

## Junefest Gives NATO Groups a Taste of What's New at Sandia

The latest in ways to protect nuclear weapons deployed in Europe: That's what more than 60 visitors to Sandia — from NATO (North Atlantic Treaty Organization) and US agencies — saw when they visited Sandia in late June.

The NATO Senior Level Weapons Protection Group (SLWPG) experienced two days filled with displays and demonstrations that included the Tactical Engagement Simulation System (TESS), survivable command-center technology, insider threat protection, intrusion-detection systems, insensitive high explosives, and other technologies significant to

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**"When they come to Sandia, I believe they see a wider spectrum of hardware and displays than anywhere else."**

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protection of NATO weapons. All this was in conjunction with a regular SLWPG meeting.

The displays and demonstrations were designated Junefest — following the lead of Aprilfests in 1987 and 1985.

Besides SLWPG members, those attending Junefest included Robert (Bob) Barker, Assistant to the Secretary of Defense for Atomic Energy and also chairman of the SLWPG (see interview below); NATO's Joint Theater Surety Management Group (JTSMG); representatives of the Defense Nuclear Agency (DNA); and other US officials. Members of Sandia's management also observed.

The roots of Sandia's association with NATO go back into the past decade, points out Executive

### Sandia: 'A Treasure Trove Of Ideas'



BOB BARKER

During Junefest (see story above), Robert Barker, Assistant to the Secretary of Defense for Atomic Energy (ATSD/AE) and chairman of NATO's Senior Level Weapons Protection Group (SLWPG), took time out for a LAB NEWS interview. Below are excerpts from that discussion.

LN: What is the Senior Level Weapons Protection

Group, and what are its main concerns?

**Barker:** SLWPG members represent NATO nations. We also have representatives from SHAPE [Supreme Headquarters Allied Powers Europe] and other military headquarters and the NATO staffs. We concentrate on issues related to the security and survivability of nuclear weapons in NATO countries in Europe.

The group usually meets four times a year — in different member nations and at NATO Headquarters in Brussels. Recently, we've been lucky enough to come to Sandia every other year; this is our third visit since 1985.

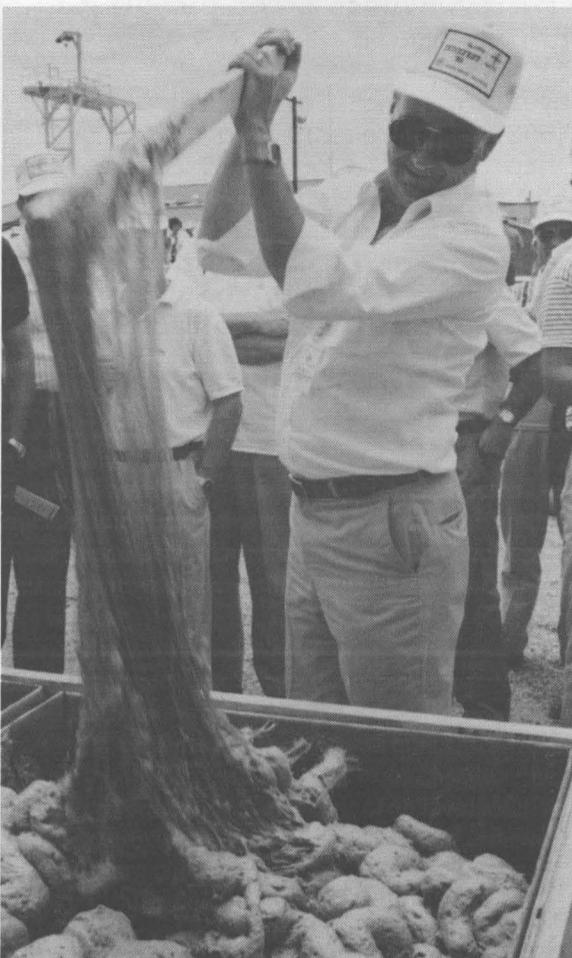
LN: Why the frequent visits to Sandia?

**Barker:** SLWPG recognizes that Sandia plays a very important role in the NATO defense effort. I don't know of another institution that does as much R&D on security and survivability [S&S] enhancements as Sandia does. So the visits always provide an outstanding opportunity to take a look at prototypes representing new S&S capabilities, and to hear about a wealth of new ideas.

One of Sandia's strengths is that it's not a victim of the "not-invented-here" syndrome — the idea that "if we didn't originate it, it's not worthy of note." Rather, people at the Labs maintain an awareness of

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VP Orval Jones (20): "From the early 1970s, Sandia has had an active program for developing physical security technologies. This, along with our traditional military liaison activities relating to nuclear weapons, led us naturally into a close association with NATO



WITH STICK AND STICKY FOAM, Bob Barker (Assistant to the Secretary of Defense for Atomic Energy and Chairman of NATO's Senior Level Weapons Protection Group) checks the properties of a Sandia-developed material that helps protect against intruders.

to help counter potential terrorist threats against nuclear weapons."

#### Sandia Was First

According to Junefest coordinator Pat Sena (5221), the SLWPG often combines facility tours or technology demonstrations with its meetings. "It keeps members informed on what's going on technically, what's being developed, what might be coming down the line.

"When they come to Sandia, though, I believe they see a wider spectrum of hardware and displays than anywhere else. We were the first to give them demonstrations of this type."

To broaden the scope of demonstrations and displays, says Pat, Junefest presenters included (besides Sandians) people from Lawrence Livermore, Los Alamos, DNA, the US Air Force and Army, and companies involved in defense. Pat credits Bob Barker with efforts to expand the spectrum of technology that the SLWPG is exposed to.

Although the action provides a good show for the visitors, it's far more than that. "Sandia is working on a lot of projects that help the SLWPG with its concerns," says Pat, "so it's important for us to meet these people and discuss problem areas with them directly. We get a chance to hear about their efforts and their problems during the meeting, and then, through our hardware demonstrations and displays, we can show them how we've been directing our work.

"That way we get firsthand reactions to our new concepts or hardware. It's two-way communication."

#### Trying Ideas Out

John Kane, manager of Survivability and Security Dept. 5220, agrees: "As I see it, we're really doing technology transfer to both the Department of Defense and our NATO allies. During Junefest, most of the technical information went from us to them.

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SECRETARY OF ENERGY JAMES WATKINS (left) and other government officials got a "deluxe" tour of the Waste Isolation Pilot Plant (WIPP) on June 28. Wendell Weart (6330) is seen here answering one of the Secretary's many questions during the tour of WIPP's underground facilities, led by Wendell. In the second seat are Governor Cecil Andrus of Idaho (far side) and Governor Roy Romer of Colorado. In the rear seat are John Tuck, DOE Under Secretary (far side) and Jack Tillman, DOE's on-site WIPP Project Manager. [Photo by Louis Archuleta (3154-3). See related photos and information on inside pages.]

# This & That

**Still Thinking** -- Those Sandia retirees don't stop thinking when they quit working. Retiree Murray Silverman of Albuquerque sends a prediction in response to the item in our last issue that 60 percent of fatal accidents on New Mexico highways involve alcohol. Murray predicts that figure will rise to 100 percent if we are one day forced to power our vehicles with methanol. Could be, Murray, unless sober bicyclists or joggers collide and kill one another.

\* \* \*

**How Sweet It Is, Or Was!** -- You never know where or when you'll run across the Sandia name. Dave Carlson (6521) did recently in a Lynchburg, Va., restaurant. It caught his eye as he prepared to empty a packet of sugar into his tea. Printed on the back of packet was a photo of the geodesic dome (Bldg. 852), captioned "Albuquerque, N.M. -- Sandia Sphere of Science." Dave sent me the packet -- still unopened.

