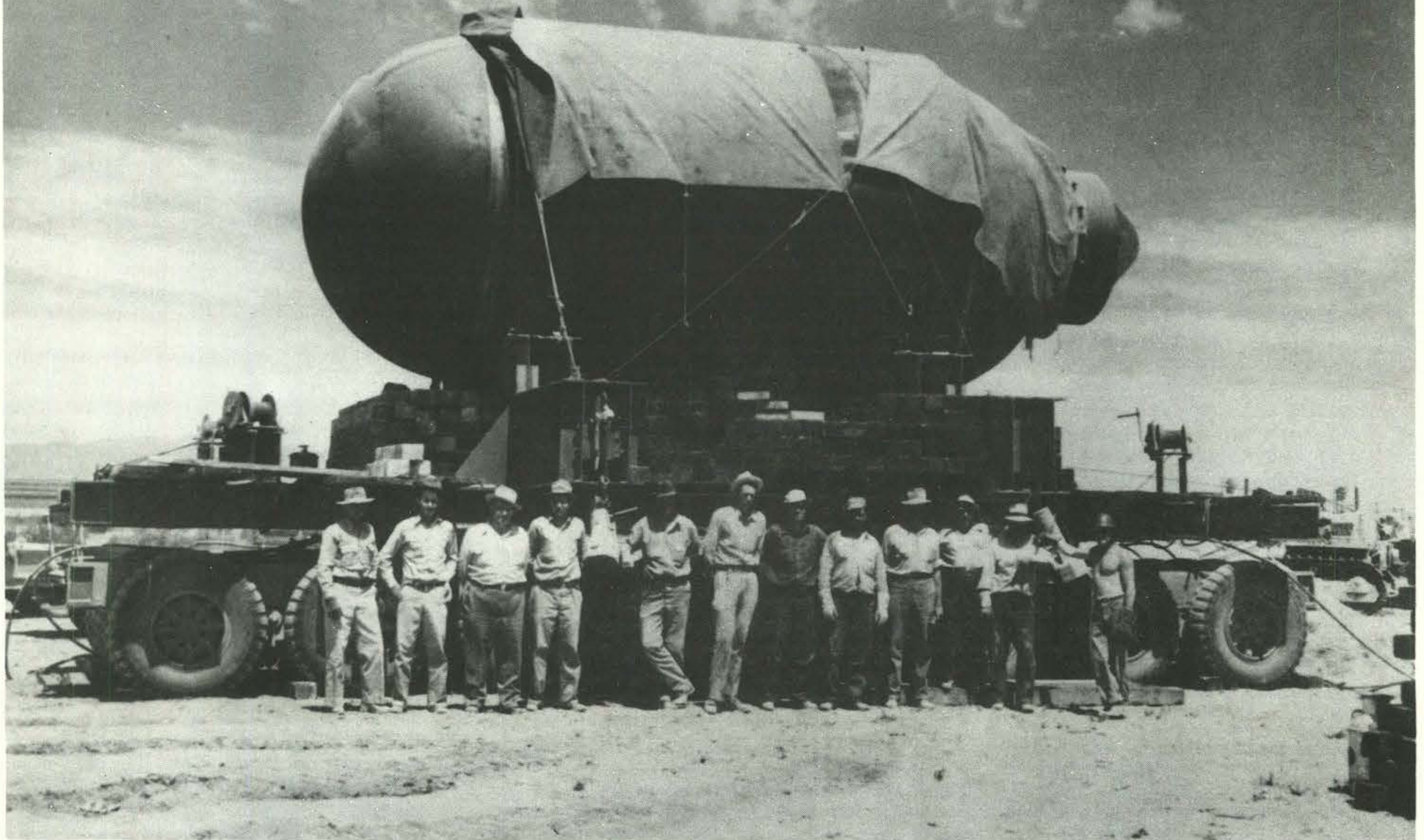


LAB NEWS

VOL. 29, NO. 2

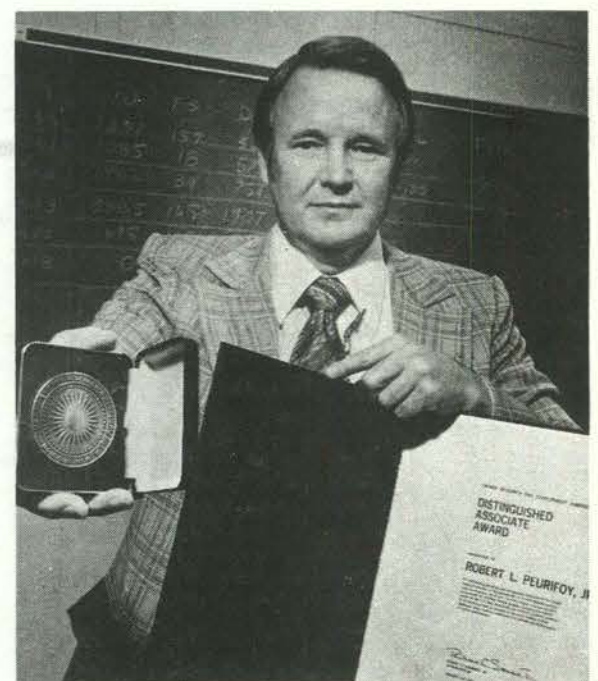
JANUARY 28, 1977



JUMBO, circa '45, was designed to contain fissile material of Trinity device in case of fizzle. On page 3 is described the Sandia Livermore NEDS (for nonviolent explosive destruct system), a current weapons-related program having design objectives along the same lines as those of Jumbo. Never used, Jumbo weighed in at 214 tons, required special trailer; retired VP Bob Henderson was co-designer of the container. Photo is pre-Trinity.



GROUND BREAKING CEREMONIES for Sandia's new E-Beam Fusion Facility were held last Friday with Ev Beckner (5200) and shovel, Gerry Yonas (5240), Morgan Sparks (1) and Al Narath (5000). Construction should be complete in September 1978, and the new 40 terrawatt accelerator should be operational in 1979. See article on Page Four.



ERDA AWARD — Bob Peurifoy, Director of Weapon Systems Development 4300, was honored this month with ERDA's Distinguished Associate Award. The Award reads: "For outstanding technical and management contributions to a broad range of activities in the development of nuclear weapon systems. Under his direction technically complex ordnance engineering tasks on warheads for strategic missile systems, including the reentry bodies for the U.S. Navy POSEIDON and TRIDENT systems, continue to be performed with an exceptional record of meeting critical deadlines within funding constraints and without sacrificing quality or system performance."

Afterthoughts

