economic competitiveness.

It's similar to military war games in which teams of military strategists play the roles of opposing forces in imaginary battle scenarios,

(Continued on page 5)



CLOUDS AND CLIMATE — John Vitko of Global Climate Change/Remote Sensing Office 8102 is interviewed by an Oklahoma TV reporter in front of the high-altitude Egrett aircraft at the Blackwell-Tonkawa Airport. John is director of the Atmospheric Radiation Measurement Enhanced Shortwave Experiment, making radiometer measurements of energy above and below clouds in Oklahoma and south-central Kansas. Forty Sandians are involved. (Photo by Dick Jones)

Sandia LabNews

Vol. 47, No. 23 November 10, 1995

Sandia National Laboratories

Flat budget for FY96 is good news, VPs say

DOE and national labs may fare better than expected

By Bill Murphy

Lab News Staff

While Congress and the Administration continue to wrangle over the final shape of the FY96 budget, it appears DOE and the national laboratories will fare better than most observers would have predicted when the current budget process began some months ago.

Sandia's budget experts, Paul Stanford and Gary Riser, in an interview with the *Lab News*, characterized the FY96 budget as "basically flat," but, as Gary says, "In the context of the times, having a 'flat budget' is doing pretty darned well."

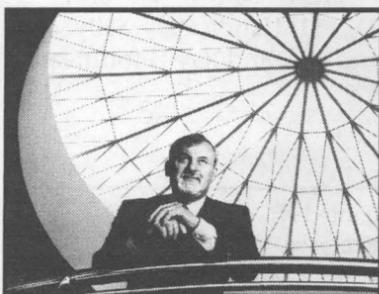
Even though the overall budget may be flat — Sandia's FY96 revenue will probably be close to FY95's operating revenue of \$1.3 billion — there will almost certainly be impacts on some significant Sandia programs. Although numbers

are not finalized, appropriations approved by the House and Senate and awaiting the President's signature provide for sharp DOE cuts in the areas of renewable energy, nuclear energy, energy research, and certain areas of environmental restoration and waste management (see "An early look at some rough numbers" on page 4). How those apparent DOE cuts will affect Sandia has not yet been determined.

When a final budget is signed by President Clinton and DOE has apportioned funds among the laboratories, the *Lab News* will publish a

(Continued on page 4)

"In the context of the times, having a 'flat budget' is doing pretty darned well."



6 What's up at Lockheed Martin's new Energy and Environment Sector?

8 Surveys call for changes in technical, administrative job 'ladders'

This & That

Make it a fabulous Friday for feet - While you're thinking about it, consider making out a \$25 check (or whatever amount you can afford) for the "Shoes for Kids" campaign. For many years, Sandia employees and retirees have given generously to this holiday-season campaign that buys new shoes for needy Albuquerque youngsters. And it's easier than ever this year - you can mail or deliver your check (\$25 buys one pair of shoes) directly to either branch of the Sandia Laboratory Federal Credit Union before Dec 15. You can even send it to the Kirtland CU branch in the company mail; just address it to "Credit Union" - no mail stop number needed. Your donation can keep some needy kids' feet warmer this winter, and I'll bet you'll get a warm feeling from it, too. Please note this on your check: "For benefit of Shoes for Kids, #223180." For more info about this fine project, see the short story on page 9.

* * *

This is it for November - It's that time of year when the Labs' holiday schedule causes the *Lab News* to alter its publication schedule slightly. This is the only issue we publish this month, and the next one will be published in three weeks, on Dec. 1. We will publish our final 1995 issue Dec. 15, and our first 1996 issue Jan. 5.

* * *

Yellow tape and colored e-mail - I promised to follow up in this issue with more info about these vital subjects. Many employees and retirees have sent comments - some quite clever. I don't have enough space to cover many, but here are a few:

Yellow tape - Rusty Wright (12671) thinks Sandia may use "screaming-yellow" duct tape because it matches the lovely yellow butt cans I'm so fond of. Nice theory, Rusty, but the tape predates those butt cans by many years. Retiree Don Bush says he got "addicted" to the tape during his 35-year Sandia career and needs a commercial source. I promise I'm getting no kickback for this, but I did find out who manufactures the stuff: an outfit called Sherford Mills in Hickory, N.C. (thanks, Lola Stude, 7806).

Colored e-mail messages - I found that a few folks like them, but I heard from more who prefer black-on-white messages. Linda Rivera (3525) says she gets some messages that are so blinding she has to "wear my shades just to read my ccMail." And Julie Archibeque-Guerra (6200) refers to e-mail colorizers as "Ted Turner wannabes" (Turner's TV networks broadcast many now-colored old movies). Several folks said that yellow type on a blue background (yuk!) is the ccMail default mode, and they don't know how to change it. Computer whiz Tom Wubbels (12616) told me how you fix this - at least on a Macintosh. With ccMail open, under the text menu choose "hide colors" for black-on-white messages, or under the file menu choose "preferences," then "text editor." You can then change the color of the type and background for various types of messages.

* * *

Managers' "dirty messages" - Have you seen the small "yellow stickies" that have this printed message in the upper corner: "It's a dirty job, but you have to do it"? Rumor has it all Sandia managers have been issued a healthy supply of them.

- Larry Perrine (845-8511, MS 0129, lgperri@sandia.gov)

Supervisory Appointment

LANA LACHENMEYER to Administrative Assistant to Vice President of Production Division 14000 (now Defense Programs Products and Services Division 14000).

Lana joined Sandia in 1982 as secretary of the Storage Batteries Division. She was department secretary of



LANA LACHENMEYER

Power Sources Department from 1984 to 1988, when she was promoted to administrative coordinator for the same department and the Electro-mechanical Subsystems Department.

She became a Member of the Laboratory Staff in 1992, and was budget, planning, and reporting coordinator for the Battery group's energy programs. She became administrative assistant for the Energy Component Center in 1995.

Lana has a BA and an MA in education, both from Western New Mexico University. Before joining Sandia, she taught mathematics, first at Sandia Preparatory School and then in the Albuquerque Public Schools system.

Norm Augustine to visit Sandia Nov. 15

Lockheed Martin President Norm Augustine will be at Sandia Wednesday, Nov. 15. He will see demonstrations of Sandia's scientific capabilities and have lunch with a small number of Sandia employees. He asked that the lunch group be made up of a cross-section of Sandia employees. Representatives have been nominated by their VPs.

Augustine is in Albuquerque both to visit Sandia and to be the keynote speaker at the Interservice/Industry Training Systems and Education Conference, sponsored by the American Defense Preparedness Association and the National Security Industrial Association, Nov. 13-16 at the Albuquerque Convention Center.

'Virtual newsroom' now operating

One call now does it all for Sandians who have news tips and special announcements for Labs-wide dissemination. Former *Lab News* Editor Larry Perrine of Media and Employee Communications Dept. 12620 is the contact. Larry is coordinating Sandia's new "virtual newsroom," passing along news tips and story ideas to the *Lab News*, the recently revamped Radio Sandia (1610 AM), and *Heads Up!* (brief daily summary of events of significance to Sandians). Radio Sandia now broadcasts a "Keeping Current" program, featuring more short news items.

Larry can also arrange to have appropriate messages posted on the "Hot News" section of the Internal Web and on a small network of video monitors at Sandia/New Mexico (a pilot project). Larry will also forward appropriate news items to the *Weekly Bulletin* and to Sandia/California for its daily *TNT* announcements, but he emphasizes that routine announcements should continue to be sent directly to those publications. The "virtual newsroom" is so named because it connects Sandia publications and communications specialists that are physically separated. If you have news or feature story tips, or special announcements, call Larry at 845-8511, e-mail him at lgperri@sandia.gov, or send him a fax at 844-1392.

Sandia LabNews

Sandia National Laboratories

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Sandia National Laboratories, a prime contractor to the US Department of Energy, is operated by Sandia Corporation, a wholly owned subsidiary of the Lockheed Martin Corporation.

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Lab News 505/844-7841 fax 505/844-0645

Published Fortnightly on Fridays by
Employee Communications Dept. 12622, MS 0413

LOCKHEED MARTIN

Welcome

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California - David Aldridge (6114)

Texas - Mark Ladd (5831)

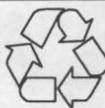
Fun & Games

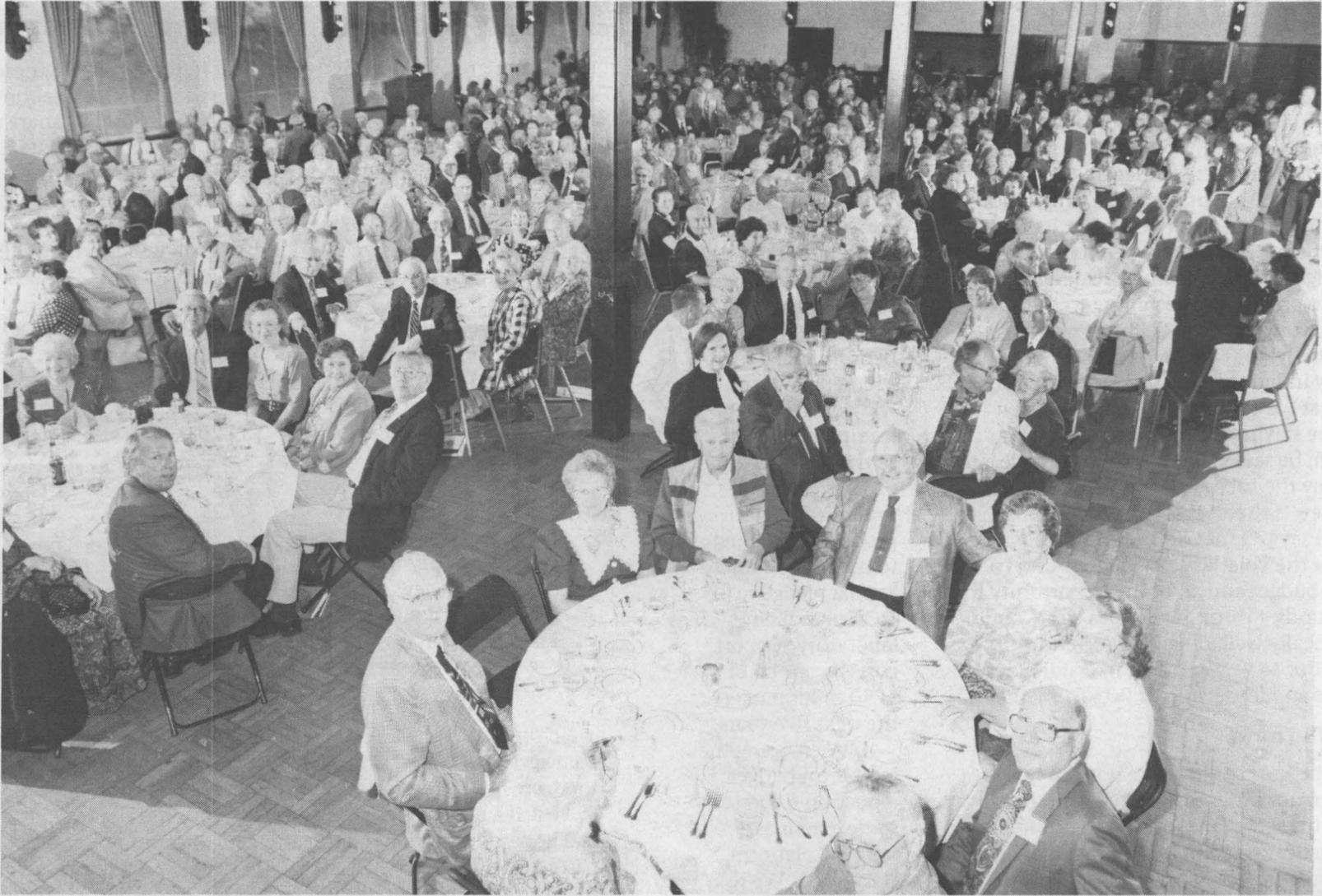
Clowning - The Sandia Clowns are offering a clown class beginning Nov. 14. Learn all the basics of clowning in 10 sessions. If you're interested, call Cindy Gregory at 245-9309.

