

Sandia Works on Advanced Air-to-Air Missile Project with Motorola

Hitting the target — that's been an objective of weapon designers ever since the first caveman chucked a spear at an enemy or at an animal that he wanted to eat. But hitting the target was only one of his objectives. More important was the capability of his weapon to kill or sufficiently disable his enemy or planned meal.

The same goes for military weapon designers today. It's not enough just to hit the target — you've got to destroy it or at least disable it to the point that it can't harm you or what you're trying

to protect. And that's the main purpose of work that Sandia, under subcontract to Motorola, is doing for the Air Force on the advanced medium range air-to-air missile (AMRAAM).

The AMRAAM, developed beginning in the late '70s and produced starting in the late '80s by the Hughes and Raytheon companies, is the newest medium range conventional (non-nuclear) missile for modern US and NATO fighter planes, including the F-15, F-16, and others (see "AMRAAM Specifications" on page four.) The AMRAAM is

designed as a follow-on to Sparrow missiles that have been used since the late 1950s. The Sparrow is still widely used by the US and its allies, but the AMRAAM is now the state-of-the-art missile.

Coordinated by Advanced Projects Dept.

Sandia's AMRAAM work, which began early this year, is coordinated by Project Leader Randy King of Advanced Projects Div. IV 9127, with management oversight by Max Newsom, Manager of Advanced Projects Dept. 9120. Max also represents Sandia on the program's five-member Science and Technology Transition Advisory Board, composed of senior-level officials of

The ordnance can "make decisions" after it is launched, including when and how to detonate the explosive for maximum effectiveness.

Motorola and its Programmable Ordnance Technology (PROTEC) subcontractors.

The goal of the 4-year PROTEC program is to develop and test an upgraded ordnance package to improve the missile's capability to destroy and disable post-1995 air targets, according to Randy. "These potential targets include enemy fighter and bomber planes and guided missiles that may not even be in production yet," he says.

Programmable in this case generally means that the ordnance has built-in intelligence that enables it to "make decisions" after it is launched

(Continued on Page Four)



NEW MEXICO AMRAAM TEST — An advanced medium range air-to-air missile is launched from an Air Force F-15 Eagle in an original-development test series at White Sands Missile Range. AMRAAMs are used today on a variety of modern Air Force, Navy, and NATO fighter planes. Sandia is working with Motorola and other Motorola subcontractors to design a new ordnance package for the AMRAAM.

ECP Going and Growing at 35 — Page Nine

LAB NEWS

VOL. 43, NO. 20 SANDIA NATIONAL LABORATORIES OCTOBER 4, 1991

October Is Quality Month

Sandians Achieve Impressive Results Applying Quality to Weapon Programs

Among the people at Sandia, Livermore, a commitment to quality is changing the way they do business.

Employees at the Livermore site can point to some impressive improvements as a result of incorporating and championing new quality processes.

For example, in the development of prototype hardware for trainer units that teach workers how to handle weapon component assemblies safely, it used to take workers at Rocky Flats four to six months to produce the hardware and return the completed trainer units to Sandia. This past summer, that time was reduced to 20 days, says Bill Hobson (Component Development Div. II, 8445).

The reason: new quality techniques devised by Jack O'Connor and Von Madsen (both 8445), who like other Sandians received extensive training on how to apply quality principles in the workplace. This led to a significant reduction in paperwork and the amount of time needed to make design changes, as well as improved and more consistent communication between development

engineers at Sandia and production engineers at Rocky Flats.

In another program, turnaround time to produce prototype hardware at the Allied-Signal plant in Kansas City (KC) was reduced from an average six-to-nine months to two months, and production costs were reduced by monitoring quality earlier in the production process. These changes, too, are directly attributable to quality initiatives at Sandia and Allied-Signal, says Dick Jones (8445), which led to improved teamwork between the two laboratories as well as between management and union employees at Allied-Signal.

"In the past, we would often have to get an outside shop to build the prototype hardware and only get KC involved during full-scale production," says Dick.

"Folks at KC simply realized that they needed to be more competitive if they were going to survive," he adds. "They now see me as their customer, and I see them as a customer, too, as part of my team."

(Continued on Page Five)

DOE Says Retirees Must Be Escorted On Family Day

DOE has announced that retirees and their guests will be required to be escorted by Q-cleared employees to participate in this year's Family Day activities Oct. 19 at Sandia, Albuquerque. The decision is a result of increased security measures throughout DOE.

A *Special Bulletin* has been issued to Sandia, Albuquerque employees soliciting assistance from people who can escort retirees to Family Day.

"Retirees are strongly encouraged to attend," says Family Day Coordinator Joe Laval (3163), "and we expect to have plenty of escorts available."

Special Family Day Planner in This Issue — See Four-Page Insert Inside

FAMILY DAY
N · I · N · E · T · Y O · N · E

This & That

Today's *This & That* is by Assistant Editor Charles Shirley.

Gitchee Maps Here! - This issue has a pull-out center section that'll help guide your Family Day visit at Albuquerque on Oct. 19. We figured it was better to give you two weeks for planning, rather than wait until our next issue the day before Family Day. If your cocker spaniel eats your LAB NEWS maps, or they blow out of a bus window, don't worry - you can pick up pocket-sized guides on the 19th as you come in the gates.

* * *

What's in Store for Weapons? - As shifting political conditions remake the world we've known for decades, many of us wonder what the effects will be on Sandia's traditional role in nuclear weapons. Executive VP Orval Jones and VP for Defense Programs Roger Hagengruber discussed this question in a recent interview with LAB NEWS Editor Larry Perrine. We're presenting their remarks in this issue, beginning on page six. In a related article on page eight, LAB NEWS Writer John German describes a DOE demonstration program called Manufacturing Development Engineering that involves Sandia in the management of weapon component production by commercial manufacturers.

* * *

Don Made a Difference - Many Sandians will remember Don Cotter, a former Labs employee who died in Arlington, Va., on Sept. 10. He joined Sandia in 1948 and, among other contributions, was one of the originators of the "wooden bomb" concept and led work in weapon safeguards, particularly as a key figure in the development and adoption of PAL (permissive action link) devices. During the 1970s, while at the Department of Defense, Don was special assistant for nuclear policy to three Secretaries of Defense. Even after departing DoD for the private sector, Don continued to be influential at high levels in weapon security; several times in recent years, he accompanied groups of official visitors to Sandia. It's a mark of his prominence that his obituary appeared in both the *New York Times* and the *Washington Post*. Retired VP Bob Peurifoy remembers Don this way: "In all his years of public service, Don was devoted to the prevention of war through a strong but secure and controlled nuclear deterrent."

* * *

Citizens' Opportunity - Just a reminder that Tuesday, Oct. 8, is when Albuquerqueans will go to the polls and vote on several bond issues and propositions. The items on the ballot have spurred lots of debate during the last few months. Now comes the chance for each of us to register our own preferences. Polls will be open from 8 a.m. to 7 p.m.

* * *

Perrine's New (Fiscal) Year's Resolution - Though Larry Perrine is on vacation, he left this where I could find it in his computer: "Most people make resolutions at the beginning of the calendar year, but I make work-related resolutions at the beginning of the fiscal year. Here's one that I hope other Sandians will follow, too. I'm gonna call fewer meetings and hold shorter meetings when I do call 'em. Not only that, I may walk out on some meetings if they last more than 10 minutes longer than they were scheduled to last." Remember that, Larry, if I walk out on you someday. ●CS

AT&T Bell Labs President

John Mayo Joins Sandia Board

John Mayo, who became President of AT&T Bell Laboratories July 1, was recently elected to the Sandia Corp. Board of Directors.

As has been the practice in the past, outgoing Bell Labs President Ian Ross will continue to serve concurrently with Mayo.

Mayo has BS, MS, and PhD degrees in electrical engineering from North Carolina State University. Throughout his career at Bell Labs, he has participated in development of digital technologies. In his early research, he was with the team that produced the first transistorized digital computer. Before his



JOHN MAYO

July 1 appointment, he was Senior Vice President, Network Systems and Network Services.

Mayo is an IEEE Fellow, a member of the National Academy of Engineering, a trustee of Rensselaer Polytechnic Institute, a member of the Board of Directors of Johnson & Johnson, and a member of the College of Engineering Advisory Board of the University of California - Berkeley. In 1990 he was awarded the National Medal of Technology for his contributions to the technological foundations for information-age communications. ●

Take Note

The Albuquerque Business and Professional Women's (BPW) organization is conducting its annual Young Careerist Women's competition. The program is BPW's way of recognizing the accomplishments of successful young career women in the Albuquerque community. Candidates must be between the ages of 21 and 35 (by July 31, 1992) and must have been employed in their career areas for at least one year. The competition will be held Nov. 20. Deadline for entries is Nov. 1. Women who are interested in the competition may obtain applications and additional information from Young Careerist Chairperson Deborah Moy on 345-3429 or 271-8718, or Marion McDonald (3442) on 5-3027.

LAB NEWS

Published Fortnightly on Fridays

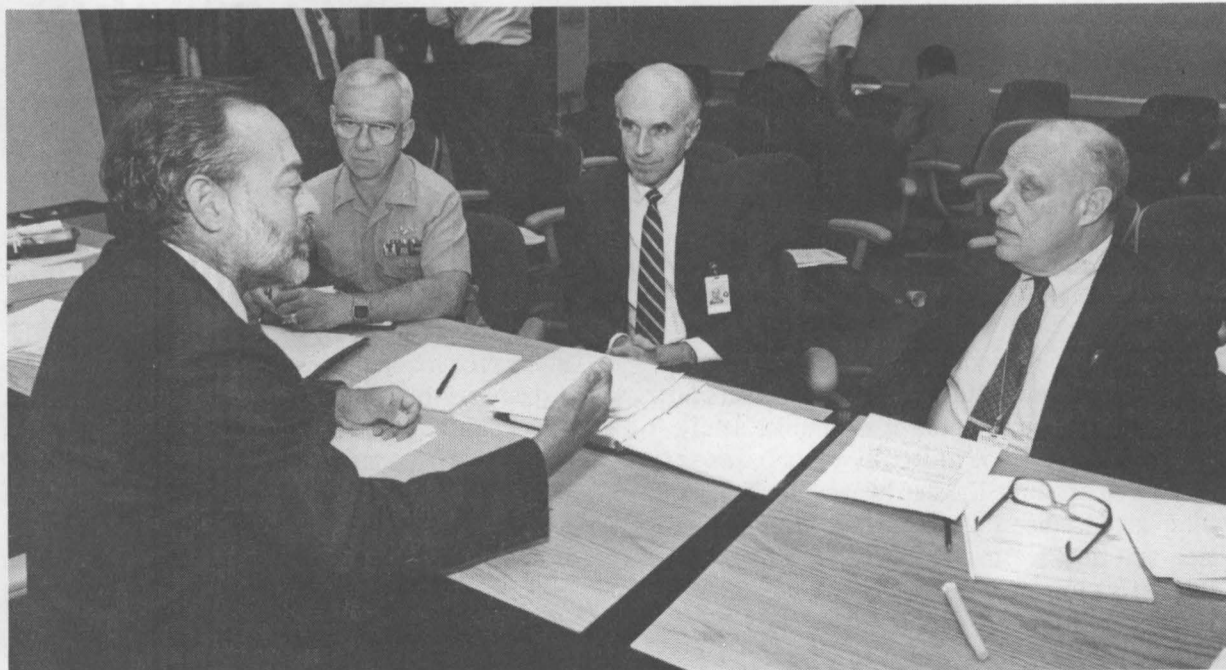
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SANDIANS SPOKE to DOE visitors about a variety of Labs programs during a DOE Institutional Site Visit Sept. 18 and 19. Mike Wartell (foreground, Supervisor of Education and New Initiatives Div. 35) discusses educational outreach activities with (from left) Rear Admiral Gerry Ellis, DOE Deputy Assistant Secretary for Military Application; Richard Claytor, DOE Assistant Secretary for Defense Programs; and Warren Chernock, DOE Deputy Science and Technical Advisor.

Goal: \$163,000

Livermore Assistance Campaign Gets Under Way Oct. 16

Adopting the theme "LEAP for Quality," the 1991 Livermore Employees Assistance Plan (LEAP) Committee is ready to kick off its annual campaign Oct. 16.

Setting an ambitious goal of \$163,000 for the all-employee drive, LEAP chairman Russ Miller (5355) notes, "The need for support from human service agencies is greater than ever this year due to a downturn in the economy, which has resulted in fewer donations by major corporations. As Sandians, we have always come through in each successive year since our annual pledge campaign began in 1969, and I look forward to the continued generosity of the people at the Livermore site."

In addition to the noontime LEAP Faire, individual directorates will hold meetings in the Bldg. 904 auditorium Thursday, Oct. 17.

Four new agencies have been added to the list of local recipients of employees' pledges. They are the Children's Emergency Council in Dublin, the Widows' Network, the East Bay Consortium for Elder Abuse Prevention, and the Canine Companions for Independence.

The 23 other Tri-Valley area agencies scheduled to receive funding are the American Indian Center, Anthropol Foundation, Arbor House, Buenas Vidas Youth Ranch, Emergency Fund Center, Family Crisis Service, HOPE Hospice, Horizons Youth & Family Services, Kaleidoscope Center, Livermore Association for Guiding and Teaching Students (LAGATS), Love Thy Neighbor, LARPD Extended Student Services, Ministry to the Aging Through Community Help (MATCH), Nursery School Scholarship Fund, Nurses' Welfare Fund, Peppertree School, School Age Mothers, St. Mary's Dining, Student Education Loan Fund (SELF), Tri-Valley Adult Day Care, Tri-Valley Community Fund, Twin Valley Learning Center, and Valley Support Services (VASS).

Bay Area agencies receiving donations will be the Agency for Infant Development, Community Re-



ENJOYING A VISIT with preschoolers at the Peppertree School in Livermore are members of the LEAP committee (from left) Fred Johnsen (8484), school Director Betty Crowley, Karen Simkins (5355, kneeling), Lupe Alameda (5361), Beth Folkendt (8211), and Russ Miller (5355). This is the second year that LEAP has funded the non-profit day care and preschool facility, which serves 50 children.

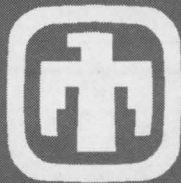
sources for Independent Living (CRIL), M-2 Sponsors Inc., the Northern California Society to Prevent Blindness, Parental Stress Service, and Spectrum Community Services. Umbrella and national agencies benefiting from this year's fund drive include the Combined Health Appeal of California, Guide Dogs for the Blind, and United Way in the Bay Area, San Joaquin County, and Stanislaus County.

Working with Russ on the employee committee this year are deputy chair Mark Perra (8314), Karen Simkins (5355), Lupe Alameda (5361), Del Hatch (5376), Beth Folkendt (8211), Forest Blair (8354), Don Adolphson (8400B), Fred Johnson (8484), Peggy Hatcher (8543), Mel West (8523), Stewart Wavell-Smith (8535), and Cindy English (8522).

As in the past, employees will have the option of designating where they would like their money to go by filling out a "Donor Option" card when the campaign begins. The LEAP committee will encourage employees to make a "Fair Share" pledge of 0.6 percent of their pay. Directorate solicitors will contact employees who are not able to attend one of the Directorate meetings. ●

Displays Provide Agency Info

The noontime LEAP Faire on Wednesday, Oct. 16, on the computing center patio will feature tables representing all the local area agencies so employees can learn more about volunteer opportunities and the services they provide. A special attraction this year will be the Ultimate Paper Airplane Contest, emphasizing the theme of paper recycling. Individual and directorate competitions are also being encouraged. A special LEAP bulletin is going out to all employees explaining details and rules. Musical entertainment and free refreshments (hot dogs and soft drinks) will be available. Employees may sign up at the LEAP table to make pledges or wait for their directorate meetings later in the week. A LEAP run/walk will take place at 11:15 a.m. and will follow a course similar to that used in the Directorate Challenge last spring.



SANDIA LIVERMORE NEWS

NASA Astronaut To Visit Sandia

NASA astronaut Ellen Ochoa, a former Sandian, is returning to Livermore for a visit on Tuesday, Oct. 22, to address Sandians in the Bldg. 904 auditorium.

Ellen worked at Sandia, Livermore in the Imaging Technology Division from October 1985 to July 1988, when she left to join NASA at its Ames Research Center in Sunnyvale. In January 1990, she was selected to enter astronaut training at the Johnson Space Center in Houston, Texas. This summer, she completed her intensive training program, and she will soon be assigned to a future space mission as a Mission Specialist.

Ellen is the first Hispanic woman in the US to become an astronaut.

Her speech, which will be open to all employees, will be at 1:30 p.m. and will cover the subject of NASA and its missions.

Sympathy

To Don Sweeney (8351) on the death of his mother in Ft. Myers, Fla., Sept. 10.

To Cleo Hill (8431) on the death of her sister in Somerset, Ky., Sept. 15.

