

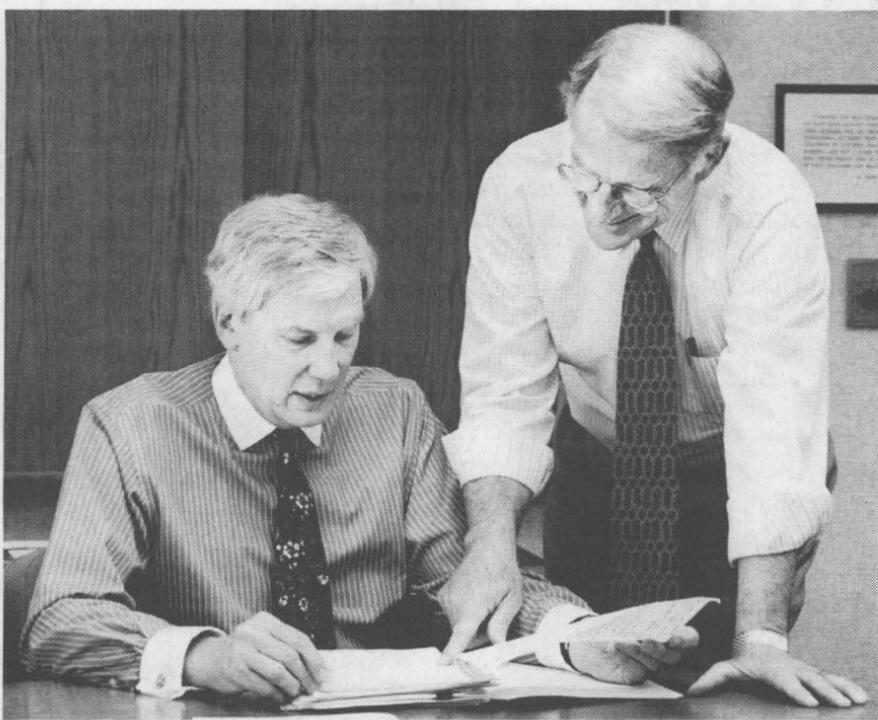
State of the Labs: Amid pressures and uncertainties, Sandia still strong, creative (but too bureaucratic)

From budgets to bureaucracy, Paul Robinson and John Crawford discuss concerns, problems, future

Each year the Lab News interviews Sandia's top two officials in the annual State of the Labs interview. This was our first such opportunity with President and Labs Director C. Paul Robinson and Vice President and Deputy Director John Crawford, who took office Aug. 15, 1995. They were interviewed by Lab News Editor Ken Frazier and former editor Larry Perrine (12620).

Lab News: We would like, right at the top, to get your impressions of what it's been like for you personally and professionally to lead the Labs at this particular time for the first eight months or so.

Paul: It's not lacked for excitement. I think we have some really good work going on. I hope it was apparent at the recent managers' conference that the SQLC [Sandia Quality Leadership Council] isn't going through our planning process to check a square but to fix some deeper teaming issues. We recently had a key strategic planning session, the first one after the feedback from the managers' conference, and I've never seen everyone work together so well. I was a couple of feet off



INSIGHTS FOR INTERVIEW — Sandia President and Labs Director C. Paul Robinson and Executive VP and Deputy Director John Crawford confer regarding their State of the Labs interview with the Lab News. (Photo by Randy Montoya)

the ground the rest of the afternoon. You could see people striving to be one laboratory team instead of holding to a belief that each part of the lab is an entity unto itself.

LN: On teaming, you're talking at the strategic planning level. I assume you would agree we've always teamed in the science and technology pretty well — we're known for that.

Paul: We are known for that, but it is amazing how easily you can lose that ability and put blinders on in your own workplace. One key area we need improvement in is to get business processes that will make the laboratory user-friendly to other people in the laboratory. The Manhattan Project, which birthed this laboratory, was the first and best example of teaming among engineers and scientists to draw all the various technical disciplines together to solve a problem, and we could do lots more in that arena than we're doing. I think a lot of our processes haven't really helped that. It's hard to find the right expert. We probably do have the right expert in any particular area, it's just hard to find them. So, we are trying to work on some

processes that will make that teaming among technical individuals a lot easier. The most important reengineering effort will be to
(Continued on page 4)

Sandia National Laboratories

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Sandians' Perspective survey results are in; 5,443 respond

A clean bill of health it isn't, but some results may surprise you.

That's the diagnosis reported to Labs management May 6 and 7 by International Survey Research (ISR) Corp., the company that administered, for the third time since 1991, the Sandians' Perspective employee opinion survey early this year — an event that has become a periodic checkup that gauges the Labs' health based on what its employees think of their management, their co-workers, and their workplaces.

"The Sandians' Perspective survey certainly reflected candor," says Labs Director C. Paul Robinson. "On some issues, we 'got it with both barrels,' and on other, fewer issues, you saw signs of progress. We are still digesting the messages you sent. I think every one of us knew that we have some serious institutional problems, and we will devote more effort to internal changes. But we cannot lose sight of our external customers and their needs."

Human Resources Div. 3000 reported the survey results to Sandia/New Mexico employees May 14 and 16. (Times for Sandia/California briefings are to be announced.)

Already members of the Sandia Quality Leadership Council, Sandia Human Resources Planning team, and individual division and center teams have begun digesting the data and developing corrective actions for many of the problems identified by survey respondents.

"In these turbulent budget times," adds Paul, "we have to make every expenditure count, so your view of these priorities provides important data for us. The '96 survey data represent an important baseline against which to measure our improvement in the future."

See pages 8, 9, and 10 of this issue for some of the survey's data and plans to transform your opinions into meaningful change.



BEST FOOT FORWARD — Vi Rael (12111) presides over the newly reopened Bldg. 800 lobby, which underwent extensive renovation to create a larger, brighter entrance to Sandia's main entryway. The badge office, now located behind the wall in back of the reception desk, is entered through the door at the extreme right. The doorway at left behind the reception desk is the entry to the hallway leading to Bldg. 802.

Plans now under way to make ES&H oversight more efficient

2

Sandia makes transistor using extreme ultraviolet lithography

3



This & That

Not as the Romans did - President Paul Robinson and Executive VP John Crawford have some interesting things to say about where we are and where we're headed in this year's State of the Labs interview, which begins on page one. I'm betting lots of us will welcome one bit of news: They aren't planning any restructuring or reorganizing of the Labs soon. As Paul put it, "We're going to concentrate a whole lot more on substance for awhile and then let the form catch up."

When I heard that news, I was reminded of a passage that Gayle Allen (8811) sent me several months ago: "We trained hard - but it seemed that every time we were beginning to form into teams we would be reorganized. I was to learn later in life that we tend to meet any new situation by reorganizing. And what a wonderful method it can be for creating the illusion of progress while producing confusion, inefficiency, and demoralization." That could have been written by any of millions of US workers recently, but Gayle points out that it came from a fellow named Gaius Petronius Arbiter - in first-century Rome.

* * *

Hiring slots as door prizes? - I was visiting with National Security Programs VP Roger Hagengruber (5000) several weeks ago about his town meeting next Tuesday (see story below). Because it takes place at 9 a.m. following Monday's Memorial Day holiday, I expressed concern that too many Sandians might show up disguised as empty seats. "No problem," Roger said. "Just announce that I'll hand out hiring slots to all managers who show up. That should boost attendance."

* * *

Thanks for your confidence - The employee communications staff was delighted to learn that 85 percent of the more than 5,400 employees who responded to the Sandians' Perspective survey rated our primary products - the *Lab News* and *Weekly Bulletin* - as effective information sources. According to the independent firm that compiled the survey results, it is extremely rare for company publications to be rated this highly. So we say a very big "THANKS" to all of you who expressed confidence in our work. (See pages 1 and 8-10 for John German's comprehensive coverage about the survey's results.)

Although we're proud of the high mark for our publications and we try hard to report the news from "the employee perspective," thinking about the flip side bothers us. If 85 percent of you find our products effective, we need to work harder to please 15 percent of you. That's exactly what we plan to do. Your ideas for improvements are always welcome.

- Larry Perrine (845-8511, MS 0165, lgperri@sandia.gov)

Hagengruber to discuss Sandia's national security work and prospects for the future

Sandia's national security work accounts for more than half of the Labs' \$1.3 billion budget, but many Sandians probably aren't that familiar with it. Employees can remedy that and learn more about future directions for this work on Tuesday, May 28, when VP Roger Hagengruber gives the next Management Town Meeting at 9 a.m. in the Technology Transfer Center (TTC, Bldg. 825).

As VP of National Security Programs (NSP) Div. 5000 and Manager of the NSP Sector, Roger is responsible for about \$750 million of DOE-funded defense-related work. He leads the programs that are central to Sandia's core mis-

sion of stockpile stewardship, which includes nuclear weapons R&D, technology assessment (intelligence), security technology, and non-proliferation and arms control.

Roger emphasizes the need to maintain a Sandia staff and facilities that will allow the Labs to continue providing outstanding service to the nation in stockpile stewardship. Roger will give a 20-minute-or-so overview of work in these areas, including the current status, outlook, and growth prospects. A question/answer and discussion session will follow, lasting until 10 a.m. All employees are invited. The program will be video-linked to Sandia/California's Bldg. 904 auditorium beginning at 8 a.m. Pacific time.

This is the second in Sandia's revived Management Town Meeting series, sponsored by Public Relations and Communications Center 12600. The series features Sandia VPs talking about topics of interest to employees. Gary Riser, Chief Financial Officer and VP of Business Management Div. 10000, is up next. He's scheduled to talk about Sandia's budget and the financial outlook for FY97 in the TTC on Wednesday, June 19, at 10 a.m.

Note to readers

A large part of this issue is devoted to two major stories - our annual State of the Labs interview and the results of the Sandians' Perspective '96 survey. As a result, several other stories and the Milepost photo page have been held until the next issue, when we will return to our usual format.

- Ken Frazier, Editor

Sandia, DOE seek more efficient ES&H oversight

By Howard Kercheval

Lab News Staff

Spurred by the Galvin Commission report that charged "the present DOE system of ES&H oversight is neither effective nor efficient," DOE and Sandia are piloting a program both hope will give the Labs' line organizations greater individual - and independent - responsibility for oversight of environmental, safety, and health operations.

DOE Deputy Secretary Charles Curtis announced at the start of the program last August a "moratorium on all ES&H appraisals and audits" conducted by headquarters and operations/project offices "except as defined in the pilot." The goal is to get DOE headquarters out of line ES&H management while retaining its overall independent oversight responsibility.

"Our local DOE staff are very enthusiastic and supportive of this pilot as a much-improved way to do ES&H oversight," says DOE/Kirtland Area Office Acting Manager Mike Zamorski. "We are committed to do everything we can to work with Sandia to make the pilot successful."

The pilot program was developed by a team led by former Sandia VP Everet Beckner, who was then serving as DOE principal deputy assistant secretary for defense programs. Beckner left DOE in February for a position with Lockheed Martin's Energy and Environment Sector in Albuquerque.

DOE willing to 'back off'

"We have complained for a long time about too much oversight," says VP Lynn Jones (Laboratories Services Division 7000). "DOE now says it's willing to back off, but it still has the ongoing responsibility to see that [ES&H safeguards] remain in place, so it's up to us to determine the optimum arrangement to give them confidence that Sandia is running well. In return, we get the freedom to focus more on actual safety and environmental protection, rather than so much on hosting and responding to audits."

This potential independence has drawn a mixed response from the line, she says. Those who understand the direction and goal are delighted, but some skepticism remains.

"We have approval for less oversight, but
(Continued on next page)

21 foreign journalists visit Labs' CMC

Sandia's Cooperative Monitoring Center was host last week to 21 foreign journalists and opinion leaders for a four-day seminar on technologies to monitor compliance with arms control agreements.

The visitors, including writers and editors from India, Pakistan, China, Egypt, Israel, Jordan, and Lebanon, as well as journalists who cover the Middle East from European bases, had an extensive schedule of presentations on cooperative monitoring applications and technologies, on-site inspections, arms control treaties, and lab-to-lab cooperation on materials security in Russia.

CMC manager Arian Pregoner (5341) says the center got funding from DOE to invite the journalists after previous CMC foreign visitors suggested that making opinion leaders in their countries aware of cooperative monitoring technologies could help develop arms control constituencies in regions of proliferation concern.