* * *

Bowling - SANDOE Bowling Association Bowlers of the Month for August/September include: Scratch - Cheryl Barton, 650, and Bob Barton (10221), 731; Handicap - Sally Frew (3524), 558 and 684, and Ray Letourneau (ret.), 628 and 691.

The *Lab News* is printed on recycled paper and can be recycled again along with regular white office paper.





A ROOMFUL of 440 people enjoyed the 30th annual Sandia/California Retirees Dinner at Castlewood on Oct. 11.

A record crowd of retirees and spouses — some 440 of them — turned out for the 30th annual Sandia/California Retirees Dinner at Castlewood Country Club on Oct. 11. The event was begun in 1965 when then-Public Relations supervisor Bill Jamieson got approval from his boss — then-director Hilton DeSelm — to host a luncheon at Castlewood for local retirees and seven of them

showed up. This story was related at this year's dinner by Marge York (8522), and both Bill and Hilt (since retired) were in the audience. Also addressing the gathering were Retirement & Benefits coordinator Jo Sandelin (8522) and two vice presidents — John Crawford (newly promoted to Executive VP) and Tom Hunter (8000), experiencing his first Sandia/California social event.

Sandia California News



RETIREES (from left) Eloise Perry, Gertrude Starchman, and Vivian Lenz reminisce.



PRESENT, PAST & FUTURE — Four Sandia vice presidents, from left, John Crawford (now Executive VP and Deputy Director), Tom Cook (retired EVP and California VP), Tom Hunter (newly named California VP), and Dick Claassen (retired California VP) got to talk at the retirees dinner.



AROUND the dinner table (from left) are Jim Wimborough, Gordon Miller, and his wife Trudy.



SOCIALIZING before dinner are Keith Andersen (husband of retiree Ramona Andersen), retiree Carl Lundbom, and wife Pat.

FY96 budget

(Continued from page 1)

more detailed look at the budget specifics, with comparisons between FY95 and FY96 numbers.

Gary, VP of Business Management and CFO 10000, and Paul, VP/Financial Administration 15000, with the help of Government Relations Program Office 12120, have been following the federal budget process closely, tweaking Sandia's budget projections according to the ebb and flow of congressional deliberations.

"Essentially, for FY96 it looks as if we'll only be down by inflation" Paul says, adding the qualifier that "of course, with inflation, even when you're staying even, you're actually down." Still, he says, Sandians should be pleased with the way the Labs fared in the budget.

"My view is that it is just a tremendous relief," Paul says. "I mean, when you really think about the volatility of Congress and balancing the budget and all of the opportunity for us to lose funds, I think Sandia has come out of this fantastically well, due in large part to the stability of our New Mexico congressional representatives and leadership of Pete Domenici.

Lots of churning

"We'll be hurt some at the bottom line, and some of our programs will be hurt, but I think our strategic plan; sticking to our main mission, nuclear weapons; executive management leadership and planning over the past several years; broadening our technical capabilities and diversifying; the R&D funding decline reversal led by DOE/DP and Sandia's DP sector — all of these factors have really helped.

"So, yes, there's a lot of churning in small programs, ups and downs, but when you can look at the bottom line and say that it's basically flat, I think that's amazing."

"Where do we stand in the aggregate?" Gary asks rhetorically. "In the aggregate, we're really in pretty good shape. It's partly a credit to the fact that we have some unique capabilities here and partly due to the fact that we've had some very good financial management in the past. I don't think we should forget that. I think we have a good track record in financial

planning; people in DOE and Congress have confidence in the way we've managed our resources."

Although Gary and Paul say they are pleased with the FY96 budget, they concede that "the trend line is down." As such — and consistent with Sandia's reputation for prudent financial management — Gary will continue to be a leading champion of the reengineering process currently under way. That process is designed to make good on a Sandia pledge to DOE of reducing laboratory support costs by a total of \$250 million over the next five years.

"We're using the long-term budget reduction trend to some extent as a burning platform," Gary says. "We're using it to force our support managers to think boldly about 'How can I do the work differently?' and 'What do I really not need to do?' We're asking them to talk to their customers and ask, 'What are my critical deliverables to you and what are the less-critical deliverables?'"

"We made a commitment to DOE that we're going to make these [\$250 million] reductions happen; that's what's driving the process at our end."

Even though the best guess is that budgets

An early look at some rough numbers

Although a number of things must happen before Sandia has a definitive budget for FY96 — Congress and the President must agree on a federal budget and DOE must apportion its share of the budget among its various laboratories and programs — the Energy and Water Development appropriations bill approved by Congress and awaiting President Clinton's signature serves as a good, if rough, indicator of DOE's funding level for the year.

Here is a summary of the numbers contained in that bill, with comparisons to last year's appropriation:

Energy & Water Development Highlights	FY95 DOE enacted	FY96 DOE (approved)
Atomic Energy Defense Activities		
Weapons Activities	\$3,229.0	\$3,460.3
ER/WM	4,892.7	5,557.5
Other Defense Activities	1,849.7	1,373.2
Defense Nuclear Waste Disposal	129.4	248.4
Energy Supply R & D		
Solar and Renewable Energy	388.1	275.2
Nuclear Energy	293.2	230.9
Energy Research	1,706.2	1,518.5
Total	\$12,488.3	\$12,664.0

Note that while a very large percentage of Sandia's funding comes via the Energy and Water Development appropriations bill, there are other funding sources as well.

Until a federal budget is adopted, DOE and the rest of the federal government are operating under a continuing resolution passed by Congress. The resolution grants government agencies the authority to spend money, subject to a complex set of guidelines, in lieu of a federal budget. The resolution is set to expire on Nov. 13. If Congress and the Clinton Administration have failed to reach agreement on the budget by that date, and if Congress does not extend the continuing resolution, Sandia can continue to operate business as usual for approximately 30 days by using carry-over funds from FY95.

will continue to trend downward for the next several years, Gary says, the Labs can thrive — if reengineering and realignment help the Labs realize new efficiencies.

"In the big picture," Gary says, "we can have some growth if people are more cost-effective in the things they are doing."

Clouds

(Continued from page 1)

be responding to increasing levels of greenhouse gases such as carbon dioxide. The Oklahoma experiments should shed more light on this phenomenon.

Flying in a stacked formation, a high-altitude Egrett aircraft and a more conventional Twin Otter were each outfitted to spend 75 hours collecting data about the visible and infrared light absorbed, reflected, or transmitted through the cloud layer.

The Egrett maintains an altitude of approximately 13,100 meters (43,000 feet) as it collects data and transmits it to the payload ground station. There, the data are translated to a common data format, recorded on digital tape, and sent to the project scientists for immediate analysis. The Egrett was originally constructed for the German government as a high-altitude reconnaissance plane.

The Twin Otter, often used to transport people and freight in remote areas, flies under the cloud formation and parallel with the Egrett at about 450 meters (1,500 feet). The Otter collects the same kind of data as the Egrett but stores it digitally until it can be fed into the main computer banks the following day.

Each plane carries 144 kilograms (300

pounds) of instrumentation, primarily six radiometers, to measure the radiant energy from the sun and earth. Scientists are concentrating on energy passing through the atmosphere between 450 and 15,200 meters (1,500 and 50,000 feet) — data that cannot be collected from ground-based instruments.

Although they are not flying in parallel with the Egrett and Otter, several other platforms will provide data at key altitudes. Satellites will provide top-of-the-atmosphere data. An ER-2 high-altitude research plane, owned by NASA, will provide data at 19,800 meters (65,000 feet), and DOE's Cloud and Radiation Testbed will provide surface data.

Global circulation models

By analyzing these data and comparing the various data sets, scientists can get a better understanding of the role of clouds in warming or cooling the earth. "Scientists will use this new understanding to improve the general parameters that global circulation models use," says Francisco P.J. Valero of the Scripps Institution of Oceanography, chief scientist for the Atmospheric Radiation Measurement Enhanced Shortwave Experiment. "We think we can help people sharpen their predictions."

A previous series of flight experiments in April 1994 collected data from clear skies.

The experiment is part of the research conducted by DOE's Atmospheric Radiation

Measurement Program and the associated Unmanned Aerospace Vehicle Program. These experimental and modeling programs are designed to improve how large-scale computer models, used to predict climate change, treat cloud and atmospheric radiative processes. Funding for the programs comes from DOE and the Department of Defense Strategic Environmental Research and Development Program.

Sandia plays a major role in this multi-agency, multilaboratory experiment. In addition to providing overall technical direction, Sandia is responsible for payload and aircraft integration, real-time telemetry of data, data management, development of a compact cloud radiometer, and actual conduct of operation. This involves some 40 Sandians from across some 15 departments (2663, 5354, 5361, 5364, 5371, 5725, 8102, 8115, 8230, 8272, 8351, 8411, 8413, 8416, and 8417), all working in a closely knit team.

In addition, team members came from four other DOE laboratories, three NASA centers, a half dozen universities, and three aircraft companies. "Approximately 30 to 40 researchers, pilots, and support staff worked to get the airborne data collection off the ground," says Deputy Technical Director Will Bolton of Dept. 8102, "with some 120 people sharing responsibility for the project in rotating shifts. The cooperation between the different agencies and laboratories has been absolutely fantastic."

Health care

(Continued from page 1)

each side anticipating and reacting to the others' moves. By fighting a mock war, participants get to evaluate and learn the consequences of their strategies and decisions without casualties.

Instead of playing on a mock battlefield, Prosperity Games participants fight on simulated economic, technical, social, or political fronts. Teams of industry, government, national laboratory, and university officials, rather than military leaders, make decisions and pay the consequences. And the spoils aren't real estate, but market shares, environmental improvements, or lower product costs.

The first Prosperity Game, played in January 1994 (*Lab News*, April 1, 1994), involved representatives of the electronics industry. Since then Sandia has facilitated ten other sessions exploring a variety of issues, including environmental technologies, information technology and manufacturing, diversity, and relationships among DOE labs.

The latest game, Nov. 2-3 at the Hyatt Regency Hotel in Albuquerque, brought together representatives of the health care industry to explore existing and future biomedical technologies and policies that could lower medical costs while maintaining or increasing health care quality.

Participants included local and national health care providers, including physicians and hospital administrators, as well as representatives of insurance companies, biomedical equipment suppliers and manufacturers, federal regulators, and national labs and universities.

"The game and follow-up efforts create a



SIMULATED MONEY changes hands as Bryon Cloer (9403, right), playing a health care consumer, buys an insurance policy from Leonard Schlessinger (left), Manager of Biomathematical Analysis at Kaiser Permanente in California. The transaction was part of a Biomedical Technology Prosperity Game played in Albuquerque Nov. 2-3 and facilitated by Sandia. More than 100 real-life health care and technology experts, including VP-9000 Gerry Yonas (next to Bryon), participated in the role-playing exercise, the 12th Prosperity Game since January 1994.

unique opportunity for applying new technologies to reduce medical costs," says game director Marshall Berman (4701). "The players are highly qualified leaders in their fields."

Risks, deals, and solutions

The game also was among the most complex ever attempted, he says. Players were divided into 11 teams representing health care consumers, providers, suppliers, legislators,

insurers, funding organizations, lawyers, the FDA (Food and Drug Administration), universities and labs, and the news media.

