To the opposite ends of the Earth: Studies show what happens when an asteroid hits our planet

Yucatan crater, India volcanism linked in hellish blast?

By Ken Frazier

Lab News Managing Editor

Now that scientists have seen what happens when a comet crashes into the atmosphere of Jupiter, a question slightly closer to home has arisen: What would happen if a similar object with the same kinetic energy struck Earth?

It's not a moot question. We now know from widespread geochemical evidence that an asteroid some 10 kilometers across did strike the Earth some 65 million years ago. Debate has been raging for years over whether its effects account for the extinctions of entire groups of life forms at that time — including the dinosaurs — that mark the transition from the Cretaceous to Tertiary periods of Earth history.

The team of Sandia scientists whose analyses accurately predicted visible fireballs from the comet-Jupiter collision have turned their powerful computational-simulation tools to the effects of an Earth impact.

At the 1994 Hypervelocity Impact Symposium in Santa Fe last week, Mark Boslough of Experimental Impact Physics Dept. 1433 delivered their verdict. And the big surprise is not just the magnitude of the effects unleashed but their locations.

The Sandians used two different types of simulations to model the asteroid impact and resulting seismic disturbance in the Earth's interior.

Seismic energy is refocused

They found that due to axial focusing of seismic waves from such a hypervelocity impact, the antipode — the point on the exact opposite side of the Earth from the impact point — would be subjected to displacement

(Continued on page 4)

DISCOVERER — Eugene Shoemaker (seated), co-discoverer of Comet Shoemaker-Levy 9, which crashed into Jupiter in July, sees a computational model of fireball from the collision demonstrated on Sandia's Multidimensional User-oriented Synthetic Environment virtual reality system during a visit to Sandia last week. Shoemaker came to Sandia the morning after giving the keynote address at the Hypervelocity Impact Symposium in Santa Fe. Behind him are (from left) Jim Asay, Manager of Defense Programs Technology Base Program Office 5602; Mark Boslough of Experimental Impact Physics Dept. 1433; and contractor Craig Peterson. Mark was part of a Sandia team whose computer simulations accurately predicted visible plumes from the comet-Jupiter impact. He is now studying the geophysical effects of an asteroid colliding with the Earth (see story at left).

Sandia National Laboratories

Sandia LabNews

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Budget basically steady, says Stanford

FY94 carryover money helps stabilize Labs operations

By Larry Perrine

Editor

Sandia expects to spend about $1.5 billion in fiscal year 1995, compared with nearly $1.42 billion in FY94, according to Sandia's Chief Financial Officer, VP Paul Stanford (10000). Operating costs shown in the chart at right are organized by the Labs' three business sectors. The chart also includes construction and capital equipment purchases.

Although the FY95 figure is nearly 6 percent larger, Paul says

(Continued on page 6)

Sandia National Laboratories total budget
FY94 actual and FY95 estimated costs (dollars in millions)

	FY94	FY95
OPERATING COSTS		
Defense Programs Sector	$ 752.0	$ 778.7
Energy & Environment Sector	309.5	343.0
Work For Others Sector	242.8	240.1
Total Operating	1,304.3	1,361.8
CAPITAL EQUIPMENT COSTS	50.2	50.0
CONSTRUCTION COSTS	64.5	90.0
TOTAL	$1,419.0	$1,501.8

President's science adviser visits Sandia, praises partnerships with industry

By Ken Frazier

Lab News Managing Editor

Labs-industry partnerships of the kind Sandia is increasingly pursuing received strong praise from President Clinton's science adviser, John (Jack) Gibbons, during his visit to Sandia Oct. 12.

Gibbons, Assistant to the President for Science and Technology and Director of the White House Office of Science and Technology Policy (OSTP), spent the entire day at Sandia. He was accompanied by two OSTP associates, Katherine (Kitty) Gillman, Special Assistant for Defense Conversion; and Fred Tarantino, Defense Liaison.

They got overview and wrap-up briefings from Sandia President Al Narath and were briefed and saw displays on electronics, manufacturing, information, and pulsed power and on Sandia's three business sectors, Defense Programs, Work for Others, and Energy and Environment.

In an interview with Radio Sandia and the *Lab News* at midday, Gibbons said public-private partnerships are going to be increasingly important in the nation's research enterprise.

"Ever since Ben Franklin we have been a nation that has been committed collectively to supporting research in the public sector," said Gibbons. "I don't see any reason why that should change.

"What we do need is to line up public and

(Continued on page 7)

This & That

Not a leg to stand on – I know that this is no laughing matter to the folks in Geohydrology Dept. 6115, but I couldn't suppress a snicker or two when I read their recent *Weekly Bulletin* announcement asking if anyone knows the whereabouts of 54 boxes of table legs that ended up somewhere else when the group ordered some furniture for their new office space. I couldn't help wondering what you'd do with 54 tables without legs except possibly put them together as flooring. When I last checked, the legs were still missing. Maybe those legs walked off. Let's hope they find the road back.

* * *

Who's not essential? – Speaking of the *Weekly Bulletin*, an Oct. 17 item noted that "essential employees" – groups of employees among whom an absence rate of 50 percent or more would seriously impair the operations of the Labs – are being encouraged to get flu shots. Several groups were given as examples, including security personnel, mail services employees, steam plant operators, key maintenance personnel, and others. I couldn't help noticing that the *Lab News* staff didn't make the "essential" list. Our feelings are bruised, and we're starting to get this group headache and the chills!

* * *

I like being an employee – Some companies have started calling their employees "associates." I don't know about you, but "associate" sounds pretty strange to me. I would certainly prefer being an associate to being unemployed, but I much prefer being an "employee." It's an honorable word, and I hope we keep using it here.

* * *

Name change in order? – Last year I reprinted several tidbits from a Sandia report titled "Annual Statistical Charts," which shows all kinds of interesting stats about the Sandia work force. I asked about getting a copy of this year's report and found out that the *annual* charts are printed every two years.

* * *

Nomination deadline nearing – If you'd like to nominate a Sandian for an Employee Recognition Award, keep in mind that the deadline is next Friday, Nov. 4. There are four categories – technical achievement, management achievement, outreach achievement, and operations and support achievement. More information and forms are available in the offices of all vice presidents, directors, and personnel reps.

* * *

Delightful Sandia Day! – Thousands of Sandians took advantage of the great weather last Saturday to bring their families and friends to Sandia Day. We have photos of folks at the Sandia/New Mexico festivities on page eight, and we'll have more from Sandia/California in the next issue. Retired *Lab News* Editor John Shunny reports that he sold out of Sandia T-shirts and sold more than $2,500 worth of Sandia logo items at his Sandia Day booth; all "profit" goes to charitable causes.

* * *

Not even close – Thanks to everyone who sends me those creative and entertaining botched spellings of Sandia and Albuquerque they get on correspondence. The worst that I've seen lately is provided by Suzy Wagner (7612): Albourquirquie.

– Larry Perrine

Lovelace Health plan changes are effective Jan. 1 for New Mexico employees/area retirees

Sandia has been notified that some changes will be made in the benefits and services provided under the Lovelace Health Maintenance Organization (HMO) and Lovelace Senior Option plan effective Jan. 1, 1995. Sandia/New Mexico employees and area retirees are encouraged to study these changes carefully before they decide whether to join or stay in one of these Lovelace plans or change to the Sandia Medical Care Plan (MCP, administered by Mutual of Omaha) for 1995.

Lovelace plan participants — employees and retirees — should have received written material from Lovelace this week explaining the changes in the HMO and Senior Option plans.

Employees and retirees can choose to stay in or switch to Lovelace or to the MCP during the current benefits open enrollment period that ends Nov. 9.

For additional information, Sandia/New Mexico employees and area retirees may attend one of the Lovelace informational meetings that are being held in Albuquerque.

Meeting schedule

Here is the schedule for the remaining meetings for **employees:**

- Monday, Oct. 31, 9-10 a.m., Technology Transfer Center (TTC, Bldg. 825)
- Tuesday, Nov. 1, 9-10 a.m., Coronado Club
- Thursday, Nov. 3, 9-10 a.m., TTC
- Tuesday, Nov. 8, 11:30 a.m.-12:30 p.m., TTC

Here is the schedule for the remaining meetings for **retirees:**

- Wednesday, Nov. 2, 10-11 a.m.
- Friday, Nov. 4, 10-11 a.m.
- Monday, Nov. 7, 10-11 a.m.

All meetings for retirees will be held at the Lovelace Educational Building at 5400 Gibson Blvd. SE.

If you cannot attend one of the meetings, you can request further information and leave questions on the Benefits Department message line on 844-7575. Please leave your request, name, address (mail stop for employees), and phone number.

Sandia LabNews

Sandia National Laboratories

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MARTIN MARIETTA

Annual holiday Shoes for Kids campaign accepting donations through Dec. 10

Donations are now being accepted for the annual holiday Shoes for Kids campaign. "Many Albuquerque children go to school without warm shoes and coats during the winter months," says Liz Scott-Patterson (5501), Shoes for Kids coordinator. "The shoes might be the only holiday gift these children receive all year."

Last year, Shoes for Kids was able to outfit 280 children with warm, sturdy shoes says Liz. "For the third year in a row, $25 will buy a child a sturdy pair of shoes that should last him or her all year," she says, "but we welcome donations in any amount, so please donate whatever you can afford."

A 37-year tradition

Shoes for Kids began 37 years ago when, instead of sending each other greeting cards, employees in what are now Defense Programs Div. 5000 and Surety Assessment Center 12300 decided to help needy children by buying them shoes. Shoes for Kids is coordinated with Albuquerque Public Schools. APS teachers and principals select which children will receive shoes. Kinney's Shoes in Coronado Center provides the shoes at $25 a pair.

Marge Zinger-Knorovski (wife of Gerry Knorovski, 1831) teaches kindergarten at Mission Avenue Elementary School. She says it's obvious which children need shoes and warm clothing.

"Last year, there were a dozen children in my class who obviously needed new shoes," she says. "Many of these children have never seen a children's book before they started school. Several cannot recite the alphabet or count to 10." One little girl attended school without a coat throughout December until Marge found her one.

Employees are asked to send donations to Liz Scott-Patterson at Mail Stop 0461. Retirees and others who wish to contribute should add the rest of the address: Sandia National Laboratories, Box 5800, Albuquerque, NM 87185-0461. Call Liz on 844-9108 for more information.

'Telecollaboration': The latest in telecommuting

Sandia/California helps Hewlett-Packard expert work from New Mexico

By Pat Radin

Summer Science Writer

Most people with big-city jobs have to wait until retirement to live in that cabin in the country.

And then there is Bill Cadier, a Hewlett-Packard operating systems expert who solves some of Silicon Valley's thorniest technical questions while living at the edge of the wilderness in New Mexico.

Cadier's ability to work productively some 1,100 miles away from his office is the result of a pioneering project between Sandia and Hewlett-Packard. With creative use of new communications technology, he can talk face-to-face with other engineers over a video link while working with data or diagrams appearing simultaneously on his computer screen in New Mexico, and on his collaborator's screen in California.

The implications are enormous. Simple "telecommuting," or working on a personal computer at home, becomes "telecollaboration" — interactive knowledge sharing that includes face-to-face contact via video.

Shared need with Sandia

Sandia is doing groundbreaking work in this area because of the Labs' need to link employees in New Mexico and California who are collaborating on projects.

Sandia's Rich Palmer, Manager of California Program Development Dept. 8901, says that Sandia and Hewlett-Packard discovered "a lot of common goals" that enabled the electronics giant to work productively with the DOE-funded national lab. He says it all began in spring 1993, when he attended a meeting of the Smart Valley Project, a Silicon Valley consortium devoted to making the most of advanced telecommunications technology.

At the meeting, Rich met Tom Crosby, Manager of Support Engineering at Hewlett-Packard's North American Response Center, which provides engineering support to Hewlett-Packard clients. Over lunch, Crosby told Rich that one of his top engineers, Bill Cadier, was planning to move to New Mexico, even if it meant quitting his job. Rich was immediately interested. Even though Sandia had never tackled this type of problem, he thought perhaps the Labs could help.

The situation was urgent. Cadier was "very highly trained," Rich relates. "H-P didn't want to lose him. It was worth trying to network Cadier into Silicon Valley from Albuquerque, and what we learn can be applied to many other situations in the future."