Joe Laval (3163), whose office was in the dome until recently, says it may be a good thing Dave didn't use the sugar -- that the packets used to turn up occasionally, but he hasn't seen one for 10 to 15 years. The dome hasn't even been called the Sphere of Science since the late '60s, when it housed scientific exhibits open to the public.

\* \* \*

**More Sweet Talk** -- Item from the *Monitor* published by AT&T's Montgomery (Ill.) Works: ". . . telephone booths on Namiki Street in Tokyo begin spraying perfume into the air next month. The squirting phone booths, a brainchild of a giant cosmetics firm, are intended to create a 'more elegant, more sophisticated image' for the already elegant tree-lined shopping street where the company has its headquarters. If the smell catches on, the company may export perfume dispensers for phone booths on fashionable American streets."

The way some of my calls smell, I just may get one of those installed in my office.

\* \* \*

**WIPPIing With Wendell and Watkins** -- Wendell Weart, manager of Waste Management Technology Dept. 6330, escorted DOE Secretary James Watkins on a tour of the Waste Isolation Pilot Plant (WIPP) underground facilities during the Secretary's late-June visit to New Mexico (see photos this issue). Wendell says the Secretary asked many, many questions and is taking a personal interest in arriving at WIPP decisions. "He wants to make sure that any new schedule for opening WIPP is one in which he believes and one in which considerations have been made from the ground up, rather than from the top down."

\* \* \*

**Watch That Punctuation** -- Russ Walker (7243) thinks the KAFB Security Police may've had temporary custody of the world's largest cassette case. While scanning the classified ads in the June 30 *Focus* newspaper, Russ came across the following: "FOUND: one cassette case containing music tapes, several sets of keys, six bicycles, one set of jumper cables, three wallets . . . ."

\* \* \*

**A LAB NEWS "Oops"** -- I'm afraid we spoiled our "perfect image" last issue with the lead sentence in the back-page story about Sandia's upcoming 40th anniversary: "Sandia Corporation will be 40 years old on November 1, 1949." Make that "1989," please. ●LP

## Countdown to 40

# LAB NEWS Began 35 Years Ago

*Sandia Corporation will be 40 years old on Nov. 1, 1989. Until then, the LAB NEWS will publish related short articles in most (if not all) issues.*

In 1954, the SANDIA LAB NEWS published its first issue under that name, succeeding the SANDIA BULLETIN. But it reported little about Sandia's technical activities, commenting that "Sandia Corporation's annual report read cryptically (but pleasantly) 'production assignments successfully completed.'"

Among the few technical stories: A thousand-foot rocket sled track was used for high-velocity impact tests, and work with captive balloons was being conducted as a way of positioning electronic test equipment.

A year's recap published December 31, 1954, included the following items: Sandians played roles in local theatre groups, won a sports-car road race on the West Mesa, flew Air National Guard planes, donated 368 pints of blood to the Red Cross, bought a four-foot bullsnake through a LAB NEWS ad, shot river rapids in Wyoming, formed a Model A club, won a bowling competition with Los Alamos, served as presidents of the Albuquerque Boys Choir and the Albuquerque Press Women's Club, gave a wedding shower for a husband-to-be, and lost a runaway model airplane when it appeared on Kirtland Field radar and was destroyed by Air Force jets.

John Braseman became the first to retire under provisions of the Sandia Corporation retirement plan.

## And, Elsewhere

Elsewhere in the world, Bell Labs demonstrated the first successful "solar battery," a photoelectric device with six-percent efficiency. The Atomic Energy Commission revealed that MIKE, a large thermonuclear device, was detonated in the Pacific in 1952.

Jonas Salk began inoculating schoolchildren against polio. The Boeing 707 (the first jet-powered transport plane) was tested. The first atomic-powered submarine, USS "Nautilus," was commissioned. An atomic-powered railway locomotive was developed at Utah University but never really got "untracked."

Roger Bannister ran the first sub-four-minute mile. The French fortress of Dien Bien Phu, Vietnam, fell. The AEC voted to deny a security clearance to J. Robert Oppenheimer.

President Eisenhower modified a Pledge of Allegiance phrase from "one nation indivisible" to "one nation, under God, indivisible." Elvis Presley signed with RCA. New words and phrases included *massive retaliation, desegregation, do-it-yourself, togetherness*, and *bread* (meaning money). ●

## LAB NEWS

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JOHN YIP (5114) and Marcie Samuelson (3428) won their events this spring at the Southwest Regional Corporate Challenge Meet at UNM, sponsored by the US Corporate Athletic Assn. Marcie won the women's 1500-metre run (ages 60+), and John won the men's 200-metre sprint (ages 40-49). Both are members of the Sandia Labs Track and Field Club (SLTFC), headed by Dave Womble (1422). "We're always looking for new members -- of all ages and skill levels," says Dave. Members participate in one or two track meets a year and at least one cross-country meet. About a dozen members will join the AT&T team at the National Corporate Championship meet July 15-16 in Des Moines, where AT&T will be going for its third consecutive national championship. Contact Dave on 6-6918 or Becky Hunter (9000) on 4-2444 for more info on SLTFC, or to sign up for membership.



**Pete Dean Hears a Need**

# Deaf Student Working in Computer Operations At Combustion Research Facility This Summer

A chance encounter at an information booth during a conference led Pete Dean (8236) to recommend that Sandia employ a deaf student from the National Technical Institute for the Deaf (NTID) for summer work in computer operations. As a result, Marian Akamatsu is working this summer in the Combustion Research Facility with Rita Hoak (8236).

Pete learned about NTID at a computer conference in San Diego last year. Located at the Rochester Institute of Technology, the school trains deaf students in several computer science areas. Pete came back and recommended that Sandia consider hiring an NTID student.

### A Well-Suited Pairing

The pairing of Rita and Marian is well suited because Rita knows sign language, which she learned from a deaf co-worker when she worked at the Labs in Albuquerque for six years.

“Don Benthussen [8354] and I have been giving her a broad awareness of what computer programming is like at Sandia. I think she will find this on-the-job experience valuable when she goes into the labor market after another year or two of education.”

Deaf since birth, Marian started learning sign language when she turned seven. Her parents and a sister also took sign-language classes so they could better communicate with her. When Marian was eleven, her mother insisted that she go to a speech tutor, and this one-on-one training continued for five years.

### Speech Tutoring Pays Off

Because of this training, Marian can speak, as well as use sign language. “I realize that speech is important to my future,” she says. “This summer, I’m using speech to communicate with other employees here and with the couple where I room.”

Her Sandia duties this summer include operating the tape library, printers, and consoles with user files, as well as editing data bases. She has also worked on



WORKING IN COMPUTER OPERATIONS at the Combustion Research Facility this summer is Marian Akamatsu (seated), a student at the National Technical Institute for the Deaf. Marian is working with Rita Hoak (8236), seen here, and Don Benthussen (8354).

the VAX/VMS and UNIX systems and has learned MacDraw and Cricket Graph, among other applications for the Apple Macintosh.

Last summer, Marian worked as a data services operator at McDonnell Douglas Aerospace Information Services in Cypress, Calif. A native of southern California, she attended public schools that have programs for the deaf in the Orange County area.

When she finishes school at NTID, Marian would like to work as a computer operator for a large firm on either the east or west coast.

## Death



Clifford Skoog of Communication Services Div. 8275 died June 23 after a long illness. He was 49 years old.

Cliff was an electrical engineer, computer scientist, and division supervisor. He joined the Labs in 1962.

He is survived by his wife Harriett (8350), two stepsons, and a granddaughter.