Each group was given a set of challenges. The consumer group's challenges included finding affordable health care (for mock ailments assigned midway through the game) by utilizing insurance plans, treatment options, and payment plans offered by two competing provider groups. The provider groups, played by real doctors and hospital administrators, had to establish health care costs, determine delivery systems, abide by regulations, and offer affordable new technologies as they became available.

The legislators group had to determine proper government funding appropriations for each group based on the shifting political landscape. The suppliers, working with lawyers and research institutions, developed and marketed new technologies. And the news media occasionally interrupted the game with reports typically critical of the various groups.

"Some real-life dynamics go on here," says Victoria Garcia, an independent Albuquerque attorney with the lawyer table. "People are interested in working together to come up with high-tech advancements."

The game, meant to simulate the years 1996 through 2003, was played Nov. 2. Nov. 3 was reserved for follow-up discussion among the players and development of a biomedical technology and policy road map incorporating lessons learned from the game.

"We hope the players will help translate this simulation and planning effort into effective programs and partnerships for enhancing health care," says Marshall.



PRESIDENT'S QUALITY AWARDS — Three members of a Sandia/industry team that received one of the first four Gold Awards in the Sandia President's Quality Awards competition talk with Labs Director C. Paul Robinson after the award ceremony last week. They are (from left) Jeffry Koon of Texas Instruments, Bob Burrell of Seho USA, and Ron Iman (6613). They were part of the Low-Residue Soldering Industry Collaboration (Sandia and nine other organizations), which worked on a joint technology transfer initiative to evaluate an environmentally friendly, low-residue soldering technology. The team has also received a 1995 Stratospheric Ozone Protection Award from the Environmental Protection Agency. This year's ceremony marked the first time Gold Awards have been given. Three other groups also received the Gold Award: The Active Ceramics Team, Sandia/New Mexico's 1995 Earth Day Festival team, and the Small Business Initiative Technical Assistance Program. Several hundred Sandians in 23 teams received awards in four levels — gold, silver, turquoise, and special recognition. (The winning teams were announced and all members listed in the Sept. 1 *Lab News*.) Paul congratulated all the recipients for their "outstanding accomplishments" and said the awards "are a cause for celebration for all of us. . . . We're clearly functioning at higher levels of quality and teamwork than ever before." Paul and former President Al Narath, now President of Lockheed Martin's Energy and Environment Sector, presented the awards. Charles Tapp (12900) hosted. Also participating were Virgil Dugan (4300) and Tom Hunter (8000), from California by live video.

Sympathy

To Brian Brock (5711) on the death of his mother in Albuquerque, Oct. 9.

To Paul Beck (5700) on the death of his father in Spokane, Wash., Oct. 14.

To Juanita Padilla (9501) on the death of her mother, Susana Barela, in Albuquerque, Oct. 24.

To Renae (6200) and Larry (12620) Perrine on the death of her father and his father-in-law, Ernest Henning, in Davenport, Iowa, Nov. 4.

Al Narath says Lockheed Martin's new E&E Sector is focusing on opportunities and efficiencies

Building a 'real system of labs' is a top priority

By Larry Perrine

Media and Employee Communications Dept. 12620

Establishing an office, hiring staff, and learning more about the groups reporting to Lockheed Martin's new Energy and Environment (E&E) Sector have occupied much of Al Narath's time since he left Sandia several months ago to be the sector's first president and chief operating officer, but he and his staff have also done lots of strategizing.

Al says he and other E&E Sector leaders are spending considerable time discussing "where the sector's businesses are today and where they need to be going."

Al left his job as Sandia president in August to lead the new E&E Sector (*Lab News*, Aug. 4), taking several Sandians with him, including then Sandia Executive VP Jim Tegnalia (see next page for information about sector officials and their roles). The sector office is located in the new Lockheed Martin Building at University and Stadium in Albuquerque. Formerly known as the Technology Ventures Corp. (TVC) Building, it now houses TVC, the sector office, and most Sandia Technology Transfer Center staff.

More than 35,200 sector employees

Sandia National Labs, with about 8,450 employees, is the largest of 12 groups operated for DOE or owned by Lockheed Martin that report to the sector (see organization chart, next page). The sector also encompasses Oak Ridge National Lab (ORNL), with about 5,200 employees, and Idaho Technologies (Idaho National Engineering Lab — INEL), with about 6,175 employees. Other sector groups with more than 1,000 employees include the Energy Systems' Y-12 Plant (5,700 employees), the K-25 Site (3,900), both near Oak Ridge, Tenn., and Utility Services (4,300), headquartered in Bethesda, Md. Altogether, sector companies have more than 35,200 employees and a total budget of more than \$5.67 billion.

"Although we haven't yet done formal strategic planning, we've had to do some rapid thinking about the future," Al told the *Sandia Lab News* in an interview Oct. 20. Evidence was clear; he was leaving that afternoon to present the young sector's five-year financial plan to Lockheed Martin headquarters.

"There's no doubt the backbone of our sector's business will continue to be M&O [management and operating] business for the Department of Energy," he says. "We have roughly a 25 percent share of all of DOE's M&O contracts now. That's a very large market share, but we will continue to look at other DOE opportunities."

Biggest potential growth area

He says, however, that the M&O business for DOE is limited, explaining, "It's difficult to imagine that there is sufficient growth opportunity in DOE's M&O market to take us to where I think the sector needs to go."

"The most promising growth area is environmental remediation and waste management, particularly those areas that require systems solutions and that will rely on proprietary technologies," he says. "There really hasn't been a lot of cleanup of DOE sites yet. There have been a lot of characterization studies, and now there is a very interesting market opportunity to get on with cleanup operations using modern technology. That's what the environmental part of our sector business is all about. It's currently small — our sales last year were



LOCKHEED MARTIN Energy and Environment Sector President Al Narath in the lobby of the Lockheed Martin Building at University Research Park in Albuquerque. (Photo by Randy Montoya)

about \$70 million — but we hope to grow this considerably."

One organizational change is in the works, Al says, to create parity among the three DOE national labs that Lockheed Martin manages. In response to concerns expressed by DOE's Office of Energy Research, Oak Ridge National Lab (ORNL) is being separated from the Energy Systems group. The separation is already shown on the page 7 organization chart, but Al doesn't expect the deal to become final until Jan. 1 or so. "The separation was done in anticipation of moving the ORNL part of the Energy Systems contract to a new corporate entity that will be called Lockheed Martin Energy Research Corporation," he says.

ORNL Director Alvin Trivelpiece will then also become president of the Lockheed Martin Energy Research Corp., giving Trivelpiece the same "dual-hat" reporting relationship that Sandia National Labs Director C. Paul Robinson has, for example; Paul is also president of the Sandia Corporation.

Energy Systems, under Gordon Fee, will retain management responsibility for the nearly

10,000 employees at the Y-12 and K-25 plants.

Building a system of labs

Al expects closer cooperation in the future among the three national labs and has already set one initiative in motion to foster that. On Oct. 31, two people from each of the labs participated in a meeting to explore ways whereby the three labs can work together to "achieve increased value for the Department of Energy and thereby set the stage for accelerating the establishment of a real system of laboratories," Al says. Virgil Dugan and Larry Bertholf (both 4300) represented Sandia.

"Reengineering was one of the topics discussed," says Al, "and what the three labs can do together to reengineer themselves in a way that will make them more effective."

It's clear that Al, when speaking of the need for the national labs to operate more as a system, includes all of the DOE labs, not just the three managed by Lockheed Martin. "I'm strongly committed to the concept of a system of labs," he says. "As the manager of three of

(Continued on next page)

New Sector has several 'success stories'

Lockheed Martin's E&E Sector already has several "success stories." The latest is Nevada Technologies, Inc., a Sector company that will help manage and operate DOE's Nevada Test Site (NTS). DOE announced on Oct. 27 that Bechtel Nevada Corp. has been selected as the prime management and operating contractor for NTS beginning Jan. 1.

Johnson Controls and Lockheed Martin's Nevada Technologies are partners with Bechtel on the \$1.5 billion, five-year contract. Retiring Sandian Dennis Hayes will become president of Nevada Technologies, based in Las Vegas, Nev.

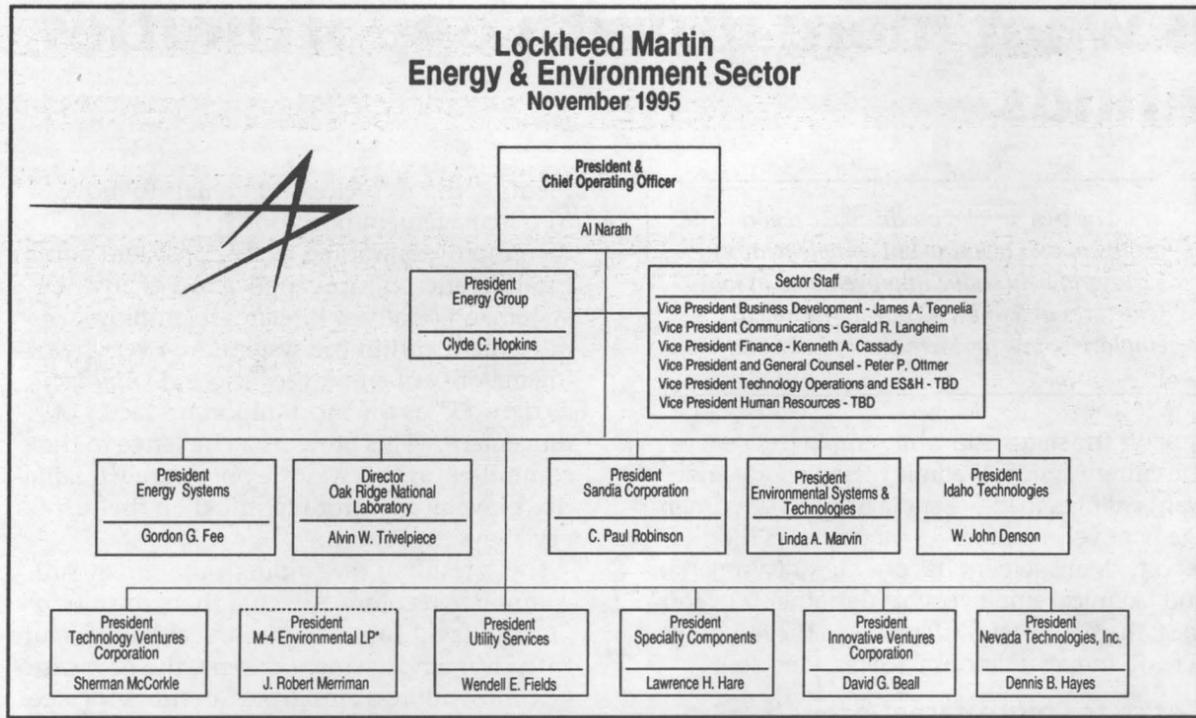
When announcing the new contract, DOE Secretary Hazel O'Leary also announced new work for NTS. She is directing that subcritical high-explosive experiments with nuclear materials be conducted at the site to support the

President's commitment to a "zero-yield" nuclear test ban and to ensure the safety and reliability of the US nuclear arsenal.

The E&E Sector has two other key accomplishments:

(1) It signed a two-year contract extension for managing DOE's Oak Ridge Operations and added three years to its contract with the US Enrichment Corp. for managing enriched uranium facilities in Kentucky and Ohio.

(2) Lockheed Martin and Molten Metal Technology, Inc. announced the planned formation of ECO-21 Technologies, L.P., a partnership that builds upon the jointly owned M4 Environmental, L.P., which is positioned to expand in the growing domestic and international environmental remediation markets requiring advanced-technology solutions.