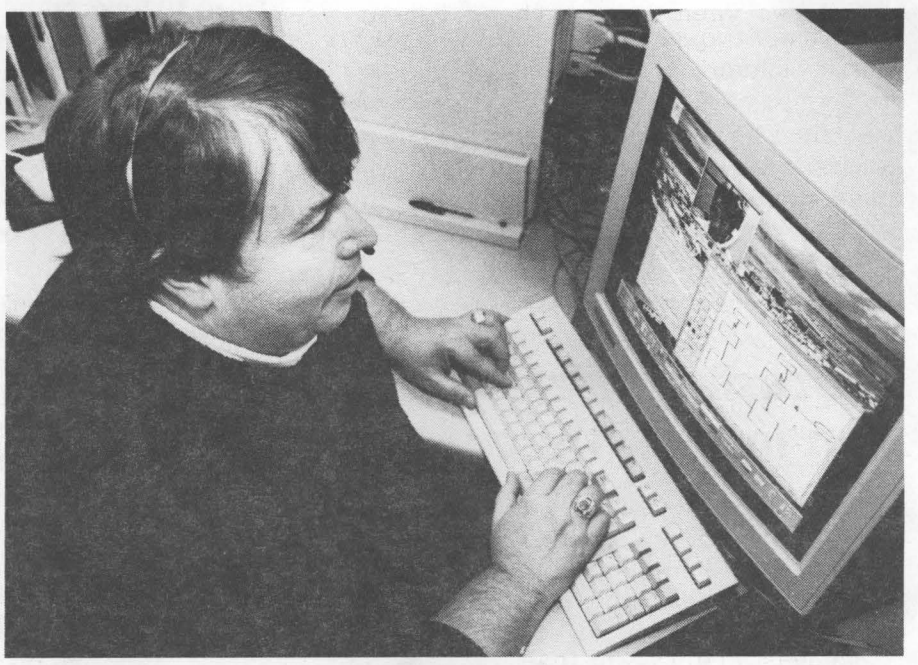
Crosby adds, "What Sandia could bring to this was the engineering, networking, and related expertise. Hewlett-Packard could test this technology in a commercial environment."

Before long, the two had agreed to cooperate in an informal, one- or two-year project they dubbed "WARO"— Work At Remote Office. It would involve setting up high-capacity data lines between Hewlett-Packard's Mountain View and Cupertino offices and Sandia/California; feeding H-P's data into Sandia's Livermore/ Albuquerque link; and finally, at the other end, establishing a line between Sandia/New Mexico and Hewlett-Packard's sales office in Albuquerque, where Cadier wanted to work.

At first, Cadier would use a program called Shared-X to view information on his computer screen simultaneously with his clients as he spoke with them over the telephone. Eventually, new capabilities, including a digital video link, would be added as the necessary bandwidth and hardware became available.

Also built into the WARO project were evaluation criteria for measuring productivity gains and a plan for making the results publicly available.

As a result of trying to connect Sandia's and Hewlett-Packard's networks together for the WARO project, the team realized there were many security issues to be resolved. H-P has subsequently joined a consortium formed by Sandia and others to develop a standard network "firewall" so that companies can work together over a common network and still protect their private information. "One of the exciting things about these informal collaborations with industrial partners," Rich says, "is that they often lead to relationships we didn't anticipate at the outset."



ELECTRONIC COMMUTE — Hewlett-Packard operating systems engineer Bill Cadier collaborates with a colleague in California (image on screen) from his company's office in Albuquerque. He's using communications technology Sandia helped establish in an informal Work At Remote Office project.

Cadier made his move to Albuquerque early this year. After years of living in Silicon Valley, he says, "I just wanted to get out of California. I went to New Mexico every chance I got. I used to buy plane tickets to Albuquerque four at a time."

He was already accustomed to communicating with far-flung Hewlett-Packard colleagues via fax and telephone, and he often called up data from distant sites on his computer screen, so he didn't think the transition to New Mexico would be difficult. Gradually, with the help of members of Centers 8900 and 13900, who operate Sandia's Livermore/Albuquerque link, and their counterparts at Hewlett-Packard, Cadier has been provided with more sophisticated technology.

". . .what we learn can be applied to many other situations in the future."

Face to face

This month, he will start using the digital video link, along with desktop video conferencing software — being developed for other Sandia projects — that Jeff Jortner (1408) and Jerry Friesen (8920) are adapting for use on the WARO project. When the system is operational, Cadier's co-workers in California will see his face on their computer screens and hear his voice, along with displays of the data on which they are working. In turn, Cadier will see the California office on his monitor.

Underlying all of the effort has been the realization that there is no room for error because of the nature of Cadier's job — "hot-site engineer," as it is nicknamed. This involves solving problems so tough that they have been passed up the line to him from other H-P operating systems experts. The smooth performance of some of Hewlett-Packard's most sophisticated products can hinge on his expertise, which in turn depends on the quality of technical information he receives.

Sandia CaliforniaNews

First urgent test

Could he work as well from Albuquerque as from Silicon Valley? The test came recently, when a major Hewlett-Packard customer hit a snag while trying to consolidate a huge amount of data into a new, multimillion-dollar system.

"The call came on Saturday," Cadier says. "We had to have a solution to them by Tuesday night. I had to look at the code, find out what they were doing, find out where the problem was, and then add additional code to the routine to make it work for them.

"We made the deadline."

So much for productivity, but what about quality of life? Isn't it lonely working 1,128 miles from the home office? Cadier dismisses that idea with a chuckle.

"As it turns out, I'm pretty much staying on top of everything," he says, "even the office gossip. I work in the H-P sales office, so I actually do have to get dressed and get out in the morning, and I do see other people."

And then, he says happily, there are the hours at home, where he's situated at the edge of the city with a mountain wilderness for a back yard.

"Five minutes and you're out of town," he says. "I get into my new four-wheel-drive truck, drive it to the mesa, and there's not another living thing in sight, except maybe a jackrabbit or a cactus."

More expected to follow

Expansion of telecommuting at Hewlett-Packard will be based on business needs and costs, but employee interest is high and word of Cadier's new telecollaboration lifestyle has already begun to spread at H-P. "I often get calls from people wanting to do the same thing," he says. "One guy has already moved to Colorado Springs.

"I'm one of the first, but there will be many more."

Asteroid impact

(Continued from page 1)

effects almost equal to those within a few hundred kilometers of impact.

Because of the essential spherical symmetry of the Earth, all the impact energy radiated as seismic waves into the Earth is refocused — minus attenuation — onto the axis of symmetry defined by the impact point and the antipode (pronounced anti-pode). The result is that material on or near the axis of symmetry experiences much greater strain cycles with much higher amplitude— more than 10 times greater — than elsewhere. As a result, it experiences much greater irreversible heating.

"For a sufficiently energetic impact," say Mark, Eric Chael (9236), Tim Trucano (1431), and David Crawford (1433) in their paper, "this mechanism might generate enough local heating to create an isostatic instability leading to uplift, possibly resulting in rifting, volcanism, or other rearrangement of the interior dynamics of the planet."

In other words a kind of geophysical hell would be unleashed.

The simulations, in showing how hypervelocity impact energy can be transported to the Earth's interior— even to the exact opposite side of the Earth — help demonstrate a possible causal link between large impacts on Earth and major internally driven geophysical processes. Some of these geophysical processes, such as greatly increased volcanism, are in turn the kind that, depending on their extent, severity, and duration, can have seriously disruptive effects on life.

The Chicxulub coincidence

There is more. What's especially intriguing about the degree of antipodal focusing, Mark and Eric point out, is this: The suspected site of the impact of the 10-kilometer-wide object that hit the Earth 65 million years ago is the partially buried Chicxulub crater, centered on the northern tip of the Yucatan Peninsula of Mexico and by some estimates up to 300 kilometers across. In the past four years, various researchers have commented on the nearly coincident timing and nearly antipodal locations of the Chicxulub site and the Deccan Traps flood basalts in India. The Deccan basalts, the biggest basaltic flows on Earth in the past 100 million years or so, are the result of a lengthy period of extensive volcanic flows roughly 65 million to 67 million years ago.

Both events have been invoked to explain mass extinctions at the Cretaceous-Tertiary

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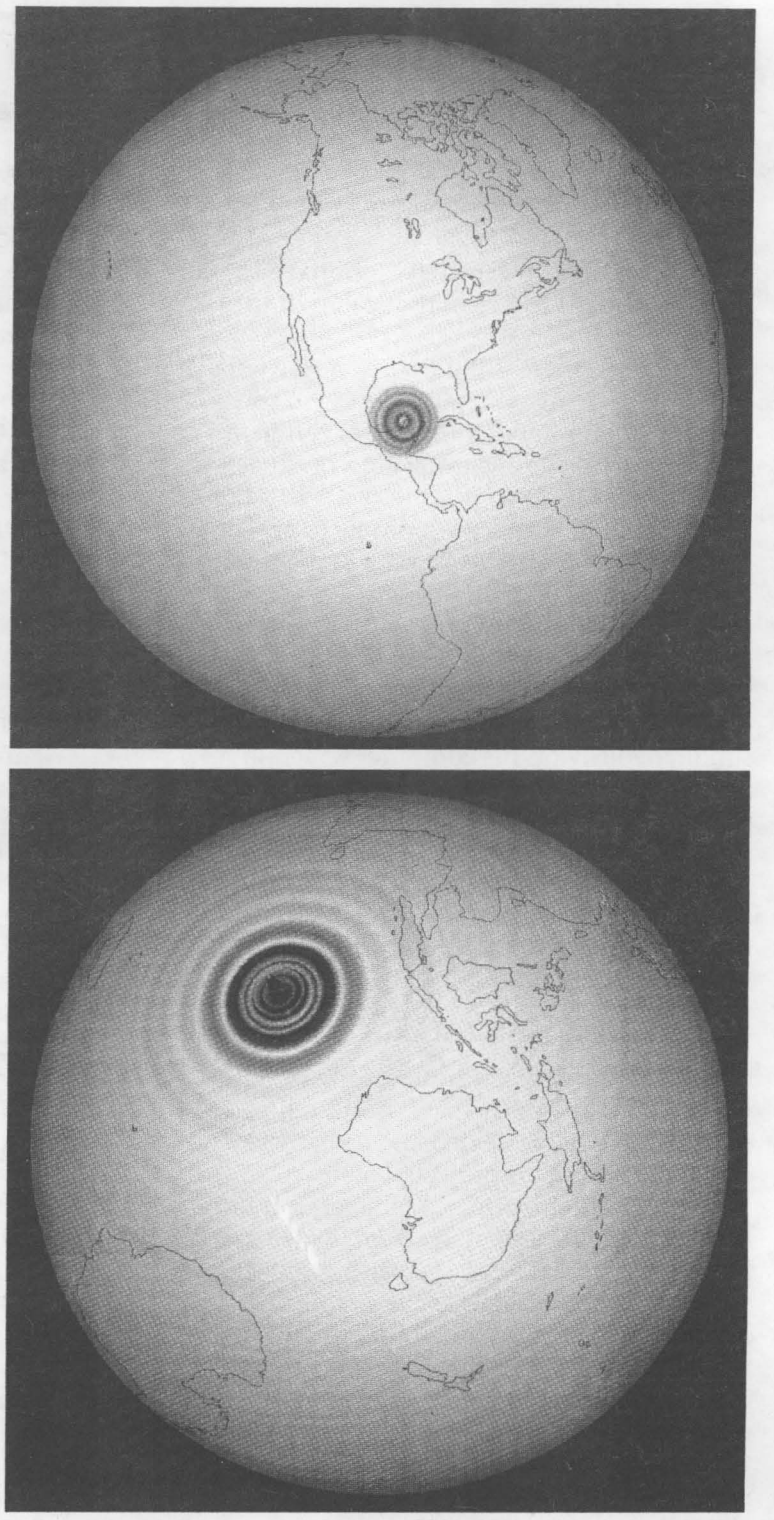


IMPACT AND REACTION — Visualization of vertical surface displacement (exaggerated) shortly after impact of a 10-kilometer-diameter asteroid on the Yucatan Peninsula (top). Simulation at bottom shows the resulting vertical displacement 86 minutes later on the opposite side of the Earth. Outlines show present positions of the continents. These images were generated by Debra Campbell (9432) using synthetic seismic data from computer code developed by Eric Chael (9236).

Focusing effect seen on moon, Mercury

Antipodal focusing from impacts is not a new concept. Planetary scientists have invoked this process to explain unusual surface features on the moon, Mercury, and icy satellites that are on the opposite side of the body from large impact structures.

One example is "disrupted" terrains observed antipodal to the Caloris impact basin on Mercury and the Imbrium basin on the moon. Peter Schultz of Brown University and Don Gault noted these correlations in a 1975 paper.

On Earth, antipodal focusing of seismic waves from earthquakes is a well-known phenomenon that has been exploited by seismologists in studying Earth's deep interior. In fact, Eric Chael of Seismic Verification Technology Dept. 9236, one of the authors of the new Sandia studies, did his doctoral research at Caltech on how antipodal waves place constraints on details of the nonspherical structure of the Earth.