Take Note

Charlotte Acken, Supervisor of Electronic Sensors Div. 8453, has been elected for a two-year term as vice chair of the Advisory Board of the Special Interest Group on Design Automation (SIGDA) of the Association of Computing Machinery (ACM). Charlotte was first appointed to the advisory board in 1989 to direct a scholarship program aimed at underrepresented student groups. She will continue in this capacity as well. ACM is an international professional society for computer scientists. SIGDA has some 4,000 members worldwide. Its advisory board manages a \$1.3 million fund for SIGDA and an annual income of \$350,000. The money is applied to projects that promote the field of electronic design automation.

Recent Retiree



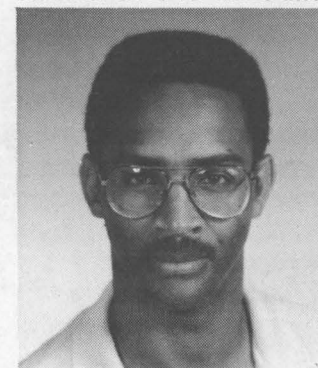
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Supervisory Appointment

JOHNNY ELLISON to Supervisor of Plant Maintenance Div. 8513.

Johnny worked in Plant Engineering in the summer of 1973 while attending college. In 1977,



JOHNNY ELLISON

he joined the same department as a drafter. He was named Supervisor of the Material Movement Section in 1985. Johnny moved to the Modifications Section in 1986, and in 1987 returned to Plant Engineering as a TSA doing design

work on building projects. He became acting Supervisor of Plant Maintenance a year ago.

Johnny has an AA degree in engineering technology from Delta Community College, Stockton, and also attended Chaminade University in Honolulu and the University of Hawaii while in the military. From 1974-77 he served in the US Army. He attended Officer Candidate School in California in 1979-80, graduated in 1980, and was commissioned a Second Lieutenant in the National Guard. He now commands a maintenance unit of the Reserves in Stockton.

Johnny, his wife Early, and three sons live in Stockton. Johnny enjoys running and family-centered activities, and is active in the Micro-century Toastmasters at LLNL.

(Continued from Page One)

AMRAAM Project

from a plane, including when and how to detonate the explosive for maximum effectiveness. Such decisions are based on target characteristics and encounter conditions as the missile approaches the target.

The program will develop several upgraded components, including the target detection device (TDD), warhead, and electronic safing, arming, and firing (ESAF) system.

The new ordnance package is being designed to deal with air targets that have a reduced observable cross section ("stealthy"), that are harder and more maneuverable, and that have advanced on-board electronic countermeasures designed to

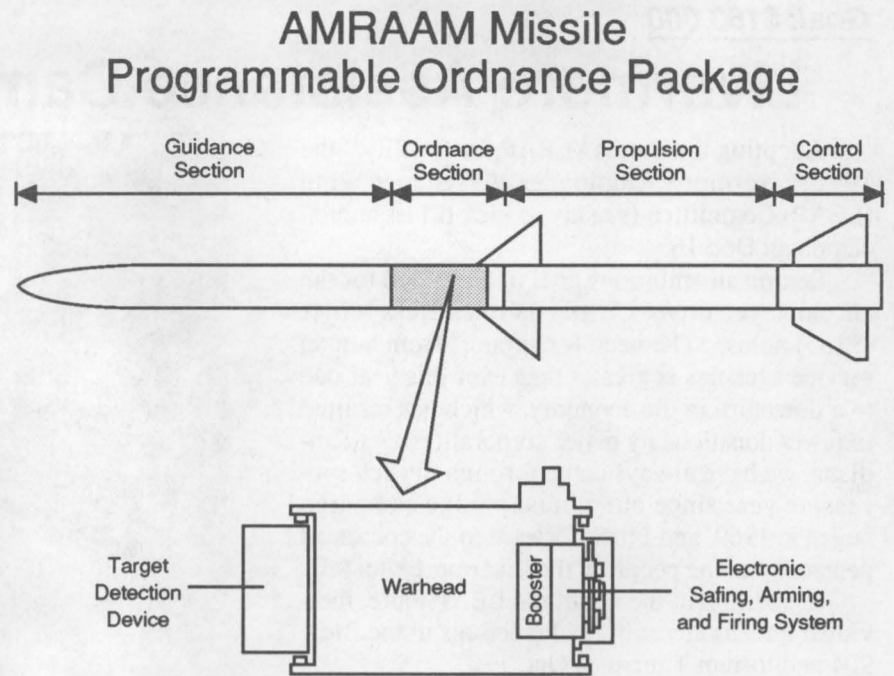
The program will improve the ability of AMRAAMs to destroy air targets that may not even be in production yet.

"confuse" the missile. (The new programmable ordnance package must be compatible with the guidance, propulsion, and control sections on current-model AMRAAMs — see drawing.)

Sandia has three main tasks in the project: (1) system analysis and support — basically analyzing future air targets and threats and determining how the programmable ordnance package could be configured for maximum lethality on these targets and threats; (2) ESAF system design; and (3) "slapper" detonator design ("slapper" detonators require a large, fast-rising pulse of power — much larger and faster than typical "hot-wire" detonators — which gives slappers an insensitivity to inadvertent detonation).

Motorola's Tactical Electronics Division is the prime contractor and designer for the improved target detection device. Sandia, General Dynamics, Hercules Allegheny Ballistics Laboratory, and the Terminal Effects Research & Analysis (TERA) organization at New Mexico Tech are the other primary participants. The project is funded by the Air

PROGRAMMABLE ORDNANCE package for the advanced medium range air-to-air missile is being designed by a group led by Motorola and including Sandia. Several Sandians will help design and test the electronic safing, arming, and firing system and the slapper detonator that it contains. The slapper detonator initiates the booster, which then initiates a main charge inside the warhead casing (see photo of Randy King holding full-scale model of a warhead casing). The AMRAAM is about 12 feet long and weighs about 345 pounds.



Force's Wright Laboratory at Eglin AFB, Fla. (See "AMRAAM Project — First of a Kind for Labs" below.)

The TERA group at New Mexico Tech, which is responsible for the new AMRAAM warhead design, has more than 40 years experience in development and testing of conventional warheads, including those on the current AMRAAM, Seasparrow, Hawk, and Patriot missiles. During later phases of the project, TERA will fabricate and test candidate and final warhead designs.

Making Effective System Even Better

Max explains that the work to improve the AMRAAM ordnance package does not mean that the current package has weaknesses. "In fact, the package is very sophisticated and extremely effective against today's enemy planes and missiles," he says. "What we [the entire team] are doing is working to ensure that the new package is equally effective against enemy planes and missiles that our pilots may have to face in 1995 and beyond."

"This project is typical of the way the military services are doing business today," Max continues. "Because major weapon systems are becoming so sophisticated and costly, the services are upgrading

and improving the systems instead of designing entirely new ones. A good example of that is the M-1 tanks that were used in the Gulf War. These M-1s are quite different from the ones that first came off the production line."

Like many other Sandia projects today, the
(Continued on Next Page)

AMRAAM Specifications

The advanced medium range air-to-air missile, being produced for the Air Force, Navy, and European allies, is an all-weather, beyond-visual range, radar-guided missile scheduled for use well into the next century. AMRAAMs are about 12 feet long and 7.2 inches in diameter and weigh about 345 pounds. A pilot can fire several of the missiles simultaneously at multiple targets and then disengage his attack and perform evasive maneuvers while the missiles guide themselves to the targets.

AMRAAMs reportedly have a range of more than 30 miles and reach speeds of about Mach 4.



RANDY KING (9127), project leader for Sandia's advanced medium range air-to-air missile (AMRAAM) upgrade work, shows a full-scale model of the warhead fragmentation casing used on current AMRAAMs. The casing explodes into a given number of fragments in a controlled pattern that can knock down large modern bombers, fighter planes, and cruise missiles. The AMRAAM upgrade effort is developing a programmable ordnance package that will allow AMRAAMs to be effective against post-1995 targets. This warhead casing model was made in Sandia's Pattern Shop by Mike Clough and Bruce Higgins (both 2473).

AMRAAM Project — First of a Kind for Labs

Max Newsom (9120) says the Labs' involvement in the AMRAAM improvement project represents a first — it's the first time that Sandia has worked directly with a prime defense contractor (Motorola) on a Department of Defense (DoD) reimbursable project. The Labs has done a substantial amount of reimbursable work for DoD, but always directly.

Max says the method of project operation is a sign of the times. "Sandia's role and ways of operating — to no one's surprise — are changing," says Max. "This 'first' doesn't necessarily mean that we'll be doing lots of projects by working for defense contractors, but it's just one more way that we will be doing business."

Max emphasizes something that top Labs managers have stressed before — that Sandia will not compete with private industry for work that industry can do. As staff time and facilities allow, however, Sandia may provide unique services, facilities, and expertise when it doesn't interfere with other work related to the Labs' primary DOE missions. This work is done under auspices of DOE's "Work for Others" program.

"In this case," explains Max, "Sandia is operating as a subcontractor to support the prime contractor in several areas where we have particular expertise as a result of our long experience in nuclear weapon design, engineering, and testing. It's also important to note that we

did not offer our services exclusively to the Motorola team. We made it widely known to all potential bidders on this project that we would offer these same services to other legitimate bidders, and one other bidder did include us in its proposal."

Randy King (9127), Sandia's project leader for the AMRAAM improvement project, says the new type of working arrangement with industry has put the Labs in the spotlight to some extent. "Other contractors who may want to team with us in the future are eager to see how well this works," he says.

Motorola's Program Manager, Boyd Holmes, says, "The reason we chose to work with Sandia is because of its demonstrated capability in ordnance system effectiveness evaluation against current and post-1995 air target threats. Sandia has extensive experience in modeling threats, warheads, target detection devices, and missile dynamics, which will provide the basis for thorough, unbiased, and systematic evaluations."

Holmes continues, "It was difficult initially to get the working relationship between the Labs and Motorola in order, but we have that all behind us now, and the program is running very smoothly. We are expanding our working relationship with Sandia in other areas, including work with Energy and Environment 6000."

(Continued from Page One)

Weapon Quality

"To achieve the turnaround, KC got the union involved right from the start. One of the things union members did was learn how to operate all the machines used in manufacturing explosive valve components for us. That way everyone is involved, and they can cover for each other if someone is gone."

The Kansas City plant also incorporated in-process controls — instrumentation for measuring quality — on its assembly lines, resulting in many thousands of dollars in cost savings over the old buy-or-reject method once the hardware had already been manufactured. Now the hardware is monitored throughout its production to make sure it meets specifications, and it is starting to be bought straight off the line, says Dick.

It is Kansas City's goal to reduce the turnaround time for explosive valve production even further — to 30 days if possible.

Quality Training

Of course, none of these improvements were achieved by rubbing a magic lamp or pulling ideas out of a hat. They were made possible only with a great deal of preparation.

For the past year and a half, Sandia, Livermore employees have been getting in-depth, specialized training in the concepts behind nationally recognized quality initiatives, ranging from the Malcolm Baldrige National Quality Award to AT&T's Chairman's Award, which is the basis for Sandia's quality initiative.

Some of those individuals then formed a support network known as the "FX" — Facilitators Exchange — group, whose members share with others the lessons they have learned. Begun about a year ago by Henry Hanser, Manager of Engineering Technology Dept. 8440, and Jim Bartel (8441), the group's members have become apostles for quality, leading the way for others, says Norm Wagner (5313 and Org. 5300 Quality Coordinator).

Henry's initial leadership helped employees achieve one of the cornerstones of the new, more productive corporate culture promoted by Sandia President Al Narath — empowerment. "Henry was able to accomplish behavioral changes

Facilitators Exchange group members have become apostles for quality, leading the way for others.

through training employees and getting them involved rather than by issuing a management initiative," says Norm. "In this way, the new techniques were internalized at the staff level. Part of Henry's secret was to get everyone involved and then get out of the way and let them go to work."

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AMRAAM Project

AMRAAM project involves Sandians in several technical vice presidencies. The "primaries" who are involved now from Systems Applications 9000: Randy and Max; Greg Haschke (9127), assistant project leader; Ike Evans (9127), analyst; and Larry Trost (9415), analyst. From Engineering Design and Development 2000: John Jones (2364), supervisor; John Browning (2364), ESAF system lead designer; and Steve Barnhart (2513), slapper detonator lead designer. Other Sandians in Engineering Sciences 1500 and Development Testing 2700 will be involved later.

●LP



PARTICIPANTS in the recent QC-2 review of Sandia's W-89 weapon program included (from left) Norm Wagner (5313), Tony Gonzales (LANL), Bob Oetken (5376), Jeff Statz (Rocky Flats), John Didlake (5363), Lee Chavez (DOE/AL), Andy Lundberg (LLNL), Dave Lee (343), and Leon Seibel (8441).

The facilitators' group was formed partly in response to a nationwide need to be more competitive, and partly in response to new quality criteria issued by DOE in February 1990 for its weapon design labs — Sandia, Los Alamos, and Lawrence Livermore. Although DOE's weapon production agencies — such as Rocky Flats and Pantex — had

The ultimate goal of the quality survey is to improve the lines of communication.

been assessed for quality since Day 1, the new set of criteria, known as QC-2 (Quality Criteria-2), marked the first time that design agencies were subjected to the same rigorous review that QC-1 imposes on production plants.

The ultimate goal of the quality survey is to improve the lines of communication, notes Norm. Under the old system, design engineers were typically isolated from the production engineers who built the components. Because cost was usually not an obstacle, in order to get maximum performance, design engineers tended to push the manufacturing process and existing technology as far as possible by writing specifications that made the components difficult to manufacture.

This traditional gap between the two groups led to some inefficient practices. An example was the dual drawing system, in which production engineers completely redrafted design documents to make them more compatible with manufacturing setups. This reinforced the appearance of a caste system, under which design engineers could do no wrong.

"We built this mystique about ourselves from early on that everything we do is somehow different," says Norm. "And it's not. That's really the

great awakening — realizing that not everything we do is different."

But that began to change when Sandia designers asked themselves what they could do to improve the manufacturing process, instead of expecting someone else to do it. They adopted a procedure known as concurrent engineering — a key quality philosophy — in which design and manufacturing engineers establish a close working relationship much earlier in the design cycle of a component.

"We've gone from almost primordial ways of thinking — isolation of the design engineer from the manufacturing engineer — to working as teams and sharing responsibility for making a part or a component," says Norm.

Sandia's Initial Performance Rating

Sandia, Livermore underwent its first QC-2 survey last summer, when DOE reviewed part of the W-89 program.

Overall, the Labs received an excellent rating, with recommendations for improvement focusing primarily on Software Quality Assurance.

The review team praised Sandia for its use of quality tools, such as Quality Function Deployment Techniques (QFDs), the Process Quality Management Initiative (PQMI), and brainstorming; for the genuine excitement of its employees about quality; and for its focus on customer needs and proactive interaction with clients such as DoD and Boeing.

"A key to our success in the QC-2 audit was to treat the auditors as customers and prepare our information in a manner organized to meet their requirements clearly and understandably," notes Rick Wayne, Director of Component and Applied Research 8400. "Use of QFD made this possible. QFD is a formalized process of connecting the

(Continued on Page Eight)

STUDYING model components are three Sandians who are participating in the AMRAAM upgrade project. From left are assistant project leader Greg Haschke (9127) and analysts Larry Trost (9415) and Ike Evans (9127). Larry holds a scale-model warhead casing and points to a full-scale model of a 700-grain blast fragmentation piece from a warhead.

In Light of a Changing World . . .

Jones and Hagengruber Discuss New Sandia Roles and Responsibilities in Nuclear Weapon Program

(Editor's Note: This article was prepared before President Bush proposed additional nuclear arms reductions last Friday and acted to reduce the alert level of some US nuclear forces. Related continuing activity at LAB NEWS press time could outdate some of the information in this article, but most of the comments remain valid. Sandians can hear an up-to-the-minute weapon briefing by Roger Hagengruber, VP for Defense Programs 5000, next Friday; see box on page seven).

The rapidly evolving world political and economic climate will likely result in significant changes for Sandia and DOE's other weapon-complex labs and production agencies. Some major changes are being proposed by US political and scientific leaders. Last month, for example, the National Academy of Sciences issued a report, *The Future of the US-Soviet Nuclear Relationship*, that suggests dramatic reductions in nuclear arms — reductions that go far beyond those in the Strategic Arms Reduction Treaty (START) that was signed by both nations several months ago.

The LAB NEWS recently talked with Sandia Executive VP Orval Jones (20) and VP for Defense Programs Roger Hagengruber (5000) to get their views about our changing role and responsibilities in the nuclear weapon program — how the nation's weapon program may evolve, how Sandia can best contribute to that program, and how Sandians can begin now to gear up for it. Here's some of what they had to say:

Orval: The National Academy of Sciences [NAS] report that suggests a substantially smaller nuclear weapon stockpile for both the US and USSR was put together by a prestigious, knowledgeable group [the NAS Committee on International Security and Arms Control] that included former Lawrence Livermore National Lab Director Mike May, and it may well carry some weight. [See "NAS Weapon Proposals" box.] However, regardless of that report's specific recommendations, it's clear that the



ORVAL JONES

US will have a smaller nuclear stockpile in the future, so we — DOE, Sandia, and all of the weapon-complex labs and production agencies — need to do a lot of long-range thinking and planning.