WELL-DRESSED and color-coordinated, this Sandia foursome recently won the best-dressed competition in the Livermore Chamber Cowboy Golf Tournament. They also tied for third in a scramble format tournament event, with a scratch score of 64 (eight under par). They are (from left) Jackie Garrett (8524), Nick Wittmayer (8285), Kit Schmidt (8284), and Todd Howe (contractor). Kit also won the women’s contest for longest drive, hitting 220 yards.



BARRY FORMISANO (8441, second from left), volunteered his time as a certified welding inspector at Las Positas College on a recent Saturday. The American Welding Society certifies students who pass a rigorous test to demonstrate their skills. Others are (from left) students Greg Pons and Walter MacInnes (both from Livermore) and faculty member Bob Dahl. They are seen inspecting a student’s test plate assembly. Barry is a former welding technology faculty member at Chabot Community College and at Las Positas and has served on both colleges’ advisory committees since 1976.



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## Junefest

But we also got input from the allies on what their thinking is and what their requirements might be in the future. So there was a dual exchange.”

Orval points out the value of having Sandia concepts implemented by NATO: “Sandia benefits directly from its NATO relationship in seeing many of our ideas translated into actual field applications. Thus, our ideas are quickly wrung-out and our ‘report card’ is scored. Such feedback is invaluable in keeping us in contact with the real operating environment.”

### Continuing Support of NATO

Sandia’s contact with NATO isn’t limited to every couple of years. The Labs provides the technical advisor serving SLWPG and JTSMG — as well as an advisor to headquarters of the US European Command, in Stuttgart, Germany.

Along with Jim Rea (5220A), John has served as SLWPG and JTSMG technical advisors. Asked why Sandia has that unique position, John says, “Sandia for several years has been a major player in safety, security, and survivability of non-strategic nuclear forces. So we were asked to support the NATO

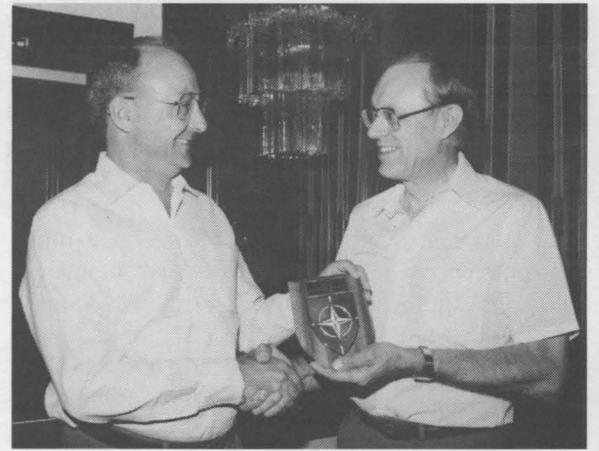
groups by supplying their technical advisor.”

Orval points to other ongoing support: “For years we have had Sandians assigned in Europe to help NATO implement its Long Range Security Plan. We have also been interested in improving the survivability of nuclear weapons during conflict. Many of the NATO security and survivability improvements now being installed had their birth in the ‘Forward Look’ study, which Andy Lieber [5290] led in the mid-1970s. Now, Andy and his staff are looking far ahead in the ‘Future Look’ study. So our relationship with NATO has been long, close, and fruitful.”

From this point of view, Junefest — like past Aprilfests — was an important part of Sandia’s continuing contribution to the NATO alliance. It was a success, according to John: “The people here at Sandia who gave Junefest briefings and demonstrations put in a lot of effort to make sure they were first-class. And the effort paid off. All the guests I talked to said the demonstrations and the technical exchanges were valuable.”

Orval agrees: “I visited with many Junefest participants, and they all were pleased with the program and the demonstrations. Andy Lieber and Pat Sena did a great job of orchestrating the superb efforts of the many Sandia participants.” ●CS

Photos by Randy Montoya, 3162.

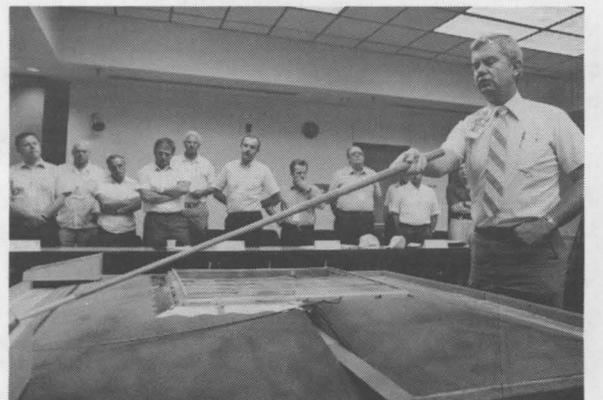


EXECUTIVE VP ORVAL JONES (right) receives from Bob Barker (Assistant to the Secretary of Defense for Atomic Energy) a plaque conveying thanks for hosting a meeting of NATO’s Senior Level Weapons Protection Group.



INSIDE A SIMULATED BUNKER for storing nuclear weapons, John Moyer (5221, left) explains features of the Weapon Access Delay System to Junefest participants.

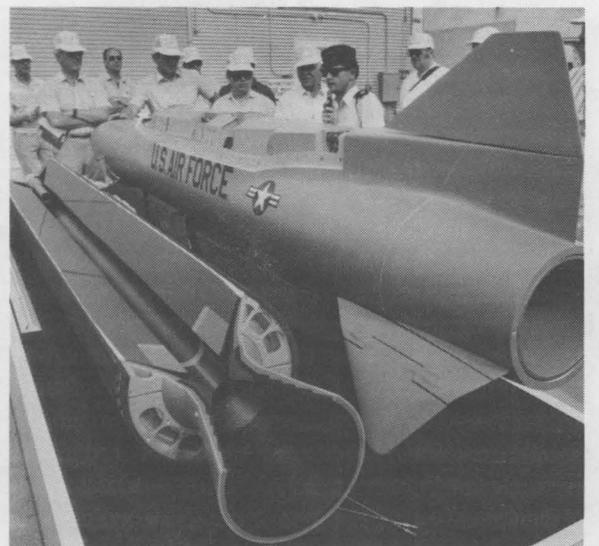
EQUIPPED AS TERRORISTS and wearing TESS (Tactical Engagement Simulation System) gear, these Junefest participants break through a fence and charge guards protecting a simulated weapon-storage site. Both terrorist and guard roles were played by the 1608th Security Police Squadron from Kirtland AFB.



CONCEPTUAL MODEL of a weapon-storage facility called the Fort is presented by Emile Bernard (5221, right).



GUARDS RESPOND BRISKLY to “terrorists.” Laser-firing weapons and laser-sensing vests and headgear — the TESS hardware — worn by both “good guys” and “bad guys” help make the exercise fair and realistic by determining who has become a casualty.



MOCKUP OF A TASM (Tactical Air-to-Surface Missile) is explained by Air Force Capt. Gregory Vance (behind missile, holding microphone).



# DOE Secretary Watkins Tours WIPP, Makes Albuquerque Stops

Department of Energy Secretary James Watkins visited Albuquerque and several DOE facilities in New Mexico on June 28 and 29. His visit was at the invitation of Senator Pete Domenici. The Secretary's visit included a day touring the Waste Isolation Pilot Plant (WIPP) near Carlsbad, an address at an Albuquerque Chamber of Commerce dinner meeting, and a visit to DOE's Albuquerque Operations Office.

The day at WIPP included briefings and an extensive tour of the underground facilities. The tour was led by Wendell Weart, manager of Sandia's Waste Management Technology Dept. 6330. Sandia provides a variety of advisory and support services for the WIPP project.

## Governors Participate

New Mexico Governor Garrey Carruthers, Idaho Governor Cecil Andrus, and Colorado Governor Roy Romer also participated in the WIPP briefings. All three states are involved in the production, storage, and ultimate disposal of nuclear wastes that will eventually be stored at WIPP, assuming that its opening is approved. Governors Andrus and Romer joined the Secretary for the underground tour.