Man's best friend--The day of the personal computer has arrived, so announces a new magazine, Personal Computing. It won't nuzzle up to you like your pet dog, but it will, says the magazine, "... control your sprinkler system, do family accounting, act as a teaching tool for you and your children, monitor and control energy consumption and provide you with immediate access to whole libraries of information." And computer price should not be a significant obstacle: "You can buy a good personal computing system for about the price of a good stereo system." Personal Computing is informed, breezy, non-technical but not condescending. It may well reflect and nurture the blossoming of a technological development as significant in its effects upon our society as the introduction of television.

* * *

Meanwhile, at Bell Labs--A news release announces a Labs development that, in its own way, also has some profound implications. "Chicago, Ill. -- The world's first lightwave communications system to provide a wide range of telecommunications services will be evaluated here this year, AT&T Chairman John deButts announced today. Addressing the Executives' Club of Chicago, he said that, during the evaluation, a cable of hair-thin glass fiber lightguides will run about 1½ miles under the streets of Chicago carrying Bell System customers' voice, data and video signals on pulses of light." Advantages of communication by light are economical--amplifiers for boosting signal strength can be spaced farther apart than with conventional copper wire and coaxial cable transmission systems. And glass is cheaper than copper. Also, the hair-thin size of the fiber lightguides makes possible cables that are much smaller and lighter than copper cables, and that could make better use of existing underground ducts.

