

Despite 'Turbulence' Ahead, Sandia's Future Looks Solid

A quarter-century ago, the LAB NEWS published the first "State of the Labs" interview. Continuing that tradition, President Al Narath and Executive Vice President Jim Tegnalia recently talked with the LAB NEWS about the current "State of the Labs." Here's what they said:

LN: We're several months into a new fiscal year with a new management and operating (M&O) contractor — at this point, not so new. Everyone seems to agree that the transition to Martin Marietta management has gone extremely smoothly. But Sandia continues to look ahead. For instance, there's strategic planning going on right now. Will we see any new directions?

Al: We're living in a period when conditions in Washington and elsewhere are changing almost daily, and we have to stay on our toes. I see an evolutionary process in which our tactics and strategies evolve in keeping with changing national priorities.

But I didn't expect before Martin Marietta won the competition, nor do I see any reason to think now, that we would need to make significant changes in overall direction of the Laboratories. Nor do I see signals of that sort coming out of Washington. We've anticipated what is happening today reasonably well, and we seem to be pretty much on track.

This is not to say that the 1990 Strategic Plan, at least in its details, isn't in need of some major reworking. After all, it has been four years since that plan was created.

[See "Strategic Plan Gets Facelift" on page seven.]

Jim: I'd certainly second what Al said. I don't think there were any major organizational changes

precipitated by the change in M&O contractor. Organizational changes are dictated by the job we have to do. That's the way it has been, and that's the way it's going to be.

It's very clear, for example, that we're going to have to take on a limited production responsibility as the nuclear weapon complex is reconfigured. That may involve organizational changes as we prepare ourselves to handle this new responsibility. It's that kind of thing which will generate changes in organizational structure, not any differences caused by the change in M&O.

I've heard Al say, and I agree, that the transition process has gone as cleanly
(Continued on Page Four)



STATE OF THE LABS — Executive VP Jim Tegnalia (left) and President Al Narath talk about Sandia's present and future in light of changes in DOE's directions and widespread questions about national labs' purposes.

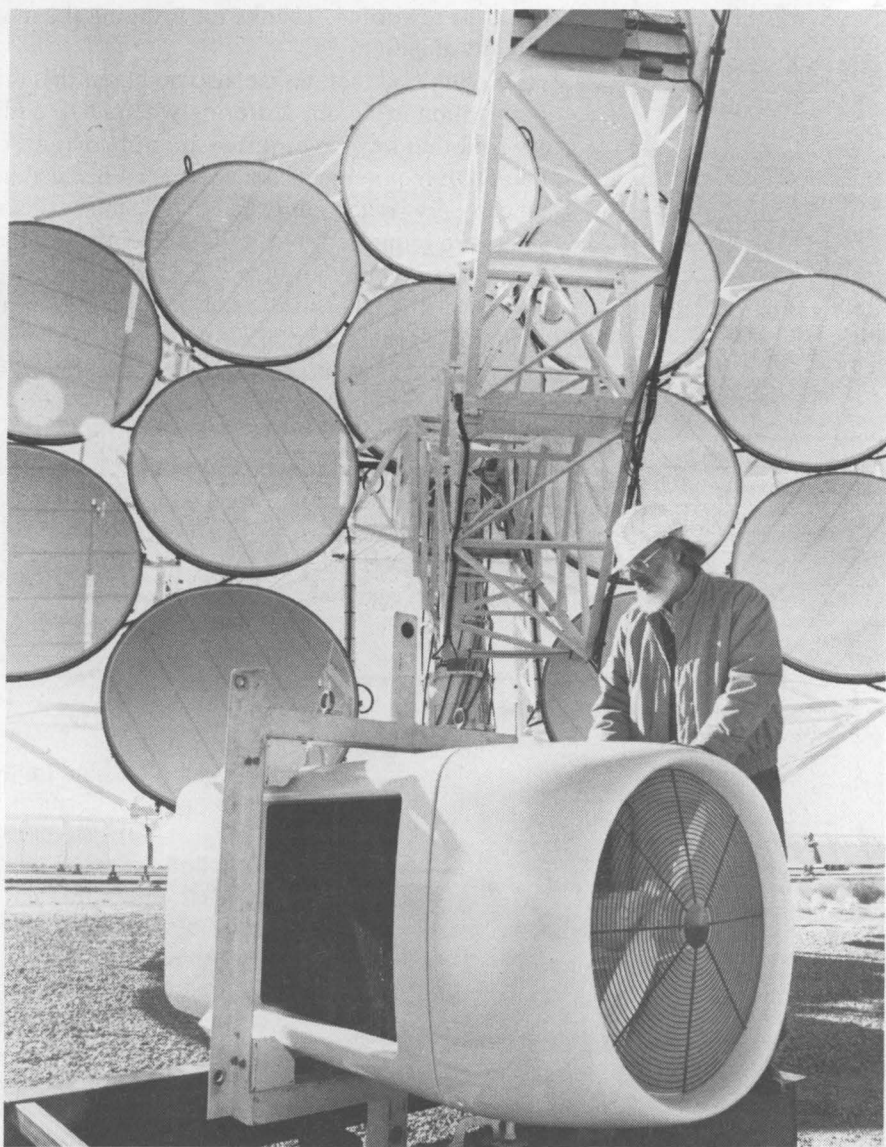


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PACKAGING THE SUN — Tom Mancini of Solar Thermal Technology Dept. 6216 inspects a Stirling heat engine that will be mounted on the multi-mirrored solar concentrator in the background. Tom is program manager of a new project between Sandia and Science Applications International Corp. to commercialize dish-Stirling solar technology, developed in part by Sandia, as 25-kilowatt modular solar power devices. See story on page thirteen.

(Photo by Mark Poulsen)

Now a San Jose Address for Labs

New Microelectronics Office To Support Silicon Valley

Sandia officials, industry executives, and political representatives gathered before an overflow audience at the San Jose Fairmont Hotel on Friday, Jan. 7, to announce the opening of the Sandia Microelectronics Office. Located near the heart of Silicon Valley at 4300 Stevens Creek Boulevard in San Jose, the new office will provide companies and universities with a Bay Area contact for direct access to DOE laboratories' microelectronics capabilities.

After several dignitaries spoke, attendees witnessed the signing of two protocol agreements that will lead to cooperative research and development agreements (CRADAs) between Sandia and two high-technology

"Sandia has provided real evidence that the national labs are reaching out to industry."

enterprises: TriQuint Semiconductors, Inc., a leading manufacturer of high-performance digital and microwave electronics, and Applied Materials, Inc., a large manufacturer of semiconductor device manufacturing equipment.

The two projects are valued at a total of more than \$10 million.

"By establishing an office in Silicon Valley, Sandia has provided real evidence that the national labs are reaching out to industry . . . to help them remain competitive in the world market," said Andrew Procassini, president of the Semiconductor Industry Association (SIA), commenting after the ceremony. "This office helps make Sandia part of the San Jose community. Consequently, I believe communication will flow more easily, and the Labs and Silicon Valley companies will be more accessible to one another."

Promoting Technology Transfer

Sandia President Al Narath opened the ceremony by introducing the featured speakers and noted the presence of several guests, including

(Continued on Page Three)

What Do New Mexicans Think About Sandia? — See Page Ten

This & That

What state are we in? - Most of us are in New Mexico or California, but those aren't the answers we were looking for when Managing Editor Charles Shirley and I talked with President Al Narath and Executive VP Jim Tegnalia early this month and asked them that same basic question. We were talking about the "State of the Labs" - Al and Jim's assessments about how Sandia is doing, where we're trying to go, and how we're going to get there. I think you'll find Charles' account of what they said interesting and worthy of your attention (see page one).

* * *

He's had enough - Speaking of Managing Editor Charles Shirley, he'll be leaving the LAB NEWS in a few weeks and taking his considerable talents to a job in Laboratory Communications Dept. 12610. The often- hectic pace and the deadlines here eventually get to you, and I think he has "enjoyed all he can stand." Somewhat of a computer whiz, Charles was making some story notes on a writing tablet in his office recently when someone walked in. Before looking up, Charles reached out and tried to hit the "save key" on the tablet.

I don't want to embarrass him, but I will say Charles is one of the most productive folks I know, consistently cranking out much fine LAB NEWS copy. When he leaves, the rest of us here will have to lubricate our clutches and shift our paradigms into high gear!

* * *

In the spotlight - We begin something new in this issue - "Sandia Spotlight" - a mostly photo page about Sandians at work, which we plan to run about once a month. Our inaugural spotlight beam highlights Receiving Team 7613-1 (see page twelve). We plan to spotlight Sandians at all locations. Although we already have lots of ideas for future spotlights, we'll certainly consider others. Send any ideas to Employee Communications Dept. 12660, MS 0413.

* * *

Holy micro machine! - My colleagues in Media Relations Dept. 12630 and Strategic Media Planning Dept. 12620 have much success getting interesting Sandia science and engineering stories publicized in national and international media, but now it appears they may have reached the pinnacle of success. *Superman and Batman Magazine*, which intersperses short science and technology stories with its comics, has requested a photo of the fascinating micro steam engine invented by Jeff Sniegowski of Silicon Technologies Dept. 1325.

The LAB NEWS' John German wrote the story for our Sept. 3 issue, the Media Relations folks issued a news release about the device, and since then hundreds of publications and TV stations have reported about it. Just how small is it? Several micro steam engines could fit inside the period at the end of this sentence.

* * *

Voluminous verbosity - Marvin Moss of Sandia's Intellectual Property Development Dept. 11510 is something of a language expert, and he sends some examples of redundancy that he sometimes sees: past experience, prior history, advanced warning, and pre-existing condition. Marvin eloquently notes, "The nouns stand alone quite well and should not be the victims of repetitive redundancy of undue prolixity." Now who could disagree with that? Anyone have other "favorites?" •LP

feed back

Q: One of the Sandia values is "respect for the individual." Why, then, does Personnel Security Dept. 7437 always send out memos that threaten us? I will quote two memos that I recently received from this organization. A memo dated Nov. 19 concerning the inventorying of keys says, in bold print: "Subsequent letters for non-response will be sent to the Director level, or above." I am educated, hard-working, and honest. I very much resent being treated as if I am in elementary school. Another memo, dated Nov. 23, concerning "L" and "Q" clearances for contract employees, says in bold and capital letters, "FAILURE TO RESPOND TO THIS REQUEST WILL RESULT IN TERMINATION OF CLEARANCE FOR THIS EMPLOYEE." What if I were traveling during the one week of response time given to me? Would this organization really compromise the work that we are doing by pulling the contractor's clearance? I think the tone in these memos is inappropriate. Furthermore, I think their style violates the Sandia value of "respect for the individual."

I have a few questions concerning their treatment of Sandia employees:

- How would they feel if everyone threatened them back in their responses, e.g. "I'm going to tell your director on you if you record the key inventory incorrectly?"

- Is threatening people an acceptable Sandia managerial tool?

- Is this organization always supposed to get special priority because they threaten us and have some power to punish us? What about all of the other demands that might be put on us during any particular day? Do we drop everything when any memo from Security arrives?

- Does this organization buy into the Sandia values?

A: I reviewed the two memos you referred to and I agree they are too "threatening" in tone and should be reworded. Thanks for bringing the matter to my attention.

Having said that, let me also point out that this organization is the one suffering when DOE auditors find that key inventories are not current, or other DOE requirements are not met. When actions that can only be accomplished by our internal customers are requested, but left undone, the authors of the memos you referred to are criticized not only for being out of compliance, but also for not enforcing the rules. This environment tends to generate fear and frustration that is then manifested in the "threatening" letters. Clearly, we need to fix that.

Be assured that members of this organization buy into Sandia's values. Please don't forget that they are individuals also, with a desire to accomplish their goals and with a need for respect. Finally, another Sandia value is teamwork. More of that would be very helpful.

J.D. Martin (7400)

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MARTIN MARIETTA

Congratulations

To Kathy and Steve (2645) Kuehn, a son,
Timothy Stephen, Dec. 18.

To Maggie and Bill (2482) Silva, a son,
Nathan William, Jan. 3.



DOE SECRETARY VISITS - Secretary of Energy Hazel O'Leary visited Lafayette Elementary School in Oakland on Jan. 12, joining schoolchildren in classes that were taking part in one of Sandia's science carnivals. She is seen here helping the children make "gluep," a Silly-Putty-like substance made from glue and borax that is popular with young students. Looking on are Education Outreach Dept. 8528 Manager Karen Scott (left), Sandia/California VP John Crawford (middle), and Oakland Schools Superintendent Peter Mesa. The woman behind John is an unidentified school employee.

(Continued from Page One)

Silicon Valley Office

Donna Fitzpatrick, a former Undersecretary of Energy and current Sandia Board of Directors member; Bill Howard, Sandia board member; Gordon Cumming, Vice President of TriQuint Semiconductors; and Sass Somekh, Senior Vice President of Applied Materials. In addition, Al recognized several attendees from Lawrence Livermore and Los Alamos national laboratories.

"Sandia began its industrial outreach efforts through DOE in 1989 with passage of the National Competitiveness Technology Transfer Act, and

"The future of the national labs will hinge on how the private sector . . . assesses the value we provide."

opening this new Silicon Valley office will further facilitate our R&D partnerships with industry," Al said. "The future of the national labs will hinge on how the private sector downstream assesses the value we provide, and I believe microelectronics is a critically important industry that can benefit greatly from DOE assistance.

"Sandia felt that due to the heavy concentration of semiconductor companies in the San Jose area, it was important to create a physical presence that would serve as a point of contact," he continued. "We look forward with great excitement to working closely with the Semiconductor Industries Association to ensure efficient use of Sandia's capabilities in achieving the industry's technology objectives. In fact, we are well along in the planning process to form a microelectronics alliance between DOE and Bay Area companies and universities."

Speakers Offer Congratulations

US Representative Norm Mineta's aide, Michelle Poche, offered congratulations on behalf of the congressman. She cited the new Sandia

Microelectronics Office as a direct example of the positive impact that can be achieved through the federal government's efforts to transfer technology from the national labs to the private sector.

"What better place to demonstrate this kind of private/public partnership than in Silicon Valley?" she said. "DOE cooperation through Sandia with SIA, SEMATECH, and Bay Area universities will boost the economy of Silicon Valley, and keep the nation moving in the right direction by transferring technology out of the Labs and into the workplace."

San Jose Deputy City Manager Darrell Dearborn called the new office "a recognition of the federal government's appreciation that Silicon Valley represents a business climate that nurtures the kind of joint ventures that produce success.

"The tremendous resource potential that the national laboratories represent is one of the underpinnings for successful defense conversion to peacetime applications," Dearborn said. "The extraordinary talent provided by the Labs is vital to support the private sector as it develops key new technologies, including alternative energy sources, environmental clean-up techniques, and other endeavors that require the federal government's commitment."

John Andrews, DOE site manager at Sandia/California, said Sandia's new office represents a concrete example of DOE's commitment to make national laboratory resources available to Silicon Valley and the entire nation. "Although the office will be small at first, it has tremendous value because DOE is reaching out to industry, rather



AT THE SANDIA Microelectronics Office opening, President Al Narath (standing) and Gordon Cumming (center), Vice President of Tri-Quint Semiconductors, sign protocol papers for a cooperative R&D agreement. Looking on is San Jose Deputy City Manager Darrell Dearborn.

than waiting for industry to come to us," he explained. "Our goal is also to support other types of industries with DOE resources, and creation of this office marks the start of something that will provide significant benefits not only to Silicon Valley and San Jose, but to the entire country."

