

## Max Sandoval Helps US Negotiate 'Open Skies' over Europe

Three years ago, no Sandian would have imagined dining with a cosmonaut, working at a Soviet airfield, flying in a Russian transport helicopter, or rubbing elbows with technical experts from the Russian Federation.

But for Max Sandoval of Verification and Monitoring Analysis Dept. 9241, these are just some of the highlights of the past two years. Since late 1990, Max has been serving as the US technical expert on imaging radar to the international Open Skies Treaty negotiations.

The Open Skies Treaty — first proposed by President Eisenhower in 1955 but soon abandoned

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**"Open Skies will allow countries to keep a wary eye on their neighbors."**

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as Cold War tensions escalated — was reintroduced by President Bush in 1989. It allows participating nations to fly aircraft over other treaty nations to monitor conventional military activity, especially troop and munitions movements near borders.

The treaty was signed in March 1992 by several nations, including the US, and 26 nations are now considering ratifying it, including five former Warsaw Pact nations and the Commonwealth of Independent States (CIS).

### Treaty Technology

The purpose of the new treaty is to reduce tensions in Europe and around the globe, especially in the wake of the Soviet Union's demise. "Conventional military activity is a source of tension in Europe, especially for smaller countries in Eastern Europe and the CIS," says Max. "Many of these countries are not yet comfortable in their new surroundings, and any movement of troops or munitions is regarded as potentially hostile. Open Skies will allow countries to keep a wary eye on their new neighbors."

As part of the treaty, monitoring aircraft will be fitted with "sensor suites" containing three major sensor types — optical cameras, infrared line scanners, and synthetic aperture radar (SAR). Max



**OPEN SKIES GUY** — Max Sandoval (9241) holds a trihedral corner reflector similar to the ones that will be used to verify aircraft radar performance as part of the new Open Skies Treaty. Since 1990, Max has been serving as the US technical expert on imaging radar to Open Skies negotiations in Europe. The US plans to use C-135 aircraft like the one behind Max to monitor conventional military activities in other treaty nations. The versatile C-135s are roomy inside and can stay airborne for long missions. (The unusual markings on the plane are from previous Air Force tests.)

was selected to represent the US partially because Sandia is actively engaged in SAR research and development. (Exploratory Systems Center 9100, Monitoring Systems and Technology Center 9200, and Electronic Components Center 2300 are currently studying SAR applications.)

SAR is a useful imaging capability for treaty verification because it can monitor activities at night, in inclement weather, and at high or low altitudes. It makes the radar antenna large "synthetically" by using the forward motion of an aircraft to  
*(Continued on Page Six)*

## feed<sup>it</sup>back

### A Feedback Follow-up

By Larry Perrine, Editor

In the Jan. 22 issue (page 2), we published a Feedback question and response about the appropriateness of wearing pro-sports-related clothing to work at Sandia — team caps, jerseys, etc.

A questioner connected certain team clothing with gangs and suggested that Sandia ban employees from wearing it to work. Human Resources Director Ralph Bonner replied that Sandia would not be banning sports-related clothing in the foreseeable future and reiterated Sandia's policy, which in essence says employees should wear what is reasonable and proper for their particular jobs.

### Employees Write

Two employees wrote us about this Feedback item — not about Ralph's response (which I thought was quite good, by the way) — but about this statement in the original question: "A recent tour through one of our main shops left the group wondering out loud if our security guards were assigned for security reasons or for personal protection." Obviously, some shop employees were wearing sports-related clothing that day.

Here is part of what one employee wrote after reading the question and response:

"Although I am sorry this person felt threatened or frightened by the personnel in one of the  
*(Continued on Page Six)*



# LAB NEWS

VOL. 45, NO. 3 SANDIA NATIONAL LABORATORIES FEBRUARY 5, 1993

### CYBL Will Test New Design Concepts

## Boiling Water Dissipates Heat, Could Save Nuclear Reactor Vessel

Escorted by pickups, four-wheel-drives, and cherry pickers scouting for low-hanging utility lines, the 50-ton external shell of Sandia's latest major test facility reached its new home late last year.

For many Sandians, the arrival meant another step toward an important series of experiments scheduled to take place in March. For the tractor-trailer and escort vehicle drivers, it was the end of a seven-day crawl from Los Angeles. (See "How Big? Well, Considerably Bigger than a Bread Box," page five.)

The stainless steel vessel, fitted with special ports for cameras and other instrument fixtures, is the main component of a new experimental facility in Tech Area 3 — CYBL, for CYlindrical BoiLing. The 16-by-27-foot tank, including a 12-foot-diameter inner vessel, was designed by Sandia and constructed by L&F Industries Inc. of Los Angeles. Construction took a year. The total project cost for CYBL is \$2.5 million.

Researchers will use the new facility for non-nuclear tests of a method that would use boiling water to dissipate heat from a melting reactor core. This could prevent a possible reactor vessel melt-through and release of radioactive materials into the environment in the case of an accident.

Although melting of a nuclear reactor core is extremely unlikely, new designs for commercial reactors are addressing the boiling method — called the flooded-cavity design — as a way of further reducing the consequences of such  
*(Continued on Page Four)*

**What's Happening  
In Internal Programs  
— See Page Eight**



# This & That

**Transition Rumors** - Only a month has passed since DOE started evaluating the proposals for a new Sandia management and operating (M&O) contractor, but there are already rumors aplenty about which Sandia officers (VPs and above) will stay on with the new contractor and which ones won't. This will depend to a large extent on which company is selected by DOE to manage Sandia, because all "offerors" (reportedly seven) were required to name their prospective Sandia officers. That info will be released only for the winning offeror, we understand, but some of our current officers may retire, return to AT&T, or perhaps even choose to work elsewhere - regardless of which company gets the new Sandia M&O contract. Of course, we can't say anything about anyone's personal plans until they're ready to announce them, and we know that our current officers want to continue to "pull as a team" as long as they can - something all of us appreciate, I'm sure.

\* \* \*

**Better Get "Buzzy"** - There's only one week left to enter our buzzword contest. We're looking for the best coherent sentence that contains as many different buzzwords as possible, with a maximum of 25 total words in the sentence. We've already received some great entries, so give us your best effort. Send entries to Buzzwords, Dept. 7162, or fax 'em to 844-0645 to arrive by noon on Friday, Feb. 12. We'll publish the best one - and maybe more - in our Feb. 19 issue.

\* \* \*

**Long Odds** - There's a strange coincidence in Procurement Dept. 7222. Three Sandians who work in 7222 share office space in Bldg. T7, with their desks arranged three in a row. Jo Cunningham, Julie Rhoden, and Nina Coe share the same birthday - Jan. 10.

\* \* \*

**I, II, 3, IV: Delayed Reaction** - About four months ago, I mentioned that Ruby Cockrell (6400) wanted to know why Sandia's technical areas are sometimes referred to in print using Roman numerals and sometimes Arabic. I asked whether anyone had proof about which system was official or at least which was used first. The response was underwhelming - zilch to be exact - until a couple of weeks back when 40-year Sandia veteran David Judd (1957) called to say he recalls that Roman numerals were used exclusively in the early years.

David didn't offer the iron-clad proof that I was looking for, but he did point out some interesting mixtures in the maps and charts in the front of our current *Sandia Directory*. The title at the top of page A6 says "Area I," but the title on the facing page says "Area 1." However, the most notable (or noticeable, at least) mixture of styles is in the same big line of type at the bottom of page A11: "AREA 3 Northeast Quadrant (Area V Sector 61)."

\* \* \*

**Missing Your W-2?** - OK, which one of you made \$1.9 million last year and is missing your W-2 form? That's the amount (\$1,957,136.16 to be exact) shown on a typed W-2 form that was among the others distributed to the folks in Protective Force Department 7435, says Team Supervisor Bill Wolf. The form, which Bill brought to the LAB NEWS office, also shows that the mystery Sandian had more than \$302,000 withheld for federal taxes and other large amounts for Social Security taxes, etc. There's no name at all on the form, but please call me if it's yours. I have some fantastic investment opportunities that I'd like to discuss with you. •LP

## More Manufacturing in Kansas City?

# Watkins Submits Report on DOE Reconfiguration

As one of his last official acts in office last month, former Secretary of Energy James Watkins submitted a report to Congress analyzing the projected costs and benefits of DOE's proposed non-nuclear reconfiguration actions. The report went to the House and Senate Appropriations and Armed Services committees.

On the basis of that report, according to a DOE news release, Watkins also certified that proposed activity transfers and plant closures would be cost effective and that these actions would not increase the technological, environmental, safety, or health risks associated with operating DOE facilities.

Both the cost-effectiveness report and the certification are mandated by the Energy and Water Appropriations Act and the National Defense Authorization Act for fiscal 1993.

The report analyzed the proposed reconfiguration and the other alternatives being considered by DOE for consolidation of non-nuclear manufacturing activities. The proposed reconfiguration would consolidate most of the work at DOE's Kansas City (Missouri) Plant, withdrawing the non-nuclear activities at the Mound (Ohio), Pinellas (Florida), and Rocky Flats (Colorado) Plants. An environmental assessment of those alternatives, released in December 1992 to affected states and Indian tribes for pre-approval review, supports the conclusion that overall safety and health risks from weapons complex activities would be reduced as a result of consolidation.

### Could Save \$250 Million Annually

According to the report, DOE would achieve long-term cost savings by reconfiguring the non-nuclear manufacturing portion of the nation's nuclear weapons complex. This portion of the complex is currently sized for Cold War production levels and requires \$470 million (in FY 1992 dollars) per year in infrastructure costs alone. DOE's proposed consolidation would eventually reduce infrastructure costs by up to \$250 million per year.

Watkins said the consolidation, made possible by nuclear stockpile reductions, would save costs, decrease health and safety risks, and help maintain key technologies.

Watkins' announcement pledges DOE support for workers who may be affected by consolidation activities in the non-nuclear and other portions of the nuclear weapons complex: "The Department is committed to providing employees with opportunities to work in the environmental restoration and economic development activities that will be taking place at sites no longer needed for national defense. Assistance and retraining for workers affected by downsizing will be a high priority." •

## Earnings Factors November 1992

Long-Term Savings Plan for Management Employees (LTSPME) Earnings Factors

AT&T Shares	1.0802
Government Obligations	.9969
Equity Portfolio	1.0378
Guaranteed Interest Fund	1.0063
South Africa Restricted Fund	1.0471

Long-Term Savings and Security Plan (LTSSP)

AT&T Shares	1.0801
Guaranteed Interest Fund	1.0064
South Africa Restricted Fund	1.0470
Equity Portfolio	1.0377
Employer Stock Fund	1.0792

## LAB NEWS

Published Fortnightly on Fridays by  
Employee Communications Department 7162

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Sandia National Laboratories, a prime contractor to the US Department of Energy, is operated by Sandia Corporation, a subsidiary of American Telephone and Telegraph Co.

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## Take Note

Dixy Lee Ray, former Atomic Energy Commission head, will speak at the National Engineers Week Luncheon, sponsored by the New Mexico Society of Professional Engineers, on Tuesday, Feb. 16, at 11:45 a.m. at the Four Seasons Motel in Albuquerque. Her talk will be about how science can help deal with acid rain, ozone depletion, and nuclear waste. Tickets are \$15, sold in advance only. Contact Roger Zimmerman (9818) on 4-7004.