* * *

Please, no frothing--One of the people on LAB NEWS is the one you call when you want to know which bus to catch from Inca Court to Sandia, or how to form a car pool, or where you cross I-40 on your 10-speed. LAB NEWS offers this service because--well, that's another story. Anyhow, we came up with a clever phone number--4-RIDE--which we figured everyone would quickly remember and, to give it a little boost, we advertise Commuter Info, 4-RIDE, in most issues of LAB NEWS, on bulletin boards, and it's in the phone book as well (p. 5). Nevertheless, about half the callers on this number are in a state of high indignation when they reach us because they've spent the preceding hour tracking down the number, and much of the call is devoted to soothing and stroking by us. That's nice, but we have other things to do. So, if you want to know which bus takes you from Inca Court to Sandia, it's 4-RIDE (4-7433 for those insisting on by-the-number). (We even get calls on 4-RIDE for Computer Info, but that's another problem.) *js

Supervisory Appointment



ANTHONY VENERUSO to supervisor of Drilling Technology Division 5736, effective Feb. 1. Since coming to Sandia in July 1964, Tony has worked with the field test organization, the exploratory development group and the missile guidance and control systems group. For the past two years he has worked on advanced controls and power systems for solar and wind energy. In his new position, he will be responsible for the development of advanced technology in geothermal logging and drilling techniques.

Tony graduated from the Polytechnic Institute of New York with a BS in EE. His advanced degrees--MS and PhD in EE--were awarded by UNM under Sandia's Technical Development Program and Doctoral Study Program. He is a registered professional engineer in New Mexico, a member of IEEE and the Power Engineering Society, and a board member of the Medical Aids Research Foundation. Off-the-job interests include music, art and swimming. Tony and his wife Tamara have four children and live at 7501 Arroyo Del Oso NE.

Supervisor/Secretary Seminar Is A Success

Clay Hardesty, manager of Management Development Programs in Dayton, Ohio, conducted a seminar for Sandia supervisors and secretaries on Saturday Jan. 15 at the KAFB West Officers Club.

Education and Training Division 3521 co-sponsored the seminar with the Committee of Secretaries. Sandra Barber (3521), seminar coordinator, is decidedly happy about the outcome. "We issued invitations to all supervisors and secretaries, and attendance was voluntary," Sandra says. "Nearly two hundred Sandians attended and the ratio of supervisors to secretaries was about one to one. Comments from attendees indicate that the seminar was enjoyable and beneficial."

LAB NEWS

Published every other Friday
SANDIA LABORATORIES
An Equal Opportunity Employer

ALBUQUERQUE, NEW MEXICO
LIVERMORE, CALIFORNIA
TONOPAH, NEVADA

Editorial offices in Albuquerque, N.M.
Area 505 264-1053
ZIP 87115

In Livermore Area 415 455-2952

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&
don graham ass't. editor

bruce hawkinson & norma taylor write
bill laskar does picture work
so does russ smith

&

lorena schneider reports on livermore

Events Calendar

Jan. 29 -- "Amazing Korea," travel film
7:30 p.m., Popejoy Hall.

Jan. 29, 30 -- "Pinocchio," Albuquerque Children's Theatre, 1:30 & 3:30, Popejoy Hall, 277-3121.

Feb. 3-5 -- "Winter Dance Concert" Albuquerque Dance Theatre, U of A Stage I, 247-3771.

Feb. 4-6 -- Lobo, Jaycee & AAU track meets, Tingley Coliseum.

Feb. 5 -- The Eastman Quartet, 8:15 p.m., Popejoy Hall, 277-3121.

Feb. 7 -- The Osipov Balalaika Orchestra from USSR, 8:15 p.m., Popejoy Hall, 277-3121.

Feb. 9 -- "Hamlet," German film version, 7:30 p.m., Popejoy Hall.

Speakers

Jack Dini (8312), "Plating on Unusual Metal," American Electroplaters' Society meeting, San Francisco, Calif., Sept. 16, and Los Angeles, Calif., Nov. 10.

Mike Malinowski (8334), Invited Presentation: Surface Contamination and Deuteriding Inhibition in Titanium Thin Films," National Symposium of the American Vacuum Society, Sept. 20-27, Chicago, Ill.

Marty Abrams (8111), "The Temperature Distribution Along an Absorbing-Emitting Fluid Layer Flowing Over an Opaque Substrate," 97th Winter Annual Meeting, American Society of Mechanical Engineers, Dec. 5-10, New York City.