Secretary Watkins announced earlier that the WIPP opening has been postponed indefinitely until he has additional information about environmental and safety concerns and answers to some technical questions.

## NAS Study May Provide Answers

A National Academy of Sciences study that's scheduled to be completed soon should provide some of this information. WIPP is designed to be the nation's first nuclear waste repository, which will be used for transuranic waste.

Photos by Louis Archuleta and Oscar Goodwin (3154-3).



SECRETARY WATKINS answers questions during a briefing at WIPP, along with (from left) Idaho Governor Cecil Andrus, Colorado Governor Roy Romer, and New Mexico Governor Garrey Carruthers.



WENDELL WEART (6330) gives details to Secretary Watkins (center) and Colorado Governor Roy Romer during the WIPP tour. "Secretary Watkins emphasized to WIPP employees that he felt their work was being done in a very professional manner and that it was important that we proceed with WIPP on a methodical and carefully studied basis," says Wendell.



RANDY SABRE (left), Director of the Transportation Safeguards Division at DOE's Albuquerque Operations Office, briefs Secretary Watkins (second from right) and Senator Pete Domenici (right) about hardware and procedures for transporting nuclear weapons. Bruce Twining (second from left) is DOE/AL Manager.

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## Treasure Trove of Ideas

technological developments in a national sense. They're very good at spotting technologies — regardless of origin — that might be successfully applied to NATO's problems.

Not only does Sandia have people — the ones I call "synthesizers" — who scan the whole field of technology outside the Labs, there are also competent and capable people here who are intensely creative; they regularly come up with new ideas on S&S. So we have the best of both worlds when we visit here.

**LN:** Any specific Sandia contributions to the S&S mission?

**Barker:** Sandia has been in the business of developing and evaluating S&S improvements for a long time. Back in the mid-'70s, my predecessor as ATSD/AE several times removed — Don Cotter from Sandia — asked Andy Lieber [5290] to do a study that would pull together a large number of ideas that could be related to S&S. From that very comprehensive study, called "Forward Look," came several important concepts that are now in place. One is an igloo access delay system — now known in NATO as Weapon Access Delay System — that's a package of improvements designed to make it extremely difficult for an unauthorized person to get into a nuclear weapon storage structure.

Another significant concept that came out of Forward Look is the weapon storage vault system: the idea of being able to store nuclear weapons in a below-ground vault in a hardened aircraft shelter that also contains dual-capability aircraft [can carry either

nuclear weapons or conventional munitions] that would ultimately deliver the weapon should conflict in Europe reach that stage. If we keep on our current schedule, the first storage vault will be installed in a hangar in Europe early in 1990.

**LN:** How do world events affect the work of SLWPG — for instance, the Intermediate-Range Nuclear Force Treaty, or anti-nuclear sentiment in West Germany?

**Barker:** The two biggest factors that have influenced our work are the INF Treaty and the continuing demonstration of the increased technical threat capability of terrorists. On the latter: Clearly, we must keep consciously aware of the technical sophistication of potential terrorist threats. Thus far, I think, we've been able to convince potential terrorists that nuclear weapon sites are not interesting targets because of the security measures we've taken. That situation will remain only if we continue to enhance security as we recognize any shortfalls.

**LN:** How do terrorists know that site security is strong enough to deter them? Obviously, you don't write them a letter or advertise in the newspaper.

**Barker:** I think it's by what they see. We've already said they're very sophisticated. They very carefully evaluate any target before they try to take it on. It's always difficult to prove deterrence, but the fact that they have not tried to take one [nuclear site] on may be proof in and of itself that they recognize any such effort as not in their interest.

**LN:** And the INF Treaty?

**Barker:** As we reduce the number of weapons, improving the survivability of those that remain becomes all the more important. There's a common recognition within NATO that the importance of survivability has greatly increased because of INF.

**LN:** Representatives from Los Alamos and Lawrence Livermore national labs were also here this week. Any comments on the DOE national labs?

**Barker:** Indeed. One thing that's unique about the DOE laboratories is the wide range of expertise they bring to problems. I don't think there are any other institutions in the US that have the breadth of excellence across a broad technical base that the DOE labs have.

Luckily, DOE shares a common interest with us [DoD] in issues related to nuclear weapon security. DOE has funded significant research within the national laboratories to address that area. And we in DoD are happy to share the benefits that stem from that DOE commitment.

**LN:** Any other thoughts on the SLWPG mission and your visit here?

**Barker:** Though we've talked a lot about hardware, we shouldn't overlook another important component of the S&S effort — adequate training of the people who have the ultimate responsibility for security of nuclear weapon sites. Sandia has helped tremendously in this area by developing laser-engagement systems for counter-terrorist training: first, adoption of the Army's MILES [Multiple Integrated Laser Engagement System] — now used in the training of the security forces for many nuclear weapon storage sites in Europe — and more recently, TESS [Tactical Engagement Simulation System], which we have seen demonstrated here this week and which we think will markedly enhance security training once it's fully developed and put into use.

The SLWPG's product is reports to the Defense Ministers. We try to identify the best ideas for S&S and then encourage NATO and individual member nations to fund them. At Sandia, we always find a treasure trove of those ideas. ●PW

**Protecting Sensitive Information**

# OPSEC: Operations Security Program Begins Where Traditional Security Programs Leave Off

**Fact:** Soviet Bloc nations are gaining access to Western technology on an unprecedented scale. According to DOE estimates, approximately 150 Soviet weapon systems contain components derived directly from Western technology.

**Fact:** Contrary to the impression created by spy films, most intelligence, according to DOE, is gained by the methodical gathering and piecing together of information readily available from unclassified sources.

In the summer of 1979, two Soviet embassy officials ambled into the public library of a small Tennessee town and checked out an environmental impact statement concerning a proposed military explosives manufacturing plant. Using the library's copier, they copied page after page of the document.

A subsequent DOE investigation revealed that the technical data contained in those pages, combined with other published data, provided enough information to duplicate the entire manufacturing process.

Such routine, undramatic plundering of public sources of information is typical of the methods used by today's intelligence agencies to obtain scientific and technological information, according to J.D. Martin, Director of Security and Facility Support Services 3400.

"Intelligence operatives don't necessarily have to resort to covert sources or to clandestine collection methods to get the information they want," he says.

"According to some estimates, as much as 90 percent of the input to most intelligence systems is gathered from open, unclassified sources."

### Mandated by DOE

To protect various types of unclassified information that could help adversaries or that could weaken the effectiveness of traditional security programs,

Sandia implemented the Operations Security (OPSEC) program in 1984, as recommended by DOE. In January 1988, DOE issued an order mandating that all DOE facilities adopt an OPSEC program.

"Some unclassified information, which, by itself, would be useless to adversaries, could be pieced together with other data to provide a pathway for obtaining sensitive or classified information," explains OPSEC Coordinator Kathy Marder (3432). "The goal is to prevent that from happening."

Sandia's OPSEC program was recently enhanced by forming working and oversight groups to help Sandians identify and prevent potential vulnerabilities that could lead to unintentional leaks of sensitive, unclassified information.

Some formal procedures have already been established by the OPSEC Working Group.

Group member Judd Hollister (3180) describes them: "Briefly, we've developed two sorts of 'grocery lists' that will serve as our main working tools: a Critical and Sensitive Information List — the CSIL — and an Essential Elements of Friendly Information list — the EEFI. Both are now being reviewed by management."

### If I Were a Spy . . .

"The CSIL identifies all the areas at Sandia — weapon-program details and special technologies, for example — that we believe various adversaries would like to know more about. The EEFI lists all the paths that could lead to items listed on the CSIL."