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LOCKHEED MARTIN

World's first transistor made with extreme UV lithography fabricated at Sandia

Sandians use EUV process to develop smaller (0.1 micron), faster semiconductor circuits

By Nancy Garcia

California Reporter

The world's first working microelectronic device to be made with extreme ultraviolet light has been fabricated at Sandia /California.

The device is a field effect transistor, a common building block of all integrated circuits. It has an electrical channel, or gate width, of 0.1 micron — a thousandth the width of a human hair and less than a third the width of circuits on current chips.

"This demonstrates there are no fundamental show-stoppers in fabricating devices using extreme ultraviolet lithography [EUVL]," says Rick Stulen, who manages Sandia's Advanced Electronics Manufacturing Technologies Dept. 8250, where the work takes place. "It's the world's first proof of principle for device fabrication with EUVL."

Sandia California News

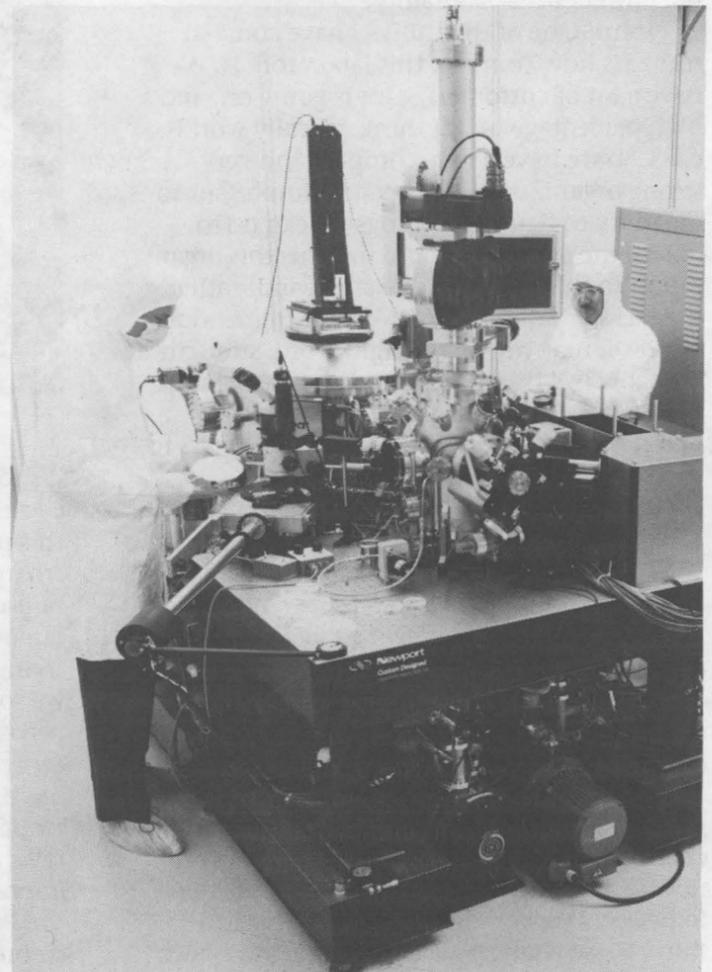
Results of the Sandia project were presented May 2 in Boston at a meeting of the Optical Society of America by project leader Khanh Nguyen (8250). Khanh first demonstrated the device's operation on April 13 by examining its electrical characteristics using equipment at the University of California at Berkeley's Electrical Engineering Department. Additional highlights from the EUV lithography program were given by Sandia and Lawrence Livermore National Laboratory (LLNL) collaborators at the meeting, signifi-

cantly increasing confidence in the feasibility of this advanced lithography tool.

Current leading-edge chip patterns are printed with a photographic-like process, optical lithography, creating features that are 0.35 micron wide. However, optical lithography is reaching physical limits.

The shorter wavelengths of extreme ultraviolet light enable printing smaller features at high resolution. The experimental lithography tool assembled at Sandia a year ago (*Lab News*, March 3, 1995) is the first extreme ultraviolet patterning system capable of overlaying features, a precise and demanding function necessary to create a working device.

Lithography has been targeted as a key technology for semiconductors as they continue to be made smaller, faster, and more powerful. The project is sponsored by DOE's Technology Transfer Initiative program in collaboration with LLNL, AT&T Bell Labs, Intel, and other partners. The Semiconductor Industry Association aims for commercial production of microchips with 0.1 micron features in the year 2007. As the project proceeds, the researchers will create more complicated devices and circuits to evaluate and develop the fabrication processes further, Rick says.



GET SMALL — This laboratory lithography tool was used to create the first functional transistor in which the smallest feature was patterned using EUV lithography. Shown are Dan Tichenor, left, and Steve Haney, both of Advanced Electronics Manufacturing Dept. 8250.

(Continued from preceding page)

we have to more formally demonstrate that we can and are managing our operations safely and effectively," Lynn says. "The reality is that we've come to depend on DOE's oversight of us and we don't yet have a full process for self-assessment in place."

Zamorski agrees. "I believe the critical factor in determining success is how well Sandia's line organizations accept responsibility for and carry out effective self-assessment," he says. "In order for DOE to back out of its traditional oversight role, Sandia needs to demonstrate that its self-assessments are determining the status of ES&H across the lab, and that Sandia is both finding and fixing its own problems."

The primary objectives of the pilot, Lynn says, are to see that:

- ES&H performance is maintained or improved.
- Efficiency and effectiveness are improved.
- DOE has confidence in Sandia assessments.
- Regulators and stakeholders remain well informed.
- Trends are discerned before problems occur.
- DOE Facility Representatives are perceived by both DOE and Sandia as value-added.

Other labs also involved

Los Alamos, Lawrence Livermore, Lawrence Berkeley, and Oak Ridge are participating in similar pilot programs separate from Sandia's. Sandia will continue its program through fiscal year 1997; the other labs' programs may end at the end of the current fiscal year.

During the course of the pilot program, each lab is developing a comprehensive plan for demonstrating that its operations are being per-

formed safely and in compliance with applicable requirements, including a self-assessment process for verifying the plan's effectiveness.

As the various pilots end, DOE will assess the results and use that information and its own internal criteria to determine the effectiveness of individual labs' ES&H management and to design future oversight programs.

Although labs involved in the pilot are responsible for developing their individual ES&H oversight programs, other agencies such as EPA, the Department of Transportation, and individual state environmental agencies will continue to perform their own oversight activities.

"The goal, of course, is to not simply swap DOE oversight for our oversight, but to free the line to do more to improve the safety of their operations and less administrative processing," says Lynn.

Recognition award

Mary Kay Hampton was correctly mentioned as one of the recipients of an Employee Recognition Award in our story in the May 10 issue, but her photo was inadvertently omitted. Mary Kay (Badge Office Dept. 7437) retired April 15 after 18 years at Sandia.



MARY KAY HAMPTON

Child care update

The audience at a recent child care facility update heard encouraging news about the availability of nearby child care for children of Sandia parents. Slots have opened up for Sandia families at the DOE child care facility, and with the opening of another Kirtland Air Force Base child care facility near the Gibson Gate and the new KAFB Youth Center, slots will be available at the on-base KAFB child care center.

Jann Levin (3343), Sandia Child Care Project leader, informed the gathering that Sandia parents (*Lab News* Dec. 1, 1995) will again be surveyed to find out if a Sandia facility at Research Park specifically would appeal to them. The facility would be privately owned; the owners would determine policies. The survey will also include information about the openings at the DOE and KAFB facilities to help determine if employees still desire a separate facility.

If you'd like information about child care providers, contact Lynn Beard, Child Care Resource and Referral Services, at 844-1492.

Comet Day II coming

The Space 96 conference presents "Comet Day II," Sunday, June 2, and Monday, June 3, at the Albuquerque Hilton. Comet Day II, organized by Mark Boslough, Computational Physics and Mechanics Dept. 9232, will feature a variety of presentations about near-earth objects as resources and as threats. Presenters will include David Levy, Alan Hale, and Thomas Bopp. David Levy will also speak at the TTC (Bldg. 825) at Sandia on Tuesday, June 4, at 10 a.m. For information, call Mark at 845-8851.

State of the Labs

(Continued from page 1)

recreate our engineering and our R&D processes to take maximum advantage of computer networks. This has the potential to greatly increase the power of this laboratory.

John: One of the things I have come to realize is how complex this laboratory is. We have a lot of customers, a lot is going on, and a high percentage of it, I think, is really world-class. So we have a very complex and very strong organization. It's become important to me to try to figure out things we can do to reduce the complexity and to focus this organization so that it moves as a single unit rather than as a group of units. We have tremendous — power may not be the right word, strength probably is. I think in a world changing so fast where there're so many different pressures pulling on all our folks, it's important for us to sharpen our focus for the laboratory.

Hold off on more reorganizing

LN: Not long after you took over as President, Paul, we asked if there were plans for any more reorganizing or restructuring. You said you wanted to take time to get some experience under your belt and see how it worked. In light of our forming these new strategic objectives, are there any plans to do any more re-anything?

Paul: That's a great question, and it is one we have addressed. First, we did institute some changes. Among the vice presidents, most are now in a slightly different job than they were in before. We wouldn't want to undo that. I think those changes, on the whole, have been good. But we reached a more fundamental belief: Everything has a time and a season and this is not the time to reorganize or restructure. We have to focus a lot more on our business tasks and on our customers. So the new initiatives we're talking about are more to focus on the customers. We will put aside any questions about structure until a later time. We're going to concentrate a whole lot more on substance for awhile and then let the form catch up.

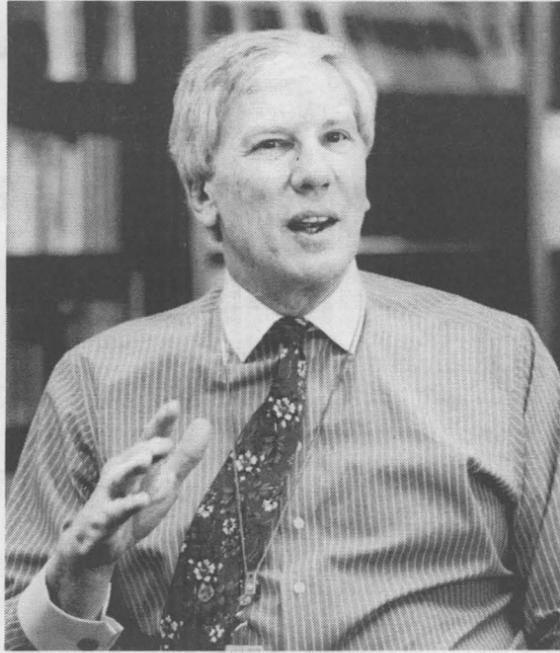
John: I think that's a very important point. You would only reorganize or change things if necessary to do your job better or to move into a new area or if you're not satisfying a particular major customer. So, I think it will be continued evolution, but it's going to be driven by the job we're trying to do.

Paul: And if we need to make a change to help with those directions and break some barriers, then we will, but otherwise, both in structure and in organization, we're putting those on a back burner.

The budget situation

LN: We talked to you on the budget situation recently (Lab News, April 12). Since we reported that story, we have had to start doing 10, 20, and 30 percent budget-cutting exercises. Have things changed since our story and will they change in the next few weeks in a way that we need to tell Sandians things are worse than we thought? What can we say about this budget situation and the exercises?

John: They've changed again since then, not as much in numbers as in uncertainty. There's probably a little more spread or noise in the system. There're just a lot of scenarios, and frankly, a lot of politics to play out over the next few weeks. What I was trying to say is that



C. PAUL ROBINSON

it's too early to panic and that we will see large cycles in uncertainty. We're putting some of this pressure on ourselves. It's a double whammy for the business-support side of the house in that we're looking at a downslope in our overall budget and simultaneously we're trying to reduce the percentage of money that we spend for administrative support by one percentage point [from 28 percent to 27 percent]. That doesn't sound like much but that has the effect of a 4 percent reduction in indirect. So part of the pressure the administrative folks are feeling is self-imposed and the rest is imposed by the outside world.