During the signing, Cumming said, "This agreement is an important moment for TriQuint. The expense of developing technology is substantial for a small company such as ours, so we look forward to the extraordinary opportunity to capture the capabilities of Sandia."

Second Signing for This Pen

Before signing for Applied Materials, Somekh displayed a special pen he brought to the ceremony, and told the story behind it. "About five years ago I was responsible for development of a complex, expensive product for my company, and was very concerned about system reliability," he said. "I visited Sandia twice, received presentations about how the Lab ensures the reliability of nuclear weapons systems, and used this pen to sign an agreement to work together.

"We introduced that system two years ago, and as of today it has generated \$250 million in revenue and become the standard for reliability within the industry. This example shows the benefits Applied has derived from working with Sandia, and we look forward to a closer relationship that will further enhance our competitiveness and yield many new benefits."

Managing the new office in Commerce Plaza is Jay Jakubczak, who will have the new organization number of 8006 and report to VP-8000 John Crawford's office. Jay transferred from Non-volatile Memories Dept. 1341. The suite includes two offices and a conference room equipped for videoconferencing. The office phone number is (408) 261-7951. ●MSheehan

Marlin Pound Inducted Into UNM Hall of Honor

Marlin Pound (8501/8600) was inducted with the 1953 University of New Mexico football team into the UNM Athletic Hall of Honor at an alumni gathering recently. Marlin was a member of the 1952 Lobo team, acclaimed as one of the school's finest ever, with a 7-2 record that allowed only 46 points against its defense all season. The team also had the highest academic record of any men's group on campus. A sophomore that year, Marlin was the starting right tackle on both offense and defense. The Hall of Honor was established to perpetuate the mission of intercollegiate athletics and promote a sense of pride among alumni lettermen, the university, and the community.

SANDIA CALIFORNIA NEWS

Supervisory Appointments

KRISTY SIBERT to Supervisor of Procurement Support Team 8534-1.



KRISTY SIBERT

Support Team since March 1993.

She is a Livermore High School graduate and a native of Livermore.

KAREN SCOTT to Manager of the newly created Education Outreach Dept. 8528.

Karen joined Sandia at Livermore as a Member of Laboratory Staff in 1987 in the Education

and Training Department. In 1990 she became the acting manager of the Education and Affirmative Action Department, then formed the educational outreach program with funding from DOE and the National Science Foundation.

Before joining Sandia, she worked with student programs at the University of Utah and served as director of the Career and Labor Market Information System for the State of Wyoming.



KAREN SCOTT

American Society for Engineering Education in 1992 for her presentation on "The Next Workforce — K-12."

(Continued from Page One)

State of the Labs

as anybody can expect. I think the two organizations are culturally as close as we can get. We don't need to make any changes because of that.

Al: In fact, I would assert that at least one of the reasons Martin Marietta was interested in acquiring this responsibility was the similarity of interests, capabilities, and strategic directions. It was a marriage that in many ways made a lot of sense.

Jim: I also think the personalities have meshed well together. The people who Martin Marietta brought in have been accepted very well by the Laboratories. As an outsider coming in, I couldn't have asked for a better reception from the people at Sandia. So I think the transition process — I may be overstating, but it's close to the truth — is behind us. We're now getting ourselves ready for a new environment. The M&O changes were pretty much accomplished last year.

LN: *What about our relationships with DOE and with Secretary O'Leary?*

Al: On the whole, the relationship with DOE and the Secretary are very positive, very constructive. DOE itself is going through a period of transition. The Secretary has specific ideas of how she wants to reshape the department. As you may know, she has set in motion a rather ambitious program of strategic planning. She has committed the department to Total Quality Management. So within DOE there is currently a lot of activity.

At Sandia, we set comparable efforts in motion some years earlier. That has made it quite easy for this laboratory, and me in particular, to come into resonance with the new DOE management.

Jim: I think Sandians ought to feel pretty confident. As a new person just looking at the strategic planning here, and watching what's going on in Washington right now, with Vic Reis [DOE Assistant Secretary for Defense Programs] and his organization, it's clear that we're well integrated and are thinking about things the same way. My sense is that we're not going to see anything come out of the DOE strategic planning that this organization hasn't already anticipated and prepared for as well as anybody could.

That's a compliment to the work that's gone on in the past at Sandia.

Al: I'm quite encouraged by what I see, at least in terms of planning activity, within DOE. It remains to be seen how well we can implement DOE's strategic vision in the end. But I find it

"Conditions in Washington and elsewhere are changing almost daily, and we have to stay on our toes."

encouraging that there's widespread recognition that DOE has technical assets at its disposal that call for a rethinking, a broadening, of DOE's mission.

LN: *Do you think that message is getting through elsewhere in government? Are DOE's technical assets widely recognized?*

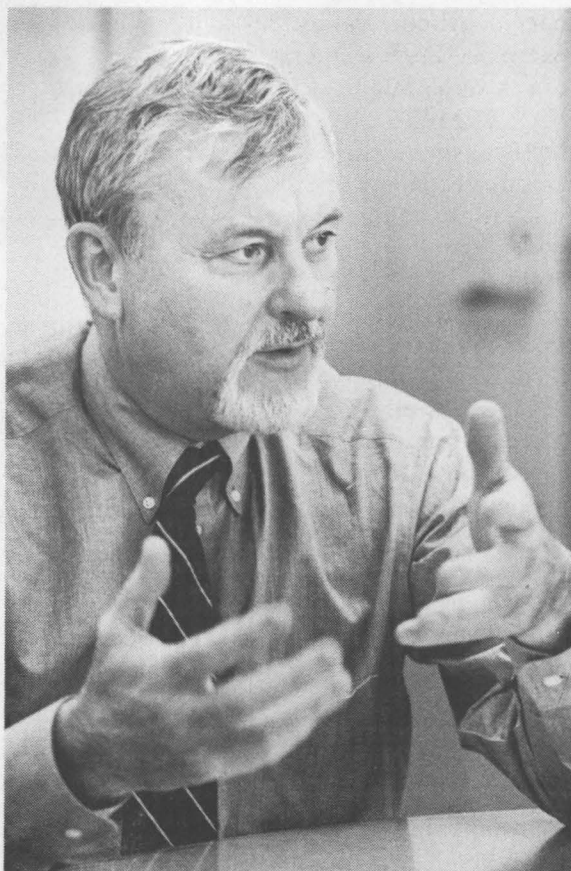
Al: Any time an organization, on the basis of its capabilities, sets about to expand its horizons, it's going to encounter some turf issues. I think the big challenge for DOE will be to legitimize its roles in areas such as advanced manufacturing technologies and electronics. Support of industries not directly linked to DOE's core mission responsibilities (for example, the textile industry) must not threaten the legitimate responsibilities of other federal agencies. That's going to require alliances that are mutually supportive. I believe the Secretary understands these difficulties and is prepared to deal with them.

LN: *Do you think the current attention to activities of the past by DOE's predecessors, human experimentation and so on, will detract*

from other goals that need to be addressed?

Al: Certainly. At least initially, it's going to be a serious distraction, because it will focus a lot of attention and a lot of management effort within DOE and elsewhere on the past rather than the future.

Jim: But elsewhere in government as well, there's a similar process of declassifying a lot of Cold War files. This is going to be a temporary turbulence that we'll all go through. We're just



AL NARATH

going to have to recognize that it is part of our responsibilities.

LN: *As far as we know, did Sandia have any involvement in the radiation experiments on humans that are being discussed?*

Al: I have no reason to believe that we had a role in the activities that I've read about. Of course, I don't want to make sweeping statements, because at this point I don't know much more than has appeared in the news media.

Jim: We will assess our own files and make sure we understand what our history is. We need to make sure that we weren't part of that activity, if that's in fact the case, or take up our responsibilities if we were. So I think the thing to do is recognize that the Secretary has set policy, that she wants to declassify a lot of this activity, and we will undoubtedly become part of that process.

Al: Unfortunately, the perception has been created that all of the experimentation was unethical, if not illegal, and that a large fraction of it involved harm to human subjects. Again, I don't speak from a lot of knowledge, but I would speculate that much of the experimentation involved radioactive tracers at very low concentrations, which, incidentally, gave rise to nuclear medicine, an absolutely indispensable part of modern health care.

LN: *What can you tell us about Sandia's relationships with the other DOE labs?*

Al: They are very good. There is some difference of opinion, however, among the lab directors as to where the institutions ought to be heading during this period of rapidly changing national priorities. Until there is a clear understanding and agreement on future directions of DOE and the purpose for the labs' continued existence, you're going to find differences of opinion. Let's also remember that the labs are all very different. We were created for different purposes originally, and as a consequence we differ in terms of current capabilities and interests.

I think it's very healthy that we're talking candidly about these matters. We have been meeting, both as part of formal DOE efforts, and in addition

— with DOE's blessing — just among ourselves. We will meet again soon. These meetings have opened up a constructive dialogue among the lab directors. Out of that will eventually be distilled a much stronger consensus of how the labs collectively and individually can best serve DOE and the country.

So I feel quite optimistic. Yes, I'd like to see faster progress. But on the whole, the signs are very encouraging.

Jim: It's clear that there's a good channel of communication among the various laboratories. The people respect each other, we work together. On big issues, my sense is that the cooperation is pretty good.

LN: *Compared to some of the other labs, our budget has held up somewhat better. Is that a sign of success?*

Al: Sandians might remind themselves that how well we have done depends on what reference point we choose. After all, during the early 1970s we suffered worse than some of our sister labs. We

"DOE has technical assets at its disposal that call for a rethinking, a broadening, of DOE's mission."

recovered subsequently. But we are currently at the same strength — the same number of employees — as in 1965. Many other labs have grown substantially since then.

But, yes, I think we've been fortunate. We've performed well in recent years; for the most part, we've made our customers happy. They've come back to us.

But the size of the laboratory, the size of its budget, are not ultimately the best measures of the value contributed by a national laboratory.

Jim: And certainly the redefinition process isn't finished. There's a long way to go before strategies and mission responsibilities are worked out. Nobody is smart enough to know how all that is going to end up. It appears to me that Sandia goes into the process in as healthy a condition as any of the laboratories. But there's still a long way to go.

Al: We have benefited from the fact that in the last few years the emphasis in federal R&D has shifted strongly in the direction of more applied work, perhaps at some expense to more fundamental investigations. As a result, we have found it somewhat easier to attract new customers than labs that have a stronger basic science focus. But that could very easily reverse tomorrow. There's no assurance that that's a direction federal support will continue to take.

LN: *We've been expecting to see a decline in Sandia's Defense Programs (DP) sector budget. But it hasn't materialized as a lot of people thought it would — at least to date. Is a crunch coming?*

Al: The crunch has already been happening. It's disguised by the fact that within Roger Hagen-gruber's [VP-5000] Defense Program sector, we've taken on a lot of new work. The part that has been suffering is the Labs' foundation effort — science and technology. In the nuclear weapon program, the R&D budget has been plummeting, and it is this budget that has historically supported the major portion of our research foundation and other special capabilities.

So although the total employment level within Defense Programs has not declined, the mix of activities has changed. There's less scientific research and technology development and more application of existing knowledge to meet customer needs.

If that trend continues, it's going to pose a real threat to the Laboratories. Inevitably, it would weaken the technical foundations of the Laboratories. That is, it would be more difficult to sustain our core competencies. That is a serious concern to me.

LN: *So if we ask you "Is it encouraging that*

the overall DP budget has stayed up?" your answer is "No, it's not really encouraging."

Jim: There is a worse alternative!

Al: There's a worse alternative; Jim said it just right.

But the health of the Laboratories in the long run cannot simply be measured in terms of employment level. At some point, even that would be threatened if we no longer maintained the flow of new ideas and new technical breakthroughs. Once that flow ceases, our ability to do innovative applied work for customers will suffer also.

But that's a long-term problem. That kind of damage doesn't set in overnight. It's something that we can work out over the next few years.

Jim: In addition, it appears that Vic Reis is very sensitive to the problem and is trying hard to fix it. So the situation isn't bleak, but by the same token, everything isn't perfect.

Al: I agree. We're very fortunate in having an Assistant Secretary for Defense Programs who understands the important role that the national laboratories' science and technology base plays. He is very intent on focusing a lot of his attention on helping preserve and reap the benefits of the science and technology base. We're getting strong support from him.

LN: Are we still likely to see declines in Defense Programs overall? Are we encouraging people there to get retrained for work in the other sectors?

Al: One has to be careful when looking into a crystal ball that's inherently very foggy. All of us anticipated the rapid decline in support for weapons program research, development, and testing. It forced us to the erroneous conclusion that the DP program in its entirety would suffer a similar fate. That turned out to be wrong because DOE's defense program activity has taken on additional responsibilities. We've seen growth in non-proliferation activities, for example. The Labs has also acquired more responsibility in connection with the production complex reconfiguration.

So this confronted us with the problem that the DP sector needed to grow slightly over the last year, when we had expected a need to increase other areas of the Laboratories to compensate for an anticipated shortfall in DP.

What will happen five or six years from now, I don't know. I find it difficult to believe that as long as national defense as a whole continues to shrink, the DOE DP program will not suffer some of that decline, too. So we could still see, over the next several years, some decline in total funding for DP. But this is all speculation at this point. I just don't know. I think the experience of the last year has shown how difficult it is to do even tactical planning, that is, operational planning, during a period of such continuous, unpredictable change.

Jim: Defense Programs' responsibility is still the most important mission that the Laboratories has. How that mission evolves over the next five or 10 years will be very important. But because it remains, in my mind, the most critical mission in the Laboratories, we *must* be sure that we support the DP activities that we have here. And I think to date we've done that. I think the staffing levels in DP have been adequate, there are good people

"It's clear that there's a good channel of communication among the various laboratories."

there, and we haven't failed to accomplish any major responsibility.

The difficulty that I think we're struggling with now is in trying to keep up with the growth in Dan Hartley's [VP-6000] Energy and Environment [E&E] sector. The budgets are growing there, and we have to make sure that we have the people to take care of that mission. That mission has been a strong one for us now for the better part of 10 or 15 years, and it's growing very, very fast. So I don't

believe the problem is in DP. I believe the problem is how to get good people into the E&E mission.

LN: What about the Work for Others (WFO) sector? We're still doing well there, it would appear from recent budget figures.

Jim: There's more of a demand for our services than we're able to supply. Last time I checked, more than 20 percent of our total program was in Work for Others. That's a big percentage. My sense is that that's about as large a percentage as we ought to let WFO grow to. That sector is doing extremely well, and there's a lot of demand for Sandia services through it. But I think we have to be careful to keep in balance, and the figure now is about as far as we'd like to go.

Al: It's important to add that this is not coming to us passively. There are a lot of people in Gerry Yonas's [VP-9000] WFO sector who have worked hard to sustain the flow of projects into the Labs. And when we go out and seek these opportunities, we find customers who are very responsive. The real challenge — it's something we're addressing in our strategic planning — is going to be to relate the opportunities we want to pursue under Work for Others strategically to our DOE mission responsibilities.