(Continued from preceding page)

the larger labs within DOE, we have an opportunity to demonstrate what it really means to have a system. What we learn, we hope to diffuse out across all of the DOE labs, making us more effective collectively."

Al continues, "Larry Bertholf had already done a lot of impressive thinking about this subject before the meeting and had documented many of his ideas. In fact, that's what motivated me to suggest an upcoming sector workshop. What Larry had already done was an excellent starting point for building this concept into a reality, and I'm hopeful the workshop will be a giant step toward building some real synergy." (The workshop is scheduled to take place at INEL in early December.)

"Remember," Al cautions, "that Secretary Hazel O'Leary has committed to saving \$1.6 billion over five years at the DOE labs. And she doesn't mean program reductions. She's talk-

ing about cutting indirect costs while maintaining the same rate of technical output."

On a personal level, Al says he misses Sandia in many ways — that he has a lot of strong emotional ties to the Labs — but his new duties are so challenging that he hasn't had much time to think about it. He says for two basic reasons, he hasn't maintained any unusual amount of contact with new Sandia Labs Director and President Paul Robinson: (1) because he (Al) has been concerned with "many other things that he knows a lot less about than Sandia," and (2) he doesn't want to treat Paul any differently than the other Lockheed Martin E&E Sector leaders. "Paul is running the Sandia show now, and I'm sure he doesn't need me to run interference for him," Al says.

"I will be watching with great interest how Sandia responds to the recent reorganization [*Lab News*, Oct. 27]," he adds. "I'm doing this with the expectation that everything will work out as hoped for, but I recognize that the changes are

sufficiently dramatic that Sandia management will have to track progress very carefully to see that the train doesn't get derailed."

Al acknowledges there's nervousness at many E&E Sector entities, just as there is in many parts of government and corporate America where budget cuts and consolidations are taking place, and he's working to soothe some of the tensions. He cites several examples involving concerns at the Oak Ridge, Idaho, and Pinellas facilities.

"And finally," Al says, "there's been a certain amount of tension at several of our sites outside New Mexico associated with my having come on the scene with my strong New Mexico and Sandia identification. So one of my jobs has been to go around and ease people's fears and to make sure they know that I intend to be very even-handed. My obligations are to manage the sector on behalf of Lockheed Martin and our customers, especially the Department of Energy."

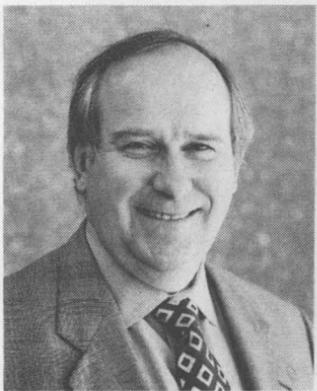
Lockheed Martin names Executive VP

Lockheed Martin Corporation announced Nov. 2 that Vance Coffman has been elected to the new position of Executive Vice President and Chief Operating Officer, effective Jan. 1, 1996. The action is consistent with the succession plan set forth in the August 1994 agreement to merge Lockheed and Martin Marietta.

As part of this previously announced transition, Dan Tellep, now Chairman and Chief Executive Officer (CEO), will retire on Jan. 1, 1996, but continue throughout 1996 as Chairman of the Board. Norm Augustine, who now serves as President, will become CEO when Tellep retires.

Coffman is currently President of the Space & Strategic Missiles Sector. He was named to his current position after the merger of Lockheed and Martin Marietta.

Lockheed Martin's E&E Sector management team



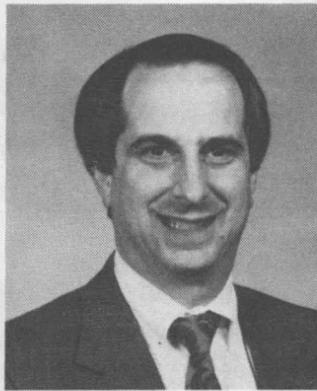
Peter Ottmer is the new Vice President and General Counsel for the E&E Sector. He will provide sector President Al Narath with legal advice and assistance, oversee general legal matters sector-wide, and ensure that the sector and its companies are correctly following general corporation policies.

A native of West Bend, Wis., he first joined Martin Marietta in 1981 as Assistant General Counsel in the Denver Aerospace Division. Most recently, he acted as General Counsel for Lockheed Martin Aero & Naval Systems. He is a member of the American Bar Association and has been admitted to practice before the US Supreme Court.



James A. Tegnella is the Vice President of Business Development for the sector. He will be responsible primarily for developing and coordinating strategies to expand the sector's defense, civil, commercial, and international markets and maximize shareholder value.

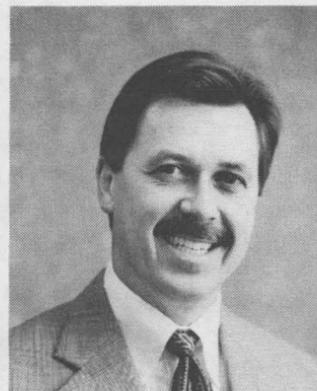
Jim has long been involved with defense programs: before joining Martin Marietta in 1987, he was Deputy Director and Acting Director of DARPA, and before that served in the Office of the Undersecretary of Defense. Jim was Executive VP and Deputy Director of Sandia from 1993 until moving to his current position with Lockheed Martin.



Joel Weiss is the Director of Business Development and Strategic Planning and will assist Jim Tegnella in increasing the sector's competitiveness and profitability.

Joel comes to Energy & Environment after two years at Sandia as Director of Planning and Strategic Business Development. Joel began his career with Lockheed Martin in 1987 at what is now Lockheed Martin Aero & Naval Systems.

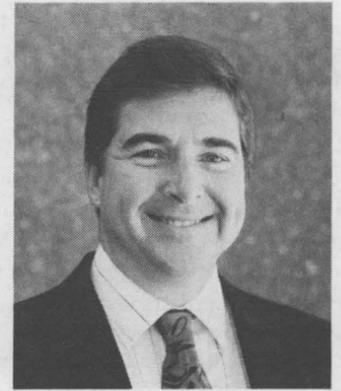
He moved to corporation headquarters in 1990. Prior to corporate life, Joel was a physicist at the Naval Research Laboratory. He received his PhD in physics from Harvard University in 1975.



Kenneth A. Cassady is the Sector Vice President of Finance. He will be responsible for keeping the sector's finances healthy and in order, as well as for reviewing and evaluating its financial practices and controls.

A native of North Carolina, he came to Martin Marietta in 1979 after graduating from the University of North Florida.

Most recently he served as Vice President of Finance of the Martin Marietta Information Group from May 1993 until February 1995, when he became Vice President — Mergers and Consolidations of Lockheed Martin.



Gerald R. Langheim is Sector Vice President of Communications. Jerry will oversee development of the sector's public image and its relations with employees, and will also maintain the sector's commitment to civic, community, and charitable groups.

Jerry serves on a number of health and human services boards and educational organizations and is a member of the Board of Directors for the United Way of Central New Mexico. He was Director of Public Relations and Communications for Sandia for the past two years and worked in public relations with Martin Marietta from 1987 until 1993.

Technical employees want more growth opportunities, job structure survey finds

Technical staff members at Sandia want more levels in their job ladders to allow greater career growth. And while they aren't asking for radical changes in the way technical jobs are structured at the Labs, they do want more flexibility and more consistent and more uniform administration in any new system.

These are several of the main findings from a questionnaire distributed to all technical employees at Sandia in July to gather information for a new technical job classification system for Sandia. The response rate was 40 percent.

As reported in the April 14 *Lab News*, a Technical Job Structure Committee was established to develop a more comprehensive job structure for technical employees. Information from the survey is an important input to that process.

The committee's final report on the employee questionnaire, including its recommendations, was distributed to all technical management this week. The report is also available to employees in the tech libraries at both the New Mexico and California sites.

One clear message is that the number of ladders in a new structure should remain the same (a technician, technical staff, and management ladder). But technicians want more levels within the technician ladder, and technical staff also appear to support more than the three current levels — Member of Technical Staff (MTS), Senior Member of Technical Staff (SMTS), and Distinguished Member of Technical Staff (DMTS) — within their job ladder. Managers wanted more levels for themselves, but appeared ambivalent about more levels in the positions they managed.

In general, technical managers tended to

The two articles on this page report results of two separate but complementary surveys to help shape improvements in job structures at Sandia — one for technical employees, one for Members of Labs Staff.

support the status quo while employees believe the current system is administered poorly and want changes made. "Sandia fits the classic management versus employee model," says the report. "Management has one view of a situation and technical employees have another." In contrast, there were few differences in the responses across Sandia's divisions (vice presidencies).

Desire for more career growth

"A clear message from the survey," says the report, "is the fact that while the current job ladders are adequate, the growth opportunities or 'rungs' within the ladders are not meeting employee career desires." This was particularly so for technicians; most of them are at the top of their current ladder (STA, for example).

"Overwhelmingly," the report says, "respondents indicate a desire for more career growth opportunities for individual contributors. There is significant frustration over the fact that individuals must enter a management track in order to be promoted within the hierarchy."

"Written comments further suggest a perception that many individuals in management would be more effective as high-impact individual contributors. Any successful design must include a mechanism to recognize exempt technical contributors on high-level assign-

ments without forcing individuals to move into management positions."

Employees wanted to see consistent administration and uniform application of any new system, especially as it relates to employee movement within the system. An overwhelming majority of employees selected "Ability to do the work" as the most important factor of movement. "This presents a challenge to the committee, as this was the only purely qualitative movement factor identified on the survey," says the report.

As a result of the findings, the survey subcommittee recommends that there must be *one* [its emphasis] Labs-wide technical job structure with clear advancement criteria, the new structure must address employees' desires for career growth, it must have parallel career paths for technical staff and management, and it must meet technician needs.

The committee will use the survey results to shape a new technical job structure system. "These findings indicate that the current system can be enhanced and modified to a structure that will be acceptable to the majority of Sandians, especially if it is administered with integrity Labs-wide."

The Technical Job Structure Committee has representatives from every Sandia division (members were listed in the April 14 *Lab News*). It works with the staff of Compensation and Job Evaluation Dept. 3545.

Six members served on the employee questionnaire subcommittee: Sheila Akins (8535), Dave Braudaway (1142), Jim Muir (12913), Kirsten Randolph (3545), Ken Ronquillo (12913), and Mary Clare Stoddard (8412). — Ken Frazier

MLS restructure survey finds wide support for fundamental change in system

Fewer than one Sandian in a hundred responding to a recent survey thinks the Labs' MLS (Member of the Laboratory Staff) job structure should be left alone.

The survey of 272 Sandians — from management and staff levels — was part of a process by the MLS Job Restructure Team to redesign the current 14-level MLS structure. In category after category, Sandians used the survey instrument to send an unequivocal message: change is needed.

The MLS Job Restructure Team was established as part of the Human Resources reengineering initiative to address — and redress — shortcomings in the MLS job structure. According to Mary Kay Austin (7900) and Evan Ashcraft (3545), members of the MLS Job Restructure Team, the restructured MLS system ideally will more closely reflect the marketplace. Industry, they note, has moved toward flatter, broader job classification systems that provide for meaningful career paths involving lateral as well as vertical movement. Given the changes in industry standards and the high level of internal dissatisfaction — as revealed by the surveys — with the current MLS structure, the time is right for an overhaul, Mary Kay says.

The July 7 *Lab News* reported on the MLS job restructure process. Since that story was published, the restructuring team has conducted a series of briefings, focus groups, and surveys designed to solicit broad-based staff input into its redesign process. The team intends to incorporate staff concerns into a

new MLS system, says Mary Kay.