Paul: We've been in similar situations before. Other than maybe the first year I was here, I've gone through the scenario that said, "Well, looks like we're going to do OK this year, but the year after that, there's going to be a train wreck." We've said that every time, and people worked very hard, and while we have gotten reductions, there has been no wreck. We have some good supporters in DOE headquarters and other agencies, and we have very strong support in Congress, and so this year's budget has a long time to play out. So I don't think any Sandian should operate on the fluctuations that are going on right now. This year may be a particularly turbulent year because Congress has set for itself a very short calendar. There was a stalemate between the administration and the Congress in getting the FY96 budgets approved. So predictions that they'll get next year's budget done in a shortened calendar is probably a little Pollyannaish. We may have to live with uncertainty for a longer time.

One strong commitment is our decision: We need to decrease non-value-added activities. I think there's no one who wouldn't admit that you see a lot of such activities at Sandia in the technical as well as the administrative lines. We just have a lot of baggage we carry with us in internal bureaucracy, and that's what we have got to stamp out, regardless of whether budgets are down or up.

Numbers of employees

LN: In our article John basically said that we don't have an employee target or number for the end of FY97, but I think the copying machines have been running pretty hot and heavy, reproducing a viewgraph showing a projection of 7,434 employees by the end of FY97. That number is out there floating around the Labs. What can you say about that?

John: I haven't seen that particular number. I'm not surprised that there's a number like that out there. There're lots of ways to get there. I was looking at two numbers just yesterday, and they were separated by 300 people. And both could happen. So I honestly don't know what the right answer to the employees

is right now, because we have not changed the official target number for the end of fiscal year 1997. It was 7,950. Having said that, I think it's clear that we will be under that because we'll be starting FY97 under where we thought we would be because of the VSIP [Voluntary Separation Incentive Program, under which 273 Sandians left the Labs by April 15].

LN: The latest projection was 8,060, I believe.

John: Right, and I think we will probably reach that at the end of this fiscal year.

The scenarios will probably go like this. We could, by just throttling our hiring, get down to about 7,750 by the end of FY97. With a restricted hiring program we can decrease the Labs' size by about 300 people, and if we have to go below that, then we're going to have to do something explicit to drive the system. But we have not made that decision yet, and it will be driven by our budget numbers.

Paul: We felt we were on a trajectory that made some sense. I might mention where we've been in our trajectory. There have been some fairly large numbers. Our high for the laboratory was above 8,700 people. The CFO [Chief Financial Officer] gave me a plot of how that has been coming down over time. We've decreased by 650 people, but in addition, we hired 85 people from Pinellas [DOE's shutdown neutron generator production facility in Florida] and brought them into the laboratory and shifted another 200-plus people from R&D tasks to production tasks. We now have more than 300 people doing production. So I could say the size of the R&D laboratory, as we know Sandia, is down by 950 people, and that's a tremendous change, an 11 to 12 percent change over five years. So we have shown we can change the laboratory size as we need to.

I think it's not good to focus only on numbers. If we focus only on the number and try to bring it lower, it will be a self-fulfilling prophecy — or I might say "a self-defeating prophecy." We really are working hard in strategic planning in trying to re-energize what we're doing, looking at some new business thrusts. We've taken a little extra time to make sure that those fit us as a laboratory. We believe we have a strong commitment as to the culture of the laboratory and what programs can be successful, so we are going to put more pressure on new business areas for awhile before we really look at the numbers again. We have not changed our official numbers at all. There are a lot of planning exercises that do, and they don't have the same reality.

Policy on contractors

LN: What about contractors?

Paul: The growth of contractors who work within our fences, on-site contractors, was remarkable. I don't think anybody was monitoring how extensive that became — up to 2,300 people. We have been reducing them in two ways. We made a commitment that if we were reducing our manpower by 500 in a year we were going to reduce the contractors by 500. I think we're on a slope to have that take place. Proportionally, that's a much bigger change. More important, we are changing the nature of the contracts by which we bring people on-site to be performance-based contracts instead of manpower-augmentation. The difference is if you have a limited-term task that you can define — we need this thing done, it has this start, this finish — then you can write a performance-based contract to achieve that.

LN: But the number of contractors, I believe, is down to about 2,000.

Paul: It's now gone down below 2,000.

National security key mission

LN: What do you see as Sandia's strong points that we will be emphasizing to all our customers (Continued on next page)

*(Continued from preceding page)
and potential new supporters?*

Paul: We have decided very strongly we are first and foremost a national security laboratory. All the areas we emphasize are really problems of national security for the nation, regardless of which agency owns them. That is why we exist and where we add value.

LN: *Broader than nuclear weapons?*

Paul: That's broader than nuclear weapons.

John: But with the core. Nuclear weapons business forms the core.

LN: *Where does that leave energy and environment? For example, do you see that as a growth area, are we going to hold our own?*

Paul: We've been looking at trying to reintegrate the energy and environment work to make sure it does not become a separate line of business that loses a tie with the national security and the nuclear weapon activities. In particular, we took on a lot of tasks and were awarded major work because we had skills built up in the nuclear weapon program. A good example is the work at WIPP [the Waste Isolation Pilot Plant], which has been a major energy and environment project for us. We developed geotechnical expertise in the weapons program, in the testing activities we carried out, and that same capability formed the core to win the other assignments. Now that's alignment when you do that as a laboratory. All the laboratories were warned in the Galvin review not to try to be everything to everybody. I think after the Cold War, there was some truth that laboratories reached in far too many directions. We're saying if there is an alignment with our technical capabilities, so that the value of coming to Sandia is much higher than trying to find another provider, that's work we ought to do. We also are going to try to invest a lot more in areas that do emphasize national security and goals.

Global intelligence, surety

LN: *What do we need to beef up at the labs, to be more competitive in the future?*

John: I think we are going to have to strengthen what you might call intelligence, or our understanding of all the global connections back to

national security and to national defense. We are going to have to have a more global view of what we do for the nation's security than we have had in the past, and to beef up our knowledge and our ability to understand and gather information so we make intelligent choices, so we can generate intelligent options for our customers.

Paul: One other example occurs to me: surety. Surety is a word not likely understood, but basically it's safety, security, reliability. We uniquely bring that task to the nuclear weapons stockpile of the US, and it has built up characteristic skills within the laboratory that are unique. There's a need for those same skills lots of other places. The real problem of society's acceptance of WIPP is that people want to know, "Can you say with certainty and reliability that it is safe to store nuclear waste there? Do you have a basis to explain and understand and provide the same guarantee in that arena as you have that our nuclear weapons are safe?" We're dealing with the same kind of probabilities and statistics — parts per billion certainties — in that arena as we provide for nuclear weapons. The technical skills needed have a great similarity and are truly unique to us. It's probably the highest value the labora-

"We have decided very strongly we are first and foremost a national security laboratory."

tory can provide — people want that kind of assurance — and you have to do it by understanding in a scientific way the phenomena involved and you have to have the mathematics to start rolling up the probabilities for all the alternatives that could occur and then give a defining answer. The process seems to us to fit perfectly within the weapon program skills.

Scientific modeling replacing tests

John: A strength we have now that is going to be even more important in the future is our ability to build scientific and engineering models with a lot less experimental data than we've had in the past. Experiments and tests are going to be very dear in the future because we aren't going to have very many of them. We are going to be asked to certify — to understand things at the same level as we've been asked to in the past — with a lot less data. So our ability to model things — almost all the way from first principles, if we can — to model phenomena, processes, and hardware to such an extent that we can predict their behavior and their response to various functions will become increasingly important. It's going to be a strength that will be central to the laboratory for the kind of work we do. The weapons business will drive it, but this kind of work is going into many other areas because the whole world is headed in that direction.

Paul: If you adopt the modeling and simulation approach, it may be more important to design experiments to put key benchmarks within the code that don't look at all like the final configuration but explore a phenomenon that the code tells you is most uncertain. You explore it separately and earlier in the development process. It's a very different kind of experimentation than we did in the past, and we are starting to see that take place.

John: I think in the future, when Paul is called upon to certify the stockpile, as he will be every year, more and more of it will be based on models and extrapolation of existing data. It's kind of a new world. But if we develop that capability, I think it applies to many other areas.

Our new facilities

LN: *We have a number of new facilities about ready. What can you say about them?*

Paul: The new robotics facility is about ready. The new CNSAC [Center for National Security and Arms Control] facility is about ready. The structures are up but there is extensive work now going on inside them.

LN: *What new capabilities do they give us?*

John: The robotics facility allows us to bring together efforts in robotics that have been in different places around the laboratory. It gives us a laboratory that is functionally designed for that work rather than being in 10 garage-like buildings in different places. It allows for that group for the first time to operate in a lab that is designed for it and all in one place, which is a big advantage.

Paul: And share equipment with each other, which is much tougher to do spread out as they have been.

John: The CNSAC building allows for an expansion of our intelligence effort, which is part of our strategic plan.

Paul: That intelligence effort has been growing very rapidly. The building is just in time. They have had a very difficult time carrying out their work with the requisite level of security required for that in existing facilities.

The robotics facility and the Explosive Components Facility will be absolutely world-class facilities in those areas when they open. There's none better in the world. The same is true of CNSAC. It will be an unprecedented structure for doing high-security work.

John: And we're now funded to complete

Phase 2 of the Combustion Research Facility [CRF] in California.

Paul: In these tight budget times, to find that the CRF II made it to the recommended list gives us a lot of assurances.

LN: *What additional capabilities will an expanded CRF provide?*

John: The expansion will actually complete the laboratory building. The shell is up. It about doubles the laboratory space. And it adds an office wing to the existing building, which about doubles the office space as well. It essentially completes a project that doubles the capability of the combustion center.

LN: *Functionally is the CRF healthy?*

John: It has been getting very good support. There are budget pressures there just like every place else. But in today's world I think it has done very well. The research done there remains highly regarded in DOE and by the external research community as well. So it's very definitely one of the major strengths of the Laboratories.

California a portal to industry

LN: *Do you see the relative balance in numbers of people and the work changing at all between California and New Mexico?*

John: I don't see it changing dramatically. I think the California site will remain around a thousand people. They have good facilities for that size of laboratory. They have been dropping as has the Labs as a whole. I think they are slightly below a thousand now.

Paul: We are starting to see the strategic value of that facility because of its closeness to where major industries are in the technology transfer programs. There is a plot by state of where CRADAs [cooperative research and development agreements] are in place. California tops the list by large factors. The California site is our window on the large commercial world, and I think that's going to be more important to us all the time.

Partnerships with industry

LN: *Are we having any success getting across the necessity of our interacting with industry to the people who are less supportive of the idea?*

Paul: I hear people say our tech transfer program must be dead because the budgets are being cut back. There is clearly a policy battle going on between people who believe that you've got to be very careful joining government and industry together and others who believe it's essential to do so.

The decision that caused us to close some CRADAs and cut back on some others was a tactical decision and not even a result of a policy debate on that subject. In coming up with the FY96 budget, the conference committee of the Congress either ran out of time, or perhaps patience, and said we're going to remove — I think the number is \$191 million — two lines of unspent balances, and that was the last amount needed to come into budget agreement in the Appropriations committees. Within Defense Programs, by far the bulk of carryover money was in the technology transfer initiative, so we took a huge disproportionate share of that cut without a policy person standing up to weigh in either direction. That's clearly a short-term loss to us, but it's not changing our philosophy at all of the importance of industrial partnerships.

Bill Perry, Secretary of Defense, noted that two or three years ago was the crossing point between research and development done for defense purposes, which used to be the majority in this country, and research and development done for commercial purposes. His view was that if we're lucky the ratio will only continue to grow, that there will be more commercial R&D than defense R&D.

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With that being the case, how can we possibly afford to turn our back on the largest source of innovation? We have thus set a goal of becoming much better hunter/gatherers of technology from the commercial sources. You can't get the advantages of the technology unless you're giving something in return. It has to be win/win partnerships. So partnering has to be an essential part of all of our businesses as we go forward.

We have enough experiences with CRADAs already to see the value that comes from that partnering. I think the SEMATECH CRADA is an ideal one. The electronics industry is flourishing right now. We're well above the Japanese and have recovered most of the gains that they had made prior to that. Electronics is a key part of what we do in all our mission areas, and by having the SEMATECH partnership we get some government funds with the CRADA funding. In addition, SEMATECH is placing \$4 million within the laboratory — direct funds in. As these relationships have built up and as innovations have happened in the member companies of SEMATECH, we've learned their technologies and put them to use here. We rise in our capabilities as the commercial sector rises. Capabilities are on the rise in electronics today for sure. We've a few other examples of that going on. Certainly the overall concept is rich.