\* \* \*

Sandia Laboratory Federal Credit Union is offering free tax seminars in February and March at Credit Union Center (Juan Tabo and Comanche NE), first floor meeting room, for Sandia/New Mexico and at the Bldg. 904 auditorium for Sandia/California. In New Mexico, Basic Tax Concepts will be presented Tuesday, Feb. 16, and Monday, March 1, from 6 to 8 p.m.; Complex Tax Returns will be covered on Wednesday, Feb. 17, and Wednesday, March 3, from 6 to 8 p.m. In California, Complex and Basic Tax Returns will be presented Tuesday, Feb. 23, from 4:15 to 6 p.m. For reservations or more info, call 293-0400, ext. 303 in Albuquerque or 294-2044 in Livermore.



**Another Record Set****Sandia/California Employees Go All Out — Give \$171,366 to LEAP**

The LEAP (Livermore Employees Assistance Program) campaign pledges are in, and Sandians outdid themselves once again — raising an all-time-high of \$171,366 for local and regional human service agencies and surpassing the campaign goal of \$170,000.

Even beyond this financial accomplishment, Sandia employees and contractors "pitched in" to Holiday Spirit '92 and provided unprecedented numbers of personal holiday gifts and grocery items for their neighbors in need.

The amount pledged to the employee fund drive this year is an increase of more than \$8,000 over 1991 pledges. LEAP chairman Mark Perra

**The amount pledged this year is an increase of more than \$8,000 over 1991 pledges.**

(8714) says, "Sandians have every reason to celebrate their strong commitment to address the needs of people in their community, and the way they have extended themselves to help others in a number of ways. Sandians are demonstrating leadership in our community even during a time of economic uncertainty. The recession sharply increased the needs of the charities to which Sandians give, and Sandians have responded generously. Sandians are giving more and in more ways."

**Agency Choices Welcomed**

Mark also reports that Sandians responded to the increased opportunity for donors to determine exactly how their charitable dollars would be spent. "We attempted to present a much wider range of agency choices to employees and to simplify the process for selecting the desired agencies. As a result, the fraction of funds earmarked by donors for specific agencies jumped from 20 percent in 1991 to 30 percent in 1992. The LEAP committee feels that this increasing commitment by Sandians to give to particular agencies is a very positive development."

He adds that the follow-up Holiday Spirit '92 campaign, which brought in 644 gifts for 330 recipients in the local area, was remarkably successful — increasing more than 25 percent over the preceding year. Some 368 Sandians and contractors participated in the gift campaign. They also responded to more basic needs by contributing 1,600 pounds of groceries for homeless shelters and support groups for low-income families.

In a related program, using the LEAP campaign as a springboard, a Sandia Corporate Volunteer Team has been formed. Its first work projects were to paint the Family Crisis Center office in Livermore and make curtains for the Center's family shelter. Other 1993 activities are being planned.

All this happened at a time when numerous other large corporations experienced a downturn in

employee charitable giving. About 82 percent of Sandia/California employees returned pledge cards during the campaign.

VP John Crawford (8000) adds his thanks to the many people who took part in the LEAP drive. "You can be very proud of your generosity and your ability to rise to this challenge. You should be congratulated for sharing your personal resources with our neighbors as well as with worthwhile charities around the Bay Area."

**Expanding Partnership with Tri-Valley**

Among the largest funding increases this year was that to the Tri-Valley Community Fund, which was asked to make a presentation regarding community needs during employee meetings held by the 10 California centers. The total pledged to this fund was more than \$28,000, five times as much as the previous year. Sandia's LEAP committee decided to work closely with this "umbrella" agency because it uses 100 percent of funds received to meet local needs, and because it supports a far broader cross-section of local agencies than LEAP could effectively support on its own.

Further indication of an expanding partnership between Sandia and the Tri-Valley Community Fund is that Rick Wayne (8700) was recently selected to serve on the Fund's Board of Directors.

Other umbrella agencies receiving significant pledges were the Combined Health Appeal of California, which will receive about \$21,000; United Way of the Bay Area, \$17,000; United Way of San Joaquin County, \$6,000; and United Way of Stanislaus County, \$2,600. Individual service agencies receiving appreciable amounts include Family Crisis Center, \$6,700; Hope Hospice, \$12,000; St. Mary's Dining Room, \$4,900; Buenas

**"Sandians are giving more and in more ways."**

Vidas Youth Ranch, \$8,200; San Francisco Bay Area and Mount Diablo Area Scouting, \$8,000; Kaleidoscope Activity Center, \$4,300; and Horizons Youth and Family Services, \$4,000.

A new LEAP committee will be named this spring. Chairman for the 1993 campaign will be Randy Christman (8523).




**NEW CONGRESSMAN VISITS** — US Congressman Bill Baker and his aides Ann Jordan and Erlene DeMarcus visited Jan. 14 for briefings and a tour of the Combustion Research Facility. They discussed advanced manufacturing, combustion research, tech transfer, and Sandia's partnership with the California Environmental Protection Agency. Seen in the Optical Wave-Mixing Lab are (from left) Don Sweeney (8354), Congressman Baker, VP John Crawford (8000), and Roger Farrow (8354).

**Crawford Named to Environmental Council**

California Governor Pete Wilson has appointed VP John Crawford (8000) to the newly established California Environmental Technology Partnership (CETP) Policy Advisory Council.

Writing on the Governor's behalf, California Environmental Protection Agency (Cal/EPA) Secretary James Strock and Department of Commerce Director Julie Meier Wright invited John to join in "an exciting new venture that will help protect California's precious environment and create jobs here." The advisory group will comprise top California executives in the private and public sectors.

John says the first order of business for the new council will be to advise Cal/EPA on the proposed structure, goals, and activities of the Technology Partnership, and then to develop implementation plans for their highest-priority activities. The first meeting is Feb. 24 in Sacramento.

**New Technologies Needed Quickly**

The success of the new initiative depends in large part on the ability to quickly develop new technologies and have permits issued for them,

Strock explains. Cal/EPA has already started a program to reform California's environmental permit system so the state's manufacturing facilities can utilize new technologies without having to overcome obstacles in the current permit process. EPA's permit reform programs will be coordinated with the activities of the CETP, according to Strock.

Ad hoc technical working groups of experts from all sectors will be formed as needed to examine issues of particular concern. John says he sees this as a great opportunity to apply Sandia scientists' and engineers' talents to mutual problem-solving efforts resulting in technology exchange. "I look forward to working with this exceptional group of California business and industry leaders, and with the help of our staff, making a contribution that will be of benefit to all the state's population and to many issues of national importance."

Other advisory council appointees from the East Bay include Curtis Morgan, chairman of the board for Evergreen Oil Co. in Newark, Lawrence Berkeley Lab Director Charles Shank, and Lawrence Livermore Lab Director John Nuckolls.

**Employee Death**

Mike Hester of Materials Management Dept. 8533 died Dec. 28.

He was 44 years old.

Mike was a member of the laboratory support group and had been at Sandia since 1982.

He is survived by his wife, one son, and two daughters.

**Sympathy**

To Cindy English (8522) on the death of her father in Coeur D'Alene, Idaho, Dec. 16.

To Pete Oliver (5361) on the death of his father in Livermore, Jan. 26.





(Continued from Page One)

## Boiling Water

an occurrence.

The March experiments were originally planned in connection with the design of DOE's New Production Reactor (NPR) — a project to produce weapons materials, especially tritium. Cancellation of that project was announced by President Bush during his visit to Sandia in September.

However, designs from private industry for a new generation of commercial electric power generating reactors also incorporate the boiling idea,

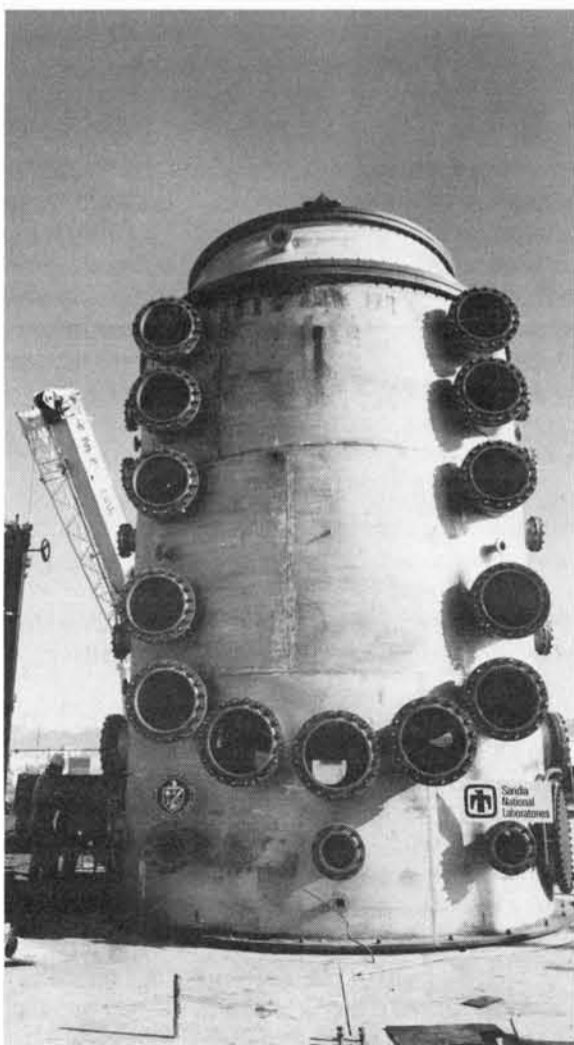
**In case of an accident, the vessel is saved from the molten fuel by water boiling outside instead of inside.**

which has been discussed internationally for years. "Applying the data from planned experiments to other designs is still important," says Ken Bergeron, Manager of Sandia's New Production Reactor Project Dept. 6415.

"It was a recognized philosophy of the NPR program from the beginning that test information would be valuable not only for the production reactors but also for other advanced reactor designs in the US and elsewhere," says Ken. DOE decided that since more than 90 percent of the project cost had been paid, it would complete construction and carry out a limited initial test series, Ken reports. After the initial series of experiments, additional work could be funded by DOE/Nuclear Energy or from cooperative research programs with other US or foreign sponsors.

### Paper Cup Concept

The concept to be tested at CYBL involves a tank within a tank, much like a double boiler. Both vessels are stainless steel, the inner one 1/2 inch thick and the water-filled outer vessel 3/8 inch thick. The water simulates passive system designs that call for immersion of the reactor in a pool of water



**BIG BOILER** — The stainless steel outer shell of the Cylindrical Boiling Facility at its new home at the Radiant Heat Facility in Tech Area 3. After the vessel was in place, a building was erected around it.



**RADIANT HEAT ARRAYS**, being examined by Keri Sobolik (2761), are the heat source for simulating hypothetical accidents in nuclear reactors. The array can simulate the heat that many different melt patterns would create. CYBL's double-boiler-like inner vessel can be subjected to heat as intense as 400 times the sunlight falling on a comparable surface. (Photo by Randy Montoya)

to remove heat from the inner vessel in the case of an accident.

Project leader T.Y. Chu of Severe Accident Phenomenology Dept. 6422 compares the project to boiling water in a paper cup. "Surprisingly, the cup will stay intact as long as there is water boiling in it," he says. "In the case of a reactor accident, the vessel is saved from the hot molten fuel by water boiling outside the vessel instead of inside."

"In the dry reactor cavity of present designs, the heat load created from the molten fuel in an accident could melt the vessel wall, making the situation harder to control," Ken explains. "The double tank construction will help cool the reactor until it becomes safe to take other actions."

Keri Sobolik of Thermal Test Team 2761-4 and her colleagues at the Radi-

ant Heat Test Facility have designed a heat array with 20 panels. Power to these panels can be controlled to simulate greater heat in the center of the vessel or along the edges, for example, or in more complex patterns representing many possible melt (Continued on Next Page)



**BENEATH THE TANK** that forms the outer vessel of CYBL, T.Y. Chu (6422) examines access ports for diagnostic instruments and other hardware.