Fred Eichert (8432), "Transient Drafting," Annual Institute Meeting, California Industrial Education Association, East Bay Skills Center, Oakland, Calif., Oct. 30.

Jack Dini and Rudy Johnson (both 8312), "On Adhesion Testing of Deposit-Substrate Combinations," Symposium on Adhesion Measurement of Thin Films, Thick Films and Bulk Coatings, American Society for Testing Materials, Nov. 2-4, Philadelphia, Pa.

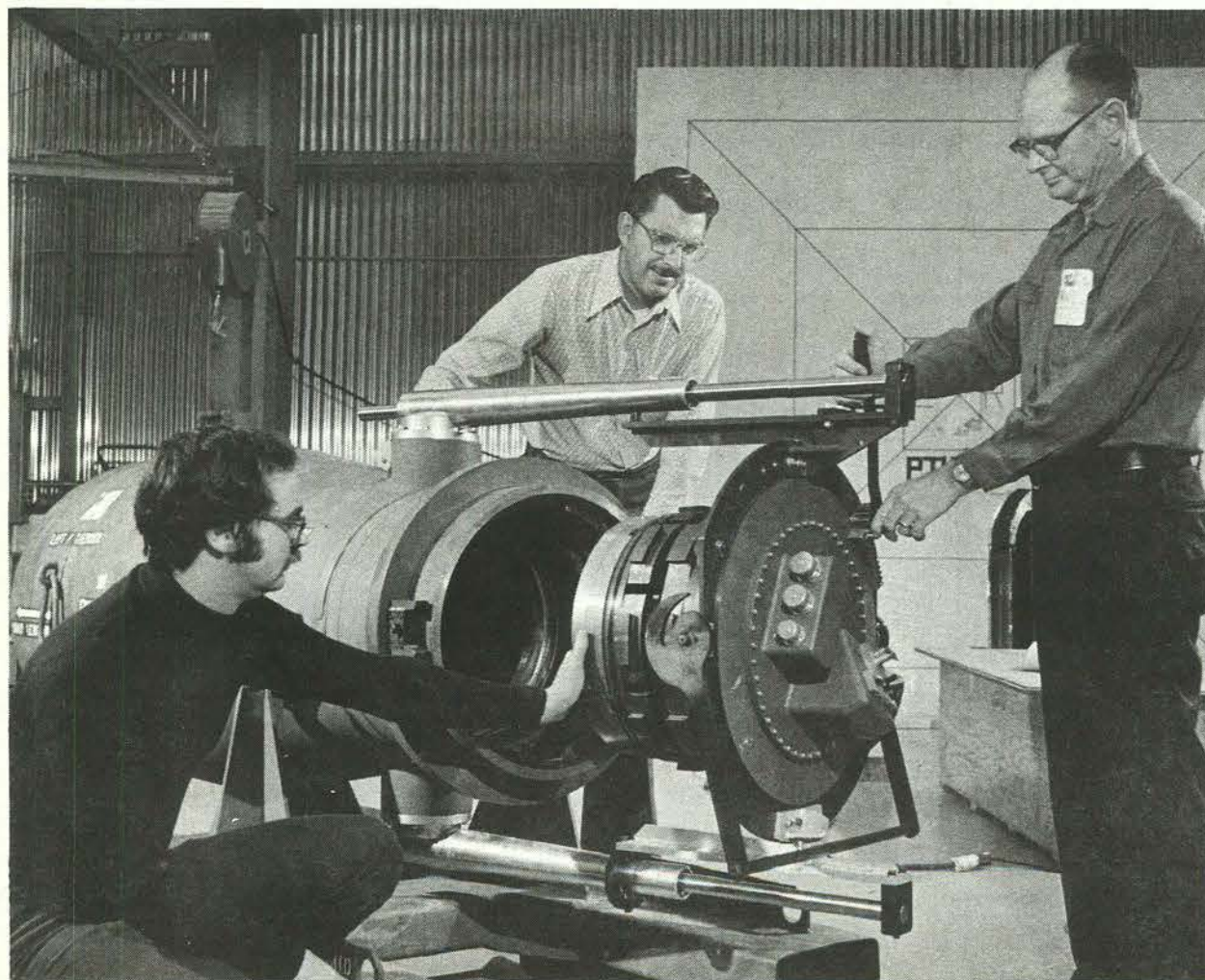
Rand German (8312) and Z.A. Munir (UC/Davis), "The Activated Sintering of Molybdenum"; Rand German and John Smugersky (8312), "A Powder Metallurgy Approach to Ductile 250 Grade Maraging Steel"; Rand German and Carolyn Kramer (8312), "The Sintering of 304L Stainless Steel Powder"; John Smugersky, "Iron and Aluminum Distribution in Beryllium"; and Mike Baskes (8341), "Helium in Metals," American Institute of Metallurgical Engineers fall meeting, Sept. 20-23, Niagara Falls, N.Y.