"In developing the lists," says Judd, "we attempted to answer this question: 'If my task were to obtain information about a certain activity or facility, what would I want to find out and where would I

Kathy Marder (3432), Coordinator	6-9652
Rod Geer (3163)	4-6601
Max Martinez (3411)	6-6169
Gloria Millard (3202)	4-5659
Dick Hawkins (2612)	4-7897
Linda Dailleboust (7821)	4-7472
Judd Hollister (3180)	4-8691
Jerry Brown (3400)	6-1641
Gladys Sheldon (3144)	4-3192
Adele Caldwell (3732)	4-4320
Ben Sedlack (3433)	6-2286
Roberta Carter (3432)	4-8102

look for it?' The 'what' became the CSIL, the 'where' became the EEFI."

Both lists, Judd explains, will be used to conduct vulnerability assessments throughout Sandia to help organizations identify materials or procedures that might need more protection.

Vulnerability assessments can be initiated either by the Working Group, or by organizations by calling any member of the Working Group.

### Where's All the Cloak-and-Dagger Stuff?

Words like espionage and spy still evoke the cloak-and-dagger stuff of the movies — shadowy images of trench-coated men and women, hats pulled low over sun glasses, slinking about clandestinely gathering secret information with hidden microphones, trick cameras, and other sneaky surveillance tools.

Or we may think of recent real-life "insider" espionage cases in which people with access to classified information (Edward Lee Howard, Clayton Lonetree, John Walker, for example) voluntarily, for various reasons — greed, revenge, love — delivered that information to foreign governments.

"No doubt, clandestine intelligence activities and deliberate espionage by 'insiders' have, in some cases, led to serious security breaches in the US," says Don Jerome, supervisor of Security Plans, Coordination, and Awareness Div. 3432.

But such activities, he says, aren't typical. Most intelligence work is performed by university-trained research analysts in quiet offices sifting through masses of information, much of it gathered from open sources — technical journal articles, conference papers, technical reports, patents, corporate newspapers, construction bids, records of Congressional hearings, and other public records, for example.

"The primary concern of OPSEC," says Kathy, "is to help people who would never entertain the idea of deliberate espionage avoid unintentional release of certain unclassified information that could be useful to an adversary."

### When in Doubt, Query OPSEC

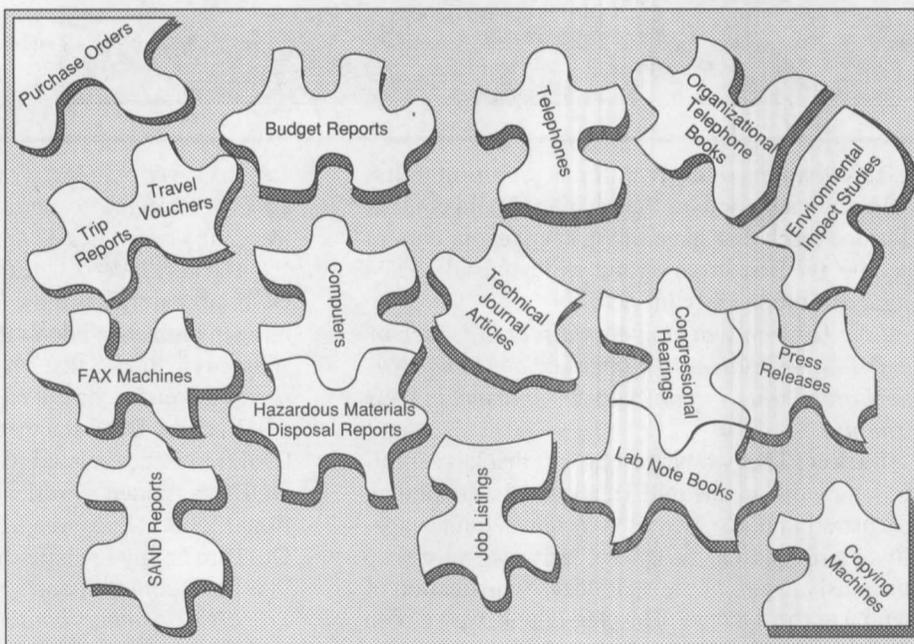
So how do we separate the innocent from the not-so-innocent information?

"First of all," says Kathy, "by just becoming aware that almost all information involving the planning and execution of activities at Sandia — classified and unclassified — may be of interest to one intelligence group or another; second, by consciously identifying and protecting unclassified information that could serve as an avenue for obtaining more sensitive information."

When in doubt, says Kathy, contact a member of the recently formed OPSEC Working Group (see box) and explain the concern. At Tonopah, contact John Laster (7171) on 295-8302; at Livermore, Sherry Angelini (8531) on 294-2493.

OPSEC materials for use at new-hire briefings and at standard security refresher briefings will be available soon, says Kathy. ●DR

THE GOAL OF OPSEC is to increase awareness that, in the wrong hands, many types of unclassified materials could be pieced together to provide useful information to intelligence-gathering groups or could provide a pathway for obtaining sensitive or classified information. "It's a matter of adding up many bits of information to form a more complete picture," says OPSEC Coordinator Kathy Marder (3432).



## Congratulations

To Jessica Shaffer (3141-1) and Tom Stefan, married in Albuquerque, June 3.

To Jeannie and Tim (3437) Lucero, a son, Justin David, June 3.

To Rebecca Darnell (5212) and Scott Horton married in Albuquerque, June 3.

To Venus Di Bruno and Robert Weir (1551) married in Albuquerque, June 17.

To Ami (3552) and Martin (7816) Peterson, a son, Benjamin Joshua, June 22.

To Gloria (3142) and Archie (2631) Gibson, a daughter, Kara Lynette, June 23.

To Tiffany O'Hagan and Jim Calderone (7535), married in Albuquerque, June 24.

To Jennifer Prairie (141) and David Outka (1555) married in Albuquerque, June 24.

To Melinda Markey (3531) and Dave Marks

(5142), married in Albuquerque, June 24.

To Tracy and Doug (1233) Reynolds, a son, Tyler Jeremiah, June 25.

To Ranae and Mark (9211) Terhune, a son, Brandon Wade, July 2.

To Mildred (2831) and Ronald (2857) Van Theemsche, a daughter, Lisa Marie, July 3.

## Sympathy

To Dean Thornbrough (400) on the death of his wife in Albuquerque, June 25.

To George Connor (2632) on the death of his father in Pryor, Okla., June 30.

To Lorina Chavez (3202) on the death of her grandfather in Belen, N.M., July 4.

**For Your Benefit**

## Survey Will Aid Retirement-Planning Program

Benefits Department 3540 is surveying randomly selected Sandia employees and retirees to determine how to provide a more complete retirement-planning program.

The survey is a joint project of Rebecca Spires (3544) and Professor Ian Miners of UNM's Anderson School of Management. Questions are designed to evoke ideas and help identify areas of concern about retirement information and support.

Because some elements of retirement planning begin early in a career, the sample includes employees at all service levels, as well as all locations. Retirees are included to determine what information was or would have been most helpful to them be-

fore they retired.

The project will include several different stages of surveys. The first, already in progress, consists of open-ended questions. Later, more-detailed questions will be based on the responses to the first survey. Each person surveyed, however, will be asked to participate only once.

Results should be available in late autumn and will be reported in the LAB NEWS.

Questions about the survey or comments about retirement planning can be addressed to Rebecca on 846-1643. Whether included in the survey or not, anyone who has comments about retirement planning is invited to give them to her.

## Death



Sandra E. Simpson of Payment Processing Division 154, died June 22 after a short illness. She was 49 years old. Sandra had been at the Labs since November 1981. She was a senior clerk. Survivors include her husband Charles (7545) and a daughter.