## Radiant Heat Array Makes Reactor Safety Experiments Possible

Developed in connection with early testing of the Polaris warhead, Sandia's Radiant Heat Test Facility in Tech Area 3 offers a unique Sandia capability. Now gearing up to electrically simulate the heat output of molten reactor fuel, the facility has previously been used for a number of projects.

"The principal reason DOE selected Sandia for the flooded-cavity experiments was that we had in place this remarkable capability to apply up to 5 megawatts of radiant energy," says Ken Bergeron (Manager, 6415).

The facility began life in Tech Area 1, says Ned Keltner, Supervisor of Sandia's Thermal Test Team 2761-4. It was moved in the 1960s to Tech Area 3 and linked to a 5-megawatt power substation. It went to its present location in Bldg. 6536 in the 1970s.

The electrical capabilities have been used to simulate concentrated solar energy in testing several solar receiver concepts. The facility has also simulated aerodynamic heating. This is the kind of heating created by friction when an object moves rapidly through the atmosphere or other fluid.

A 4,160-volt power line enters the facility through a large power switch, explains Keri Sobolik (2761-4), who helped design the radiant system for the upcoming flooded-cavity tests.

"This is another example of the many Sandia capabilities that are a result of our work in defense-related research and development," Ken says. "The maintenance of these capabilities will allow us to continue to have a competitive advantage in applications to non-defense areas."



**(Continued from Preceding Page)**

configurations. (See "Radiant Heat Array Makes Reactor Safety Experiments Possible," page four.) The flow of electricity to the panels also controls the range of heat distributions, which, Keri explains, can be raised to about 400 times the intensity of sunlight on a comparable surface.

**Boiling Upside Down**

One reason the surface is so important in the experiments is that the heat source is on top of the water, rather than beneath it. "The size and shape of the surface are also more important when the heat is on top, because the vapor that's generated in boiling cannot easily escape and must flow around the surface," T.Y. says.

Boiling passes through stages, or regimes, he explains, and one of these is film boiling. "You're

**How Big? Well, Considerably Bigger than a Bread Box**

The giant stainless steel test vessel shipped to Sandia/New Mexico for use in reactor safety experiments is the largest testing apparatus to arrive at Kirtland AFB in recent years.

Lying on its side on a tractor-trailer rig, the 16-foot-diameter test vessel reached 20 feet above the roadbed. The size and weight of the outer vessel resulted in special routing and restrictions on its journey from Los Angeles. The slightly smaller inner vessel was shipped separately.

The 20-foot height required that power and other utility lines be moved at several locations. Operating procedures for the trip, which got under way Nov. 29, did not allow night-time driving through some areas or any travel during inclement weather. Some Arizona communities placed date and time restrictions on when the load could pass through.

generating so much vapor, you can't get rid of it fast enough, and your ability to transfer heat becomes much lower," T.Y. says. "If we go into a film boiling regime, we risk melting the vessel." Careful calculations and operating procedures will prevent that from happening in the experiments, but it is this critical information that will determine if the concept is valid for other nuclear reactors.

John Bentz (6423) has worked with T.Y. for the past two years on the flooded-cavity idea. They, Rick Blose (contractor), and others looked at several ways to conduct a large-scale flooded-cavity experiment. "We chose this one because it best simulates the reactor design and makes it easier to contain water, so we had fewer ES&H [environment, safety, and health] concerns," John says. After small-scale testing, John and T.Y. moved to the larger experiment.

Dave Schulze (2761-4) and Bill Jacoby (contractor) will install more than 200 thermocouples for temperature measurement. Dale Shamblin (2761-4) will be in charge of putting together the heat array. Richard Simpson (6423) will help John install 10 video cameras and a steam recovery system.

"Video is important to these tests," says John, "because the boiling is so difficult to model." The thermocouples and flow meters will track operation of the heating array and provide data to assess heat transfer rates. John is also in charge of designing software that will display heat flux and temper-



JUST AHEAD of a December snowstorm (and a line of traffic on Rio Bravo Blvd.), the outer vessel of the Cylindrical Boiling facility — CYBL for short — hits the homestretch of a seven-day trip from Los Angeles to Tech Area 3.

ature calculations in real time on computer terminals at the Radiant Heat test building.

As often happens in a major Sandia experiment, T.Y. points out, an integrated team of researchers analyzed several preliminary smaller-scale experiments to make sure the big one was understood. Charles Hickox (1511), Ronald Dykhuizen, and Bruce Bainbridge (both 1513) did boiling and two-phase flow analysis work in the subscale experiments. Rod Schmidt (6423) made computer simulations of the convection flow of the molten reactor fuel that helps to define the heat flux distribution. To address concerns about stress on the full-scale inner vessel, Richard Koteras (1561) verified the integrity of the design and calculated the "thermal envelope," or range of safe operation. ●WKeener(7161)

**Second Semiannual Group****ES&H Award Winners Named for Contributions to Labs**

The latest winners in the Corporate ES&H Award Program have been announced and recognized. Recipients cited for having demonstrated "outstanding Labs-wide contributions to ES&H" were presented their awards by President Al Narath at a Sandia Management Council meeting last month.

Another group, recognized for other noteworthy contributions to ES&H, receive awards from their respective vice presidents.

Receiving awards from Al were

- Louis Restrepo (6523) — For outstanding safety analysis contributions in support of many Sandia organizations. Louis is a recognized authority on safety analysis at the national level and has made recent contributions that benefit the entire DOE complex.

- Jim Raines (7611) — For significant contributions in providing management oversight of Packaging and Transportation (P&T) operations and promoting compliance with P&T requirements.

- Occurrence Reporting Team: Donna Mitchell (7443), Al Villareal (7432), Duane Hughes (7443), Gus Arellano (7732), Shirley Ramirez (7616), Jean Lopez (7032), Pat Milligan (7326), and Dennis Johnson (contractor) — For sustained group effort using benchmarking and prototyping activities to develop an improved occurrence management system that impacts all Sandia organizations and sites.

Receiving awards from vice presidents:

- Earl Graff (5115) — For leading and supporting numerous extracurricular ES&H efforts that have Labs-wide impact. Examples of such activities include editing/publishing the SNL Elec-

trical Safety Bulletin and participating on the SNL Electrical Safety Manual Subcommittee, the Electrical Safety Committee, and the team authoring the Industrial Machine and Portable Power Tool Safety Manual.

- William Bonivert (8716) — For developing a system to significantly reduce the volume and toxicity of effluent from the Electroplating Laboratory at Sandia/California. Under Bill's initiative, the lab is completely self-contained, allowing no paths by which hazardous liquids can enter the environment.

- Martin Nee (7734) — For exceptional service to Sandia in the field of electrical safety. Examples of Martin's contributions include serving as the senior consultant on electrical safety concerning the National Electric Code, upgrading the SNL Electrical Safety Program, and assisting DOE in the formation of the DOE/HQ Electrical Safety committee.

- Joe Boyce (7030) — For collaborating with Kirtland AFB to develop and implement 24-hour emergency medical services (EMS) for Sandians. Through Dr. Boyce's initiative, corrective action has significantly reduced the risk of insufficient EMS services during non-operational hours.

- Tim Miller (7813) — For pursuing the identification and documentation of deficiencies in Sandia's Cranes and Hoists Maintenance Program. Tim's efforts will benefit all Sandia employees who require cranes and hoists to perform their job responsibilities.

- Martha Haines (7151) — For extraordinary efforts to identify potentially contaminated Sandia sites needing environmental restoration. Martha's support of this environmental restoration project

included planning of the process for data gathering, structured interviews, and documentation of the completed process.

- Sheryl Buck and Don Nissen (both 8642) — For intensive efforts to prepare the joint Sandia/California and Lawrence Livermore Environmental Impact Statement (EIS). Don and Sheryl's efforts demonstrate the Sandia values of leadership, teamwork, and integrity in their interactions with LLNL and the numerous agencies involved in this effort.

- Operating Procedures (OP) Team: Debra Nissen (8601), Barry Schwartz (7020), Guy Donovan (1236), Carol Adkins (1815), Susan Esfahani (2336), Dave Ryerson (2664), Earl Graff (5113), Paul Hommert (1502), Dave Glowka (6111), Allison Davis, Marilyn Warrant (both 7024), Darlene Moore (7721), Paul Fleming (7732), Larry Humpherys (8200), Bill Ormond (8643), Gerry Zawadzka (9302), Paul Elder (9211), Glenn Kuswa (4504), and Sandy Warner (8643) — For intensive group effort, using project management and quality principles, to develop an OP document that will help Sandians conduct operations that may be hazardous in a uniform, consistent, and safe manner.

- Medical Reporting Team: Lorraine West (7031), Jean Lopez, Juan Griego (both 7032), Denise Reed (7033), Gus Arellano, and Therese Kelly (both 7732) — For initiating a comprehensive review of the accident/reporting system, designing new processes, and implementing a comprehensive data base management system linking Medical and Safety Engineering information.

The next call for ES&H award nominations is scheduled for May. ●



*(Continued from Page One)*

## Open Skies Treaty

get successive overlapping radar echoes.

As the US advisor on imaging radar, Max helped formulate US positions on radar image quality. He also authored parts of the treaty concerning performance verification methods and procedures for validating imaging radar, and he chaired a formal session in Vienna to review radar technologies presented by other nations. (See "Radar Expertise Afforded Unique Opportunities" at right.)

One issue Max has been directly involved with is how to certify radar performance (verify that imaging radars are within the resolution limits specified by the treaty). "The purpose of Open

**"Limits on radar performance help ensure that Open Skies aircraft are not being used for 'spying.'"**

Skies is to build trust among nations by allowing them to monitor each other's conventional military forces, not to gather sensitive intelligence information about each other," he says. "Limits on radar performance help ensure that Open Skies aircraft are not being used for 'spying.'"

Another obstacle presented by the treaty is export control. Open Skies, by its very nature, requires participating nations to share their technologies, knowledge, and equipment, most of which was heretofore considered sensitive, Max says.

One way of solving the problem is by using commercially available technologies as much as possible. Currently, Orgs. 9100 and 2300 are trying to commercialize a non-classified SAR system that can be exported to other countries and used in their monitoring suites, if they desire to do so.

But commercializing such technologies is difficult in many cases, says Max. Monitoring equipment is rare and expensive, and many countries don't have the resources to invest in such systems. The Russian Federation plans to reduce its costs by using Open Skies sensors to perform environmental monitoring tasks at home as well.

Because of these and other unresolved issues,



MAX'S radar expertise took him, among other places, to the Hofberg Palace in Vienna for treaty negotiations. The writing on the sign, in German, identifies him as a representative of the "United States of America."

## Radar Expertise Afforded Unique Opportunities

Max Sandoval (9241) says being a part of the Open Skies Treaty negotiations has allowed him to "see the world," or at least parts of one continent. He attended technical briefings in Brussels, technology export discussions in London, treaty negotiations in Vienna, a signing ceremony in Helsinki, and field tests in Budapest.

One of his most memorable visits was the Hofberg Palace in Vienna, a time-honored mecca for peaceful solutions to international problems in Europe. During formal negotiations at the Palace, Max helped diplomats from several nations iron out technical details of the treaty. "I never thought my knowledge of sensor regimes would take me to such places as the Hofberg Palace," he says.

One of the biggest obstacles of successful negotiations was the language barrier. Five official languages were spoken during negotiations — Russian, German, French, English, and Spanish — so translators were on hand at all times.

Max says many of the attending diplomats needed to be tutored in the technical aspects of the treaty. "Technical jargon is difficult to translate, so I had to learn to speak about technical subjects in words that could be easily translated and understood," he says. But his knowledge of French, Spanish, and some Russian came in handy. "Sometimes I could tell if the translators were missing the point."