John: We have permission and support from our program management that where we find opportunities, we may couple their project money with industrial partners. As long as we meet their program goals then we are free to develop partnerships. So the only thing that's changed really is that there's a lot less earmarked money being put into those. It's just gotten harder but it certainly hasn't gotten any less important. I think we should look forward to the day when a major part of our programmatic funding is also involved in industrial partnerships.

Paul: You've already done a story on the hardening process we developed that General Motors has on the factory floor at its Saturn manufacturing plant (*Lab News*, March 1). That's a milestone. People used to ask, "What have you done that's really making a difference, do you have anything on the production floor?" The answer is yes, we have things on the production floor in a number of industries, and one is in General Motors, the largest company in the world. That's a very nice one.

The future of DOE

LN: You mentioned supporting DOE headquarters on various things like this. That brings us to the general point of DOE's future. Where do things stand? What is the outlook for our interactions with DOE? Can we function if it is severely weakened?

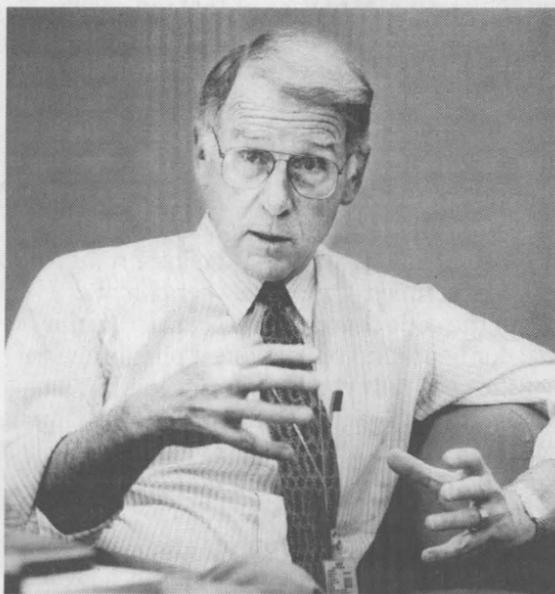
Paul: In 20 years there have been three changes of our agency — AEC, ERDA, and DOE. My guess is that with all of the arguments being made there'll likely be some other changes, but I think we've positioned ourselves to not rise and fall as the changes occur. Most of the arguments about changes in DOE are not in the direct work we do with them but in regulatory responsibilities. The Secretary of Energy has given a report that she commissioned about external regulation of the department — that the department should get out of the business of regulating itself. She said she accepted it and would like to see it implemented. That itself would be an enormous change that would help a lot of the criticism. We're trying to make DOE a success in any of the areas we work with. They are our prime spokesman and supporter in Washington. It's essential to have strong supporters in the executive branch, and so we intend to do the best job of working with whoever is there and what-

ever form they are to make sure we have a good partnership.

Breaking down bureaucracy

LN: Some folks say upper management hasn't been willing to make the really tough decisions about making changes in the Labs — taking a hard look at some of the things we're doing on the support side of the house that maybe we could just do away with entirely rather than going through budget exercises where everyone has to propose 10, 20, 30 percent cuts. There may be things at the Labs that we could just do without entirely, and there has been some criticism that you aren't dealing with that.

John: I guess I've heard that. I think everybody has their own favorite whipping boy. Usually those simplistic answers aren't very workable. While there are things within the support areas that some people value more than others and some value less, we have not taken a meat ax to whole functions. I'm still trying to understand the value that's added by these functions. I frankly don't know enough about it to be comfortable saying, "This function we could



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absolutely do without." I haven't gotten to the point where I'm willing to do that. Now there are pieces of functions where we are doing that. But I would much rather understand what the function and value added is and how we can do it better and more effectively.

Paul: Let me try two parts of that. The trouble with bureaucracies is almost all of the functions had some good, driving reason when they were put into place. A lot of times we lose sight of the original reasons. People change, people forget. So there is a need for us to understand, and where we can't determine if it's adding value, get rid of it. We started a process which is still under way that relies more on principle than the meat ax John mentioned, and that's the customer/supplier relationship. The customers for a service decide what its size is going to be. We tried to communicate that message. Maybe this article will help communicate that some more. It's very important for everybody here to know where they fit in, who their customers are, and if you have trouble doing that, I would say that's a function that's in danger.

The other thing that we've put a tremendous effort on and started to get reports on in the last few months are these Red Teams [outside teams of experts that critically analyze business processes]. We've had Red Teams for most of the business functions. We also have a lot of data about what other businesses do to size administrative functions. The messages are very clear. In a number of cases we are the commercial standard, but in more cases we are bloated above commercial standards.

The Human Resources function is the first report we got back, and it says we're twice as big in HR personnel as a comparable research and development part of major industry. We have started downsizing that organization, and at the

same time configuring it the way it's done in industry. Instead of having an isolated central function for HR, you get the HR support people out to the organizations they support, working with their customers. I hope people have begun to see these customer service units. We're not just moving people from the central organization, we've downsized the whole organization. We're also looking at that in the financial management and accounting system.

I mentioned this in my dialogue sessions with employees. Over the years we have polarized into the line versus the accountants, and that is doing no one any good. The place to make gains in cost effectiveness is where you decide things — out in the line. You need to restructure to get those accounting folks out as support to the line people because the only way to save money is to make those decisions and choices in the line.

In the past DOE allowed zero risk of ever making a mistake, particularly in the accounting area. The result was smaller and smaller accounts, each closely monitored. They are stepping back as a result of the Galvin recommendations to say we've got to adopt businesslike methods.

Better business practices

John: There's been substantial progress in starting to move to new ways of doing business. By the end of this fiscal year, we will have finished installing fiber optics in the Labs' major buildings. The customer service units are ready, and we're beginning to build our business system around them. The electronic time cards are coming up, not without difficulty. I may have been one of their strongest critics, but it's happening, and by the end of the year they will be up and running for most people. Electronic vouchering is coming and will be on-line by year end. We've now made the decision and have actually procured the PeopleSoft software for doing our HR business and made the decision to put commercial Oracle software in as our database and procurement system. Raising the threshold on accountable property to \$5,000 cuts our inventory burdens. You're starting to see movement of this big company in a new direction.

LN: Our investments in this infrastructure—the electronic desktops, all of that — are starting to pay off?

John: They're starting to pay off. I think we all would like to have believed it was going to be simple and fast and with no problems, but in fact it's a lot of hard work and there're a lot of bumps in the road. But it's happening.

Paul: I may be the only person who remembers this, but in my first letter to employees [*Lab News*, Aug. 18, 1995], I talked about new directions for change in business processes and said reengineering really means learning how to do your processes through electronic systems so they can be very efficient, rapid, and match the decision time scales — and actually know what things cost. I felt a tool for change was to rely more on commercial software. Until we can make that step we couldn't say we're really doing best business practices. Well, it's not an instant panacea because we realized when we looked at the commercial software that if your business is not organized to function through the new software you're not going to get any gain, you may get loss. But now we've changed ourselves.

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"There's been substantial progress in starting to move to new ways of doing business."

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The two software systems that John mentioned to you — PeopleSoft for HR and Oracle for procurement and financial data — are the standards in industry now. Our ordering that software fulfills a commitment I made. That's the direction we've got to go to push for change, and I'm delighted to see it.

Wasteful bureaucratic processes

LN: Have we seen tangible results in DOE lightening up on over-regulation as the Galvin Report criticized? Is that happening? Are they supporting these kind of efforts?

John: I believe there's room for optimism. Maybe I'm always optimistic. What I sense is that upper levels of DOE — the management levels — are supportive and want real changes. Three years ago I don't think we'd ever gotten the base amount for control of new capital equipment raised to \$5,000, but it happened. I think the evaluation system from ALO [DOE Albuquerque Operations Office] that we're looking at for the next year for the laboratory based on three or four major categories would be not only simpler but — probably more important — more meaningful. It would be a way that we could judge ourselves that would be meaningful to us and to ALO. But frankly, the bureaucracies under the management both in Sandia and in DOE are coming along slowly, and so we each have our problems with our own bureaucracies. It's a bit of job protection, but I'm convinced that if we stay committed to this we will make real progress.

Paul: The whole debate about downsizing — downsizing is not an end, it's a means. You have to ask to what end do you want to take it? We would like to get our costs down so we can do more of the work we're organized to do, the

research and development, the solving of customer problems. We are trying to put in an ethic of doing reengineering, but we aren't pushing to put you out of a job but to try to put you into a better job. Wasteful bureaucratic processes hurt everyone — they hurt the people who have to do those tasks daily as well as everybody in the laboratory.

I have never quite forgotten a woman who, during one of our original meetings about establishing the corporate information system, said that she had gone to school for eight years, she had an MBA, and that when she was hired by Sandia she thought her life's goal had been achieved. She was going to do wonderful work for the rest of her career. She then said, "Do you have any idea what a lousy job I have? My job is to try and run differences between my organization's accounting system and the central accounting system. No human ought to have a job like that. I didn't do all of that studying, I didn't come here to do that. Why don't you fix it?" I think there are probably thousands of Sandians who have the same point of view. We want everyone to have a meaningful job. We need your help in moving from the non-value-added to the really significant-value-added tasks here.

LN: Are there any important points you want to make to Sandians that you haven't had a chance to? Also, we want your reflections on how you've reacted personally to your first year. How has it been for both of you in a personal sense?

John: In a personal sense it's a very fulfilling job. It brings me in contact with all different parts of the company, and I think that's a view I'd never had before. We always see just pieces of it. I certainly have learned a lot, learned to appreciate all the different characters of the laboratory. About once a month I go

spend a day with one of the divisions and try to get a sense of that division, what's working and what's not working, to hear them tell what's going on. You get a feel for, first, a very fundamental strength, and second, how different things are in the different parts of the company. Already I've seen the production end of the company and the research end. They're quite different functions, but I would say equally staffed with very bright people. That's one of the things I'm proud of at the Labs — that we have world-class people in all these different areas. That's probably the thing I've enjoyed most — getting a better view of the entire laboratory.

Sandians highly competent

LN: Your management style is different from what we've had before. The two of you seem to have a close working relationship.

Paul: Teaming starts here. I just wish it could be as easy for everybody in the laboratory. The relationship we have — we just haven't had any difficulties. The ease of working together has just been wonderful.

John: It really does work. The question most often asked is, Is it a CEO/COO relationship? And Paul said from the very beginning that that was not his view of the way we should work. He didn't want to concentrate just on outside responsibilities and he didn't want me to just concentrate on the inside. We would operate it as a two-person team doing this job, and I think that's what makes it work.

Paul: I really believe we're interchangeable for each other with respect to any issue that arises. Let me try your question. My answer parallels John's. Even though I previously had a wonderful vantage point with Division 4000 to look across the laboratory and to take the pulse, I'm in awe — that's the right term — of the quality of people here. When problems arise there's usually urgency associated with digesting the information and figuring out the course, and so I'm constantly calling on new Sandians who I didn't know and asking them to bring us up to speed quickly on an issue. The competence I find amazes even me.

Every time there's an issue that comes up, you find someone who knocks your socks off — their depth of understanding, their views about things. The people I talk to are so capable, so knowledgeable. It's more than I could have ever hoped for. I think the real power here is the staff, not the facilities or the budgets. We're reaping that benefit.

Lockheed Martin and Sandia

LN: I suppose we'd be remiss if we didn't ask one question about the relationship with Lockheed Martin — both the Energy and Environment Sector and the company as a whole.

Paul: We were asked that at the managers' conference, and I think within the line there is still a fair amount of uncertainty and cynicism. Gosh, they say, we used to have a contract in which no money changed hands and now it does, have we lost something in the process? AT&T was certainly among the nation's finest companies. They are not as good today as they were when they had us. Their fundamental beliefs about the value of research and development have changed. Now we have a new company that's not at all the company we started with. Martin Marietta has transformed to be a very large and powerful company, Lockheed Martin. Unquestionably this is the nation's No. 1 defense contractor, not just in size but in capability. Today, Lockheed Martin is the largest of the Fortune 500 companies whose upper management is staffed by engineers and scientists. As a corporate model, I don't think we could ask for a better one in these times. Sandia's philosophy has not changed, nor would Norm Augustine or Al Narath want us to change.