The NAS report talks about a much greater emphasis on command and control. This is a unique Sandia responsibility, and I think we should be working on it very aggressively — putting some of our "best heads" on it. A smaller stockpile has much greater demands on it for reliability and long life. We need to be thinking about what weapons will be in the future stockpile, what the issues and problems are, and how we can make those weapons as long-lasting, safe, and reliable as possible.

Roger: Weapon treaties and the US budget deficit will have big effects on the nuclear weapon program. But that doesn't mean that our job is going to be uninteresting or that we're on our way to nowhere. In fact, to the contrary, there are a lot of exciting things to be done. For example, we have known for some time that the nuclear weapons that were initially designed to be in the stockpile for 15 or 20 years may now be there for 20 or 30 years — maybe even longer. How materials behave when

they're in a system for 30 or 40 years in contact with other materials over various temperature ranges is challenging technical territory, and this is an area where we can make major contributions. We also need to look at ways to reduce weapon costs through use and reuse of standard parts and to ensure low maintenance costs for long-lasting weapons.

As we look to the future, I don't think US leaders foresee a world totally free of conflict — it's just that the nature of conflicts is changing. In the past, we envisioned a possible massive conflict with the Soviet Union. Now it seems that smaller, regional conflicts are more likely, but our nuclear weapon stockpile will still be counted on to deter potential enemies from widening such conflicts. We need to ensure that our future stockpile is configured in a way that will continue to deter aggression against the US and our vital interests.

Orval: We need to assess the weapons that will remain in the stockpile, where various Sandia components stand in their lifetimes, and whether we need to do new development work and possibly replace some of components. In years past, we've experienced competition for resources between new weapon development work and existing weapon improvement work. In the future, with less money being expended for new-weapon development, additional resources may be available to examine weapons in the stockpile to see how they can be improved.

We have a challenge here that — if we meet it properly — could offer tremendous benefits not just to the weapon complex, but also to US industry in general. By studying long-life materials and establishing their compatibility with one another, we can develop capabilities to make products that perform better and last longer. A good example of this is the pioneering work that Sandians have done in the lithium battery area. Our work to understand how the various components — the glass and contacts, for example — work together to prevent corrosion and the breakdown of the circuit has opened up new possibilities in the long-life battery area.

Also, as we develop more long-life materials

and study them in detail, we can develop more reliable methods to predict whether materials and products will last five years, 10 years, 20 years, or longer. This kind of information can be extremely valuable to industrial firms who want to know how long their products and manufacturing machinery will last. This would improve their long-range forecasting and planning capabilities.

Roger: We can and should work more closely with industry in other areas, too. One of the things we can do is to become a leader in learning and applying best approaches for production and design — to study American industry's "best practices" rigorously, benchmark them, and make sure they are used in our weapon program. I personally think this is a tremendously energizing thing — to think about the Labs adopting the best and brightest ideas from industry and applying them here and elsewhere in the weapon complex for the good of the nation.



ROGER HAGENGRUBER

New MDE Program

Orval: As the weapon complex changes, we anticipate an expanded Sandia role in overseeing the manufacture of some weapon components. That's what our new Manufacturing Development Engineering demonstration program under Harry Saxton [5400] is all about [see article on page eight]. As the demand for new-weapon-component manufacturing declines, there will also be less demand for a large DOE manufacturing complex. We will have a greater responsibility as a design agency in understanding how weapon components are going to be made and then for ensuring that components are manufactured to meet the highest standards at an economical price.

Roger: At Sandia we're going to be spending less time thinking up new things to build for the weapon program and more time thinking about how we can build things cost-effectively and in an environmentally responsible way. From the continuing dialogue on WIPP [Waste Isolation Pilot Plant], it's evident that the public has become more demanding about safety, security, and the reliability of everything — not just weapons. If we take the reins of leadership, we can be at the forefront of the movement toward a more efficient weapon program and provide value not only to DOE and our military customers, but also to the industrial sector. We have some challenging problems ahead in maintaining a smaller, but equally effective, nuclear stockpile. To make this transition, we cannot hold onto every scrap of the past. I don't think we should worry about the future being different if we prepare for it properly and change to meet it head-on.

Orval: Military aircraft and other weapons will continue to evolve, and some of these systems will be expected to deliver nuclear weapons. That means there will be continuing opportunities for us to contribute in traditional ways. The design and development expertise that we've exercised over the years and that we pride ourselves in will be needed.

But our services and how we go about delivering them must also evolve. Changes will be necessary — changes being brought about by the
(Continued on Page Seven)

NAS Weapon Proposals

The National Academy of Sciences' Committee on International Security and Arms Control suggests in a report released last month that US-Soviet nuclear weapon stockpiles be reduced to less than one-half the level allowed under the recently signed Strategic Arms Reduction Treaty (START).

Whatever the outcome of the political restructuring now under way in the Soviet Union, the report states, it is in the best interests of the United States and the Soviet Union to dramatically lower existing nuclear arsenals, and to strengthen internal controls and safeguards over nuclear forces.

An NAS news release announcing the 68-page report says the START agreement is expected to cut US warheads below 10,000 and Soviet warheads to about 8,000. The report suggests that the two nations could next reduce weapon levels to between 3,000 and 4,000 warheads on each side and that tactical nuclear weapons now deployed in Europe and elsewhere could be cut deeply or even eliminated.

Sandia's libraries in Albuquerque and Livermore have copies of the report, *The Future of the US-Soviet Nuclear Relationship*. The National Academy Press has copies for sale; for information, call 202-334-3313.

Mark Your Calendar for Oct. 19

Family Day Planner: What You Need to Know

Family Day '91 will be held at Sandia, Albuquerque on Saturday, Oct. 19, from 9 a.m. to 4 p.m. No classified operations are planned on that day.

Employees will need to bring their ID badges along with their Family Guest List and/or Access Control-approved Guest List for Access of Non-Family Members (both published in a Sept. 24 *Sandia Bulletin* and available at the Badge Office). Retirees must bring their Sandia IDs and must be escorted by a Q-cleared employee. (See box, page C.)

Guests will receive special buttons, which they must wear during their visit. They will also receive souvenir folders with maps and information about exhibits and demonstrations.

As always, hand-carried items are subject to search at entrances and exits.

Entering Kirtland AFB

As usual, the Wyoming and Gibson gates will be open around the clock. The Eubank gate will be open from 8 a.m. to 5 p.m.

Entering Sandia's Gates

Not all of Sandia's gates will be open during Family Day. No vehicles will be permitted inside the fence, other than authorized handicapped and executive vehicles, which will be allowed to enter only at Gate 10.

The following gates will be open to pedestrian traffic:

- Area I: Gates 1, 2, 4, 6, 7, 8, 10 (handicapped access), 11, 14, and 15 will be open from 9 a.m. to 4 p.m. Gate 20 will be open from 9 a.m. to noon.
- Area II: Gate B-1 will be open from 10 a.m. to noon only.
- Area III: Gate C-1 will be open from 9 a.m. to 4 p.m.
- Area IV: The gates at Bldgs. 960, 961, 962, 970, and 981 will be open from 9 a.m. to 4 p.m.
- Area V: Gate C-5 will be open from 9 a.m. to 4 p.m.

No Mardix booths will be open on Family Day.

Shuttle buses will pick up and drop off passengers outside the Tech Area gates.

Parking

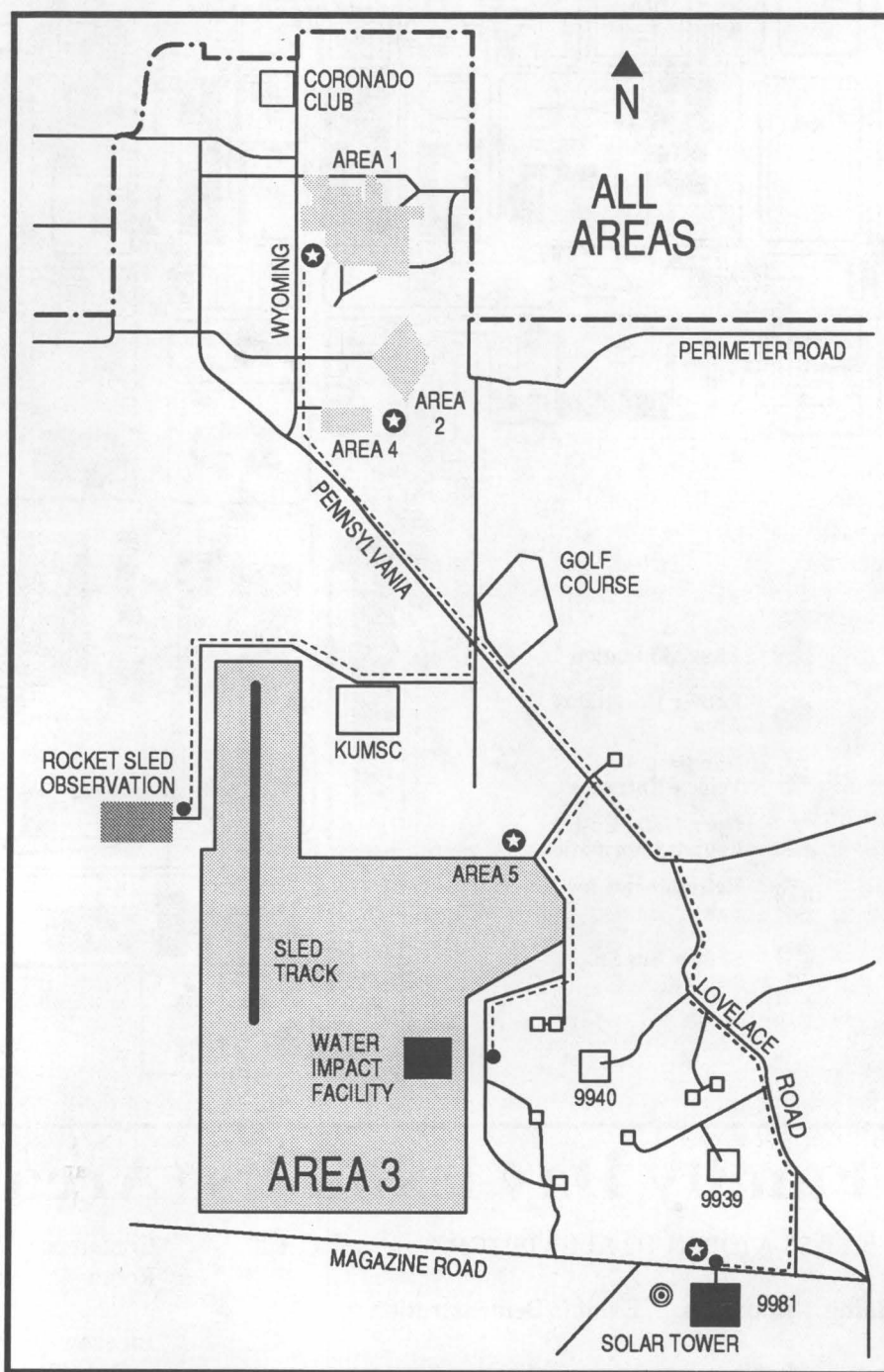
All parking areas, except "Reserved" spaces, will be open to Family Day visitors, including spaces marked "Visitor," "Employee on Official Business," "Car Pool," and "Second Shift."

As always, spaces marked "Handicapped" and "Medical" may be used only for those purposes.

Shuttle Buses

Shuttle buses will run a loop every 15 to 20 minutes between Gate 10 in Area 1, Area IV, Area V, and the Solar Power Tower.

Shuttle bus service will *not* be available to the Sled Track viewing area.



Robots, Networking, Videos, Etc.

Sandia Computers on Exhibit in Area I

Always one of the nation's leaders in advanced computing, Sandia will again host special computer exhibits for Family Day visitors in Area I. Three main exhibits will feature take-home software, security demonstrations, films, graphics, and a variety of other presentations.

Areas open to all visitors are designated "A" or are indicated by a roped tour path to guide people. These include the tent area north of Bldg. 880, and portions of the B Aisle, the X Aisle (including the vending area and restrooms), the C Aisle (Room C-11 only), and the D Aisle (north of the X Aisle).

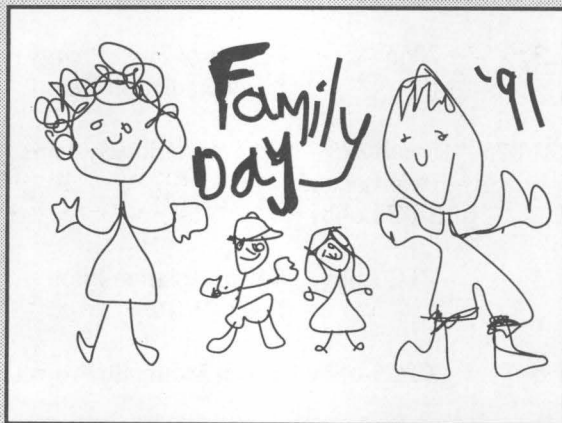
Areas designated "B" are open only to family members of employees who work in those areas, and include all personal offices and work areas outside the Central Computing Facility (CCF), all areas not roped off for the tour path, and all areas not designated "A" or "C."

Areas marked "C" are closed to everyone, and include the Technical Control Room of the CCF, the printing room of the CCF, and all areas in the CCF not roped off for the tour path.

Exhibit One: Canvas Computer Room

A tent just north of Bldg. 880 between the B and D aisles will house a variety of displays, including:

- Internet: demonstrates Sandia's access to



international networks.

- Computer Tank Game: demonstrates networking.
- Workstation: demonstrates drawing, producing graphics and sound.
- Robots: accept commands in both English and Spanish.
- Medium Robot: speaks and moves on a stage.
- Voice Messaging: demonstrates talking to characters, printing pictures.
- Flag Games: features software for visitors to take home.
- Typevade: features software for visitors to take home.

- Hangman: demonstrates computer words, features take-home software.
- Skyglobe: software demo of star constellations and planets.
- Video Pictures by Sun: prints digitized pictures in color.
- Video Pictures by IBM: prints digitized pictures in color.

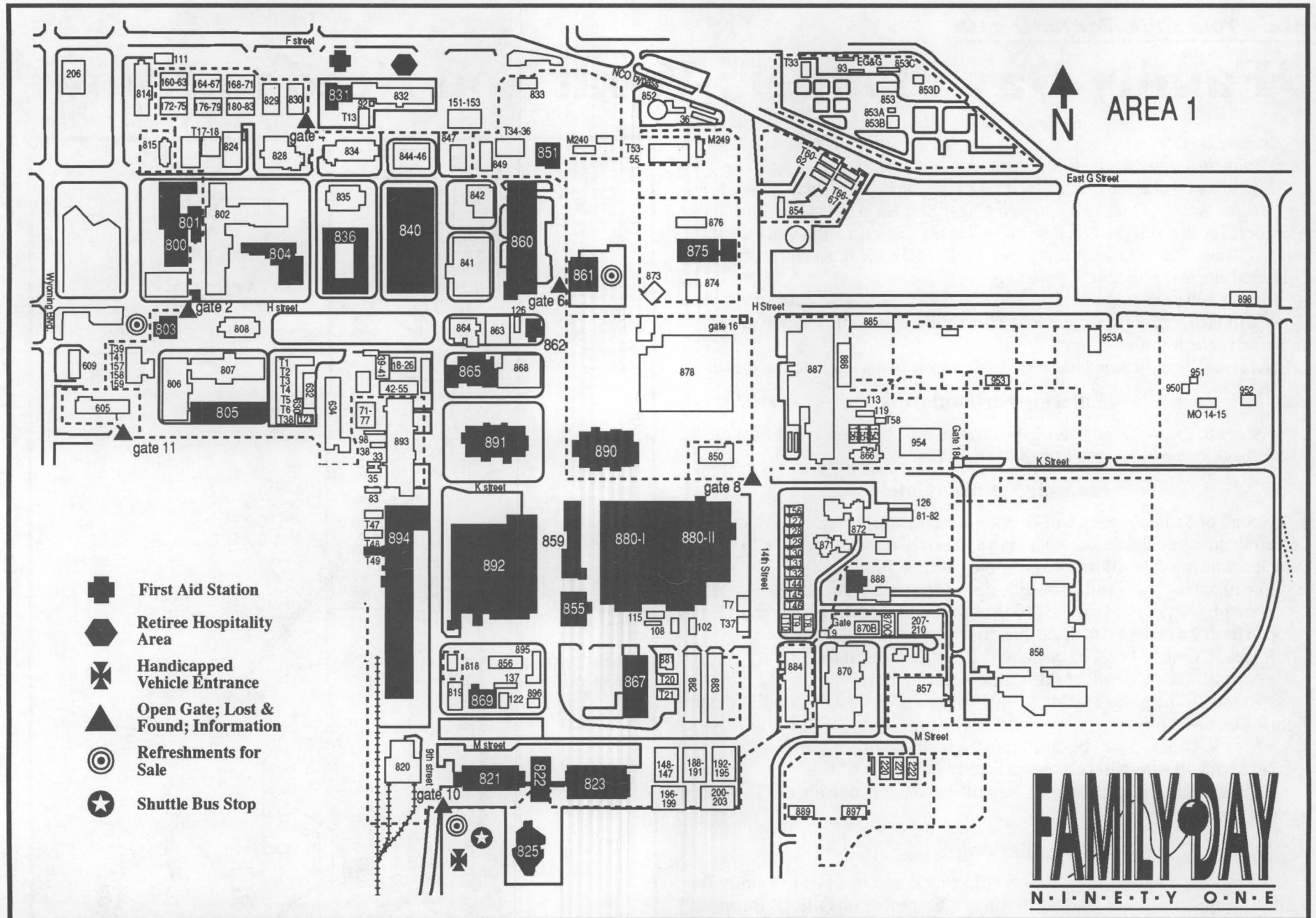
Exhibit Two: Computer Security

- Computer Security Film by Walt Disney.
- Threatbusters: demonstrates software used in training.
- Hackers Are Monsters: demonstrates Dinosaur Software.