The negotiations also gave Max a chance to see several aircraft from other countries. During field tests in Hungary, for instance, Max and the other technical experts were offered a ride in a Soviet-built Tu-134, similar to a DC-9. "I looked at the tires and the general condition of the aircraft and promptly declined the offer," he says. "Safety is not much of a concern in the Russian Federation."

Later, he was asked if he wanted to ride in a Soviet transport helicopter from Budapest to the airfield where the field tests were located, some 20 miles away. Max was hesitant at first, but when the pilot informed him that the Pope had flown in it recently, he climbed aboard.

While in Budapest, Max says, he attended a dinner for technical advisors. Attending the dinner was a Hungarian-born cosmonaut. "After seeing the Soviet-built aircraft, I told him he was a very brave man for getting into a Soviet-built space vehicle. He agreed and laughed," he says.

Max says the negotiations also showed him firsthand how international events affect relations among nations, especially recent events such as the breakup of the former Soviet Union and the breakdown of the Berlin Wall. "I was at NATO headquarters in Brussels when the East and West German negotiators first walked into the room together," he says. "That was incredible."

aircraft fitted with full sensor suites are probably at least two years down the road, he says.

### Treaty Sets a Precedent

Although the US is participating in Open Skies, monitoring flights over the US will probably be limited to a few each year. Other nations will likely be most interested in such areas as military bases and weapons storage sites.

"Most nations are not concerned about troop movements inside the US," says Max. "The overflights are more valuable in Europe, where troop and equipment movements may foreshadow a border skirmish."

However, the treaty indirectly affects the US in several ways, he says. "Every time tensions are

reduced in Europe, that's one less skirmish that US troops may eventually become involved in," he says.

Open Skies could also pave the way for other treaties. For example, aerial inspection is being evaluated as a provision in the Conventional Forces in Europe Treaty. "Open Skies is the first time former Warsaw Pact and NATO nations have come together in the military reconnaissance arena," says Max.

In addition, Open Skies may set a precedent for nuclear weapons treaties. Such treaties may combine aerial inspections with commercial satellite monitoring and on-site inspections. Researchers in Org. 9200 are determining potential applications of imaging radar for monitoring such treaties. ●JG

*(Continued from Page One)*

## Feedback Follow-up

main shops, I am curious as to who it was that caused this reaction.

"Could it have been the grandfather who has worked here for 20 or 30 years? It could have been the person who volunteers their time for children's sports or Girl Scouts or Boy Scouts.

"The point of all this is that those of us who work in the shops are really very ordinary people whose only possible connection with gangs is to try to keep our sons and daughters from getting involved in gangs."

Another employee had a little fun writing the following tongue-in-cheek response to the original question:

"Not only do you have to watch out for the common criminal element within the tech area . . . but I have another complaint that has not been addressed: When are we going to get adequate parking spaces for all of our 'chopped' Harleys and additional space to hang our black leather jackets? Hey, these things are expensive!"

This writer then closed: "The author of the letter . . . sounds like your typical bureaucrat trying to create problems to be fixed, as if we didn't have enough already."

Obviously, the original questioner's statement

— a purposeful overstatement, I'm guessing — didn't go over too well with the folks in the shops. Now that they've had their say — eloquently done, in my opinion — I have a suggestion: Let's let the issue rest, and if we must judge one another, let's do it based on the quality of our work — *not* by what we wear. (I still hate ties.) ●

## Take Note

The New Mexico Section of the American Society of Mechanical Engineers (ASME) is sponsoring a Student in Industry Day for UNM students. The ASME student section at UNM has compiled a list of more than 70 students who would be interested in spending a half or full day with practicing engineers. The list includes students from the mechanical, electrical, civil, and nuclear engineering schools and indicates their areas of interest. Technical interests include design, heat transfer, environment, testing, dynamics, robotics, optics, manufacturing, construction, facilities, and others. The week of March 8 has been targeted for students to meet with engineers, depending on the schedules of the student and host. If you would like to host a student or need more information, please call Larry Luna (7906) on 4-8027 or 881-6808.



**For Your Benefit**

## New Dental Administrator Chosen

A new claim administrator for Sandia's Dental Expense Plan has been chosen. No changes have been made to the benefit structure or the schedule of allowances.

Effective April 1, through a competitive bidding process, The Travelers has been chosen to replace Metropolitan Life Insurance Company as the claim administrator. The Travelers Preferred-D Dental Network will replace Metropolitan's Preferred Dentist Program (PDP) as Sandia's dental network.

### Key Dates

As in any transition, some delays may occur. To minimize the chance of delays, submit any current dental claims to Metropolitan *as soon as possible*. Here are key dates:

March 20: Beginning this date, **do not** send dental claims to Metropolitan. Metropolitan will be completing processing of the dental claims it has already received. **Do** begin mailing dental claims to The Travelers (see below for when you will receive claim kits).

March 31: Metropolitan will stop processing Sandia dental claims and will issue no more claim checks. Sandia claims and records will be transferred to The Travelers.

April 1: The Travelers will begin processing and paying claims. The customer service phone line will be open for inquiries (number to be provided later).

Also beginning April 1, the Preferred-D dental network will be available for use by Dental Expense Plan participants, and the PDP will not be available. However, the Preferred-D Network will include many of the same dentists as the PDP.

Starting April 1, The Travelers will process all

claims, no matter when the date of service (subject to the current one-year limitation). The above transition dates apply both to new treatment and to claims for ongoing treatment such as orthodontia, fixed bridgework, crowns, dentures, and root canal therapy. The Travelers will identify such claims for special handling.

### Claim Kits Coming in March

During the third week of March, The Travelers will mail a claim kit to covered persons' homes. The kits will include two Travelers dental claim forms, a listing of the Preferred-D dentists in the Albuquerque and Livermore areas, and other information. The roster of Preferred-D dentists will not be complete until March, so inquiries about dentists should be held until claim packets are received.

For possible future reference, here is The Travelers' address: The Travelers, Managed Care and Employee Benefits Operations, P.O. Box 660277, Dallas, TX 75266.

### Reimbursement Spending Accounts

Participants in the Reimbursement Health Care Spending Account should remember that claims for unreimbursed health care expenses incurred in 1992 must be filed with the Reimbursement Spending Account (RSA) no later than April 1, 1993. Because an insurance company's Explanation of Benefits is needed for the RSA filing, anyone with unfiled 1992 dental claims should send them to Metropolitan as soon as possible to avoid missing the RSA filing deadline.

For answers to questions about the dental plan or the RSA, call health care administrator Richard Garcia (7543) on 845-9704. •

## Agility Seminar to Feature National Authority

Among the featured events at a Sandia seminar on agile manufacturing Feb. 11-12 will be discussions with one of the principal investigators for a report that has gained increasing attention since its release in 1991.

Roger Nagel, Deputy Director of the Iacocca Institute at Lehigh University, will address Sandians and local members of industry and will participate in discussions. He and a team of industry leaders produced the *21st Century Manufacturing Enterprise Strategy Report*, which sparked much of the current nationwide interest in agile manufacturing.

The report responded to Congress's request that the Office of the Secretary of Defense Manufacturing Technology assemble experts to assess US industry's transition to 21st-century needs.

To help achieve the goals of manufacturing agility envisioned in the report — a competitive advantage gained by responding rapidly to demand for high-quality, highly customized, cost-effective products — the Agile Manufacturing Enterprise Forum (AMEF) was founded. AMEF describes itself as led by industry and facilitated by the Iacocca Institute.

The Iacocca Institute was formed at Lehigh in 1987 with the purpose of strengthening US technology and education for global competitiveness. Sandian Gary Laughlin (2900) is currently a loaned executive at the institute.

Agility requires teaming across manufacturing enterprises, efficient information sharing, improved business and management methods, and better use of employee decision-making abilities as well as advanced technical means to rapidly produce low-cost, high-quality products. A likely development in agile manufacturing is increasing formation of "virtual corporations," the teaming of companies to meet fast-developing customer needs. A current *Business Week* cover article about that subject quotes Nagel extensively.

Details of the seminar were being completed at LAB NEWS press time, and more information will be provided through various channels. The event will be held in Sandia/New Mexico's Technology Transfer Center (Bldg. 825). Because of limited seating, tickets will be distributed through directors' offices.

For more information, Sandians may call the Advanced Manufacturing Technology Center 2900 office on 845-8436. •

## Feed Back

*Q: As I wandered through the Tech Area on Thursdays and Fridays last September, it seemed as if it were a Sunday. The association of the vacation-completion requirement with the end of the fiscal year means that work really suffers in September. As an alternative, could Sandia institute a policy of vacation completion by anniversary date (or the end of the anniversary month)? At least that approach would spread the situation out over the full year.*

*A: This question comes up regularly. It is true that the last few working days in September are rather quiet in some areas. However, our vacation time, like other elements of our budget, is funded by fiscal year. Sound accounting principles require that funding received and cost incurred should be matched in the same fiscal year; therefore, all employees must take their vacation within the fiscal year in which the vacation is budgeted unless*

specifically authorized otherwise.

In addition, our payroll system is set up to account for the use of vacation by fiscal year. Modifying programming to track vacation for each individual employee by anniversary date would be very expensive.

SLI 4510, "Vacation," provides guidelines for scheduling vacations "to satisfy individual requests subject to assurance of the continuity of operations and timely completion of work requirements." Management is expected to estimate work and staff requirements and communicate those needs to schedule work more effectively. Managers can encourage employees to take their vacation, as business needs permit, throughout the year, and employees can be mindful of customer needs when requesting vacation time.

Paul Stanford (100)

## Take Note

UNM's Center for Women's Health is conducting monthly health forums throughout 1993 on the second Wednesday of each month. Sessions are in the fourth floor lobby in University Hospital's Ambulatory Care Center and begin at 5 p.m. Fees are \$3 per session. Remaining presentations include "Women and Cancer: What is Your Risk?" Feb. 10; "Women and Aids: Can It Happen To You?" March 10; "PMS: What Does This Mean?" April 14; "Mother/Child: How to Talk About Sex," May 12; "Infertility: Doesn't It Get Your Zygote?" June 9; "Vaginitis: Normal Discharge or Infection?" July 14; "Women and Stress: Do You Know How To Relax?" Aug. 11; "Menopause: The Secret of the Century," Sept. 8; "Sexually Transmitted

Diseases: Which is Which?" Oct. 13; "Sexual Abuse: Get the Facts," Nov. 10; and "Your Child's Self-Esteem: Where's Yours?" Dec. 8. For more information or to register, call 272-1269.

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The New Mexico Museum of Natural History and Science is offering a free course on New Mexico's natural history for anyone interested in becoming a docent and helping visitors understand museum exhibits. Classes are scheduled from 1:30 to 3:30 p.m. or 6:30 to 8:30 p.m. on Tuesdays and Thursdays Feb. 16 through April 29. No prior knowledge of natural history is necessary. For more information, contact Maddie Zeigler at the museum on 841-8837.

## Fun & Games

**Bowling** — The SANDOE Bowling Association Bowler-of-the-Year Tournament was held Dec. 6 at Holiday Bowl. To participate, bowlers had to be a Bowler-of-the-Month during the 1991/1992 season or the previous season's Bowler-of-the-Year winner. Bowler-of-the-Year awards will be presented at the SANDOE annual meeting at the end of the season.

SANDOE Bowling Association 1991/1992 Bowlers-of-the-Year include: Scratch — Milt Stomp (6200), 585; and Cheryl Barton, 568; Handicap — Jerry Long (ret.), 577 and 649; and Dora Gunckel (6400), 555 and 660.