I don't mean to imply that much of what we're currently doing doesn't fit; on the contrary. But in view of the fact that we've reached essentially the limit of what I think the Labs can reasonably justify under WFO, we have to choose what directions



JIM TEGNELIA

to emphasize in the future. Those decisions need to be guided by some strategic construct that takes account of DOE interests.

I don't think we can be successful in the long run without helping DOE become successful. DOE unfortunately is still a department that continues to suffer attacks on its credibility, making it more difficult to realize the department's full potential.

LN: What about the Labs' research program? Do you expect that it will continue to be approximately the same size, and healthy?

Al: Our intent is to maintain the research program at Sandia at some fixed percentage of the total effort of the Laboratories. In the past, Defense Programs has provided the major source of funding for research. With Defense Programs R&D dropping rapidly, that has become increasingly difficult. Nonetheless, a larger — and growing — percentage of the DP program is being applied to help maintain our core competencies. But a big challenge over the next year or two will be to identify new sources of funding to help sustain the research effort. In the long run, in a period of declining

nuclear weapon R&D, we simply cannot expect DP to carry the freight alone. Bert Westwood [VP-1000] understands that challenge and is prepared to deal with it.

LN: With the demand for Sandia services in all three sectors, are we still constraining ourselves to a ceiling of on-roll employees? Couldn't we support more than we have?

Al: We're aiming for 8,550, which is close to the current level.

Jim: You just have to ask yourself — looking ahead with all the turbulence that Al indicated — what position you want to be in. We prefer not to

"There's more of a demand for our services than we're able to supply."

have an additional number of people for whom we feel obligated to continue a job responsibility.

The Laboratories is entering a post-Cold War redefinition in a very strong position, with regard to the number of people who are on board, the mix of the talent that's here. We might be stronger if we could foretell the future! But given what we know now, we're in a good position.

LN: Are there any constraints on contracting work out when we really need to do that to get a job done?

Al: No. But we need to think about it differently. In the past, we've responded by bringing in on-site contract personnel. The only time that makes sense to me is when we bring in specialized talent that we either cannot acquire through regular employees or for which we don't see a continuing need.

The kind of contracting we're encouraging now is this: Where we take on larger commitments than we can handle internally, let's go into partnership with other organizations, such as laboratories, universities, or industrial enterprises. Let's subcontract not for additional on-site people, but pieces of work that can be carried out in a contractor's facilities. To move in that direction is a way for our laboratory to increase its impact, its effectiveness.

Jim: Our customers hold us responsible for the performance of work, whether we do it internally or whether it's done under contract. We have to make sure that we have processes in place so that when we take on work that's above our head-strength, we know we're capable of guaranteeing the performance of the products that we deliver. That may require different techniques than simply contracting for people.

Al: But they're not new techniques. They're used in industry every day.

Jim: They're just different from the way we've been doing things in the past. As long as we can guarantee the quality of our product, it appears to me that that's a good way to enter this period of turbulence.

LN: Are we actually doing much of this kind of contracting?

Al: Quite a bit, though I don't have any numbers available.

Jim: Where we've been doing it, it appears to be good for both sides. We're seeing quality work; the industrial base is getting work that it didn't have in the past. In aerospace and similar businesses right now, there aren't any slouches left. They have quality people. So I think everybody ends up pretty well off in a process like that.

Al: At the peak of the Safeguards program, an anti-ballistic missile program of the '60s — it actually had its beginnings in the 1950s — the overall direction came from Bell Labs, and there were specific technical tasks performed within Bell Labs for which it had special expertise. But huge chunks, in fact the bulk of the work, was done by other contractors.

I think it's healthy for a laboratory like ours to increase its interactions with the private sector. We talk a lot about doing it through CRADAs

(Continued on Page Six)

(Continued from Page Five)

State of the Labs

[cooperative R&D agreements] and other cooperative technology-transfer-related activities. A more direct way is to involve the private sector to a greater extent in our normal, everyday programmatic activities.

Jim: That has the benefit of causing an automatic transfer of our technology and our techniques into the industrial base. So it's a process that's good for everybody.

LN: You mentioned earlier that Sandia will be getting more into producing weapon components, the non-nuclear components. That's the activity called manufacturing development engineering — MDE. Will contracting be a major part of this?

Jim: It's one way of doing it. For instance, if there were components that Sandia had to guarantee for the weapon complex, rather than building

"We are currently at . . . the same number of employees as in 1965. Many other labs have grown."

the capability internally, we could ensure that there was an industrial partner that could deliver that kind of capability.

Al: Most of the effort under the MDE umbrella, in fact, will involve procuring parts from industry. The production responsibilities we anticipate bringing to Sandia are highly specialized, where everybody agrees it wouldn't make sense to develop a commercial source.

Jim: And where the capability doesn't exist in the commercial sector.

Al: It'll be a significant responsibility, but it shouldn't be construed as moving all or even a major portion of the non-nuclear production responsibility to Sandia.

LN: More generally, what's going on in Sandia's relationships with private industry?

Al: What is most noticeable is the large number of cooperative research and development agreements that we've been able to put in place — in excess of 140 now, an aggregate value of \$500 million. But numbers of CRADAs, or even the dollars, are not a good metric. More important is the net tangible return on invested effort that we achieve in our industrial interactions — both in terms of benefit to our industry partners, and the "dual benefit" to our core missions. Toward that end, we are emphasizing two directions:

One is that we're increasingly aggregating our CRADA efforts in such a way that we focus our support on major industries, such as the electronics industry, or the auto industry, or the textile industry. Here we look for opportunities that really match our competencies. We are giving special emphasis to three topics that are closely related technically, and which cut across all three sectors: Advanced Manufacturing Technologies, led by Heinz Schmitt [VP-2000]; Microelectronics, led by Paul Percy [Director of Microelectronics and Photonics Center 1300]; and Information Science and Technology, for which a strategic plan is in preparation under the leadership of Arlyn Blackwell [Chief Information Officer 12200].

We also plan to concentrate much of our effort on precompetitive partnerships through alliances with industry consortia. That gets us out of the business of picking winners and losers, which has always been very difficult for our government to deal with.

The other important direction that we're encouraging much more strongly than in the past is to reach out and provide technical assistance to ever larger numbers of small and medium size enterprises. We're making ourselves more accessible, increasing the value of the knowledge and know-how that public funds have created in this

laboratory by making it available to the private sector. Here we're not dealing so much with cooperative research and development as we are with supplying information. You might call this process technology deployment.

We are also firmly committed to cooperation and collaboration with other institutions, both public and private, as a way to increase the impact of our work. Examples of strengthened interactions that appear especially promising are joint R&D efforts with regional universities, with Los Alamos National Lab, and with the National Institute for Standards and Technology.

Finally, I'm also very enthusiastic about the possibilities afforded Sandia by Martin Marietta's creation of the Technology Ventures Corporation [TVC], by offering nurturing opportunities for Sandia technology that we can spin off by moving people and their ideas into the private sector. Maybe Jim wants to expand on that.

Jim: I think it's an opportunity to do two things. The first is that Sandia people can generate ideas for products that are produced by small businesses and made available commercially. We've had reasonable success with that at Oak Ridge. One of the products that comes to mind is the artificial hip implant. Those were started by Oak Ridge people, and now they're out in industry.

TVC also provides an opportunity to have Sandia technology reflected in products and jobs that are created in our particular regions of New Mexico and California. That's something we haven't accomplished very much before. This kind of regional economic growth is being done through other national labs as well, Los Alamos and Oak Ridge, to name two.

Those are pretty ambitious goals, but we've been successful at Oak Ridge, and I think we'll be successful here.

LN: Recently, Norm Augustine, Martin Marietta's Chief Executive Officer and Board Chairman, visited Sandia/California and had good



AL NARATH

things to say there. Yet, with the uncertainty that we've talked about in future directions of the DOE labs, there's uncertainty felt by employees at the California laboratory. What can you tell them?

Al: What I've said in the past year and earlier is still true. The California laboratory is an essential part of this institution. We attach great strategic value to it. We are exploiting the advantages offered us by having a site on the West Coast.

We opened an office in San Jose, next door to the headquarters of the Semiconductor Industry Association, to facilitate our support of that industry. [See article on page one.] The presence of our laboratory on the West Coast is what enables us to create this presence in Silicon Valley.

It's understandable, given the talk we hear about the need to eliminate some labs or redefine labs' missions and so on, if some people get a nervous feeling about their future. And of course it's impossible to give iron-clad guarantees. All I can do is to articulate the unequivocal intent of Sandia senior management to maintain Sandia/California as an essential part of the Labs. I've discussed that intent with various people in Washington, and at no time has anybody found any flaw in our plan.

You mentioned Norm Augustine. I've discussed this matter with Norm and also Tom Young [Martin Marietta's Chief Operating Officer]. Both

have expressed very strong support for the strategic reasoning that has gone into this commitment. It now remains for us to demonstrate the value of Sandia/California as an integral part, inseparable from the rest of Sandia National Laboratories. We have come a long way already, under John Crawford's [VP-8000] thoughtful leadership, and I am absolutely confident that we will succeed.

LN: What about two other locations that are directly affected by recent changes — Tonopah Test Range and the Nevada Test Site [NTS]?

Al: The Tonopah activity is now being pursued on a campaign basis. That means many, if not all, of the personnel, when needed, will come from other Laboratories locations and assemble for the purpose of conducting a series of tests. We will maintain the range in a state of dormancy for those periods when we don't do any work there.

At NTS, the situation is still evolving. There are obviously no nuclear tests planned currently. I don't think there will be any. Barring unforeseen international events, I don't anticipate renewal of testing any time soon.

At the same time, I believe everybody recognizes that we can't just throw away the Nevada Test Site. We have to maintain it in a manner that provides some significant value commensurate with the continued investments we make in it. There are some roles that will emerge and are emerging for Sandia.

Jim: The people at NTS understand the improbability of re-starting any testing. They're in the process of redefining their future, looking at new missions that can be done there. We're helping them with that activity. I think, because of the prior investment that's been made, plus the contingencies that have to be prepared for in case of changes in the international situation, they'll be moderately successful. NTS won't be shut down.

Al: It won't be shut down; on the other hand, any time a radical change of direction takes place, like the one we've seen with the cessation of testing, you can expect significant impact on the people. And they are people who have dedicated much of their careers to that work. I feel very badly for them. Sometimes victory is more difficult to take than the battle.

LN: Al, you mentioned talking to people in Washington. What is Sandia's image there?

Al: The image is very positive, as best I can tell. Our presence is much stronger than in past years. There's clearly a much better understanding of what Sandia is and what we contribute than was true in the past. I feel very good about that. My sense is that we have become a much more influential laboratory, as envisioned, incidentally, by our 1990 Strategic Plan.

Jim: I think we have allies in Washington in getting through this redefinition phase, because of the reputation that we have and our past accomplishments. These allies include a strong congressional delegation, but the support is broader than

"We want to . . . provide goods and services at a cost that's acceptable to our customers."

that. Having support in Washington right now is a good thing for Sandia.

Al: It's important for a lot of reasons. One that we talk about a lot has to do with the congressional interest in redefining of the purpose of the national laboratories, in the evolution of new mission responsibilities, and in the clarification of laboratory roles in new initiatives — new strategic thrusts, if you will — such as manufacturing.

But equally important, we need to take a strong stand against excessive overreaction to the end of the Cold War. You can't help but get a sense that some people believe radical changes are needed because yesterday we had a Cold War and today we don't. The fact of the matter is that there

(Continued on Next Page)

Goal: a Clear Delineation of Corporate Strategy**Strategic Plan Gets Facelift to Guide Labs' Post-Cold War Work**

When Sandia's first *Strategic Plan* was published in 1990, the Cold War was still being waged and the Warsaw Pact still existed. The Soviet Union, although mellowing and weakening, was still considered by the US to be the biggest potential threat to world peace and stability.

Four years later, the world is much different. International peace hasn't been realized and there still seem to be plenty of "bad guys" around the world making trouble, but the threat of a catastrophic war between "superpowers" has diminished greatly. In fact, some experts say the US is now the *only* military superpower.

Although maintaining a powerful nuclear deterrent and a strong US military force remain important, the definition of national security has been extended to incorporate maintaining a strong US economy that can compete in the world market.

Reflecting society in general, Sandia is now as concerned with economic matters as it is with military/nuclear matters — one of the primary reasons that the Labs' *Strategic Plan* is getting a major

Sandia is now as concerned with economic matters as it is with military and nuclear matters.

facelift, according to Paul Shoemaker, Manager of Strategic Planning Program Office 4514.

Paul and others in Org. 4514 are working with a planning team that includes President Al Narath, Executive VP Jim Tegnalia, all Sandia VPs, and three directors to produce the new *Strategic Plan*. The directors are Executive Staff Director Virgil Dugan (12100), Strategic and Operational Planning Director Joel Weiss (4500), and Public Relations and Communications Director Jerry Langheim (12600). Bruce Dale and Dan Garber (both 4511) are supporting the effort.

Draft Ready Soon

The planning team is just more than halfway through its schedule of 11 all-day sessions to revise the plan. The first session was Nov. 12. Two more sessions were held in December and three in

January. Five more are scheduled next month, with the final one planned for Feb. 17. No target date has been set for publishing the new plan, but Paul says the team hopes to have a draft ready for review soon after the Feb. 17 session.

The LAB NEWS visited with Paul and his director, Joel Weiss, recently to find out what the group hopes to accomplish and how the process is going.

Paul and Joel emphasize two points. First, the plan will take into account years of input from employees, and, second, the revised version will be more thorough than the 1990 plan.

There are several sources of employee input, says Paul, including information gathered last year in a project to "articulate a unifying theme" for Sandia, information gathered by the Strategic Planning Program Office during the Vision Project in 1992, and results from the Labs-wide employee survey ("Stanek Survey") conducted last year. (The Stanek Survey results will be covered soon in the LAB NEWS.) Also, planning team members are committed to asking employees in their groups to provide comments on draft material as the team produces it.

Pace VanDevender (4700), who served as Director of Corporate Communications up through Sept. 30, 1993, held eight meetings at three Sandia sites (New Mexico, California, and Washington, D.C.) in September to seek employee input at all levels to articulate a unifying theme for Sandia, and the results have been provided to the Labs' strategic planners.

The Vision Project asked selected Sandians who were identified as "visionaries" by their peers for their vision for Sandia's future. "They produced a lot of information that has 'staying power' and



HALFWAY HOME — Five Sandians of a team working to "modernize" the Labs' *Strategic Plan* are seen at a working session last week. They are (from left) Bert Westwood (VP-1000), Mim John (8100, representing VP-8000 John Crawford), Virgil Dugan (12100), Jerry Langheim (12600), and Dan Hartley (VP-6000). The group has completed six of its planned 11 sessions.

that is being used by the strategic planners," says Paul.

The main "product" produced as a result of this effort is the *Statement of Strategic Intent* that reiterates Sandia's motto, "Exceptional Service in the National Interest." The one-page statement also spells out in brief the Labs' mission, focus, and approach. It states that "Sandia responds to the challenges and opportunities of an increasingly

The plan will take into account years of input from employees and will be more thorough than the 1990 plan.

dynamic and demanding world, with broad-based R&D programs that create solutions contributing to military security, energy security, environmental integrity, and economic competitiveness."