But the situation with a large impact event as modeled in the Sandia simulations is very different from that of a giant earthquake. An impact the size of the one at Chicxulub (a 10-kilometer asteroid impacting Earth's surface at 10 kilometers/second) releases an energy equivalent of about 60 million megatons of TNT, the Sandia scientists say. (This is the energy of 3 billion atomic bombs the size of the first nuclear explosion at the Trinity test.) Even a giant earthquake has far less energy, the energy is diffused over a much wider area, and a quake's focal mechanism is not symmetric.

Impacts have shaped Earth's history

Hypervelocity impacts are now widely recognized as having strongly influenced the history of the Earth. Much of that realization has come just within the past decade or so.

Over the past 10 years a scientific consensus has emerged that our moon was itself created by a colossal collision of a Mars-sized planetesimal (a large body left over after formation of the solar system) into the very young Earth. The same impact added enough angular momentum to increase the Earth's rotation rate in addition to keeping the moon in orbit. Computational simulations at Sandia by Marlin Kipp (1432) and Jay Melosh of the University of Arizona provided an understanding of the physics of such an event and contributed to its general acceptance.

In 1980 Walter and Luis Alvarez reported discovery of a globally distributed clay layer enriched in iridium (rare on Earth but more abundant in asteroids) as evidence that a giant asteroid impacted Earth 65 million years ago. The case for that impact has now become very strong, and in the early 1990s the Chicxulub impact structure in Mexico was identified with that impact.

The asteroid impact coincides closely with the demise of species on a worldwide scale (including, but hardly limited to, the dinosaurs) — the Cretaceous-Tertiary extinction. This and the recognition that large impacts have been more common than earlier assumed have brought a realization that what paleontologist Stephen Jay Gould calls contingency, or chance, plays a major role in the evolution of life — unpredictable catastrophic events disrupt the normal processes of natural selection and suddenly redirect the course of evolution.

It is now thought that Earth has undergone hundreds of impacts on at least the scale of Chicxulub, with much of this cratering record erased by Earth's active geologic processes.

Mark Boslough (1433) and his colleagues hope Sandia's computational simulations can begin to determine the effect of hypervelocity impacts of this size on the internal workings of the Earth. The paper Mark presented at last week's Hypervelocity Impact Symposium in Santa Fe puts it succinctly: "If hypervelocity impacts can influence the Earth's interior, they may have played other roles in its history in addition to creating the moon, determining the length of the day, and generating the conditions that allowed humans to evolve."

Sandia technology to lure job-creating companies

Labs' Al Narath, TVC president sign formal agreement

Sandia President Al Narath and Technology Ventures Corporation (TVC) President Sherman McCorkle have signed an agreement formalizing a mutual commitment to use transferable Sandia technology to attract job-creating companies to New Mexico.

In its bid for the DOE contract to manage and operate Sandia, Martin Marietta Corporation (MMC) committed to create the nonprofit TVC as part of a $10 million effort to help strengthen the New Mexico economy.

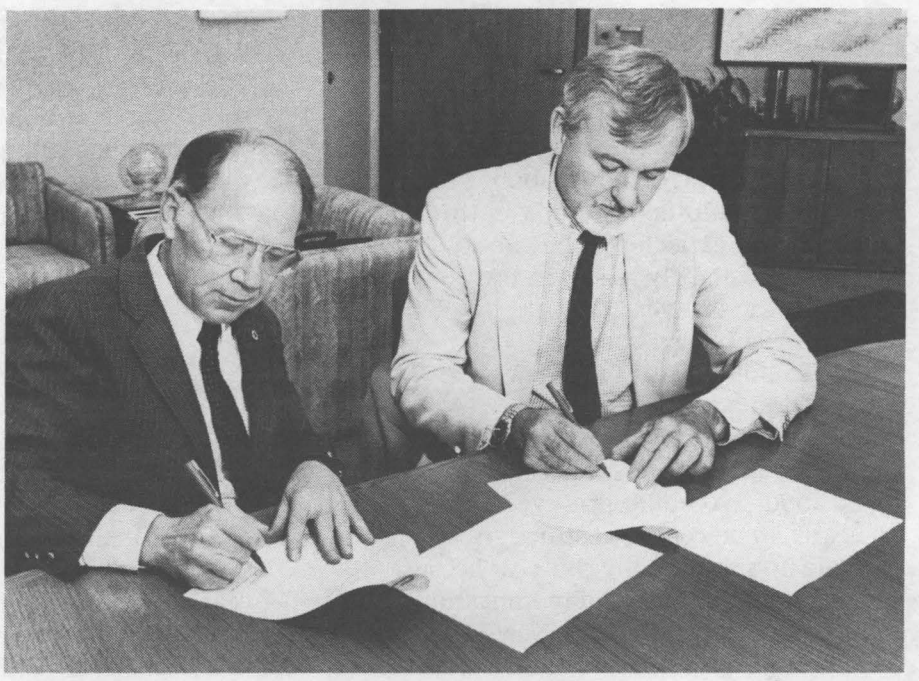
In keeping with that agreement, MMC is spending $5 million on a new TVC building in the University of New Mexico research park and will spend an additional $5 million to fund TVC's activities over the next five years.

Symposium attracts investors

In addition to housing the small TVC staff, McCorkle says the building will provide office space for representatives from Sandia, DOE, and several venture capital concerns. "We think bringing all these people together under one roof will enhance our efforts to transfer technology from Sandia into the private sector, thus creating jobs," he says.

TVC's first anniversary was celebrated recently with a symposium on equity capital, at which McCorkle introduced representatives of seven firms interested in attracting venture capital in order to transfer technology from Sandia and expand their work forces. The symposium also attracted investors interested in venturing capital to such companies.

"This agreement," says Al, "specifies close collaboration between Sandia and TVC to search out technology that can be transferred, organizations and individuals willing to venture money on promising businesses, and companies that can exploit that technology and money to create jobs that benefit New Mexico's economy."



JOBS-CREATING AGREEMENT — Technology Ventures Corporation President Sherman McCorkle, left, and Sandia President Al Narath sign an agreement formally committing the two organizations to combine technology and venture capital to create jobs for New Mexico.

Among the immediate goals of the agreement are formation or expansion of five businesses during fiscal year 1995 — this month through September 1995 — through agreements or licensings of Sandia intellectual property, operations, or technical assistance.

Longer-term, the goal of the agreement is to generate 1,000 direct or indirect jobs by 1998, and 5,000 total jobs by 2003.

(Continued from preceding page)

boundary.

The Sandians' proof-of-principle computational experiments, carried out with Laboratory Directed Research and Development funds, now point to at least the possibility of a causal link between these two extraordinary geophysical events.

"I'm not convinced that they are connected," says Mark. "I'm not claiming that this is the cause, but our work does say it is a possibility." He says the degree of focusing and the coupling of energy from the impact to the asthenosphere (a 200-kilometer-thick weak layer of the Earth's upper mantle directly beneath the lithosphere, or rocky layer) at the opposite side of the Earth shown by their calculations is so extraordinary that the possibility exists.

"We think our model is a viable hypothesis," says Mark. "But whatever the answer is, it must agree with the geologic record."

Challenges ahead

He says their paper was received very well at last week's symposium in Santa Fe. But that might be expected, since most of the participants were impact specialists. The real challenge will come when the Sandians present their findings to the American Geophysical Union in December, Mark says. There will be plenty of geologists and volcanologists to look for weak points.

One vulnerable point is that the location of the Deccan flows 65 million years ago isn't exactly antipodal to Chicxulub, even when considering movement since then due to plate tectonics. The latitude is right but the longitude is off, Mark says. A second is that geologists say the flows, which lasted several million years, began roughly 67 million years ago and thus were already in progress at the time of the asteroid impact.

How certain those dates are, however, may be open to some question. And, Mark says, "Everyone agrees that the Deccan volcanism increased greatly during the Cretaceous-Tertiary transition."

The real test of the theory, Mark says, would be if a major impact site were discovered on the opposite side of the Earth from where the Columbia River flood basalts in the Pacific Northwest erupted, another period of extensive basaltic flows on the planet. "That would be a prediction of our theory," Mark says.

Mark says the next phase of the research will couple Sandia's CTH strong-shock hydrodynamics computer code to the seismic modeling to quantify the heating at the antipode caused by a giant impact and determine the effects of heterogeneities in the Earth's interior.

The expertise and the computational codes used in these simulations were developed for Sandia's weapons programs. These new impact studies, in addition to the insights they provide about nature, help test and refine these codes.

FALL AND RISE — Bldg. 838 falls to the bulldozer Oct. 21 while behind it rises the westernmost section of the new four-story Center for National Security and Arms Control (CNSAC). Bldg. 838 was built in 1946. It and Bldg. 839, also demolished, are part of a program managed by Gerry Lipka of Inspection and Acceptance Dept. 7914 to decontaminate and demolish old, substandard Sandia buildings that are uneconomical to maintain and are on prime space for future development. So far seven other buildings have been demolished (including 814, former home to the *Lab News*), with 16 more scheduled. One of the Sandians who watched Bldg. 838 fall was Allan Fine (7733). Al started work at Sandia in the building in 1953 and was one of its last occupants before it was vacated last October. CNSAC, a $34.9 million, 152,000-square-foot, state-of-the-art structure, will house Sandia's programs in arms-control verification research and development and nonproliferation technology. A modern display/conference area at the east end of the building is to open in December, says Roger Hagengruber, VP for Defense Programs 5000. Interior work on the rest of the building will proceed throughout 1995 with full occupancy scheduled for 1996. The space along H Street opened up by the removal of Bldgs. 838 and 839 will be landscaped and used for parking, according to Dave Barber of Services Management System Office 7252. (Photo by Mark Poulsen)

Budget steady

(Continued from page 1)

that's misleading because some of the $1.5 billion is carryover money — authorized in FY94 that will not get spent (or "costed" in Sandia accounting terminology) until this fiscal year. Without this carryover money, the Sandia budget for FY95 would be down about $15 million.

Capital equipment purchases this fiscal year are expected to be about $50 million, slightly less than the $50.2 million last year.

The FY95 budget contains about $25 million more for major construction projects; $64.5 million was spent for construction last fiscal year, and the Labs expects to spend about $90 million this year, up nearly 40 percent. Construction costs are up substantially this year because several major building and modification projects are under way at Sandia/New Mexico.

Major new facilities scheduled to be completed and/or occupied this fiscal year include the Strategic Defense Facility, Explosive Component Facility, Integrated Materials Research Lab, Weapons Primary Standards Lab, and Technology Support Center. Construction is going strong on the new Robotics Manufacturing Science and Engineering Lab and the new Center for National Security and Arms Control. Major modifications are under way to the power system and to several buildings that will house non-nuclear weapon component production, primarily thermal batteries and neutron generators. (See Jan. 7, 1994, *Lab News* for details on major construction projects.)

Operating budget up 3½ percent

Sandia's operating budget is projected to total almost $1.362 billion this fiscal year, compared with $1.304 billion in FY94 (see chart below). The FY95 figure is an increase of about 4.4 percent, basically enough to offset inflation says Paul. (The operating budget is organized by program areas within the three sectors and does not show amounts for indirect services such as security, communications, legal, etc. These services are paid for out of the amounts shown for the technical programs.)

As the operating budget chart shows, FY95 spending will be up in some areas and down in others. Substantial "ups" in the Defense Programs (DP) Sector include $15.7 million for New Independent States' (Former Soviet Union) assistance programs, an increase of about $20 million in the Technology Transfer Initiative/CRADAs area, and increases in Reconfiguration (production activities), Verification and Control Technology, and Intelligence areas. The DP Research and Development budget is down this year nearly $40 million, continuing a downward trend of the past two years.

Most Energy and Environment (E&E) Sector programs show moderate increases this year. The largest increases are in the Energy Research program and Nuclear Waste Management program, up $11.6 million and $11 million, respectively. The new Molybdenum 99 Medical Isotope Project (*Lab News*, Sept. 30) adds $8 million to the E&E budget.

The FY95 operating budget for the Work for Others Sector is down slightly (less than $3 million) from '94, with each of the three program areas projected to spend just a bit less this year.

Paul cautions that spending plans can change during the fiscal year and that DOE and other Sandia customers can sometimes require that plans be put on hold or changed. In other words, the FY95 budget should be considered a spending projection for the year rather than a firm amount.

"There's a lot of churning within our programs now, but all-in-all, our bottom line looks pretty steady," says Paul. "Our biggest concern is the erosion of our R&D budget in Defense Programs. We're very hopeful that this is the last year that R&D will take such a hit. We've been taking large hits in this area for three years, and it's at the point that a lot of people — including many in DOE and Congress — are saying we should not reduce more.

"We've been able to offset some of our R&D program reductions by planned increases in our LDRD [Laboratory Directed Research and Development] program and Technology Transfer Initiative funding," he says, "but we can't maintain a vital, rigorous R&D foundation program in the long run unless the R&D funding itself improves."