Thunderbird Awards recognize 15 triumphant Albuquerque students

Fifteen Albuquerque high school seniors were awarded Sandia National Laboratories/Lockheed Martin Thunderbird Awards on April 30 at a special ceremony hosted by Community Relations Dept. 12671.

Each of Albuquerque's 11 public high schools and the four APS alternative high schools were represented by the 15 "at-risk" students. Each student was chosen for his or her ability to overcome obstacles and adverse circumstances and excel academically. Two Thunderbird recipients have had children while staying in school, and a third overcame learning disabilities to raise his grade point average to a 4.0.

Students were each accompanied by a mentor, a person the student had chosen as having made a difference in his or her life.

As part of the award each student was given \$1,000 from the APS Foundation, established last year with help from Lockheed Martin. Many will use the money to fund further education.

The recipients and their high

schools were: Anna Chacon (Albuquerque Evening School), Katherine Vigil (Albuquerque High), Summer Smith (Cibola), Rebecca Christy (Del Norte), Rachel Mahan (Eldorado), Chad Alexander (Freedom), Maria Elena Garcia (Highland), Nathaniel Madrid (La Cueva), Dan Phung (Manzano), Anna Tang (New Futures), Carmen Polk (Rio Grande), Matthew Berg (Sandia), Kellie Feidler (School On Wheels High), Adam Jones (Valley), Elaina Perea (West Mesa).



DEL NORTE High School student Rebecca Christy and her mentor Gabriel Romo check out a solar oven while on a recent tour of Sandia's Solar Tower. Rebecca was one of 15 high school students to receive a Sandia National Laboratories/Lockheed Martin Thunderbird Award for overcoming adversity while maintaining academic performance.

Sandians' Perspective '96 survey results — the good, the bad, and the ugly

In third Labs opinion survey, employees provide a mixed bag of responses

By John German

Lab News Staff

Editor's note: Sandians' Perspective '96 respondents answered more than a hundred individual questions, generating literally hundreds of thousands of pieces of data. The Lab News cannot publish all the results, but has attempted to present some of the more interesting data below. If you need to see the '96 survey results in greater detail, please contact your center office or Human Resources Div. 3000.

Of the more than 9,000 Sandians' Perspective questionnaires mailed out the week of Jan. 22, 5,443 of them — more than 60 percent — were completed and returned, a "pretty respectable return rate" for a survey administered by company mail, says Leo Brajkovich, International Survey Research (ISR) Corp. project director. For comparison, about 47 percent of employees responded to the 1991 and 1993 surveys.

Overall category scores



(Lab News charts by Janet Carpenter)

As in past surveys, overall favorability ratings were tabulated in several categories. This year, employees bestowed the most favorable ratings on questions having to do with "working relationships" and "involvement, participation, and empowerment" and assigned the least favorable responses to questions having to do with "job security" and "rewards and recognition." (For overall favorability ratings for all 21 categories, see the illustration below left.)

As reported in the Jan. 19 Lab News, the '96 survey incorporated some important changes. Questions in several categories were added. ISR also presented Sandians' response data alongside data representing four, rather than two, comparison groups; in addition to the "US national norm" and the "R&D norm" used in the '93 survey, a "transition norm" (representative of organizations facing major management or organizational changes and/or reductions in force) and a "high performance norm" (representative of ISR-surveyed companies considered to be among the best in their respective industries based on financial data) were added.

How Sandians' attitudes stack up

Compared with the US national norm and R&D norm, Sandia scored above the comparison groups in several categories (notably "supervision," "work organization," and "involvement, participation, and empowerment") and below in several categories (including "job security," "management," "rewards and recognition," and "performance management"). (See illustrations above right and on next page.)

Against high performing companies, Sandia fared worse than the norm in 14 out of 17 categories, scoring above only on questions having to do with "supervision," "work organization," and "involvement, participation, and empowerment" and falling well below the norms in the "management" and "job security" categories. (See illustration on next page.)

When compared with the norms for companies in transition, however, Sandia stacked up much better, scoring above the norms in 13 out of 16 categories. Most notably, Sandia scored 16 points higher in the "Sandia image"

US national norm comparison



category than the transition group, illustrating that despite a few recent setbacks, including more than 250 voluntary separations, employees generally believe Sandia remains highly regarded. (See illustration on page 10.)

Brajkovich notes that four categories scored fairly low by all comparisons — "job security," "management," "performance management," and "rewards and recognition."

"When people don't feel good about their job security, typically their feelings about their chances for promotion, how they rank in their departments, and their faith in management also suffer," he says. "Low job security scores almost always drag down other scores."

Tracking employees' attitude changes

Wherever possible, '96 survey results were also compared with results from the two previous Sandians' Perspective surveys administered in 1991 and 1993.

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Here's how some of you responded to the survey's write-in section

As part of the Sandians' Perspective '96 survey, employees were given an opportunity to write in their opinions and suggestions. Almost half of respondents chose to do so.

Most comments focused on four categories: management (630 responses), diversity (353 responses), rewards and recognition (323 responses), and business operations (313 responses).

Leo Brajkovich of International Survey Research (ISR) Corp. cautions that write-in comments tend to be more negative than other survey data because "comments come from the critique side of people's brains" and "you tend to get people's number-one gripe." Still, he says, Sandians' comments were unusually articulate and constructive.

Below are several representative comments from real Sandians.

"Managers technically excellent but not well-trained to manage people. . ."

"Sandia needs to reduce the number of managers. The ratio of management to staff is too high. We now have both line and project management structures . . . This has contributed to increasing our cost of doing business without

improving our productivity."

"I don't know how management deals with their subordinates in other departments, but in mine I feel that management takes pride in how much distance they place between themselves and their subordinates."

"As a white guy, I find the AA/Diversity programs to be demoralizing and one of two principal causes of dissatisfaction with my job. It is contradictory to put people into groups and systematically prefer some groups and then proclaim respect for the individual."

"I hear a lot of griping from white males in my center about how women always get promotions. It is irritating and not even true. No matter how many men continue to be promoted, they still feel picked on. I'm sick of hearing it, but since they will be the managers, I better not say anything."

"It is very discouraging to learn that after being at Sandia for 11 years, people with the same degree are being hired in out of school at more than I currently make. I would like to think that experience counts for something!"

"Raises do not match performance reviews. Each year I get rave reviews but raises that don't

quite match the cost-of-living increases."

"Overhead costs are too high for value received. Reengineering has been ongoing for three years, but indirect costs have steadily increased. We cannot successfully compete with universities and other companies with these loaded rates."

"The Center is too heavy on the administrative types. The technical side of the house is constantly pushed to bring in more money, be more cost-effective, do more with less, and keep customers happy. However, this is becoming impossible with the addition of more administrators. The technical side has had to justify their existence, it's time for the administrative side to do the same."

"Job security is out of the hands of Sandia management. Congress passes our budget. Management can prepare for budget cuts and manage layoffs fairly. Our current realignment process seems fair and well thought-out. If implemented fairly, it should help us downsize with a minimum of pain."

"Don't blow smoke about layoffs. Be honest and fully truthful. The morale will be better off for the truth."

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"Quality" and "involvement, participation, and empowerment" were the only two categories about which Sandians' attitudes improved significantly since the 1993 survey (6 percent and 2 percent improvements respectively, 10 categories held), but employees' attitudes in six categories — "job security," "training and career development," "management," "job satisfaction," "organization change," and "benefits" — declined significantly (the largest drop being 7 percent in "job security").

When compared to Sandia's 1991 survey results, however, the 1996 data showed significant improvements in 11 out of 18 categories, with decreases in only two — "job security" and "benefits" — and major increases in the "involvement, participation, and empowerment" (up 11 percent), "supervision," and "personnel policies and procedures" (both up 9 percent) categories.

"The '93 survey, administered at the transition between AT&T and Martin Marietta, was a relatively upbeat survey," says survey administrator Harriet Morgan (3000). "Even though very few categories showed improvements since '93, the longer-term improvements since '91 in some categories are encouraging."

Attitudes vary among subpopulations

Women responded more favorably than men in 10 of 21 categories, particularly in "performance management," "benefits," and "job security." Brajkovich notes that rising scores from women in such areas is a national trend that may reflect establishment of Equal Employment Opportunity and Affirmative Action programs nationwide, although "this many positive differences is still a bit unusual," he says. Also, employees classifying themselves as members of minority groups responded less favorably than employees identifying themselves as Caucasian to questions about diversity issues, which is not unusual, says Brajkovich.

Employees who have been at Sandia fewer than five years or longer than 25 years responded more favorably to survey questions than did other employees, which is not uncommon and probably reflects a "honeymoon" phase and a "light at the end of the tunnel/career satisfaction" phase, respectively, says Brajkovich. The exceptions: long-service and short-service employees are generally less satisfied than other employees with their benefits packages. For short-service employees, that likely can be attributed to the 1994 change in vacation policy, he says.

Sandia/California employees responded significantly less favorably than Sandia/New Mexico employees in four categories: "business operations," "rewards and recognition," "benefits," and "job security."

R&D norm comparison



Initial responses from Charlie Emery, VP

Human Resources VP Charlie Emery (3000) says he's pleased with the number of employees who participated in the '96 Sandians' Perspective survey.

"It gives us more of an indicative view of what people think, and it shows that our employees are interested in seeing improvements," he says.

He says Sandians' favorable ratings in the "involvement, participation, and empowerment," "working relationships," and "supervision" categories are encouraging in that employees seem generally pleased with their immediate workplace surroundings.

But the lower marks in the "management" category suggest Sandia still has a long way to go in breaking down some of the barriers that have traditionally hampered the Labs' efforts to become an integrated laboratory, he says. "The management scores support the notion of a 'stovepipe' organization that we're trying to change," he adds.

However, the recent two-day managers' conference, held after the survey was conducted, may go a long way toward breaking down many organizational barriers, he says.

Low "job security" scores are not surprising, he says, given the budgetary pressures Sandia has been under for the last several months, the mission uncertainties the national labs have been facing since the end of the Cold War, and the fact that "we're in the midst of our first staff reduction program since 1972," he says.

Administrative employees tended to respond more favorably than the overall Sandia population in several areas, particularly in the "business operations" and "benefits" categories. Technical employees, on the other hand, scored significantly lower than the average in the "business operations," "quality," and "performance management" categories. Technicians and union-represented employees responded less favorably than average to questions about "job satisfaction" and "involvement, participation, and empowerment."

Sandians with doctorate and postdoctorate educations tended to be more negative than other employees, a finding that Human Resources VP Charlie Emery (3000) finds troubling because, "docs and postdocs are key players with regard to our technical missions."

Members of management, both technical and administrative, generally responded more favorably than nonmanagement employees across the board, which is typical of most companies, says Brajkovich. "This is their baby," he says. "If I ever saw a company where its management wasn't somewhat more favorable or optimistic, I'd say 'buckle up!'"

Interestingly, secretaries apparently are the "happiest group of people at Sandia," which is "something you don't see every day," he says. Nonrepresented executive and staff secretaries as a whole responded more favorably to the survey than any other subgroup. Office Administrative Assistants, represented by the Office and Professional Employees International Union (OPEIU), also responded more favorably than other union-represented Sandians to most questions. But Metal Trades Council-represented employees responded less favorably in all categories (significantly in 12 categories) than other represented employee subgroups.

Question highlights and lowlights

Sandia apparently takes safety seriously. Most employees (86 percent) agreed that corrective actions are taken when unsafe conditions are brought to their management's attention, 17 percentage points higher than the norm for high performing companies.

But "rewards and recognition" and "training and career development" are two areas that the Labs "really needs to focus on," he says. "We're a little concerned about the low scores in those areas, because they are areas we've been working to improve."

He says the low "rewards and recognition" score may be a result of increased communication (since 1991) of Sandia's position relative to salary surveys. "In some areas," he says, "we appear to be declining and are working within our limited budgets to reverse this trend. In addition, we will maintain our efforts to match pay to performance and value of contribution. The mechanisms to do this have been in place, and it is a gradual process of really rewarding the very high performers. All Sandians can understand the implications of doing this with fixed salary-increase budgets."

He says he realizes that some of the problem areas the Labs has been working to improve scored the same as or lower than they did in previous surveys, but he emphasizes that many corporate changes, particularly complex ones, take more than three years to be implemented and then show up in survey data.