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**Boating** — The Coast Guard Auxiliary offers safety courses in powerboating and sailboating, Tuesday evenings at 7 p.m. at the Armed Forces Reserve Center (400 Wyoming NE) beginning Feb. 16 and continuing approximately 13 weeks. Classes include marine engines, basic sailing, navigation, marlinspike training, and trailering. There is a charge of \$15 for the course text; instruction is free. Additional family members who attend pay \$5 for worksheets. To register, call 897-1695 or 298-0116.



**becoming a Source of Competitive Advantage**

# What's Happening in the Internal Programs Division

By Glen Cheney (VP-7000)

*Editor's Note: This is the fourth in a series of LAB NEWS articles by Sandia's vice presidents, discussing what's happening in their areas. The next scheduled article is by John Crawford (8000).*

Internal Programs Division 7000 faces two principal challenges in 1993 and beyond. The first is to realize our vision of both being, and continuously becoming, a source of competitive advantage for Sandia. And the second, related to the first, is to be regarded by all Sandians as an organization that's vital to the Labs' programmatic success.

To some employees, the idea that an internally focused support organization regards itself as a source of programmatic competitive advantage may seem a bit odd. After all, it is the technical output of Sandians' technical line organizations that meets customer needs, wants, and expectations — customer requirements. So it would be easy to overlook the contributions of the Internal Programs Division to Sandia's technical success. As you read this article, I hope you'll come to understand how we do contribute.

Internal Programs Division is home to more than 2,000 Sandians — roughly a quarter of the Laboratories' employees. The functions we perform are as diverse as the people who perform them.

## Our Responsibilities

Here's a quick summary of Internal Programs Division responsibilities.

**ES&H** — Our responsibilities in Environment, Safety, and Health include corporate programmatic oversight of ES&H as well as ES&H professional support to all Sandia sites except Sandia/California. We work with DOE, external regulators like the New Mexico Environmental Department (NMED) and the Environmental Protection Agency (EPA), local government, and Sandians to protect our environment and to assure the safety and health of Sandians and the public.

**Facilities** — We exercise management and oversight of our corporate facilities program. And

**"The functions we perform are as diverse as the people who perform them."**

we provide facilities construction, operation, and maintenance for Sandia's New Mexico site.

**Communications and Information** — We provide a wide range of information services and communications products to inform and represent the Laboratories, including our library, the LAB NEWS, *Weekly Bulletin*, public relations, records management, and classification.

**Human Resources** — Hiring, personnel movement, training, position evaluation, strategic human resources planning, compensation, and benefits management are primary functions in our Human Resources Center.

**Information Systems** — Our work in information systems includes operation of both technical and administrative central computer systems. We develop and support corporate administrative applications, voice mail, and integration of E-mail [electronic mail] systems. We are business analysts, software designers and analysts, production and data center specialists, data administration analysts, data base analysts, and mainframe and personal computer specialists.

**Purchasing** — Virtually all goods and services bought by Sandia/New Mexico are acquired through the purchasing organization. We negotiate leases, contract for services, buy goods for Sandia



**SANDIA INNOVATION** — VP Glen Cheney (7000) checks out part of the Hazardous Waste Management System developed by a team of Sandians and contractors working in Chemical Waste Management Dept. 7721. Darlene Moore (7721), project leader of operations in Sandia's Hazardous Waste Management Facility, shows Glen how the system uses a bar-code reader to track wastes continuously from the time they are packaged until they are disposed of at commercial sites. Darlene says the system, praised by DOE officials, even tracks very small waste packages that are combined into larger packages.

programs, and administer and monitor these contracts.

**Safeguards and Security** — Sandia's ability to do classified research and development rests in no small part on a well-trained security force and on the procedures, management, and safeguards we have developed to protect classified materials, devices, and documents.

**Logistics** — Any material that arrives at our loading docks, is distributed internally, or is sent from Sandia to another location is handled by our Logistics Center. We perform custodial services and handle mail, purchased materials, and incoming and outgoing shipments for Sandia/New Mexico.

**Occupational Medicine** — We provide a full range of occupational medical services and employee assistance for both physical and mental health. Employee physical examinations, emergency care, treatment of injuries, health promotion, and counseling for substance abuse are some of our important services.

## The Downside and the Upside

Two ways to think about how the Internal Programs Division can be, and can continuously



**A WELL-TRAINED** security force is vital at facilities such as Sandia, and security operations are part of Division 7000. Security police officers are seen here practicing automatic-weapon skills they hope they never actually have to use.

become, a source of competitive advantage for Sandia are (1) avoiding the downside, and (2) enjoying the upside.

**Avoiding the Downside** — Let's consider the downside of performing poorly in some of our areas of responsibility:

- Workplaces that injure employees or fail to safeguard their health would suffer from low morale and productivity.
- Harming the environment and violating environmental laws could result in civil and criminal penalties as well as a loss of public and customer confidence.
- Inadequate protection of classified materials and documents would threaten classified programs.
- Paying too much and waiting too long for purchased products and services would increase costs and result in unproductive delays.
- Facilities that are inadequate for programmatic demands or that fail to perform as intended could undermine programmatic success.

Of course, I could cite many more examples of "downside" potentials we want to avoid. The degree to which we avoid them all will give us a competitive advantage over less-diligent competitors.

**Enjoying the Upside** — The potential for upside advantage is available in every one of the downsides we seek to avoid.

- Workplaces that practice productive, safe, and healthy ways to do their work enjoy high employee morale and productivity.
- Preserving the environment and complying with environmental laws build public and customer confidence. External customers need not be concerned about their liabilities for Sandia activities, and many will choose us over other organizations that might represent higher risks.
- Consistent, successful protection of classified materials and documents supports program success.
- Cost-effective and timely procurement uses program dollars and Sandians' time most productively.
- Facilities that successfully serve program



needs and perform as intended are direct contributors to programmatic success.

### Getting There

Just talking about competitive advantage is not enough. Getting there requires planning and focused effort. We have begun in Internal Programs Division by preparing a Strategic Quality Plan. In our plan we are very clear about our vision, and we are pursuing a strategy to achieve it (more on that later). We recognize the need to form and nurture alliances with customers, regulators, and colleagues. And we acknowledge that key roles for management are to recognize contributions and foster growth.

Two elements of our strategy to achieve our vision are especially vital. The first is negotiated goals for managerial performance. The second is comprehensive project or work plans for all our work.

We recognized early on that while conditions constantly change and crises are inevitable, we still need some concrete goals to guide us. We started by developing performance goals for the Division that support Sandia's *Strategic Plan* and business directions. They are subdivided into Results, Quality, and Management Goals. President Al Narath and I have discussed my performance goals, and he has approved them. My next step was to negotiate supporting goals with each of my direct reports, and then they, in turn, negotiated goals with their employees. Every manager in Division 7000 has explicit, documented performance goals for FY93.

One of our goals is to have 100 percent of our work in Division 7000 covered by work or project plans by March. Each plan will contain six key attributes:

- Work will be divided into "work elements" or a work breakdown structure.
- Requirements must be defined for each element.
- The person(s) responsible for the work must be identified as well as the portion of their time to be devoted to the work element.
- Milestones are required for each work element.
- Financial and physical resources must be explicitly assigned in time.
- Actual outcomes will be compared to the plan, and adjustments will be made periodically.

Having specific performance goals for all organizations in Division 7000 will focus our efforts throughout the year and provide a discipline that will constantly bring us back to actions that support our vision. Also, by doing comprehensive planning for all of our work, we will manage our financial, human, and physical resources for maximum efficiency and productivity.

### How Are We Doing Today?

Let's turn now to some examples of work in Division 7000 that are now, or will become, sources of programmatic advantage for Sandia:

**Sandia Human Studies Board** — A recent project within Sandia's Occupational Medicine Center has established Sandia's Human Studies Board (HSB). Frequently called an institutional review board or IRB at other institutions, the HSB is a formal review board that is charged with safeguarding the welfare and rights of human subjects of research. It became apparent that Sandia needed to establish such a board about a year ago when several physical safeguards projects within Division 9000 were denied full funding support pending completion of such a review.

The Human Studies Board reviews the risks and benefits of proposed research projects involving human subjects, human data, or human specimens to determine acceptability in terms of Sandia's commitments and policies, applicable law, and standards of professional conduct and practice. Sandia is committed to excellence in research, and the HSB provides an independent "ethical" review of the proposed research. HSB members have been

appointed by Al Narath and are representative of a cross-section of Sandia, including the New Mexico and California medical organizations, other Sandia technical and administrative organizations, and the external (non-Sandia) community.

The HSB reviews any human-studies research sponsored by Sandia, conducted by or under the direction of any employee, or involving the use of any Sandia property or facilities. The board has been designed to be responsive to current research interests and to enable future research directions, the most notable being the new strategic initiative in biomedical engineering. Prompt HSB review of proposed research initiatives and assurance of compliance with applicable regulations will strengthen Sandia's credibility as a responsible technical contributor to a broadening variety of research directions.

**Radar Image Data Base** — Cross-organizational teamwork is a major part of our work in Division 7000. Recently, Greg Conrad of Data Administration Dept. 7321 became involved in a cooperative effort with Engineering Information



OPERATION OF Sandia's central computer systems is another task handled by Division 7000 employees. Here, Ida Romero (7328) retrieves records in Sandia's Computer Annex.

(Photo by Randy Montoya)

Systems Dept. I 2816 to design, implement, and administer an information data base for Image and Signal Processing Systems Dept. 9133. This data base contains information that facilitates image processing of radar images. A first-cut data base and application was delivered within two months, and a working set within four months after Department 9133 first contacted Department 2816. Not only was the data base available in a timely manner, but the structure brought to the information through the data base has allowed Department

**"While conditions constantly change and crises are inevitable, we still need some concrete goals to guide us."**

9133 to process nearly 10 times more images in the last few months than in the past. This gives Sandia a competitive edge in this R&D area.

**ES&H Customer Support** — Judith Mead, Manager of ES&H Program Customer Liaison Office 7023, has been working to increase our responsiveness to internal customers by forming ES&H support teams. The support these teams provide our customers helps them serve their own customers more responsively.

One team is supporting the ODES/STARS Program, which launches rockets from the Kauai Test Facility with various experimental payloads serving the Defense Department's Strategic Defense Initiative Organization (SDIO). The ES&H team provides consultation on management

of the waste streams, oversight on operations safety, and consultation on industrial hygiene issues for the launch crew and experimenters. This support allows Kauai to offer safer operations that meet compliance requirements.

In another arena, the Tonopah Test Range (TTR) is in transition from being a full-time test facility to operating in a "campaign mode." The ES&H team working these issues is concentrating on the operating attributes needed at TTR so testing can be done safely and in compliance with

**"Preserving the environment and complying with environmental laws build public and customer confidence."**

laws and regulations. Some of these issues include implementation of the new DOE Radiation Control Manual, explosive and electrical safety, disposal of waste streams, and proper use and control of toxic and hazardous materials. With ES&H issues such as these under control, TTR can offer customers better performance with greater safety, while fully complying with environmental laws and regulations.

Another ES&H team is supporting Manufacturing Technologies Center 2400. Team members represent safety engineering, industrial hygiene, waste management, and environmental protection disciplines. By providing timely consultation and quick response to ES&H issues, we can help 2400 maintain a safer workplace for its employees and safer, more effective operations and services for its customers.

**Purchasing** — During 1992, Purchasing and Materials Management Center 7200 helped save more than \$9 million for our Sandia customers. In addition to ensuring that we identify the appropriate supplier to meet our quality and schedule standards, we also take an aggressive position in ensuring that we negotiate the most competitive prices.