Input from the Labs' primary customers also is being sought. "In fact, several members of the planning team participated in preparing key sections of the DOE Strategic Plan [under development]," Paul notes, "and appropriate information is being factored into our plan."

Permission to Be Different

Regarding some employee comments that the 1990 *Strategic Plan* wasn't specific enough to provide meaningful guidance, Paul acknowledges that this is fair criticism, but he thinks the original plan still made a significant impact. "It gave the Laboratories 'permission' to be different from what it had been. It said we could think of ourselves in new ways that up to then had been viewed as presumptuous. We became more proactive as a result of the permission we gave ourselves in the 1990 *Strategic Plan*."

"The fact that there really wasn't a clear delineation of corporate strategy in our first plan will definitely be addressed in the new plan," continues Paul. "We are going to focus on the impact we want to create and the strategy by which we want to create it."

Joel Weiss points out that the new *Strategic Plan* will not be an end in itself, but a plan that will lead to other, more detailed plans. "We hope the new Strategic Plan will 'go deep enough' to provide a natural flow to the operational planning process. Basically, an operational plan addresses how you're going to implement the *Strategic Plan*. To do that, it definitely needs to come down off the plateau that the 1990 plan is on. I think you'll see some real delineation of strategies — and some broad metrics — by which we can gauge the Lab's progress toward our strategic objectives." ●LP

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has been an ongoing change for many, many years. Priorities have been shifting steadily for a long time, and laboratories like Sandia have made many adjustments. The changes that are needed, in my view, are much more evolutionary than they are of the radical sort that some people are currently entertaining.

What I'm saying is, it's important to speak out for the continued importance of many of the things we've been doing for years. There is a lot of work still to be done in the weapon program, in the energy program, environmental programs — it's not as if everything the national laboratories are currently engaged in needs to be redirected.

LN: What about the National Competitiveness Technology Partnership Act that's pending in Congress? What will it mean to us, if it's passed?

AI: I see the legislation that has passed the Senate as an expression of confidence that DOE and its laboratories are capable of playing a larger role than provided by their traditional weapons and energy missions. But beyond that, we're just going to have to wait and see how the House reacts and what legislation is finally signed by the President. It is premature to say much more at this point, but the introduction of the legislation is encouraging.

LN: In the past several years there's been an emphasis on shrinking our indirect costs, in terms of percentage at least, maybe in terms of absolutes.

Where do we stand there? Do we have any goals?

Jim: We're working hard on that. But I wouldn't state the problem just in terms of direct and indirect. What we want to do is to make sure that we provide goods and services at a cost that's acceptable to our customers, and affordable and reasonable when measured against other industrial standards. I don't care whether you look at them as a direct cost or an indirect cost. The fact is that our costs have to be reasonable and under control. I have asked Gary Riser [Deputy Chief Financial Officer 10000] and Mike Ebben [10600] in Paul Stanford's office [Chief Financial Officer 10000] to look at this.

There is a perception, which we're looking at very intently right now, that a lot of the goods and services we provide are more expensive than can be done with the industrial base. We've got to get our arms around that, and we've got to make sure that our costs are reasonable when measured against other industrial standards. If our costs are high, we've got to understand why they are and what we can do to get those costs under control.

LN: Any specifics you'd like to mention?

Jim: I don't want to be too specific, and there are a number of possible examples. But for instance, we've found that it's more expensive to do explosive testing on our site, in our "back yard," than elsewhere. And in the area of facilities, we know that square footage in the Albuquerque commercial

(Continued on Page Eight)

What Do You Think?**Sandians Tell Where They See Teamwork Being Practiced**

"What Do You Think?" features employee responses to questions posed by the LAB NEWS. The idea is to give Sandians an opportunity to voice their opinions and thoughts about various issues — some serious and some not so serious. Some responses have been lightly edited and condensed to meet our maximum word limit.

The current question: "Where and how do you see the Labs' value of teamwork being practiced (in your organization or elsewhere)?"

A team composed of Sandians from Albuquerque, Livermore, WIPP, Kauai, Pantex, Nevada Test Site, and Tonopah has been working together for more than two years to conduct internal appraisals of hazardous material transportation. The group calls itself the Compliance Appraisal Team for packaging and transportation. As a result of this team's efforts, Sandia now finds itself in compliance with regard to mandated internal appraisals in packaging and transportation. There are currently 14 active members.

Herb Meyers (7601)

Motor Pool Services Dept. 7614 practices teamwork every week. Each week, two members of our organization are selected to participate in the Motor Pool's walkthrough process. Their willingness to complete the walkthrough and write up their ES&H findings, through a new set of eyes, creates a safer, cleaner workplace for all of our employees. Their efforts are followed up by the ES&H coordinator to ensure that the findings are taken care of.

Shawkeet Hindi (7614)

The Property and Material Management departments work closely together and have continued their "leadership is everybody's business" experience with quarterly teaming activities that encourage challenging processes, enabling others

The Next Question**What Do You Think?**

Here's the next question:

What is your favorite quotation or saying that influences the way you do your job? How does it influence your work?

We'll be calling some Sandians and asking you personally to respond to the question. If you agree, we'll fax you a one-page answer sheet (with guidelines) that you can complete and fax back to us. Other employees are also welcome to respond — not just the folks we call. If you'd like to respond, please call us for a form on 844-7841 or 844-7522.

to act, etc. Center 8500 has modeled the way by innovative quarterly center meetings (no viewgraphs; fun, informative themes; and folklore). One indication of teaming is that several departments are sharing employees in order to get the job done. Teamwork is alive and cross-functional in California.

Sharron Norris (8533)

Human Resources Center 3500's Communications in Action Team is a cross-functional team whose charter is to enhance internal communication and foster an environment of teamwork. Recent projects include development of a center reward and recognition process, planning center-wide team celebrations, and establishing cross-departmental network groups. Efforts have led to improved morale, a willingness to participate in voluntary teams, a feeling that each individual's input is valued, and an overall increase in center-wide communication. This team is an example of

the synergy that can result when each team member contributes his or her unique ideas and best efforts toward a common goal.

Ralph Bonner (3500)

The Robotics Manufacturing Science and Engineering Laboratory (RMSEL) design team is a high-performance group with a mission to design the RMSEL building in less than one-third of the normal time, while meeting all DOE orders and customer (Org. 2100) needs. Team members set up roles and responsibilities and are committed to helping each other. They demonstrate mutual respect, continually communicate with each other, follow through with their commitments, and produce quality results. The most noticeable result has been the creativity demonstrated in solving old problems with new methods. Team members include Howard Walther, Nenita Estes, Nash Chavez, and Tim Peterson (all 7905); Joe Jones and Lucille Roybal (both 7909); Rico Ortiz (7915); and Richard Goodson (contractor).

Florian Lucero, Jr. (7905)

Teamwork is practiced in Equal Employment Opportunity/Affirmative Action Dept. 3611 on a daily basis by a staff of highly motivated individuals. The most recent example of successful teamwork was the completion of Sandia's Affirmative Action Plan (AAP). This is the first time in memory that the AAP was completed this early in the fiscal year. The early completion has allowed Sandia management the ability to coordinate AAP goals with recruiting actions and hiring allocations. The AAP was the responsibility of two Dept. 3611 staff members, but others in the group contributed to the plan in a significant and timely manner. Additionally, the deadlines were met with excellent teamwork from Information and Communication Services Center 7100.

Linda Vigil-Lopez (3611)

●JC

(Continued from Page Seven)

State of the Labs

sector costs less than what we provide internally. I'm not pointing a finger at any people or group here. It's just that we need to find out, in these areas and others, why we have these costs. And then we need to see what we can do about them.

LN: *Is there anything in our relationship with DOE, the orders we're subject to and so forth, that increases our costs?*

Jim: Maybe we have ES&H responsibilities, for example, that commercial facilities don't have. I think that when we've examined the matter more completely, a lot of our costs are actually going to turn out to be reasonable. As long as we have a good explanation for our costs, that's acceptable.

AI: On the other hand, we don't want to use the DOE directive system as an excuse. There is, in

"Sandians are gradually understanding that quality principles apply usefully to everything we do."

fact, another side to this. I was talking to a construction contractor earlier today who pointed out that before we started emphasizing ES&H at Sandia, the ES&H pressure on him doing jobs for Sandia was less than anywhere else in the community. I thought that was kind of telling. A little embarrassing, too.

I still believe that if we continue to pursue our quality commitment, and apply it properly, we can evolve our management processes in a direction

that will bring our costs down. Ultimately, the objective has to be not simply to comply with detailed orders, but to seek improvements where it really matters, and that's in cost and performance. And I think we can do that.

As an example, what I saw being submitted among the applications for the Sandia President's Quality Award cheered me. There were more than 80 applications, and 1,200 Sandians were involved in the teams that applied. I think that's a start. We can make a lot of progress, as long as people focus on what's really important — the customer, and continuous improvement. I think we're going to get there.

Sandians are gradually understanding that quality principles apply usefully to everything we do, including the technical work, and that there are opportunities for improvement everywhere. And I got a lot of support in that belief, looking at what came in among the applications for the quality award. We'll do it again this year.

LN: *We've talked about a number of individual topics. Summing up, what is the state of the Labs in 1994?*

Jim: I've been at the Laboratories for a total of three months now, so my perspective is something of an outsider's. But my sense is that in the environment we're in, we've got to look at fundamentals to find out how well we're doing. I think there are two things that are fundamental.

Number one is the quality of the people. Number two is the quality of the facilities and the tools we have to do our job. Those are going to be the resources that get us into the new environment, to be a contributor in the new environment. When you look at the quality of the people and the quality of the facilities, we've got to be pretty proud and pretty optimistic. When we measure how well our

customer thinks we're performing, we do well. We'll be in good shape when reconfiguration and redefinition is completed.

AI: I'm tempted to use words like "outstanding." The problem with that is it doesn't leave any room for improvement, and I don't accept the lack of need to push for improvement. We must never get complacent.

But I've said it often: Today our laboratory is more capable on balance than it's ever been in its history. The future it faces may be challenging, but it also strikes me as more exciting than anything

"Opportunities . . . to do really important work have never been greater."

I've experienced at Sandia during my career. The opportunities we have to do really important work have never been greater. The fact that this is happening during a very turbulent period just adds a little spice to life!

I'm proud of what Sandia has accomplished. Recently I was showing some visitors around, and they expressed amazement at all the new construction. I could see a question in their minds: At a time when the future of the national laboratories is being debated, why is DOE putting up all these new facilities? I explained it as an indication of our evolving missions, but more important, as a vote of confidence on the part of our customers, that we are doing good and important work, and that we will continue to do so.

We may encounter some rough times ahead, but Jim and I agree that we're as well positioned as we possibly could be. Whatever storm may be heading our way, I am confident we're going to survive it in good shape. ●CS

Over Two Million Served . . . Per Day**Labs Gets Down to the 'Seamy' Details with Local Bag Maker**

Imagine yourself exiting McDonald's one day, when suddenly the brown paper carryout bag you're holding peels apart at the seams, spilling two cheeseburgers and a large order of fries on the ground.

In late 1992, an Albuquerque company that manufactures carryout bags for McDonald's restaurants was having difficulty with its bag forming and gluing operations. The manufacturer's big bag machines, it seemed, couldn't get some of the recycled brown bags to hold together at the seams.

The glue glitch was drawing an unusual number of complaints from McDonald's purchasing arm, Perseco, which analyzes the quality of

"At 550 bags per minute, it doesn't take long to turn out a lot of defective bags."

millions of bags from several suppliers. The perplexed business owner wasn't quite sure how to fix the problem.

Sandia got word of the dilemma in November 1992 and was able to provide some short-term technical assistance through its Small-business Technology Transfer Program. Thanks to a few simple fixes recommended by Sandia, the big bag machines now turn out sturdy bags more reliably, and a local small-business owner is pleased.

A 'Sticky' Dilemma

The project was launched more than a year ago when Small-business Technology Transfer Program Manager Kevin Murphy (4212) met Roses Southwest Papers owner Roberto Espot at a Greater Albuquerque Chamber of Commerce meeting. (Kevin was temporarily assigned to the Albuquerque mayor's office at the time.)

Espot mentioned that his company — which makes toilet paper, paper towels, wipes, and other recycled paper products — was having difficulty with its bag manufacturing operations for two different-sized paper bags it was supplying to McDonald's. The company manufactures more than two million bags a day for McDonald's locations in 13 Western states.

Kevin thought the Labs could help. He put Espot in contact with Pete Stromberg of Mechanical Process Engineering Dept. 2484, who visited Espot's plant in Albuquerque. The work, about 40 hours of Pete's time, was funded through the Small-business Program.

To study the problem, Pete found some commercially available devices that could measure selected parameters in the glue application process, including a capacitive proximity detector that senses the presence of glue as it is applied to the bags' seams. Installed along the production line, these instruments could measure real-time flow rates and pressure drops while the machines ran. (Plant Manager Amin Espot and Carl Leishman of Electronic Fabrication Dept. 2412 helped install the instruments.)

Several conclusions were drawn. One, recycled paper is more porous than virgin paper and thus provides less surface area for glue to stick to the bags' seams. (Roses had switched to recycled paper the previous year.) Two, the amount of glue being applied to each bag varied considerably — some bags didn't receive enough glue to bond the seams, and other bags received globs of glue, which caused bundles of bags to stick together.

One reason for this glitch was large variations in glue consistency, says Pete. When the glue was less viscous (like water), it flowed easily onto the bags. When the glue was more viscous (like paste), less glue arrived at the seams. Pete found that batches of the glue were mixed at the plant,



HOT OFF THE ROLLERS — Thanks in part to Sandia's help in solving a "sticky" problem, Roses Southwest Papers, an Albuquerque paper product manufacturer, turns out two million sturdy carryout bags a day for McDonald's restaurants in 13 Western states. Here, Roses Quality Assurance Manager Roberto Espot, Jr., inspects a stack of freshly glued bags. (Photo by Mark Poulsen)

accounting for much of the variation in viscosity.

Moreover, the machine's operator had no method of determining how much, if any, glue was being applied to the bags in the machine. That made it difficult to know when to shut down the machine and correct the problem.

"At 550 bags per minute, it doesn't take long to turn out a lot of defective bags," says Pete.

Simple Fixes to a Big Problem

As a result, Roses adopted the glue sensor (capacitive proximity detector) into its operations and is using it to provide feedback to the operator, alerting him or her when "no glue" is sensed and shutting down when a series of bags receives no glue. In addition, the company is considering changing glues and installing flow meters and other sensors recommended by Pete to achieve better glue uniformity, says Amin.

The project also represents a new beginning of sorts for Roses. Based on Pete's recommendations,

"The project is a good example of what Sandia can do to help small businesses."

the company installed a programmable logic controller (a relatively inexpensive, multipurpose microcontroller) to keep track of mechanical processes at certain process control points during manufacture.

