

Sultan of Salt becomes third Sandia fellow

By John German

Lab News staff

During his 22-year involvement in the Waste Isolation Pilot Plant (WIPP) project, Wendell Weart has been called many names — the Godfather of WIPP, the Grandfather of WIPP, and Mr. WIPP among them.

For whatever reason, one nickname stuck. It stuck so well, in fact, that former Energy Secretary Hazel O'Leary officially designated Wendell the "Sultan of Salt" in a surprise ceremony in Washington in 1995 (a reference to the salt-bed geology in which the underground waste repository is built).

During another surprise ceremony at Sandia on April 22, the Sultan of Salt received a new, more formal title to go with the informal ones — Sandia Fellow, the highest honor bestowed on a

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Never-tiring robots help dismantle nuclear weapons faster, more safely

Pantex storage building will hum with Labs automation

By Howard Kercheval

Lab News staff

After the euphoric ring of sledgehammer blows on the Berlin Wall echoed away in 1989 and diplomats from the West and the collapsing Soviet Union signed agreements trimming nuclear arsenals, physicists and engineers east and west were left with the daunting task of shifting production smoothly from forward to reverse.

A major challenge was dealing with the bits and pieces left when nuclear weapons were retired and taken apart. Production had occurred steadily over four decades, but suddenly that routine had to be changed as thousands of US weapons were scheduled for dismantlement and began to flow back to the Pantex plant near Amarillo, Texas.

The volume of material was the major issue to be dealt with, but of concern as well was the speed with which some very delicate operations had to be accomplished. Sandia's robotics group began looking for safe ways to handle pits, gas generators, and other components faster than people could, and those robotic work cells designed for specific operations are now at Pantex — two in production use and one in the installation and approval process.

The already installed Automated Gas Generator Disassembly System (AGGDIS) was success-

fully demonstrated at Pantex April 15. Project team members began work two days later tearing down the Weighing and Leak Check System (WALS) equipment in the Albuquerque lab for shipment to Pantex. It will be installed and integrated into the plant's operation, operational procedures will be developed this summer, it will be evaluated by the end of the year, and it should be operational by next summer.

The robotics staff and Pantex engineers did an outstanding job implementing three projects that comprise a significant change in the older processes, says Al Jones, Manager of Manufacturing Systems Dept. 9672.

Gas generators require delicacy

Gas generators, roughly the size and shape of small cans of frozen orange juice concentrate, contain explosive powder which, when detonated, deploys the parachute in a laydown bomb. Disarming and dismantling them is not heavy work, "but they're old so the binder in the powder is degraded and handling them may be a little dicey," says Al. "You want to keep people out of the operation, if possible."

He says the team got a lot of help from Vince Loyola of Explosive Subsystems and Materials Dept. 1552, "who suggested the project and

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Is the IJS on your mind?

Has the Integrated Job Structure got you down? Are you concerned about job criteria or equity in your department? Do you have questions that aren't getting answered?

Ask us. Send any reasonable question about the IJS to the *Lab News*, and we'll sit down with Human Resources Director Don Blanton and Compensation & Job Evaluation Manager Ed Cassidy to get the answers. Then we'll publish your questions and their answers. (Similar questions may be combined.)

Questions must arrive at the *Lab News* office before 4 p.m. Wednesday, May 14. Send them to John German at jdgerma@sandia.gov or MS 0165. Questions should be brief and succinct. We will not publish questions that identify individuals or organizations.

FAA gives thumbs-up to new aircraft repair technique, Delta L-1011 returns to trans-Atlantic service

Composite doublers to help extend the lives of aging aircraft

By John German

Lab News staff

Takeoffs. Landings. Cabin pressurization and depressurization. Rapid temperature changes. Moisture. Turbulence.

Day in and day out, they take their toll on the aluminum structure of a commercial jetliner. Eventually these repeated stresses can cause tiny cracks or internal flaws to form in the fuselage skin, so small they can't be seen with the human eye. Unremedied, the small flaws can spread and grow into larger cracks or other flaws, and most often near stress-magnifying features such as doors and windows.

It's the reason older commercial aircraft often look like quilted patchwork, with multishaped aluminum patches riveted onto the hull in various locations meant to arrest flaws underneath. Because of their rigidity and the need for rivets, however, these plates can, over time, cause other flaws in the skin surrounding the patch.

New patch developed at AANC

On April 22 the Federal Aviation Administration (FAA) gave an improved type of aircraft fuselage patch a thumbs-up and returned a Delta Airlines L-1011 to commercial service. It was the plane's first inspection since a Sandia-led team installed the patch — called a "bonded composite doubler" — in late February to reinforce a corner of the plane's right mid-section access door.

The new repair technique, a substitute for conventional riveted metal patches, is the result of a three-year research and validation project managed by Sandia's FAA Airworthiness Assurance Nondestructive Inspection Validation Center (AANC). The project team included

(Continued on page 4)



NEW REPAIR TECHNIQUE — During a heavy-maintenance visit at Delta Airline's Technical Operations Center in Atlanta in February, this L-1011 was fitted with a new type of fuselage patch called a bonded composite doubler. The doubler was installed near the right-side access door, seen here cloaked behind a plastic tarp. The new technique was developed at Sandia's Airworthiness Assurance Nondestructive Inspection Validation Center.



3 Discover names two Sandia projects as finalists for 1997 innovation awards

5 Special center pullout section — 1996 Employee Recognition Award winners

This & That

Congrats to award winners - Sandia's 1997 Employee Recognition Award winners will be honored at a banquet and ceremony Saturday night (May 10). The *Lab News* congratulates all 101 individual winners and the 19 teams receiving awards; see our special section beginning on page 5.

The *Lab News* staff is proud to be one of the team winners this year. Although the paper and some staffers have received several major national awards in the past few years, we are most proud of this Employee Recognition Team Award because Sandia employees choose the winners, and you are who we're really trying to please.

* * *

Looking for "honor-able" employees and fellows - Speaking of honors and awards, it's only with your help that we can keep the outside awards section of our Accomplishments and Awards page current on our Web sites. If you aren't familiar with this info, look for it on the External Web "About Sandia" page at <http://www.sandia.gov/About.htm> (or <http://www-irn.sandia.gov/awards/a&aman.htm> on the Internal Web).

Sandy Smallwood (12670/80) keeps the information as current as possible on her own, but she often doesn't hear about outside awards that employees receive or when they are named professional fellows. Please don't be shy. If you or a Sandian you know gets a suitable honor, send that information to Sandy (sksmall@sandia.gov) or MS 0129. The *Lab News* also wants to recognize new fellows and award winners, so send us the same info; contact Bill Murphy at wtmurph@sandia.gov or MS 0165.

* * *

Retiree mailings - In response to a retiree who says it often takes 10 days or more to get his *Lab News* in the mail: We're very sorry, but we're at the mercy of the Postal Service and a tight budget. Most Albuquerque-area retirees get the paper within a day or two, but we know folks elsewhere often don't get it nearly that soon. The *Lab News* almost always goes into the mail the day it's printed, but it's mailed third class (bulk rate). Our budget simply won't allow us to mail the paper to our more-than 4,300 Sandia retirees any other way. We wish this weren't the case, but it's the best we can do with the money we have. It may be aged news or recent history when you get it, but we hope you enjoy reading it nevertheless.

* * *

On the move again - As the "Sandia shuffle" continues to fill some voids resulting from our latest downsizing, I'm taking on some more duties and transferring into what's now Employee Communications & Media Relations Dept. 12640 (these were separate departments not long ago, and I've worked in both areas previously). I'll continue serving as Sandia's External Webmaster and writing this column for now, but I'll also be getting some new writing and media relations duties. This will involve my being a Labs spokesman on some issues - a thought that may cause some members of upper management to reach for their antacid tablets. The great thing about changing duties as often as I do is that I never actually have to complete anything on my performance management form; I just say I've moved on to other, more important things.

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

Sandia joins Lockheed Martin in first nationwide Space Day May 22

Robotic vehicles, rockets, and a special presentation by Sandia's resident astronaut, Col. Sid Gutierrez (2527), are among the attractions at the National Atomic Museum on Thursday, May 22, as the Labs joins in the nation's first observance of Space Day.

Sandia Space Day organizer Virginia Salazar (12660) says the event is a chance to focus on the Labs' and Lockheed Martin's contributions over the years to the US space program.



Nationally, the observance calls attention to the contributions the scientific exploration of space have made to human problems, and to educating children ages 7 to 14 in math and science. Lockheed Martin is a national sponsor of the event along with the National Science Teachers Association, the Space Policy Institute of George Washington University, the Challenger Center for Space Science Education, and others. Lockheed Martin facilities nationwide are participating.

Kennedy's challenge

National organizers intend for Space Day to be an annual event.

This year's event focuses on President John F. Kennedy's call on May 25, 1961, to land an American on the moon.



SID GUTIERREZ

Sid, a veteran of two US shuttle missions and a Sandia manager, will speak at 11 a.m. in the Museum theater about how Kennedy's challenge influenced his decision to pursue a career as an astronaut. Sid will sign autographs

after the presentation.

Other Space Day attractions at the Museum include:

- Star Lab, a portable planetarium on loan from the Space Center in Alamogordo, 10 a.m.-2:30 p.m.
- Presentations about star maps and the phases of the moon by the Space Center's Ken Hitchcock, 10 a.m.-2:30 p.m.
- Aspirin-bottle rocket propulsion demonstration in west parking lot by National Atomic Museum Director Jim Walther (12660), 12:30 p.m.
- Albuquerque Rocket Society exhibit and information, 10 a.m.-2:30 p.m.
- Young Astronaut Club exhibit and demonstration of the club's crystal growing experiment to be conducted on an upcoming US space mission, 10 a.m.-2:30 p.m.
- Demonstrations of robotic vehicles for space exploration by members of Sandia's Robotic Vehicle Range staff, 10 a.m.-2:30 p.m.
- Tours of space-related exhibits at the National Atomic Museum, 10:30 a.m. and 1:30 p.m.
- Movie: *Blue Planet*, a 45-minute video illustrating the forces affecting Earth's fragile ecological balance, 1 p.m.
- Space Stuff: A hands-on game for kids, 10:15 a.m.

Bruce Fetzer (12680) says event organizers hope the youth-oriented attractions will draw participation from local schools. "Our hope, and the primary goal of the national Space Day event, is to motivate young people in our communities to pursue careers in math and science," he says. Sandians and their families are invited.

More information about the national Space Day observance can be found on the World Wide Web at <http://www.spaceday.com>. The site includes an electronic field trip, classroom activity kits, a list of 101 things to do on Space Day, and other educational resources.

-John German

Ride your bike to work May 20

For the second year in a row, the Sandia Bicycle Commuters Group (SBCG) is promoting Bike-to-Work Day on Kirtland Air Force Base.

Bike-to-Work Day is a national event each year on the third Tuesday of May, which is May 20 this year. Last year, 300 Sandia, DOE, and

KAFB people rode to work that day. This year, the goal is double that. To achieve the goal, SBCG is encouraging regular commuters, infrequent commuters, and recreational cyclists to arrange their schedules so that riding that day is accommodated. Don't forget the bus and bike combination (all SunTran buses have bike racks) as an assist if the ride seems too long.

(Don't forget to pick up your KAFB Bicycle Pass at the Badge Office in Bldg. 800 prior to May 20 if you don't have one; you must show a pass to ride onto Base. To get a pass, you need a Sandia badge.)

The SBCG, Commuter Assistance Office (844-4608), and the SERP Office (844-8486) collaborate to provide resources that enable successful bike commuting: City of Albuquerque Bike Maps and brochures titled "How to Commute by Bicycle" are available at the SERP office, Bldg. 832 East, Bldg. 861 (cafeteria), Bldg. 880 central common area, and Bldg. 822 breezeway.

SBCG has a Web site at www-irn.sandia.gov/organization/div4000/ctr4600/bicycle/sba.html for general information on bike route corridors to/from the Base. If you want specific help selecting a travel route, call Frank Bouchier (845-8382) for San Mateo/Carlisle vicinity bike routes, Ralph Wrons (275-0856, 844-0601) for Wyoming/Louisiana vicinity, Keith Bauer (299-0640 or 844-2406) for Eubank/Morris vicinity, and Gail Ryba (292-4873 or 844-1802) for Juan Tabo/Tramway vicinity.