The LDRD program is funded by a DOE-approved internal Sandia activity that "taxes" all technical program funds.

Employment could rise slightly

Paul says Sandia will probably add a hundred or so employees this year, up from about 8,500 to about 8,650. The increase will be almost exclusively in the non-nuclear component production area (thermal batteries and neutron generators) that Sandia is gearing up to handle as part of the DOE weapon production reconfiguration effort. Most of the new employees are transferring to Sandia from Martin Marietta's Pinellas, Fla., plant, which is being phased out of this component production area. Some of the Martin Marietta employees have already transferred to Sandia, and more will join the Labs later.

"I think the support we get reflects the fact that our programs are appreciated by government and industry alike."

Summarizing the FY95 budget outlook, Paul says, "I think all Sandians should be very pleased with the '95 plans. They took a lot of hard work on the part of our sectors and program people, and I think the support we get reflects the fact that our programs are appreciated by government and industry alike. Industry is behind us with matching funds [much in the form of CRADAs] to do cooperative research.

"In short, I'm very pleased. Things look OK for FY95, and we're planning and hoping for the best in '96. We're already starting to work on '96, and we'll know more in January when the President makes his message to Congress."

Sandia National Laboratories
Operating budget by sectors
FY94 actual and FY95 estimated
(dollars in millions)

	FY94	FY95
DEFENSE PROGRAMS (DP) SECTOR		
Research and Development	$299.8	$260.9
Inertial Confinement Fusion	27.0	25.5
Testing	37.1	36.5
Stockpile Support	147.1	147.0
Integrated Contractor Orders	27.9	21.4
New Independent States' (Former Soviet Union) Assistance Programs	0.0	15.7
Technology Transfer Initiative/CRADAs (Cooperative R&D Agreements)	79.8	99.0
Reconfiguration/Accelerator Produced Tritium	18.3	28.7
DOE Program Direction	3.6	4.2
Verification & Control Technology	75.2	87.2
Nuclear Safeguards and Security	9.8	8.1
Intelligence	26.4	44.5
Total DP Sector	752.0	778.7
ENERGY & ENVIRONMENT (E&E) SECTOR		
Energy Research	44.4	56.0
Applied Energy	68.9	70.0
Nuclear Energy Technology	21.7	20.0
Nuclear Waste Management	68.0	79.0
Environment	106.0	110.0
Special Programs	0.5	0.0
Molybdenum 99 Medical Isotope Project	0.0	8.0
Total E&E Sector	309.5	343.0
WORK FOR OTHERS (WFO) SECTOR		
Reimbursable Work for Other Fed. Agencies	232.2	230.1
Reimbursable Non-Federal Entity	5.3	5.0
Reimbursable Work for Integrated Contractors	5.3	5.0
Total WFO Sector	242.8	240.1
TOTAL	**$1,304.3**	**$1,361.8**

Radio Sandia plans budget interview today

Radio Sandia (1610 AM) plans to air an interview with Paul Stanford beginning at 4 p.m. today, Friday, Oct. 28. Paul will discuss the FY94 budget closeout, how the FY95 money situation is shaping up, and more. The program will be repeated throughout this weekend.

Recent Patents

Ian Fritz (1312) and Joel Wendt (1322): Tandem Resonator Reflectance Modulator.

David Glowka (6111): Downhole Material Injector for Lost Circulation Control.

Take Note

Retiring and not seen in *Lab News* photos: Jim Kaiser (7442), 26 years.

* * *

Crafts for Christmas, to benefit local heart charities, will be held Sunday, Oct. 30, 9 a.m.-4 p.m., at the Ramada Classic Hotel (Menaul & Louisiana). Featured are displays and sales of arts and crafts by New Mexico artisans; homemade baked goods are also available. Admission is $1, which includes a chance for an original watercolor painting door prize. This is the 20th anniversary for this nonprofit event, which has enabled its sponsor, the Albuquerque alumni of Alpha Phi Sorority, to donate more than $65,000 to local recipients such as the Presbyterian Hospital cardiac program and the American Heart Association. For more information, call Phyllis Wilson (ret.) on 344-5373.

Science adviser

(Continued from page 1)

private resources in new kinds of partnerships so that public and private interests can be joined. That's just what's happening, for example, in a lot of work here at Sandia. There's a co-joining of public and private interests — improved environmental controls, improved manufacturing technology, generic technologies that enable our people, our country to move ahead toward sustainability, toward prudent resource use.

"Both public and private needs are co-joined through these kinds of partnerships. I have found very strong bipartisan support for this kind of approach."

First visit to Sandia

Gibbons said he hadn't been to Sandia before. "I'd been through Albuquerque and in my old days as a physicist, to Los Alamos. But for many years I have been wanting to come by and have enough time at Sandia to get to know firsthand the many extraordinary things I've learned about the place secondhand.

"This visit is, in part, my own personal odyssey to get to know the inside of the Labs. And I must say my expectations were high and they're fully fulfilled so far in the quality of the work being done here and the dedication of the people.

"I have enjoyed my day here immensely. I have learned a lot. I am very much encouraged by the kinds of things that have been happening here over the last several years."

JACK GIBBONS (left), President Clinton's science adviser and Director of the White House Office of Science and Technology Policy, talks with Don Cook, Director of Pulsed Power Sciences 1200, during Gibbons' daylong visit to Sandia.

The Sandia visit is part of his tour of the DOE national labs. Gibbons went to Los Alamos the next day and to Lawrence Livermore this week. He'd recently visited Lawrence Berkeley and Oak Ridge (where he spent the first 15 years of his scientific career).

He said the visits are part of his own commitment to try to gain a better understanding of the national labs — "as we examine how well we are tuning these extraordinary resources to the President's commitment to have science and technology be a prime investment to create options for the nation's future."

He sees the Galvin Task Force review of the national labs, now nearing completion, in the context of similar reviews at other agencies. The Galvin group's report is due to DOE Secretary Hazel O'Leary in February. "There is similar work going on in the Department of Defense and in NASA and to a degree in EPA [Environmental Protection Agency]," Gibbons said. "The role of my office is not only to aid and abet those self-examinations but also to provide a kind of oversight across these three agencies — Defense, Energy, and NASA — to see if we can provide some of the basic common-ground understanding of these extraordinary resources."

Science in the national interest

This summer OSTP issued a major report, *Science in the National Interest.* It revisits the topic Vannevar Bush, head of the wartime Office of Scientific Research and Development, first addressed in 1945 in the influential report *Science, The Endless Frontier,* which helped shape government support for science for years after World War II. Gibbons says the new OSTP report is the first broad look since that one and another in the 1970s at what he calls "this social contract between the people and the government" about the public investment in science and technology.

"What we came out with was a strong reaffirmation of the value of the social rate of return of this kind of investment for our nation. We feel we have a much firmer foundation than we had before in the continued strong support of science and technology by the American people. We've had good responses to it."

He said the report also finally puts to rest the old "linear model" of basic research to applied research to technology to commercialization. That view is clearly wrong, he said.

"What really happens — and Sandia knows it as well as anybody — is that everything feeds back upon itself. Technology feeds science, and science feeds technology. There are a series of interconnected loops that really describe the process of discovery of ideas and their transformation to goods and services in the marketplace.

"And that in turn says that laboratories like Sandia, if they want to be most productive in taxpayers' returns on investment, need to be fully engaged not only with the science community and the university community but also with industry."

Gibbons experienced in technology policy issues

When John H. (Jack) Gibbons was appointed Special Assistant to the President for Science and Technology in February 1993, he brought to the job a background in basic science and longtime experience in energy, environmental, and science-policy issues.

After getting his PhD in physics from Duke, he began his career at Oak Ridge National Laboratory in 1954 studying neutron capture in nucleosynthesis of heavy elements in stars. Alvin Weinberg, the longtime director of Oak Ridge, urged him in the 1960s to carry out pioneering studies in how to use technology to conserve energy and minimize the environmental impacts of energy production and consumption. When the US plunged into its first energy crisis in 1973, Gibbons became the first director of the Federal Office of Energy Conservation.

In 1979, after an interval at the University of Tennessee, he returned to Washington to direct the Congressional Office of Technology Assessment. He served 14 years there before being tapped by President Clinton for his present assignment, where he coordinates science and technology policy for the federal government and provides the President access to authoritative information and advice on science, engineering, and technology.

Among his awards is the American Association for the Advancement of Science's Philip H. Abelson prize for sustained exceptional contributions to advancing science.

Fun & Games

Skiing — Kaz Oishi (5161), leader of the Sandia Peak Ski Patrol, reports that the Patrol's 28th annual Ski Swap will take place this weekend, Oct. 28-30, at the New Mexico State Fairgrounds. The swap offers a range of downhill and cross-country ski equipment — skis, boots, and clothing — at generally reasonable prices. Today, Friday, Oct. 28, equipment is checked in by the public for consignment, 11 a.m.-7 p.m. The sale itself will be held 9 a.m.-4 p.m. Saturday and 1-4 p.m. Sunday. Ski patrollers will be on hand to assist customers in making selections.

* * *

Boating — Flotilla 21 of the US Coast Guard Auxiliary is offering a safe-boating course for power boaters beginning at 9 a.m., Oct. 29, at Fire Station No. 5, 11700 Paseo del Norte NE. Boat handling, radios, engines, and federal requirements are some of the topics to be covered. Cost is $15 for text and workbook. For information, call Will Prekker (ret.) on 892-4107.

Congratulations

To Cheri and Ted (9341) Parson, a daughter, Jennifer Lucille, June 10.

To Roxanne and Mark (9137) Diltz, a son, Joshua Mark, Sept. 12.

To Carolyn and Lawrence (7435) Jackson, a daughter, Adriana Julie, Oct. 6.

To Linda and Steve (1511) Kempka, a daughter, Samantha Nicole, Oct. 9.

Welcome

Albuquerque — John Adams (10103), Debra Archuleta-Bunker (9417), Gerald Naranjo (6514), Patricia Sawyer (1815), Connie Shay (2501)

Other New Mexico — Richard Aguilar (6312), James Andazola (6521), John Lopez (7615), David Vigil (2665)

Florida — Richard Antepenko, Carol Barfield, Patricia Barthelmes, Robert Boney, James Browning, Michael Courtney, Scarlett Deninno, Eric Detlefs, Richard Diprima, Edwin Duckett, Muhammad El, Douglas Foldie, David Fries, James Gebhart, Scott Gillespie, David Goy, Gail Hamel, Lane Hinkle, Richard Howe, James Hulett, Bernard Jacksits, Janice Jacksits, James Kajder, Daniel Kettleborough, Christopher Knighton, James Krupar, Donald Malbrough, Louis Malizia, Daryl McCollister, Keith Meredith, Thomas Merewether, George Moore, Paul Morrison, Nancy Nesbitt, Robert Ney, Gregory Nichols, William Packer, Richard Pike, Mark Poiles, Gary Pressly, James Provo, Victor Romanelli, Gordon Roubik, Linda Scott, Mark Sloane, Dennis Smith, Robert Stiers, Ernest Tabb, Dana Thomas, Domenick Tufariello, Melanie Turley, Ramon Vigo, Paul Vrabel, Brenda Wickham, Timothy Wickham, Anthony Wingate (all 2581); Edward Astle (2561), Raymond Hall (10604), Sharon Hall (2507), William Hanson (2501), Moses Jones (2561), Shelia Jones (2561), Michael McClafferty (2506), Thomas Wedel (2313)

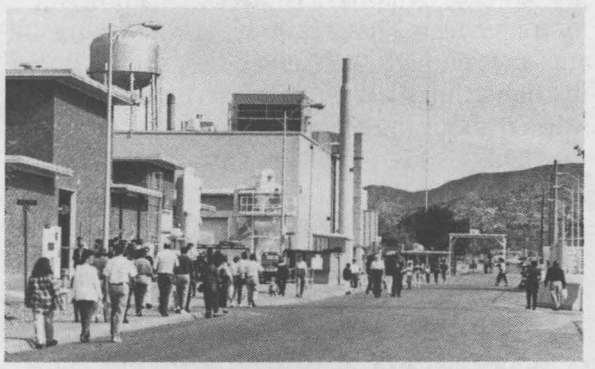
Catherine Montoya lends daughter Laura a little higher perspective to a solar trough at the Solar Power Tower as photographer husband Randy (Media Relations Dept. 12621) captures the moment. Laura was fascinated with the highly reflective parabolic surface of the solar collector.

Family members, friends visit Labs by thousands; see work, workplaces

Thousands of relatives and friends of Sandians got a chance to see some of the facilities and what goes on inside them during Sandia Day '94 at both the New Mexico and California sites.