## Take Note

KNME-TV will broadcast "Back to Chernobyl," a program about the 1986 explosion of a Soviet nuclear reactor, July 18 at 8 p.m. Part of the Nova science series, this program includes rarely seen Soviet footage.

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 both 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.

**MISCELLANEOUS**

- FALCOR 10-GA. SHOTGUN, over-under; Remington Woodsmaster 742, 30-06 semiautomatic, w/Weaver K4-W scope; shells for both; Daskocil twin-gun carrying case, airline approved. Cox, 344-2221.
- SAMSONITE LUGGAGE, 3 pieces, \$50; Toastmaster Belgian waffle, used once, \$12. Krahling, 268-8126.
- THREE 30" DOORS: 1 white, solid, prehung; 2 hollow, stained; all right-hand. Schowers, 822-8494.
- DP STATIONARY BIKE, \$40. Sellers, 292-0466.
- ANTIQUE UPRIGHT CABLE PIANO, w/bench, moving, unable to complete refinishing, \$300. Sisneros, 898-0156.
- ARABIAN MARE, Bask granddaughter, 14 yrs. old, chestnut, seasoned show horse, brood mare, \$1500 OBO. DiMarzio, 291-9225.
- CHAIN-LINK GATE, 18' wide, 4-1/2' high, double opening, \$75 OBO. Mills, 823-4484.
- SATELLITE SYSTEM: 6' dish, linear actuator and control, 65 degree down converter, Wilson receiver and remote control, \$375. Flesner, 265-2136.
- FOUR NEW GOODRICH TIRES, all-terrain, T/A radials, mounted on Empco polished-aluminum wheels, fit Samari, Ford trucks, Bronco, Jeeps, \$550. Bliss, 296-3742.
- EXTENSION LADDER, 14'. Underhill, 294-5774.
- AIRLINE TICKETS: 2 one-way tickets, America West, Albuquerque to Portland, Ore., Aug. 29, non-changeable, \$100/ea. Dennis, 296-4635.
- BERNINA 801 SEWING MACHINE, 7 stitches, 6 presser feet, automatic buttonholer, free-arm, w/carrying case, \$450. Williams, 344-9276.

- EXECUTIVE DESK CHAIR, \$22; electric tanning lamp, \$10; Bic 250 windsurfer, \$285. Horton, 883-7504.
- COLOR TV, 13", \$125; MCS audio cassette deck, \$50; king-size water bed, complete, \$100. Patrick, 265-4569.
- STEREO COMPONENTS: amplifier, tuner, cassette deck; Ethan Allen stereo cabinet, antique pine. Lambert, 293-8825.
- HOUSE PLANTS, large/medium; patio furniture; sliding patio doors; windows; oak coffee table/end tables; best offer on all. Brooks, 265-8612.
- KITTENS, 8 weeks old, litter-box trained, free. Yelton, 281-2893.
- HAY, 2nd cutting, \$3.50/bale. Waddoups, 865-7952.
- SCUBA GEAR: Sea Pro At-Pac BC device, w/20-lb. lead shot, \$125; Scuba Pro Air-1 regulator, w/Px gauge, \$150. Brooks, 275-0056.
- TREADMILL, non-electric. Kent, 256-1221.
- REFRIGERATOR, Sears, \$50; workbench, wood, bolted assembly. Muculeski, 884-4057.
- FISHING TACKLE BOX, Phantom Pro 797, 4 drawers, top compartment, new, \$30. Holmes, 292-0898.
- REFRIGERATOR/FREEZER, Admiral, 24 cu. ft., harvest gold color, \$175; antique bedroom set, \$800. Baca, 296-8474.
- KING-SIZE WATER BED, waveless mattress, bookcase headboard, \$175. Frederickson, 268-1997 before 9 p.m.
- LANDSCAPE ROCK and 3' cedar trees, free, you haul. Boal, 296-4660.
- BUNK BEDS, chest of drawers, solid oak, mattresses/bedding included, \$300. Dunlap, 884-0232.
- DOUBLE OVENS, Westinghouse, \$35; Sears microwave oven, \$35; bath vanity, w/sink, \$30. Spires, 275-3655.
- SHELF UNITS, steel, \$45/pr.; swag lamp, antique brass/crystal, \$60; utility cabinet, \$40; 7 ceramic pots, \$20. Myers, 294-7316.
- ADULT-SIZE WHEELCHAIR; bike trainer. Faculjak, 898-6502.
- CABOVER CAMPER, 6', suitable for 1/2-ton pickup, w/jacks, \$1300. Yingst, 884-3812.
- MINOLTA LENS, regular, and Vivitar wide-angle Minolta mount, \$100/both; filters, \$400/ea.; landscape gravel, free, you pick up; scooter, \$8. Alexander, 291-8028.
- FIVE-PIECE DINETTE SET: 4 swivel chairs, 47" round table, \$75. Burdard, 884-5424.
- ELECTRIC WINCH TOWING BAR, and cross bar, for under car pulled by RV. Rael, 884-4778.
- FULL-SIZE MATTRESS, box spring w/frame, headboard, \$170; 2 swivel rockers, olive green, \$40/ea., \$70/both. Lucero, 892-2946 after 6.
- PUREBRED IRISH SETTERS, 4 months old: 1 male, 1 female, have all shots, to good homes. Aronson, 268-1375 or 255-7060.
- PLAYPEN, 40", \$20; 22" kettle grill, \$20; General P185/80R13 WW

- steel-belted radial, \$15. Kawka, 299-1216.
- LIFETIME MEMBERSHIP, Coast/Coast Campgrounds, free hookup/local resorts, \$1 hookup/500 other resorts, \$500. Raisen, 294-2364.
- AKC-REGISTERED WEIMARANER PUPPIES, field-champion bloodline, tails/dewclaws clipped, first shots, dewormed, available July 15, \$300. Robinson, 865-7787.
- ANTIQUE ITALIAN PROVINCIAL CREDENZA, white, 52" long, silver-storage drawer in center cabinet, \$125. Burstein, 821-6688.
- MAYLINE DRAFTING TABLE, 2 drawers, full-size oak table w/full-width straightedge, \$275 OBO. Terry, 292-7456.
- MINOX ULTRASMALL CAMERA, w/flash, leather case, \$125. Ginn, 883-0004.
- CAMPING MEMBERSHIP: Sandia Crest, NMCR; Coast/Coast available, \$500. Taylor, 293-7053.
- COLT PYTHON, 6" barrel, vent rib, blue, 8 yrs. old, w/case, \$500. Cabe, 293-6895.
- RANCH OAK FURNITURE: 2-piece couch, rocker, 3 end tables, \$350; stereo cabinet, \$100. Morgan, 897-2445.
- CENTURY PLANTS, 4" to 20" diameter, \$5 to \$25. Bando, 292-2452.
- WORKOUT BENCH AND WEIGHTS, DP-2000, \$300. Steinfort, 865-8445.
- ROLLTOP DESK, Vigil, 293-5656.
- MICROWAVE OVEN, Amana, \$110. McMahon, 822-1301.
- KITCHEN TABLE, solid oak, 48" round, \$100; king-size water bed w/all accessories, \$100. Outka, 298-5707.
- CAMPER SHELL, for full-size Ford SB, insulated, \$280 OBO. Mora, 242-2880.
- '87 STARCRAFT TRAVEL TRAILER, 20', AC, awning, TV antenna/booster, \$10,500. Bourgeois, 821-1453.
- GRAMMATIC II, PC software writing tool for analyzing writing, new, w/instruction manual, \$35. Schubeck, 821-3133.