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Ken Frazier, Editor505/844-6210
Barry Schrader, California site contact510/294-2447
Lab News fax505/844-0645

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LOCKHEED MARTIN

Tritium Research Laboratory transition to CRDL wins pollution prevention honor from DOE

Award recognizes process for delivering an outstanding return on investment

By Nancy Garcia

California reporter

DOE has awarded Sandia a Pollution Prevention Award for saving \$106.3 million by turning the former Tritium Research Laboratory into a general purpose laboratory.

Sandia delivered a 500 percent return on the \$20.9 million spent for the transition. The award, announced on Earth Day, will be presented Aug. 27 at the DOE Pollution Prevention Conference in Atlanta. This is the first time Sandia has won in the "Return on Investment" category; six other DOE labs picked up awards in 14 other categories during the annual national competition.

Instead of decommissioning and disposing of the laboratory building and equipment, Sandia, with DOE support, put the building to use as a non-nuclear facility. The award application described the accomplishment as "turning a liability into an asset."

Completed in four years — three years ahead of schedule — and \$5 million under budget, the transition saved DOE costs for building replacement, equipment purchase, waste disposal, and project administration (since completely disposing of the building and equipment would have taken nine years as opposed to the four-year transition process). The transition avoided low-level waste disposal costs of \$24.9 million for 30 million pounds of material (enough to fill 762 trucks). Reused equipment, sent to other DOE labs, has a \$43 million replacement value.

Completed in 1975 and operated as a nuclear facility from 1977 until 1994, the facility now houses Sandia's Chemical and Radiation Detection Laboratory. Cleaning up and reusing the building was seen as a valuable investment and good stewardship of taxpayer dollars, Sandia executives said during a rededication ceremony last fall.

The core team recognized by the DOE

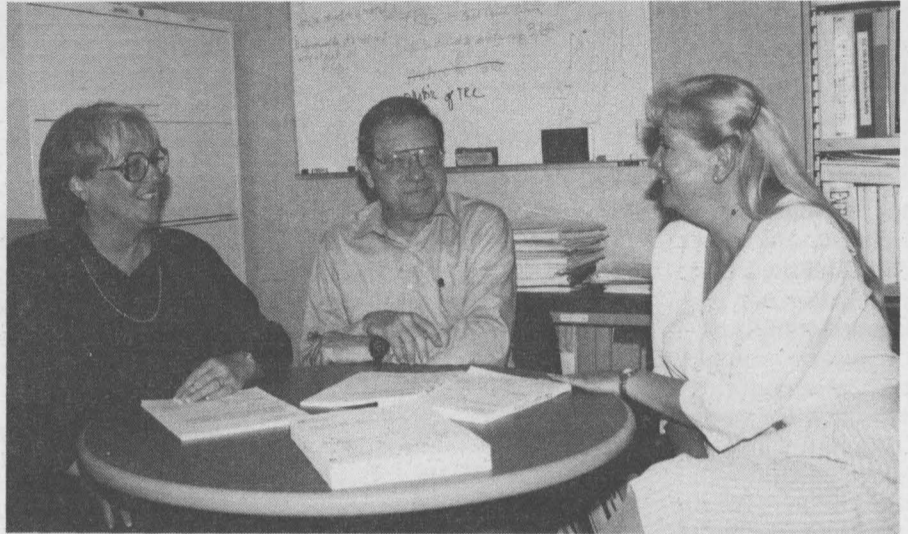
includes Reutilization Project Leader Alice Johnson (8346), Danny Dominguez (8515), Toff Garcia (8421), Gerry Giovancchini (8346), Blake MacDonald (8511), Doug Miller (8511), Tom Gorman of Ri-Tech, Charlie Laguer of KMI, and Barbara Larsen of SAIC.

In addition to avoiding disposal costs and allowing reuse of the building, says Alice, the unprecedented process was documented as a model for similar facility closures. She added that nonmonetary benefits included an outstanding safety record. The process brought the site's inventory of tritium (a radioactive isotope of hydrogen) to zero, with a steady decrease in already-low stack emissions and personnel exposure.

Mike Zamorski of DOE's Kirtland Area Office called the process "an outstanding example of what DOE and Sandia have been able to accomplish together." The process was conducted in coordination with the Environmental Protection Agency, Cal EPA, the state Department of Health Services, and the City of Livermore.

Jim Bartel, Manager of Environmental Operations Dept. 8418 at Sandia/California, notes that the award is one example of Sandia's ongoing efforts in pollution prevention.

The site has already met all applicable waste-



SEEING GREEN — Sally Raubfogel (8418, left), Jim Bartel (8418), and Alice Johnson (8346) confer in Jim's office about the rewards and cost savings of Sandia's pollution prevention efforts.

reduction goals for 1999 that were set in May 1996 by then-Secretary of Energy Hazel O'Leary, said Pollution Prevention Coordinator Sally Raubfogel (8418). The goals were to:

- Reduce by 50 percent the generation of radioactive waste.
- Reduce by 50 percent the generation of low-level mixed waste.
- Reduce by 50 percent the generation of hazardous waste.
- Reduce by 33 percent the generation of sanitary waste.

Sally says the site's staff is voluntarily trying to reduce wastes even further.

Discover magazine names Sandian, Solar Two 1997 finalists for technological innovation

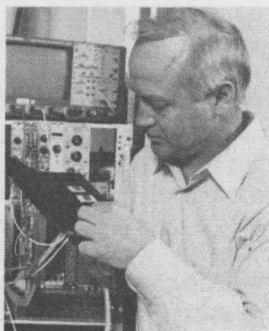
A radiation detector the size of a wristwatch with a new kind of crystal and a camera that images and identifies radiation sources, operating at a fraction of its former size, is a finalist in *Discover* magazine's 1997 Awards for Technological Innovation.

The detector, developed at Sandia for applications ranging from detection of smuggled nuclear material to better medical imaging for more precise cancer treatment, is one of 35 finalists to compete for eight technological innovation awards. A second

finalist, the Solar Two plant now operated by a consortium led by Southern California Edison, also represents important technical contributions by Sandia. Finalists were announced April 23, the final day of National Science and Technology Week, by *Discover* Editor-in-Chief Paul Hoffman at the Smithsonian Institution.

The 35 finalists were selected from 4,000 applicants worldwide. Winners will be announced May 31 at Disney's Epcot Center, where the detector technology will also be exhibited from May 30 through June 10. The awards, now in their eighth year, will be featured in the July issue of the 1.2 million-circulation monthly magazine.

Developed by a group led by Ralph James (8230), the compact detectors sense gamma ray emissions. This radiation can serve as a signature for stored nuclear materials and waste, valuable



RALPH JAMES

mineral deposits, or cancerous tumors labeled with a radioactive marker. Until recently, spotting the rays required bulky and expensive cryogenic devices. One solution is to find a way to grow large, flawless crystals of cadmium zinc telluride (CZT). These novel semiconductors emit a tiny electronic signal when hit by gamma rays. CZT detectors are already standing guard over dismantled atomic weapons, and cancer-detection applications could be next.

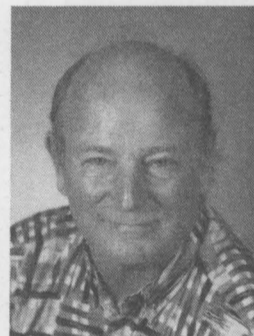
"We are proud to have this recognition for a research and development effort that exemplifies our mission to enhance national security," says California Laboratory Div. 8000 VP Tom Hunter. "Ralph's work is an example of the way Sandia creates technological solutions for pressing problems such as providing protection for nuclear materials," he says. "These innovations also have the potential to address important needs in our society, such as enhanced environmental monitoring and improved medical evaluation and treatment."

Sandians are also represented by a finalist in the "environment" category. The sun provides plenty of energy — but it isn't easy to harness. The Solar Two power plant does it with 2,000 giant, computer-aimed mirrors that follow the sun and reflect its rays onto pipes full of molten salt. The hot salt, which can retain most of its heat for 12 hours after sundown, then produces steam to drive turbines, generating electricity for 10,000 homes. The pilot plant is a warm-up for a much larger commercial plant down the road.

Sandia "has led the effort in the development of molten-salt technology," says Mike Prairie (6216). "Solar Two's use of the molten-salt system will show that this technology is capable of being commercialized."

— Nancy Garcia

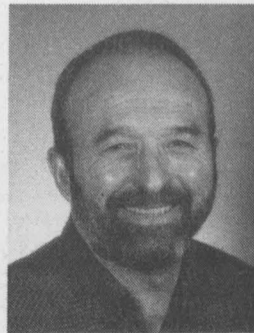
Recent Retirees



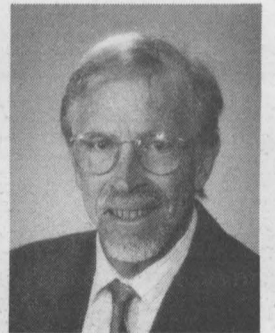
Jim Gibson 31
2211



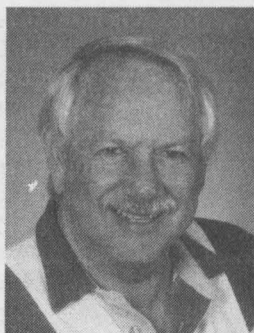
Joan Madsen 37
2221



Bill Peila 36
8411



Jack Swearingen 26
8419



Johnny Allen 31
8532



Ginger Common 31
8700

Aircraft patch

(Continued from page 1)

investigators from Delta, the FAA, Textron Systems Division (a composite materials manufacturer), and Lockheed Martin Corp. (the L-1011 model was built by Lockheed in the early '70s).

Sandians Dennis Roach, Phil Walkington, and Darin Graf (all of Airworthiness Assurance Dept. 9752) led the engineering project, the key results of which include FAA approval for the doubler technology in December 1996 and the first installation of a bonded composite doubler on a commercial aircraft this February. The new technique should provide significant improvements in the way commercial aircraft are maintained.

The FAA sponsored the work as part of a program to extend the service lives of aging commercial aircraft. "Most of the 5,000-plus aircraft in the US commercial fleet were designed for a 20-year life span," says Dennis. "Because the costs of new aircraft are so high, airlines are seeking new methods to safely extend the lives of their fleets."

Almost daily since the doubler's installation, the 250-passenger Delta jetliner had been flying a trans-Atlantic route — with stops in New York, France, England, and The Netherlands. The April 22 inspection showed that no flaws had formed in the Sandia-installed doubler after more than 45 days of flight.

"Because the costs of new aircraft are so high, airlines are seeking new methods to safely extend the lives of their fleets."

Accolades for AANC team

On April 9, *Aviation Week & Space Technology* presented its 40th annual Aerospace Laurels selections, honoring individuals and teams who made substantial contributions to the field of aerospace during 1996.

Among the 1996 laureates were Bill Shurtleff (9752), Hans Weber (Weber Technologies), and Chris Seher (FAA).

The award citation reads: "... for their contributions to aging-aircraft research through establishment of the Sandia National Laboratories' Airworthiness Assurance Nondestructive Inspection Validation Center in Albuquerque, N.M. The center has served as a bridge between the aviation industry and a dozen universities working on FAA research grants."

Honorees were selected from nominations by *Aviation Week* editors.

Validation of composite doubler repair technique

Prior to installation of a bonded composite doubler on the Delta airliner, Sandia had to demonstrate that such doublers could withstand the worst of flight and aircraft damage environments, "plus some," says Dennis Roach.

To establish fatigue, stress, and damage tolerance limits for the doublers, assorted aircraft structures with doublers attached were subjected to crack, flaw, and disjoint stresses; hot and wet conditions; fatigue tests; ball bearing impacts; and other harsh-environment tests.

In addition, fuselage tests were performed to simulate flight conditions, which required the design of a biaxial aircraft test facility to simultaneously apply cabin pressure and axial loads to large fuselage structures. An L-1011 fuselage section cut from a retired aircraft, with a door corner composite doubler installed, was tested extensively in the new Sandia facility. Tom Rice (a former Sandian in Dept. 9741) helped develop the fuselage test capability.

"We demonstrated composite doubler performance in worst-case flaw scenarios," he says. "The doublers' stress-to-failure limits were twice what FAA required — they have

tremendous damage tolerance."

Computer models also were developed for enhanced study of future doubler designs.

In addition, a variety of nondestructive inspection (NDI) techniques had to be certified — including ultrasonic, eddy current, and X-ray inspection techniques — so airlines installing the doublers would be able to detect crack growth, disbonds, or delaminations over time. Sandia developed inspection procedures, which have been integrated into industry-approved maintenance practices, and introduced a scanning ultrasonic technology for composite inspections.