Because the controller allows Roses to gather quality control data about its manufacturing operations, the company will be able to establish a Statistical Process Control (SPC) program. That may allow the company to compete for higher-volume contracts with McDonald's and other customers in the future. It also will allow Roses to monitor the quality of goods, such as paper and glue, from its own suppliers.

"We weren't able to accomplish everything we set out to do right away," says Amin Espot. "But we look at implementing SPC as a long-term project, and this is a first step."

Quality Assurance Manager Roberto Espot, Jr. says the total cost of implementing the changes was about \$10,000. Although the company hasn't

yet seen a return on investment, "down the road it all pays off," he says. "We've seen a reduction in complaints from Perseco, and because of our reputation for quality products, we might win bigger contracts in the future."

He says the company hopes to tap into Sandia's technical expertise again as it begins to monitor more of its manufacturing processes.

The Labs also has something to gain from providing short-term technical assistance to small businesses such as Roses, says Kevin. "We gain a better understanding of the needs of small businesses, and those relationships sometimes evolve into full-blown cooperative research and development agreements," he says. "We put such projects in the category of business development that also helps the community."

"When we walked in, the glue application process was definitely not high-tech," says Pete. "Although my contribution was a small part of the work that was done, I think the project is a good example of what Sandia can do to help small businesses." ●JG

Take Note

Sandia Singles Club would like to include all single Sandians in its activities. If you are single, work for Sandia or DOE, and want to get out and enjoy dancing, dining, movies, birthday parties, etc. with other people, call Sandy Culler (1323) on 821-4143 or Rex LeGalley (9615) on 822-0676.

Retiree Deaths

Loyd Kelley (82)	.....3254	.....Dec. 3
Robert Officer (83)	.....9752	.....Dec. 9
Ellen Wood (75)	.....9753	.....Dec. 9
Charles Appel (76)	.....4000	.....Dec. 17
Cecil Lang (64)	.....7513	.....Dec. 25
Benjamin Bookwalter (68)	...1546	.....Dec. 26
Harold Howard (84)	.....1313	.....Dec. 27
Phillip Beasley (79)	.....3727	.....Dec. 28
Raymond Poetzl (86)	.....7411	.....Dec. 30
Marian Ewald (79)	.....3431	.....Dec. 30

Organization numbers indicate retirees' positions at the time of retirement and may not correspond to present-day organizations.

Responses from All Corners of the State**New Mexicans Tell Views of Sandia's Strengths, Weaknesses**

Some people offered compliments, some were critical, and some simply didn't know what to say during the first comprehensive statewide survey ever done about Sandia.

Conducted by the University of New Mexico's Institute of Public Policy, the survey resulted in a final report that documents responses by 1,234 randomly selected citizens.

Some of the survey's good news:

- An overwhelming majority of those responding (80 percent) have either very favorable or somewhat favorable views of the Labs, and a majority of residents from Sandia's neighboring communities label the Labs' overall effect on their communities as positive.

- About half of those surveyed want the Labs to expand, and most of the remainder believe the current level is OK. They also want Sandia to focus more of its efforts on medical/health and environmental research.

- More than 77 percent of the Bernalillo County respondents believe most news coverage about the Labs ranges from neutral to very positive.

- Almost 60 percent of those responding feel Sandia has a positive effect on schooling and education in their communities. But most people, particularly those living outside the Albuquerque metropolitan area, don't have a clear idea of what Sandia does, the survey showed. In fact, when asked what areas of research Sandia is engaged in, more than 31 percent responded with a "don't know."

Achilles Heel Revealed

The survey also clearly reveals Sandia's "Achilles heel," says Hank Jenkins-Smith, an associate professor of political science and associate director of research for the Institute. For example:

- Almost 60 percent do not believe that Sandia is completely open and honest regarding the environmental effects that Labs operations might have on their communities.

- About one-third of the respondents from Bernalillo County believe that Sandia operations may have contaminated their local drinking-water supplies.

He stresses, however, that "Sandia performs quite well overall when compared to other organizations of comparable size, particularly when we look at how citizens feel large organizations contribute or fail to contribute to the community."

Ingredients in forming that positive impression include the Labs' economic importance, a sense of pride and prestige associated with the Labs, and its accomplishments, explains Jenkins-Smith, who also has headed similar research for other government installations and private institutions.

"However, there are other important issues raised, ones of secrecy, environmental concern, and lack of responsiveness to the community that diminish a sense of trust and comfort with the Labs as a neighbor," he adds.

UNM did the survey, "Public Images & Perceptions of Sandia National Laboratories," for Mike DeWitte's External Interface Office (12650). One major section details mental images that New Mexicans associate with the Labs and whether they consider those images to be negative or positive.

The most-often cited positive images and the percent of mentions: research/development (35.3), jobs/work/economic effects (35), energy/other technologies (14.5), science (11.9). The most-often cited negative images: environmental effects (2.7), waste/fraud/abuse (2.6), danger/destruction (1.8).

Is Sandia Trustworthy?

Another part of the survey provides data on the Labs' degree of trustworthiness. Respondents say Sandia is more trustworthy than the news media,

local governmental agencies, and elected state officials. They feel the Labs is less trustworthy than environmental groups and the US Environmental Protection Agency. The New Mexico Environment Department and Sandia get essentially equal trustworthiness ratings.

"This was our first comprehensive look at how our community views us," says Mike. "Usually, we've paid attention just to how well we accomplish our technical goals and missions.

"We're real pleased," he adds, "with the overall favorability ratings, and the fact that almost 43 percent feel we're more open and honest now about environmental matters than two years ago.

"But we must continue to listen and respond. Our quality initiative has always addressed product and process, but we must also remember that

relationships are an important aspect of quality."

Some survey results surprised both Mike and Jenkins-Smith.

"An interesting outcome is the relative lack of dread expressed about Sandia's nuclear-weapon history and responsibilities," Jenkins-Smith says. "It's as if people understand that Sandia has a role in this arena and they don't take a particularly dim view of it."

Mike points out responses concerning violation of environmental laws. Forty-five percent believe the Labs has violated such laws at some time or another; however, most do not believe operations have resulted in environmental damage. "There seems to be a distinct difference in peoples' minds between regulatory compliance and causing real damage," he says. ●RGeer(12630)

Households with Phones Eligible**Questionnaire Included 83 Items**

"Public Images & Perceptions of Sandia National Laboratories" was a random-digit-dialing phone survey that used sampling techniques designed to ensure that every state household with a working phone stood an equal chance of being included, whether listed or not in a directory. The survey was conducted during April and May, 1993. Other facts:

- The 83-item questionnaire was developed after detailed interviews with several focus groups.

- According to UNM, the survey has an overall sample margin of error of plus-or-minus 3 percent and a 95-percent confidence level.

- Respondents had lived in New Mexico an average of 25 years.

- Fifty-four percent of the respondents were women.

- One percent of those surveyed worked at Sandia, and 36 percent said they knew someone who works at the labs.

- The survey was broken down geographically into Bernalillo County, the Four-County Area (Valencia, Socorro, Sierra, and Dona Ana counties), and the state as a whole. Thirty-eight percent were from Bernalillo County, and 14 percent from the Four-County Area.

- The final report, with detailed demographic results and analyses, was issued late last year. Copies are available from Media Relations Dept. 12630 (call 844-6909). A poster exhibit detailing highlights is on display in the lobby of Bldg. 802.

ECP Wrap-Up**Preliminary '93 Campaign Results Show Sandia Raises Almost \$1.52 Million**

At last tally, Employee Contribution Plan (ECP) campaign pledges total \$1,476,010. That's short of the goal of \$1.55 million. However, with Martin Marietta's corporate contribution of \$40,000 to the United Way of Central New Mexico campaign, the total amount of Sandia pledges this year is more than \$1,516,000.

The percentage of employees participating is 84.9. Of that number, 40.2 percent are Fair Share participants (0.6 percent of salary or more), and 7.1 percent are Gold Share participants (1 percent of salary and above).

Fair Share and Gold Share pledges total more than \$1.18 million, with Gold Share pledges at more than \$300,000.

Although United Way of Central New Mexico distributes the contributions raised at Sandia, Sandians run their own campaign. Volunteer members of the 1993 ECP Committee include Richard Prairie (12908), general program chair; Jerry Esch (7101), solicitations chair; Dorothy Rarick (10325), publicity chair; Juanita Sanchez (12630), executive secretary; Ernest Aguilar (7424), Metal Trades Council representative; Maureen Locher (7909), Office and Professional Employees International Union representative; Sharon Ortiz (3533), new hire coordinator; Kay Lang (7155), Tech Art coordinator; and Janet Carpenter (12660), LAB NEWS coordinator. Payroll clerk Mary Helen Lockwood (10502) processed pledge cards and entered information

into Sandia's Payroll system.

Members of the process management team that put together this year's meeting schedule and events include team leader Denny Gallegos (7612), Becky Rosten (10214), Shirley Lopez (2274), Michael Gonzales (6212), and Juanita Sanchez (12640). ●JC

Take Note

The Rocky Mountain Adoption Exchange, in partnership with the New Mexico Department of Children, Youth, and Families, works year-round trying to find families to adopt children who don't have anyone to care for them — older kids, kids with brothers and sisters, kids of minority heritage, kids with emotional or physical disabilities, kids in state custody, all kinds of kids. More than 500 kids in New Mexico are waiting for a family to call their own. If you would like to know more about adoption, about being a parent, and about waiting kids, contact Rocky Mountain Adoption Exchange on 1-800-888-6966.

Retirement Open House

The Labs is holding an open house in honor of retiree Lee Pierce (5102) at the Coronado Club Conquistador Room, Wednesday, Jan. 26, 5-7 p.m. Refreshments will be served. Friends and acquaintances are invited.

Think About What You're Throwing Away**'Invisible' Trash Injures Unsuspecting Custodians**

Sure, you have to throw away that broken bottle, but doing so carelessly could result in a Sandia custodian paying an unscheduled visit to Medical.

Broken glass, empty glass containers, pieces of coat hangers, and the like are hazardous materials. They don't require a hazardous waste team for disposal, but they do require some special handling.

Often, these hazards are all but invisible. Custodian Debra King (7615) leaned over a trash barrel in a copier room and was cut in the abdomen by a two-foot piece of clear broken glass. It tore her sweater and cut her skin. "There was another custodian with me, and neither of us could see it because the glass was so clear," says Debra. She found it the hard way.

Monalisa Davenport (7615) didn't know someone had tossed a twisted wire hanger in the trash. As Mona swung the bag to throw it into a dumpster, the wire inside the trash bag pierced the plastic and gouged her leg. The injury required four stitches.

Ed Archibeque (7615) had to hoist a heavy trash bag over the top of a dumpster. As he did so, he used his leg to boost it, and a broken glass coffee pot at the bottom of the bag cut into his leg. He also ended up needing four stitches to close the wound.



OBJECTS LIKE THESE, when buried in trash, pose potential hazards for custodians like Roberto Gutierrez of Custodial Services Dept. 7615. Sandia custodians have been injured in recent months when broken glass and sharp wire poked out of trash bags and cut them. Custodial Services asks Sandians to prepare broken and sharp objects for disposal by placing them in cardboard boxes or by bundling them together and labeling them before setting the box or bundle next to the trash.

"You wouldn't believe the stuff we find in the garbage," says Debra. "This stuff is garbage and should be thrown away, but if we don't know it's in the trash bag, we can't protect ourselves from it." She says Sandia custodians have found things like syringes, knife blades, and other sharp objects in regular office wastebaskets, usually after someone is hurt by it when it pierces the plastic trash bags. If other trash is put in the wastebasket after a sharp object is already there, the hazardous objects become invisible.

"I'd like people to take the time to think about what they're throwing away," says Ed. "It would be a great help to us if sharp and broken objects are

"Mostly, the things that injure us are things that people don't think are dangerous."

disposed of properly." Ed asks his customers to consult him when they have a question about what's safe to throw in the trash or how to make it safe to throw away.

"Mostly, the things that injure us are things that people don't think are dangerous, such as coffee can lids," says Mona. "If you have a lid like that, please take the time to make it safe. Perhaps put it in a manila envelope or tape the sharp edges." She says properly wrapping and packaging sharp objects safely before you put them in the trash or leave them next to the trash will help greatly.

Helping Custodians Remain Safe

"Help us keep our custodians safe," urges Dody Hoffman, Director of Logistics Management Center 7600. "It also helps custodians if our

offices remain neat and orderly. It's hard for custodians to get around offices that are cluttered and messy."

"Our center has the highest number of injuries at Sandia," says Phil Rivera, order specialist in Custodial Services Dept. 7615. "These injuries can be reduced significantly with our customers' help."

Phil says a new phone hot line will be available in about six weeks on the Sandia voicemail system. When that line is working, you can call 845-CLEN for information about what you can and cannot throw in the trash, and how to do it safely. The line will also include other information about custodial services. In the meantime, if you have questions, ask your area custodian or call Phil on 844-8762. ●JC

How to Dispose of Sharp Objects

Phil Rivera of Custodial Services Dept. 7615 offers the following advice about how to dispose of sharp objects and other hazardous trash:

- Broken glass, coffee can lids, or sharp objects — wrap the object in cardboard or put it in an empty box. Tape it shut and add a label that lists what the box contains. Set it next to the trash.

- Wire, pipe, wood, plastic, or fiberglass — make a bundle and tape the objects together. Put tape over sharp ends. Ask the responsible contractor to dispose of it or leave it by a dumpster if you don't know who is responsible for it.

- Don't overload trash receptacles. If you empty a file cabinet or dispose of large quantities of reports and other paper, tie it up in bundles weighing not more than 10 to 15 pounds each and stack them next to your trash receptacle.

- Call Phil on 844-8762 if you have questions about hazardous trash, or talk to your area custodian.

Take Note

DOE, Sandia, and the Electric Power Research Institute (EPRI) are sponsoring a workshop for US nuclear utilities and interested parties on reactor pressure vessel thermal annealing. The workshop is intended to be a forum to discuss relevant experience and issues and identify potential solutions and approaches related to understanding the potential benefits of thermal annealing for US commercial reactors; ongoing technical research activities; technical aspects of a generic, full-scale, in-place vessel annealing demonstration; and the impact of economic, regulatory, and technical issues on the application of thermal annealing technology to US commercial nuclear plants. In addition, international experience in reactor pressure vessel thermal annealing will be presented. The workshop will be held Feb. 17-18 at the Holiday Inn Pyramid.

Participants include representatives of various nuclear utilities and the nuclear industry, DOE Headquarters, the Nuclear Regulatory Commission, EPRI, and Sandia. For information, contact Stan Rosinski (6471) on 844-4018.

University of New Mexico Women's Career Development Program is looking for female scientists and engineers in the Albuquerque community to become mentors to female college students. The program seeks to increase the retention rate of female students in science and engineering by providing them with a relationship with an experienced professional in the Albuquerque community. A workshop will be provided for mentors. For more information, call Carol Fleming on 277-2774 or 277-2605.

this month in the past...**Sandia LAB NEWS**

40 years ago...Sandians were reminded that it was time to register their cars and get their 1954 base decals at the Kirtland Provost Marshal's office. In those days, employees had to pay for the decals: 10 cents each.

A model plane launched by Sandian Al Gruer (dec.) and his son went astray, showed up on Kirtland radar, and was destroyed by two jets scrambled to check it out.