**TRANSPORTATION**

- '86 YAMAHA RADIAN MOTORCYCLE, 600cc, 8K miles, \$1500 OBO. DiMarzio, 291-9225.
- '78 FORD F-150 PICKUP, V-8, AT, AC, tape, LWB, \$3600. Coalson, 298-0061.
- ALUMINUM FISHING BOAT, 12', motor, trailer, extras, \$1000. Pierce, 294-0871 after 5.
- SAILBOAT, Venture 21, main, jib, genoa, new swing keel/rudder/paint, sleeps 4, all accessories, trailer. Pritchard, 293-5297.
- '77 MGB, soft top, AM/FM, luggage rack, new carpet, 48K miles, \$2400 OBO. Andersen, 897-1555.
- '83 MERCURY LYNX, AT, AC, AM/FM, 60K miles, one owner, \$2000 OBO. Hillhouse, 275-0659.
- '86 KAWASAKI KX125, DMC, modified top end/carb/pipe, new Sidewinder chain and sprockets, \$975. Brigham, 292-4399.

- '72 HONDA CW-175, 2.5K miles, \$400. Smith, 256-3764.
- '87 SUZUKI SAMURAI JX, 5-spd., cloth top, chrome wheels, 22K miles, \$5295 or make offer. Johnson, 296-1917 or 255-4371.
- '72 CHEV. IMPALA CUSTOM COUPE, 350 CID, 94K miles, all original equipment, \$2500. Baca, 296-8474.
- '86 KAWASAKI VOYAGER III, 1200cc, loaded, matching helmets, intercom, stereo, Dunlops, full dress, \$3500 or trade. Peirce, 242-3790.
- BOY'S BICYCLE, 21", Kuwahara Freestyle, green and white, Z rims, \$150. Dunlap, 884-0232.
- '70 VW VAN, 7-passenger, rebuilt engine, \$1200. Laney, 881-1703.
- '86 SEA RAY SEVILLE, 16-1/2', open bow, 140 hp Mercruiser I/O, SS prop, depth finder, CB, \$9000. Cleveland, 299-7420.
- '87 HONDA CRX Si, silver, 5-spd., automatic sunroof, Alpine stereo system. Hill, 291-8952.
- '85 FORD THUNDERBIRD, 302 V-8, PS, PB, AC, AM/FM, new paint and tires, \$6350 OBO. Eisenberger, 877-7041.
- '87 SUBARU GL SW, 4-WD, AM/FM cassette, AC, cruise, emissions-tested, rustproofed, \$7995. Lenling, 299-5942.
- '73 HONDA CIVIC, \$350. Magnuson, 821-5330.
- '80 CHEV. SUBURBAN, 4-WD, AC, carpet, 1/2 ton, \$5000 OBO. Hansche, 281-5623.
- '83 KAWASAKI KZ550A4, 4K miles, windshield, luggage rack/case, \$1100 or reasonable offer. Fraley, 296-6795.
- '72 YAMAHA ENDURO, 250cc, \$250; '85 SUZUKI GS700ES, \$1200 OBO. Garcia, 268-3848.
- '59 VW BEETLE, restored, canvas sunroof, radio, \$4000. Outka, 298-5707.
- SCHWINN MIRADA MOUNTAIN BIKE, 20", CrMo frame, 18-spd., Shimano components, \$185. Darnold, 275-8085.
- '80 CHEV. SCOTTSDALE PICKUP, 3/4-ton, rebuilt transmission and clutch, set up for fifth wheel. Pryor, 298-3788 or 294-6980.
- '83 GMC S15 JIMMY, V-6, Sierra package, loaded, \$5900. Bisbee, 293-0356.

**REAL ESTATE**

- 2-1/2 ACRES IRRIGATED PASTURE LAND, Los Lunas, 161' well, septic tank, power, phone, fenced. Cox, 344-2221.
- 3-BDR. HOME, 1-3/4 baths, 2-car garage w/separate openers, timed sprinklers, double windows, front and back floodlights, mountain views, no qualifying, \$93,500. Allen, 298-9833.
- 4-BDR. HOME, 2 baths, 2-car garage, La Cueva school district, walk to Eisenhower and city pool, updated interior, landscaping, \$104,900. Peterson, 291-0971.
- FOUR-PLEX, 2-bdr./1-bath units, 900 sq. ft. ea., NE, near Lomas/Easter-

- day, assumable SLFCU loan, \$122,500. Boye, 296-3350.
- WINROCK VILLA CONDOS: 1-bdr., 1-bath, \$30,500; 2-bdr., 1-bath, \$40,500; FHA-approved, 4 pools, security guard. Gibson, 898-3529.
- 3-BDR. HOME, 1 bath, oak parquet floor, den w/rock FP, SE, \$61,000. Mareda, 296-0135.
- LOT, North Valley (Thomas Village), Rio Grande & Matthew NW. Padilla, 292-3165.
- FOUR-PLEX, with garages, SE, \$105,000, assume loans. Roscoe, 881-0662.
- 3-BDR. HOME, 1-3/4 baths, LR w/FP, sprinklers front & back, 1420 sq. ft., 10901 Prospect NE, \$75,000. Larsen, 292-8874.
- 3-BDR. HOME, custom passive solar, 2-1/2 baths, den, spa, 2 wooded acres, views, South 14, \$172,000. Wright, 281-1181.
- 2-BDR. TOWNHOME, 2-1/2 baths, NE, landscaped, FP, 1100 sq. ft., \$60,000. Ashment, 293-2295.
- 3-BDR. HOME, 1-3/4 baths, 1-car garage, landscaped front/back, detached 16' x 24' workshop, \$69,800, owner financing available. Henfling, 298-0596.
- 2-BDR. MOBILE HOME, '85 model, 14' x 70', 2 baths, appliances, curtains, furniture, 1 mile from Sandia Medical, less than 6 years to pay at SLFCU. Spinello, 256-1597.
- 3-BDR. HOME, 1 bath, formal DR, country kitchen, landscaped, hardwood floors, 720 Indiana SE, \$66,900. Nelson, 881-7281.
- FURNISHED MOUNTAIN HOME, Pagosa Springs, riverfront property, road open year-round, \$59,500. Pryor, 294-6980 leave message.

**WANTED**

- BASKETBALL GOAL, stand-alone type for driveway, w/basket. Mills, 823-4484.
- TANDEM STROLLER, 2-place; 24' extension ladder. Underhill, 294-5774.
- MOTOCROSS ARMOR: gloves, helmets, etc.; elbow pads, knee pads. Marchi, 291-9681.
- DRESSER AND CHEST OF DRAWERS. Gutierrez, 242-7668.
- APPLE IIe COMPUTER, w/color monitor. Swanson, 281-2735.
- LAWN MOWER, push-type, reasonable. Trembl, 292-9219.
- VACUUM PUMP, functional, must be reasonably priced. Starr, 897-4414.
- TRANSPORTATION for 5- and 8-yr-olds to after-school activities; also babysitter in downtown home, M-F, 3-6 p.m., starting Sept. Sweeney, 247-4866.
- GERMAN WWII SOUVENIRS: medals, helmets, guns, etc. Greene, 299-4163.
- RETURN OF BICYCLE, "borrowed" from west end/Bldg. 823, JC Higgins, 3-spd., black, w/gray seat. Ginn, 883-0004.
- HOUSECLEANER, once a week. Chirigos, 298-3837.

Coronado Club Activities

## Start the Weekend Right: Tantalizing T-Bones, Savory Shrimp

TREATS FOR THE TASTE BUDS at the Friday night dinner this evening include T-bone steak or you-peel-'em shrimp for just \$8.75/person. Afterward, enjoy the smooth Big Band sounds of Roland De Rose and crew, as they play those oldies — but goodies — of the '40s and '50s from 8 to 11 p.m. Dinner reservations requested (265-6791).