And although the Labs compared favorably during the '96 survey to other transition companies, and Sandia certainly qualifies as a company in transition, "we like to think of ourselves as a high performing organization," he says. "Personally, I'd like to see Sandia closer to the high performance scores in the next survey."

High performing companies comparison



Are we efficient? Not yet, say many employees. Only 53 percent of respondents agreed that their own center operates efficiently, which is several points lower than both the R&D and transition norms. But 72 percent of respondents said reducing costs is a priority in their organizations.

Sandians' generally believe the quality of the Labs' work has improved; 47 percent say Sandia's commitment to quality is apparent on a day-to-day basis, a five-point improvement since the '93 survey. But 34 percent of respondents believe Sandia too often sacrifices the excellence of its work in order to cut costs; in transition companies, 49 percent of employees typically feel that way. (No comparison is available for high performing companies.)

Most employees (87 percent) say they get along well with the people they work with, and 84 percent say their coworkers are usually willing to lend a hand even if it means doing

(Continued on next page)

Transition norm comparison



(Continued from preceding page)

something outside their usual duties. Seventy-nine percent say teamwork is encouraged at Sandia, but only 53 percent say teamwork is given recognition (a seven-point improvement since the '93 survey and 9 percent better than the R&D norm).

The tendency of Labs organizations to operate autonomously (as proverbial "stovepipe" operations) may have earned it the following scores: Only 62 percent of respondents believe good cooperation exists among the departments in their centers (13 points lower than the R&D and transition norms), and only 45 percent say their centers cooperate well with other centers (15 points below the R&D and transition norms).

And only 8 percent of respondents disagreed with the statement: "Sandia is too lenient with people who perform poorly," while 74 percent agreed. Human Resources VP Charlie Emery says although this finding isn't surprising, as it was a key topic during the recent Sandia managers' conference, it invites corrective action (scheduled to be implemented in June).

Supervision vs. management

Apparently, Sandians have less faith in management than they did two years ago. Only 30 percent of respondents agreed that management at all levels is generally respected by employees, compared to 47 percent for the '93 survey. In addition, only 21 percent of '96 survey respondents agreed that Sandia does a good job of promoting the best-equipped and skilled people to be managers and supervisors, while 59 percent disagreed. And 49 percent agreed with the statement: "I often don't believe what top management says." These scores are lower than R&D and transition norm data.

In general, however, the '96 survey data show that employees generally have greater faith in their direct supervision than in management in general. Eighty-two percent say their manager/supervisor is technically competent, 73 percent say their manager/supervisor is available when needed, 64 percent say their manager/supervisor manages people well, and 60 percent say their manager/supervisor gives them adequate feedback on their performance; on all four questions, Sandia managers/supervisors rated the same as or better than the high performance norms.

Brajkovich says a disparity between employees' feelings about direct supervision and management-in-general is not unusual in a large organization because employees typically have little opportunity to interact with man-

agement beyond their own centers, and because "there's a tendency for people to believe things are pretty good around their own campfire but that everything else out there needs the improvement," he says.

But these differences are somewhat more pronounced at Sandia, he says. (Note that "supervision" scored higher and "management" scored lower than the norms in all four comparison groups.) Harriet says Sandia's Human Resources Planning (SHRP) team, responsible for identifying root causes and developing corporate-level corrective actions from the survey data, will likely look into that issue in coming months. (See "What happens with the data now?")

A troubling finding: Only 31 percent of respondents agree that top management provides a clear sense of direction (with 49 percent disagreeing), not much worse than the R&D norm (33 percent) but 9 points worse than the US national norm (40 percent).

"Employees may be saying they're ready for some clear marching orders," says Brajkovich. He notes, however, that "scores nationally have dropped 21 percent on this item in the last several years."

Is the grass greener over there?

Only 38 percent of respondents believe their paychecks are as good as or better than those paid to employees of other similar companies, and 46 percent believe they're worse. (For comparison's sake, 51 percent of respondents at other R&D organizations think their pay is as good as or better than their colleagues at other companies.) And only 16 percent of Sandians agree that the Labs is doing a good job matching pay to performance, a two-point improvement since 1993 but 7 points worse than the R&D norm.

However, most Sandians (79 percent) say the Labs' benefits package meets their needs, and a majority of respondents (54 percent) believe Sandia's benefits are as good as or better than those offered by other companies.

Do we like what we do? Seventy-nine percent of employees say their work gives them a sense of personal accomplishment, which is similar to both the R&D and high performance norms. Seventy-eight percent disagreed with the statement: "My job offers little opportunity to use my abilities/skills."

And a majority of Sandians said the Labs is successful in putting each of its corporate values — integrity, quality, leadership, teamwork, and respect for the individual — into practice. In all but one case (integrity, down 2 percent), the corporate value scores stayed even or showed slight improvement since the '93 survey.

Another troubling finding: In response to the statement: "Sandia has established a climate where people can challenge the traditional ways of doing things," 42 percent agreed and 41 percent disagreed. "We'd like to see more people agreeing with that by the next survey," says Charlie.

We're worried about the future

No surprise: We're worried about the future. Thirty-seven percent of employees responded favorably to the question: "How satisfied are you with your job security?" down from 51 percent in 1993. Sixty-one percent say they are frequently worried about the future of Sandia, and 65 percent say they are frequently worried about the future of their department, project, or program.

Are our worries translating to morale problems? Fifty percent of respondents said morale in their departments is generally high. This is higher than the R&D norm and only two points worse than Sandia's score in 1993. But on a separate question, 69 percent of survey respondents said morale for Sandia as a

whole has changed for the worse during the past year or so.

Still, 69 percent would recommend Sandia as a good place to work, down from 76 percent in 1993. In addition, 67 percent think Sandia is highly regarded by the people who work here (up 8 percent from the R&D norm), and 76 percent think it is highly regarded by the local community (12 percent higher than the R&D norm).

"That's very Sandian of you," says Brajkovich. "Obviously there's still exceptional pride in this laboratory and in the people who work here."

What happens with the data now?

Although 39 percent of Sandians' Perspective '96 respondents say they don't believe Sandia's management will act on problems identified in the survey, Human Resources VP Charlie Emery (3000) wants to assure all Sandians that corrective actions will indeed be taken as a result of the survey, and he pledges to make sure employees are informed about them.

Based on employee responses during the '91 survey, says survey administrator Harriet Morgan (3000), Sandia developed the Performance Management Program, instituted more and better methods of communicating with employees, and formalized a management training curriculum. Following the '93 survey, Sandia instituted new staffing plans and a diversity infrastructure, worked to better match pay to performance, and attempted to integrate more strategic planning and mission definition into its business plans.

"Employees still may not be satisfied with some of the programs that have resulted from previous surveys," she says, "but it's clear that the survey has been a catalyst for working on many of the problems identified by employees."

So far, members of the Sandia Quality Leadership Council (SQLC) have been briefed on the '96 survey data, and International Survey Research (ISR) Corp. has subdivided the data into division and center components and provided organization-specific data to each VP and director, many of whom may create teams to analyze the data and integrate action plans into their overall division business plans.

In addition, Sandia's Human Resources Planning team (SHRP), a group of line directors responsible for strategic human resources planning, has been provided with the corporate-level data and has begun defining "three or four major corporate-wide issues that need to be fixed," says SHRP chairperson Nina Chapman (3000).

After the team identifies root causes and corrective actions corresponding to the corporate issues, its members will present recommendations for change to SQLC around July 1. The SHRP team also will look at corrective actions being taken independently by the divisions to make sure they are integrated appropriately with the corporate-wide corrective actions. SQLC will likely develop its own set of corporate objectives as well.

Look for *Lab News* coverage of specific new programs that arise from the survey.

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

MISCELLANEOUS

EXERCISE EQUIPMENT, stepper, \$50; rower, \$40. Schrader, 298-4154.

NORDICTRACK PRO EXERCISE machine, superb condition, w/electronic monitor & programmable pacing unit, \$450. Williams, 856-5722.

CLAVINOVA, Yamaha electronic piano, new \$10,800, used 3 months, ideal for student, professional, & apartment dwellers, make offer. Williams, 856-5722.

SOFA TABLE, walnut, French country, \$85; recliner end table, oak, \$35; 4-drawer metal file cabinet, \$35. Castillo, 294-5182.

NORDICTRACK, used approximately a dozen times, paid \$500, asking \$350. Prusak, 296-1571.

WASHER AND DRYER, white, Westinghouse, 6 yrs. old, hardly used, \$150; wood coffee table, 2' x 5-1/2', dark wood, parquet top, \$20. Klein, 298-8252.

OLYMPUS OMG, w/50mm F/1.8 lens, \$95; Bushnell 35-105 zoom for OMG, \$70, Vivitar 550FD flash, \$45. Gentry, 845-9473.

GERRY BABY MONITOR, \$8; infant bath tub, \$4; toaster oven, \$12; time-share, best offer. Ludwig, 856-5111.

AUSTRALIAN SHEPHERD PUPPIES, male/female, ASCA registered, show quality. Morales, 864-8383.

FOUR-HORSE TRAILER, covered, bumper pull, 2-way rear door, front escape door, brakes, 5 new tires on custom wheels, excellent condition. Schaub, 865-8807.

GAS STOVE, Kenmore, 5 burners, w/griddle in middle, black w/chrome top, 36-in. wide, X-large oven, '92 model, \$800. Schwabe, 271-4861.

PATIO DOOR, sliding, \$25; ceiling fan, black, free; both used. Kovacic, 256-9867.

CAST-IRON WOOD STOVE, clean burning, porcelain, on pedestal w/flagstone pad, paid \$1,475, asking \$675. Mackoy, 281-8606.

BUNK BEDS, w/matching underdresser, solid pine, medium finish, w/mattresses, excellent condition, \$200. Vosburg, 296-4343.

WADING POOL, plastic, round, 12-in. deep, 4-ft. wide, \$5. Meeks, 828-9825.

HP DESKJET 500 PRINTER, \$130; Wilson ProStaff 745 aerobic stepper, \$125; armchair, oak, upholstered, \$50; computer cart, \$20. Ratner, 345-7341.

ROCK CLIMBING SHOES, Climb High, size 41 (8 US), good condition, \$40. Kartchner, 296-4155.

GOLF CLUBS, Lady Cougar beginner set, steel 3,5,7,9, graphite 3W, 5W, bag, good condition, \$100. Barron, 294-3216.

OAK-FINISH CRIB, changing table, mattress, \$125; portable crib, \$25; gate, bed rail, \$10 ea.; misc. smaller items. Eras, 898-0729.

ENTERTAINMENT CENTER, \$500; washer, \$85; desk, \$250; king futon, w/comforter set, \$150; futon couch, \$75. Stanley, 255-3083.

BABY JOGGER, \$140; '90 Dodge Caravan service manual, \$15. Pregel, 281-1414.

VITAMASTER EXERCISE BIKE, "Hide-A-Way," \$45; Everlast aerobic stepper, adjustable resistance, compact, \$35; mountain bike, \$75. Martel, 293-1892.

RATTAN HEADBOARDS, \$25 OBO; washstand, w/bowl, pitcher, \$100; square wood table, \$25. Strome, 256-3324.

MINOLTA X-370 CAMERA, 35mm SLR, 50mm lens, \$100, w/case, \$115. McConnell, 271-2011.

FREE WOOD, available to those who will pick up & haul it. Duran, 292-7588.

FUTON SOFA BED, queen-size, w/black & white cotton canvas covered futon; beautiful wood sofa bed, \$200. Pasterczyk, 255-2066.

WATERBED, super-single, headboard, side rails, footboard seat & waterbag, \$50. Seavey, 884-8215.

IBM-COMPATIBLE, 486/DX-2/66 MHz, Yamaha speakers, oak computer desk, \$950. Reilly, 344-5250.

TECHNICS DOUBLE CASSETTE DECK, Dolby noise-reduction, automatic tape selector, remote-control playback, series playback, \$75. Hill, 856-6423.

WROUGHT-IRON FENCE, 4-ft. high, 60-ft. long, two 3-ft. gates, white, \$300. Slosarik, 856-7055.

COOLER MOTOR, 1/3-hp, 2-spnd., excellent condition, \$12. Guttman, 888-5114.

MAN'S TOURING BIKE, \$50; recently serviced VCR, \$65; Roper electric cooktop, \$75; unused beer brewing kit, \$30. Wilde, 286-1795.