As a result of employee concerns about organizational representation on the team, several new members have been added, including Grant Claycomb (13315), Marie Garcia (4514), and Vadare Cornelison (12120). Other team members were listed in the July 7 *Lab News* story.

Fewer job descriptions, fewer levels

While the final shape of the restructured MLS system has not been determined, the broad outlines are beginning to emerge, says Evan. The new classification system will almost certainly have fewer job descriptions and will lean toward descriptions based on job families, he says, and will probably have fewer levels, as well.

Although the team has not been asked to look at salary structure, Mary Kay says, the group recognizes that anything it does may have an impact on salaries at some point down the line.

Once a new MLS structure is designed, Mary Kay says, it will be piloted by one or more divisions before being implemented throughout the Labs. That pilot process could begin as early as next spring, she says.

Here are some of the key results of the survey:

- Responses indicated the current structure is not well understood, though managers seemed to have a better handle on it than staff. This is a clear sign to the team, Mary Kay says, that plans for the new structure need to include better communication.

- The majority agreed with the idea of fewer levels. Focus groups are being formed to get more input on the design of the new structure, says Mary Kay.

- Respondents agreed that line managers should be accountable and responsible for job evaluation decisions, though some of the written comments expressed concern about the consistency of these decisions without some oversight at the corporate level. (Similar to a finding in the Technical Job Structure survey. See related article above.)

- Respondents endorsed the idea that the Compensation and Job Evaluation Department's role should be as partner/adviser to the line organizations.

- Ninety-five percent agreed the team should address the problem of employees performing the same work but classified and paid differently. This response was echoed in great detail in the written comments, especially as it pertains to the Management Information Systems (MIS) area. A focus group is being formed to address the issues of MIS staff, some of whom are classified as MTS and others MLS.

- Respondents believe they should be able to compete for posted jobs regardless of their current classification or the classification of the job if they meet the criteria in the posting. More than 80 percent agreed that the criteria for placement in and advancement through job levels are unclear, as is the distinction between job levels.

- An additional issue emerging from the

(Continued on next page)

Sandia scores highest among labs in DOE quality recognition program

Sandia's attention to quality management issues is winning kudos and turning heads at the highest levels of DOE: Sandia has received the highest quality award of any laboratory in the DOE complex.

Sandia and seven other DOE facilities were lauded by Secretary Hazel O'Leary during a recent Washington ceremony for their achievements in quality management. The recognition ceremony was the culminating step in the first DOE Energy Quality Awards program, established by O'Leary.

"I'm pleased about getting this award and the recognition of Sandia's quality journey," says Charles Tapp, Director of Quality Improvement Center 12900.

Based on meeting a rigorous set of criteria, Sandia earned the "Energy Quality Accomplishment" award. No other national lab earned as high a recognition, though two individual departments within Lawrence Livermore National Laboratory achieved similar ratings.

No awards were presented this year at the very highest recognition level, "Energy Quality Excellence," and no lab facilities attained the "Energy Quality Achievement" award, though two New Mexico DOE operations — Westinghouse Electric Corp., Waste Isolation Division and the DOE Albuquerque Operations Office — did attain this second-tier level of recognition.

Four of the eight Energy Quality Awards recipient organizations are based in New Mexico: Sandia, DOE/AL, Westinghouse Waste Isolation Division, and Los Alamos National Laboratory, which earned the "Energy Quality Champion" award.

Twenty-nine DOE organizations comprising 34,000 people (about a fifth of the department's federal and contractor employees) applied for the 1995 awards. Forty-seven examiners reviewed the applications in June 1995 and reported results to a panel of six independent judges.

O'Leary praised the award winners: "The quality work of these dedicated employees has saved taxpayer dollars, improved customer service, and shown the American public that this administration is committed to doing more with significantly less resources."

Labs Director C. Paul Robinson, who represented Sandia at the Washington ceremony, says, "The Secretary indicated that she hopes the legacy she will leave behind when she exits DOE will be the emphasis on quality that she has brought to the Department. Thus, she put a lot of herself into the entire ceremony, and you can tell this is an area of high impor-

(Continued from preceding page)

comments was frustration with the current requirement to go through the post and bid process to promote someone in place.

• Most respondents agreed that education, previous job responsibilities and experience (both internal and external), performance in current job, and proven ability to do the work should be included as factors for movement into job levels. There was little support for including the current job level or time in that level as a factor and almost no support for using the employee's current salary as a factor.

The written comments are still being reviewed by the team to ensure that all issues and concerns are being considered, Mary Kay says, adding that focus groups will continue to be formed throughout the process to gain further information.

— Bill Murphy

tance to us.

"We should neither be disappointed that we were not given the highest award, nor should we in any way feel complacent because we scored the highest of any laboratory; rather, we should acknowledge that we still have room for much more continuous improvement in the future," he says.

The Energy Quality Awards program is modeled on the Malcolm Baldrige Quality Award and the President's Quality Award, which evaluate applicants according to the following criteria: leadership, information and analysis, strategic planning, human resource development and management, process management, business results, and customer focus and satisfaction.

Here are the 1995 Energy Quality Award winners:

Energy Quality Achievement Award
DOE Albuquerque Operations Office
Westinghouse Electric Corp., Waste Isolation Division

Energy Quality Accomplishment Award
Sandia National Laboratories
Savannah River Operations Office
LLNL - Plant Engineering
LLNL - Safeguards & Security
Environmental Management & Enrichment Facility, Martin Marietta Energy Systems Inc.

Energy Quality Champion Award
Los Alamos National Laboratory

The Sandia Energy Quality Award application was written by a team of quality experts from throughout the Labs under the leadership of Charles Tapp (12900). The writing team key members were: Ken Hanks (4500), project manager; Suzanne Weissman (6000), integration team leader; Karen Pound (4021); and Jim Clinch (4021). More than 200 Sandians representing the sectors and divisions across the Labs provided data and participated in writing various components of the application.

Shoes for Kids

Shoes for Kids is now an official Sandia-sponsored charity. Thanks to Roger Hagengruber (VP 5000), Jerry Langheim (former Public Relations and Communications Director), Mary Nation (12671), Liz Scott-Patterson (5502), and Ray Hall (10604), Shoes for Kids will not only continue to flourish but may be eligible for other funds. Your donations can now go directly to Sandia Laboratory Federal Credit Union, PO Box 23040, Albuquerque, NM 87192. Make your checks or money orders out to Sandia Laboratory Federal Credit Union with a notation at the bottom, "For benefit of Shoes for Kids, #223180," and mail (okay to send through Sandia mail, no mail stop, just write Credit Union as the address) or deliver it to either branch of the credit union.

Donations are now being accepted for the annual holiday Shoes for Kids campaign. Shoes for Kids began nearly 40 years ago, when instead of sending each other greeting cards, employees in Surety Assessment and Defense Programs divisions decided to help needy children by buying them shoes. Shoes for Kids is coordinated with Albuquerque Public Schools. APS teachers and principals select which children will receive shoes. Kinney Shoes in Coronado Center provides the shoes. This year again, a pair of shoes costs \$25.

Because of Sandia policy changes, Shoes for Kids could not use the Sandia mail system to send its many donors their thank you cards from the children last year. There is still a stack of thank you cards that were never delivered. If you made a donation and would like to have one, call Liz Scott-Patterson on 845-9108 and leave a message that includes your mail stop or home address. Each card is an "absolute treasure," says Liz. Call Liz for more information about Shoes for Kids.

Favorite Old Photo

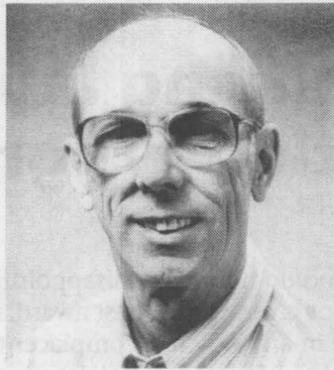


THESE "AXEMEN" include my grandfather, Leonard Pike (back row, middle). If anyone knows what the MWA organization was, I'd like to hear about it; perhaps it's M(?) Woodsmen of America. The photo was probably taken in southern Kansas between 1900 and 1910. As a boy in the 1880s, my grandfather sat on a horse and watched people heading out on the Oklahoma land rush — of which my other grandfather was part.

— Clifford Schafer, 2200

Mileposts

November 1995



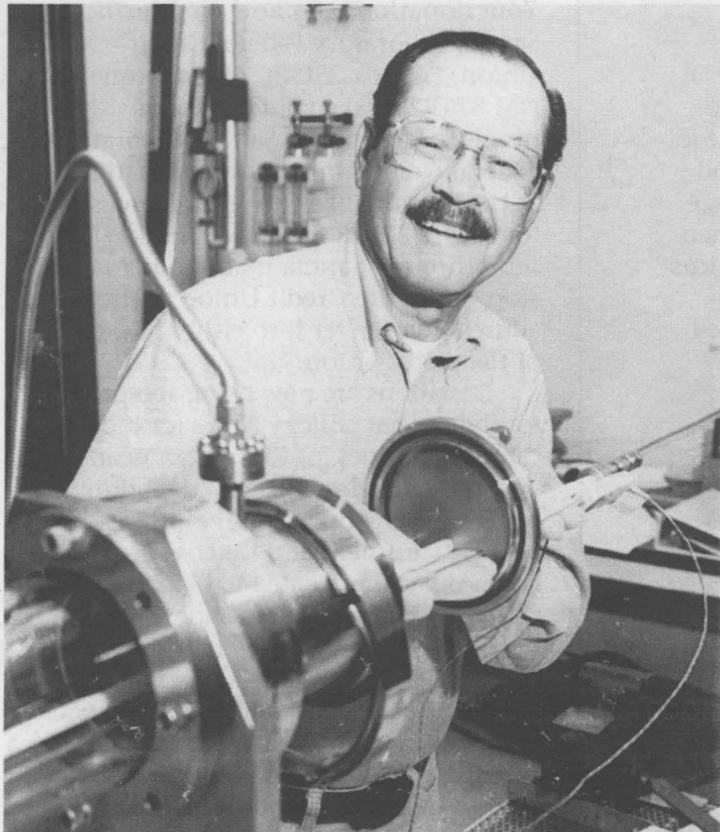
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9333



Eleanor Walther 15
5913



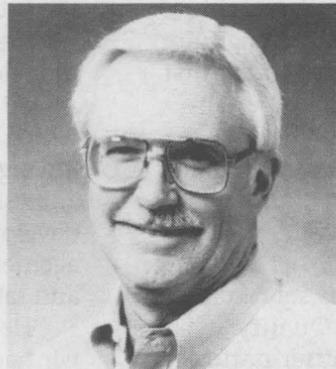
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10221



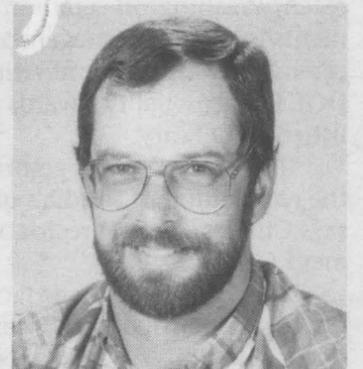
Frank Dominguez 35
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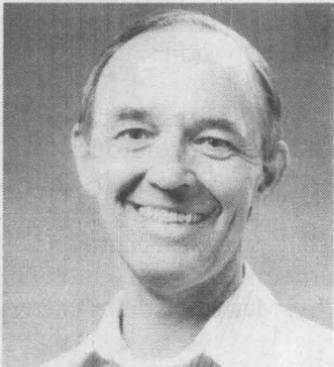
Glenda Ross 15
8523