Exhibit Three: Central Computing Tour

The large computers used at Sandia will be open for sightseeing in the Central Computing Facility (CCF, see map). Highlights include:

- Various graphics for personal computers.
- Video conferencing demonstration.
- Computer imaging display.
- Network Control Center.
- The Cray Supercomputer.
- The IBM 3090 Mainframe.
- Prototype network nodes.
- Automated tape storage silos.
- Computerized guest book.



Family Day Exhibits (Area I Unless Otherwise Noted)

CLASS A (OPEN TO ALL VISITORS)		
Building	Room No.	Exhibit/Demonstration
800	Lobby	Display of Unusual Products and Services Procured by 3700
800	Badge Office	Finger Printing Process Demo
801S	101	Emergency Ops. Ctr. Open House, Tape Presentation
802	Lobby	Kids' View Drawing Contest
803	Hallway	Display of Optical Microscope, Scanning Electron Microscope, Computer Modeling
804	Library	Open House/Library
805	117A	Transmission Electron Microscopy Lab
805	124	Scanning Electron Microscope Lab
805	202	Rigid Polyurethane Foam Demo
821 Tent	West End	Display Viking Vehicles; Rappelling Demo, 10:00 a.m. and 2:00 p.m.
821	Throughout	Display Related to Nuclear Safety and Security System
822	Conference Room	Display: Physical Security Systems
822	Breezeway to Bldg. 823	Quality Display
823	South Side Parking Lot Road	Photovoltaic Demonstration
823	1270A	Molecular Graphics
823	2065	Effects of High Energy Laser Radiation Demo
823/825	South 823 Pkg. Lot and TTC Lobby	Transportation Systems
825	TTC Lobby	Waste Isolation Pilot Plant (WIPP)
825	TTC Lobby	Yucca Mountain Project
825	TTC Lobby	Solar Thermal Detoxification Exhibit
825	TTC Lobby	Solar Thermal Electric Exhibit
825	TTC Lobby	Borehole Televiewer
825	TTC Lobby	Advanced Technology for Oil & Gas Recovery
825	TTC	Strategic Petroleum Reserve
825	TTC	Historical Sandia Films
825	TTC Lobby	Environmental Technologies Program Rm.
831	Medical Building	Medical Displays, X-Ray Exhibit, Blood Pressure Testing, Hazardous Material Medical Response
836	Atrium 104A	Weapon Evaluation Videos, Control Trident Warhead Advanced Weapon Systems
840	161 Hi Bay and Low Bay Areas	Mini Shop Tool Crib Project Area, Apprentice Section Heavy Machining
851	North End	Hands-on Robot Demo
855	102	System Control and Receiving Station (SCARS) Facility
859	Atrium	Display: Secretary Yesterday and Today
859	120	Computer-Aided Engineering Lab
860	South End	Radiography/Computed Tomography Demos
860	109B	Resonant Vibrations
860	109J	Test Waveforms Demo
865	Wind Tunnel	Wind Tunnel, Video and Slide Presentation

867	North End	Low-Intensity Cobalt Array
869	East of 869	Hazardous Material Handling and Environmental Restoration
875	Annex	Safe Secure Transport Tractors, DOE TSD Escort Weapons
880	Tent North Side	Canvas Computer Room (see "Sandia Computers on Exhibit," page C)
880	Aisles B, D, and X	Central Computing Facility Tour
880	Aisle C (Room C-11 Only)	Computer Security Exhibit
888	Lightning Lab	Lightning Facility Demo
890	Third Floor	Telemetry Instrumentation and Aircraft Compatibility
890	B98	Space Simulation Thermal Vacuum Test Facility
891	South Side Parking Lot	Sandia Electrical Vehicle Fleet
891	3414	Computer-Aided Tools and Applications
892	180	Military Liaison Video Presentation and Hardware Display, Computer-Generated Display
892	201	Weapon Evaluation Activity Video
892	2000	Weapon Process Quality Poster Display
894	15	Ultrasonic Scanning Non-Destructive Testing Demo
894	126	Infrared Camera Demo
894	126	High Speed Photography Exhibit

894	135-137A	Optical Microscope Video Display
894	East Side	Optical Tracking System
960	1215	Computer Graphics Demo and Video Animation Demos
962	Auditorium	PBFA II, Saturn, HERMES III Display and Videos
970	SABRE	Sandia's Inertial Confinement Fusion Program
970	Med. Bay	RLA, EPOCH Beam Propagation Experiments
983	PBFA	PBFA II (Particle Beam Fusion Accelerator II)
983	101	Diode Hardware — PBFA II
Area III	Sled Track (see map)	Rocket Sled Demo on 10,000-Ft. Sled Track, Two Shots: 10:00 a.m. and 1:00 p.m.
Area III	Follow Signs on Boundary Road, East Side of Area III	Water Rocket Impact Demo, 11 a.m.
Area III, 6530	Test Lab	Plasma Material Test Facility
Area V, 6582	Conference Room	Area V Facilities Video Presentation and Display
Area V, 6591	Control Room	Sandia Pulse Reactor Control
Area V, 6588	10	Annular Core Research Reactor
Remote Site: Tours start Bldg. 9981	Solar Power Tower	Tours, Videos, Exhibits, and Demonstrations
Remote Site: Coyote Canyon	Containment Testing Facility	Facility Tour, Containment Testing

Get There Early

Sled Track, Water Impact Shots

Two sled track shots are scheduled, one at 10 a.m. and the other at 1 p.m. Access to the viewing area on the west side of the track (outside the fence) will be via Pennsylvania Avenue (see map). In addition, this year's exhibits will feature a rocket-power water impact shot at 11 a.m., with access east of Area III. Should the 10 a.m. sled track shot be delayed, the water impact shot will take place one hour after the sled track shot.

To avoid congestion and possible disappointment in the choice of viewing spots, visitors are advised to arrive early, as the sled track shots are among the most popular events during Family Day.

Food Service

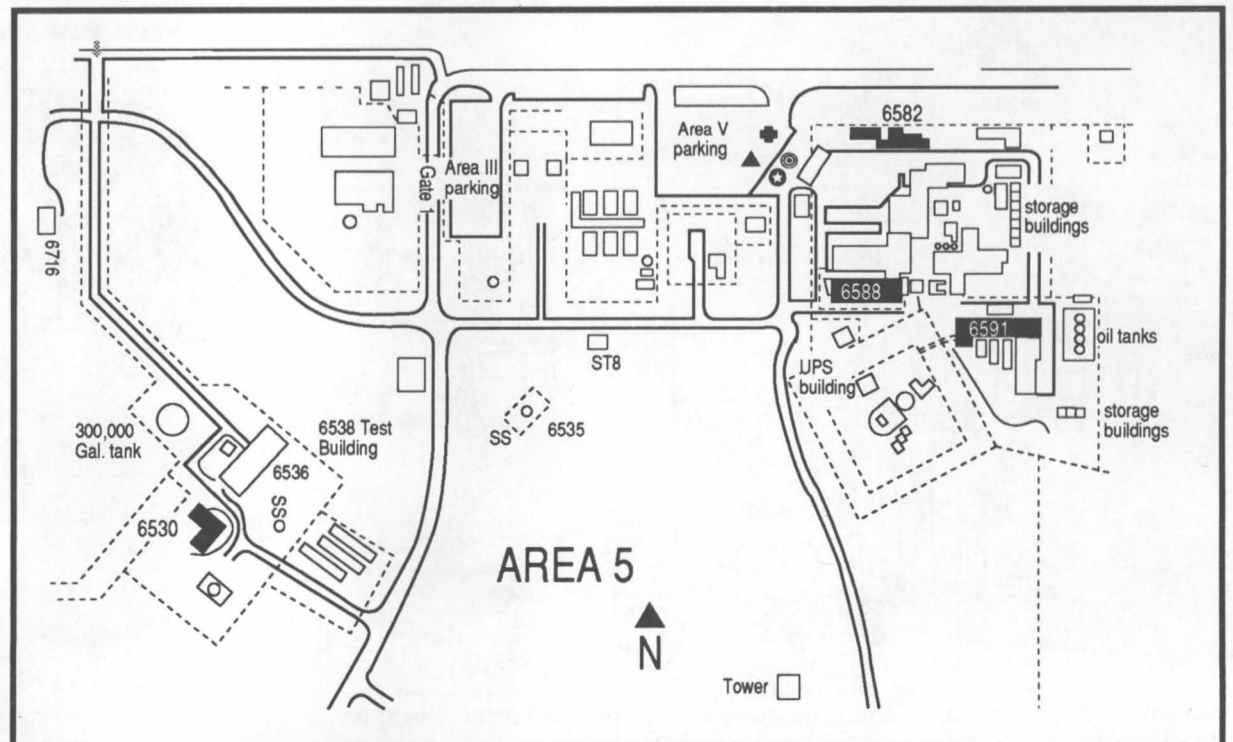
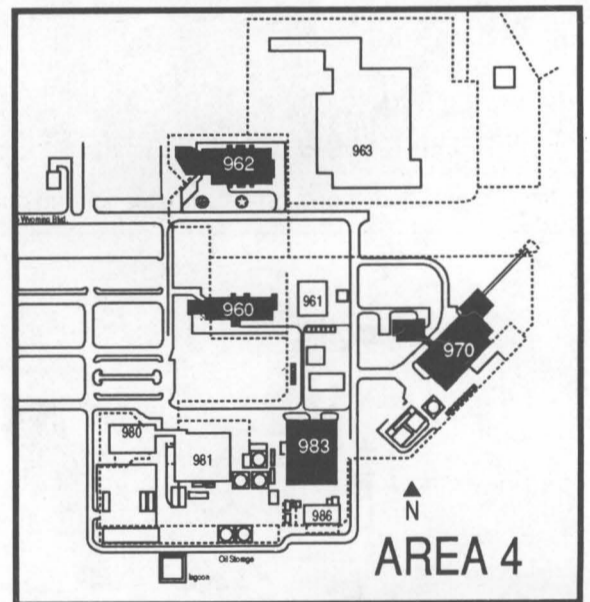
Marriott Corp. will provide limited food service during the day beginning at 8:30 a.m. at the following locations:

- Area I: Outside Gate 1 (the second shift parking area), outside Gate 10, and in the Sandia Cafeteria (Bldg. 861).

- Area IV.
- Area V.
- Solar Power Tower.

The menu at all locations includes:

Nachos	\$1.50
Hot dogs	1.50
Potato chips	.50
Donuts	.50
M&M candy	.50
Coffee/soda	.50



DOE Says Retirees Must Be Escorted On Family Day

DOE has announced that retirees and their guests must be escorted by Q-cleared employees in order to participate in this year's Family Day activities Oct. 19 at Sandia, Albuquerque. The decision is a result of increased security measures throughout DOE.

A *Sandia Bulletin* has been issued to Sandia, Albuquerque employees soliciting assistance from people who are willing to escort retirees to Family Day.

"Retirees are strongly encouraged to attend," says Family Day Coordinator Joe Laval, "and we expect to have plenty of escorts available at the retiree reception area, Bldg. 832."

“Kids’ View” Winners

Some 60 youngsters showed off their creative talents in the “Kids’ View” drawing contest for Family Day, producing a variety of drawings and some intriguing descriptions of the work their parents and grandparents do at Sandia.

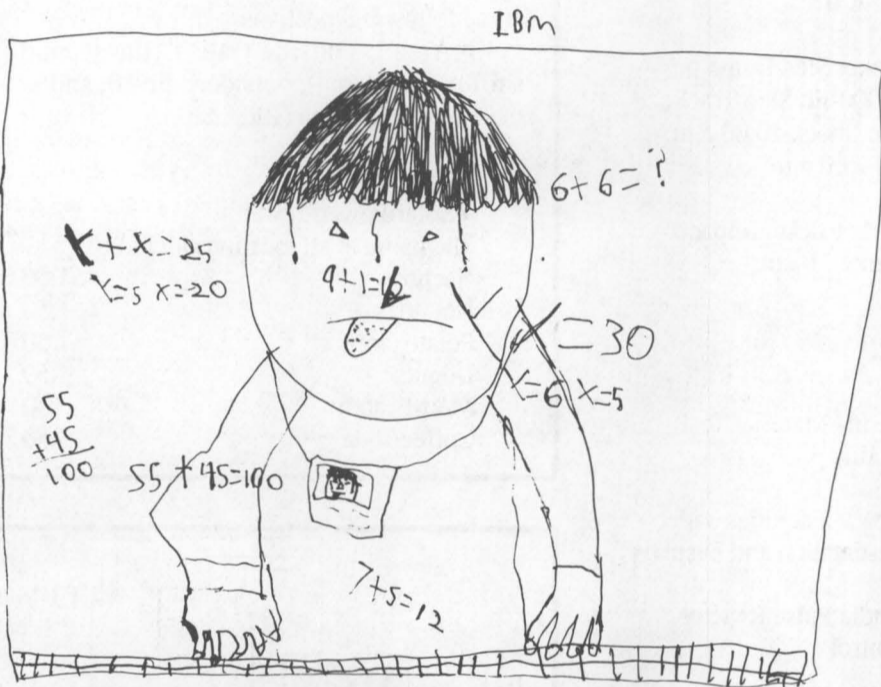
The top three entries — selected after lengthy deliberation by a panel of Sandia judges — are the works of Paul Gibson Jr., age 5; Alicia Serna, age 7; and Tony Thompson, age 13. Shown on this page, they illustrate the careers of Paul Gibson (9225), Tommy Serna (3435), and Dick Thompson (2815).

Each of the winners receives a \$100 (mature value) US Savings Bond.

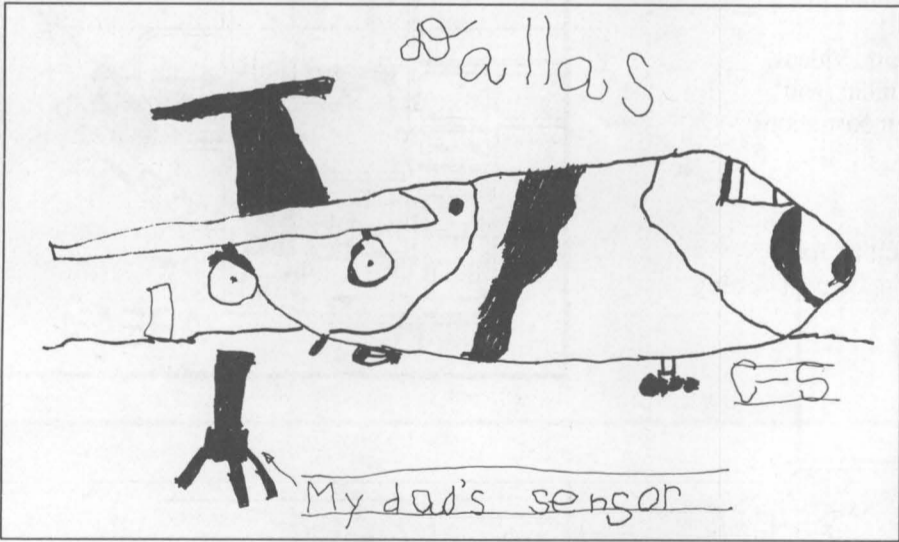
There were so many entries it was necessary to divide the artists into age groups of 6 and under; 7 to 9; and 10 to 13. There were lots of close runners-up, and all entries will be displayed in the lobby of Bldg. 802 on Family Day.

Honorable mentions go out to Julie Russell, age 3 (parent Glenn Russell, 2336); Dallas Buckle, 5 (Tim Buckle, 9531); Christopher Atencio, 7 (Paul Atencio, 5122); Alan Mason, 9 (Jeff Mason, 9221); and Janese Rae Hunter, 9 (Becky Hunter, 5000).