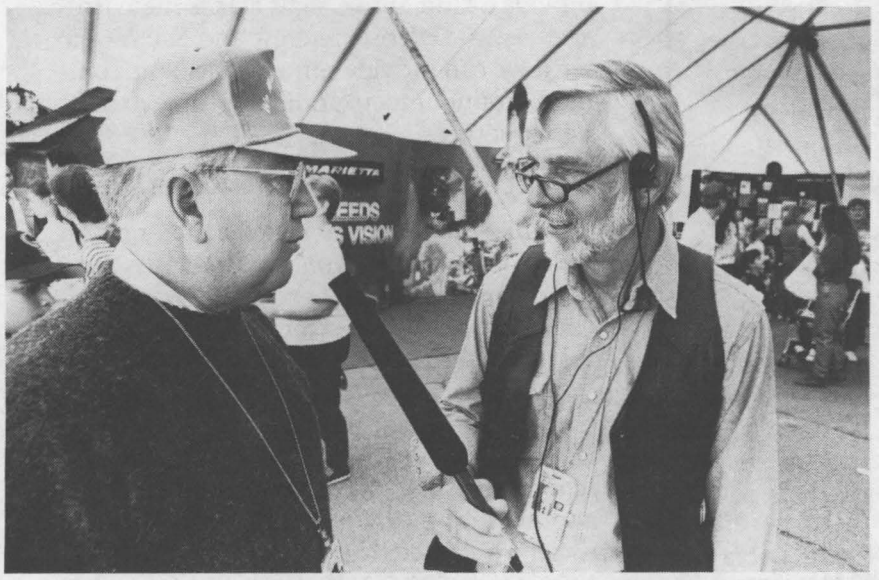
Photographers Randy Montoya and Mark Poulsen spent the day recording the fun and excitement experienced by young and old, employees and guests, in New Mexico. Here is some of what they saw through their lenses.

Photos of California activities will appear in a future *Lab News*.



Visitors wander eastward along H Street near the "big" shop (Bldg. 840), toward Gate 6.

Sandia Day '94



Component Development and Engineering Support VP Heinz Schmitt (left, 2000) chats with Bruce Hawkinson on Radio Sandia (1610 AM) beneath the "big top" as visitors examine corporate displays.

Machinist Curtis Gibson of Project Machine Team 2481-1 shows his mother, Shirley, the three-axis milling machine he uses to produce prototype components. His father, Leroy (also 2481-1), is a 39-year Sandia veteran machinist.

Melanie Florez, Manager of Personnel Security/Visitor Control Dept. 7437-1, inks Deeanna Gachupin's fingers for a fingerprint record for her parents. Deeanna is the daughter of Mary Gachupin of Heavy Equipment/Generator/ Support Services Dept. 7818-3.

Feedback

EZ Go carts polluters?

Q: I am concerned by the proliferation of EZ Go carts around Tech Area 1. Given the recent publicity surrounding the pollutants produced by small engines (lawnmowers, for example) and the Impending regulations concerning small engine emissions, I wonder how many pounds of pollutants are discharged by the two-cycle engines in these carts. I wouldn't be surprised if all of Sandia's efforts to encourage carpooling and alternative transportation aren't negated by the use of these EZ Go carts.

Given the winter season air pollution problems in Albuquerque, perhaps Sandia could explore more environmentally benign modes for transportation within the tech areas.

A: EZ Go carts have been a means of quiet transportation for Sandians, but the increasing number of EZ Go carts has become a concern for DOE as well as for Sandia, and we are looking into other methods of transportation.

Historically only the EZ Go brand of carts could be purchased with expense funds since they cost less than $5,000. Unfortunately, these carts operate on a gasoline/oil mixture that causes higher-levels of pollution. Similar carts are now available that are equipped with a 4-cycle engine that produces considerably less pollutants. Beginning in FY94, only the 4-cycle engine carts are being purchased; the purchase of EZ Go carts has been discontinued.

Although this does not address your immediate concern, we hope that with the line organizations' cooperation, we will eventually resolve the issue.

Shawkeet Hindi (7614)

Ban tobacco at Sandia?

Q: Now that smoking is fully recognized as the nation's number one health risk, why is it still permitted at Sandia? Tobacco smoke is a proven carcinogen, nicotine is one of the most addictive drugs known, and it was announced recently that cigarettes contain at least 13 toxic chemical additives. Yet, at the entrances to every Sandia building, at nearly every time of day, there is a cloud of this toxic smoke.

Other carcinogenic compounds such as asbestos and benzene — whose relative hazard is "in the noise" when measured in terms of number of employee deaths and disabilities — are much more severely restricted. Why should I and other employees be exposed to carcinogens several times daily as we go about our business at Sandia, when entire buildings have been sealed off for the minor risk due to asbestos ?

While drug addiction is a terrible thing to endure, I do not think that the majority of Sandians should have to pay the price of the smokers' habit. There are Sandians who are addicted to alcohol, but these alcoholics are not allowed to drink on the job. There are other forms of dispensing nicotine — skin patches, gum, etc. — that can get the addicted through a work day without exposing the nonaddict to the harmful chemicals. I suggest that tobacco join the list of alcohol and illegal drugs as a banned substance at Sandia.

A: In November 1990 Sandia adopted a smoking policy that effectively prohibits smoking in all Sandia facilities, buildings, and government vehicles. This policy seems reasonable and addresses the increasing health concerns associated with "passive smoking" in confined spaces. Employees who presently smoke have been consistently compliant with this policy and responsive to the explicit health and safety needs of nonsmokers.

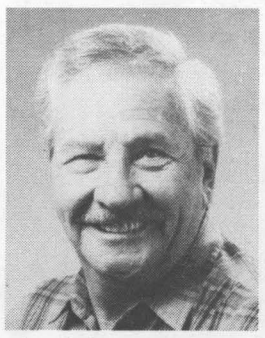
Prohibition of smoking in open-air areas does little to further the notion of health protection to nonsmokers, but does add an additional burden to those who currently smoke or are attempting to quit. I am cognizant of the tendency for smokers to congregate near entry areas of certain buildings, largely due to the lack of other reasonable options at sites. I encourage anyone interested in this issue to discuss it with his or her building coordinator and determine whether additional options might be feasible for particular work areas.

The Occupational Medicine Center considers smoking to be a preventable health hazard and offers programs to alter smoking habits. Classes in smoking cessation have been regularly offered for the past 10 years and Sandia's Benefits organization has offered on two occasions additional temporary health care benefits designed to support smoking cessation programs in the private community. Individuals interested in smoking cessation programs are encouraged to contact the Total Life Concept (TLC) Program (844-8238) in the medical organization for additional information.

Finally, it is important to note that the combination of an appropriate smoking policy, smoking cessation classes, and an ever-increasingly health-conscious employee population has resulted in a prevalence rate of smokers at Sandia of about 9 percent, substantially less than the 20-percent national average.

Dr. Larry Clevenger (3300)

Recent Retirees



Alex Griego 42
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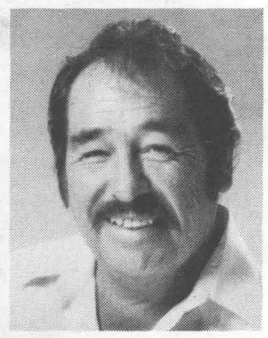
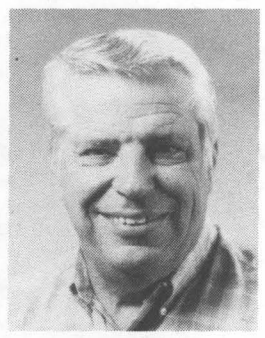


Willie Lucero 20
7813

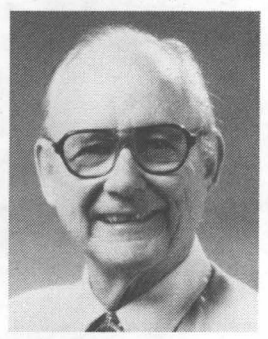


Andrew Wilken 37
9814

Larry Johnson 38
5147

Fred Vook 36
1100

Tommy Donham 37
2601



Bob Thompson 36
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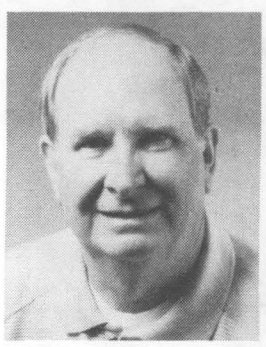
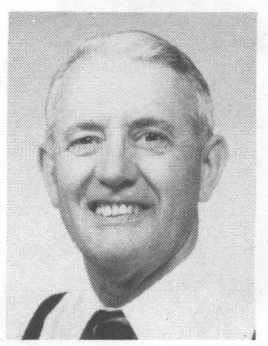
Suzanne Stone 10
13900



Garry Ogle 36
9304

Larry Gillette 33
6215

Joanne Pendall 16
13416



Larry Miller 35
2641

this month in the past...

Sandia LAB NEWS

40 years ago... More than 3,800 employees had signed up for Sandia's first hospitalization-surgical plan. Individual coverage cost $2.16/mo, employee/dependent coverage $7.77. Among the benefits: $8/day for hospital room and board, surgical benefits up to $250, ambulance benefit $15, and hospital maternity benefit $80.

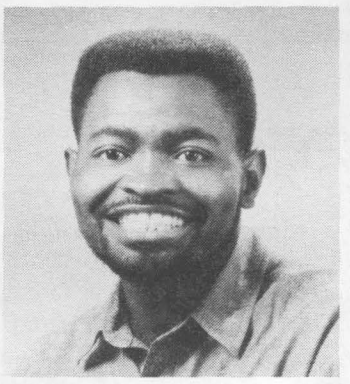
30 years ago... The start of something big! — The *Lab News* reported that Sandian Tom Fox was working with computer specialists at the Massachusetts Institute of Technology (MIT) to develop a new Automated Engineering Design computer language to work as part of MIT's new Computer-Aided Design System. The article predicted, "While the engineer will continue to be responsible for the initial concept of a new design, and for such creative tasks as the definition of the conditions under which the new design must perform, the computer will eventually be called on to perform a large part of the design routine."

10 years ago...A woman employee named Joy and a man named Joe were married at sunrise on Oct. 20, 1984, in a hot air balloon floating above Albuquerque. The eight-passenger gondola also carried several of their family members and friends. (We're not listing full names because neither is listed in Sandia's current employee records, and we're not sure if the marriage kept soaring or if it crashed.)

Mileposts

October 1994

Judy Hawbaker 30
5951



Eddie Baker 15
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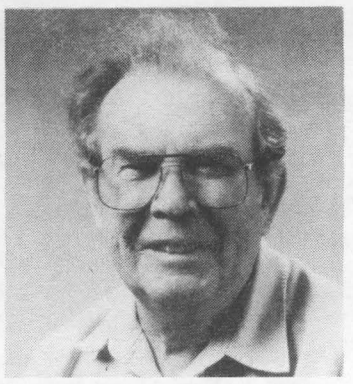

Cecil Morrisett 35
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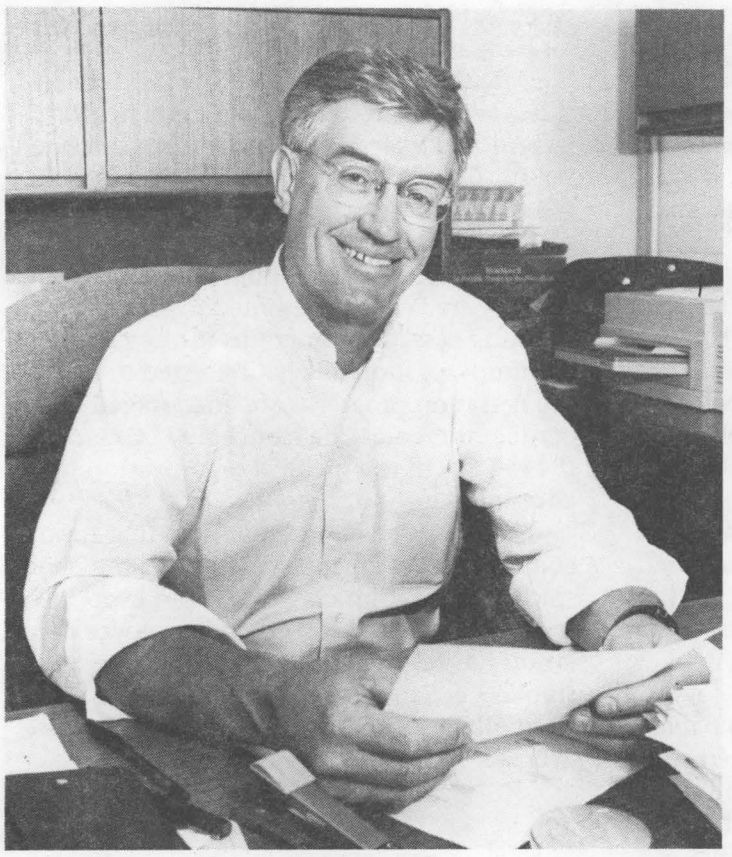