Bob Carling and Jim Bartel (both 8313), "User Evaluation of a Differential Scanning Calorimeter," and "The Effect of Selected Cadmium and Zinc Dopant Ions Upon the Magnetic Disordering Temperature and Enthalpy of Synthetic-Fe₃O₄," 31st Annual Calorimetry Conference, Sept. 29, Argonne National Laboratory, Chicago, Ill.

Alec Willis (8344), Lutz Dahlke (8344), Wil Jorgenson (8123) and Harry Saxton (8314), "The Performance and Inspection of Flawed Pressure Vessels"; Dan Tichenor, Ken Henry and Dick Gorman (all 8344), "Application of Holographic Interferometry to the Inspection of HERF Stainless Steel Pressure Vessels"; and Lutz Dahlke, "Flash Neutron Radiography and Its Application to Gas Dynamics Studies," American Society for Nondestructive Testing National Fall Conference, Sept. 27-30, Houston, Tex.

Congratulations

Mr. and Mrs. Steve Guthrie (8334), a daughter, Siobhan Edana, Dec. 5.



NEDS test unit is displayed after completion of initial test series by John Wood, Bill Pontsler, and Bob Milby (all 8165). Bill is systems engineer for the NEDS project.

LIVERMORE NEWS

VOL. 29, NO. 2

LIVERMORE LABORATORIES

JANUARY 28, 1977

NEDS: Safeguarding A Nuclear Weapon

In the early days when the nation's stockpile of nuclear weapons was small, the security of that stockpile was ensured by storing the weapons in some virtually impregnable repository — underneath a mountain, for instance.

By the '70's, the country's nuclear arsenal had undergone dramatic change, and the United States has deployed large numbers of tactical nuclear weapons around the globe. These weapons are stored in sturdy "igloos," and their storage sites are the focus of intense and sophisticated security measures designed to deny access to the weapons by unauthorized people.

The possibility of a storage site for nuclear weapons being overrun has prompted defense planners to raise this question: what does the military commander on the scene do with the weapons when time has run out and capture is imminent? For certain weapons he now has an answer: NEDS (nonviolent explosive destruct system). With NEDS the commander is able to destroy a nuclear weapon and yet neither endanger his own forces nor scatter any radioactive contamination — the explosive destruction of the weapon is completely contained within the container in which the weapon is stored.