These savings were generated by:

- Negotiating reductions in quoted price/rate/cost elements, fee, or profit.
- Accumulating requisitions to obtain volume discounts.
- Consolidating or changing requirements that result in a lower price/rate/cost while still meeting Sandia's needs.
- Making cost-effective multiple awards.
- Obtaining competitive benefits from previously awarded sole-source procurements.

These savings are available to Sandia to pursue our programmatic objectives. And they were achieved without jeopardizing quality and schedule requirements. Interestingly, these savings are roughly equal to the Purchasing and Materials Management Center's annual budget.

**Mail Service** — Getting essential mail delivered promptly and cost effectively is the Mail Center's contribution to Sandia's programmatic effectiveness, and we've made some notable progress in doing just that. Last May, we had a large backlog of incoming and internal mail, and important mail was being delivered days late. Today we average delivering incoming mail in just over 6 hours after we receive it from the US Postal Service. But, we're not satisfied yet — we think even further improvement is possible. Historically we have delivered about 10 million pieces of mail per month to Sandians, with 72 percent of that being third- and fourth-class bulk mail. By working with Sandia organizations and the US Postal Service, we have already reduced this "junk mail" by one-third. We are also urging Sandians to have non-programmatic mail redirected to their homes. Using these and other approaches, we expect to achieve even better customer service while reducing our operating costs.

**Benefits** — Rising health-care costs are an inescapable national issue for all citizens. Our Health Planning and Administration Dept. 7543

(Continued on Page Ten)



## Sandia News Briefs

### Sandians Participating in UNM Total Quality Forum

Several Sandians will be featured speakers at the 1993 Total Quality Forum Feb. 17-19 in Albuquerque at the Ramada Hotel Classic. President Al Narath will give the opening keynote address. Other Sandia speakers include Internal Programs VP Glen Cheney (7000), Quality Improvement Director Charles Tapp (4300), Quality Tools Department Manager David Bushmire, and Quality Improvement Engineer Jeanne Evans (both 4311). The forum is presented by the University of New Mexico College of Engineering and Robert O. Anderson Schools of Management. Sandia is one of several corporate and government sponsors. For more information, call External Quality Dept. 4303 Manager Julia Gabaldon on 271-7935.

### Howard Stephens Elected Chairman, ACS Fuel Chemistry Division

Howard Stephens, Manager of Process Research Dept. 6212, has been elected chairman of the American Chemical Society's Division of Fuel Chemistry. The 1,000-member division promotes research and education in energy production from coal, petroleum, heavy oil, oil shale, and tar sands, and studies such issues as environmental effects, energy production from waste combustion, and production of high-value materials from hydrocarbon resources. Howard will serve as chairman-elect in 1993 and chairman in 1994.

### Michael Hannah Receives IEEE Computer Society Award

Michael Hannah of User Support Dept. 1956 recently received an award from the IEEE (Institute of Electronics and Electrical Engineers) Computer Society during a workshop of the Portable Applications Standards Committee. The award recognizes his efforts as vice chairperson of the Standards Subcommittee, which recently completed a four-year effort to standardize the way users obtain POSIX (UNIX-like) operating system services from Fortran computer programs.

### Three Labs Technology Newsletters Win Awards of Merit from STC

Sandia recently received Awards of Merit from the Society for Technical Communication (STC), Phoenix Chapter, during its 1992-93 publications and art competition. The awards recognize three Labs technology publications: *Manufacturing Technology*, *Testing Technology*, and *Energy and Environment*, newsletters intended for private enterprises and government agencies interested in Labs technologies.

Members of Sandia's Corporate Publications Team who contribute to the newsletters include Jim Leonard (4521), Herb Floyd (4523), Lori Parrott, Toby Dickey, Linda Doran, Bob Goetsch, Janet Jenkins, Debbie Johnson, Kay Rivers-Stroup (all 4526), Jim Bolton, and Carl Hamberg (contractors).

### Ten Sandians Contribute to New Ceramics Book

Ten Sandia materials researchers are among the 15 authors who contributed to a recently published materials book titled *Characterization of Ceramics*. The 300-page book presents a broad overview of ceramics and glass, covering advanced synthesis and processing and focusing on applying material characterization techniques. Ron Loehman (1708) edited the book, and the following Sandians authored individual chapters: Ron, Carol Adkins (1815), Edwin Beauchamp, Richard Brow, Jill Glass (all 1845), Kevin Ewsuk, Terry Garino (both 1841), Diane Peebles (1812), Robert Schwartz, and James Voigt (both 1846).

### Team Achieves Milestone in Reflectance Modulator Technology

A team of five Sandians — Ian Fritz (1312), Gene Hammons (1311), Arnold Howard (1322), Thomas Brennan (1311), and David Myers (1303) — have constructed the first reflectance modulator that operates at a 1.3-micrometer wavelength. The advanced modulator uses strained-layer superlattice technologies pioneered at the Labs. Reflectance modulators are tiny compound semiconductor mirrors that can receive light waves from a distant source and impress information on the reflected beam. Their low operating voltage makes them useful for relaying optical information in computers, radars, remote-site communication systems, and security systems. Ian says that because of certain properties of optical fibers, the 1.3-micrometer wavelength allows such devices to operate at higher speeds.

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

(Continued from Page Nine)

## Internal Programs

continually analyzes the health-care environment and makes plan adjustments to control Sandia's costs, while still providing comprehensive health-care services for employees. In 1989, the Benefits department started the HealthSmart program and in 1991 increased the deductibles and out-of-pocket maximums. These plan changes have allowed Sandia to continue to offer a comprehensive non-contributory plan with only moderate cost increases. This is an important outcome because Sandia is self-insured, and funds saved in health care are available for application to corporate programmatic objectives. Careful management of our health care benefits has resulted in a competitive, cost-effective plan.

The investment strategies pursued with pension fund assets have over the past 10 years resulted in a value of pension plan assets exceeding that required to meet expected future payouts. What this means is that Sandia has not been required to tax programs for contributions to either of our defined benefit retirement plans for several years. Dollars saved here have been, and will continue to be, available for Sandia's other programmatic objectives, allowing Sandia to price our

research and development services more competitively to our customers.

### Looking Forward

Our vision states that we will become "a world class organization fully worthy of being part of a national laboratory" performing with "superior cost effectiveness." We are approaching these standards in some parts of Internal Programs Division 7000, and we are working toward them in other parts. We rejoice in our successes and strive for even better performance, and we pledge to improve where we are weak. Above all, we recognize that our success is only meaningful when it complements Sandia's success with our customers. ●GCheney(7000)

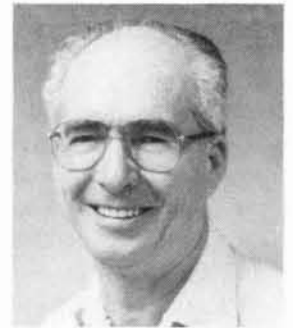
### Learn More at the Road Show

Employees can hear firsthand what's going on in Internal Programs Div. 7000 on Thursday, Feb. 18, during the next Sandia "Road Show." VP Glen Cheney will give two presentations that day in the Technology Transfer Center (Bldg. 825) — one at 9 a.m. and one at 3 p.m. The afternoon session will be video-linked to the Bldg. 904 auditorium at Sandia/California. Both sessions are open to all employees.

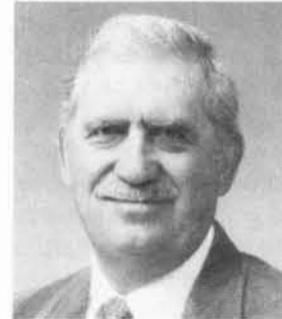
## Recent Retirees



Orié Montoya  
1811



Al Farmer  
2612 37



Wayne Young  
9723



Charles Sain  
5151 38



Neita Tucker  
154



Ray Alls  
2341 38

## Welcome

Albuquerque — Jim Green (7216), Michael Hessheimer (6449), Julie McBride (7216), Paul McConnell (6643), Danisha Peterson (21-1), Stanley Sikora (181).

Elsewhere: Indiana — Norman Schwerts (6523).

## Favorite Old Photo



BETTER CHECK YOUR PHOTO ALBUM! — At the time this photo was taken (probably Christmas 1966), I thought this person was my grandmother, Katherine Van Deusen. I'm not so sure now. Only recently did I notice that the woman in the photo had sprouted antennae. Is this my grandmother, or is she the "Catwoman from Mars"?

— Stuart Van Deusen, 1153



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

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

**Ad Rules**

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

**MISCELLANEOUS**

- GUN CABINET, 12 guns, walnut, large storage area, glass front, \$300; dog-house, large, \$25; dog patio door, medium. Walker, 821-5938.
- RIMS & TIRES, for '90 Stock Mustang GT, rims (15 x 7), tires (225/50/HR15), set of 4, 13K miles, like new, \$250. Baca, 271-2962.
- CEMETERY LOTS, choice spaces, valued at \$900/ea., sell for \$775/ea. Fletcher, 268-2094.
- CELSIUS HUMIDIFIER/EVAPORATIVE COOLER (swamp cooler), oscillating fans, ice cube tray, like new, w/original box, \$75 OBO. Davis, 255-2084.
- ROWING MACHINE, Precor 614, \$100; waterbed, king-size, 6-drawer pedestal, w/sheets, \$100 OBO. Hammond, 294-2045.
- FIREWOOD, seasoned Pinon/Juniper, 3 cords, split. Baca, 265-2881.
- BOOSTER CAR SEATS, Strolee, 4, velour, \$15/ea. Sweeney, 247-4866.
- BED & BOX SPRING, twin, \$20; life jackets, \$5; dog house, medium, \$10; maple desk, small, \$30. Maloney, 828-9610.
- MOTORIZED EXERCYCLE, adjustable seat, heart rate monitor, multiple speed, under warranty, like new, \$100. Hudson, 821-8988.
- PERSONAL COMPUTER, HP150, w/built-in printer, books, & programs, \$300; Speedrite checkwriter, protector, 8 digits, \$100 OBO. Cleveland, 898-2721.
- VIDEO CAMERA & PORTABLE VCR, like new, \$500; Remington 243 rifle, Model 700, w/rifle bag, \$285. Chavez, 275-0490.
- ELECTRONIC KEYBOARD, Yamaha Model PSR-6, portable, 49 full-size keys, 10 rhythms, 100 voices, excellent condition, \$50. Smith, 281-9360.
- SEGA GAME GEAR, w/battery charger, AC/DC inverter, battery pack, & 3 games, \$230 new, sell for \$120. Martel, 293-1892.
- COMPUTER, Compaq portable, 128K RAM, two 320K 5.25-in. drives, 9-in. monochrome display, DOS 3.3, Word Perfect 4.2, \$100 OBO. Edenburn, 869-2911.
- POOL TABLE, Golden West, 4-ft. x 8-ft., 3/4-in. slate, burnt orange surface. Konrad, 294-2807.
- COUCH & LOVESEAT, \$150; Lane coffee table & two end tables, solid oak, w/inlay glass, \$200; desk, \$40. DeReu, 275-2336.
- FISH TANK, w/stand, 30-gal.; Peavy column speakers; 12-string guitar, KMD 31-band equalizer. Rhoden, 293-5301.
- RADIO CONTROLLED GASOLINE BUGGY, RC-10, Airtronics pistol-grip controller, lots of extras, \$250 OBO for all. Miller, 281-4397.