Pat Eicker 25
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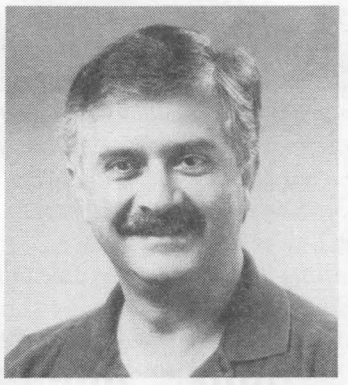

Paul Atencio 15
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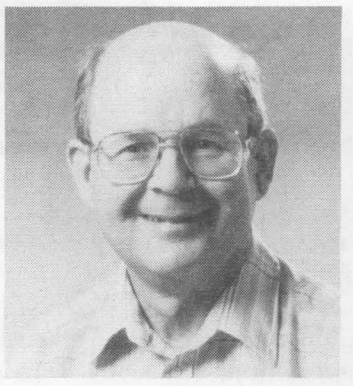

William Abel 25
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Nancy Leishman 15
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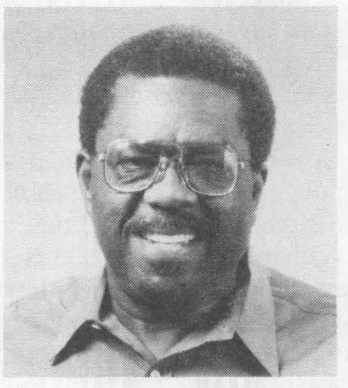

O. B. Crump 25
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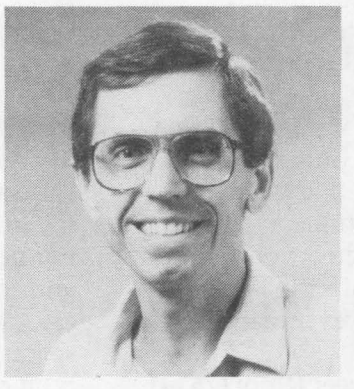

Leonard Duda 15
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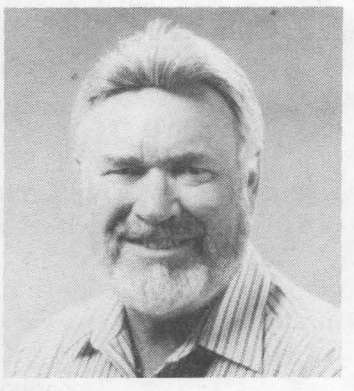

Wilbur Boyd 30
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Cleo Kerr 25
10000

Herman Molina 15
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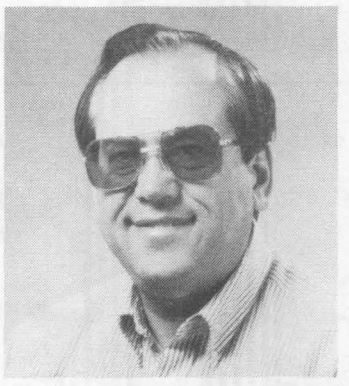
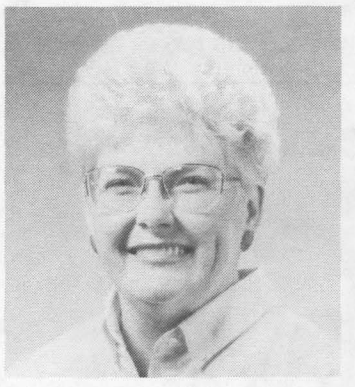


José Montoya 20
5167



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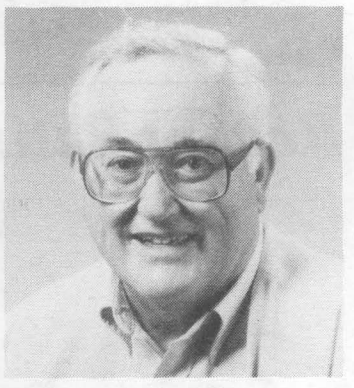

Leo Graham 30
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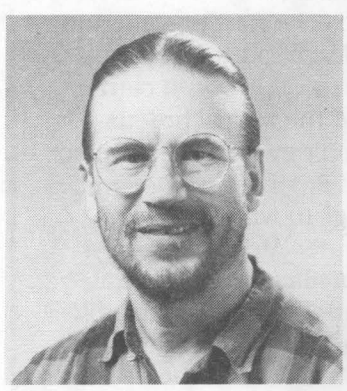

Phil Georg 15
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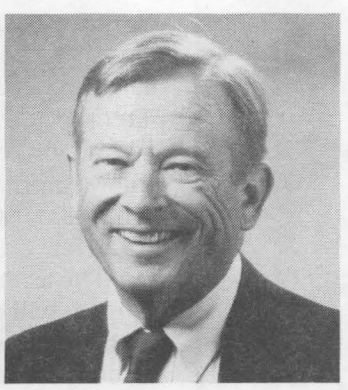

John Walter 25
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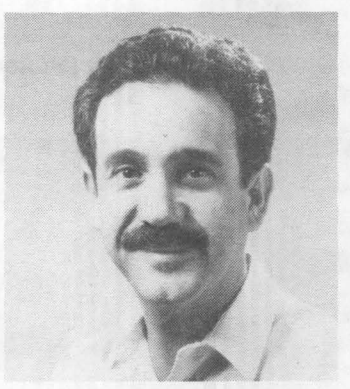

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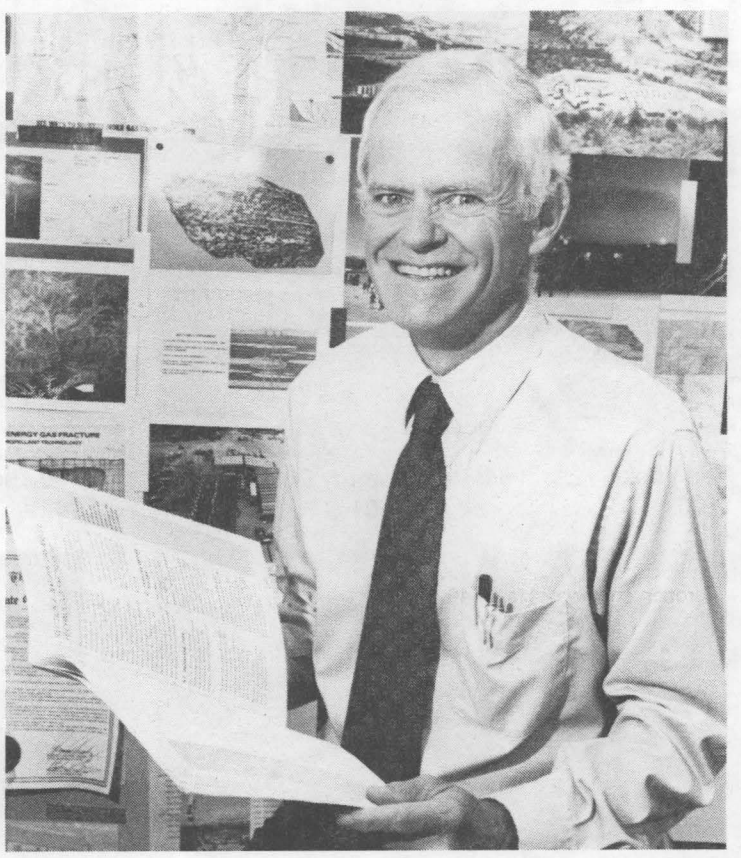

Dave Northrop 30
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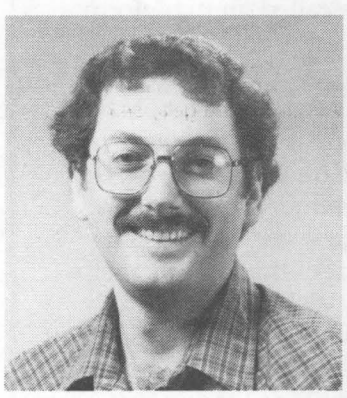

John Nevers 15
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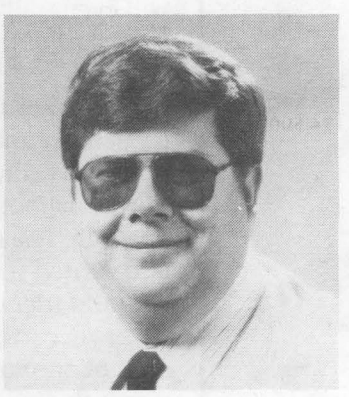

Dennis Mowry 15
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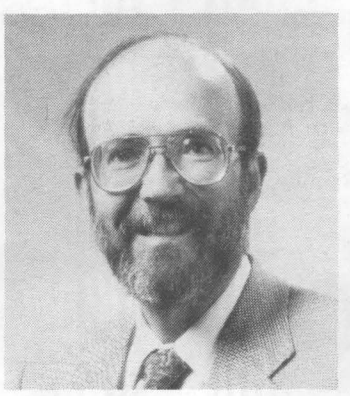


Kenneth Bergeron 20
6429

Sandia Classified Ads

Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads

MISCELLANEOUS

ELECTRIC DRYER, Kenmore,, heavy-duty, almond, $50; Kenmore heavy-duty washer, white, needs work, $15. German, 883-7002.

BEDROOM FURNITURE SET, dark oak, double bed, two dressers, night-stand and mirror, $500. Bixler, 856-3555.

XT TURBO COMPUTER, 60MB. HD, 5-1/4 floppy, CGA monitor, math chip, $300 OBO. Rosales, 837-1644.

FOUR TIRES, 33x12.50x16.5, w/white spoke wheels, good tread, $300. Miller, 281-3959.

TYPEWRITER RIBBON CARTRIDGES, correctable carbon film, Unicopy brand, for IBM Selectric III, $1.25 ea., or 11 for $12. Schkade, 292-5126.

M1 CARBINE AMMO, 30-caliber, some military surplus w/clips, some new manufacture, some reloads. Pryor, 294-6980.

GE REFRIGERATOR, frostless freezer, 15.6 cu. ft., $100 OBO. Perk, 291-1685.

'87 ALPENLITE 5TH WHEEL, 29 ft., queen bed, 3.5K solar pkg., coast-to-coast membership included, excellent condition, $13,500. Upchurch, 296-8591.

CASIO KEYBOARD, 4 octaves, $100 new, asking $25; 10-gallon aquarium, complete setup, $25; sleeping bag, 4 lbs. Holofil 808, $15. Purvis, 867-5150.

QUEEN-SIZE BOX SPRING and mattress, good condition, $80 OBO. Martinez, 888-3067.

GAS STOVE, $50; glass window frames w/glass, 25 for $3 ea., ideal for green house. Chavez, 842-6374.

METAL COOLER COVERS, 30-3/4"W x 33-1/4"H, 3 ea., $15 for all, 15-hp outboard motor, good condition, $595. Luikens, 881-1382.

BABY CRIB, Jenny Lind, white spindle, very good condition, $75. Lujan, 873-0052.

IBM PS/2 COMPUTER, model 30286, 1024K, 3.5 & 5-1/4 DD, 14,400 Intel faxmodem, color display, mouse, Proprinter III XL, $600. Chamblee, 281-4113.

GOLF CLUBS, 3-SW irons, Golfsmith Tour Model II, excellent condition, $120; almost new golf balls, four for $1. Dwyer, 271-1328.

OVERHEAD CAMPER, 11 ft., fully self-contained, full-size, excellent condition, $1,200 OBO; steel rims, 16.5 in., Ford 1-ton, eight-hole, $50. Lucero, 294-2546.

386DX-25 COMPUTER, 124MB HD, 3.5 & 5-1/4 flop, 4MB RAM, keyboard, no monitor, $550; KX-P1124 printer, $110; 1-1/2-hp Craftsman router, $150. Furry, 281-1024.

SHOPSMITH MARK V w/dust collector, jointer, workbench, accessory shelf, casters, disc and drum sanders, other accessories, brand new, $1,950. Granstaff, 856-7589.

WATERBED, super single, complete, w/bookshelf headboard, light stain, excellent condition, $100; IBM PC w/printer, $75. Russell, 294-0229.

IBM PS2 COMPUTER, 55SX memory chip (Simm), combo/at MC128 board, 1.5 memory color monitor, display adapter, make offer. Coe, 266-6579 after 6 p.m.

KODAK TMAX400 FILM, professional, black & white, 24 exposures, TMY 135-24, expiration 1/97, $3 ea. or 12 for $30. Wahner, 823-9323.

RIFLE, Remington model 6 pump-action 30-06, rings, sling, $385. Kemper, 823-1323.

PROPANE TANK, 500-gal., $400; propane hot-water tank, 40-gal., $50, both in excellent condition. Criel, 856-6582.