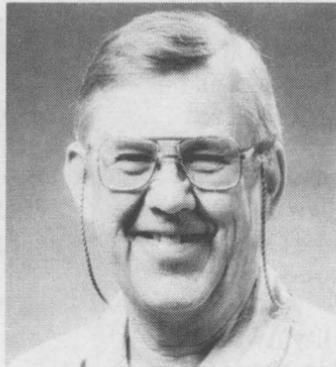
Eric Reece 30
2417



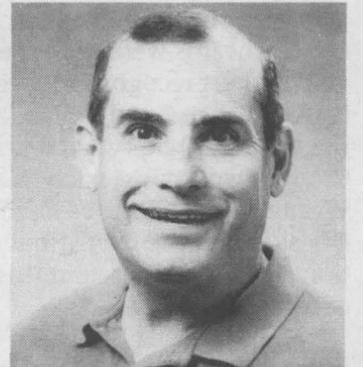
Jim Van De Vreugde 20
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Thomas Linnerooth 30
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Phil Skogmo 15
2645



William Harrison 20
7613



Norm Wagner 30
8613



Jim Lee 15
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Fred Perez 25
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Jean Williams 20
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Francine Island 15
12336



Dan Trujillo 15
8111



Don Gatto 20
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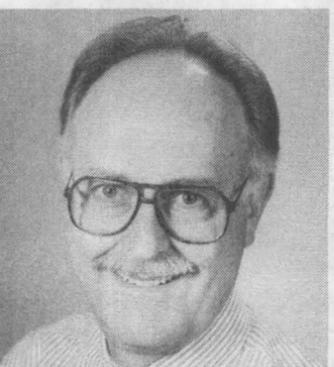
William Barrett 15
9311



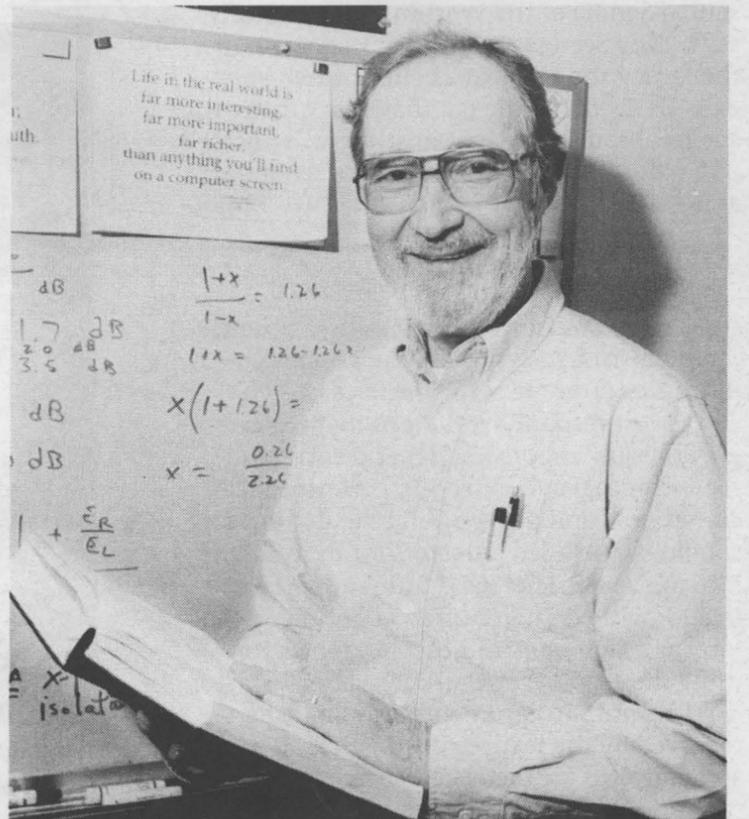
Gary Gallegos 20
1481



Edward Young 15
2102



Mike Neuman 25
2254



Kenneth Hueter 35
5711

Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads

MISCELLANEOUS

BACK WINDOW, for '88 Nissan pickup truck, \$50 OBO; alloy rims & tires, 14 x 7, for Chev., 5-bolt, \$70 OBO. Maestas, 831-4072.

NEW ARMY SHIRTS, wool, man's small only, \$3.50 ea.; need straw bales & 145 x 12 tire. Bevington, 866-5422.

BUNK BEDS, could use as singles, dark wood frames, w/foundations & mattresses, desk & bookcase, \$130. Hardison, 271-2838.

SCHWINN AIR-DYNE, w/digital timer, load indicator, odometer, \$400 firm. Spitz, 294-6237.

GLASSTITE PICKUP SHELL, cab-high, light cream color, fits long-bed truck, mint condition, \$695. Sheward, 298-9321.

THERMADOR ELECTRIC STOVE TOP, 4 burners, w/grille/griddle, \$350. Harris, 265-4792.

DOGLOO DOGHOUSE, like new, Nitroge insulation, warm winter/cool summer, for pets up to 150 lbs., \$35. Lujan, 299-4820.

STEERS, organically-raised, lean meat, ready to butcher, \$450 ea. Leyba-Essary, 266-5189.

ENSONIQ KEYBOARD, 61 full-size keys, excellent condition, w/boombox, \$250. Gauthier, 268-1215.

MAPLE SETEE ROCKER, New England-style, \$75. Leon-Maestas, 299-6514.

CAST-IRON BATH SINKS, 18-in., round, \$15 ea.; Weber BBQ grill, \$12; river & red-lava rock, free. Lucero, 296-2473.

FULL-SIZE CAMCORDER, Hitachi, autofocus, autozoom & battery charger, hardly used, \$700 OBO. Rael, 877-0696.

LUGGAGE CARRIER, Sears X-Cargo, white, metal latches, security lock, 18 cu. ft., 66" x 32" x 14", \$45. Vaughn, 867-4625.

DINING TABLE, 4 chairs, dark pine, solid & heavy, 2 leaves, oval, 42" x 60" x 84", \$300. LeGalley, 822-0676.

CABINETS, w/hardware; countertops; kitchen sink; 2 pair thermal-backed curtains, 48" x 84"; curtain rod/scalloped wooden valance; prices negotiable. Blaisdell, 875-0719.

PULMO-AIDE TRAVELER; walker, lightweight Trimate; lightweight travel chair, 15 lbs.; bath safety seat, w/back. Hay, 836-4173, ask for Jim.

PING-PONG TABLE, folding, \$75; TV antenna, 10-ft., \$40; small buffet, \$40. Ghormley, 293-6466.

PICKUP CAMPER, Mitchell, good condition, \$895; old produce boxes & crates, \$5 ea.; misc. old stuff. Martin, 296-8154.

BIKE RACK, for rear-mounted tire, Graber, holds 2 bikes. Douglas, 281-9843.

QUEEN-SIZE WATERBED, w/bookcase headboard, mattress, liner, heater, 12-drawer under-bed storage, dresser/mirror, nightstand, \$300 OBO. Cap, 294-2741.

ELECTRIC TYPEWRITER, Adler SE1010, long carriage, autocorrecting, w/stand, cover, lamp, excellent condition, \$100 OBO. Arlowe, 298-1770.

VACUUM CLEANER, Kirby, upright, w/accessories, \$60. Rosborough, 865-8490.

AMAZON PARROTS: one young Double Yellowhead & one Yellownappe, your choice \$900. Babcock, 299-3121, by appointment only.

OAK CHAIR and lidded commode, 20's, original finish, 26"H x 22"W x 18"D, inlaid tooled copper trim, \$195. Dybwad, 296-9047.

STERLING SILVERWARE, 56 pieces, w/tarnish-proof case, good wedding or Christmas gift, \$1,000. Daniel, 260-0461.

LA-Z-BOY QUEEN SOFA SLEEPER, excellent condition, must see, \$350. Pettit, 899-1150.

COOLING SYSTEM ANALYZER, (air), \$125; vacuum & brake pump kit, \$40; wheel lock removal kit, \$40. Mays, 844-2546, ask for Sandra or Don.

FILL DIRT, 2+ cu. yds. in a pile next to road, will help load, free. Duncan, 271-2718.

WHITE GERMAN SHEPHERDS, male, female must see. Gutierrez, 877-1076 or 242-2562, leave message.

WOODBURNING STOVE, large, cast iron, \$300 OBO. Tapia, 857-0475.

SAXOPHONE, Yamaha student model, \$1,000 new, \$450; chairs, oak, T-back, antique, set of 6, \$600 firm. Breckenridge, 291-0039.

NORDICTRACK, excellent condition. Baremore, 296-9267.

HOOD PROTECTOR (BRA), fits Isuzu Trooper, '88-'94, used approximately 3 months, new \$125, asking \$50. Petersen, 275-7467.

DEEP-CYCLE BATTERY, w/UV case, (new 5/95); baby stroller; baby jogger canopy (new); toddler's 3-wheeler. Surbey, 823-2843.

BASS GUITAR AMP, Peavey Mark IV, 100-watt head, w/Black Widow speaker cabinet, \$400. Cerutti, 254-0799 or 292-0186, ask for Steve.

CAMCORDER, 8mm Sharp Viewcam, 3-in. color LCD screen, remote, 8:1 zoom, accessories, \$650. Sloan, 823-2922.

BEEKEEPING GEAR, hive boxes, foundation, smoker, etc., \$60. Brandvold, 296-4394.

'63-'96 CORVETTE CAR COVER, cable & lock, \$65; chrome T-top locks, \$30. Webb, 828-2271.

DRUM SET, 6 pieces, manf. by Pearl, new, red glossy finish, stands, hi-hat, no cymbals, \$450. Aldridge, 299-8138.

HP PALMTOP PC, 95LX w/512Kb FlashRam, DOS, Lotus, scientific calculator, connectivity pack, adapter, manual, new \$1,000+, \$325 OBO. Zaorski, 263-6435.

TWO TIRES, "Big Foot," LT235x75R15, 70% tread, \$50; pistol, Taurus 689, .357-magnum, 4-in. SS, LNB, \$350. Zarick, 898-8840.

WEDDING GOWN, size 6/8, chantilly-lace bodice & train, full-length mantilla veil, simple but elegant, \$100. Seyfer, 292-0179.

FOR 318/360 ENGINES: Carter Thermoquad 4BBL carburetor, w/intake, manifold, gaskets, passing-gear linkage, air cleaner, \$250. Lyons, 281-9283.

ROCKING CHAIR, solid hardwood, high back, cherry finish, \$100; Scott PF-1 drop spreader, \$17.50; trampoline, 38-in. rebound, \$15. Stang, 256-7793.

SOUTHWESTERN SOFA/LOVESEAT, light charcoal-gray tweed, large cushions/pillows, \$225; pine dark-finished dresser, w/2 mirrors, 2 nightstands, \$225. Ortiz, 836-7064.

BICYCLE TRAINER, Performance "Peak-load", magnetic resistance, \$50 OBO. Novak, 268-8258.

BLUE NYLON CAR COVER, 18' x 8', \$50. Anderson, 296-3352.

DEN FURNITURE, sofa, loveseat, recliner, coffee table, 2 small oak tables, lamps, may view Nov. 18-19. Elson, 822-0891.

ELECTRIC RANGE, Whirlpool, micro shelf, self-cleaning, yellow, excellent condition, very clean, \$200. Chorley, 296-1454.

SOFA, queen sleeper, blue tones, \$250; 3 bikes, \$20 ea.; garage-door opener, \$50. Witkowski, 271-1691.

YAMAHA DX7, keyboard synthesizer, \$350; Yamaha RX15 drum machine, \$150; Ultimate keyboard stand, \$50. MacKenzie, 265-8339.

DESKS: executive & credenza, \$250; secretarial, \$70/ea.; wood-veneer, \$40; Canon 50 fax, \$300; desk chairs, \$15/ea. Tipton, 828-2538.