- UPRIGHT FREEZER, Sears Kenmore, 16 cu. ft., new. Sanchez, 299-0443.
- STUFFED ELEPHANT, gray, made by Alresford Crafts of England, 21" L x 13" W, beautiful. Wagner, 823-9323.
- BED, full-size, includes headboard, frame, & firm mattress set, \$50. Padilla, 296-1387.
- SKI BOOTS, Salomon, men's size 10 to 10-1/2, \$30; cross country skis, Trax, ladies, 180cm, no wax, \$35. Bland, 265-6286.
- TURNTABLE, Technics SL-3200, direct drive, \$125; dinette set, 42-in.; refrigerator, Whirlpool, 19.1 cu. ft., side-by-side, \$175; camera, Contax 139Q SLR, w/extras, \$300. Furry, 281-1024.
- EXERCYCLE, Schwinn Airdyne, low miles, \$375. Shephard, 298-4879.
- TABLE TENNIS, standard size, good condition, w/paddles, \$85; Hoover vacuum cleaner, good condition, \$60. Keller, 822-8598.
- CAMERAS: Kodak — Hawkeye B, Vest Pocket 3, Autographic Special, 3A C; Polaroid — 800, print copier; Balda — Jubilette; make offers. Patton, 281-5209.
- KICKERBOX, two 15-in. "Power" woofers, 300 watts max., 4 ohm, 100-watt "Pyramid" crossovers included, \$150 OBO. Aguilar, 873-1952.
- GOLF CLUBS, Lynx Predator: 1, 3, & 5 metal woods, \$130; Lynx Predator driver, \$30; Lynx Predator pitching wedge, \$15. Mitchell, 299-5144.
- LAPTOP COMPUTER, TRS 100, modem, 3.5 floppy drive, serial & parallel ports, Basic, editor, & communications software, \$100. Koch, 296-2923.
- MISCELLANEOUS: 5-piece sectional, 4 bar stools, rocking chair, tricycle, car seats, hanging light fixture, make offers. Geer, 265-2094.
- CAMPER, 6-ft., for short bed pickup. Hansche, 281-5623.
- TREADMILL, Cadence 2300, 5 mph, calorie/pulse monitor, auto incline, \$225; utility trailer w/41" x 48" shell, 825-lb. capacity, \$125. Webb, 828-2271.
- SOFA BED, twin-size, tan, like new, \$125. Guttman, 888-5114.
- ELECTRIC RANGE & 2-speed vent hood, both in great working condition, harvest gold color, \$125 OBO. Curtis, 857-9124.
- COMPUTER TABLE, desk width, 3 levels on left, work space on right, metal base, putty color, never used, \$40. Mauldin, 293-3763.
- HUMIDIFIER, house-size, \$12; Hollywood bed frames w/rollers, twin-size, \$10; queen or double, \$15. Peterson, 256-7514.
- FLOOR TILE, ceramic, 8" x 8", 75 tiles (33 sq. ft.), coyote color, made by Monarch Mills (USA), \$1.00/ea. Trentham, 255-7145.
- MIRROR, 67" x 35", \$30; front door, 36" x 79", \$40; 2 louvre doors, 18" x 79", \$25; 6-bulb brass vanity light, \$15. Rosinski, 823-1805.
- RECLINER, brown, good condition, \$75; couch, 7-ft., contemporary, brown/gold, excellent condition, \$150. Bisbee, 293-0356.
- CEMETERY LOTS, Sandia Memory Garden, "Garden of Mercy", 2 spaces, 2 vaults, 1 bronze double marker, make offer. Haycraft, 299-3220.
- REPAIR MANUAL, for '88 Toyota Corolla, \$25; tire, P155/80 R13, w/half tread, \$10. Murphy, 881-1520.
- STEREO RECEIVER, Marantz, 20-watt/channel, \$40; Hartley speakers, large, tweeter, 10-in. woofer, \$50/pair; turntable, \$30. Biffle, 293-7043.
- LP RECORDS, 33-1/3, more than 100, 1960-1980's, \$1/ea. or \$75 for all. Norwood, 292-0072.
- GERMAN SHEPHERD CROSS, female, between 1 & 2 yrs. old, 19" tall, shots, spayed, sweet disposition, free to good home. Bell, 268-2744.
- STOVE & VENT, Whirlpool, \$100; 4 tires, Uniroyal Tiger Paw, P205/75 R15, \$75; wooden baby cradle, almost new, \$50. Koepp, 294-7136.

- TYPEWRITER, Smith Corona, portable, electric, w/case, \$35. Lippis, 898-8429.
- NOVATRON STANDARD HEADS, \$45/ea.; Halliburton #105 case, \$90; dedicated cords/connectors, Nikon Sunpack Pro 622. Baker, 888-9650.
- COMPUTER, Amiga A500, V 1.3, w/1 megabyte memory, TV adaptor, & basic software including games, \$200. Poulsen, 265-0566.
- COMPUTER, Macintosh IISI, 5/40 plus, 13-in. high resolution monitor, keyboard, microphone, manuals, boxes, bought 5/92, like new, \$2,000 OBO. Davis, 255-2084.
- MICROWAVE, 2.5 cu. ft., \$125; 3/4 cello, \$300; Packard Bell mini-modem, 2400 bps, \$60. Bordlemay, 883-4926.
- SKI BOOTS, 4-1/2 LS, almost new, only worn 8 hrs., new \$145, asking \$80; skis, 160cm, & bindings, \$40. Cooper, 839-7489.
- LOVESEAT & CHAIR, \$50; two maple chairs, \$25; electric lawnmower, \$50; Tuntouri rowing machine, \$125; Schwinn exercycle, \$225. McEwen, 293-9074.
- BABY GRAND PIANO, excellent condition, original ivory keys, \$3,400. Barnaby, 865-1348.
- GAME BOY, w/3 games, Tetris, Dr. Mario, & Mega Man, \$60. Munson, 822-1497.
- TELEVISION, 25-in., Heathkit GR2000, w/manuals, new in 1976, dark solid walnut contemporary console, fair picture, asking \$100. Kepler, 296-0402.

**Feeling Rejected? Please Follow the Rules**

Some "unclassified ads" are rejected because they do not meet requirements. LAB NEWS staff members do not have time to call people who submit ads, so non-qualifying ads are rejected *without notice*. The most common reason for rejected ads is that Sandians do not list their full names and organization numbers; this information is not printed, but it is necessary to verify that the ad was submitted by a Sandian. The rules are printed at the top of this page in each issue, and Sandians are encouraged to clip and save a copy.

- DUPLOS, large set w/storage bucket & playmat, \$20; child's bean bag chair, \$10; Tunnel-o-Fun, \$10; Bentwood rocker, very good condition, \$30. Johnson, 299-5459.
- COLOR TV, 19-in., 1977 Sears Sanyo, still good color picture, but bad vertical, best offer. Kawka, 299-1216.
- SKIS, K2s, 180cm, Marker M26 Twin-cam bindings, men's Raichle boots, size 8, Reflex poles, used once, \$350. Barr, 822-0671.
- FLY ROD, Sage 8'9"-3wt. Graphite III, 389LL, \$215; Ensoniq EPS keyboard, midi sequencer, digital sampler w/4X memory, \$750. Nichols, 281-0801.
- MACHINIST TOOLBOX, wood, 18" W, 8 drawers, micrometer, depth micrometer, squares, indicator calipers, thread & radius gauges, drills, extras, \$90. Allen, 298-9833.
- TABLE SAW, Craftsman, 10-in., new condition, will deliver, \$190 OBO. Henfling, 869-4119.
- ELECTRIC MATTRESS PAD, full-size, dual control, \$15; refrigerator, excellent condition, \$250. Forster, 293-7231.
- SECRETARIAL DESK, solid wood, \$150; coffee table, cherrywood/glass, \$100; chairs, naugahyde/chrome, 2, \$25/ea. Lowe, 299-7725.
- BIKING SHORTS, medium, \$12; bike helmet, \$20. Key, 298-7988.
- UTILITY TRAILER, 4' x 5' bed, heavy duty axle, & springs, \$150; Sears exercise bike, w/large padded seat, excellent condition, \$150. Garcia, 268-3848.
- SUN SLC SPARCSTATION, 17-in. mono display, 16 MB memory, SCSI, Ethernet, 2 serial, audio, diskless, \$1,800. Ray, 294-7720.

- SOFA, 85-in., beige on cream color, \$175. Navratil, 293-5527.
- BEDROOM SET, antique mahogany, headboard, footboard, sideboard, & slats, vanity w/mirror & stool, nightstand, excellent condition, \$425. Roybal, 836-5062.

**TRANSPORTATION**

- '67 CHRYSLER NEWPORT, classic, new tires, good condition. Bryant, 299-6973.
- '90 MAZDA MPV, fully loaded, PS, PB, AT, dual AC, CD, towing, cruise, 43K miles, below book, \$14,600. Green, 298-9216.
- '77 FORD PICKUP F250, AT, AC, PB, PS, cruise, good condition. Vigil, 296-3590.
- '84 NISSAN PULSAR, sports car, AC, new battery, starter needs sensor or something, \$300. Dickenman, 892-9561.
- '87 BMW 325is, power locks & windows, cruise, AT, leather seats w/sheepskin covers, original owner, low mileage, excellent condition. Morgan, 828-3995.
- '89 ISUZU PICKUP, AC, PS, PB, 5-sp., tinted windows, camper, \$4,000. Rhoden, 293-5301.
- '92 FORD AEROSTAR MINI VAN, 9K miles, XLT package, like new. Sanchez, 299-0443.
- '79 FORD LTD LANDAU, 35K miles on new engine, excellent paint, new brakes, good tires, power windows & locks. Beauchamp, 884-4749.
- '89 BMW 325ix, all-wheel drive, low mileage, excellent condition \$19,000. Gonzales, 884-8761, after 5 p.m.
- '92 FORD F150 PICKUP, 4-WD, AT, power everything, AC, cruise, camper shell, carpeted rear, 11K miles. Schluter, 298-0940.
- '87 JEEP GRAND WAGONEER, excellent condition, leather, loaded, 50K miles, like new, go anywhere, \$8,750. Myers, 271-1525.
- '81 HONDA ACCORD, 4-dr. sedan, 5-sp., AC, new engine, paint, brakes, tires, radio, battery, alternator, regulator, & seat covers, \$2,500. Sargent, 865-3227.
- '73 CHEVY CAPRICE, 4-dr., blue, V-8, AT, 100K + miles, good condition, \$500. Baker, 888-9650.
- '88 FORD F150 PICKUP, EFI, V-8, 5-sp., camper package, almost new tires, \$6,900. Smith, 265-4080.
- '89 DODGE RAM 250 CONVERSION VAN, all options, plus overdrive & dual air, 56K miles, \$11,500. Oglesby, 296-5361.
- '87 CHEVY NOVA, 4-dr., AT, AC, low miles, 1.6L, 4-cyl., \$2,700. Ludwick, 296-6447.
- '66 DODGE CORONET 500, Tudor (Classic), 318 V-8, AT, PS, 98K miles, clean, \$2,600 OBO. Romine, 299-8418.
- '77 PONTIAC BONNEVILLE BROUGHAM, 2-dr., V-8, body & overall condition very good, \$1,200. Hedges, 299-1756.
- MOUNTAIN BIKE, Huffy, thorn-proof tubes, like new, cost \$163, sell for \$95. Key, 298-7988.
- '90 TOYOTA CAMRY, white, AT, AM/FM cassette, all power, 43K miles, emissions tested, below book. Buck, 296-5963.
- '91 PLYMOUTH GRAND VOYAGER LE MINIVAN, champagne, 3.3L, V-6, FWD, AT, PS, ABS, loaded, 14K miles, excellent condition, \$17,000. Baldwin, 822-1860.
- '81 FORD MUSTANG, 6-cyl., AT, PS, AM/FM cassette, blue w/white top, good condition, \$1,500. Litts, 884-9010.
- MOTORCYCLES: '83 Yamaha Maxim 550, excellent condition, new tires, \$1,200; '72 Yamaha 250 Enduro, needs carburetor, \$150. Garcia, 268-3848.
- '81 DODGE COLT, 2-dr., hatch, 84K miles, \$650. Blain, 293-3971.
- '85 CHEVY MONTE CARLO, Super Sport, 47K miles, garage kept, fully loaded, immaculate, white, selling toy, \$7,400. Arana, 275-8399.