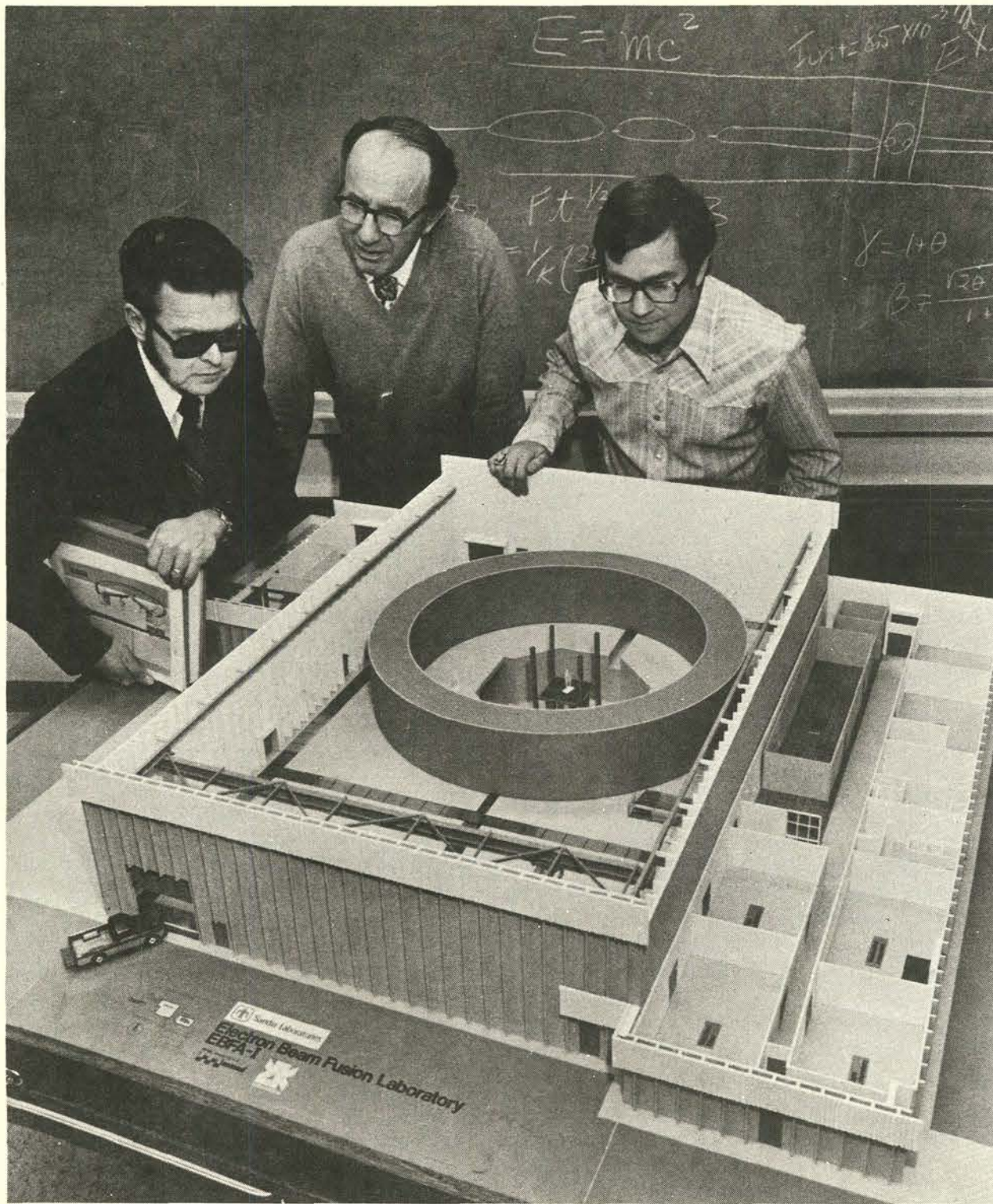
Work on NEDS started over two years ago in Command & Control Division 8365 under Rick Wayne. A project group was formed last year under Bill Wilson (8165) to proceed with the engineering development of this unique device.

Billy Pontsler (8165) handles overall NEDS planning, and he describes some of the design constraints. "To contain the explosion which destroys the weapon takes a pretty stout container. Yet this had to be light enough and small enough to be handled by the military in the field without undue complication. For example, they want to be able to load it on a truck with an ordinary fork lift. So we couldn't just keep adding inches of metal to the wall thickness — it would have weighed many tons."

The laminar design of NEDS gave the project group the desired small size, coupled with the strength necessary to contain the explosion. Sintered iron (a sort of porous iron) and a dense organic foam are layered between three shells of stainless steel. "The composite structure absorbs explosive energy by compacting material and bending metal," notes Billy. NEDS is 211 cm long (about 7 ft.), 81 cm. in diameter (32 inches), and weighs 2300 kg (5000 lbs.)

To meet military requirements, the massive door that seals off the end of the container can be operated by one man. Weighing 180 kg (400 lbs.), the door is constructed like the breech block of an artillery piece. When closed, it seals off the high pressure gasses and radioactivity of the destroyed weapon for an indefinite period. A captured NEDS would yield only a vaporized conglomerate of material, from which it would be extremely difficult to distill any usable fissile material.