GASOLINE ENGINE, 10-hp, Wisconsin horizontal shaft, all cast iron, excellent condition, \$200. Wright, 296-3850.

MICROWAVE OVEN, GE Spacemaker, fits over stove, black facade, excellent condition, \$150 OBO. Gianoulakis, 896-4408.

TWO PLAYSCHOOL TWIN COM-FORTERS, sheets, curtains, rug, \$25; boy's size 7 black suit, w/designer shirt, \$25. Mayer, 299-8524.

GARAGE SALE, Fri. & Sat., 5/24-5/25, 2660 Candlelight, Rio Rancho, combining 2 households, great stuff. Fleming, 892-5438.

WATERBED, oak finish, lower storage, liner & heater, \$200 OBO. Moore, 296-6586.

PERSONAL WORD PROCESSOR TYPEWRITER, Smith-Corona, database, mailmerge, tutorial, manual, accessories, like new, for student, \$125. Brown, 271-1141.

FOUR BACKPACKS: for overnight hiking, Kelty external frame, \$39; new R.E.I. internal frame packs, \$39, \$30, & \$30. Locher, 256-3406.

REFRIGERATOR/FREEZER, Kelvinator, frost-free, apartment-sized, cream-colored, \$175. Hadley, 298-4194.

PAIR OF BURIAL LOTS, Sandia Memorial Gardens, \$1,600. Burke, 1-719-275-6362 (call collect).

GRINDERS, 10 Grandma's antique meat & vegetable, 2 blades, \$10 ea.; 1 cherry pitter, \$20. Bazar, 898-1467.

MULTI-FAMILY GARAGE SALE, Sat., June 1, 8 a.m.-4 p.m., Paradise Hills, 5231-5219 Russell NW, furniture, appliances, everything. Hauber, 898-0997.

WEIGHT BENCH, weights & bars, free to good home; 10-spd. bike, \$10; you haul. Bonaparte, 296-4916.

AUTUMN WOOD FURNITURE, 2 block chairs, ottoman & end table, solid oak w/Southwestern neutral upholstery, \$375. Kovarik, 897-2188.

HANDGUN, Firestar "Smallest," 45 AP semi-auto, blue, 3 magazines, box & papers, like new, \$400 OBO. Salmen, 881-8612.

SOFTWARE, Lotus Smart Suite 96, full CD for WIN95, never used, lowest list \$379, asking \$200. Ennis, 836-0504.

DISNEY CERAMIC COLLECTIBLES, 45 pieces, \$225; out-of-print Disney books, Department 56 collectibles, retired, w/boxes; girl's clothing, infant to 2T. Sjaardema, 299-8042.

ANTIQUE CABINET, large Chippendale, w/beautiful glass doors, for china, books, collections, \$1,500 OBO. McGuire, 831-5566.

RED RACE CAR TWIN-SIZE BED, w/o mattress, Little Tykes, \$200. Skroch, 343-8037, ask for Lisa.

BICYCLE CARRIER, trunk mounted, \$35. Lockwood, 298-9563.

LITTON MICROWAVE OVEN, small, w/turntable, excellent condition, \$45; MagTurbo bicycle trainer, like new, \$50. Eaton, 281-2771.

TWO WALL UNITS, Broyhill, matching, lighted, medium brown oak, 32" x 92" x 19", 3 shelves, cabinet below, excellent condition, \$250 ea. Eaton, 281-2771.

HONDA GENERATOR, 1000-watt, very compact & quiet, less than 20 hours, \$425. Gilbert, 821-0602.

STAIR-STEPPER, Wilson Prostaff 785 Aerobic Stepper, \$40. Kelly, 266-5977.

SOFA SLEEPER, student model, brown plaid, \$50. Rochau, 875-0335.

COOKTOP, electric, 30-in. solid elements, \$225; binding system, GBC-2000, \$250; drafting table, Vemco machine, make offer. McNiel, 344-7694.

TWO REFRIGERATORS, apartment-size, brown, \$50 ea.; pingpong table, \$50; cucumber trellis, \$10; 2 cottonwood trees, \$15 ea.; metal shed, \$1,050. Cibicki, 877-7098.

SEARS CARDIOFIT (same as Weslo Cardio-Glide), rated better than Healthtrider, almost new, \$125. Diltz, 899-3943.

SCHWINN AIRDYNE, \$350; Blackburn TrakStand (bicycle wind trainer), \$50. Garcia, 247-9437.

TRANSPORTATION

'94 VW JETTA GL, 5-spd., 4-dr., AC, sun roof, 20K miles, excellent condition, \$13,500. Williams, 344-9276.

'90 CHEV. CAPRICE, very clean, AT, AC, tinted windows, \$4,900. Martin, 343-9719.

DEADLINE: Friday noon before week of publication unless changed by holiday. MAIL to Dept. 12622, MS 0165, FAX to 844-0645, or bring to Bldg. 811 lobby. You may also send ads by e-mail to Nancy Campanozzi (nrcampa@sandia.gov). Questions? Call Nancy at 844-7522. Because of space constraints, ads will be printed on a first-come basis.

Ad Rules

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

'87 MAZDA RX-7 SPORT, blue, 5-spd., alloy wheels, AC, cassette, good tires, less than 50K miles, excellent condition, \$5,500. Mattem, 856-6313.

'94 LAND ROVER DISCOVERY, 22K miles, 4x4, 5-spd., V8, ABS, air bags, warranty, beautiful, \$26,500. Alvin, 294-5170.

'92 HONDA ACCORD LX, 37,800 miles, white/blue interior, excellent condition, PS, PB, AM/FM tape, cruise, 5-spd., \$12,500. Moore, 294-5646.

'90 MAZDA 323, AC, 5-spd., manual, good condition, \$500 below book, \$3,250. Kennicott, 286-9288.

'92 INFINITI Q45, 41K miles, excellent condition, \$21,500. Beeler, 822-9485.

'91 FORD EXPLORER XLT, 4WD, 5-spd., PW, PL, ABS, auto-lock hubs, aluminum wheels, ski rack, 1 owner, 81K miles, \$11,000. Semonisck, 883-4212.

'87 HONDA PRELUDE, 2.0Si, 5-spd., loaded, 105K miles, red, excellent condition, 1 owner, \$5,200 OBO. Ellis, 275-1609.

'86 CHRYSLER LEBARON GTS, 5-spd., turbo, AM/FM cassette, AC, cruise, FWD, 4-dr., LeBra cover, \$1,900 OBO. Matt, 237-8609.

'85 AUDI 4000S, Titan red, 4-dr., sunroof, 5-spd., AC, AM/FM cassette, interior/exterior excellent condition. Knippel, 298-7269.

'67 CORVETTE COUPE, marina blue on white, 327-350hp, 4 spd., frame-off restoration, numbers match. Von Loh, 877-4140.

'88 SUZUKI SAMURAI JX, 74K miles, custom hardtop, soft top, AC, AM/FM, new tires, \$3,700. Johnsen, 298-1086.

'83 VW RABBIT GTI, original owner, all maintenance records, excellent condition, \$1,500. Owens, 281-8525.

'92 SATURN SC, midnight blue, 5-spd., cruise, tinted PW, PL, AC, 70K miles, \$9,500 OBO. Zittel, 281-1023.

'84 FORD BRONCO II, 4x4, silver/gray, 2.8L engine, lock-out hubs, cloth seats, AM/FM, AC, 100K miles, new tires, \$3,500 OBO. Rautman, 345-6936.

'90 OLDS TOURING SEDAN, 65K miles, 1 owner, white, AT, AC, PS, ABS, leather seats, 3.8 V6, \$10,600. Oatley, 821-6801.

'90 DODGE GRAND CARAVAN LE, AC, PS, AM/FM cassette, PL, PW, cruise, running boards, 70K miles, \$8,500 OBO. Herrera, 884-4925.

'92 CHEV. LUMINA, executive gray, V6, full power, PW, AT, 2-dr., 33K miles, AM/FM cassette, excellent, \$9,200. Norwood, 292-0072.

'90 NISSAN AXXESS MINIVAN, 2 sliding rear doors, 45K miles, \$7,700. Hartley, 292-7437.

'86 NISSAN, king cab, 4x4, new all-terrain tires, aluminum wheels, AC, 5-spd., shell, \$4,850 OBO. Lesperance, 281-0547.

'92 CORVETTE, convertible, LT1 (300-hp) engine, 6-spd., low miles, excellent condition. Narrow, 256-9159.

'73 CHEV. CHEYENNE PICKUP, 1/2-ton, 4x4, 350 V8, 4-spd., 108K miles, new shocks/tires, \$1,800 OBO. Antonich, 271-1635.

'90 MAZDA MIATA, excellent condition, 70K miles, red, driver's airbag, 5-spd., great stereo, \$8,500 OBO. VanLeeuwen, 293-3917.

'95 MAZDA PROTEGE LX, AT, AC, all power, cruise, sunroof, tinted windows, factory warranty, excellent condition, \$12,395. Polito, 856-0598 or pager 768-8433.

'87 TOYOTA 4RUNNER SR5, 2-dr., 5-spd., AC, altimeter, new tires, 125K miles, \$7,500. Phelan, 869-6094.

'66 CHEVELLE, 2-dr., hardtop, original 288 engine & powerglide transmission, \$1,700. Prevender, 296-8586.

'79 HONDA ACCORD, 4-dr., parts car, towable, good rims, other parts, first \$50 takes it. Zirzow, 281-9896.

'76 MG MIDGET, convertible, light yellow, excellent condition, low mileage, 32 mpg, \$6,500 OBO. Deller, 298-5705.

'86 SUBARU GL SW, 4WD, dual range, 5-spd. transmission, AC, AM/FM, good condition, 150K miles. Reese, 281-3498.

'91 AUDI 100 & '90 OLDS REGENCY, both loaded, low miles, call for more info. Paul, 293-2350.

'88 GMC PICKUP, 4x4; '93 Pontiac Sunbird, PW, PL; bids through 6/5/96, reserve right to refuse, subject to prior sale, as is. Livermore, CA SLFCU, 1-800-472-6342 or 294-2044.

RECREATIONAL

'78 NORDIC MINI-DAY CRUISER, 454 LS7, 21 ft., Berkeley pump, holly, platforms, trim plates, mint, classic boat, \$7,500 OBO. Ryburn, 344-2563, ask for Ray.

GIRL'S BICYCLE, 10-spd., Schwinn Traveler, 26-in. rims, blue, excellent condition, \$50 OBO. Kjeldgaard, 268-8835.

TIMESHARE RESORT, RCI-affiliated, deeded ownership, 1 red week, \$2,500, & 1 white week, \$2,000; 2 bedrooms, 2 baths. Castillo, 294-5182.

'79 DODGE BROUGHAM MOTORHOME, 22-1/2 ft., sleeps 6, 40,020 original miles, annually maintained, dual wheels, fixer-upper. Freeman, 298-8818.

CARTOP BOAT, 14-ft., roof rack, 2 deluxe seats, \$400; fish finder, clamp on, \$125; '68 Chrysler 9.9 horsepower outboard engine, \$350. Madole, 298-6081.

'85 VW CAMPER VANAGON, \$3,500; '84 Hobbie cat sailboat, 16 ft., \$1,200; Suzuki RM125 dirt bike, \$200. Knudson, 865-4478.

BOAT & TRAILER, 120-hp I/O, 17-ft., 7-in., semi-vee, \$3,200 OBO. Shaut, 299-8569.

'89 MOTORHOME, Holiday Rambler "Alumilite," Class A, 30-ft., many features, sleeps 6, excellent condition, \$18,500. McCarthy, 296-4490.

TRAVEL TRAILER, 19-1/2 ft., self-contained, AC, new awning/tires, \$4,500; camper shell, fully insulated, fits full-size pickup w/long bed, \$700. Tafoya, 298-6208.

'87 HONDA CR 60 DIRT BIKE, good condition, \$450; camper shell, fits Ford short bed, \$100. Gallegos, 281-5515.

ROAD BIKES: Nishiki Riviera, 21-in. mixti frame, 10-spd., hardly used, \$150; Raleigh Grand Prix, 23-in. man's frame, 10-spd., \$100. Baca, 292-5342.

SNOWBOARD, Burton Amp 6, Burton bindings, Sims gloves, all brand new, \$300. Gallegos, 344-5250.