Numerous sample doublers were installed on retired aircraft parts as dry runs, and detailed installation procedures were developed. Sandia is providing the comprehensive documentation package necessary to offer the technology to private industry.

The FAA certified the bonded composite doubler technique for L-1011 door corner reinforcement in December 1996, allowing the technique to be installed on the first Delta L-1011 in February.

Multilayer laminate adds strength

The problem with riveted metal plates, says Dennis, lies in their rigidity and method of attachment. A repair that is too stiff may result in increased fatigue, continued growth of the crack being repaired, and initiation of new flaws on the skin surrounding the patch due to magnified stresses there. Metal patches can trap moisture and cause corrosion. The rivets themselves can cause new flaws to form as well, leading to additional aircraft maintenance.

"Despite the aviation industry's acknowledgment of the difficulties associated with riveted metal patches, they have been the primary method of fuselage repair since the advent of the airplane," he says.

The new bonded composite doubler technique makes use of a fiber-reinforced composite material that can be adhered to the aircraft's surface. Produced as a thin tape, the material comprises strong, parallel boron fibers enmeshed in epoxy.

When an aircraft comes in for a maintenance visit, airline workers strip, clean, and prepare the aluminum surface in the area of a flaw. Then layers of the tape are cut to fit the repair area and are applied with an adhesive, forming a multilayer laminate. Heat and pressure are applied to ensure adhesion to the aircraft's surface.

The finished doubler is a fraction of an inch thick (each ply is 0.006-in. thick) and can be three times stronger than a typical riveted aluminum patch of comparable thickness.

"The bonded composite doublers can provide a number of engineering and economic benefits that riveted metal patches cannot," says Dennis.

With a composite doubler, says Dennis, stress

load transfer occurs gradually by shear through the adhesive layer, creating a more uniform stress field than with riveted metal patches. Also, because of the composite tape's parallel boron fiber orientation, each layer of tape is strongest in one direction — parallel to the fibers. By orienting successive plies 0, 45, or 90 degrees from a crack's orientation, for instance, a composite doubler can be designed with a directional strength optimized for a particular repair.

Composite doublers also are corro-

sion resistant and lightweight and can be readily formed into complex shapes, which permits the repair of irregular components (such as doors and wing joints) without machining.

Technique saves time, money

The L-1011 doubler installation required only 250 person-hours as opposed to the 600 hours typically required to reinforce an L-1011 door corner with conventional metal repair techniques.

Using bonded composite doublers, most common repairs could be completed in less than 12 hours — overnight — which is perhaps the greatest advantage of the new technique, Dennis says. Each day a commercial aircraft is grounded can cost an airline \$80,000 or more.

According to a preliminary Sandia cost-benefit analysis, door corner repairs on Delta's fleet of approximately 55 L-1011's could save the company more than half a million dollars. When all types of repairs are considered for all 727, 737, and DC-9 aircraft (among the oldest aircraft in the US commercial fleet), the airline industry could save millions using composite doublers, he says.

The composite doubler technique — now certified for door corner reinforcement on all L-1011 aircraft — underwent an intensive validation and flight-certification procedure prior to its installation on the Delta airliner. A variety of novel nondestructive inspection (NDI) techniques were certified as well so the doubler's long-term integrity can be verified. (See "Validation of composite doubler repair technique" above.)

Door corner the first of many

The Delta L-1011 installation and flight testing is part of the proof-of-concept phase of the project. The April 22 inspection was the first in a series of special Delta/FAA inspections set up to ensure the doubler's performance over time.

With the successful completion of the L-1011 door corner application, says Pete Versage, project manager at the FAA's Technical Center, Sandia and the FAA are now seeking to develop and certify a more generic set of applications for a variety of common aircraft repairs, including fuselage joint, landing gear bay, and cargo door repairs.

"The use of composite materials and processes, for many repairs, reduces labor hours and overall costs as compared to metal repairs," says Versage. "In addition, the L-1011 was a very complex application, as compared to most repairs, and serves to emphasize the feasibility of composite doubler repairs for metal aircraft structures."

"Certifying and testing the L-1011 door reinforcement is a huge step toward industry acceptance of this type of repair," he adds.

"Air transportation is critical to the US economy," adds Dennis. "Airline passengers want safe and reliable transportation at a reasonable price. The aviation industry and FAA are continually seeking improved technologies and processes that enhance aircraft safety."



FINISHED PRODUCT — Dennis Roach inspects the L-1011 composite door corner reinforcement prior to application of the Delta paint scheme in February. Edges of the doubler's plies can be seen tapering toward the center. Each successive ply is cut slightly smaller than the last, which helps prevent delamination.

More than 100 Sandians, 19 teams to be honored at 'Recognition Night 1997' festivities on May 10

Employee recognition process introduced at Sandia by Lockheed Martin now in its fourth year

For the fourth consecutive year, more than 100 Sandians — individuals and team representatives — will be honored during the Employee Recognition Awards ceremony. The May 10 "Recognition Night 1997" festivities at the Albuquerque Marriott hotel will include a reception and formal dinner as well as presentation of the awards.

The ceremony honors 101 individuals and 19 teams for outstanding services rendered to Sandia and the nation during FY96.

The Sandia Employee Recognition Awards program commends superior results in four general categories for individuals and — new this year — two categories specifically for teams. For individuals, the categories are: exceptional service; teamwork; technical excellence; and leadership. For teams, the categories are business/operational excellence and technical excellence.

The nomination categories are consistent with the Lockheed Martin employee awards program, NOVA. Drawing from the pool of Employee Recognition Award recipients, Sandia's executive management will submit Sandia's nominees for consideration for the NOVA award. The 1997 NOVA recipients will attend a Lockheed Martin corporate celebration later this year.

During the awards dinner, Labs President and Director C. Paul Robinson and Executive VP John Crawford will present each honoree with a pin symbolizing the award, as well as a framed



Employee Recognition

certificate of recognition. The individual recipients are pictured on these pages. [Not pictured: Bruce Hendrickson (9226), William Stygar (9577), and Mark Washington (7435)]

A complete list of team winners, team member names and team citations appears on page 8. Also included are photographs of several of the recognized teams, emblematic of all 19 teams honored this year.

'The engine of progress'

In an introductory note in the awards ceremony printed program, Paul says the occasion provides an opportunity to "recognize significant achievements at Sandia by honoring the men and women whose personal accomplishments are the engine of progress" at the Labs.

"Your achievements," Paul continues, "are an example of Mission Success and exemplify the words of Harry Truman, for Sandia to provide 'exceptional service in the national interest.'"

Lockheed Martin Energy and Environment Sector President and former Labs Director Al Narath, scheduled to be a special guest at Recognition Night 1997, says the excellent quality of work by award recipients "demonstrates why Sandia is recognized by many as the best of the

national laboratories."

Narath says the excellence exemplified by the award recipients encompasses the entire spectrum of work conducted at the Labs, from basic science and research, to solutions to engineering problems, quality improvements, administrative support, and management processes.

Noting that many husbands and wives of award recipients will attend Recognition Night 1997, Narath says spouses deserve a very special commendation from the Labs and Lockheed Martin.

"When someone goes above and beyond the call of duty in the workplace, you can be sure that they have received extraordinary support and understanding at home," Narath says. "Success is always a team effort, and is due as much to what occurs behind the scenes at home as in the workplace."

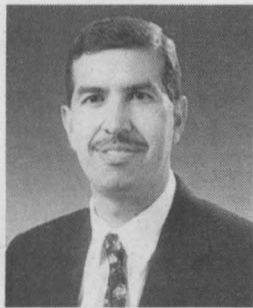
In addition to Narath, other special guests at Recognition Night 1997 include Jim Tegenelia, President of Lockheed Martin Advanced Environmental Systems Inc.; Everet Beckner, Vice President, Lockheed Martin E & E Sector; Jerry Langheim, Vice President, Lockheed Martin E & E Sector; and David Geary, DOE/AL Director of Public Affairs.

The annual awards event is organized by Public Relations and Communications Center 12600 and Human Resources Division 3000. The corporate selection committees, which review nominees within similar classifications, are composed of a diverse set of Sandia employees.

"Success is always a team effort, and is due as much to what occurs behind the scenes at home as in the workplace."



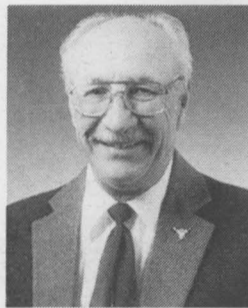
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Henry Abeyta
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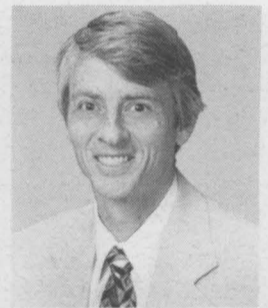
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Abel Anaya Jr.
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Anthony Aragon
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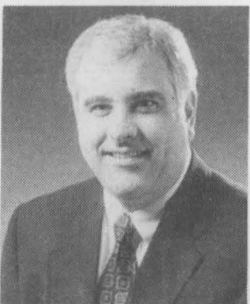
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Carole Barron
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James Blankenship
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Grant Bloom
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William Bonivert
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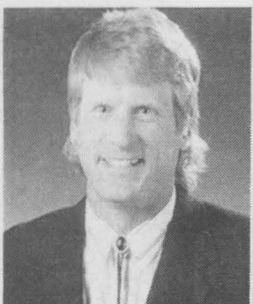
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Tamara Brandon
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Nanette Briscoe
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Eric Burns
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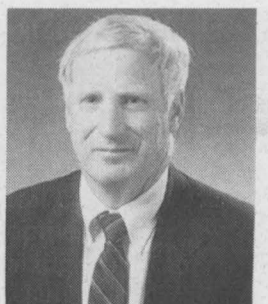
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Robert Chambers
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Yolanda Chavez
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Christopher Cherry
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Tze Yao Chu
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Lorraine Clayburn
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Donald Coates
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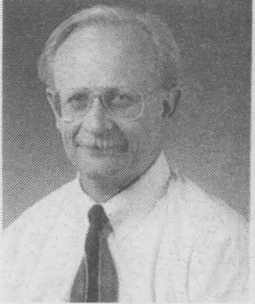
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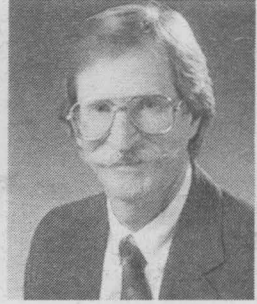
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Vadare Cornelison
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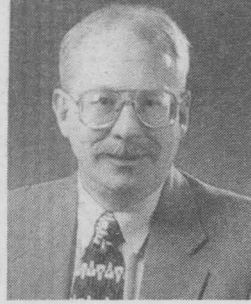
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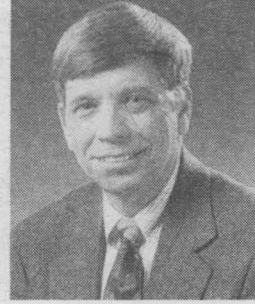
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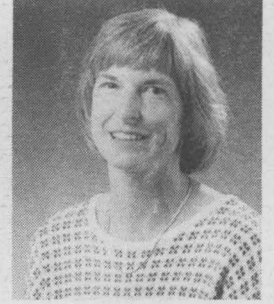
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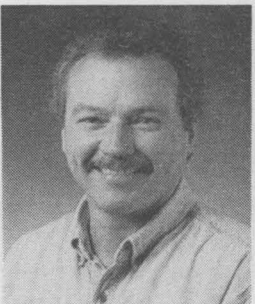
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Larry Ellis
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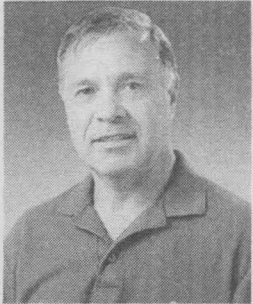
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David Faucett
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Gary Ferguson
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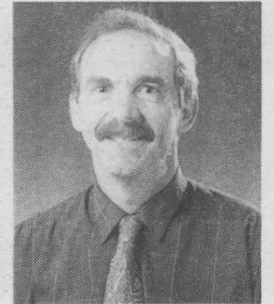
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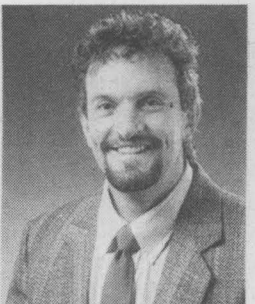
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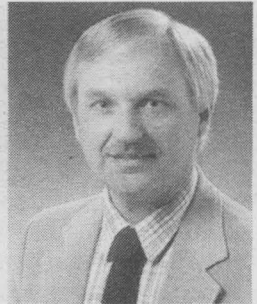
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Donnie Glidewell
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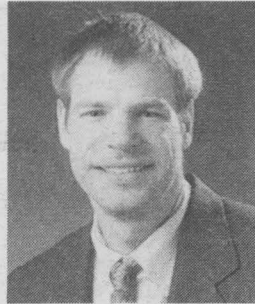
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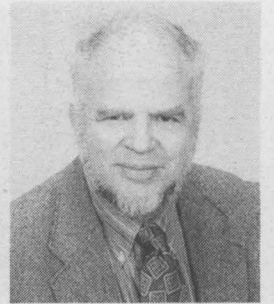
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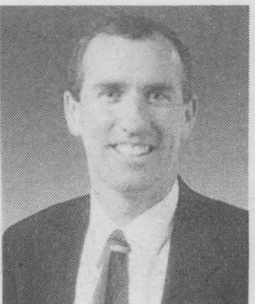
Employee Recognition