Like a weapons program, NEDS has been a team effort. Ed Cull is handling overall mechanical design, while Jerry Henderson is designing the door and sealing system. The considerable electronics associated with the container are the responsibility of Paul Heppner, Don Markwell, and Wayne Chrisman, with John Wood and Bob Milby handling testing. All are in Division 8165. Outside the group, Bert Folks (8412) does mechanical assemblies, while Fred Scholl and Larry Hoffa (both 8432) are draftsmen for the project. Spike Leonard and Ernie Eason of Analytical Mechanics Division 8121 under the supervision of Al Jones perform the analytical modeling which provides much needed insight into the complicated explosion/container interactions. Early experimental work on the design concept was done by Bill Benedick and Charley Daniel (both 5131).



MODEL of new E-Beam Fusion facility is examined by Walt Scott (9743), Plant Engineering facilities design engineer; Marv Becktell (5200A), Advanced Projects Coordinator; and Gerry Barr (5243), E-Beam fusion program project engineer. Doughnut shape represents the 40 terrawatt accelerator.

\$14 MILLION FACILITY

Ground Broken for New E-Beam Fusion Lab

"Eighteen months from now this barren mesa will be the scene of one of the most challenging and exciting fusion research programs in the country," Gerry Yonas, manager of Fusion Research Department 5240, said at ground breaking ceremonies last Friday for Sandia's new E-Beam Fusion Facility.

The facility will house a new 40 terrawatt accelerator which will create either electron or ion beams. The facility is expected to be an important step toward the achievement of thermonuclear fusion.

"Congratulations," President Morgan Sparks told the crowd of 150 — Sandia researchers, Plant Engineering people and ERDA representatives. "In an intensely competitive arena your work in E-beam research has earned this significant support."

Construction of the Fusion Facility, which includes a laboratory of about 21,000 sq. ft., an equipment basement of about 3000 sq. ft., two adjacent annexes of about 12,000 sq. ft. and a 13,000 sq. ft.

office and support building, will cost \$4 million.

Cost of the 40 terrawatt accelerator and associated equipment will be an additional \$8 to \$9 million. The new machine is expected to become operational in 1979.

The facility is being constructed at a site about one-half mile south of Area II. It will be designated Area IV. Robert McKee, Inc., of El Paso is the contractor.

Design of the new machine is based on a Sandia research program started in 1965 using a series of high-power particle accelerators — Hermes II, Nereus, Reba, Slim, Hydra and, more recently, Proto I and II which are designed specifically for fusion research. The earlier machines were used primarily in weapon effects studies.

"Recent technical achievements in beam propagation, pulse power systems, beam focusing and target physics have brought new levels of confidence to our program," Gerry Yonas said. "We are making significant progress toward the goal of thermonuclear fusion — a goal that is still some 15 years away."

Speakers

N.J. DeLollis (5813), "Metrication and International Standards," Nov. 5, Downtown Optimist Club.

B. Stiefeld (5715), "Wind Energy Research," Nov. 8, Eldorado H.S. energy seminar.

H.G. Jeblick (3442), "Industrial Safety," TV-I, Dec. 14.

D.R. Anderson (5444), "A Preliminary Assessment of the Feasibility of Disposal of H.L.W. in Geologic Formation Beneath the Ocean," Florida International University, Nov. 18, Miami, Fla.

W.Y. Velez (5121), "Chicano Scientist Employment in Arizona and New Mexico," Conference on Special Emerging Programs in Higher Education, Dec. 9, Tucson, Ariz., and "Some Remarks on a Number Theoretic Problem of Graham," '76 Westcoast Number Theory Conference, Dec. 19-23, San Diego.

A.D. Swain (1222), "Human Factors Engineering," ERDA-Contractor Health Protection Meeting, Dec. 14-17, St. Petersburg, Fla.

A.R. Sattler (1141) and C.W. Cook (1116), "Status of WIPP In Situ and Bench Scale Experiments"; W.R. Wawersik (5163), "Laboratory Mechanical Properties Evaluations on Rock Salt from Southeastern New Mexico," Symposium for Rock Mechanics Review/Workshop Meeting on the Disposal of Radioactive Waste in Geological Formations, Dec. 16-17, Denver.