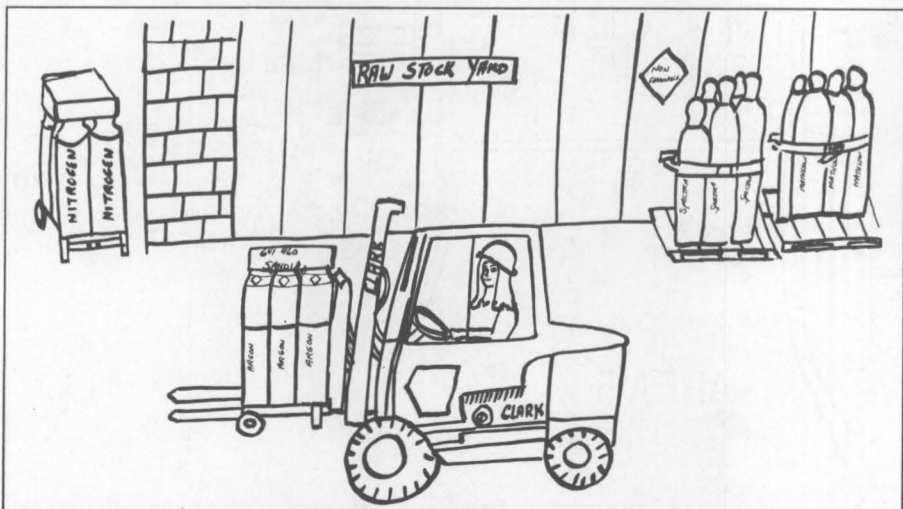
An elaborate three-dimensional drawing by Jacob Blain, age 8, of his mom, Cindy Blain (3426), at work as a custodian carting a full trash can and two mops appropriately embellished with glued-on pieces of yarn and paper, deserves special mention because of its uniqueness. Unfortunately, it and another color drawing had to be disqualified because contest rules required drawings to be done in black pen on white paper (for ease of reproduction). However, they too will be displayed on Family Day for admiration by all. ●LD



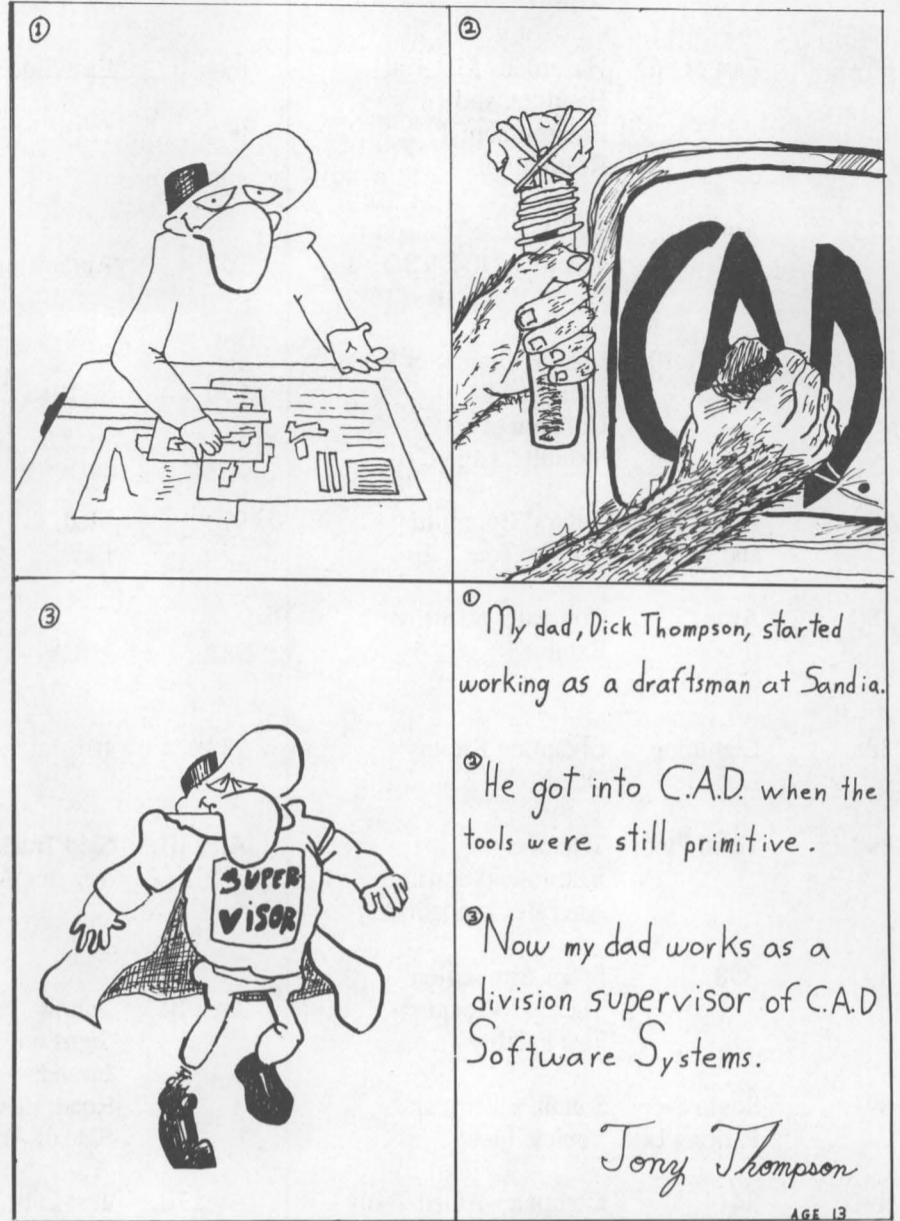
Alan Mason's dad "works on a computer figuring out stuff about a satellite."



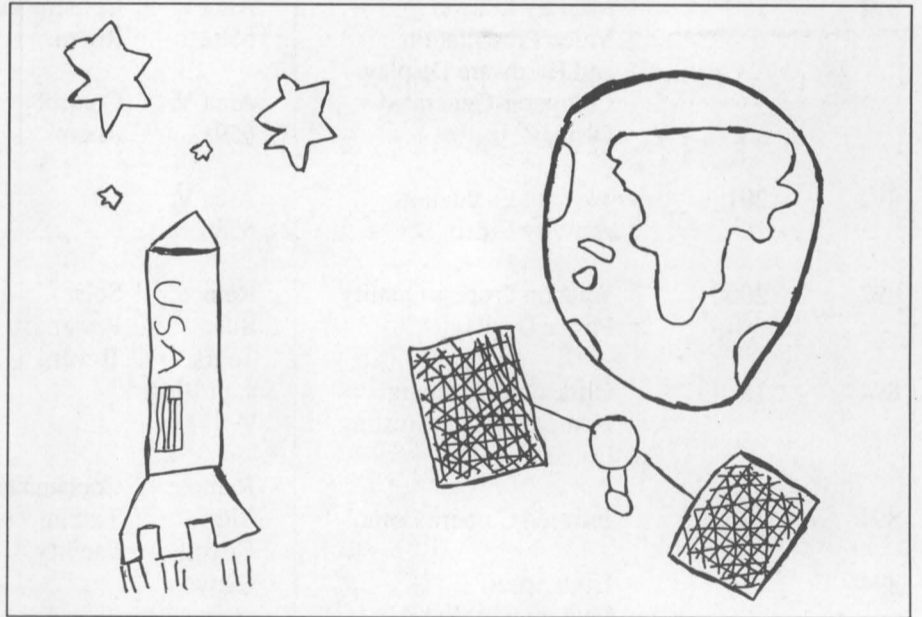
Dallas Buckle created this drawing of an airplane security system.



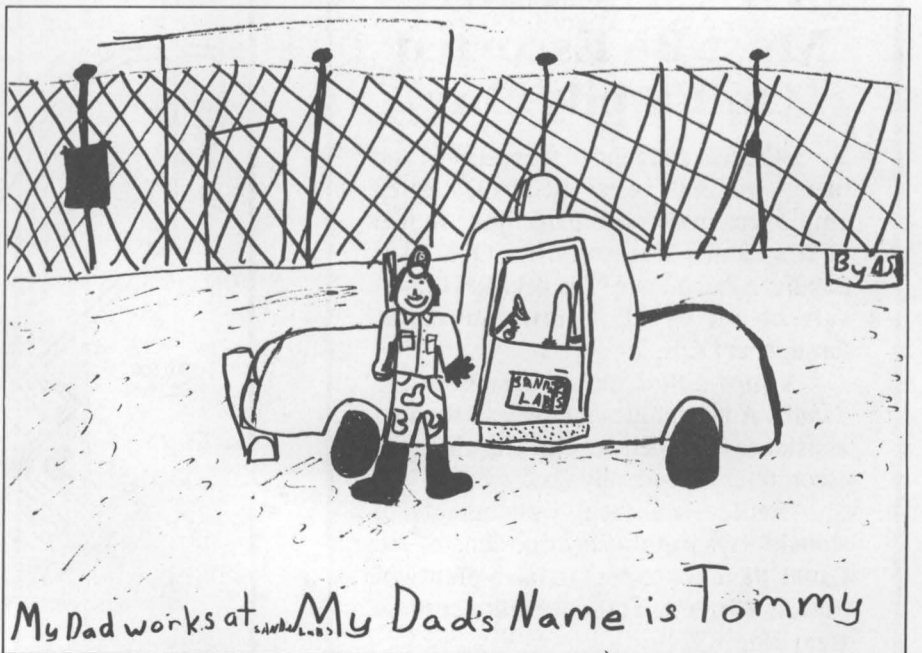
Michelle Mello's mom, Kathy (8533), "works at Sandia National Labs in Livermore. She is a forklift driver." This one didn't arrive in time for judging.



LAB NEWS Supervisor (not a judge) Larry Perrine especially liked this entry.



"My daddy works on things that go on satellites," says Paul Gibson Jr. "They go up in rockets. Satellites go around the earth."



"My dad guards the gates and he shoots a gun," says Alicia Serna.

(Continued from Page Six)

Nuclear Weapons

enormous power that modern computing systems involve. Software-driven weapon systems are going to demand changes, upgrades, and so forth in how we interface weapon components. We can expect some interesting technical challenges in this area.

Roger: In the past, we took the "outline" of a reentry vehicle or reentry body and the general size constraints of a weapon delivery system and then designed the most effective nuclear weapon to go inside of it. Now that it looks like nuclear pits will be reused and standardized to some extent, why can't it be just as demanding and challenging to say, "Here is the nuclear pit; now find the best way of wrapping a system around it"? This type of challenging problem should allow us to do more exploratory work to examine the complete picture of how nuclear devices can be weaponized in new, cost-effective ways.

How About Jobs?

Orval: With our nuclear deterrence resting on a smaller number of weapons, their reliability and survivability become more important — a concept that's endorsed in the NAS report, by the way. I sometimes get asked by Sandians — especially those in the design organizations — if they are going to have jobs in the future. I think there are going to be plenty of jobs, but with some new emphases and plenty of technical challenges in the area of reliability and survivability.

We'll also have a continuing need for modern test facilities. Testing is one of our core competencies, and we need these facilities to ensure that our weapon designs accomplish what we intend — that they are reliable and safe. We're looking at our testing facilities now and planning what we need for the future. This will involve making some invest-

ment and disinvestment decisions and sizing our facilities to do what we need to do, but we'll definitely stay in the testing business.

Roger: I agree that we will continue to need sophisticated testing facilities — not only for weapon testing, but also for verification technology and energy-related tests. Fortunately, we've had the resources in the past to build very strong capabilities in testing — subscale and full-scale — and this makes it possible for us to do some dramatic things. Testing is, in fact, the heart of our engineering system.

This doesn't mean that our facilities won't "shrink" a bit because the times are tough. However, I have to believe that our quality program is going to squeeze more efficiency out of the system and let us keep a high level of productivity while lowering some costs. Ruth David [Director of Development Testing 2700] and Jim Powell [Director of Radiation Effects and Testing 9300] have worked hard on this problem, and we've already made substantial progress.

Time to Pursue New Concepts

Orval: Earlier, Roger mentioned the possibility of more exploratory work. I think that's likely. In the past, we've sometimes complained that we had so much Phase 3 design work to do that we didn't have the time or resources to explore advanced technologies — new concepts. I think we should welcome the opportunity to explore some ideas that have been sitting around for a time while we were so busy with Phase 3 work.

Roger: We shouldn't wring our hands over the fact that the nuclear weapon program is changing and getting smaller. I hope we will realize that uncertainty also brings opportunity and makes this a time when innovation and creativity should be peaking. Let's not lament the fact that some facilities and programs may be scaled back or even shut down, but instead think about what kinds of facilities and programs will make it possible for us to do

Hagengruber to Discuss Weapon Program at Oct. 11 Town Meeting

VP for Defense Programs Roger Hagengruber will discuss the future of the nuclear weapon program Friday, Oct. 11, at 9 a.m. in the Technology Transfer Center. His presentation, part of the Management Town Meeting series, is unclassified, and seating is on a first-come basis. A valid Sandia badge (any color) is required for entry.

The presentation will also be telecast live (8 a.m. Pacific time) to Sandia, Livermore's CRF Auditorium; the same badging requirements apply.

innovative things in the future. And there are some exciting new things that we're getting into, such as the aging aircraft work for the Federal Aviation Administration. [The LAB NEWS will feature this new program soon.]

Orval: We need to work more closely with DOE, the military services, and with the other weapon labs to stimulate each other's thinking and develop concepts about what the complex needs to accomplish in the future, commensurate with the direction the world is going. It's a new era, and we've got to adjust our thinking and planning for the changing times.

Roger: The Defense Programs [DP] people in DOE have said many times that we [Sandia] are a special asset. For more than 40 years, we have been one of the most creative and innovative engineering R&D places in the world. We need to do all we can to remain an asset during difficult times. We can do that if we continue to be "the solution" to DOE's problems, *not* one of the problems. For the Labs to insist that everything should be exactly like it always was and then ask DOE for more money to do new things would drive a wedge between us. We need to work side by side with DOE to make sure that doesn't happen.

When we get too busy worrying about our self interests, it gets in the way of our ability to see what is in the national interest. Conversely, when we think about the national interest above our own interests, I think we rise to new heights and realize our full potential.

'What We've Been Working For'

Orval: The tremendous changes that are taking place in the USSR should hearten us all. It's wonderful! No one knows for sure how it will play out, but basically what's happening is what so many of us have been working on for these many years. As our Sandia careers have to be readjusted or reoriented, we should keep in mind that tensions between the nuclear giants have eased considerably and that the world is becoming a safer place for our children and grandchildren.

Roger: Our nation is now getting a tremendous return on its investment in nuclear deterrence. And it's been an incredibly small price to pay when millions of lives could have turned out much differently. Our challenge now is to determine how we can keep contributing in ways that will give the nation a continuing high return on its investment in us. ●LP

Meeting New Technical Challenges

Latest Sandia Weapons Break New Ground in Safety, Reliability

Sandia's nuclear weapon program is currently working on several new projects that emphasize such technical issues as weapon safety, reliability, and use control. A few of these projects are highlighted below:

In July, Sandia began Phase 3 development on the W61 Earth Penetrating Weapon, a weapon derived from an earlier B61-7 lay-down bomb. Sandia's role in this project is primarily to design and test a new high-strength steel case for the W61, which will result in reapplication of many of the existing B61-7 components, thus reducing much of the time, cost, and technical risks associated with W61 development. As part of this program, the Labs will also develop two new delivery-system interfacing components.

Also in July, Sandia began design engineering work on the Air Force's tactical short-range attack missile (SRAM T). This missile, incorporating the latest in nuclear safety techniques, is designed to provide tactical aircraft with a versatile, modern stand-off weapon that could serve the country's deterrence needs from the late 1990s to the year 2020.

Sandia also began Phase 4 production engineering on the new W89 warhead in June. The W89 will provide the Air Force's SRAM II stand-off missile with enhanced safety, achieved by using insensitive high-energy explosives, a fire-resistant pit, and modern detonation safety and use control technology. Sandia designed the W89 system and helped ready it for production, which is scheduled to

begin in October 1994.

(Editor's Note: The SRAM programs could be cancelled if President Bush's proposals go into effect, but Sandia work on the SRAM — and any other weapon system — can stop only if and when DOE directs such action.)

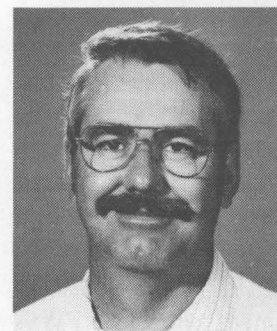
A new weapon casing made from composite materials is also being developed at Sandia. This casing is equally robust but much lighter than traditional stainless steel casings and will allow certain weapons to destroy enemy targets protected by ice, sand, water, soil, concrete, or rock.