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John Hamilton
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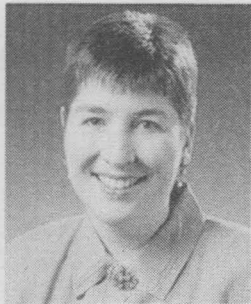
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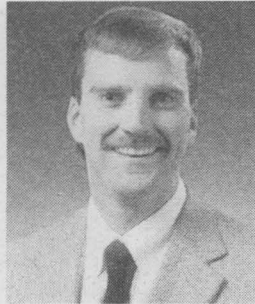
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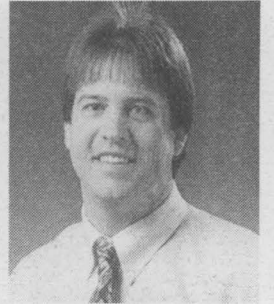
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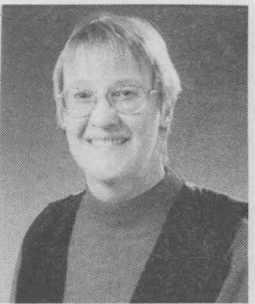
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James Hughes
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Richard Hunt
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Linda Hurley
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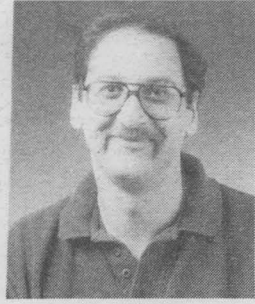
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Ralph Keyser
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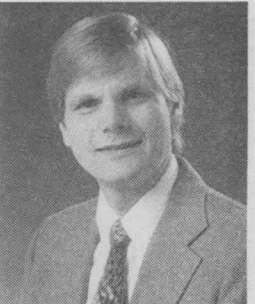
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Paul Klarer
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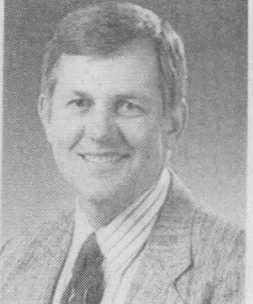
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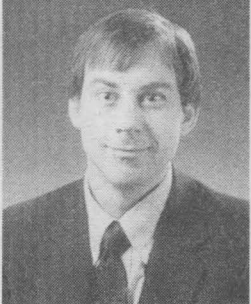
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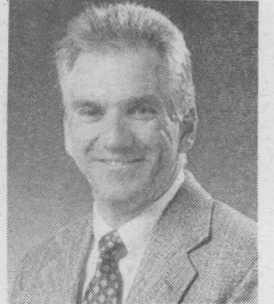
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Kent Meeks
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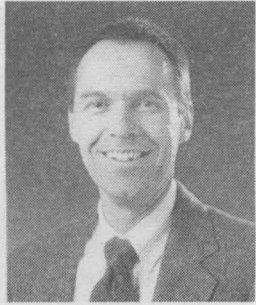
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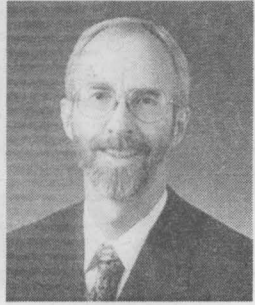
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Daniel Nelson
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Patricia Newman
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J. Alan Nichelason
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William Norris
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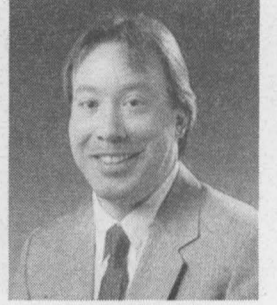
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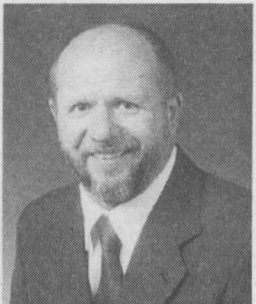
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Michael Pasik
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Steve Passman
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James Paustian
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Sheila Pounds
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Thomas Pratt
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Brett Remund
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Anita Renlund
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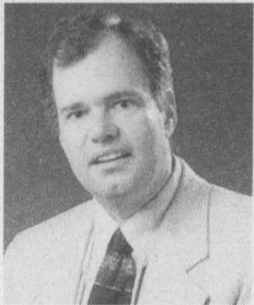
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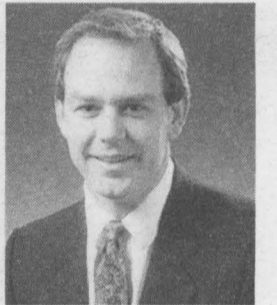
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Employee Recognition



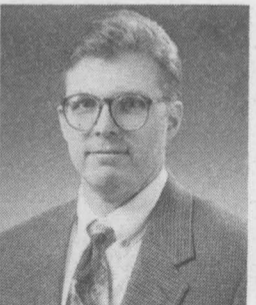
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James Riley
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Edward Roberts
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Joseph Roesch
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Eric Rohlfing
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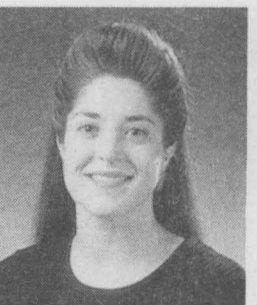
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Joseph Salazar
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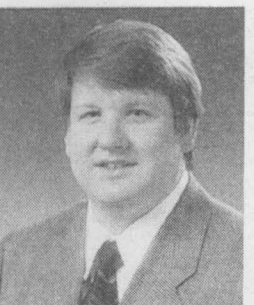
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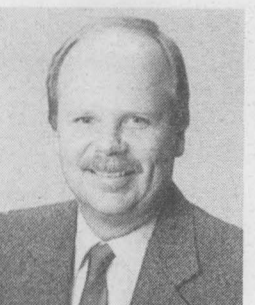
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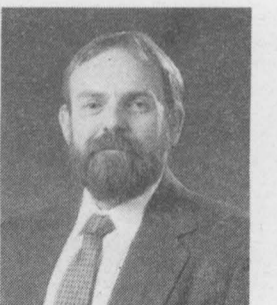
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Duane Sunnarborg
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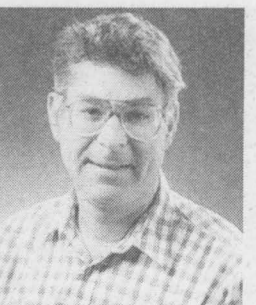
Lisa Trainor
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David Van Ornum
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Timothy Vargo
2665



Jonathan Weiss
1231



Robert Whiteside
8920



Brenda Wickham
14302



Eva Wilcox
14000



Sherry Wright
5521

Nineteen Sandia teams win Employee Recognition Awards for accomplishments in technical and administrative areas

Teams and individuals eligible for Lockheed Martin NOVA awards program

Here is the list of 1997 Employee Recognition Award team winners. Each team was to send a representative to the "Recognition Night 97" ceremony on May 10 at the Albuquerque Marriott hotel.

The Cobra Brass Development Team

For technical excellence bringing the Cobra Brass system to fruition within the time and funding constraints of the project.



The Cobra Brass Team

The Nonnuclear Reconfiguration Occupancy Team

For providing outstanding customer support during Neutron Generator Facility occupancy and consistently providing rapid response to dynamic, evolving customer requirements.

The Team for the Atmospheric Radiation Measurement Unmanned Aerospace Vehicle

For technical excellence, personal sacrifice, and dedication completing three remote flight series in FY96.



The Team for the Atmospheric Radiation Measurement Unmanned Aerospace Vehicle

The Team for the National Atomic Museum Weapons Display Area Renovation

For exceptional teamwork renovating the museum's weapons display area and significantly enhancing the museum's mission to educate the public on the history of the atomic age.

The BIOS Paperless Part Fabrication Team

For business/operational excellence designing, analyzing, manufacturing, and inspecting BIOS flight vehicle parts in a paperless environment.



The BIOS Paperless Part Fabrication Team

The Contamination Free Manufacturing Research Center Team

For technical excellence making Sandia an industry-wide, recognized pioneer in ultra-clean technology for integrated circuits.



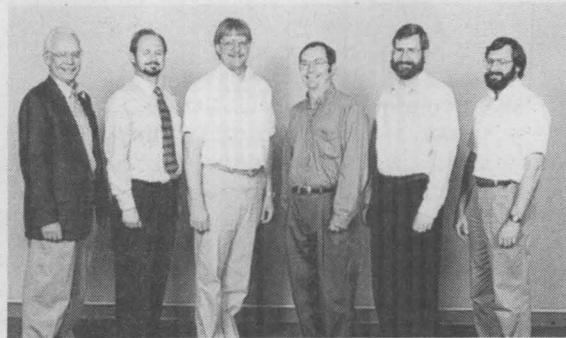
Team Recognition

Corrective Action Management Unit Team

For exceptional teamwork successfully implementing a potentially controversial waste management strategy that will save significant time and money.

The MC4507/MC4515 Lightning Arrestor Connectors Team

For technical excellence successfully achieving technology transfer and WR production of lightning arrestor connectors to meet schedule and satisfy all reliability and nuclear safety requirements.



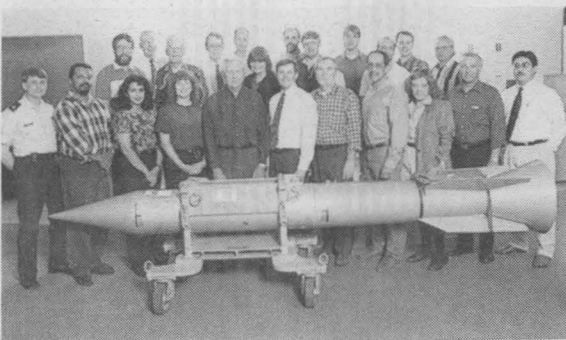
The MC4507/MC4515 Lightning Arrestor Connectors Team

The FY97 Spend Plan Tool Development Team

For recognizing the outstanding application of quality principles and teamwork between the CFO and CIO, California and New Mexico Sites, in support of electronic commerce.

The B61-11 Development Program Team

For technical excellence supporting and contributing to the B61-11 Development Program.



The B61-11 Development Program Team

The SAASM Team

For technical excellence and teamwork leading to the successful delivery of the Key Data Processor for the Global Positioning System Selective Availability/Anti-Spoofing Module.

The Team for the Sandia Workforce Realignment FY96

For successfully planning and administering Sandia's first Lab-wide workforce alignment activity.

The Team for Advanced Vertical Cavity Surface-Emitting Laser Development

For technical excellence making significant advances in the efficiency, wavelength, and modulation bandwidth of vertical cavity surface-emitting lasers.

The Microelectronic Development Laboratory Facilities Team

For contributions to the Microelectronics Development Laboratory Conservation Program, which has reduced the overall Sandia annual water usage by approximately 12 percent.



The MDL Facilities Team

The Explosives Detection Portal Team

For technical excellence developing a walk-through trace detection portal for contraband explosives.

The STARS MDT-II Digital Signal Processor & Thrust Vector Control Tiger Team

For technical excellence contributing to the mission success of the ODES PBV on STARS MDT-II.



The STARS MDT-II Digital Signal Processor & Thrust Vector Control Tiger Team

The Crystalline Silicotitanate Development for Radioactive Waste Cleanup Team

For technical excellence commercializing crystalline silicotitanate that provided a timely and cost-effective solution to the critical national need for the cleanup of nuclear waste sites.