WATERBED FRAME, queen-size, w/storage drawers underneath, \$100. Howe, 866-6059.

LA-Z-BOY ROCKER/RECLINER, \$100; sofa sleeper w/ottoman, \$200; Jenny Lind-style crib, \$65; changing table, \$35. Miller, 281-3936.

B&W TELEVISION, Quasar 12-in., \$20; Fisher-Price car seat, excellent condition, \$20. Meeke, 828-9825.

GE BUILT-IN DISHWASHER, needs minor repair, \$10; 3 junipers, 4-ft., free, you dig & haul. Fogelson, 296-0620.

PERSIAN CAT, male, neutered, declawed, has all shots. Tanuz, 237-2849.

BABY CRIB, w/mattress & sheets, bumper guard; woman's Nike running shoes, size 7, never used. Roybal, 296-8493.

MACINTOSH CLASSIC, 4/40, System 7.0, Quicken, Golf, etc., carrying case w/strap, ImageWriter printer, \$425. Williams, 294-1285.

COMPUTER DESK, O'Sullivan power center, corner unit, left/right desks/hutches, drawers, printer cart, \$250 OBO. Le Tourneau, 265-0987.

PET CARRIER, extra large, \$65; 8-ft. pool table, new top, \$450; Sante Fe-style queen canopy bedframe, \$85. Sanchez, 898-9598.

BUNK BEDS, \$75; Chev. snow tires/rims, 9.50x16.5., \$50; VT320s & VT420s, make offer. Bukaty, 345-4691.

CRIB w/mattress, Simmons, oak, \$130; other baby/toddler items: car booster, backpack, bike seat. Baldwin, 856-5309.

REAR CAR SEAT for Chev. Astro van, gray corduroy, \$299; solid-oak bathroom cabinet, 48-in., Mountain Ash, \$200. Luther, 822-1187.

DINING FURNITURE, wrought iron, glass-top table, 4 arm chairs, padded seats, Mossman sun design; tea cart. Whitham, 266-9313.

HIGH-BACK OAK DINING CHAIRS, 4, w/cane seats, early 1900's vintage, good condition, \$300. Perkins, 899-8766.

FUR COAT, dyed-lynx fox stroller, size 6, \$650. Foster, 823-1162.

AMIGA A500 COMPUTER, 4MB RAM, 80MB HD, color monitor, Epson LQ500 printer, lots of software, \$650. Goodwin, 294-6702.

WEAVING SUPPLIES, shuttles, bobbins, reeds, etc., best offer. Geitgey, 856-0829.

REFRIGERATOR/FREEZER, Whirlpool, 22.2 cu. ft., \$125; steel-frame bunk bed (bottom full, top twin), \$75. Schmidt, 275-7254.

DEADLINE: Friday noon before week of publication unless changed by holiday. MAIL to Dept. 12622, MS 0413, or FAX to 844-0645. You may also send ads by e-mail to Nancy Campanozzi (nrcampa@sandia.gov). Questions? Call Nancy on 844-7522. Due to space constraints, ads will be printed on a first-come, first-served basis.

Ad Rules

1. Limit 18 words, including last name and home phone (We will edit longer ads).
2. Include organization and full name with the ad submission.
3. No phone-ins.
4. Use 8 1/2-by 11-inch paper.
5. Type or print ad; use accepted abbreviations.
6. One ad per issue.
7. We will not run the same ad more than twice.
8. No "for rent" ads except for employees on temporary assignment.
9. No commercial ads.
10. For active and retired Sandians and DOE employees.
11. Housing listed for sale is available without regard to race, creed, color, or national origin.
12. "Work Wanted" ads limited to student-aged children of employees.

BEDROOM SUITE, French provincial, white, w/lingerie chest, desk, brass headboard, excellent condition. Miyoshi, 821-9118.

TRANSPORTATION

'90 PLYMOUTH COLT. Smith, 828-3904.
'74 CORVETTE L-82 STINGRAY, excellent condition, \$7,800. Hamilton, 892-7264.

The next Lab News will be published Dec. 1. Deadline for ads and other submissions is 4:30 p.m., Tuesday, Nov. 21.

'90 GEO TRACKER, 4x4, hardtop, 5-spd., 23K miles, below wholesale, \$5,750. Wavrik, 856-7544.

'87 TOYOTA 4RUNNER, SR5/4x4, AC, AM/FM cassette, metallic gray, excellent condition, \$8,500. Yeager, 898-0832.

'76 CAMARO LT, AT, 2-dr., V8, 85K miles; '83 Cross-country Sportcoach, 26 ft., Chev. chassis, 45K miles, both excellent condition. Baughman, 884-5082.

'93 CHEV. SUBURBAN 350, 4x4, loaded, new tires, must sell, \$21,000. Scouten, 299-0413.

'86 TOYOTA SR5, 4x4, excellent condition, original owner, new paint, \$5,800 OBO. Brooks, 255-7551 or 266-2379.

'88 JEEP CHEROKEE, fully-loaded Laredo, 4-liter, 4x4, 135K miles, PD/PL, Viper alarm, excellent condition, \$8,000. Matz, 296-0209.

'93 PLYMOUTH VOYAGER, FWD, V6, airbag, internal child seats, 57K highway miles, excellent condition, \$12,200 OBO. Morrison, 281-2905.

'84 FORD F250 XLT, diesel, 4WD, mounted sets of road & snow tires, well maintained, new paint, original owner, \$4,900. Wright, 856-6923.

'90 FORD TAURUS GL WAGON, V6, 80K miles, all options, new paint, tires, runs great, \$5,950 firm. Boyce, 856-1889.

'85 BUICK PARK AVENUE, tan, excellent condition, \$2,800 OBO. Plummer, 823-1619.

'87 GMC JIMMY, needs repairs to be serviceable, bids taken through 11/15/95, reserve right to refuse all bids, subject to prior sale, sold as is. SLFCU, 237-7382.

'93 MAZDA MX-3, V6, 5-spd., cruise, PW, PS, AC, Yakima racks, 50K miles, excellent condition, \$11,800. Moore, 281-2480.

'62 CORVETTE, Roadster, 327/340-hp, Roman red, red interior, white soft top, completely restored, \$40,000 firm. Cerutti, 299-4658, ask for Brian.

'84 TOYOTA SUPRA, 5-spd., PB, PS, PW, power mirrors, sunroof, under book, \$3,500. Hatch, 281-0543.

'87 NISSAN PATHFINDER SE, 4x4, 75K miles, 5-spd., V6, AM/FM CD, Yakima racks, \$9,995. Walker, 294-4087.

'90 CAMRY, V6, AT, loaded, excellent condition, 95K miles, original owner, below book at \$9,000. Carlson, 897-1850.

'78 CHRYSLER CORDOBA, V8, AT, AC, PS, PB, PW, cruise, tilt, AM/FM cassette, 33K original miles, \$6,000. Baca, 877-1136.

'94 MAZDA B4000, V6, extended cab, many extras, perfect condition, 11.3K miles. Wladika, 255-9166.

'87 PONTIAC FIERO, excellent condition, 5-spd., V6, all options including AC, \$3,500. Prevender, 296-8586.

'92 CHEV. S10 PICKUP, 4-cyl., 5-spd., alarm, tint, AM/FM CD, 51K miles, excellent condition, \$6,400. Humphreys, 296-8883.

'65 CHEV. PANEL, 1/2-ton, 3-spd., 91K miles, \$2,400 OBO. Guerin, 877-2726.

'82 FORD TRUCK XLT LARIAT, 1/2-ton, extended cab, V8, AT, excellent condition, \$5,600. Shay, 869-3966.

'86 FORD RANGER, 4-cyl., 4-spd., black, camper shell, chrome wheels, stereo, new battery, \$2,200. Leslie, 293-0339.

'93 PLYMOUTH GRAND VOYAGER LE, less than 30K miles, fully loaded, excellent condition, extended warranty, \$16,900. Gabaldon, 822-1968.

'70 FORD TORINO, installed new 302 V8 last November, 4-spd. OD, good mechanical condition, \$800. Miranda, 293-8644.

'87 JEEP WRANGLER, strong running, silver w/white hardtop, oversize AL wheels/tires, 100K miles, book value. Semonick, 883-4212.

'86 JEEP GRAND WAGONEER, 75K miles, runs great, leaf springs re-arc'd, interior and body nice, \$3,950. Smith, 828-3904.

'90 PLYMOUTH COLT, 3-dr. hatchback, 40+ mpg, real spare, chains, repair manual, good condition, \$2,500. Chacon, 838-3904.

'83 FORD F-250, 4x4, PS, PB, V8 302, good condition, 63K miles, \$4,500. Beazley, 837-4749.

'92 ISUZU RODEO XS, 4WD, 5-spd., 4-dr., low miles, V6, 3.1L, pampered condition, \$16,900. Bishop, 822-8295.

'85 HONDA ACCORD LX, good condition, new brakes, AT, blue, 141K miles, \$3,200. Lumley, 864-2091.

'89 HONDA ACCORD DX, 4-dr., 5-spd., AC, AM/FM cassette, nice, \$7,595 OBO. Konkel, 866-0304.

'85 OLDS 88 ROYALE BROUGHAM, pampered, extremely low mileage, must see to believe. Sunland, 256-1861.

'84 VANAGON, sunroof, every tired thing replaced except the driver, opportunity (not the engine) knocks, \$2,700. Baugher, 265-8305.

'87 BMW 325IS, low mileage, like-new condition, red w/tan leather interior, 6-cyl., AT, new tires, \$10,700. Bisbee, 293-0356.

'88 MERCURY TRACER, fully equipped, mint condition, low mileage, tinted glass all around, \$3,000. Rael, 884-4778.

'94 NISSAN TRUCK, extended cab, 2WD, 4-cyl., 5-spd., AC, bed liner, AM/FM cassette, 31K miles, \$9,900 firm. Milliman, 291-8105.

'91 SUBARU LEGACY WAGON, 4WD, 5-spd., all power, ABS, AC, 85K miles, original owner, \$11,100. Dodd, 296-1158.

'88 PONTIAC LE MANS, 3-dr. Aerocoupe, white, 78K miles, AT, AM/FM cassette, great school car, \$1,550. Homan, 292-5234.

'89 PLYMOUTH GRAND VOYAGER, V6, AC, PB, PS, AM/FM cassette, excellent condition, \$5,900. Shaw, 856-1141.

'79 HONDA ACCORD PARTS CAR, 4-dr., no transmission, engine a good re-builder, \$300/all or part out. Zirzow, 281-9896.

'95 OLDS CUTLASS SUPREME, convertible, PS, ABS, dual air bags, many extras, 3,200 miles, \$23,500 OBO. Lohr, 821-1043.

'85 GMC PICKUP, 4x4, step side, lift kit, extras, new transmission, looks and runs great, \$7,000. Widenhoefer, 281-6376.

RECREATIONAL

'79 MOTOR HOME, low mileage, good tires, roof air, large closet, rear bath, sleeps 6, \$8,000 firm. Sifford, 869-3982.

'80 HONDA CX500 MOTORCYCLE, always covered/garaged, water-cooled, shaftdrive, V-twin, fairing, windshield, trunk + tank-bag, 29K miles, \$900. Cates, 275-0143.

SKI PACKAGE: recreational 185 Atomic Skis, Tyrolia bindings, Nordica size 9 boots, Scott poles, \$100 firm. Ortiz, 899-8983.

BMX, 20-in. Diamondback, \$80 OBO; two 15-in drumheads, Ludwig Silver-dot, brand new, \$10 ea. Bordlemay, 883-4926.

MAN'S ALL-TERRAIN BIKE, 27-in., 15-spd. Huffy, like new. Garcia, 266-6596.