30 years ago...Sandia was trying out a telefacsimile system that could whisk an 8½-by-11-inch copy of a document between Albuquerque and Livermore in an astounding six minutes per page. The only catch: Blue lines were invisible to it.

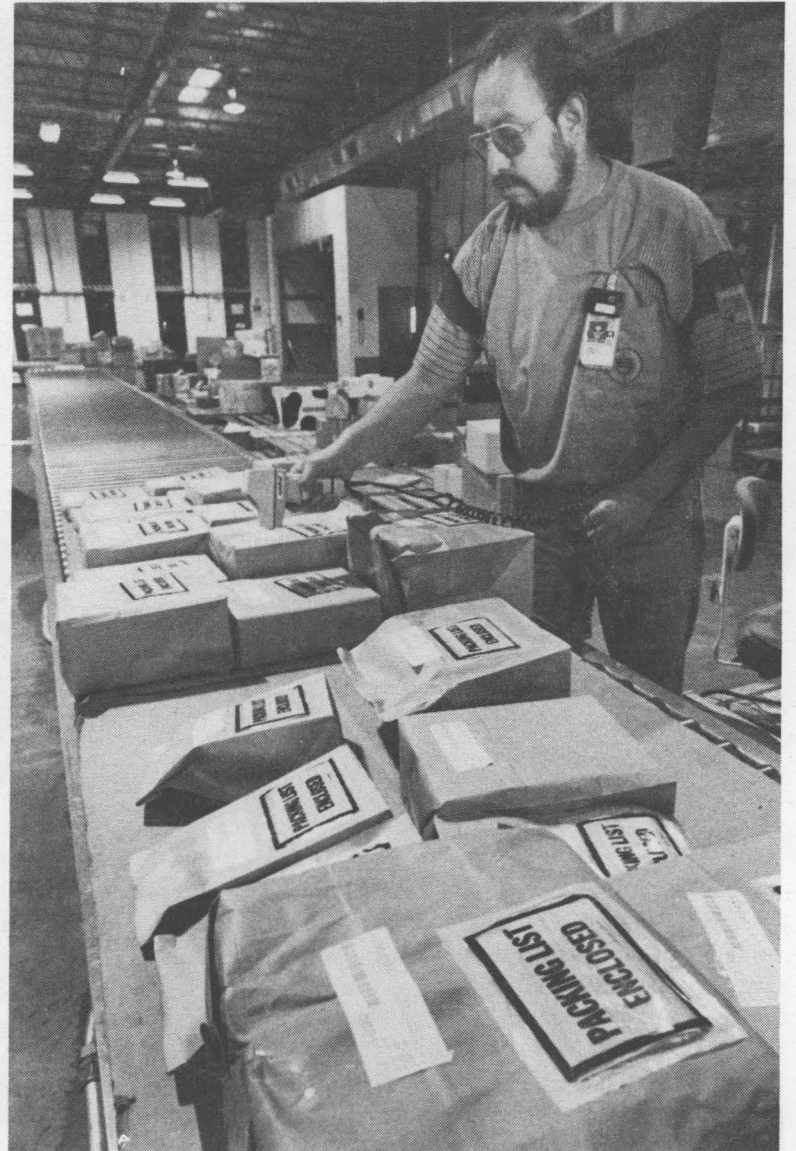
Almost two dozen employees at Livermore were named as being enthusiasts of the transistorized electronic organs that were becoming available.

Satellites designed to detect nuclear explosions, carrying sensors designed by Sandia and Los Alamos, were reported as "functioning flawlessly." Though not named as such in the LAB NEWS, these were apparently the first of the series of Vela satellites, used until 1984.

20 years ago...VP Bob Henderson retired, after service that began at Berkeley in 1942. He headed all Sandia operations in 1947 while it was still a branch of Los Alamos. Before joining the Manhattan Project, Bob won an Academy Award in 1942 for work in process photography and special effects.



A member of Receiving Team 7613-1 wheels an electric cart full of office paper down an aisle in Bldg. 957, where the paper will be prepared for delivery to labs and offices.



Joaquin Cornejo uses a laser barcode reader to scan newly arrived items into Sandia's Just-In-Time (JIT) purchasing system. About two-thirds of all items that go through Receiving are JIT.

Sandia Spotlight

If It's Sent to Sandia, It Comes Here First

(Photography by Mark Poulsen)

Sandia's Receiving Team 7613-1 handles a lot of stuff each day. Big stuff, little stuff, stuff in all shapes, and stuff worth a lot of money. The 40-member team receives, stages, and delivers more than 30,000 pieces of miscellany per month.

"It can be said that if something comes to Sandia/New Mexico, it goes through us first," says Team Supervisor Bruce MacLeod.

Items commonly shipped to Sandia include reams of paper, packages of nuts and bolts, and truckloads of furniture. Some items require special handling, such as classified materials and precious metals. Parcels range in size from something you can hold in one hand to something that must be moved with a forklift.

After packages arrive at the Receiving dock, they are logged into Sandia's purchasing system as "received." Then they are staged (prepared for delivery) and delivered to buildings and mobile offices throughout the Laboratories. Most items are delivered the day after they arrive at Receiving, if not the same day, Bruce says.



Robert Walkney stacks boxes of office materials onto forklift skids in preparation for delivery to Bldgs. 800 and 802. The Receiving Team's distribution section picks up the materials and delivers them throughout the Labs.



Receiving clerks Lillian Pickens (left) and Maria Louissena enter changes into Sandia's computerized Receiving system.

A member of the distribution section unloads a skid from atop a delivery train for delivery to a Labs building. The distribution section includes eight dock people stationed at Sandia's larger buildings, responsible for distributing items to the various labs and offices inside them.



Rural Villages, Utilities Expected to 'Plug In'**Labs to Help Colorado Company Package the Sun's Energy**

A few years from now, power companies may be able to meet peak power demands during hot summer days without burning additional fossil fuels. Villages in rural Mexico may be able to power homes and run water pumps with clean electricity produced from the sun.

As part of a five-year, \$35 million joint research agreement, Sandia is helping a Colorado-based company package the sun's energy in relatively small, self-contained solar power devices based on dish-Stirling solar technology developed in part by Sandia.

Each solar unit will produce enough electricity to power about 25 average American homes. The

Each solar unit will produce enough electricity to power about 25 average American homes.

devices will also be able to generate electricity at night and on cloudy days by using relatively clean-burning natural gas, says program manager Tom Mancini of Solar Thermal Technology Dept. 6216.

Science Applications International Corp. (SAIC) of Golden, Colo., will design, test, and manufacture the 25-kilowatt solar units along with its industrial partners — Stirling Thermal Motors of Ann Arbor, Mich., and Detroit Diesel Corp.

Sandia will chip in expertise in dish-Stirling technology resulting from several years of work perfecting components for such systems. (Dish-Stirling technology has been under development by DOE since the early 1970s.)

"This is an industry-led project," says Tom, "meaning industry wanted to commercialize the technology and asked how Sandia could help."

DOE will fund half of the development, with

SAIC and other US companies kicking in the remainder. SAIC will own all technical rights to the solar power devices once the project is complete, he says.

Clean Electricity Day or Night

Dish-Stirling technology is named for its two major components — dish-shaped solar concentrators and a Stirling heat engine. Unlike internal-combustion engines used in cars, Stirling engines are driven by an external heat source — in this case, the sun.

The dish-shaped concentrator, consisting of 12 membrane mirrors, tracks the sun and focuses its rays onto a receiver located at the dish's focal point. The concentrated sunlight heats helium gas inside receiver tubes. The alternating heating and cooling of the helium drives a single power piston and alternator to make electricity.

Tom says a solar-to-electric efficiency rating of 29.4 percent has already been achieved using the technology, and higher ratings are possible. The solar power project is an attempt to harvest a technology that is ripe for commercialization.

"The nice thing about this technology is that it's modular — you can demonstrate one unit and know that they're all going to work in the same way," he says. "That makes them especially attractive for commercialization."

The Labs is involved in another, ongoing project with Cummins Power Generation of Columbus, Ind., in which Sandia is helping Cummins commercialize similar 7.5-kilowatt dish-Stirling devices.

Solar Power Parks Possible

Under the agreement, SAIC will design and begin manufacturing prototype versions of the solar units by 1995. They will be tested at various

sites in the US, and full-scale production is expected to begin in the late 1990s, says Tom.

Initially, the company expects to be able to sell the devices for somewhere between \$200,000 and \$250,000 each. That price is expected to drop dramatically as large-scale production gears up, to as low as \$37,000 for each 25-kilowatt unit.

At high production rates, that means they can provide electricity for as little as 7 to 10 cents per kilowatt hour, comparable to the cost of electricity produced from conventional fossil fuels such as coal or oil, he says.

He believes utility companies in arid regions will benefit most from the modular power plants. "The power companies can supplement electricity production at the end of a service line without installing new lines or redistributing their power networks," he says, "or they can build large 'power parks' comprising hundreds or thousands of the devices."

Already, a consortium of utility companies has expressed an interest in using the relatively inexpensive devices, and has agreed to work closely with SAIC during development to provide a user's perspective.

Other promising applications include stand-alone power for rural areas. "The export markets for these devices look good, especially to rural regions along the Mediterranean and in Mexico," he says. •JG

Sympathy

To Kristin and Edward (2346) Hanson on the death of their infant daughter, Ashley, in Albuquerque, Dec. 15.

To Bruce Walker (2345) on the death of his mother in Albuquerque, Dec. 25.

Sandia News Briefs**Nominations Being Accepted for Employee Recognition Awards**

Martin Marietta Corporation honors technical and administrative excellence in employees through an annual Awards Night. Nominations for the first annual Sandia Employee Recognition Awards Night (to be held June 11) will be accepted now through Feb. 15. The award program is designed to recognize individuals and teams who have made significant contributions in support of Sandia's mission and values.

Categories for which employees or teams may be nominated are Management Achievement, Technical Achievement (R&D Accomplishment, Publication, and Invention), and Operations and Support Achievement. A nomination form and selection criteria are available from vice presidents' administrative assistants, center offices, and personnel representatives. For additional information, please call your vice president's administrative assistant, or Nina Chapman (3000) on 845-3514.

IRT Corp. and Sandia Sign Contraband Detection System CRADA

IRT Corporation and Sandia signed a cooperative research and development agreement (CRADA) in December to develop software systems to further automate contraband detection capabilities. IRT's technology will be integrated with pattern recognition and image analysis software developed by Sandia. The work will focus on IRT's Secure 1000 personnel scanner, which uses a patented X-ray backscatter technology to detect metallic and nonmetallic objects concealed on individuals.

Sandia Accepts Last Satellite Hardware from Eaton

Fabrication Technology Dept. 9213 in November accepted the final piece of satellite flight hardware to be produced for the Labs by Eaton Corporation, Westlake Village, Calif. Eaton (formerly Bunker-Ramo) produced multi-layer printed wiring assemblies used in several satellite programs since 1972. According to David Barnes (9213), the end of production at Eaton resulted from the downturn in the military fabrication market and a sizable reduction in the volume of manufacturing needed for Sandia's satellite program. With the closure at Eaton, General Technology Corporation is now the sole supplier of Sandia multi-layer printed wiring assemblies.

Labs Exhibits at Discoverland, Feb. 11-13

Children of all ages are invited to imagine, explore, and create through a variety of hands-on exhibits, games, and entertainment at KNME-TV's Discoverland Friday, Feb. 11, through Sunday, Feb. 13, at the New Mexico State Fairgrounds. Sandia is among the organizations providing exhibits. Featured are carnival booths with Public Broadcasting System children's programming themes and educationally oriented booths and exhibits from the New Mexico Museum of Natural History and Science, Albuquerque Children's Museum, and Explora Science Center. Admission is \$1 for adults and children. Hours are 9 a.m.-3 p.m. Friday, 10 a.m.-6 p.m. Saturday, and 10 a.m.-5 p.m. Sunday.

Send potential Sandia News Briefs to LAB NEWS, Dept. 12660, MS 0413.

Retirement Plan Changes to Be Announced Soon

Sandians should soon learn about some changes to the Labs' retirement and pension plans, according to an announcement last week by Charlie Emery, VP of Human Resources Div. 3000.

The announcement was made in a Jan. 11 *Management News Brief* that talked about employee concerns that were expressed about the Retirement Income Plan and Pension Security Plan during the management and operating contractor transition meetings in August and September. Charlie said Sandia management has been working to respond to these concerns and to plan adjustments.

His announcement noted that the Pension Security Plan was adjusted during recent contract negotiations with several employee unions. It went on to say that the Retirement Income Plan has also been reviewed by Sandia management and Martin Marietta management for appropriate adjustments and that possible plan adjustments were discussed with the Sandia Board of Directors in December.

"As a result of these discussions, resolutions for some changes are being developed and distributed to Board members for approval," said Charlie. "Following Board approval, recommendations for changes will then be sent to DOE for approval. Although we cannot be more specific now, we believe these changes, when approved, will solve many of the concerns that Sandians expressed during the transition meetings."