The Do-It-Now Maintenance Team

For their proactive approach that anticipates the needs of the customer and tailors work efforts to customer requirements.



The Do-It-Now Maintenance Team

The Lab News Production Team

For the team's impressive reputation in the field of employee communications.



Sandia fellow

(Continued from page 1)

Sandia scientist. Only two people before him have achieved the distinction: renowned mathematician and cryptographer Gus Simmons (ret.) and shock physics expert Walt Herrmann (ret.).

Wendell was nominated by Joan Woodard, VP-6000, and members of Sandia's Quality Leadership Council and appointed by Labs President C. Paul Robinson.

"Throughout his career of more than 35 years," wrote Joan in her nomination letter, "Wendell has made pioneering scientific contributions and has developed an extensive national and international reputation in the scientific basis for geologic disposal of nuclear waste and containment of underground nuclear explosions. He . . . is known throughout the international nuclear waste disposal community as a premier scientific expert."

He will continue to serve as senior science advisor in Energy and Environment Div. 6000.

"Paul told me the people who nominated and selected me thought I exemplified the criteria a Sandia fellow should meet, so to keep doing what I've been doing," Wendell says.

Milliseconds to millennia

Wendell came to Sandia in 1959 as a PhD candidate from the University of Wisconsin. Although he hadn't yet finished his dissertation, the young geophysicist was eager to begin work when Sandia recruiters approached him, offering to support the completion of his dissertation if he would hire on immediately. He agreed and joined the field testing organization as a staff member in August.

He spent much of his early Sandia days at the Nevada Test Site (NTS), studying ground motion and finding ways to contain the radioactive emissions resulting from a new breed of experimentation — underground nuclear tests — as the world's nuclear powers sought to comply with their self-imposed ban on atmospheric blasts.

From the mid 1960s until underground testing was discontinued, he chaired the Ground Motion Evaluation Committee for DOE's Nevada Operations Office, which was responsible for pre-

dicting seismic motion and assuring the safety of structures in nearby communities, including high-rise buildings in Las Vegas, Nev. In 1969, Wendell was named supervisor of Sandia's Underground Physics Division.

He first heard of the WIPP project, then named the Radioactive Waste Disposal Pilot Plant, in 1974. Oak Ridge Laboratory was proposing a repository site in southeastern New Mexico for long-term storage of radioactive by-products of the nation's nuclear work. Wendell was asked to serve as a technical advisor on Gov. Bruce King's state advisory committee on the site.

One year later, when Sandia took over the salt-bed repository project from Oak Ridge, Wendell seemed the most obvious person to lead the project. He was appointed manager of Sandia's Nuclear Waste Technology Department.

He likes to say his focus changed from "milliseconds to millennia" at this career juncture. "At NTS," he says, "we dealt with how to contain radioactivity in the fractions of seconds following a nuclear detonation. With WIPP the focus was on containing radioactivity for thousands of years."

Six years became two decades

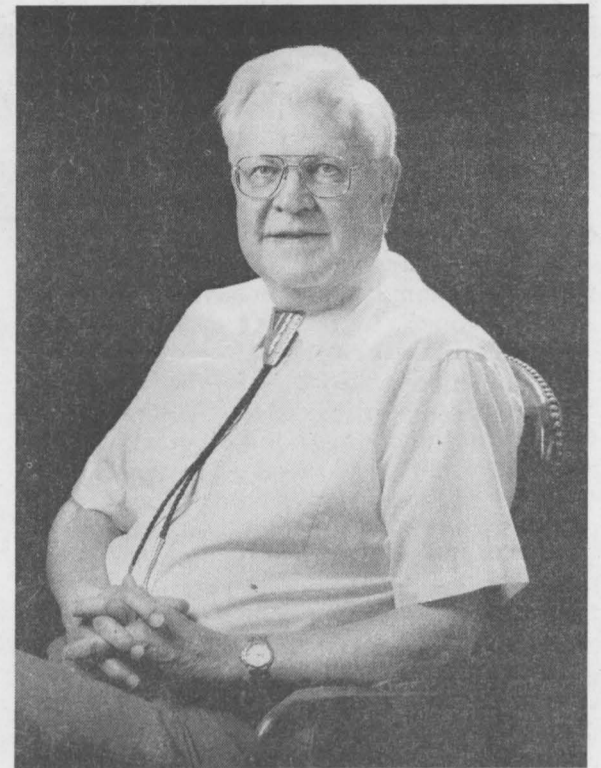
"In 1975 we thought WIPP was going to be an exciting and relatively brief interlude for Sandia — a six-year project at most," says Wendell. "It didn't quite work out that way."

When Sandia geoscientists examined the repository site proposed by Oak Ridge, they found that it wasn't adequate geologically. A new site would have to be chosen. In addition, preliminary studies showed the facility's original design wasn't appropriate, and Sandia engineers began to draw up new plans.

Above all, the regulatory scenario was changing, and it wasn't clear against what criteria the facility's compliance would ultimately be measured. Those uncertainties, several mission changes for the facility, a lot of political maneuvering, and an ever-changing list of regulatory hurdles began to delay the facility's opening.

"Scientifically, we knew we could open and operate a repository safely," he says. "What frustrated us was that the additional regulations weren't adding significantly to safety — although they were perhaps important in assuring public confidence."

Early on, WIPP attracted the interest and ire



SANDIA FELLOW WENDELL WEART

of antinuclear groups, and Wendell's focus expanded. In addition to being a scientist and manager, he now began to play the role of educator. His duties included explaining WIPP (and radioactivity) "to nearly every community in southeastern New Mexico," he says, and to groups as large as 100 and as small as two.

He says his goal was always to live up to Sandia's reputation as "a credible developer of scientific fact . . . We always presented it forthrightly to the communities." That, he says, has helped WIPP earn the distinction of being the only proposed repository in the nation that enjoys widespread support from its host communities.

Key spokesman for WIPP

In 1992, Congressional legislation finally addressed the compliance question: the Environmental Protection Agency was to be WIPP's official certifier. "That established a clear path to what needed to be done," says Wendell. "We knew if we demonstrated compliance with
(Continued on next page)

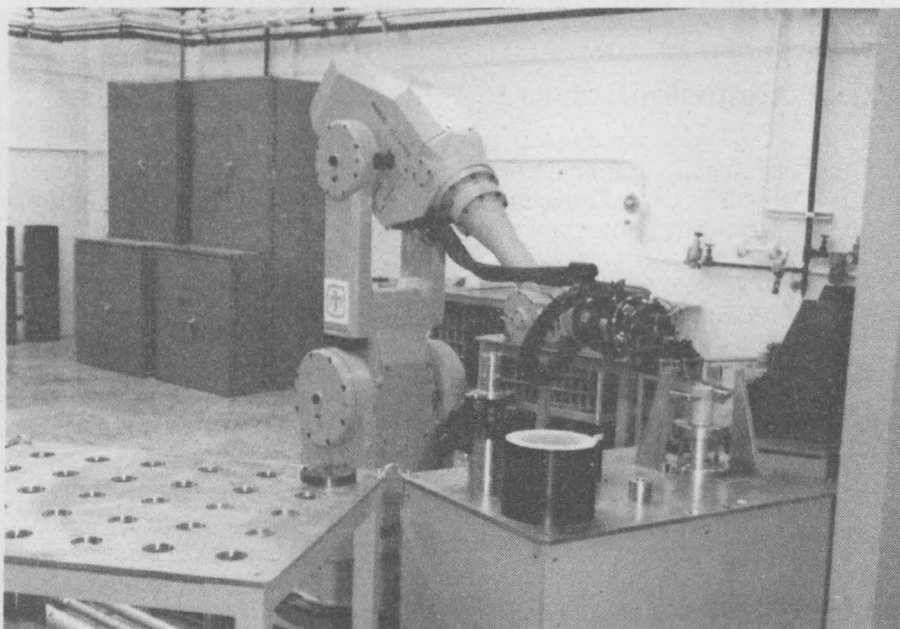
Pantex robots

(Continued from page 1)

provided technical guidance to see it through."

The generators' igniters are more explosive than the powder charges, he says, and several thousand of these devices must be dealt with. Even though they are small, they contain a number of components and must be handled according to very specific procedures.

AGGDIS picks up the generator, inserts it into



A WORKING MODEL of the Automated Gas Generator Disassembly System (AGGDIS) robot at the Robotic Manufacturing Science and Engineering Laboratory grips the top of a gas generator at the beginning of the disassembly process. Sandia robotics researchers believe AGGDIS, successfully demonstrated at Pantex last month, will be capable of dismantling 24 generators a day, compared to about one a day for a human dismantler.

a stationary socket, and turns it to unscrew the part that locks it closed. It then pours the powder into a container and in a series of operations, uses a brush and puff of air to clean out residue, removes the igniter, deposits various parts in individual containers, and moves on to the next generator.

"Experience says a person could average about one a day," Al says. "Our robot did three the first afternoon and we think it can do about 24 a day when it's in full production — about three an hour during an eight-hour shift."

It doesn't have to stop for breaks or meals, he points out with a slight smile.

After seeing a videotape of the Pantex demonstration during the April 21 Sandia Quality Leadership Council meeting, Executive Staff Director Ron Detry (12100) said, "Interestingly enough, the robot is capable of working much faster than the video shows, but its handlers aren't yet comfortable letting it operate at speeds much above the speeds a skilled human disassembler would work at."

DOE Secretary Federico Peña, visiting Sandia the same day, also saw the videotaped demonstration as part of his familiarization tour

of the Labs.

Intelligent Systems and Robotics Center 9600 Director Pat Eicker says the AGGDIS system now operational at Pantex is a "proof of concept" for other customers. He says Sandia is working with the Department of Defense to develop similar technology for the dismantlement of conventional and chemical munitions.

WALS relieves people of the radiation exposure from removing pits from storage containers, checking their weight and the integrity of their casings, then returning them to the containers. The exposure is slight and is monitored, but it is accumulative so people can spend only specific amounts of time performing such work. There is no such sensitivity for robots.

WALS is able to adjust its grippers and other movements to handle the seven kinds of pits and four kinds of containers it will encounter in its work, Al says.

Already busy at Pantex for a year, Stage Right began as a standard forklift vehicle (*Lab News*, Dec. 6, 1996). Sandia engineers added sensors and controls that allow an operator to manipulate it from a remote location to move pallets of pit containers into and out of storage facilities, relieving people of the necessity to absorb even minimal radiation exposures.

All three systems — AGGDIS, WALS, and Stage Right — were designed as integral to the agility of Pantex's new Special Nuclear Material Consolidated Storage Facility, expected to become operational in May 1998. It will incorporate all three robotic functions in a single building, which is part of the plan to make Pantex significantly smaller within the next five years, says Al.

He says work on the three systems has been under way for about six years, funded by DOE's Albuquerque Operations office, and with internal support from Dennis Mangan, Manager of Nuclear Materials Management Dept. 5314.

Sandia's US Savings Bond drive begins May 12

Paul Robinson and 1997 Savings Bond Champion Heinz Schmitt urge support for drive

From: Heinz W. Schmitt, VP Div. 2000

Fellow Sandians:

I am pleased to be Sandia's 1997 Savings Bond Champion. I believe in buying bonds and have done so for many years. Buying savings bonds is a way each of us can directly help our nation while saving for the future.

I was disappointed to learn Sandia's support for the savings bond program has dropped off the past several years. We were once one of the nation's leading supporters of the savings bond program. Last year we saw a 13 percent decline in the number of Sandians who bought bonds. I ask for your help to turn this around and get Sandia back at the top of the list of organizations supporting savings bonds. We are a proud national laboratory, and I believe a strong leadership role in the national savings bonds campaign is one of our responsibilities.

In the US, we have a very low savings rate compared to the rest of the industrial world. This hurts us personally as well as hurting our competitiveness as a nation. One way you can make a difference is by buying US savings bonds. They are a safe and competitive way to save for our future.

Bonds offer competitive rates, significant tax advantages, and are especially helpful in saving for your children's educations. I ask you to join me and save by buying bonds. When your division savings bond representatives talk with you, please give them your support.

Heinz Schmitt

Good reasons for investing in US Savings Bonds

Easy to buy

You can buy Series EE Savings Bonds through most financial institutions and through the Payroll Savings Plan where you work. You pay no fee or commission.

Safe and secure

US Savings Bonds are backed by the full faith and credit of the United States. Bonds can be replaced free of charge if lost as long as it can be established by the Bureau of the Public Debt that the bonds are either still outstanding or have been erroneously paid.