Sandia engineers have published the first formal assessment of the reliability of the W88/Mk5 payload, used in the Trident II submarine weapon system. The report provides Sandia and the Navy with an accurate assessment of the system's reliability and explores new methodologies for assessing weapon performance.

As part of its effort to continuously improve nuclear weapon safety assurance, Sandia's weapon program recently revamped its existing weapon design and review process, resulting in a Labs-wide *Weapon Nuclear Safety Assurance Plan*. This plan formally defines procedures for setting weapon safety requirements and the way these requirements are to be incorporated in the design of new nuclear weapons.

(Much of the above information is taken from a forthcoming issue of *Sandia Technology*.)

Employee Death



Ray Merrill of ES&H and Quality Org. 1800A died Sept. 20 after a short illness. He was 49 years old.

Ray was a member of the technical staff and had been at the Labs since 1968. He was ES&H quality coordinator for Org. 1800.

He is survived by his wife and two sons.

Delivery Responsibilities as Early as FY92

Sandia Oversees Production of 13 Weapon Parts in DOE Demonstration Program

Managing the production of weapon components may soon be added to the list of Sandia contributions to the US nuclear weapon program as DOE fashions "Complex 21," its slimmer and more responsive weapon production complex of tomorrow.

Harry Saxton, Director of the newly created Manufacturing Engineering and Support Org. 5400, says Sandia is now managing the production of 13 non-nuclear weapon components as part of a DOE demonstration program. This program, called Manufacturing Development Engineering (MDE), is intended to show that Sandia's internal structure can be tailored to oversee the commercial production of some parts.

"We have agreed to help meet DOE production responsibilities for the delivery of certain parts to assembly plants beginning late in FY92," he says. "If we're successful, more components may follow." DOE is considering MDE as an important element of its nuclear weapon complex reconfiguration study.

Moving Toward Privatization

Currently, DOE's production plants take Sandia-developed components and manufacture them in-house or procure them from commercial manufacturers. In the next two decades, however, reductions in the US nuclear stockpile and substantial cuts in resources devoted to weapon production will require DOE's production complex to become more compact and efficient.

One way of streamlining is to allow qualified commercial manufacturers to produce selected non-nuclear weapon components under Sandia's scrutiny. Such privatization, says Harry, enables DOE to consolidate its weapon complex with substantial cost savings.

"The private sector has certain manufacturing capabilities already in place," says John Gronager (5400), an MDE program manager. "In the long term, MDE will capitalize on those capabilities by

encouraging weapon designers to build components that are compatible with commercial manufacturing techniques rather than developing new manufacturing capabilities within the DOE complex, a costly and time-consuming process."

Already Successful Technologies

The 13 non-nuclear components that will be produced commercially during the demonstration program include such devices as thermal batteries, hot wire detonators, battery igniters, clocks, and other electrical and electromechanical components not directly related to a weapon's explosive nuclear core.

"Because these devices are already being made or procured successfully by DOE's production plants," says Harry, "this program should pose no substantial risk to our customers and will allow us to concentrate on developing a program management infrastructure within the Labs."

As part of the program, Sandia will identify qualified commercial vendors and, when necessary, transfer the technologies required to manufacture the parts. Next, the vendor supplies Sandia with Tool-Made Samples — manufactured "prototype" parts straight from the vendor's assembly line. Sandia then monitors each part's production through formal product acceptance techniques and delivers finished components to DOE assembly plants.

Learning Experience for Sandia

Managing parts production will be a valuable learning experience for Sandia, says Harry. "At a minimum, the Labs will acquire greater expertise in design for manufacturing, procurement, and quality. In addition, we will have to perform a lot of jobs we're not yet familiar with, as well as establish a production management infrastructure within the Labs."

A small program management group from Org. 5400 will provide oversight for the program,

he says, and individual employees from throughout the Labs will perform specific MDE duties, all acting as a team. He predicts that as many as 50 FTEs (full-time employees or equivalent) will be needed at any one time during the program. Training courses will help designers and developers meet the new MDE requirements.

A working group of representatives from DOE/AL, the production plants, and Sandia has also been formed to coordinate MDE activities within the weapon complex. Sandia's delivery responsibilities through FY2000 have already been specified.

Planning Significant

John says careful planning is the foundation for the MDE program's future success. A Sandia team developed detailed project plans for each of the 13 demonstration parts, describing the scope of work, cost, and schedule.

The formal planning process began in March and ended in July when DOE accepted the 13 project plans. He says other Labs organizations are now beginning to see the advantages of following a similar program management format.

"The 'value-added' from this project is the project management processes formalized by the Sandia team," says John. "I'd like to recognize the small group of dedicated employees, both technical and administrative, who invested a lot of time and effort getting MDE started," he says. ●JG

Fun & Games

Archery — The Manzano Archery Club is looking for new members. For details, call Dewey Reed or Scott Brady on 6-7535. Only members can use the club's practice and field range.

Basketball — Team registration deadline for the Sandia Labs Basketball Association (SLBA) is Friday, Oct. 18. The entry fee is \$160 per team, payable to SLBA. Rosters are due with the entry fee, as well as necessary forms. Call or stop by the SERP office (4-8486) to obtain paperwork.

Softball — On Sept. 13 and 14, the Waste Isolation Pilot Plant (WIPP) held its first ES&H Field of Dreams Softball Challenge. Sandia's team, the Thunderbirds, went undefeated and took first place in the Silver Division. The team of Sandians, family members, and contractors included Tim Dale, Robert Garcia, Len Kracko (9325), Mary Mares, Glenn McCoy (9325), Jason McKeever, John McKeever (9325), Pam Nesbit, Andrew Orrell (6343), Suzanne Orrell, Alice Ortiz, Gabriel Ortiz, John Ortiz (9325), Susan Pickering (6340), Tommy Richie, Gloria Rojo, Jessica Rojo (6340), and Vanessa Rojo.

Fun Run — The fifth annual fun run, sponsored by the Chaparral Girl Scouts, will be Saturday, Oct. 26. The 5-kilometer fun run and race walk, one-mile walk, and one-mile run had more than 600 participants last year. The 5K road race/5K race walk will start at 8:45 a.m. The one-mile walk/run starts at 9:45 a.m. The event is open to the public. Packets will be distributed at the Chaparral Girl Scout Council (500 Tijeras Ave. NW) on Friday, Oct. 25, from 11 a.m. to 5 p.m.; and at Robinson Park (8th St. & Central) on Saturday, Oct. 26, from 7:45 a.m. until starting time. Registration forms are available at Gil's Runners Shoe World, the Albuquerque Public Library, and Chaparral Girl Scout Council. The registration fee with T-shirt is \$10; \$6 without the T-shirt. For information, call 243-9581.

(Continued from Page Five)

Weapon Quality

customer's requirements or wants to those things that we do to achieve them."

In fact, one of the objectives of the quality initiative is to institutionalize quality by establishing regular procedures and policies that everyone can follow and that underscore a quality approach to every aspect of Sandia's work.

For example, in developing the hardware for trainer units with Rocky Flats, Sandia's PQMI approach made it possible not only to produce better quality parts, but to incorporate design changes without delay and to get the job done more quickly and more cost-effectively, notes Jack. The Sandia-Rocky Flats team used PQMI to analyze the systems used to procure, manufacture, and ensure the quality of development hardware. Team members then approached the Associate General Manager at Rocky Flats — an example of empowerment — with a plan for improvement that was greeted with enthusiasm. Additional teams were formed to get union workers involved at the Rocky Flats plant, and statistical process control systems were installed to ensure continuous quality improvement during production.

Sandia has also followed AT&T's lead by establishing process management teams (PMTs) to develop new procedures for improving quality.

Sandia has now committed to being evaluated

by 1994 by AT&T's quality criteria, which are based on the same criteria used in the Malcolm Baldrige Award.

"The old value system was that Sandia ensured quality by hiring good people, and that's still true, but now we've institutionalized quality assessment as well," says Norm. ●LD



DICK JONES (8445) displays a chart he designed detailing the history of explosive mini-valves designed by Sandia using similar components over the years that have been put together in different ways to accommodate the needs of various weapon systems. To date, more than 17,000 of these mini-valves have been built; more than 6,000 have been tested, with no failures.

1991 ECP Campaign

Thirty-Five Years of Sandians Giving Through ECP

The 35th Employee Contribution Plan (ECP) campaign begins next Monday, Oct. 7. Over these 35 years, Sandians have developed a reputation for generosity to the community, and through their ECP contributions have helped thousands of Albuquerque-area people.

In 1957, the theme of the first ECP campaign was "We Give Once and For All." United Way was called United Fund. There were team captains instead of directorate representatives. But the basic structure of ECP was the same as now: year-around giving by payroll deduction, annual campaigns in the fall, and teamwork by all involved.

In 1957, the total pledged through ECP was \$96,100. It rose to \$280,000 in 1967. In 1983, the total amount of money pledged passed the million-dollar mark at \$1,038,658. Last year's pledges totaled \$1,497,202.

"One of the goals of this year's campaign is for each directorate to achieve 100 percent participation," says Ted Schmidt (6450), 1991 ECP Committee Chairman. "The monetary goal is \$1.5 million." The percentage of employees participating in ECP last year was 90.1 percent.

"One thing that really impresses me is that United Way exhibits the values we have at the Labs," says Ted. "There's respect for the individual, teamwork, leadership, integrity, and stewardship of resources. I'm convinced that United Way is doing a tremendous job of meeting human needs in our community."

This year, retirees have an opportunity to participate in ECP. Retiree Ted Sherwin (manager of Sandia's Public Relations Department when he retired) was one of the original planning committee members who helped shape ECP and get it started. "ECP is an outstanding example of what cooperation between Sandia and the community can amount to," says Ted. "I feel a great deal of satisfaction from being involved in starting the payroll deduction contribution plan at Sandia. It's a continuing source of amazement to me that ECP maintains the percentage of contributions — 20 percent of Albuquerque's United Way giving — it has over the years."

Lots of Sandians Help

This year's ECP Committee members include Ted Schmidt, chairman; Melodie Owen (140), solicitation chairman; Dick Prairie (320), publicity chairman; Wayne Potter (152), treasurer; Joe Laval (3163), executive secretary; Janet Carpenter (3162), LAB NEWS coordinator; Linda Gillis (3155), Tech Art coordinator; Helen Richardson (3533), new hire coordinator; Lorri Kaiser (3435) IGUA representative; Timothy Ashby (7845), OPEIU representative; and Ernest Aguilar (3424), MTC representative.

Directorate Representatives for the 1991 ECP campaign are Gloria Zamora (4500); Paul Miller (1126); David Johnson (1238); Frances Griego (1333); Scott Strong (1415); Steven Plimpton (1421), alternate; Randy Schunk (1511); Will Hareland (1824); Douglas Leland (2362); Barbara Mills (2311), alternate; Robert Clark (2522); Hugh Bivens (2534), alternate; David Judd (1944); Shirley Everett (2855); Barry Bronkema (2853), alternate; Duane Landa (3180); Hong-Nian Jow (3212); Jonathan Sherer (3301); Connie Eimer (3340), alternate; Robert Eldridge (3421); Steve Heaphy (3435), alternate; Amy Tapia (3442), alternate; Kim Brown (3552); Jim Stromberg (3532), alternate; Billie Weatherly (3741); Ann Chipman (5171); Gilbert Quintana (9545); Robert Longoria (9519), alternate; James Chavez (6217); Alice Hotchkiss (6318); Craig Novak (6344), alternate; Rodney Schmidt (6423); Bernie Daillboust (6464), alternate; Pamela Harris (6601); Ed Case (362); Angela Campos (313), alternate; Phil Thacher (4341); Juanita Sanchez (2481); Rick Peterson (2732); Valerie Roberts (7851); Judy Gudovich (9142); Paul Elder (9211); and Jim Powell (9300). ●JC



FAMILY DAY AND ECP ACTIVITIES came together recently at Albuquerque's Rehabilitation Center, a United Way agency that provides vocational training and sheltered employment to clients such as Diana Roper, seen here assembling visitor buttons for Sandia's Family Day, Oct. 19.

ECP Ceremony Next Week

ECP's 35th anniversary will be recognized by Mayor Louis Saavedra at a special ceremony Tuesday, Oct. 8, on the Technical Library mall at 10 a.m. (in case of bad weather, the ceremony will be in the Technology Transfer Center lobby). All Sandians are invited. The mayor will read and present a proclamation to Al Narath. Herb Pitts (3100) will be the master of ceremonies, and children from the Christina Kent Day Nursery (a United Way agency) will sing.

Medical Corner

Learning About Multicultural Counseling

By Arlene Price, 3300

An important focus among mental health workers today is providing relevant, helpful services to members of culturally diverse groups. Professional counselors are becoming increasingly aware that they can help their clients more if they understand how to deal with different people from different cultures.

It's always a challenge for the counselor to establish good relations and communications. This is especially true when working with people from culturally diverse backgrounds. Multicultural counseling takes into account the ethnic and cultural background of the individual, as well as personal experiences.

"Ethnic" refers to groups of people who share similar physiological traits, personality character-

istics, language, and culture. "Culture" refers to what a person has learned to do, believe, value, and enjoy — including ideals, skills, customs, and all other aspects of a person's life. Multicultural counseling involves all this, along with the differing communication styles and the unique world of each individual, including the roles of family, friends, and spiritual and community leaders.

The culturally skilled counselor has the knowledge and skills to assist people from different cultural backgrounds. He or she approaches counseling in ways that are consistent with the individual's life experiences and cultural values. Even though the counselor may not always understand at the outset, willingness to learn helps build the bridge to effective communication.

Hispanic Counseling Program Is Oct. 16

As part of Sandia's appreciation of cultural diversity and in recognition of Mental Illness Awareness Week, Medical 3300 is sponsoring a program about multicultural counseling. The guest, Kenneth Martinez, will discuss the counseling of Hispanics. The program, focusing on understanding the mental health of Hispanics, will be at the Technology Transfer Center on Wednesday, Oct. 16, from noon to 12:45 p.m.

Mental Illness Awareness Week — this

year it's Oct. 6-12 — is dedicated to recognizing mental illness as one of the major health problems in the United States.

The week's theme, "Silence is No Treatment," goes to the heart of the stigma surrounding mental health problems. The aim is to break down the barriers to seeking professional help. Admitting a problem exists and talking about it are the first important steps in doing something about it. Deciding to seek professional help is another giant step.

Take Note

"Women in the Military Past, Present, and Future — Tribute VII," an annual salute to American women who have served in the armed forces, will be Friday, Oct. 25, at the KAFB East Officers Club. The tribute includes workshops, seminars, and a luncheon and begins with traditional military opening ceremonies. Tribute VII is sponsored by KAFB, the Veterans Administration Medical Center, Vietnam Veterans of New Mexico, the Albuquerque Veterans Administration Regional Office, U.S. Rep. Steve Schiff, and the Military Relations Committee — Greater Albuquerque Chamber of Commerce. A registration fee of \$12.50 covers the cost of the luncheon. Deadline to register is Oct. 11. Call Capt. Lemoyne Blackshear on 6-7933.

Retiree Deaths

Dorothy Pratt (79)	June 8
Oracio Garcia (76)	July 15
Amadeo Ortiz (80)	Aug. 11
Calimero Lucci (82)	Aug. 13
Johnny Archuleta (57)	Aug. 18
Mary Milatzo (81)	Aug. 24
Ray Bishop (78)	Aug. 25

Sympathy

To Randall Montoya (2858), Renetta Sierra (3423), and Rhonda Garcia (4063) on the death of their mother in Albuquerque, Sept. 12.

New and Improved Nomination Procedures**Employees May Nominate Colleagues for Distinguished MTS**

When new Distinguished Members of Technical Staff (DMTS) are appointed this winter, technical achievement will still be the most important factor in their selections. But to make the final cut this year, DMTS nominees must also be corporate role models, says Linda Vigil-Lopez (3533), senior personnel specialist.

That's because a quality action team, headed by Howard Stephens (6212), has spent the past year revising the procedures and requirements for nominating new DMTSs. These changes, says Linda, will demonstrate that Sandia values not only sustained technical contributions but also the concepts presented in the Labs' *Strategic Plan 1990*.

"DMTSs will still reflect the same level of technical excellence as in years past," says Linda. "But now, appointments will also be based on behaviors that exemplify our corporate values."

Daily, On-the-Job Contact

Another major difference between this year and last, says Linda, is the addition of peer nomination. Sandia Members of Technical Staff (MTS) may now nominate Senior MTSs who they feel

have made sustained and significant technical contributions and who exemplify Sandia's five corporate values: integrity, leadership, quality, teamwork, and respect for the individual.

"Nomination by colleagues reflects Sandia's new empowered culture," she says. "Employees sometimes see a different side of their peers than their managers do because of their direct, daily contact with them on the job." Of course, managers are still encouraged to nominate DMTSs, she adds. (To obtain a nomination packet, see "How to Nominate a DMTS.")