- '85 FORD F250 PICKUP, supercab, low miles, w/custom topper shell & carpeted insert, PS, AC, cruise, \$6,500; Schwinn Traveler, 10-sp., like new, \$100. Mitchell, 299-5144.

**REAL ESTATE**

- 3-BDR. HOME, 1-3/4 baths, 2-car garage, den w/fireplace, updates, Menaul & Eubank, assumable \$83,500. Babb, 292-3120.
- 3-BDR. MOBILE HOME, 18' x 90', at Four Hills Park, 2 baths, minor repairs needed, take over payments w/10 percent down or refinance. Huff, 296-3349.
- 2-BDR. MOBILE HOME, '86 Schult, 14' x 56', 1 bath, bay window, kitchen, hardboard siding, pitched roof, excellent condition, \$12,800. Graham, 281-5164.
- 4-BDR HOME, beautiful mature neighborhood, walk to Eldorado/Mitchell schools, automatic sprinklers, new roof, 1,740 sq. ft., \$115,000. Harper, 296-8494.
- BRICK DUPLEX, near Kirtland, well maintained, pitched roof, security, wrought iron, fencing, patio, \$49,750. Haycraft, 299-3220.
- 4-BDR. TOWNHOUSE, double garage, recently remodeled, 3,400 sq. ft., in LaLuz del Oeste, tennis, pool, hiking, views. Kannolt, 899-0788.

**WANTED**

- HOME, for male dog, a stray, all black, medium size, possibly part German shepherd, friendly, lots of character, housebroken. German, 262-1157.
- MOUNTAIN BIKE, used, in reasonably good condition. Howard, 839-9203.
- 3-BDR. OR MORE HOME, to rent in NE heights, needed by March 1 for 3 to 6 months. Wahl, 822-1261.
- MOVIE CAMERAS & ACCESSORIES, made by Mitchell, Arriflex, & others, 16mm & 35mm only, any condition. Davie, 296-3950.
- MANUAL & SYSTEM DISK, for a Kontron LA264A logic analyzer. Brady, 292-0487.
- ROLL-AWAY BED, for two weeks in February. Riley, 869-2119.
- SIAMESE KITTEN, male, long hair, papers or registration not important. Luther, 293-4462.
- CAMERA BACKS, RB-67 220; 50, 90, & 127mm lenses, bellows shades. Baker, 888-9650.
- DOG CARRIER, extra large; cat-size carrier. Sanchez, 873-2058.
- '84-'88 CAR: Honda, Toyota, Nissan, or Mazda, good condition, low mileage. Gorman, 292-7119.
- HOUSESITTING POSITION, experienced, w/references, available March 1. McConnell, (410) 787-8629, call collect.

**WORK WANTED**

- BABYSITTING, in your home, by high school freshman, evenings, weekends. Myers, 271-1525.

**SHARE-A-RIDE**

- VANPOOL RIDERS, from Belen, Los Lunas, Bosque Farms, & surrounding areas, reasonable rates. Es-senmacher, 865-7066, or Owens, 865-6880.

This newspaper is printed on recycled paper.



DO IT AGAIN!  
This newspaper can be recycled with regular Sandia office paper.



**Coronado Club Activities****Bring Your Best Boots to the Bash**

THE BAND that made Isleta famous is back at the Club tonight, Feb. 5 — the Isleta Poorboys. Shine up your boots and get ready to stomp your feet to their great country sounds from 7 to 11 p.m. When the last dance has been danced, you'll be glad you were there. You'll be glad to chow down on the Club's fine grub, too. On the menu you'll find filet mignon and golden fried shrimp, your choice for \$11.95. (Each entree is served with salad or soup, potatoes or rice pilaf, sauteed vegetable, roll, coffee or tea, and a glass of house wine.) Or you can light out for the buffet line, where for just \$6.95 you get all you care to eat, including baked ham, baron of beef, and roast turkey breast. If you've read this far without making reservations — make 'em now, at 265-6791.

BRUNCH, BRUNCH, BRUNCH — It's three this month: brunches and tea dances on Feb. 7, 14, and 21. Here's the lowdown on the first two: Sunday, Feb. 7, you can take advantage of special prices and a giveaway for the little ones, and you can enjoy a band that's new to the Club. Kids 4-12 eat for only \$1 that day, and a special video will be given to some lucky boy or girl. Brunch is from 10 a.m. to 2 p.m. At 1 p.m., the Starlighters begin playing for the tea dance, and you can enjoy their music until 4 p.m. Then on the 14th, it's a special Valentine's Day brunch, so bring your best sweet-

heart. Music for the tea dance is by those familiar favorites, Bob Weiler and Los Gatos. Except for the Feb. 7 kids' special, brunch is \$6.95 for adult members, \$7.95 for guests, \$2.50 for kids 4-12, and free for kids 3 and under. Reservations required (265-6791).

ASSOCIATE MEMBERSHIPS in the Sandia Employee Recreation Program (SERP) are available to Club members who aren't Sandia employees. For \$18 a year, associates can enjoy classes, activities, sports leagues, and seminars — not to mention a chance to check out more than 230 instructional, sports, and travel videos at no charge, or to rent outdoor equipment for camping. Classes, seminars, and sports leagues require a minimal fee. Questions? Call Mike Winder or Angela Sisneros on 844-8486, or drop by their office next door to the Club's main office.

BAMBINOS' BINGO — Next Friday, Feb. 12, is Kids' Bingo Night. There's nothing special about it — except for lots of prizes, lots of fun, hilarious cartoons, and mountains of good food. Oh, yes — free popcorn, too. The buffet line opens at 5 p.m., featuring hot dog and fries, or pizza and soft drink, for 99¢, or pizza and salad for \$1.50, plus some a la carte items. Bingo starts at 7 p.m. and continues until 9 p.m.

**Sandia Calendar**

The LAB NEWS gathers Sandia Calendar items from various sources, often several weeks in advance of publication. Events could be postponed or even canceled after the LAB NEWS deadline, so readers should confirm times and dates of interest whenever possible.

Friday, Feb. 5 — The most prolific mathematician of all time, Paul Erdos, who has published more than 2,000 papers and is a Distinguished Member of the Hungarian Academy of Sciences, presents open problems of current interest and offers a cash prize for solutions; 2 p.m., Bldg. 980, Room 95. Contact: Sorin Istrail (1423) on 5-7612.

Tuesday, Feb. 16 — Sandia Human Studies Board (HSB) Meeting, review board for Sandia research/contracts involving human volunteers or human data, records, pathological specimens, or diagnostic specimens; Medical Center (Bldg. 831) conference room, attendance limited to HSB members and investigators presenting research. Contact: HSB administrator Linda Erickson (7031) on 5-9171.

Thursday, Feb. 18 — Division 7000 management "Road Show" by Glen Cheney, Vice President of Internal Programs Div. 7000; 9-10 a.m. and 3-4 p.m.; Technology Transfer Center (Bldg. 825), afternoon session will be video-linked to Sandia/California Bldg. 904 auditorium; open to all employees.

Monday, Feb. 22 — Laboratory Directed Research and Development (LDRD) Dept. 1011 presents staff information sessions at Sandia/California about the LDRD process; those considering submitting proposals are strongly encouraged to attend; 8:30 a.m., Bldg. 904 auditorium. Contact: Chuck Meyers (1011) on (505) 844-3459 or Laura Lopez (1011) on (505) 844-9064.

Tuesday and Wednesday, Feb. 23 & 24 — Sandia/New Mexico Dialogue Sessions, President Al Narath discusses the transition, DOE's mission, and how the Laboratories' achievements accomplish our strategic intent; open to all employees; 9:30 and 11 a.m. Tuesday, 8:30 a.m., 10 a.m., and 1 p.m. Wednesday; Technology Transfer Center (Bldg. 825).

Thursday, Feb. 25 — Sandia/California Dialogue Sessions, President Al Narath discusses

the transition, DOE's mission, and how the Laboratories' achievements accomplish our strategic intent; open to all employees, 8:30 and 10 a.m., Bldg. 904 auditorium.

Mail or fax potential items to Sandia Calendar, Dept. 7162, Fax 844-0645.

**Know Your Risk Factors****It's 'Heart Healthy Month,' Says TLC**

Heart disease is the number-one cause of death and disability in the US, causing 500,000 deaths each year. February has been designated national Heart Healthy Month to help people become more aware of their risk factors for heart disease.

Do you know if you have any of the major risk factors for heart disease? These include high blood pressure, high cholesterol, lack of regular exercise, and cigarette smoking. Total Life Concept (TLC) would like to make you more aware of your heart's health through action booths and by monitoring your blood pressure and cholesterol levels.

TLC action booths this month will include a blood-pressure monitoring system with an automated cuff assembly that allows you to check your blood pressure and heart rate in only one minute. The action booths will also provide information from the American Heart Association. The booths will be in Bldg. 800 on two Wednesdays, Feb. 10 and 17, from 11:30 a.m. to 1 p.m.

TLC will also offer cholesterol screening beginning March 1. Check your monthly TLC Update for further information.

In addition to the action booths and cholesterol screening, TLC offers classes in fitness, blood-pressure control, and cholesterol reduction. Dates and times of these classes can be found in the TLC Update or at the Heart Healthy Action Booths.

**Congratulations**

To Kristin and Kevin (6411) Maloney, a son, Ian Thomas, Jan. 2.

**Take Note**

Martineztown House of Neighborly Service (a United Way agency) is sponsoring a benefit dinner, "The Great Italian Dinner and Auction," on Wednesday, Feb. 17, from 5:30 to 8 p.m. (auction at 8 p.m.) at the Second Presbyterian Church multipurpose room (corner of Edith and Lomas NE). Martineztown House of Neighborly Service provides services to the village of Martineztown with programs for the elderly and school-age children. Martineztown is an old Hispanic village, founded by the original settlers of Albuquerque, now surrounded by the city. For more information, call 242-4333.

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Works by well-established artists including Bob Hooten, Adam Lewis, and Allan Rosenfield will be exhibited and available for purchase at the 5th Annual Fine Arts Benefit Sale: A Creative Response to AIDS from Feb. 4 through March 1 at the KiMo Gallery (419 Central NW). The sale benefits the New Mexico Association for People Living with AIDS. "The exhibit will feature some of the finest professional work in the Southwest," says Bill Eisentraut, executive director of NMAPLA. For information, call NMAPLA on 266-0342.

**Fun & Games**

Golf — The Sandia Men's Golf Association (SGA) will hold a membership meeting on Tuesday, Feb. 23, 4:45 to 5:30 p.m., at the Coronado Club. Discussion will include handicapping, slow play, rules, and tournament schedules. SGA bylaws and 1993 tournament schedules will be available. This year's dues (including Sun Country) are \$21 and can be paid at the meeting. A Club Swap will be held at the conclusion of the meeting from 5:30 to 6:30 p.m. Current members are encouraged to invite anyone meeting SERP membership guidelines to join the association. For more information, contact Mark Retter (5713) on 293-4754.

**Favorite Old Photo**

This photo of my mother, Gloria Turcich *née* Lekich, and her late brother Frank Lekich was taken in 1930 on the day her family came to the US from Italy. She was 10 years old. Her family was Yugoslavian, but by the time she was born on Nerezine, an island in the Adriatic Sea, that part of Yugoslavia was taken over by Italy. As a result, she knows both Yugoslavian, which was spoken at home, and Italian, which was used in the schools.

— Suzi Montaña (7025)