Competitive investment

Series EE Bonds offer investors a good rate of return. Your investment will grow for thirty years but, if needed, bonds can be cashed anytime after six months. Just remember, the longer you hold your bond, the more it's worth.

Education savings

US Savings Bonds may provide tax savings when used to finance higher education.

Tax advantages

Interest earned on US Savings Bonds is exempt from state and local income taxes. You can also defer paying federal income tax until you cash your bond or it stops earning interest after thirty years.

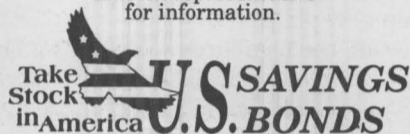
Good for America

The same features that make savings bonds good for you make them good for America. Investing in savings bonds helps finance our country's needs.

Sandia's Savings Bond Drive

May 12-23

See your division representative for information.



From: C. Paul Robinson, Labs President

Fellow Sandians:

As a national laboratory, I believe we should demonstrate a strong leadership role in the national savings bond campaign. Sandia traditionally has been one of America's leaders in savings bond participation, but during the past several years our participation has decreased. Last year marked a dramatic 13 percent decline in participation. For an industry comparison, we are at the lower tier of Lockheed Martin companies, some of which participate at the high-90 percent rate.

In addition to the many patriotic reasons for buying them, bonds provide an easy way to save for your personal goals. Bonds offer significant tax advantages, are easy to buy through payroll deduction, and offer safety and competitive interest rates.

I have asked Heinz Schmitt, our 1997 Savings Bond Champion, to set our participation goal at the high levels we sustained in the mid-eighties. During that period, we participated at an 87 percent rate. I challenge you to help us reach that goal, and I know we can with your support. When this campaign is over, I will be proud to tell DOE and our members of Congress that Sandia once again has taken the leadership role in supporting the national savings bond campaign.

Your division representatives will soon be contacting you. Please give them your support.

C. Paul Robinson

Sandia fellow

(Continued from preceding page)

those regulations, we should be certified."

Late last year, Sandia submitted the compliance application documentation to the EPA that, Wendell hopes, will lead to WIPP's acceptance of the first shipment of waste in spring 1998. First, though, EPA must finish reviewing the application, publicize a draft rule for WIPP's opening, consider public comments, and develop a final ruling.

"We are as close to opening WIPP for full operation as we ever have been," he says.

Through it all, he adds, he never doubted WIPP would open eventually. "I've always thought that if we persevered and jumped through all the hoops, we'd open. I believe that if the United States doesn't have the fortitude to open this repository given WIPP's favorable features, then this country never will open a repository."

In her nomination letter, Joan Woodard called Wendell the "key scientific spokesman" for WIPP, adding that he "has the unusual ability to communicate complex scientific and technical issues in easy-to-understand terms anyone can comprehend."

Wendell has testified before at least 10 Congressional committees; hosted three Energy secretaries at the WIPP site; appeared on CNN, CBS, PBS, and various other local and national media; and directed the scientific interaction about WIPP with review panels such as the National Academy of Sciences, the New Mexico Environmental Evaluation Group, and numerous DOE oversight panels.

Technical rigor and wisdom

Joan says Sandia fellow appointments serve two purposes. First, they highlight and acknowledge a level of excellence few Sandians have exhibited.

"It's a rare honor, reserved for the once-every-so-often kind of individual whose contributions to the nation and the Laboratory stand out," she says.

They also provide an opportunity for other Sandians to seek out and benefit from the fellow's knowledge. "The hope is that a fellow's experiences — in this case successfully managing a complex technical project for so many years — can benefit others, not just in our repository work or geology work, but in all types of work," she says. "A fellow's wisdom is valuable to the Laboratory."

In support of Wendell's nomination, George Dials, manager of DOE's Carlsbad Area Office, wrote, "Wendell has contributed a lifetime to the technical understanding of WIPP and is instrumental in this being the first of a kind in the world to be certified through extraordinary technical rigor."

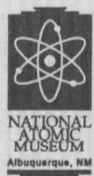
Charles Fairhurst, Chairman of the National Academy of Sciences panel on WIPP from 1984 to 1997, says Wendell is "an exceptional scientist who has brought international respect and admiration to Sandia for its role in WIPP."

"There may be no other current Sandian who reflects the ethos of the Lab and personal accomplishment as well as Wendell," adds Joan. "He would be a fitting model for generations to come of a Sandia fellow."

WWII fashion show, vintage cars among International Museum Day attractions at National Atomic Museum on May 18

World War II-era fashions modeled by local women, including Albuquerque First Lady Margaret Chavez, are among planned attractions at the National Atomic Museum on Sunday, May 18, as part of the Museum's celebration of International Museum Day.

The fashion show, titled "Whispering Inspirations," includes WWII-era evening wear, uniforms, and other apparel provided by Off Broadway, an Albuquerque vintage clothing store. Cindy de la Fé (9672) will be the featured singer. Professional dancers will demonstrate a tango, a waltz, and the jitterbug. The fashion show is cosponsored by the City of Albuquerque's Department of Senior Affairs and begins at 1:30 p.m.



What: International Museum Day Celebration

Where: National Atomic Museum

When: Sunday, May 18, 9 a.m.-5 p.m.

Admission: Adults \$5, Children 12 & under \$1

Other planned International Museum Day events:

- The Museum's newest traveling exhibit, "Quiet Shadows: Women in the Pacific War," featuring photographs portraying women's roles in the Pacific War

- Vintage car display in the outdoor exhibit area (cars provided by the Southwest Packard Car Club), 9 a.m. to 3:30 p.m.

- Zia Pueblo Indian Dancers (three year olds) performing three traditional dances at 11:30 a.m., noon, and 12:30 p.m.

- Guided one-hour tours of the National Atomic Museum begin at 9:30 a.m., noon, and 3 p.m.

Admission to the day's events is \$5 for adults and \$1 for children 12 and under; tickets are available at the door. Sandians, their families, and the public are invited.

International Museum Day, established 20 years ago by the International Council of Museums, is "an opportunity for museums worldwide to celebrate their roles in their communities and let people know how we preserve history and provide educational opportunities," says Darline Romero (12660), project coordinator.

Other local museums, including the Albuquerque Museum, Maxwell Museum of Anthropology, and Rio Grande Nature Center, are planning special International Museum Day activities as well.

—John German

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

MISCELLANEOUS

KENMORE ELECTRIC DRYER, 8-years old, excellent condition, \$100 OBO. Benjamin, 294-3228.

SHOPSMITH MARK FIVE, Model 500, w/bandsaw, jointer & other accessories, excellent condition, reasonable offers only. Mac Cosbe, 237-9913.

EXERCISE BIKE, Tunturi Ergometer, excellent condition, \$100; Pinarello Montello SLX, frame/fork 54cm, \$125; child carrier seat, \$10. Martinez, 294-6365.

CONTEMPORARY SOFA & LOVE SEAT, recently reupholstered, \$300; 2 upholstered living room chairs, \$25 ea. McEwen, 271-0400.

GUINEA PIGS, w/cage, water bottle, \$20 OBO; motorcycle trailer, \$250 OBO. Poulter, 291-0607.

'96 SET ENCYCLOPEDIA BRITANNICA, plus '97 yearbook, \$600. Oglesby, 296-5361.

DRESSER SET, 5-piece, very good condition, \$450 OBO; oak butcher block, \$75. Harms, 839-4852.

SINGLE BED, day-bed-type frame, w/white metal headboard, new mattress, \$125. Surbey, 823-2843.

AIR HOCKEY TABLE, w/all accessories, less than 4 months old, paid \$299, will sacrifice for \$199. Malecki, 294-3668.

DRIVER, Taylor Made titanium, 8.5 degree, \$90+ graphite bubble shaft, brand new, \$225. Dwyer, 271-0741.

COUCH & LOVESEAT, \$250; computer desks (corner type), \$60 ea.; push mower, new, \$55; 5-drawer desk, \$45. Miner, 828-1558.

INFANT CAR SEAT, Evenflo, \$25; Playschool high chair, \$40; banister guard & stairway guard (never used). Sena, 821-8898.

WASHING MACHINE, Kenmore, heavy-duty, hardly used, automatic temperature control, energy saving features, \$295. Goering, 897-9505.

DRUMS CB-700 INTERNATIONALE, double bass, 5 toms, snare, stands, pedals, seat, great heads, ready, \$600; Zildjian cymbals, \$150. Zura, 797-4706, after 6 p.m. & weekends.

WELDER GENERATOR, Lincoln-Ranger-8, 225-amp, 8000W, 16-hp, electric-start engine, 450 hours, \$2,000. Busick, 858-0415, ask for Kevin.

NORDICTRACK, Sequoia model; excellent condition, \$250. Marchiondo, 271-2254.

GARAGE SALE, refrigerator, beds, small appliances, electronics, clothes, Sat., May 10, 8 a.m.-6 p.m., 1809 Zena Lona NE., follow signs at Indian School/Chelwood Park. Lauben, 275-7466.

RADIAL ARM SAW, Craftsman, 2.5-hp, \$180 OBO. Avila, 299-3718.

KODAK CAROUSEL SLIDE PROJECTOR, 35mm, 8 trays, screen, \$200; Navajo rug, 29" x 45", \$200. Abbott, 298-2039.

OAK & GLASS COFFEE END TABLES, \$90; electric stove, \$100; igloo doghouse, \$40; ice skates, \$60; kerosene heater, \$100; moving. Norwood, 266-2717.

AKC LABRADOR RETRIEVERS, chocolate, champion blood lines, beautiful pups, males/females, available now, w/first shots. Lynam, 896-0124, ask for Jodi.

HEADBOARD, w/shelves & mattress, need to sell, full-size. Alexander, 291-8028.

ENTRANCE DOUBLE DOORS, 78-3/4" x 36" ea., eye viewer, mail slot; hardware closet, French doors, 78-3/4" x 60"; seed spreader; refrigerator, Kenmore, almond. Rael, 884-4778.

KEMP COMPOST TUMBLER, \$150; chipper/shredder, \$125; Park bicycle maintenance stand, \$125; Craftsman belt sander, 6-in., \$125. Sparks, 266-5060.

DISHWASHER, Kenmore, 6 yrs. old, beige, works fine, motor slightly noisy, needs dose of lubricating grease, \$75 OBO. Kawola, 298-5813.

STEREO CONSOLE, old-tube type, AM/FM, turntable, good working order, free. Krause, 858-1289.

TWO MEDITERRANEAN LAMPS, \$35. Campbell, 888-3135.

REFRIGERATOR, GE Spacemaker, 15.1 cu. ft., bottom freezer, copertone, rollers, \$125; freezer, chest-type, Signature, 15.6 cu. ft., locks, white, \$150. Talbert, 298-9036.

LACE-UP BOOTS, size 12, 16-in. height, new, black. Stuart, 345-6358.

FTL OLYMPUS CAMERA, Mida home stereo music system, grandfather clock, 27-3/4" speakers, Whirlpool hot spa, double waterbed, furniture. Crosby, 858-3128.

STONEWARE, Pfaltzgraff, complete set "Village" pattern, 8 place settings, w/serving pieces, matching stainless flatware & glassware. Seyfer, 292-0179.

COREL WORD PERFECT SUITE 7, new OEM CD edition, \$60; keyboard, new Windows 95, \$12; MS PS2 mouse, \$16. Molecke, 296-5850.

LAWN MOWER, push-reel type, 18-in., adjustable blade & cutting height, excellent condition, \$50. McIntosh, 292-3740.

WATERBED, super-single, w/3 drawers & bookcase headboard, needs new heater, \$100. Wagner, 881-3021.

BOY'S BIKE, 16-in., good condition, great for first bike, \$25 OBO; Fast Track exerciser, like new, 6 month old, \$200. Simon, 899-0109.

TRAMPOLINE, 36-in., for low-impact jogging, \$15; yard sale, May 10, tools, toys, 836 Eastridge Dr. NE. Forster, 293-7231.

ITALIAN WICKER FURNITURE, 7 pieces, dark wicker, w/cushions, excellent condition, paid \$1,000, asking \$450 OBO. Hoffman, 898-7525.

MATTRESS & BOX SPRING, queen, excellent condition, \$75 OBO. Baney, 294-8970.

PING ZING 2's, Red Dot; 3-5W, woods 1, 3, 5, putter, Ping stand bag, 2 yrs. old, \$550. Delgado, 344-2971.

CLOTHESLINE "T" POLES, 1 pair, thick-walled, 2-1/2-in. cast iron, very heavy, free. VanDeusen, 291-8196, after 5 p.m.