Among other changes: employee review panels in each vice presidency are being established that will review nominations and recommend candidates to their VPs, who make the final selections. The aim of these panels, composed of

DMTSs and managers, is to solicit more employee involvement during the selection process, says Marv Torneby (3530). (Before, supervisors, department managers, and directors recommended candidates to their VPs.)

What Else Is New?

The new DMTS nomination packet (a set of instructions available the week of Oct. 7) reflects changes in this year's selection process by requesting specific examples of when each nominee demonstrated Sandia's corporate values. (The "Rewards and Recognition Tool Kit," available from Sandia supervisors and above, lists common behaviors that demonstrate the corporate values, notes Linda; it can be helpful when completing the packet.)

The nomination packet also requests information about each nominee's record of educational and community service and asks how the nominee serves as a technical resource to Sandia.

Members of the Quality Action Team that brought about these changes include Carol Adkins (1841), Sam Martin (2541), Basil Steele (9549), Kathleen Diegert (323), Jim Wang (8431), and Dean Pershall (3511), chaired by Howard Stephens.

The team was asked to examine the DMTS selection process as part of an in-depth review of the DMTS program by a Process Management Team headed by Marv Torneby. Team members, representing a cross-section of Sandia's management, included Arlyn Blackwell (2800), Ralph Bonner (3500), Julia Gabaldon (4303), Richard Shepardson (3550), Dan Hartley (6000), and Howard Stephens.

The first DMTSs were named in March 1983; more were named in December 1983, May 1985, March 1987, March 1989, and August 1990. In all, 313 DMTSs have been selected. Each DMTS typically receives an inscribed plaque, a pin, and a lump-sum monetary award. The total number of awards is limited to approximately 10 percent of the MTS population. ●JG

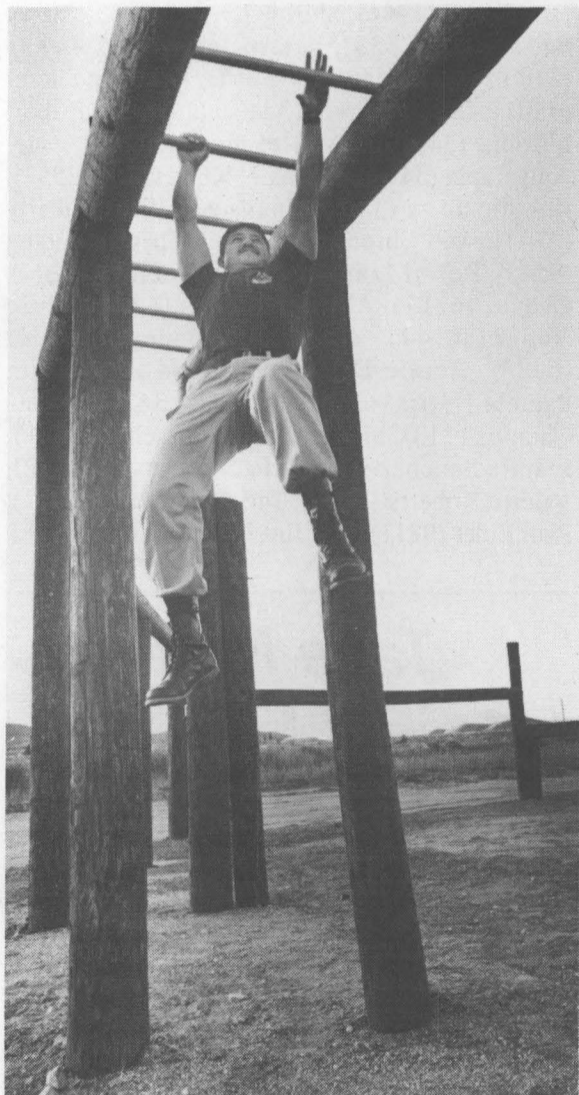
How to Nominate a DMTS

The DMTS program recognizes Senior MTSs for continued technical excellence and individual contributions to the Labs' mission. DMTSs are regarded as seasoned experts in their specialties and are, therefore, considered Labs resources. All non-supervisory Senior MTSs with five or more years of Sandia MTS experience are eligible.

To nominate a DMTS, obtain a nomination packet (a set of instructions available the week of Oct. 7) from a supervisor, department manager, director, personnel representative, or VP administrative assistant. You will need to provide evidence of the nominee's sustained technical contributions, letters of reference, and other supporting documentation.

After completing the packet, submit it to the nominee's personnel representative no later than Monday, Nov. 11.

Final selections will be announced in the LAB NEWS early in 1992.



GOING STRONG — Tommy Serna (3435), Sandia's competitor for DOE's Security Inspector of the Year, placed third in the physical fitness portion of the 1991 competition and second in the rifle course. He finished sixth overall. Sandia's team in the Small Arms Tournament held at the same time also placed sixth, out of 25 participating teams. This year's team consisted of Capt. David Stout, Lts. Gary Malin, Shane Murray (all 3435), Willie Johns (3430), and Ralph Garcia (3435), and Inspectors Tommy Serna, Anthony Aragon, Ernest Torres, and Ruben Padilla (all 3435). Willie finished third in the DOE Handgun event for Sharpshooters, Ralph placed second in the DOE Handgun event for Experts, and David took second in the Combat Handgun event for Experts. David says, "The Pistol Team thanks everyone for their support, and especially the Security people who worked in our place so we could participate in the competition."

Attention, Medicare Retirees And Surviving Spouses

The premium notice to continue the increased lifetime maximum coverage under Sandia's Medical Care Plan (MCP) will be mailed by Mutual of Omaha in December, not October.

This notice is only for retirees and survivors who have Medicare as their *primary* insurance, with Sandia's MCP as the secondary insurance, and who have already elected to increase their lifetime maximum coverage under Sandia's MCP.

Because the maximum lifetime level of benefits provided to Medicare primary plan participants is \$50,000, the opportunity to increase the lifetime maximum coverage under the MCP is extended each January to anyone who became eligible for primary Medicare coverage during the previous year. The lifetime maximum coverage can be increased to \$100,000 or \$150,000 by paying \$9 or \$18 per year, respectively.

Effective January 1, 1992, the Lovelace HMO (Health Maintenance Organization) will become an alternative choice to the MCP administered by Mutual of Omaha for your medical care coverage. Because of this, the premium notices to continue your increased lifetime maximum coverage, normally mailed in October, will now be mailed in December. The reason for the change is that Sandia needs to identify those who opt for the Lovelace HMO during October's open enrollment so that we do not bill them for the annual \$9 or \$18 premium.

If you choose to enroll in the Lovelace HMO, please note that your annual premium will be waived for the year that you are enrolled in the Lovelace HMO. If you wish to switch back to the MCP (during next year's open enrollment only), you will once again be eligible to continue your increased lifetime maximum coverage and you will automatically receive a premium notice for the following calendar year. For example, if you elect to enroll in the Lovelace HMO for calendar year 1992, you will not receive a premium notice because you are not obligated to pay for 1992; however, if you switch back to the MCP for 1993, you would receive a premium notice next December to continue the lifetime maximum coverage for 1993.

If you are considering joining the Lovelace HMO and have questions concerning lifetime maximum coverage under the Lovelace HMO, please attend one of the HMO orientation meetings. Call 262-3467 for information on the times and locations of those meetings.

If you are continuing coverage under the MCP and have not received your premium notice to continue the increased lifetime maximum coverage by the end of January 1992, please call the Benefits Department.



UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS

Deadline: Friday noon before week of publication unless changed by holiday. Mail to Div. 3162.

Ad Rules

1. Limit 20 words, including last name and home phone.
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

- SKIS: Rossignol Junior Europe, 170cm, w/Salomon 447 bindings, \$85 OBO; Elan Juniors, 130cm, \$25 OBO. Plummer, 296-4327.
- EVERETT UPRIGHT PIANO, old, located in Paradise Hills, \$450. Randolph, 299-2057.
- EARLY AMERICAN OAK TABLE, 6 chairs, buffet w/china cabinet, serving table (washstand), \$2,100 OBO. Uhl, 298-6391.
- KIRBY CLASSIC III VACUUM CLEANER, rebuilt, w/instruction book & all accessories (including spray gun), \$100. Rogers, 293-5726.
- BUNNIES, mini-lops, copper color, white California bunny, \$12. Salgado, 883-0749.
- BRA for Suzuki Sidekick or Geo Tracker, \$50. Scott, 828-0467.
- CACTUS CUTTINGS, Cow's Tongue, 50¢ per pad. Guilford, 255-6294.
- CHILD'S CAR SEATS, \$20; stroller, \$10; fold-up crib, \$20; red wagon; booster seat; door guard; child's lawn mower. Maish, 898-8027.
- RECLINER, new, blue/peach, \$215; dark brown leather chair, \$20; skis, \$20; 1/2-hp cooler motor, \$20. Atencio, 897-2189.
- MALE CANARIES, hatched June 17, \$50/ea. Ellis, 296-3907 after 6 p.m.
- NINTENDO, \$50; games, controllers, etc., various prices. Sanchez, 299-0443.
- AM/FM CASSETTE CAR RADIO, new, \$55; removable car mirrors & air deflector for pulling a trailer, \$35. Cropp, 296-1877.
- NORDICTRACK 505, cost \$535, sell for \$425. Chirigos, 298-3837 after 6 p.m.
- BEDROOM FURNISHINGS: king-size waterbed, dark pine, 6-drawer pedestal, bookcase headboard, \$100; full-size bed, \$50; lamps, \$30/ea. Gibson, 821-8316.
- GAS LOG, RealFyre ceramic logs, 30-in. w/automatic pilot light & grate, used one season, \$250. Schmidt, 823-1541.
- L-SHAPED SECTIONAL COUCH, tan earth-tones, end table, \$80. Dennis, 296-4635, leave message.
- LANE BEDROOM SET, walnut, 80-in. dresser w/mirrors, 9 drawers, nightstand, headboard, \$300. Wischmann, 821-2966.
- HAM ANTENNA & TOWER, 60-ft., Rohn 25G & Wilson 5Y-40, 10-el. Triband beam & Ham II rotor, \$350 OBO, will consider partials. LeGalley, 822-0676.
- HUNTER'S SPECIAL AVION CAMPER, fully equipped, long-bed truck shell; 25 yds. gold nylon carpet; Cobra CB. Pickering, 268-2134.

- VIDEO ENHANCER/EQUALIZER, for editing/dubbing, 4 mos. old, list price \$299, sell for \$175; snow tires, 7.75-14, w/rims, \$50/pr. Hale, 298-1545.
- FIBERGLASS TOPPER, for Chev. El Camino, 1978 up, sliding side windows, \$275. Lis, 822-1189.
- SHINDAWA CHAIN SAW, 16-in. bar, extra chains, \$150. Douglas, 281-9843.
- ARTIFICIAL CHRISTMAS TREE, 8-ft., Scotch pine, \$55; Babysitters Club books, Nos. 17-19, 21-25, 27-31, 33, & 34, \$1/ea. Wagner, 823-9323.
- QUEEN-SIZE WATERBED FRAME, 4-post, 6-drawer, dark finish, w/heater, \$100. Desko, 883-2662.
- DOUBLE SLIDING CLOSET DOORS, 2 pr., wood, complete w/frames & hardware, \$40/ea. Gonzales, 344-4933.
- NORITAKE "ADAGIO" BONE CHINA, eight 5-piece place settings, off-white w/flower pattern, silver trim, \$125 OBO. Selleck, 823-2497.
- TAMA DRUM SET, 5-piece, Ziljian cymbals, chimes, cowbells, more, \$950 OBO. Zamora, 294-3737.
- SNOW TIRES for small foreign-type pickup, 2, size E78-14, mounted on 6-hole rims, \$50. Haaker, 298-7415.
- COMPUGRAPHICS TYPESETTING EQUIPMENT, RGFR process camera, office system w/3 desks, drafting tables, miscellaneous design studio supplies/equipment. Montoya, 883-7598.
- CAMPER TOP for Ford F-150 short-bed pickup, needs repair, \$60. Walker, 898-2860.
- BUMPER POOL AND CARD TABLE, 52-in. round, balls, 8 cue sticks w/wall rack, \$175. Miller, 268-5992.
- TWO EXTERIOR DOORS, complete w/frame & locking knobs, 36-in., \$20; 32-in., \$15. Garcia, 293-3937.
- WOMAN'S WEDDING BAND, size 6, rose pattern, rose/yellow gold, \$100. violin, w/case, needs bow, strings, \$100. Johnson, 299-5459.
- DAYTON ELECTRIC WATER HEATER, 42-gal, "Wattrimmer," converted to LP gas, \$50 OBO. Mooney, 281-2612.
- GOLF CLUBS & BAG, Wilson X31S, Taylor bag & stand, 2-PW, 1, 3, 5, metal woods, new, \$350. Savage, 296-0528.
- YARD SALE, Oct. 12, 9 a.m.-6 p.m., kitchen cabinets, appliances, furniture, toys, bicycles, clothing, more, 8210 Connecticut NE. Kannolt, 899-0788.
- TIRES, LT 215x85R16; Chilton's & Tune-Up Guide, Ford Fairmont & Zephyr, \$6. Padilla, 877-2116.
- '82 SAFARI TRAVEL TRAILER, 32-ft., self-contained, roof air, awning, large living room, \$5,750. Ashland, 296-8953.
- TARGET PISTOL, Thompson Contender, single-shot, very light custom trigger job, .22 and .357 10-in. barrels, \$250. Ludwick, 296-6447.
- CONCHO BELT, w/lapis, matching earrings, \$800 OBO; black fox coat, \$325 OBO; suede coat, \$115; Zuni bracelet, \$150. Holloway, 345-3969.
- UNM BASKETBALL SEASON TICKETS, bench seats, will sell half or all. Drebing, 299-2204.
- PING i-2 WOODS, 1, 3, 5, new, \$200; 2-irons, \$45; Wilson x-31 woods 1, 3, 4, 5, \$48; "The Ginty" wood, \$35. Stang, 256-7793.
- RIDING LEATHERS, H-D Hein-Gerrick jacket, \$175; chaps, \$135; both large size. Micono, 884-7873.
- CHROME RIMS, 8-hole Ford; 78x14 mud/snow tires w/rims for Chev; mag rim & tire for '87 Maxima, 195x60R15. Cassell, 298-5262.
- IBM XT CLONE, color monitor, two 5-1/4-in. floppy drives, 20MB HD, \$500 OBO. Bishop, 892-6554.
- SUFFOLK RAMS (2), proven breeders. Eisenberger, 877-7041.
- GARAGE SALE: Saturday, Oct 5, old putters, color TV, Electrolux, etc., 5000 Sequoia Rd. NW. Homer, 836-5043.

- WOODEN PLAYPEN, \$45; Tot-Loc chair, \$15; Play School toolbench, \$5; dancing animals mobile, \$11. Korbin, 821-8461.
- TRAVEL TRAILER, 21-ft., interior recently renovated, high-clearance, 55-gal. water capacity, AC, dual furnaces, tandem axles, new tires. Kercheval, 864-6549.
- GARAGE SALE: Oct. 5, 8 a.m.-3 p.m., household items, PC software & hardware, tables, chairs, cross-stitch items, knick-knacks, misc. Snyder, 293-3611.
- MALE SHELTY, 5 yrs. old, has shots, free to good home. Vahle, 891-0451.
- DAYBED, coffee table, double mattress w/frame, steamer trunk, old vanity, 15-ft. boat cover (new), Italian tile, more. Cianciabella, 268-7150.
- VOLKSWAGEN BUS TRANSAXLE, w/reduction boxes, '67 model, \$100 OBO. Thorne, 884-4870.
- GARAGE SALE: Oct. 12, 8 a.m.-2 p.m., baby items, clothes, toys, car seat, crafts, misc., 9604 Bolack NE. Filter, 823-1232.
- CHILD'S SPRING HORSE, \$25; canning jars, 25¢ ea.; electric lawn edger; Scott fertilizer spreader; 42-in. trampoline; Paragon electric kiln. Mills, 299-2130.
- GARAGE SALE: Oct. 5, 9 a.m., misc. items. Graham, 12514 Indian Trail NE.
- PATIO SALE: Oct. 5, 8 a.m.-5 p.m., portable dishwasher, antique sewing machine, projector table, projector, more, call for directions. Myers, 865-4781.
- HITACHI B&W TV, \$25; Technics bookshelf speakers, \$40/pr.; Brother AX-15 typewriter, \$30. Prins, 821-0490 after 6 p.m.
- FISHER-PRICE SWING, \$50; child's pine desk & chair, \$55; wooden portacrib, \$45; big jump horse, \$45. Levan, 293-0079.
- STEREO SYSTEM, JVC receiver w/remote, JVC dual cassette deck, Bose 4.2 speakers, 1 yr. old, paid \$900, sell for \$675. Davis, 294-1048.
- SIDE-VIEW MIRROR, clamp-on, for trailer towing; bathroom sink faucet, 4-in. centers, new. Moss, 298-2643.
- UMBRELLA STROLLER, \$5; crib toys, etc. Hudson, 884-7621.
- STAMP COLLECTION, US postage stamps from the '60s, make offer on all or part. Hall, 243-3672.
- BICYCLE TRAINER/EXERCISER, Vetta, uses your bike, \$39 OBO. Abbin, 296-7678.
- WHITE REFRIGERATOR, full-size, \$125. Pompeo, 265-5396.
- BEER MEISTER, holds large keg or pony kegs, complete with CO2 bottle, \$200 OBO. Lesperance, 298-5203.