MOUNTAIN BIKE, Nishiki Colorado, 17-in., 21-spd. rapid-fire, originals, lightweight, good condition, \$350. Kovacic, 256-9867.

125 SUZUKI 4-WHEELER, runs well, \$400. Barthelme, 286-1491.

CROSS-COUNTRY SKIS, Asnes TL215, poles, \$35; Asnes TL205, poles, \$35; boots, \$5 ea. Filter, 823-1232.

LASER SAILBOAT, 13-ft. trailer, hull, sails & all accessories, excellent condition, \$900. Sandhaus, 822-1438.

SCUBA EQUIPMENT, BCD, regulator, wet suits, other equipment. Gonzales, 294-2425.

LOBO BASKETBALL TICKETS, Section 15 (south end), Row 37 (near bottom), will sacrifice, spectacular seats, \$500. Hayes, 281-9282.

ROSSIGNOL SKIS (180cm) & BAG, \$65; Solomon boots, woman's size 9, \$50; intermediate-level, \$100/package. Nenoff, 260-0943.

'77 TRIUMPH BONNEVILLE, 750cc, 4K original miles, 1 owner, \$2,000. Kirk, 281-6668.

REAL ESTATE

4.19 ACRES, east Sandia mountains, Mag-ic Valley, breathtaking views, water system, utilities, 20 minutes to Albuquerque, \$63,900. Gabbard, 294-6904 or (510) 833-1935.

4-BDR. HOME, 2,250 sq. ft., 2-1/2 baths, 2-1/2-car garage w/workshop, mature landscaped yards, North Albuquerque acres, \$165,000. Neumann, 858-0944.

2-BDR. MOBILE HOME, 2 baths, Moririty, 2 acres, all utilities, fenced yard, great condition, furnished, \$65,000. Shields, 344-7418.

3-BDR. HOME, super clean, 1,200 sq. ft., beautifully landscaped, great neighborhood & location, \$94,900. Martinez, 821-0598.

WANTED

THOMAS THE TANK ENGINE: playboard, table, tracks & trains; double jogging stroller. Ellis, 856-2412.

USED RACKET/TENNIS BALLS, at least 100, for a school project, partial donations accepted. Dykhuizen, 281-9463.

CHILD PROTECTIVE BED RAILS, to secure under twin mattress, good condition. Brigham, 293-6914.

CAMPER SHELL, fiberglass to fit '89 Toyota truck, 76-1/4" x 60". Cassidy, (505) 983-2219.

HOUSEMATE, male/female, share new home, washer/dryer, \$325/mo. plus 1/3 utilities. Blea, 836-7453.

RADIUM-DIAL WATCHES, thoriated lenses & dental porcelain, pitchblende samples, for SNL radiation awareness presentations. Thomson, 844-2607.

CEDAR CHEST, gas-powered chain saw, both good to excellent condition. Squire, 266-3957.

SINGLE-SIZE CANOPY BED, prefer white. Kaufmann, 292-9249.

ROOMMATE, private loft w/FB, semi-private entrance, quiet, perfect for grad student, \$240/mo., utilities (except phone) included. Souther, 254-9361.

TOWING RECEIVER, for '84 Suburban, needed to pull a 2,500-pound trailer. Blankenship, 296-9580.

HIT & RUN WITNESSES: If anyone witnessed a collision on Friday, Oct. 27, in the parking lot next to Gate 10 south of Bldg. 821 between a parked '93 black Blazer and an unknown vehicle, please call Steve Silva at 844-1109 or 898-9115.

"FAST TRACK" EXERCISER. Windham, 293-8107.

ROOMMATE, female, 4-bdr. house near Arroyo del Oso golf course, \$400/mo, includes utilities & cable. Lopez, 884-4164.

DAY CARE, patient, loving day-care mom/nanny wanted for infant, full-time in your home near Sandia. Missert, 281-8354.

PLAYPEN, good condition. Stixrud, 298-0478.

WORK WANTED

YARD WORK, dog sitting, animal sitting, energetic 10-yr. old, Taylor Ranch area. Lambert, 899-2060, ask for Michelle.

TUTORING/ODD JOBS, 8th grade honors math student available for tutoring and odd jobs, pet sitting. Carroll, 298-2827.

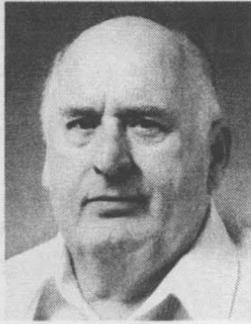
LOST & FOUND

FOUND: Sapphire ring, woman's, east of cafeteria parking lot, on Oct. 31. Lambert, 292-8417, ask for Donna.

Recent Retirees



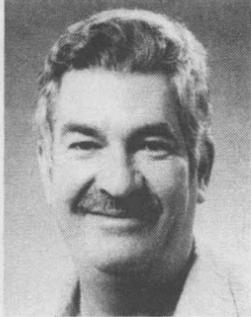
Dan Blazek 31
2615



Bruce MacLeod 18
7612



William Tucker 29
9121



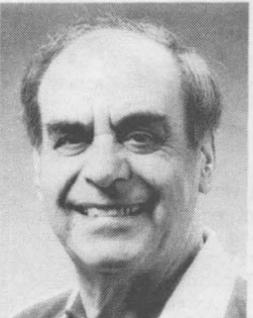
Don Tipping 26
9819



K. R. Nielsen 33
2251



Cliff Condit 32
1144



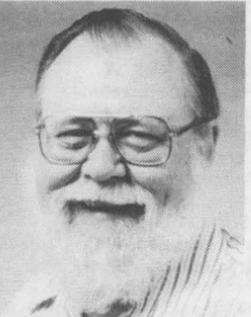
Gene Polito 10
7613



Genova Johnson 15
10502



Glen Kepler 31
1860



Jack Cannon 38
6218

Recent Patents

Jerome Rejent and Paul Vianco (both 1831): Tin-Silver Bismuth Solders for Electronics Assembly.

Vincent Hietala (1322), Neil Sorensen (1832), Jon Martens, and David Ginley: Surface Property Detection Apparatus and Method.

Mohsen Shahinpoor (1433): Omni-Directional Railguns.

Charles Arnold, Dora Derzon, and Peter Rand (all 1811), and Jill Nelson (7712): Method of Preparation of Removable Syntactic Foam.

Lars Roose (9323): Process of Modifying a Cable End.

Five national labs rank in materials science impact

Five DOE national labs including Sandia rank among the top 25 institutions with the greatest impact on materials science research during the last five years.

From 1990 through 1994, materials science papers produced by researchers at Lawrence Livermore, Lawrence Berkeley, Argonne, Oak Ridge, and Sandia national labs were among those most cited in technical and scientific journals by their colleagues in government, industry, and universities.

Institutions, authors, and countries are ranked in the October Science Watch, published by the Institute for Scientific Information, according to both influence (measured by the total number of citations of papers produced) and impact (measured by the number of citations per paper). For its survey, Science Watch used the 300 most-cited papers of each year published in approximately 150 journals of materials science and metallurgy indexed by the ISI for 1990 to 1994.

IBM headed the list of total citations, while Oak Ridge was fourth and Argonne sixth. Los Alamos also made the total citations list, as did Lawrence Livermore and Lawrence Berkeley.

Sandia, Lawrence Livermore, Lawrence Berkeley, Argonne, and Oak Ridge made their showing in impact, along with commercial company Lockheed Martin. For the 10 materials science papers it produced, Lawrence Livermore was cited an average of 31.5 times per paper. Lockheed Martin papers were cited an average of 26.9 times; Sandia, 24 times.

The University of New Mexico also made a strong showing in the survey. — Philip Higgs

Sandians offered discount tickets for Mozart, Mendelssohn, and more

The New Mexico Symphony Orchestra (NMSO) is offering Sandians "buy one get one free" tickets for either of its classics concerts to be presented Friday, Nov. 17, 8 p.m., and Sunday, Nov. 19, 4 p.m.

Roger Melone will conduct the NMSO at Hoffmantown Baptist Church in Albuquerque's Northeast Heights. Pianist Sergei Babayan will perform Mozart's Piano Concerto No. 21 in C Major, "Elvira Madigan." Smetana's "The Moldau" and Mendelssohn's Symphony No. 3 in A Minor are also on the program.

Tickets are available now through Nov. 16 and must be purchased in person at the NMSO Symphony Store in American Square, Suite 4 (3301 Menaul NE, just west of Carlisle) or charged by phone on 881-8999. To get the discount — \$22 for the first ticket, no charge for the second — employees must identify themselves as Sandians when tickets are ordered.

For more information, call Judy on 881-9590.

Coronado Club

Nov. 10 (Friday) — Kids' bingo night. Buffet, 5 p.m., with cartoons and movies. Bingo starts at 7 p.m. Free hot dog and soft drink for all kids playing bingo; cost is \$2.50 for a bingo packet.

Nov. 12 — Cantina opens at 4 p.m.

Nov. 16, 30 — Thursday bingo nights. Card sales and buffet start at 5 p.m., early birds' bingo at 6:45 p.m.

Nov. 17 — Friday night dinner/dance. \$7.95 all-you-can-eat buffet, 6-9 p.m. Music by Isleta Poorboys, 7-11 p.m.

Nov. 18 — New Year's Eve party tickets go on sale; dinner 7-10 p.m.; music by the variety band "Together," 9 p.m.-1 a.m. \$25 per couple/\$30 per guest couple. Tickets must be purchased by Dec. 18.

Nov. 19 — Sunday brunch buffet, 10 a.m.-2 p.m. \$7.95 adult members, \$8.95 guests, \$2.95 for children 4 to 12, free for children 3 and under. Music for buffet by Bob Weiler, 1-4 p.m.

Nov. 21 — Traditional C-Club Thanksgiving luncheon during regular lunch hours; \$4.50 (the normal lunchline will also be serving.)

Nov. 23 — Thanksgiving Day dinner, 10 a.m.-3 p.m. Menu items include turkey, baked ham, roast beef, dressing, yams, mashed potatoes, cranberry sauce, additional vegetables, and desserts. \$7.95 adults, \$4.95 for children 4 to 12, free for children 3 and under. Music for buffet by Bob Weiler, 1-4 p.m.

Dec. 1 — Friday night dinner/dance. \$7.95 all-you-can-eat buffet, 6-9 p.m. Music by Isleta Poorboys, 7-11 p.m.

Retirement open house

Sandia is holding an open house in honor of retiree Garland Tilley (7311) on Wednesday, Nov. 15, in the Coronado Club Zia Room, 4-5:30 p.m. Refreshments will be served. Friends and acquaintances are invited.

Take Note

Sandia's Women's Program Committee is still accepting contributions for its outreach to the Domestic Violence Shelter (supported by the Albuquerque Community Foundation). Donations of kitchen and household items, office and school supplies, and personal toiletries would be appreciated. Although clothing is not needed at this time, large- and medium-size disposable diapers and children's like-new coats, jackets, and sweaters, books, and toys (no stuffed animals, please) are always accepted. There has also been a special request for small, inexpensive gift items (suitable for women and children) for gift giving among those moms and children unable to return to their homes for the holidays. Your generosity and caring have made a significant difference to the well-being of many women and children in such unfortunate circumstances. Mary Gallegos (10244) will be collecting donations until Nov. 30. For more information, call Mary at 845-9491.

The National Atomic Museum will open a new exhibit, "Risqué Business — Nose Art in the Pacific War," which will run from Nov. 15 through Dec. 31. In honor of this exhibit, the museum is hosting a special reception on Wednesday, Nov. 15, 5-6:30 p.m., featuring key speaker Hal Olsen, one of the aircraft "nose artists." Sandians and retirees are invited. For information, call the museum at 845-6670.



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