OAK ENTERTAINMENT CENTER, \$395; pine captain's bed, \$100; bicycles: man's 3-spd., 26-in., \$25; girl's 10-spd., 24-in., \$60; boy's 20-in., \$35; scooter, \$35. Ashwill, 888-3562.

FREEZER, upright, GE, 18-20 cu. ft., oldie but goodie, \$50; refrigerator, free. Stam, 299-3724.

LAWN MOWER, engine runs well, but only 3 wheels, free. Brown, 298-8447.

SE GARAGE SALE, Friday & Saturday, Southpoint Village, Space L278, Gibson at Eubank, toaster oven, sandwich maker, towels, more, 8 a.m.-5 p.m. Trace, 292-3118.

LITTLE TYKES TREE HOUSE, good condition, \$35. Kilbane, 839-4832.

POOL TABLE W/PING-PONG TOP, cue sticks, full-sized, old but works fine, \$85. Perrine, 293-1429.

FURNITURE: queen-size futon couch/bed; children's bedroom set (white); brown recliner; all great condition. Spring, 281-5688.

WHITE SPOKE RIMS (4), 9-1/2 x 15, Ford, 5-lug, \$60; four 16-in. 8-lug rims w/free tires, \$75. Fine, 836-2281 or 269-2019.

TRANSPORTATION

'69 MUSTANG COUPE, project car or parts car, good engine, \$550 OBO. Cossin, 262-0633.

'90 NISSAN MAXIMA, AC, PS, sunroof, leather interior. Hunter, 865-5745 or 864-9594, ask for Jeff.

'92 SUZUKI SAMURAI, 4-cyl., hardtop, soft top, 73K miles, 4WD, 28 mpg, 5 spd., excellent condition, \$4,975. Salazar, 281-6825.

'95 TOYOTA 4RUNNER, garnet red, fully loaded, low mileage, excellent condition, \$23,500. Smith, 275-8185.

'91 FORD AEROSTAR XLT, 4WD, extended window van, front & rear AC, AT, 83K miles, book value \$10,650, make offer. Loucks, 255-9444.

'87 SUBARU GL hatchback, 4x4, AC, drives great, dependable, \$2,700; '70 Buick LeSabre, 2-dr., 350, AC, 35K original miles, very clean, \$4,200. Zarrella, 831-1981.

'66 DATSUN 1600 ROADSTER, convertible, runs great, recently restored, removable hardtop, \$500 under book, \$3,075 OBO. Pletta, 281-4277.

'87 VW JETTA GL, 4-dr., blue, tinted windows, AC, AT, cruise, excellent condition, \$2,600. Connor, 821-4349.

'95 CHEV. ASTRO CONVERSION VAN, 4.3L V6, PW, PL, PS, AT, gray, 4 captain chairs, bed, shades, dual heat & air, wired for TV/VCR, \$15,000. Henry, 897-2192.

DEADLINE: Friday noon before week of publication unless changed by holiday. MAIL to Dept. 12640, MS 0165, FAX to 844-0645, or bring to Bldg. 811 lobby. You may also send ads by e-mail to Nancy Campanozzi (nrcampa@sandia.gov). Call Nancy at 844-7522 with questions. Because of space constraints, ads will be printed on a first-come 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.

'93 PONTIAC GRAND AM SE, 4-dr., 3.3L V6, 49K miles, excellent condition, \$8,800. Peterson, 883-8463.

'83 VOLVO 245 WAGON, original owner, all maintenance records, excellent condition, \$3,000. Kuehne, 281-5446.

'93 NISSAN SE, king cab pickup, 4WD V6, AT, 51,300 miles, \$14,500. Gorman, 294-6014.

'94 CHRYSLER LEBARON, convertible, V6, loaded, low miles, AC, leather, PW, PB, PS, security system, new tires, \$11,000 OBO. Bujewski, 856-6101.

'94 FORD RANGER, 33K miles, 4x4, extended cab, 5-spd., 4.0L, loaded, excellent in & out, \$14,500 OBO. Bailar, 865-1518.

'93 TOYOTA TERCEL, 2 dr., excellent condition, 44K miles, 4-spd., CD, 1 owner, all maintenance records, \$5,550. Green, 858-3051.

'79 MERCEDES 240D, 4-dr. sedan, new transmission, looks great, runs great, \$2,000 OBO. Brooks, 255-7551.

'87 TOYOTA CELICA GT, 5-spd., 94K miles, 1 owner, \$3,900. Meindl, 275-2122.

'93 MITZI, 5-spd., AC, AM/FM cassette, 4-dr., PS, \$7,450. Ashworth, 281-2824.

'90 MAZDA PROTEGE, all-wheel drive, '94 engine, AC, PS, 5-spd., new paint, good interior, \$4,495 OBO. Barthelmes, 286-1491.

'94 FORD TAURUS GL WAGON, full power, 3.8 V6, loaded, ABS, dual airbags, 47K miles, great shape, \$11,500. Hart, 291-8774.

'85 NISSAN SE, 4x4 truck, w/camper, PS, PB, AC, 5-spd., clean, dependable, \$3,500. Guinn, 898-9339.

'87 MERCEDES BENZ 190E, 4-dr., 2.3L, sunroof, 111K miles, new alloys, immaculate, \$9,250. Smith, 888-8811, ask for Mike.

'89 JEEP CHEROKEE, white, 95K miles, 4-dr., AT, \$7,500 OBO. Madrid, 296-7104.

'64 INTERNATIONAL SCOUT, mostly new & rebuilt parts, broken rear axle gears, \$2,500 OBO. Aragon, 892-3033.

'96 FORD RANGER STX, 4x4, brand new, only 2K miles, loaded, paid \$20,000, must sell \$18,000 OBO. Stanley, 896-0486.

'71 VW BUG CONVERTIBLE, brand new top, upholstery, no dents, excellent condition, \$4,000 OBO. Chavez, 877-6068.

'93 TOYOTA PICKUP, 4x2, DX, extended cab, red, AT, AC, AM/FM, bedliner, anti-theft, tilt, tint, 48K miles, excellent condition, \$9,900. Sanchez, 873-2058.

'76 CADILLAC COUPE DEVILLE, runs great, lots of new parts, \$3,300 invested, make offer. Babcock, 299-3121, ask for Buzz.

'96 DODGE NEON, 23K miles, dark blue, 4-dr., AT, AC, Highline airbags, excellent condition, extended warranty 100K, \$12,000. Duncan, 832-0068.

'90 COUGAR XR7, supercharged, 3.8L, 77K miles, AT, power everything, leather, CD/JBL, moonroof, loads more, \$8,500. Brooks, 275-0056.

'97 CHEV. CAMARO Z28, V8, 6-spd., silver w/black top, gray leather, T-tops, airbags, anti-lock brakes, CD player, \$20,000. Rohwer, 831-9426.

'85 BUICK PARK AVENUE, body in great condition, needs engine repair, willing to negotiate. Elder, 828-2608.

'90 FORD F150 SUPERCAB, 4x4, XLT Lariat, 351 EFI, AT, AC, PW, 2-tone white & metallic gray, under book at \$9,700 OBO. Current, 875-1865.

'87 HONDA CIVIC, 5-spd., new clutch/tires, reliable, \$1,999. Murray, 323-9109.

'89 MAZDA 626, 4-dr., AT, AC, new tires & brakes, excellent condition, 69K miles, \$6,700. Clevenger, 821-0046.

'87 HONDA ACCORD DX, 5-spd., AC, AM/FM cassette, bronze, great condition, 125K miles, \$3,950. Pullen, 858-1500.

'87 OLDS DELTA 88, 4-dr. sedan, AC, AT, cruise, power everything, well maintained, garaged, original owner, below book, \$2,700. Kimball, 299-5527.

'93 PLYMOUTH GRAND VOYAGER SE, white w/blue, excellent condition in & out, new transmission installed 3/97, \$12,000 OBO. Reagan, 888-3561.

'84 HONDA ACCORD, hatchback, PS, PB, AT, AC, 100K miles, looks good, runs great, \$2,500 OBO. Zamorski, 293-7706.

'82 NISSAN (DATSUN) 200SX, 168K miles, runs fine, \$1,000. Gillings, 293-7815.

'85 GMC SUBURBAN 1500, 5.7L V8, new PS, new 4-spd., AT, new tires, towing package, well maintained, \$4,500. Trowbridge, 866-1506.

'83 CHRYSLER FIFTH AVENUE, clean, 318 V8, AC, cruise, tilt, PW, PL, PS, \$1,900 OBO. Buckle, 293-8407.

'81 CHEV. 10 SERIES PICKUP, 67K actual miles, 4-spd., PS, PB, excellent condition, must see, \$3,000. Kaye, 293-0499.

RECREATIONAL

'83 YAMAHA 920, "Midnight" Virago, excellent condition, 1 owner, custom seat & hitch, 30K miles, \$1,495. Brosseau, 286-1969.

FLORIDA/BAHAMA VACATION, 7 days, includes cruise, lodging, car, 4-day bonus in Orlando, take before May 1998, \$700 OBO. Field, 873-0951.

TWO TICKETS, NMSO Pops zoo concert, May 17, \$50. Pucket, 298-6067.

BICYCLES: boy's 20-in. Huff, girl's 24-in. Huff; both good condition, \$35 ea. Duda, 292-2015.

PING GOLF BAG, L8+ carry bag w/stand, black/white lettering, brand new, perfect condition; Haig Ultra golf clubs, other golf equipment & accessories. Brewer, 293-7192.

'80 GOLDWING MOTORCYCLE, w/side-car, very clean, low mileage, many extras, \$3,500. Waldorf, 836-0642.

'80 KAWASAKI 650 F1, 13K miles, original owner, looks great, runs well, luggage rack & windshield, \$1,200 OBO. Chapman, 296-4321.

'87 ALLEGRO MOTORHOME, 31-ft. basement model, John Deere chassis, 460 Ford engine, loaded, 20K miles, \$20,000. Rowe, 299-5678.

MISTRAL SUPERLIGHT SAILBOARD, w/2 sails, \$350; sailboard racing harness, \$15; sailboard roof rack, \$20. Dobranich, 298-4547.

'79 COACHMAN MOTORHOME, 23-ft., roof air, generator, full bath in rear, lots of storage, 58K miles, \$6,500. Sifford, 869-3982.

'90 ASTRO BASS BOAT, 20-ft., 200 Black Max Mercury, 350 hrs., S/S prop, tandem trailer, sharp, \$10,500. Stephens, 323-2114, evenings.

CAB-OVER CAMPER, 8-ft., older model ice box, stove/oven, large water tank, \$300. Toya, 898-0491.

MITCHELL CABOVER, 9-1/2-ft., sleeps 5-6, refrigerator, heater, toilet, rack & ladder, crank-on loader system, w/bumper, \$1,500. House, 293-6016.

'85 ELBKO DAY CRUISER, 22-ft., 140-hp inboard Mercury, located at Elephant Butte Lake, \$5,000. Martin, 1-505-894-0785.

COAST-TO-COAST MEMBERSHIP, Base Camp-El Vado Lake Resort, N.M., worth over \$2,000, asking \$550. Nutt, 856-8267.

SOLAR PANEL, 45-watt, 12-volt, ideal for camper, RV, boat, complete, mounting brackets, fuse, wiring, instructions, \$250. Horton, 883-7504.

'86 YAMAHA MOTORCYCLE, Radian 600, excellent condition, 6,025 miles, garage kept, just tuned, \$1,600 OBO. Oberkamp, 292-4366.

'83 SPINDRIFT DAY SAILER, 17-ft., 2-hp Johnson, w/trailer, very good condition, \$2,500. Bertsch, 873-0925.

ALBUQUERQUE BEACH WATERPARK TICKETS, good through Aug. 17, 1997, day passes regular \$12.50, asking \$8. Jones, 292-9750.

ALUMINUM BOAT, 14-ft., \$450; 7-1/2-hp motor, \$350; both \$750 OBO. Garcia, 293-3937.

TIMESHARE in beautiful Tahiti, RCI Red Week, exchangeable worldwide, \$1,350 OBO. Ludwig, 856-5111.

REAL ESTATE

4-BDR. HOME, 2-1/2 baths, 2,664 sq. ft., NE, Eldorado school district, 2-car garage, great city & mountain views, backs on open space, \$224,900. Widler, 294-4263.

4-BDR. BRICK VENEER MOSSMAN HOME, 1,877 sq. ft., NE, Cleveland mid-school area, spacious kitchen, landscaped, \$149,500. Teisher, 296-5613.