TRANSPORTATION

- '77 BMW MOTORCYCLE, R100S, 32K miles, extras, bags, San Jose mods., leathers available, \$1,900. Micono, 884-7873.
- '65 KARMAN GHIA, new engine, \$5,400; '67 Mercury, \$2,300; one owner. Cropp, 296-1877.
- MAN'S 12-SPD. BIKE, 20-in, gold, racing/touring style, not mountain bike, \$85. Lowrey, 292-1137.
- '72 SUPER BEETLE, 20K miles on engine, new interior, brakes, paint, rear window louvers, rust-free, \$2,500. Marchi, 291-9681.
- '74 VOLVO, \$1,000 OBO. Short, 299-1548, leave message.
- '69 THUNDERBIRD, 429 engine, needs new vinyl top, suicide doors, \$1,000. Haines, 275-2715.
- '67 VOLKSWAGEN BUG, all new or rebuilt, \$1,850 OBO, consider trade for motorcycle. Irwin, 294-4644, leave message.
- '89 CHRYSLER NEW YORKER, AC, AT, 6-cyl., anti-lock brakes, 7/70 warranty, \$12,000 OBO. Helton, 897-4560.
- '83 AMC EAGLE LTD., 4-WD wagon, leather, new tires & battery, \$2,200. Hansen, 823-9515.
- '89 HONDA CBR-600 HURRICANE, 8K miles, \$3,500 OBO. Hendrickson, 821-7453.
- BICYCLE: 56cm Cannondale SR500 road bike, Dia-Compe, Shimano, Suntour components, \$550 OBO. Goodson, 265-2080.
- REPOS: '80 Volkswagen Rabbit, needs repair, 119,900 miles; '86 Ford Bronco XLT, 4x4, AT, 8-cyl., AC, AM/FM stereo tape deck, PW, PL, 120,400 miles; '87 Chev. Sprint, 5-sp., 3-cyl., AC, AM/FM, 40K miles; bids accepted through Oct. 11; we reserve the right to refuse all bids; subject to prior sale. Sandia Lab FCU, 293-0500.
- '84 AMC EAGLE WAGON, 4-WD, AC, AT, \$3,000. Payne, 299-5966.
- '65 DODGE DART, 4-dr., AT, everything works, \$500. Johnson, 299-5459.
- '84 TOYOTA VAN LE, AT, dual AC, \$4,500 OBO. Padilla, 899-1913.
- '64 CORVAIR MONZA, AT, fuel pump push-rod problem, \$250; '71 Mercury Capri, runs, better for parts, \$100. Meister, 268-9159.
- '85 SUZUKI GS450L, \$850; tube-frame Volkswagen dune buggy, w/parts, \$375. Brock, 865-4055.
- '80 SUBARU WAGON, AC, AM/FM, 83K miles, \$1,200 OBO. Gough, 822-0090.
- '82 SUBARU WAGON, 5-sp., 4-dr., AC, cassette tape, \$1,500. Gonzales, 265-0380.
- '90 JEEP CHEROKEE LAREDO, 4x4, AT, AC, PW, PL, extras, \$2,000 below book, \$16,400. McClenahan, 294-8454.
- BOY'S BIKE, 16-in. BMX-style "Cheetah," padded crossbars, coaster brake, \$35. Goldstein, 828-1839.
- '85 SOUTHWIND RV, 27-ft., 48K miles, new AE9000 awning, railing, ladder, more. \$24,000. Cianciabella, 268-7150.
- '89 MAZDA B2200 SE5 TRUCK, 27K miles, matching shell, AM/FM cassette, AC, cruise. Hanson, 299-6421.
- '87 LINCOLN TOWN CAR, 72K miles, \$9,000. Haines, 744-5145.
- '90 PLYMOUTH LASER, 28K miles, AM/FM, take over payments. Gabaldon, 1-864-3696.
- GIRL'S SCHWINN BICYCLE, 10-sp., 27-in. small frame, \$80; '75 Chev. Malibu, 4-dr. sedan, AT, AC, PS, PB, \$1,000. Hickox, 299-0772.
- '73 CHEV. MONTE CARLO LANDAU, AC, AT, PS, PB, 82K miles, new tires, blue, AM/FM, \$1,300. Puissant, 821-2447.
- SKI BOAT, 18-ft. Nordic, 460 cu. in. Ford, tandem trailer, new cover, \$6,900 OBO. Abbin, 296-7678.
- '88 HONDA ACCORD LXI, loaded, all power, AC, cruise, hatchback, new tires, 62K miles, \$8,900 OBO. Lopez, 293-2508.

- '74 VOLKSWAGEN BEETLE, new brakes, AM/FM cassette, \$2,300 OBO. Prusak, 296-1571.
- '79 MERCEDES-BENZ 450 SLC, cream w/leather interior, garaged, \$14,000. Wilson, 884-3128.

REAL ESTATE

- STONE HOME, 4 acres, 1,550 sq. ft., modernized & upgraded, garage, greenhouse, sunroom, view of Sandias, \$98,500. Weems, 281-5837.
- 2-BDR. HOME, 930 sq. ft., NE Heights, large backyard, \$54,900. Lucero, 294-7639.
- 3-BDR. HOME, large master bedroom, 1-3/4 baths, great room w/vaulted ceiling, 2-car garage, fully landscaped, 1,364 sq. ft., Tramway & Copper, \$95,000. Crotty, 294-0128.
- 2-BDR. CONDO, 2 full baths, washer/dryer, luxury extras, 1,300 sq. ft., electric garage opener, no qualifying, assume Candelaria/Tramway. Epperson, 299-0789.
- 3-BDR. HOUSE, Westview, 2,045 sq. ft., 3 baths, 2-car garage, sunroom, den, fireplace, exercise/utility room, large yard, REC, \$10,000 down, \$75,900. Padilla, 836-6956.
- 4-BDR. HOME, 1-3/4 baths, den w/fireplace, sunroom, 1013 Georgia SE, \$82,500. Miller, 268-5992.
- 1/2-ACRE, in lush forest, Cochiti Canyon, near Dixon's Apple Orchard. Drebing, 299-2204.
- 4-BDR. HOME, 3 baths, all brick, large den, 2 fireplaces, study, built-ins, fruit trees, roses, auto sprinklers, alarm. Mills, 299-2130.
- 3-BDR. HOME, Heritage Hills, great room, fruit trees, garden area, roses, assumable VA mortgage, La Cueva/Dennis Chavez districts. Montoya, 822-0717.

WANTED

- MANUAL for Printek 920 dot-matrix printer, buy or borrow; will also trade printer for IBM AT case. Romero, 296-9119.
- HAND-HELD CASSETTE PLAYER/RECORDER, must take external power as well as battery operation. Underhill, 294-5774.
- WHEELCHAIR, in good condition, for elementary school use, donated or cheap. Kellogg, 299-3737.
- HOUSE TO RENT OR BUY in Eldorado High School district, need by Aug. 1, 1992, 4-bdr., 2-car garage. Reif, 813-789-5656.
- TRAILER, to haul light motorcycle, rails or flatbed will work. York, 828-9505.
- RECURVE HUNTING BOW, quality, late model; over-under double-barrel shotgun; Honda generator. Patterson, 299-1062.
- HEAVY AMERICAN-MADE CAR, AT, 4-dr., medium-size, no older than 1980, for elderly parent. Stefanov, 299-7009.
- BACKPACK to carry baby/small child, prefer full-support models, in good condition. Ross, 299-3023 after 6 p.m.
- ART SLIDES, painting, sculpture, ornament, from anywhere, public/private collection, include artist identity. Meister, 268-9159.
- LOT, house, or cabin on Heron Lake. Mattox, 292-7763.
- UPRIGHT FREEZER, in good condition, 16-21 cu. ft.; Fisher-Price Construx. Hogan, 292-8879.
- CHILD-CARE PROVIDER, in our home, for 2 children, responsible person, part-time, flexible hours, weekdays. Cocain, 275-9505.

LOST AND FOUND

- LOST: Kryptonite bike-lock key, between Wyoming gate and Medical on Sept. 25. Stirbis, 299-8442.

Coronado Club Activities**Big Band Tonight — Sounds of Roland De Rose**

BIG BAND SOUND — Tonight, Oct. 4, it's the Roland De Rose Orchestra to help you swing your way into fall. The kitchen staff plays along with an irresistible menu: golden fried shrimp or roast prime rib (either, two for \$16.95); broiled salmon steak, filet mignon, or steak neptune (your choice, \$9.95). Dinner, 6 to 9 p.m.; music from 8 to 11. This one will be popular — reservations are highly recommended.

SKI CLUB WALKS — Down from Sandia Peak, that is. Make your plans for Sunday, Oct. 20, to participate in a traditional event dedicated to clean air and cleaning the mountains (by picking up trash as you walk down). As in times past, good food and fellowship is part of the day — lift & lunch is \$1 for CSC members over 5 years old, and each member can bring a guest for \$1 (subsequent guests, \$3 each). The lift opens at 10 a.m., and the last ride is at 2 p.m. The *Farmers Almanac* predicts fantastic snow this year, so get ready!

RESERVE YOUR PLACE at one of this month's three Champagne Brunches: Sundays, Oct. 6, 13, and 20. Brunch is served from 10 a.m. to 1 p.m., at \$6.95 for adults, \$2.50 for children 4-12, and free for toddlers 3 and under. As a bonus, get \$1 off your meal by showing your favorite balloon pin on the 6th or 13th — that's the big balloon week in Albuquerque. And don't forget — on the 20th, Bob Weiler and the Cats will play for a Tea Dance after brunch, from 1 to 4 p.m.

SAY "HAPPY BIRTHDAY, SAL" — Next Friday, Oct. 11, is the birthday of Club General Manager Sal Salas. The place is gonna be jumping in celebration that night. Birthday cake and balloons for everyone, and the Isleta Poor Boys will play some good ol' C&W music. Special menu, too, with special prices. Dinner served 6 to 9 p.m., music from 7 to 11. Make reservations now for a fun evening!

Events Calendar

Events Calendar items are gathered from various sources. Readers should confirm times and dates of interest whenever possible.

Oct. 4-6 — Annual Grecian Festival: Greek food, dancing, arts & crafts; 11 a.m.-10 p.m. Fri. & Sat., 11 a.m.-8 p.m. Sun.; St. George Greek Orthodox Church (308 High St. SE), free, 247-9411.

Oct. 6 — Concert, "Saints and Sinners," Música Antigua de Albuquerque performs music of religious piety and worldly pleasure from the Middle Ages and Renaissance, performances combine voices with authentic period instruments such as the crumhorn, shawm, viola de gamba, harpsichord, recorder, vielle, rebec, medieval harp, vihuela de mano, and Arabic oud; 4 p.m., Central United Methodist Church (1615 Copper NE), 842-9613.

Oct. 6 — Concert: the Albuquerque Chamber Soloists, performing a program of "water" music including Handel's "Water Music," Schubert's "Auf dem Strom (On the River)" and "Die Forelle (The Trout)," and Milhaud's "Scaramouche," presented in the semi-round, co-sponsored by the UNM Division of Continuing Education and the June Music Festival; 3 p.m., St. Paul Lutheran Church (1100 Indian School NE), 888-1842.

Oct. 6 — Indian Pueblo Cultural Center Balloon

Fiesta Celebration, arts & crafts, Indian dancers, food, entertainment; 10 a.m.-4 p.m., Indian Pueblo Cultural Center, 843-7270.

Oct. 7 — Monday Lecture Series: "Challenge to Success" by Judge Theresa Ann Gomez of Isleta Pueblo; 10 a.m., Indian Pueblo Cultural Center, 843-7270.

Oct. 10 — "There's a Nightmare in My Closet," puppet show addresses childhood fears in ways that create wonder and giggles; 10 a.m. & 1 p.m., South Broadway Cultural Center, 848-1320.

Oct. 12-13 — Jazz and Wine Festival, art, food, wine, sunshine, and jazz; noon to dusk, Sandia Shadows Vineyard and Winery (11704 Coronado NE), 298-8826.

Oct. 12-13 — Valleyfest '91: New Mexico Rodeo Association Finals Rodeo, more than \$100,000 in cash and prizes; 1 p.m., Bernalillo County Sheriff's Posse Arena (10308 2nd St. NW), 877-5883.

Oct. 12-13 — Valleyfest '91: horseback trail ride from Isleta Pueblo to Coronado Monument retracing part of the Coronado expedition of 1540; call for time, 841-8838.

Oct. 13 — Valleyfest '91: Festival de Otoño in historic Armijo on the Camino Real, parade at 10 a.m. from Rio Bravo Park, burning of "El Cucui (the Bogeyman)" at dusk; Westside Community Center (Arenal & Isleta SW), 877-8914.

Sandia News Briefs**Sandia Hosts Energetic Materials Safety Conference**

Next week, Sandia will host a two-day conference of the Research Center for Energetic Materials (RCEM), a consortium of 17 industrial sponsors devoted to the prevention of hazards associated with energetic materials.

The conference, to be held Oct. 8 and 9, will focus on safety issues associated with explosives, high explosives, propellants, and pyrotechnics. Representatives from Sandia, US Army Missile Command, Naval Weapons Center, Wright Lab Armament Directorate, and Los Alamos National Laboratory will speak during the first day's open seminar.

The RCEM, headed by New Mexico Tech, is an attempt by the New Mexico and federal governments to enhance technical expertise in energetic materials safety. The conference is expected to draw national and international participation.

David Anderson (2510) says interested Sandians are welcome to attend the open seminar presentations on Oct. 8 without registering (9 a.m. to noon in the Bldg. 962 auditorium). For more information, call David on 5-9625.

Community Leaders Take Part in Hispanic Community Day

On Tuesday, Oct. 8, New Mexico Hispanic community leaders — representing state government, the public schools, and community organizations — will learn about Labs educational programs for minorities and about career opportunities in science and technology at a Sandia-hosted Hispanic Community Day.

The event, part of Hispanic Heritage Month activities, is designed to establish contacts with community leaders and encourage them to join the effort to keep minority youths in school. Sandia's Hispanic Leadership and Outreach Committee is sponsoring the program.

As part of the event, Sandians are invited to a luncheon at the Albuquerque Marriott from noon to 1 p.m. The keynote speaker, Joe Garcia, represents the Director of the Department of Labor's Office of Federal Contract Compliance Programs. Tickets for the luncheon are \$14. For more information, contact Fred Norwood (1542) on 4-3306.

For Your Benefit**Open House at Lovelace**

During two weekends this month, Lovelace facilities will hold open houses for Sandia employees, their families, and other eligible persons in the Albuquerque area who may be interested in the new Health Maintenance Organization (HMO) option for health care. The Lovelace Health Plan, with coverage becoming effective Jan. 1, is the HMO alternative to the Medical Care Plan administered by Mutual of Omaha.

The open houses will be at two locations simultaneously: Lovelace Medical Center (5400 Gibson Blvd. SE) and Lovelace at Journal Center (I-25 at Paseo Del Norte).

Dates and times are Saturday, Oct. 12, 9 a.m. to noon; Sunday, Oct. 13, noon to 4 p.m.; Saturday, Oct. 26, 9 a.m. to noon; and Sunday, Oct. 27, noon to 4 p.m. Interested persons may go to either location any time during the open-house periods.

There will be entertainment such as clowns and magicians for children, and refreshments for everyone. Adults can get a cholesterol screening.

Several Lovelace specialty departments will be featured, including cardiology, family practice, internal medicine, and pediatrics. (Other specialty clinics may be added.)

Tours of the facility will be available. There will be opportunities to talk with staff members including physicians, technicians, and nurses. Lovelace staff members will also be available to answer specific questions about benefits or other aspects of the Lovelace Health Plan. ●

Welcome

New Mexico — Edward Schultz (7714).

Elsewhere: Arizona — Gordon Madison (7714).

Congratulations

To Sonia and Ron (2858) Brown, a daughter, Porshaé Ronique, Aug. 24.

To Laurie Plank (5145), a son, John Robert, Sept. 9.

To Gabriela and Joe (9227) Ramos, a son, Victor Gabriel, Sept. 12.



SPACE SHUTTLE astronaut Sid Gutierrez, USAF Lt. Col., was scheduled to speak to Sandians yesterday in the Technology Transfer Center as part of Hispanic Heritage Month activities. Gutierrez, a New Mexico native, helped conduct more than two dozen life science investigations in the microgravity environment aboard his recent flight on the space shuttle Columbia. His talk was sponsored by Sandia's Hispanic Leadership and Outreach Committee. (NASA photo)