'76 DODGE WINNEBAGO, "Minnie Winnie," 23-ft., 2K miles on rebuilt 360 engine, new tires, AC, generator, furnace, self-contained, \$4,000 OBO. Carrick, 266-0191.

'75 HONDA MOTORCYCLE CB400F, 400cc, 4-cyl., 14K miles, red, garage-kept, excellent condition, windshield, backrest, helmet, \$700. Horton, 865-9437.

'93 BOUNDER RV, 31-ft., 27K miles, fully loaded, 7-kw generator, 2 AC, 2 TV/VCR, couch, booth table, full bed, \$45,325. McCabe, 294-6689.

WINDSURFER, Mistral Superlite, complete, ready to sail, great beginner outfit, \$250; also miscellaneous sails, booms, masts. Horton, 883-7504.

TWO 10-SPD. BICYCLES, 26-in., one new, domestic, \$55; one foreign, used, good condition, \$55; \$100 for both. Freyeremuth, 299-2053.

GIRL'S BIKE, 20-in. Schwinn, 5-spd., \$50. Rector, 286-1217.

REAL ESTATE

3-BDR. JEMEZ SPRINGS HOME, new, beautiful, 3 baths, 2-car garage, hardwood floors, high ceilings. Cook, 266-6088.

'78 MOBILE HOME, 8' x 40', \$4,500. Grimm, 281-7041.

2-BDR. TOWNHOME, 1-1/2 baths, NE Heights, 1,205 sq. ft., 2 fireplaces, 2 balconies, garage & nice back yard, \$99,000. Kaplan, 294-8243.

ELEPHANT BUTTE MOBILE HOME, immaculate, furnished, lakeview double lot, fenced, covered porch, three-stall carport, landscaped. Jakubczak, 892-6322.

4-BDR. CUSTOM HOME, 2,250 sq. ft., foothills near Lomas, 2 baths, skylights, hot tub, home buyer warranty. Fogelson, 275-1529.

3-BDR. HOME, 1-3/4 baths, formal LR/DR, den, 5-car garage, apple orchard, on 3.618 irrigated acres, historic Chimayo, \$270,000. Martinez, 505-351-4749.

3-BDR. CENTEX HOME, 1,485 sq. ft., 2 baths, Taylor Ranch, excellent, professional landscaping, vaulted ceilings, schools close, \$128,598. Edwards, 899-8634.

4-BDR. HOME, 1,480 sq. ft., 1-3/4 baths, excellent condition, east of Tramway, deck, views, fireplace, auto sprinklers, 2-car garage, \$124,900. Hegar, 237-2206.

2-BDR. TOWNHOUSE, 1-1/2 baths, fireplace, Las Cruces, located by NMSU campus, mall, hospital. Zamora, 294-3737.

3-BDR. EAST MOUNTAIN FARMETTE, accessible, 1.34 acres, 1,500 sq. ft., 2 baths, sunroom, fenced, 2-car garage, attached barn/workshop, \$92,000. Ely, 281-0330.

3-BDR. HOME, 1,825 sq. ft., 4-1/2 yrs. old, 3/4 acre, fenced yard, 2 decks, beautiful views, Pinon Ridge, Cedar Crest, \$171,000. Purcell, 281-1761.

3-BDR. HOME, Sandia Park, 2,300 sq. ft., 2-1/2 baths, 2-car garage, 2 yrs. old, 2+ acres, fireplace, fenced, views, \$214,950. Salazar, 281-0560.

WANTED

FREON-R12. Armistead, 299-8773.

ROOMMATE, May to mid-August, nice house off Tramway, great view, two dogs, \$325/mo + 1/3 utilities. Manginell, 296-7961.

HOME TO RENT, responsible visiting professor, month of July, no pets. Beirger, 822-0603.

TOASTMASTERS, need to improve your public speaking, join Toastmasters on KAFB. Thursdays at noon. Ho, 237-2668.

FURNISHED HOUSE/APARTMENT, visiting scientist wants to rent, from July 6 to August 4, 1996. Sanford, 845-1343.

SMALL HONDA 70, 90cc trail-bike or similar scooter/motorcycle, for parts, must be cheap. Schaub, 865-8807.

HOUSE/DOG SITTER, last 2 weeks of June, female preferred, East mountains. Clancy, 281-4469.

TWO-MAN DOME TENT, for backpacking college student. Shirley, 294-1018.

PRIVATE SWIMMING LESSONS, 2 children, must be certified & have references, prefer NE Heights. Massoth, 296-6078.

WEED WACKER, quasi-heavy-duty, small reel or electric mower, gas-powered. Underhill, 294-5774.

USED BAND SAW, Craftsman, 12-in., any condition. Schmaun, 298-5192.

CANOE, Grumman, 15-ft. squareback aluminum, good condition, prefer Eagle model, no leaks. Hutchins, 856-3361.

HOME TO RENT, safe, clean, under \$600/month. Dixon, 254-1782.

WORK WANTED

HOUSE SITTING by reliable college senior, available through July, entire week or weekends. Perrine, 293-1429, ask for Joel.

HOUSE SITTING, anytime until Sept. 15 by young, married, college graduates with infant, referrals available. McGee, 857-0661, ask for Mark or Angela.

Sandia News Briefs

DOE will renew contracts with UC to manage LANL, LLNL

DOE has announced its intent to renew the University of California contracts to manage Los Alamos and Lawrence Livermore national laboratories for another five years. There had been speculation that the department planned to open the contracts, which expire Sept. 30, 1997, to competitive bidding. UC has managed the two laboratories since their inception — Los Alamos since the Manhattan Project during World War II and Lawrence Livermore since it was established in 1952. In deciding to renew the contracts, DOE cited UC's experience with nuclear weapons program management. That experience, the department said, is vital to the success of the transition from a testing-based to a science-based stockpile stewardship program. Deputy Energy Secretary Charles Curtis said DOE may seek an outside contractor to manage environmental cleanup programs at Los Alamos and possibly at Lawrence Livermore. The UC Board of Regents had indicated it would not compete for the labs management contracts if they were open for bidding. A UC spokesman said the regents regard management of the weapons labs a public service. "They are not interested in fighting for the job," the spokesman said. The Board was scheduled to vote on acceptance of the new management contracts in early June.

SQLC panel to discuss draft of new strategic objectives; managers and above invited

A Sandia Quality Leadership Council (SQLC) panel on June 10 will review the draft of the Labs' new strategic objectives. The panel discussions, scheduled for 8:30-10 a.m. and 1-2:30 p.m. at the TTC (Bldg. 825) are open to department managers and above. During the meeting, the panel will provide the background and intent of each of the new objectives. SQLC is scheduled to distribute draft copies of the strategic objectives to all managers for review in early June. Managers' comments and suggestions will be collected during the June 10 TTC sessions and used by the SQLC as it prepares a final version of the strategic objectives. Managers from Divisions 1000, 2000, 3000, 4000, 5000, 11000, and 14000 should attend the 8:30 a.m. session; managers from Divisions 6000, 7000, 9000, 10000, 12000, 15000, and 16000 should attend the 1 p.m. session. Seating is on a first-come basis. The morning session will be broadcast live to the California site in the Bldg. 904 auditorium.

Popular UCLA speaker Art Lange returns to discuss strategic planning issues

As a follow-up to the Sandia 2000: United for Success managers' conference, UCLA professor and author Art Lange on June 11 will discuss "Implementing Strategic Direction." Lange, author of three books and recipient of the "Outstanding Teacher of the Year" award at UC Irvine, was very well received as the after-dinner speaker at the Sandia 2000 managers' conference. His return engagement is at the specific request of attendees at the conference, who expressed a strong interest in hearing more of his ideas. Lange will speak at the TTC (Bldg. 825) at 8 a.m. in a session for managers and above and at 10 a.m. in a session open to all Sandians. Seating is on a first-come basis. Both sessions will be broadcast live to the California site in the Bldg. 904 auditorium.

Grossman and Edgar win 'best paper' award at solar energy conference

James Grossman and Robert Edgar, Solar Thermal Test Dept. 6215, received a "Best Paper" award for their paper, "Transforming the Sandia 2f Optical Performance Measurement System to Color," at the 1996 International Solar Energy Conference, American Society of Mechanical Engineers, in San Antonio, Texas.

Send potential Sandia News Briefs to Lab News, Dept. 12622, MS 0165, fax 844-0645.

★ Congratulations

To Jeri Solomon and Lewis Roach (6642), married in Bernalillo, March 31.

To Lana Lachenmeyer (14000) and Harlan Everett, married in Albuquerque, April 25.

To Harriet (3000) and Alan Morgan, a daughter, Kathryn Irina, adopted from Chelyabinsk, Russia, April 16.

To Deborah Jensen-Kill (2336) and Tony Kill (2345), a son, Erik Robert, May 8.

☀ Recent Patents

Daniel Neal (1128) and Robert Michie (9360): One Dimensional Wavefront Distortion Sensor Comprising a Lens Array System.

David Haaland (1823), M. Ries Robinson, and Kenneth Ward: Oximeter for Reliable Clinical Determination of Blood Oxygen Saturation in a Fetus.

Gerald Rohwein and Lars Roose (both 9323): Spark Gap with Low Breakdown Voltage Jitter.

Retirement open house

Sandia is holding open houses in honor of retiree **Ruben Urenda** (2643) on Tuesday, May 28, in the Coronado Club, 4:30-6:30 p.m. Refreshments will be served. Friends and acquaintances are invited.

Coronado Club

May 24 — Kids' bingo. Buffet from 5-8 p.m. Cartoons, movies, and bingo, 7-9 p.m. Free hot dog and soft drink for all kids playing bingo. Cost of a bingo packet is \$2.50.

May 27 — Memorial Day buffet, noon -5 p.m. on the patio. Pool open 11 a.m.-6 p.m. Music by Bob Weiler and Los Gatos, 2 p.m.-6 p.m.

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

May 31 — Patio BBQ buffet. A la carte buffet 5-9 p.m. Pool open til 9 p.m. Music and dancing on the patio 7-11 p.m. Music by Bobby Buttram.

June 2 — Sunday brunch buffet, 10 a.m.-2 p.m. \$6.95 all-you-can-eat buffet. Kids 3-12, \$1, under 3 free. Music by Bob Weiler, 1-4 p.m.

June 6, 13, 20, 27 — Thursday bingo night. Card sales and buffet start at 5 p.m., early birds' bingo at 6:45 p.m.

June 7 — "Western Night" dinner/dance. \$7.95 all-you-can-eat buffet, 6-9 p.m. Music by Isleta Poorboys, 7-11 p.m.

June 14 — Patio BBQ buffet. A la carte buffet, 5-9 p.m. Pool open til 9 p.m. Music and dancing on the patio 7-11 p.m. Music by Cross Fire.

Fun & Games

Tennis — Here are the results of the Pre-USTA League Tennis Tournament held at the Coronado Club April 13-14: Men's Singles — Ed Pimentel defeated David Wenger (9577) 2-6, 7-5, 6-2 (3.0-3.5); Men's Singles — Cliff Ho (6115) defeated Scott Evans 6-3, 6-1 (4.0-4.5); Men's Doubles — Wendel Archer (1251) and Tom Caldwell (9322) defeated Mark Allen (4211) and Larry Desonier (5845) 6-3, 7-5; Women's Doubles — Carmen Allen (5715) and Frances Kilpatrick defeated Jean Gustafson and Sue Hildebrandt 6-4, 6-2; Women's Singles — Carmen Allen defeated Andree Shunk 6-1, 6-0.



MAKE A WISH — Bill Lovejoy, left, a volunteer with the New Mexico Make-A-Wish Foundation, presents an appreciation plaque to Don Carson, Director of Public Relations and Communications Center 12600. Don accepted the plaque on behalf of Sandia, which donated \$5,000 to Make-A-Wish through the Lockheed Martin corporate giving program. With the two men is Scott Hudson, who spoke movingly during the presentation ceremony about a Make-A-Wish-sponsored trip he and his family took to Walt Disney World. "Everything was taken care of [by Make-A-Wish]," Scott said. "It was a lot of fun; it was like you didn't have a care in the world. I'll always remember it." The Make-A-Wish Foundation grants wishes to children diagnosed with terminal illnesses. More than 35,000 wishes have been granted to children nationwide, Lovejoy said, including 262 in New Mexico. The New Mexico chapter has granted 37 wishes this year and has 14 wishes pending.