PLAYING YOUR CARDS RIGHT is what it's all about at two more bingo nights this month — July 20 and 27. Card sales start at 5:30 p.m. both nights, and the early-bird game begins at 6:45. (Ahead of time, check out early-bird prizes in the lobby display; you'll be pleasantly surprised.)

IT'S FAMILY FUN on the patio every Wednesday night. Enjoy buffet items, cartoons on the big-screen TV, and a cool dip. (The pool stays open until 8 p.m.) This middle-of-the-week picker-upper is a great way to beat the heat — and stay out of the kitchen.

TAKE YOUR PICK of either prime rib or fried shrimp and all the trimmings next Friday night (July 21) for a very reasonable price of \$8.95. Then, from 8 p.m. to midnight, that band with the noteworthy name — Trio Grande — belts out its sagebrush-shuffle specialties for your dancing pleasure. Help out the kitchen ranch hands with a reservation call.

LOOKING FOR A PERFECT PLACE for a party? Look no further. The pool/patio area's available, so invite the gang over and have a blast. Catered food's available — everything from hot dogs and burgers to full dinners. Available dates are being booked rapidly, however, so call catering manager Maggie Pappas ASAP on 844-3808.

T-BIRD CARD SHARKS GUARANTEE: No aces up anyone's sleeve, but plenty of convivial card-playing and conversation. The next gaming session on Thursday, July 27, starts at 10 a.m.

## Events Calendar

July 14-15 — "Birds of Water Canyon," includes two-hour introductory course to birds of Water Canyon in Magdalena Mountains near Socorro and all-day field trip to canyon; taught by Dr. Peter Stacey, UNM Biology Dept., and Mary Alice Root, New Mexico Ornithological Society; \$40 for NMMNH members; \$50 non-members; New Mexico Museum of Natural History, 841-8837.

July 14-16 — 12th Annual Albuquerque Collector Car Show and Auction: featuring more than 500 classic, antique, exotic, high-performance, and special-interest automobiles; 5 p.m. Fri., 10 a.m. Sat. & Sun.; Midway, NM State Fairgrounds, 265-1791.

July 14-16 — "Albuquerque by Six," exhibit of works by Albuquerque photographers with commentary by V.B. Price; 9 a.m.-5 p.m. Tues.-Sun., Albuquerque Museum, 242-4600.

July 14-23 — "Feiffer's People" by cartoonist Jules Feiffer, sketches of American life in all its hilarity, desperation, and frivolity; 8 p.m. Fri.-Sat., 6 p.m. Sun.; Vortex Theatre, 247-8600.

July 14-30 — "A Double Birthday: Baseball and Photography," exhibit celebrating the 1839 coinciding inventions of baseball and photography, local photographer Paul Jeremias documented the Albuquerque Dukes as they began the season, UNM Centennial event; 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues. evening, 1-4 p.m. Sun.; west gallery, UNM Art Museum, 277-4001.

July 14-Aug. 31 — Exhibit, "The Dinosaur Portfolio," 33 mixed-media and oil paintings and drawings by University of Maine art professor Philip Carlo Paratore; 9 a.m.-6 p.m., New Mexico Museum of Natural History, 841-8837.

July 14-Sept. 15 — "Raymond Jonson Cityscapes," exhibit featuring drawings and paintings by Jonson from the 1920s to 1940s; 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues. evening; Jonson Gallery, UNM Art Museum, 277-4967.

July 14-Sept. 17 — "Art Since 1945," exhibit featuring paintings, sculpture, and prints from the permanent collection, highlighting later twentieth-century art (realism, geometric abstraction, and expressionism); 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues. evening, 1-4 p.m. Sun.; upper gallery, UNM Art Museum, 277-4001.

July 15 — San Buenaventura Feast Day: Corn and Rain dances; call for time, Cochiti Pueblo, 843-7270.

July 15 — Summerfest '89 — Chinese Moon Festival: food, entertainment, arts & crafts; 5-10 p.m., Civic Plaza, 768-3490.

July 15-Sept. 30 — Exhibit, "Moon, Man, & Mars," commemorates 20th anniversary of man on the moon with video, still photographs, and a moon rock; guest curator, former astronaut and US Senator Harrison Schmitt; 9 a.m.-6 p.m., New Mexico Museum of Natural History, 841-8837.

July 16 — Sunday Jazz at the Zoo: featuring New Mexico musicians; 2-5:30 p.m., Rio Grande Zoo, 255-9798 or 843-7413.

July 21-23 & 28-30 — "Dames at Sea," Albuquerque Civic Light Opera presentation of 1930s musical spoof; 8:15 p.m., 2:15 p.m. Sun.; Popejoy Hall, 345-6577.

July 22 — Summerfest '89 — Cajun Night: food, entertainment, arts & crafts; 5-10 p.m., Civic Plaza, 768-3490.

July 22 — The Great Albuquerque Rubber Duck Race: 15,000 rubber ducks compete in up-to-one-mile race, duck bash follows race at San Gabriel Park, duck adoption (\$5) to benefit Easter Seal Society of New Mexico; 9:45 a.m., Tingley Beach, 888-3811.

July 25 — Santiago Feast Day: Corn Dance; call for time, Taos Pueblo, 843-7270.

July 27-29 — "Alice in Wonderland," Albu-

## Welcome

### Albuquerque

Marcia Anderson (22-2)  
Timothy Ashby (21-1)  
Martrice Bordlemay (22-2)  
Debra Browitt (2172)  
Rebecca Horton (21-1)  
David Humble (7821)  
Mary Koehler (22-2)  
Marion McDonald (3431)  
Sharissa Malik (1822)  
Lewis Marlman (3202)  
Michael Nicholas (2131)  
Larry Olson (144)  
Patrick Ortiz (7813)  
Toni Pierce (2612)  
Andrew Seth (2853)  
Pamela Stringfellow (2621)  
Cynthia Turner (3141)  
Coy Wilson (22-2)

### Arizona

Michael Moore (7825)

### Illinois

Randall Lober (2814)  
Stephen Lott (2525)  
Troy Spangler (2858)

### Colorado

Michael Maguire (1833)  
Nancy Marsh (3411)

### Kansas

Scott Burgett (5126)

### New Mexico

Tamara Brandon (22-2)  
Kathryn Fowler (21-1)

### Pennsylvania

Craig Dean (2813)  
Edward Henry (5144)

### Tennessee

Karen Ledbetter (3141)

### Texas

Patrick Muyschondt (2362)  
Ronald Schiller, Jr. (2625)

### Utah

Tracy Jones (2629)  
Shannon Lytle (3531)

### Virginia

Son Chan Mai (5245)

querque Children's Theatre presentation; 1:30 & 3:30 p.m., Rodey Theatre, 277-3121 or 888-3644.

July 29-30 — "Sandia Mountain Discovery Days," a celebration to build awareness of the natural environment with exhibits, booths, music, and food; sponsored by New Mexico Museum of Natural History, 841-8837; 9:30 a.m.-6 p.m. both days, Sandia Peak.



POLLY SCARDINO (152-2) holds one of her autographed posters of US astronauts. This and other space-program memorabilia (patches, pictures, pins, buttons, medals, and more posters) that Polly collected during the '60s and '70s will be on display for several weeks in the Building 802 lobby. The exhibit is in connection with the 20th anniversary of the July 20, 1969, Apollo 11 moon landing — the first. Polly collected the memorabilia while working in Houston for a NASA contractor from 1963 to 1975 — a job that allowed her to work with all the astronauts in Mission Control at the time. She never got to the moon, but Polly says she did get to go glider flying once with Neil Armstrong, first man on the moon.