HIDE-A-BED, queen size, gold tones, like new, $175 OBO. Lambert, 271-7815.

WOODBURNING FIREPLACE INSERT, Ashley, $750. Padilla, 898-3115.

WOODEN CRATE, 28"W x 36"H x 47"L, suitable for overseas freight, $75 OBO. Boissiere, 881-5064.

MIGHTY MORPHIN POWER RANGER, new, in box, Model 2200, Red Jason, $14. Bassett, 898-1840.

SKI RACKS, Barrecrafter, locking for 6/7 pair skis; one for rain gutters, $60; other roof-rack mount, $55. Brammer, 266-5158.

COOLER COVER, down discharge, canvas, split corner, 28" x 28" x 34", new, $15. Baker, 888-9650.

SNOWBLOWER, get ready for winter, 3.5-hp, Toro, self-propelled, seldom used, $150 OBO. Weiss, 856-1649.

STUDENT'S CELLO, fully carved, high-quality, Anton Beder, $2,000 value, will accept best offer. Goodrich, 299-6684.

NIKON ED AF NIKKOR, 300mm, 1:4 lens, leather case, UV filter, nearly new, $750. Hutchinson, 293-9730.

WATERBED, super single, mattress, heater, bookcase headboard, dark pine finish, $100; pool table, 4' x 7', $50, fair condition. Braaten, 293-0709.

WATERBED, queen size, six drawers, bookshelf, headboard, $150; four-drawer metal shelf, $30. Harstad, 298-6551.

CARPET, 18-20 sq. yds., excellent quality, mauve color, 100% nylon plush pile, cost $45/yard, asking $10/yard. Hernandez, 299-5749.

WEIGHT TRAINING BENCH, Comp. 600, leg extension, fly bars, dumbell, curling and press bars, like new, $80. Hufnagel, 294-5949.

ROLLERBLADES, Bauer, child size 3, brand new, $45 OBO; large Vari-Kennel, in good condition, $50 OBO. Poulter, 291-0607.

CASSETTE DECK, Pioneer CT-9R, bad transport mechanism, otherwise excellent condition; 19-in. color TV, good picture, vertical needs repair. Kawka, 299-1216.

WOOD STOVE, Orley, w/fireplace insert, $250. Bauer, 266-8480.

SOFA, mauve, 92-in., leather-like, excellent condition, 4 yrs. old, paid $950, asking $375. Girard, 292-3708.

TENT TRAILER, '73 Jayco pop-up, sleeps 6, furnace, stove, sink, ice-box, AC/DC converter, excellent condition, $1,200. Bobbe, 899-8768.

WASHER AND GAS DRYER, Kenmore, harvest gold, heavy-duty, $50 ea., $90 pair; double mattress, box spring, $100. Sutherland, 345-1183.

SONY HANDYCAM VIDEO RECORDER, used little, w/accessories, $600; Seiko portable CD player w/Seiko speakers, new, $75. Epperson, 271-9880.

SCHWINN AIRE DYNE, $435; Coleman 4000-watt generator, w/extended-run tank, low hours, $450. Sullivan, 298-4880.

AUDIO WALL UNIT, oak, sliding shelf, glass shelves, glass doors, $250; 2-piece gray loveseat, $50; beige/brown tweed sofa, $150. Sanchez, 898-9598.

NINTENDO ENTERTAINMENT SYSTEM, w/rapid-fire joystick, cleaning kit, $30; many games, $5 each, excellent condition. Dandini, 296-4975.

JAYCO EAGLE 8 CAMPER, '93 pop-up, furnace, converter, icebox, sink, roof vent, excellent condition, sleeps six, easy to tow, $3,000. Koepp, 294-7136.

WATERBED, queen size, complete w/underdresser, $100. Mozley, 884-3453.

WATCHMAKER'S BENCH, w/all tools, many parts, $500; small precision lathes, two, $75 & $50. Bernard, 881-0640.

SKI BOOTS, Lange/XLR, 11-1/2, $50; full-size camper shell, $150; old Kenmore washer, needs work, free. Szklarz, 292-3995.

GOOD HOME for Boots, 5-month-old cat, charcoal gray w/white markings, house trained, gentle, loves food. Pecore, 844-6899.

GOLF CLUBS, Tour Model II irons, 3-PW, great shape, $60; GTS jumbo driver (Big Bertha copy), $25. Perrine, 293-1429.

CHEV. TRUCK WHEELS, four 16" chrome, 6-bolt, 7" wide, including used tires, $200 or trade for standard rims. Ghormley, 831-1991.

TELEVISION, 26-in., Hitachi, 3 yrs. old, $300 OBO. Martino, 265-3291.

Deadline: Friday noon before week of publication unless changed by holiday. Mail to Dept. 12622, MS 0413, or fax to 844-0645.

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 8½- 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.

DRAPES, light beige, lined, two-way pull, 120" x 87" and 100" x 81", cleaned, $45/pair. Pitts, 293-5481.

PRO MIDI SEQUENCER, internal memory, 3.5 floppy drive, 32 tracks, 16 channels, many other features, $200. Prins, 867-9440.

FLUTE, w/case, music stand, good condition, $100; Amazon parrot, orange wing, w/cage, $650. Babcock, 296-2729, leave message and phone number.

THREE DRAPE SETS, one rose pattern on ivory, 163" x 95", $200; two ivory woven, 74" x 84", 129" x 52", thermal backing, $75. Matalucci, 884-7502.

MACINTOSH SE COMPUTER, 40MB HD, w/Word, Excel, more, carrying case, ImageWriter II printer, $425. James, 294-6837.

DYNASTAR OMNISOFT K SKIS, w/Tyrolia bindings, 200cm., $125; antique Duncan Phyfe mahogany table w/without chairs, call for price. Fitzgerald, 265-7955.

ARTIFICIAL CHRISTMAS TREE, 7-1/2-ft. ponderosa pine, stand included, $30. Flanigan, 299-0049.

FIVE CEMETARY LOTS, double depth, excellently located in Sunset Memorial Park, will sell one or more, $750 ea. OBO. Summers, 881-7765.

WASHER, Whirlpool, 4-cycle, large tub, $100; dryer, Maytag, 3-cycle, $50. Breeding, 260-0820.

LOVESEAT COUCH w/footrests, $200; rowing machine, $20; lawn chairs, $5. Jordan-Culler, 881-8310.

WEDDING GOWN, lovely ornate ivory satin, chapel train, Juliette sleeves, size 6, worn once, includes petticoat, $300. Elson, 298-4216.

WOLF GAS STOVE, 6-burner, black, highback w/shelf, $1,000. Schultheis, 866-0334.

DINING ROOM TABLE, 4 chairs, $350; boy's bedroom furniture, dresser, bunkbeds, hutch, bookshelves, desk, $300; refrigerator, 23 cu. ft., $550. Salazar, 281-0560.

'86 CUSTOM FOOD-VENDOR'S TRAILER, fully equipped, must see, $8,500; '92 Kenmore freezer, 8.3 cu. ft., like new, $225. Arredondo, 275-2671.

PASTA MACHINE, Simac 700, automatic, imported from Italy, retail $280, used only once, includes drying rack, $125. Ross, 299-3023.

DOGHOUSE, tan, medium-size, lightweight, $25 OBO; boy's clothes, fit 1 yr. old, coat, snowsuit; electric throw, $5; king-size electric blanket, $15. Forster, 293-7231.

THREE ALLOY WHEELS, 6.5x14 in., wheels for '84-'85 BM5, $75 ea. Gough, 822-0090.

COMFORTABLE TWIN BEDS w/box springs, mattresses, wooden shelf-headboards; sheets, mattress pads, rust-colored bedspreads, $100 ea. Pendall, 265-3008.

COLLECTOR, rebuilt Solar Age, hot air, w/fan, $250; security storm door, 36" w/screen, $75. Kromer, 298-3073.

CAMERA, Canon EOS Elam, 50mm, 1.8 lens, new in box, never used, $500. Chavez, 898-9252.

DISHWASHER, Whirlpool, needs repair (timer?), $25; TV, Curtis Mathis, 27 in., needs CRT, $25; child's roll-top desk, 1920's, $200. Goetsch, 892-8366.

REFRIGERATOR, dorm size, $50. Palmer, 256-3164.

TAURUS MODEL 85 .38 SPECIAL, 2-in. barrel, , fired once, $200. Robertson, 294-2652.

DINING ROOM TABLE, 6 matching chairs, 47-in. diameter, 1.5-in. thick, 16-in. leaf, chairs padded, from IKEA, all light pine, $150. Krumm, 856-1221.

LITTON MICROWAVE OVEN, 750W, digital type, very good condition, $40,; port-a-crib, w/bedding, very good condition, $40. Montoya, 296-4268 before 9 p.m.

TRANSPORTATION

'92 BUICK RIVIERA, excellent condition, low mileage, one owner, exterior/white, w/Landau roof, real leather, loaded, $17,500. Perez, 828-9005.

GIRL'S BICYCLE, 20-in. Panasonic, $50. Bixler, 856-3555.

SKI BOAT, Cheetah, 17-ft., 3-liter omc, electric drive system, open bow, full canopy/tunnel covers, garaged, excellent condition, $5,000. Orth, 275-0876.

'84 VW RABBIT, convertible, great condition, new top, low mileage, $5,000 OBO. Gamblin, 821-8708.

'88 FORD XLT F-350, 4x4, Lariat crew-cab, dual wheels, new paint, warranty, $12,500. Miller, 281-3959.

'90 FORD 250 XLT, 7.3 diesel, 37K miles, gear vend, extra fuel tank, tool chests, excellent condition, $15,995. Upchurch, 296-8591.

'59 VW VAN, delivery van style, good condition, runs great, ready to restore, $1,000. Yost, 857-0435.

'93 SUZUKI DR 350 DIRT BIKE, less than 100 miles, $2,800. Dwyer, 893-4152.

'83 DODGE OMNI, runs excellent, 5-spd., 4-dr., $1,500 OBO. Lucero, 294-2546.

'81 DODGE ARIES SW, runs well, 2.6L, AC, new AT, brakes, and muffler, 5 new tires, $900. Vargo, 294-8226.

'69 YAMAHA MOTORCYCLE, 175cc, good running condition, $350. Kemper, 823-1323.

'85 TOYOTA SUPRA, sunroof, gray, good conditiion, AT, $3,950. Creel, 839-7335.

'92 TREK 9000 MOUNTAIN BIKE, fully suspended, 18-mos. old, $600 negotiable. Bodette, 275-9722.

'87 CHEV. S-10, 2-WD, no AC, 125K miles, one owner, good condition, $2,500 OBO. Eanes, 293-4298, after 5:30 p.m.

'85 NISSAN, 4x4 pickup, very clean, one owner, 5-spd., AM/FM cassette, camper shell, 150K miles, $3,295 OBO. Evans, 281-3864.

'83 DODGE WINDOW VAN, full-size, V8, 90K miles, all options, one owner, no damage history, $3,500. Doyal, 299-5688.

'74 PONTIAC TRANS AM, rebuilt 455 engine, transmission and rear end, $4,500. Prevender, 296-8586.

BICYCLE, Diamond Back, 20 in., $75. Harstad, 298-6551.

'82 LINCOLN MKVI, 4-dr., excellent condition, $1,900. Patton, 298-9987.

'83 DODGE OMNI, runs excellent, 5-spd., 4-dr., $1,500 OBO. Lucero, 294-2546.

'80 TOYOTA PICKUP, 3/4-ton, long bed w/camper shell, AC, 68K miles. Kepler, 296-0402.

GIRL'S BICYCLES, mixte frames, Nishiki and Centurion, $25 ea. Kromer, 298-3073.

'83 MERCURY MARQUIS, 4-dr., one owner, 93K miles, AT, PW, PS, PL, very clean, $2,500. Schamaun, 298-5192.

MOUNTAIN BIKE, '87 Raleigh Techniium, 16.5-in. frame, Shimano Deore components, index shifting, good condition, $300. Levin, 856-1885.

WOMAN'S BICYCLE, 12-spd. Jordan-Culler, 881-8310.

'92 SATURN SL, 4-door, red, 5-spd., PS, PB, AC, AM/FM stereo cassette, 42K miles, very good condition, $7,995. Elson, 298-4216.

'93 MAZDA MIATA, white w/black top, low mileage, immaculate condition, $16,500. De Marquis, 237-9858.

'79 MERCEDES 300 SD, original motor totally rebuilt, excellent condition, new tires, cream w/buckskin interior, $5,750. Salazar, 281-0560.

'83 CHEV. PICKUP, 3/4-ton, 78K miles, AC, AM/FM cassette, camper shell, very good condition, $3,400 OBO. Huffman, 828-1745.