The review process should be completed and employees notified by mid to late February. •



MILEPOSTS

LAB NEWS

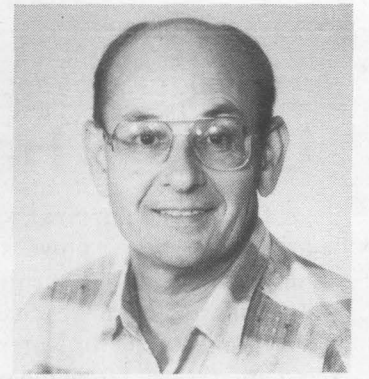
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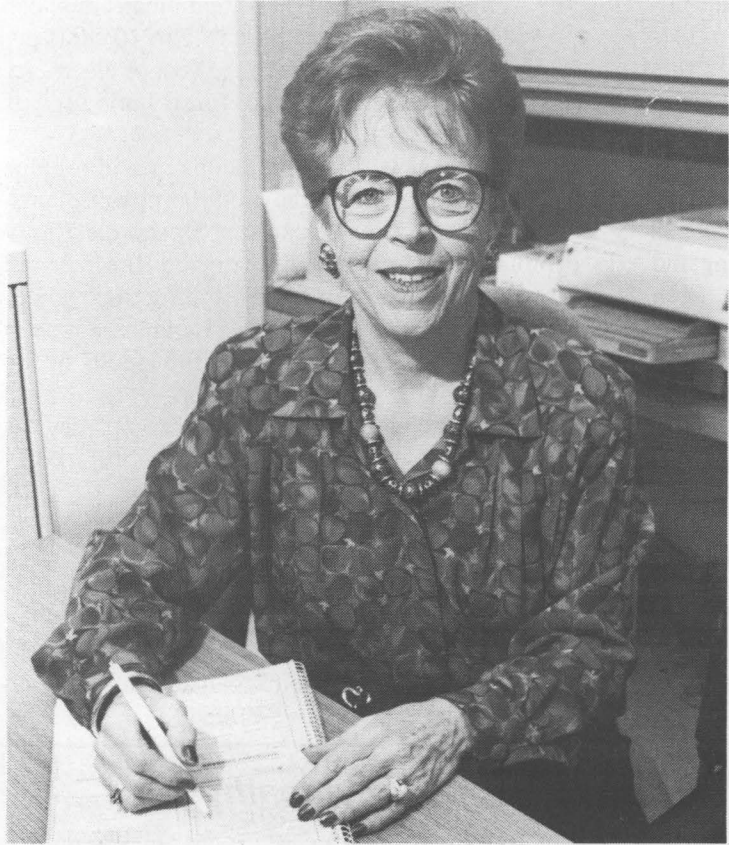
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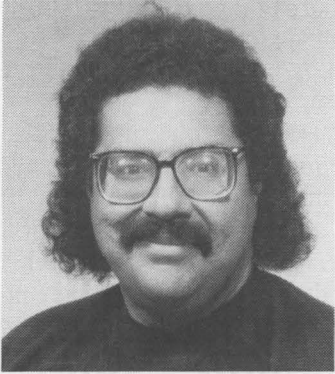
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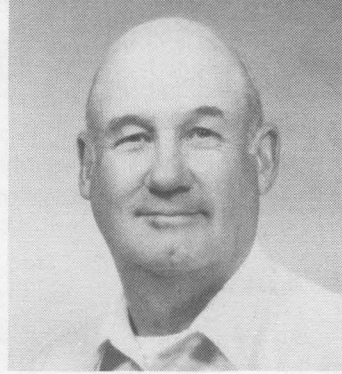
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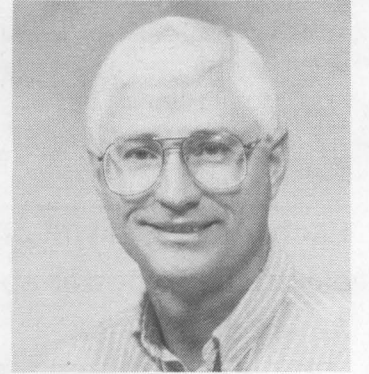
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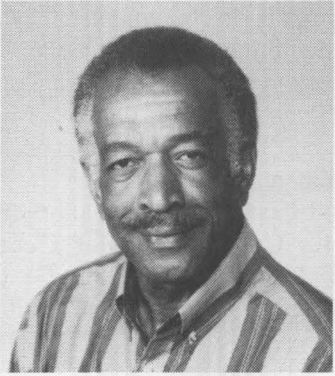
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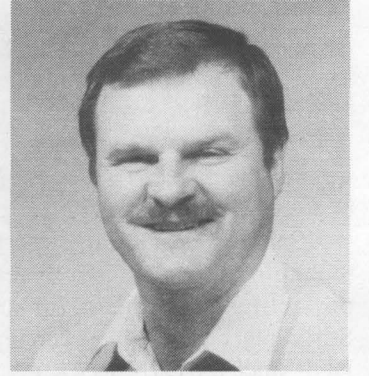
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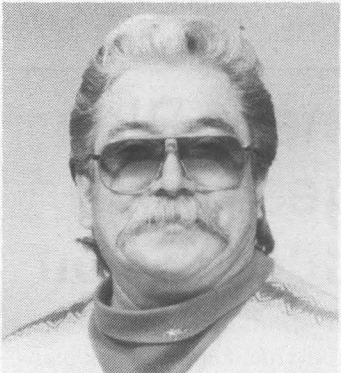
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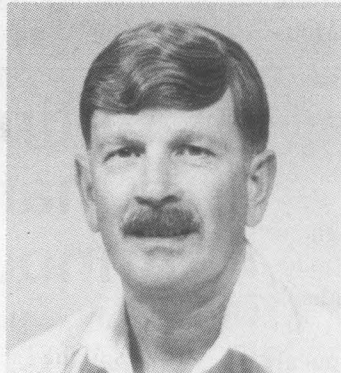
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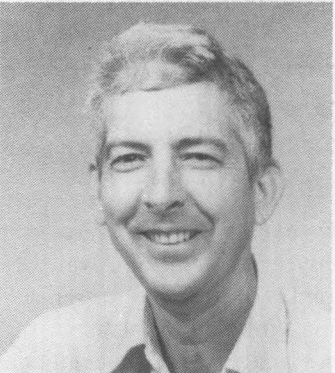
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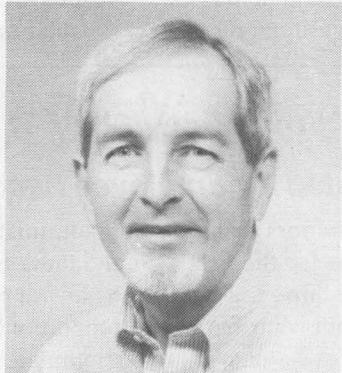
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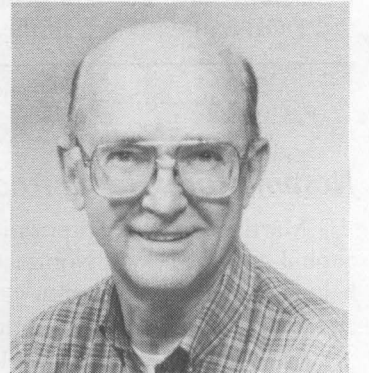
David Norwood
2411 15



Jim Hamilton
7734 25



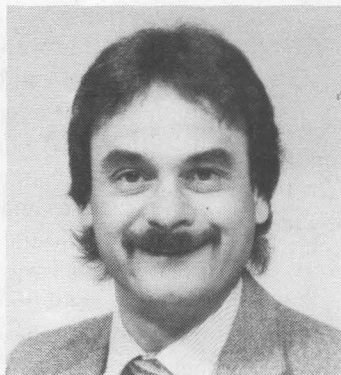
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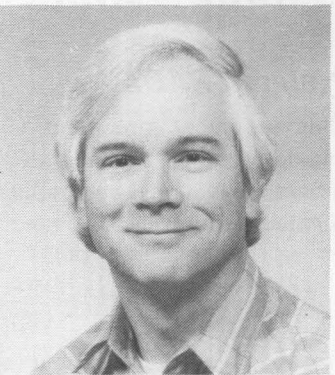
Glen Kepler
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Roger Rizkalla
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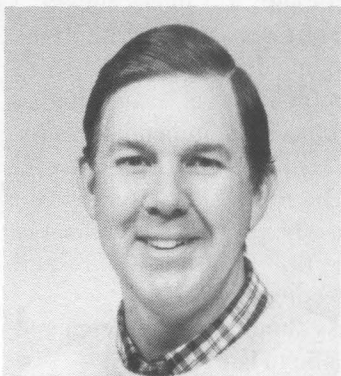
R. C. Chavez
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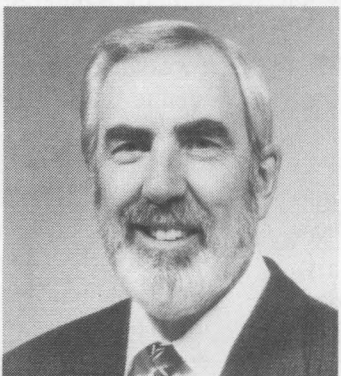
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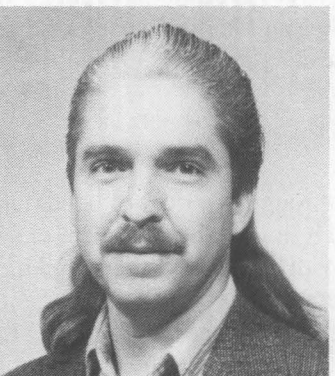
Dave Davidson
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Charles Field
9332 25



Joe Stiegler
7700 35



Robert Sanchez
2251 20

President's Quarterly Dialogue Sessions Begin Tuesday

Sandia President Al Narath's quarterly dialogue sessions featuring the "State of the Labs" begin next week. All employees are encouraged to attend one of the sessions listed.

New Mexico

Sessions will be in the Technology Transfer

Center (Bldg. 825) at 8:30 a.m. and 10 a.m. on Jan. 25, and at the same times on Jan. 28. Employees with last names beginning A-M should attend one of the 8:30 a.m. sessions, and those with last names N-Z should attend one of the 10 a.m. sessions.

California

Sessions will be at 8:30 and 10 a.m. in the Sandia/California auditorium (Bldg. 904) on Feb. 18. Employees with last names beginning A-M should attend the 8:30 a.m. session; N-Z the session at 10.

UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS

Deadline: Friday noon before week of publication unless changed by holiday. Mail to Dept. 12660, MS 0413, or fax to 844-0645.

Ad Rules

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

MISCELLANEOUS

COMPUTER PRINTERS: ACER LP-76 Laser, \$80; Citizen 120D, dot, \$50; Star Gemini 15X, wide carriage, dot, \$40. Green, 281-4533.

BEDROOM SET, girl's 4-piece, French provincial, good condition, \$250. Martin, 822-9940.

OAK ENTERTAINMENT CENTER, 53" x 38", like new, \$150; Noritake dishes, complete set, \$50. Banks, 291-1794.

BABY CRIB, \$40; two tricycles, \$10/ea.; toddler car seat, \$10; printer, Panasonic KX-P1123, dot matrix, 24-pin, \$100. Ruby, 821-0982.

BABY GRAND PIANO, 4'11" Sohmer, walnut, all wood in excellent condition, appraised at \$6,000, asking \$4,900. Hartwigsen, 865-7836.

STEREO POWER AMP, Mosvalve, \$275; two Marshall cabinets, 4 x 12, one angled, one straight, like new, \$750. O'Toole, 866-5327.

SOFA SLEEPER, chocolate brown, queen-size, excellent condition, \$225. Lowrey, 281-9255.

GRAND PIANO, Yamaha Conservatory, 7'4" C7, purchased new, light usage, professionally maintained, excellent sound, action, and investment. Ginn, 883-0004.

HOME GYM, Flex 110, Weider, \$75; couch, 85-in.; loveseat, 60-in.; Both plaid, white, beige, brown, \$200. Benton, 877-2473.

CHILD'S CROSS-COUNTRY SKIS, 170cm, Fischer Crown no-wax, w/Rottefella NNN bindings, Artex high-top boots, used twice, paid \$160, asking \$100 OBO. Rodacy, 293-2668.

AUSTRALIAN SHEPHERD PUPPIES, five blue merle, three black tri-colored, AKC- and ASCA-registered, champion lines, great dogs. Aragon, 292-8883.

PICKUP CAMPER, 10-ft. cab-over, LP/DC/AC refrigerator, pressurized water system, hot water tank, flush toilet, shower, good condition, \$1,100. Street, 294-6217.

BEDROOM SET, girl's, white and gold, canopy double bed, nine-drawer bureau, two nightstands, make-up table, \$450. Kelly, 293-2475.

TIMESHARE, Lake Powell house boat, 55-ft., available middle of May, sleeps 8, \$3,000 plus yearly upkeep fee. Hudson, 821-8988.

SKIS, boots, golf clubs, swing weight balance, golf bags, lawn mower. Meyer, 821-0123.

HOT TUB, five-person, \$2,500 OBO. Hunter, 865-5745.

GOLF CLUBS: Ping 1-2, Black Dot 3-SW, \$375; 1 & LW, \$42/ea; Hogan Apex, 3-PW, \$195; Taylor driver, \$60; hamsters, free to good home. Feng, 275-6639.

EXERCISE BIKE, DP-Airgometer, excellent options, \$100; five-gal. watercooler, \$5; Coleman campstove, three-burner, \$20; track lighting, \$25. Krivitzky, 837-1274 after 6 p.m.

WATERBED, king-size, premium waveless mattress, six-drawer pedestal, large headboard w/storage, \$250. Wilde, 281-4511.

SOLAR COMPONENTS: 16 ea., glass, 28x47, \$100; eight collector plates, 28x96, \$100; Dayton 4C445 blower, \$30. Walkington, 839-9662.

CAMCORDER/PLAYER, JVC GR-65, used one year, 3 lux 8:1 power zoom w/macro, complete w/carrying case, battery charger, operating instructions, \$599. Maes, 298-2294.

ARTIFICIAL CHRISTMAS TREE, 6-1/2', \$25; mirror, \$15; cabinet and light fixture, \$10; '55 Chev. car cover, \$100; '55 Chev. parts; Avon collectibles. Bisbee, 293-0356.

'82 STARCRAFT POP-UP CAMPER, sleeps six, heater, two tanks, awning, converter, \$1,500 OBO; engine, '84 Ford 3.9L, \$275 OBO. Brusseau, 891-2841.

FREEZER, chest, 15 cu. ft., Kenmore, \$75; Apple IIC computer, two disk drives, monitor, Epson printer, manuals, software, \$250. Kinney, 856-1512.

COUCH, loveseat, chair, 3-piece set, \$50; used sliding glass door, 6-ft., \$20. McCrory, 292-7516.

LEATHER JACKET, woman's, Harley Davidson, w/fringe, lined, size 34, \$225. Souther, 254-9361.

REFRIGERATOR, 2.5 cu. ft., \$65; Auto Creeper, \$10. Edmunds, 856-6918.

SOFA, blue, 7-ft., \$70; rocking chair, restored, cane back and bottom, \$90. Herr, 281-0473.

ELECTRIC STOVE, Whirlpool, 3-1/2 yrs. old, almond, excellent condition, works great, \$275 OBO. Schalip, 892-6681.

TRASH COMPACTOR, Sears, four changeable color panels, \$125; shop manuals, for '83 Dodge Aires, \$10. Carr, 281-1632.

SOLID-OAK DESK, top is 34" x 60", \$500. Blackburn, 294-6682.

KENMORE WASHER, \$250; dryer, \$200; or \$400 for the set; baby bed, without mattress, \$30; sofa, loveseat, ottoman, \$400. Case, 291-0586.

ANTIQUK KITCHEN CABINET, \$200; exercise machine, DP GymPac 1500, \$100; entertainment center, \$50. Couch, 823-9755.

SKI MACHINE, Alpine Tracker, \$75; two wood/macramé chairs, \$50/ea.; baby playpen and walker, \$25/ea. Garcia, 344-3406.

TABLE SAW, Sears Craftsman, good condition, \$250. Scranton, 869-6589 after 6 p.m. or weekends.

PISTOL, 380 semi-automatic, 8-shot clip, 100 rounds of ammunition, plus extras, \$150. Bray, 292-2410.

CHILD'S BIKE SEAT, \$15; Gerry child's backpack, \$25. Scott, 294-8627.

OVERSTUFFED EASY CHAIR, 1930's nostalgia, claw feet, light brown w/pattern, excellent condition, \$25. Dybwad, 296-9047.

BOOKCASE HEADBOARD, full-size, \$20; two brass lamps, \$20; console stereo, \$50; doggie door, for sliding glass door, \$20. Langwell, 293-2728.

GREEN BAY PACKERS JACKET, brand new, \$40; two oil-filled heaters, used one season, \$25/ea. Prins, 867-9440.

EXERCISE BIKE, DP Airgometer, new condition, originally \$250, sell for \$125. Lott, 856-5956.

TV, Sony Trinitron, 19-in., w/remote, \$80; bunk beds w/mattresses, \$100; typewriter, IBM Selectric, \$75 OBO; Kirby vacuum, \$75. Lachenmeyer, 268-7818.

MICROSOFT WORD, version 5.0, for IBM, new, unregistered, on 5-1/4" disks, \$50. Benham, 881-2593.