3-BDR. HOME FOR RENT, June, July & August, fully furnished, near LaCueva high school, excellent neighborhood, clean, landscaped/fenced, \$1,100/month plus utilities. Gonzales, 821-0417, ask for Mary.

3-BDR. HOME, 1,865 sq. ft., 2 baths, 2 fireplaces, new paint & roof, recent carpet, close to schools, \$124,900. Edmund, 881-7974.

2-BDR. CONDO, Pagosa Springs, Colo., resort area, turnkey, furniture, linen, dishes, more, \$68,000. Stauder, 898-0597.

3-BDR. WILLOW WOOD HOME, Oppel-Jenkins, 2,010 sq. ft., 2-1/2 baths, 3-car garage, balcony, big loft, get it before I add the realtor's fees, \$198,500. Morrison, 293-6652.

WANTED

IBM 486 COMPUTER, preferably 17-in. monitor, ink or Laserjet printer, CD ROM optional. Rockwell, 884-4206.

MANUAL PUSH LAWN MOWER, inexpensive (less than \$30). Baldo-Pulaski, 345-0432.

HOUSEMATE, nonsmoker, no pets, loft w/bathroom, private entrance, 3 miles to Area I, \$260/month, gas, water, electricity included. Souther, 254-9361, tsouther@flash.net.

CARPOOL, from Las Maravillas, 9/80 schedule. Vigil, 844-5639.

PERSON, to mow and do some weed pulling. Wilson, 293-2228.

MOWER, hand push, not gas or electric, good condition. Martin, 323-2182.

TRICYCLE, w/large 14-in. or 16-in. front wheel. Jones, 292-1581 or 271-0025.

AFFORDABLE HOUSING, for German summer student, from May 20 through July 30, he will be working on Sandia project, so he prefers to be close to Kirtland. Gomez-Dalton, 844-2767.

LAWN MOWER, good working condition. Torres, 828-1679.

BICYCLE TRAILER to carry two children. Walther, 299-7560.

BICYCLE TRAVEL CASE, to fit 18-in. mountain bike. Reineke, 281-9285.

LOST & FOUND

FOUND: Man's ring, in parking lot south of Bldg. 861. Jones, 844-7253.

FOUND: Man's prescription glasses, in brown case, parking lot of Bldg. 811, 4/18/97. Campanozzi, 844-7522.

Sandia News Briefs

Sandians shine in statewide Society for Technical Communication Awards

Mona Aragon of Creative Arts Dept. 12620 earned a "Best of Show in Online Communications" at the statewide Society for Technical Communications (STC) annual banquet held recently in Santa Fe. Mona was recognized for her work on Sandia's 1995-1996 Corporate Overview CD-ROM. Mona also captured a first place award for the CD-ROM project in the Technical Communication category and took a third place in the Technical Art category for "H16747 Mechanical Part." Linda Gillis (12620) and Linda Doran (12680) took home top honors in the Award of Distinguished Technical Publication category for their work on the Lockheed Martin Energy & Environment Sector brochure, *Finding Global Solutions*. Mona, Linda Gillis, and Linda Doran also took third place honors for their work at the STC's international competition in Toronto. Back at the state STC level, Linda Gillis earned a second place in the Award of Excellence in Technical Art category for her work on the E&E sector brochure and shared a third-place award with John Bell (also 12620) in the Award of Merit in Technical Art category for *Real World — Real Time Communications*. Jan Gaunce (12620) won an Award of Excellence in the Technical Publications category for the *Classification Handbook* and a third place in the Award of Merit in Technical Publications category for the *Sandia History Program and Corporate Archives* brochure, while Mitzi Bower (12620) placed third in the Technical Art category for her "Extraction Diode." Tammy Locke, Patty Guyer (both 12620), and Bob Goetsch (now Lockheed Martin) took second place in the Award of Excellence in Technical Publications category for *Inside Sandia*.

Send potential Sandia News Briefs to Lab News, Dept. 12640, MS 0165, fax 844-0645.

Around the corporation **LOCKHEED MARTIN**

10 Lockheed Martin companies combine to form new organization

Lockheed Martin expects to close a deal by mid month combining 10 of its business units into L-3 Communications, an independent communications technology company to be co-owned by Lockheed Martin, Lehman Brothers Capital Partners III LP, and a management team of former LMC executives. Lehman Brothers will own about 50 percent of the \$525 million company, LMC will retain 35 percent, and the management team will hold 15 percent. Former Loral President and COO Frank Lanza will be chairman and CEO of L-3 Communications, to be headquartered in New York. It will have 5,000 employees, and its components generated combined sales of \$650 million last year.

Companies combining to form the new organization are: Advanced Recorders, Sarasota, Fla.; Communications Systems, Camden, N.J.; Conic, San Diego; Display Systems, Atlanta; Hycor, Woburn, Mass.; Microcom, Warminster, Pa.; Narda Microwave, Hauppauge, N.Y., and Rancho Cordova, Calif.; Randtron, Menlo Park, Calif.; Telemetry & Instrumentation, San Diego; and Wideband Systems, Salt Lake City.

Leadership giving increases 49 percent

United Way says thank you

Labs Director C. Paul Robinson would like to share the following letter from United Way's Leadership Giving Circle thanking Sandia for its increase in leadership giving to the 1996 United Way campaign. Half of the total United Way of Central New Mexico 1996 campaign leadership givers are from Sandia.

April 2, 1997

Dear Ambassador Robinson,

We would like to congratulate you and your employees on an outstanding year in leadership giving at United Way of Central Mexico. During the 1996 campaign, 837 of your employees gave at the leadership level with a gift of \$500 or more. You should take pride in the personal commitment this group of employees has demonstrated to United Way, your organization, and our community.

You should also be proud of the leadership provided by Paul Stanford and the ECP Committee members who directed Sandia's 1996 leadership giving campaign. Because of their hard work, Sandia experienced a 49 percent increase in the number of leadership givers, an increase of 276 leadership givers from the prior year. It is evident to everyone at United Way that without the dedication and personal commitment of Paul Stanford and the ECP Committee, Sandia's leadership giving results would not have been as significant as they were.

Since its inception in 1989, the Leadership Giving Circle (gifts of \$500 or more) has experienced tremendous growth. Over the last five years, the number of leadership givers has increased by 50 percent and the total leadership giving dollars has raised by 100 percent. During the 1996 campaign, more than 1,900 individuals gave at the level of \$500 or more, resulting in a total of \$1.6 million raised for the community campaign. Those of us who are involved with United Way are increasingly aware of the importance leadership giving plays in helping us reach our annual goal. We are grateful for the support of those employees who step forward each year as leadership givers.

On behalf of United Way of Central New Mexico, please accept our sincere thanks for an outstanding year in leadership giving and all you do for United Way. We could not succeed without your participation and personal support. We look forward to working with you on the 1997 United Way community campaign and to another successful year in leadership giving.

Sincerely,

Edward T. O'Leary, Chairman
1997 United Way Campaign
President
First Security Bank

Eugene J. Moser, Chairman
1997 Leadership Giving Circle
Executive Director of Human Resources
University of New Mexico Hospital

Coronado Club

May 8, 15, 29 — Thursday bingo night. Card sales and buffet start at 5 p.m., early birds' bingo at 6:45 p.m.

May 9 — "Western Night" dinner/dance. Music by Isleta Poor Boys, 7-11 p.m.

May 11 — Mother's Day buffet. Call 265-6791 for reservations at 10 a.m., noon, or 2:30 p.m. seatings.

May 17 — Pool preseason weekend. Pool open 11 a.m.-5 p.m.

May 18 — Sunday brunch buffet, 10 a.m.-1 p.m. \$7.95 all-you-can-eat buffet. Kids 3-12, \$1, under 3 free. Music by Swingshift, 1-4 p.m.

May 22 — Sandia retiree annual picnic. Club closed: no lunch line, no bingo, no bar.

May 23 — Kids' bingo. Free hot dog and soft drink with \$2.50 bingo card. Bingo starts at 7 p.m.; buffet line open 5-8 p.m.

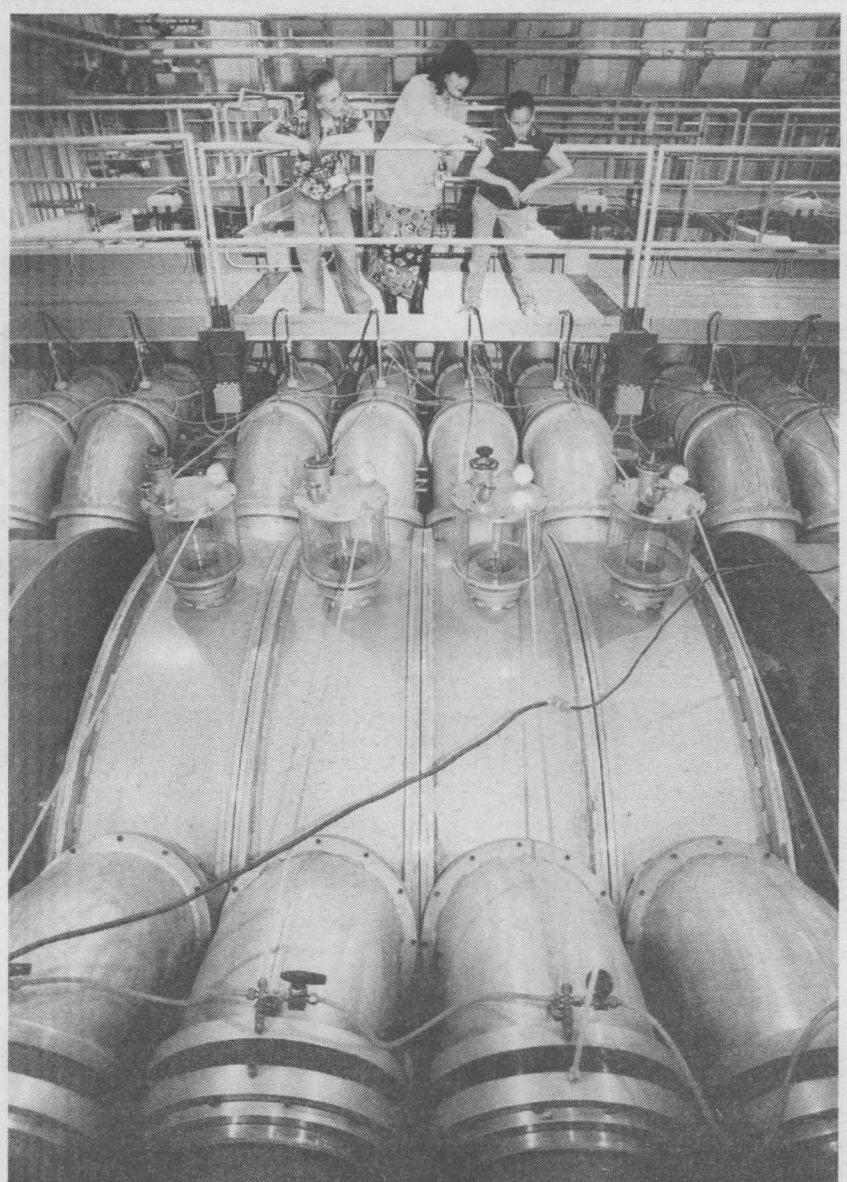
Recent Patents

Bruce Hendrickson and Robert Leland (both 9226): Multidimensional Spectral Load Balancing.
Robert J. Anderson (9651): Modular Architecture for Robotics and Teleoperation.

Jonathan Weiss (1231): Strain-Optic Voltage Monitor wherein Strain Causes a Change in the Optical Absorption of a Crystalline Material.

Rush Robinett (9611), Don VanZuiden (2417), Mark Vaughn (2418), and John Phelan (2526): Two-Axis Angular Effector.

David Haaland, Howland D. T. Jones (both 1823), and Edward Thomas (12323): Multivariate Classification of Infrared Spectra of Cell and Tissue Samples.



SPARKING AN INTEREST IN SCIENCE — Susan Hess of Above Ground Test Accelerator Operations Dept. 9342 brought daughters Jennifer (left, 13) and Melissa (11) to see the HERMES III (High-Energy Radiation Megavolt Electron Source) facility at Sandia on Take Our Daughters to Work Day, April 24. The national event drew 800 girls to Sandia to see what their parents, grandparents, or friends do in a typical work day. "I bring the girls to work to show them they are free to be whatever they want to be," says Susan. "Seeing the technicians — men and women — work gives them something to think about." (Photo by Randy Montoya)