REAL ESTATE

3-BDR. TRI-LEVEL, solar-enhanced, 1-1/2 baths, basement storage, 1-1/3 acres, fruit trees, springs, La Jara, N.M., $110,000. Martin, 505-289-3236.

3-BDR. CUSTOM HOME, Sandia Park, 1-3/4 baths, 2-car garage, 2-1/4 acres, long porch w/mountain view, 1,567 sq. ft., steel roof, $140,000. Salazar, 281-0560.

WANTED

HOUSEMATE, female or male, 3-bdr. house, separate baths, 2-car garage, fireplace, plenty of storage, large backyard, $250/month, 1/2 utilities. Ewen, 836-3563.

HOUSESITTING POSITION, long-term, excellent references, bonded, over ten years experience, ask for Patricia. Schkade, 292-5126.

FOUR-WHEEL ATV, want to rent Nov. 18-22, to be ridden very little by adult only. Grieco, 271-9020.

HOUSEMATE, 3-bdr. home in Los Lunas, professional non-smoking female preferred, stabling for 1-2 horses available, ditch access, $225/plus utilities, stabling. Wilson, 865-1406.

QUIKRETE (stone), Walkmaker mold and/or concrete mix/color pak. Rockwell, 884-4206.

"TROUT" BOLO TIES, or info regarding these bolo ties once made by someone at Sandia. Pryor, 294-6980.

NEED TEXTBOOK, The Acts of the Apostles, by Charles W. Carter and Ralph Earle Grand Rapids, Zondervan, 1973. Baker, 888-9650.

GERMAN SPEAKERS, for casual group get-together, monthly meeting at Michelle's Old World Cafe, Nov. 10, 7 p.m., R.S.V.P. Ruby, 821-0982.

MANTIS, Sears, like mini-tiller. Anderson, 883-2647.

OLD METAL OIL CANS or oil bottles, by collector, empty or full, quart, gallon, etc. Sena, 873-1665.

SMALL CHILD'S PLAYHOUSE, plastic outdoor type. Montoya, 296-4268 before 9 p.m.

LOST & FOUND

FOUND, prescription glasses, bifocals, in black case, left in Melt Lab in Area III. Call Angela, 845-3105/3085.

FOUND, unusual vintage 1-1/4" pink button. It's round, plastic, pastel pink, rough texture on top, probably from 40's or 50's, found by the water tower. Call Chris, 844-5691.

LOST, gold/zirconia-stone tennis bracelet, somewhere in Area 1 or in Bldg. 957 last week. Armijo, 844-9112.

FOUND, Wednesday, Oct. 12, 7:15 p.m., man's gold watch, at KAFB east gym, during SERP Volleyball league play. Call Mark, 845-9877.

Sandia News Briefs

Sandia sponsoring technology commercialization forum

Marcia Rorke will present "Commercializing New Technologies: A Private Sector View" at a Technology Commercialization Forum on Tuesday, Nov. 1, 8:30-11:30 a.m., at Research Park Bldg. 10510, Rm. 82 (south building in Research Park, outside Eubank Gate). Rorke's presentation will focus on the relationship between commercialization and planning. She is president and founder of Mohawk Research Corp., a firm specializing in contract research, focusing on innovation as practiced by individuals and small firms. The firm's work includes program design and evaluation, research, workshop design and implementation, and instructional materials development. A roundtable discussion will be held during lunch (11:30-1 p.m.). Contact Martha Haines (13416) on 845-9787 for lunch reservation information. For more information, contact Cesar Lombana, Industrial Partnership Development Dept. 4211, on 271-7834.

Sam Miller named Missouri Southern State Outstanding Alumnus

Sam Miller, Supervisor of Testing and Modeling Device Section 1325-1, has been selected by Missouri Southern State College in Joplin, Mo., to receive an Outstanding Alumnus award. The award is given to alumni who have gained professional recognition in their field. Sam earned a BS in physics from Missouri Southern. He went on to earn an MS in physics from the University of Missouri and a PhD in solid state physics from Iowa State University. His research in advanced integrated circuits has earned three conference awards. Sam's current work at Sandia involves the study of hydrogen sensors and chaotic systems.

Only one Lab News *issue next month*

The *Lab News* alters its fortnightly publication schedule every November and December because of the Thanksgiving/energy conservation holidays and the end-of-year holiday break. The next *Lab News* will be published Friday, Nov. 11. We will not publish an issue on Nov. 25, which is energy conservation day (day after Thanksgiving). Our two December issues will be published Friday, Dec. 2, and Friday, Dec. 16. The first issue of 1995 will be published Friday, Jan. 6, at which time the normal fortnightly schedule will resume.

Send potential Sandia News Briefs to Lab News, *Dept. 12622, MS 0413, fax 844-0645.*

Caremark Drug Plan changes and reminders

Caremark Prescription Drug Plan processes all prescription drug claims for Sandia Medical Care Plan (MCP) participants. Participants may use Caremark Mail Services, Caremark Select Network (claims filed electronically), or Caremark Claims Processing (complete and mail an MCP claim form).

Mail Services copayment increase

When using Caremark Mail Services, you pay a copayment for either brand-name or generic prescription drugs. Effective Jan. 1, 1995, the copayment will be $15 for brand-name drugs and $8 for generic drugs. The mail service is for maintenance prescriptions of more than 34 days. The copayments are for each prescription up to a 90-day supply or 300 pills, whichever is less. As a reminder, please be aware that the copayments in the mail order service do not apply toward the MCP deductibles or stop-loss as described in the Medical Care Plan Summary Plan Description. If you have questions about the mail order plan or would like information, please leave your name, phone number, and request on the Benefits message line on 844-7575.

New providers in pharmacy network

As announced July 1, the Select Pharmacy Network was expanded. In addition to the previously announced pharmacies, Highland Pharmacy (717 Encino Place NE, Albuquerque) is now a Caremark Select Network Pharmacy. The complete list of Caremark Select Pharmacies includes Furrs, Highland (New Mexico only), Kmart, Long's, Osco, Payless, Sav-on, Smith's, Walgreens, and Wal-Mart. Participants may use these pharmacies in any location, nationwide (except as noted).

Reminders

1. The Select Pharmacies located in Albuquerque have agreed to provide Sandia participants with the lower of the Select Network price, the special in-store price, or a competitor's advertised price. Ask for the lowest price before the sale is made.

2. The Select Pharmacies use a database provided by Sandia of names of eligible participants. When providing your name and dependents' names, use the proper name (no nicknames) and provide the date of birth of dependents. If you are unsure about how you are listed in Sandia's database, review the personnel data sheet recently mailed to your home address for open enrollment. This personnel data sheet lists the proper names, Social Security numbers, and dates of birth of all participants. Call Suzanne Moya (3543) on 845-9702 if you did not receive this information.

3. When purchasing prescription drugs from a Select Network Pharmacy or mail services pharmacy, file your claim using the MCP claim form and send it to the Caremark address shown on the claim form. All prescription drug claims are mailed to Caremark, not Mutual of Omaha.

Coronado Club

Oct. 30 (Sunday) — Children's Halloween party, 6-9 p.m. Appearances by Dracula, Frankenstein, witches, and ghosts. Lots of games and activities. Hamburgers, hot dogs, BBQ beef, chicken, pizza, and corn dogs available. Admission is $1.50, guests $2.50, moms and dads free.

Before the regular Halloween party, the C-Club will host a special party for about 50 "Make a Wish Foundation" kids and their families. The nonprofit foundation helps families of young, terminally ill children grant special wishes to the kids, with the help of community services and sponsors.

Nov. 3, 10, and 17 — Thursday Bingo nights. Card sales and buffet, 5:30 p.m. Early birds' bingo begins at 6:45 p.m. On Nov. 17 turkeys will be given away.

Nov. 6 — Sunday brunch buffet, 10 a.m.-2 p.m. Tea dance, 1-4 p.m., music by Best Shot.

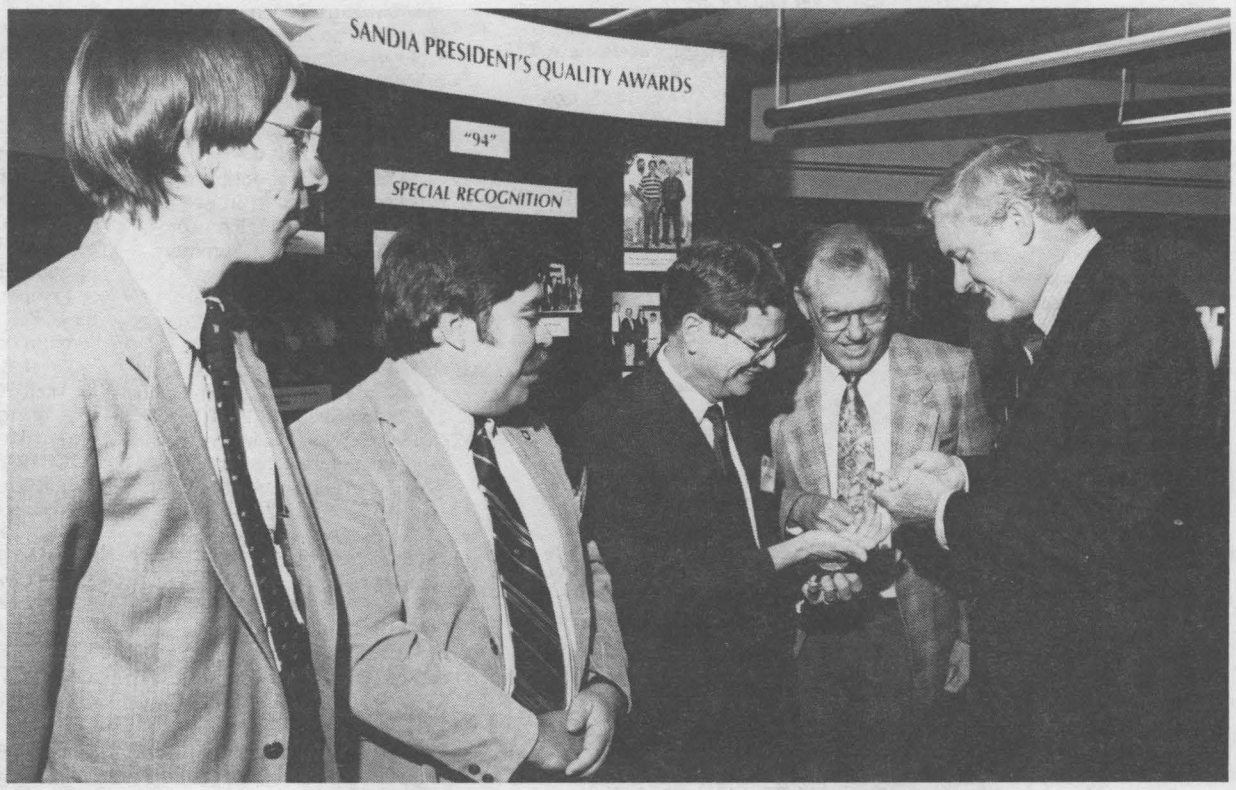
Nov. 11 — Friday night dinner/dance. Dinner served 6-9 p.m., filet mignon, $11.95; grilled halibut, $10.95, all-you-can-eat buffet (baked ham, beef, roast turkey breast, poached fish), $6.95. Music by Isleta Poorboys, 7-11 p.m.

Coronado Club members who recruit a new member will receive complimentary food tickets for both you and the new member. The current member must be present at the sign up, and the new member must meet eligibility requirements.

Sympathy

To Eloy Gutierrez (5502) on the death of his father, Max Gutierrez, in Albuquerque, Oct. 15.

To Conrad Lucero (12365) on the death of his mother, Erminda Lucero, in Las Cruces, Oct. 16.



QUALITY SWAP MEET — Sandia President Al Narath (right) and Paul Phipps (center, 9206) swap lapel pins during Sandia President's Quality Awards ceremonies Oct. 20. Al gets Paul's GPS (Global Positioning System) pin, and Paul gets a pin spelling out "Quality" from Al. Paul and other members of his team — Greg Christiansen (9222), Steve Yearout (9212), and Norm Blocker (9206), left to right — won a Silver Award for their work on GPS Satellite Global Burst Detector payloads for nuclear detonation detection systems. Their device includes an optical sensor to detect bursts and a digital control to interface with the optical sensor and sensors supplied by other agencies. More Sandia projects were nominated for this year's Sandia President's Quality Awards than for last year's, and the level of achievement was higher, with twice as many Silver Award recipients as last year. Al presented awards to Albuquerque winners in the Technology Transfer Center (Bldg. 825), and the ceremony was telecast live to Sandia/California, where California Programs VP John Crawford (8000) presented awards to winners there. There were five Silver Awards last year and 10 this year; 11 Turquoise Awards last year, five this year; and 12 Special Recognition awards last year, 11 this year.