'85 COLEMAN POP-UP CAMPER, furnace, awning, stabilizer jacks, sleeps six, \$1,600. Eilers, 294-8582.

'68 POP-UP TRAILER, w/small range, sink, port-a-potty, sleeps six, needs a little work, \$800. Maldonado, 836-6923.

TRAILER, 22-ft., Kill "Companion," sleeps six, self-contained, bath tub, shower, w/ or without Ford F150-4x, shell, new tires, 66K miles. Stixrud, 298-0478.

OAK TV/VCR STAND, swivel top, storage cabinet and pull-out drawer, 28 x 19 x 37H; stereo cabinet, 4-shelves, drawer, 21 x 18 x 49H. Shrouf, 821-0765.

MATTRESS, full-size, Simmons Ultra-edic, \$120; portable color TV, 19-in., w/remote, \$100. Sutherland, 345-1183.

TRANSPORTATION

'90 PONTIAC 6000 LE, \$6,000. Riley, 869-2119.

'76 FORD GRANADA, only 55K miles, one owner, runs great, \$800 firm. Ask for John. Stuppy, 898-4720 anytime.

'86 CHEV. CELEBRITY STATION-WAGON, one owner, V6, AT, AC, cruise, maintenance records, excellent condition, \$3,200. Walker, 821-4059.

'86 T-BIRD, loaded w/all options, red, 3.8L V6, new OD transmission, 120K miles, runs like new, averages 24 mpg, \$3,700 OBO. Pantuso, 892-3641.

'82 CHEV. CAMARO BERLINETTA, PB, PS, PW, AT, V6, AC, AM/FM cassette, white, sporty but not fast, \$3,000. Drennan, 897-7153.

'87 CHEV. ASTRO VAN, new tires, four captain's chairs, tilt wheel, new brakes, new rotor arms, conversion, \$5,500. Sparks, 884-5644 or 880-0324.

'72 FORD F100 TRUCK, rebuilt engine, new tires, \$1,000 firm. Barnaby, 255-5624.

'91 CHEV. PICKUP, 5-spd., 4-cyl., AM/FM, great condition, \$6,200; '86 Nissan Sentra, 5-spd., 2-dr., 4-cyl., AM/FM, runs great, \$2,500. Hernandez, 345-4808.

'61 WILLYS JEEP, 226, 6-cyl., 3-spd., new carburetor, upgraded suspension, a classic, \$1,400. O'Toole, 866-5327.

'79 FORD VAN ECONOLINE 150, 94K miles, 6-cyl., new tires, icebox, stove, runs well, \$2,300 OBO. Galbaldon, 344-6380.

'87 DODGE CARAVAN LE, AT, AC, power everything, AM/FM cassette, tilt, luggage rack, new tires, good condition, \$4,500. McDowell, 888-9485.

'83 ALFA SPIDER VELOCE, 81K miles, PW, AC, PM, new tires and battery, excellent throughout, \$5,100. Underhill, 294-5774, serious calls only.

'91 FORD EXPLORER XL, 4x4, AT, 4-dr., tilt, cruise, anti-lock brakes, AM/FM cassette, cloth interior, split bench, clean, \$14,000. Sanchez, 873-2058, leave message.

'86 NISSAN MAXIMA, \$6,500. Hunter, 865-5745.

CONVERTIBLES: '74 450 SL, both tops, partial restoration; '89 Chrysler LeBaron premium coupe, all options. One must go. French, 856-6126.

'85 FORD VICTORIA LTD, V8, 351 Windsor engine, good mechanical condition, \$1,900 OBO. Houghton, 299-3386.

MOUNTAIN BIKE, Nishiki "Colorado," 12-spd., low center, less than 100 miles, excellent condition, \$200 OBO. Krivitzky, 837-1274 after 6 p.m.

'85 LINCOLN TOWNCAR, all options, trailering package that was never used, clear-coat platinum paint, always garaged, beautiful condition, \$5,600. Hall, 299-0009.

'93 PLYMOUTH GRAND VOYAGER SE, 3.3 V6, ABS, cruise, PW, PD, AM/FM cassette, dual AC, only 6K miles, \$18,500. Russell, 864-2624.

'70 VW BUG, rebuilt carburetor, new starter, coil, plug wires, seat pads, AM/FM cassette, great shape, \$1,800 OBO. Brusseau, 891-2841.

'84 FORD LTD WAGON, V6, AT, AC, PS, PB, PW, cruise, tilt steering, luggage rack, 89K miles, 18-23 mpg, good tires, \$1,850. Radigan, 821-0723.

'91 FORD PROBE LX, AC, 5-spd., V6, PS, PB, PW, AM/FM cassette, low miles, Yakima rack, \$10,400. Jones, 275-5668.

'92 GMC PICKUP, 3/4-ton, fully-loaded, one owner, 4-spd. w/overdrive, 210 original miles, still under warranty, very nice. Green, 898-3791.

'90 HONDA ACCORD EX, white, 2-dr. coupe, AT, 29K miles, excellent condition, \$10,500. Sobel, 281-8792.

'87 TOYOTA TERCEL, PS, AC, cruise, tint, AM/FM cassette, alarm, Enkei rims, 35 mpg, good condition, \$3,000. Ford, 275-6657.

BIKES, two, need tire and seat, \$25/ea.; two-wheel scooter, needs tire, \$15; bike w/training wheels, \$20. Case, 291-0586.

'84 FORD RANGER PICKUP, parting out, some front-end damage, call for available parts and prices. Miller, 869-6383.

'76 MALIBU CLASSIC, 2-dr., V8, AT, PS, PB, one owner, \$1,000. Couch, 823-9755.

MAN'S BICYCLE, 12-spd., Peugeot, excellent condition, \$150; unicycle, \$25. Garcia, 344-3406.

'72 VW SQUAREBACK WAGON, Type III, rebuilt engine, good condition, \$1,790 OBO. Ross, 299-3023.

BIKE, Lotus 21", mixed frame, 12-spd., \$60. Scott, 294-8627.

'88 HONDA CIVIC CRX, 5-spd., blue, ski rack, great gas mileage, excellent condition, \$4,250. Skogmo, 881-4642.

'88 DODGE CARAVAN, AT, PS, PB, AC, AM/FM stereo cassette, 44K miles on new motor, burgundy exterior/interior, \$5,995 OBO. Harrison, 897-2023.

'86 FORD F150 SUPERCAB XLT, 4x4, 302 V8, AT w/overdrive, towing package, camper shell, excellent, \$7,000. Hochrein, 299-5225.

'86 SHELBY GLHS (OMNI), all original, #200 of 500, excellent condition, \$10,000. Lachenmeyer, 268-7818.

GIRL'S BIKE, 16-in., Schwinn Diamond Back, w/training wheels, excellent condition, \$40. Shrouf, 821-0765.

'84 JEEP GRAND WAGONEER, power everything, towing package, leather upholstery, 103K miles, outstanding condition, \$5,000. Kercheval, 1-864-6549.

REAL ESTATE

3-BDR. HOME, 2 baths, hot-water heat, custom cabinets, backyard access, mountain and city views, \$142,500. Patterson, 299-1062.

3-BDR. HOME, west side, more than 1,800 sq. ft., 1-3/4 baths, den, game room, patio, fishpond, fireplace, security bars, solar, more, \$76,000. Tenorio, 836-4081.

3-BDR. HOME, Westgate area, lots of cabinet and closet space, solar and central heating, on cul-de-sac, \$65,000. Maldonado, 836-6923.

3-BDR. HOME, 2,000 sq. ft., den, country kitchen, Edgewood/Moriarty schools, restrictive covenants, 2.67 fenced acres, 3-car garage, \$149,900. Reich, 281-3521.

WANTED

OLD SLIDE RULES, for SCIAD program, to teach the next generation. Rakoczy, 881-1372.

AKC-REGISTERED SILKY TERRIER, male, for my female Silky Terrier. Valles, 865-5902.

SLR CAMERA BODIES, prefer Minolta, working condition. Dykhuizen, 281-9463.

FORMER SCOUTS & SCOUTERS, from BSA, Sandia District, Troop 395, to attend troop's 25th Anniversary celebration, Feb. 13. Cancilla, 293-1620.

NORDICTRACK, cross-country ski machine, in good condition, model and price open. Zaorski, 281-9194.

DIRTBIKE, Honda CR125, 250, or 500, older model for reasonable price. Lemon, 896-0388.

INDIVIDUAL in Los Alamos who offered to sell and deliver chest freezer to Albuquerque, please call; chest-type freezer, 12-cu. ft. or more. Farmer, 857-0503.

NORDICTRACK SKI MACHINE, prefer Pro model, will consider others. Rodacy, 293-2668.

FRISBEE PLAYERS, all skill levels, to form frisbee or ultimate club, for noon or after work play. Bailey, 281-4383.

"TIMES R CHANGING," out-of-print release, by Freddy Hubbard, LP, CD, or cassette. Eley, 255-4599.

ROOM TO RENT, w/space for art projects, quiet, responsible non-smoker, can pay \$200 per month. Conway, 271-0770.

ROOMMATE, to share NE Heights townhome, master bedroom w/full bath, non-smoker, must like dogs. Haycraft, 821-3816.

ROOMMATES, to share NE house, convenient to KAFB, driveway, W/D hook-up, AC, garage, fenced, backyard, \$250/mo. + utilities. Eldred, 237-2223.

HOUSEMATE, to share 3 bdr., 2 baths, 2-car garage, large fenced yard, fireplace, washer/dryer, \$250/mo. + utilities. Ewen, 836-3563.

LEGO & DUPLO DONATIONS, for hands-on, across-the-curriculum lessons, classroom use. Mrs. Dunn, 293-5170.

MOTORHOME, 25-30-ft., '85 or later, low miles. Stixrud, 298-0478.

LOST & FOUND

LOST: Women's black/gray leather glove, between Bldg. 887 & 800 or between Bldg. 800 & NCO club, on Jan. 4. Sandoval, 844-3704.

LOST: Dalmations, on Jan. 7, Lomas/Wyoming area, one female liver-colored, one black male, "Tulip" and "Duke", reward if found. Schulz, 889-9668.

From 'This Month in the Past'

Two of Five from Fifty-three Found

In our Dec. 3, 1993, "This Month in the Past" column, we mentioned that five former Sandians were featured in a 1953 LAB NEWS article about women with technical degrees and jobs, a relative rarity then. Only one, Elzie Greene, seen at right in the photo below, is listed today on Sandia's retirement roles, so we asked if anyone knew the whereabouts of the other four. Thanks to several readers, we also



located Mary Jo Vaughn (left). Both women still live in Albuquerque, and they were kind enough to visit the Labs recently and have this picture made in front of Bldg. 800.

Mary Jo was single in 1953 when she was featured as Mary Jo Tawzer, a mechanical engineer who was working as a wind tunnel engineer. She married another Sandian, Harold Vaughn, in 1954 and left Sandia the following year to raise a family. Harold retired from Sandia in 1986. Their son, Mark Vaughn (9812), and their son-in-law, Roy Baty (1552), are senior technical staff members at the Labs today. Mary Jo laughs about a call she received soon after her picture was published with the 1953 article. She says a military man called her for a date after seeing the picture, but she turned him down because she was "almost engaged" to Harold at the time. (We hope something similar doesn't happen today, because Harold just might be in a fighting mood if it happens again!)

Elzie, a mathematician who was working in 1953 as a Sandia data analyst, is the only one of the original five featured women to stay at Sandia long enough to formally retire. She was a math teacher in several high schools and at John Brown University before she began her Sandia career in 1952. Elzie says she became one of the first woman computer programmers at the Labs in the late 1950s. She retired in 1970 after 18 years here.

Even though Sandia was much smaller in 1953, Mary Jo and Elzie did not know each other then and met for the first time when this picture was taken this month. So far, no one has called with information about the other three women featured in the 1953 article — Miriam Ayer, Marian Hills, and Dorothy Stimpson, but Sandia's records show that all three left the Labs in 1954 and 1955. ●LP

Coronado Club Activities

Hot Tamales Play Cold Away

TURN UP THE HEAT — Tonight, Jan. 21, brings Pat Burns and the Hot Tamales to the C-Club. They're a fine country-and-western band, and they can play just about anything else, too. They'll be on stage from 7 to 11 p.m. The menu is 8-oz filet mignon or golden fried shrimp, two-for-one priced at \$14.95. Or, naturally, you can choose the all-you-can-eat buffet for \$6.95. Call 265-6791 for reservations now.

SUNDAY BRUNCHES are another way the club helps you get through these chilly January days. This Sunday, Jan. 23, brings the next one your way. Brunch is served from 10 a.m. to 2 p.m., with a tea dance from 1 to 4 p.m. Those swinging cats, Bob Weiler and Los Gatos, will make the music. Reservations required for brunch — call 265-6791.

SUPER PLANS — That's what the club has for Super Bowl Sunday, Jan. 30. There'll be super green chile stew, super-big TVs for the super football action and super halftime show, super-good drink specials, and super bingo. What could be super-er? The doors open at 1 p.m., bingo starts at 2, a low-cost buffet is served 3-6 p.m., and the game starts about 4 p.m.

SINGLES MINGLE NEXT WEEK — That's Friday, Jan. 28, and it'll be a fine time for singles to see familiar friends and meet new ones. There'll be a great buffet of munchies, and Danny Silva & Co. will provide dance music 7-11 p.m. All single Sandians and DOE employees are invited — you don't have to be a C-Club member, and no reservations are needed.

SEEMS EARLY, but it's none too early to get your pool pass for next summer. Between now and May 1, passes are available at a substantial discount. Call 844-8486 for more information.

Division 7000 Is Reorganizing and Getting New Name

Environment, Safety, and Facilities Management Div. 7000 will be slightly restructured and renamed the Laboratories Services Division effective Feb. 1, says 7000 VP Lynn Jones.

Lynn says the new name will better indicate the centers within the division and the division's main purpose of serving the entire Labs to ensure that Sandia overall is operating properly.

The most immediate noticeable effects will be the dissolving of two current centers — Facilities Program Management 7300 and ES&H Program Management 7200 — and establishment of two new ones — Sites Planning and Integration Center 7200 and Sites Operations Center 7300. The new centers are assuming current organization numbers, but their responsibilities will be quite different, notes Lynn.

All of 7000's current center directors will remain, but several are getting new duties. Jim Baremore, who now directs the ES&H Program Management Center, will become Sites Planning and Integration Center Director. Jim Martin, who now directs the Safeguards and Security Center, will become Acting Director of the Sites Operations Center. Frank Gallegos will become Acting Director of Safeguards and Security.

Neil Hartwigsen has been serving as Acting Director of Facilities Program Management Center 7300 since the death of Director James "Jake" Jacobs last month. Neil will now devote full time to his regular job as Director of Facilities Development Center 7900. ●

Favorite Old Photo



THIS IS THE CREW of the "Consolidated Mess," a B-24 Liberator in which they flew 40 credited missions in the European Theater during World War II. In a period of 22 days, they flew six double-credit missions, including two against the highly valued oil refineries at Ploesti, Romania. My father, Bill Lizut (back row, far right), was the top turret gunner and flight engineer. — Roger Lizut (6904)