T.M. Gerlach (5831), "Sandia Laboratories Magma Fuel Program," Geoscience Seminar, invited talk, Dec. 17, LASL.

B.L. Gregory (2140), "The Influence of Microelectronics on the Education of Tomorrow's Engineers"; W.J. Spencer (2100), "The Differing Role of Public and Private Laboratories in Microelectronics," Microelectronics Symposium, Jan. 3-4, UNM.

S.M. Myers (5111), "Metallurgy by Ion Implantation," IBM Research Laboratory Jan. 4, Yorktown Heights, N.Y., and BTL Special Seminar, Jan. 6, Murray Hill, N.J.

W.H. McCulloch (5711), "Solar Energy Research," Dec. 1, Heights Optimist Club, Albuquerque.

G.C. McDonald (9636), "New Mexico Wilderness Areas," Dec. 2, Northwest Optimist Club.

A.D. Swain (1222), "Motivation of the Volunteer Worker," Dec. 9, Northwest Optimist Club.

M.E. Morris (5442), "Cost and Effectiveness Comparisons of Various Types of Sludge Irradiation and Sludge Pasteurization Treatments"; R.L. Ward (5441), "Virus Inactivation in Wastewater Sludge"; G.S. Smith (NMSU) and H.D. Sivinski (5440), "Recycling Sewage Solids as Feedstuffs for Livestock"; J.R. Brandon (5442), "Sandia's Sludge Irradiation Program," 3rd Annual National Conference on Sludge Management, Dec. 14-16, Miami, Fla.

R.W. Harrigan (5711), "Solar Energy Research," Nov. 15, Highland H.S. chemistry class.

A. Owyong (5214), "Nonlinear Refractivity Studies in Liquids Using Two Beam Nonlinear Interferometry," Physics Dept. Colloquium, USC, Jan. 3, Los Angeles.

F.P. Gerstle, Jr. (5844), "Thermal and Mechanical Considerations in the Design of Composite Structures," invited presentation at Gordon Research Conference on Deformation and Failure Mechanisms in Polymers and Composites, Jan. 3-7, Santa Barbara, Calif.

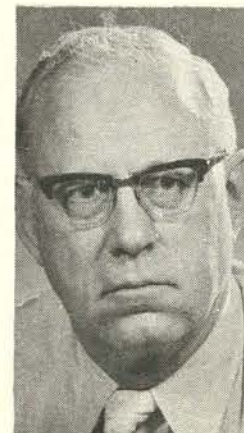
Sympathy

To Skippy Narvaez (9718) on the death of his father-in-law, Jan. 11.

To Joseph Smith (5832) on the death of his father in Texas, Jan. 4.

To Al Hall (9584) on the death of his father-in-law, Jan. 23.

Death



Phil Bircher of Electrical Standards Division 2552 died Jan. 12 after a short illness. He was 55.

He had worked at Sandia since March 1951.

He is survived by his widow.

Sandia TI Courses Offer Opportunity

Since 1966, 108 Sandians have earned Technical Institute Equivalency certificates in the out-of-hours education program. Of the total, 95 are still on roll working in the higher levels of Staff Assistant Technical (SAT) and Engineering and Science Assistant (ESA) jobs.

For the higher ESA rank, a Tech Institute certificate is required. This is strong motivation for the 200 employees now enrolled in the program. Completion of any of the six technology programs offered requires from five to seven years. Achieving that goal is a long, hard grind that takes many hours of study and considerable dedication.

The program is called the Technical Institute Equivalency Program because, in fact, Sandia operates a school equal to any of the two-year technical institutes in the country. The teaching staff is composed of qualified working professionals. Laboratory facilities are among the best. High academic standards are maintained.

Gene Bates of Education and Training Division II 3522, who coordinates Sandia's Tech Institute program, emphasizes one other factor in the program that is probably more important than facilities or academic qualifications. "Our instructors care," he says. "These are people whose own jobs are in the field they teach. They care about the subject matter, and they care about their fellow workers. They *want* the students to do well."

The technologies that Sandia offers for TI equivalency certificates include electronics, drafting and design, mechanical, electro-mechanical, materials, and information systems.

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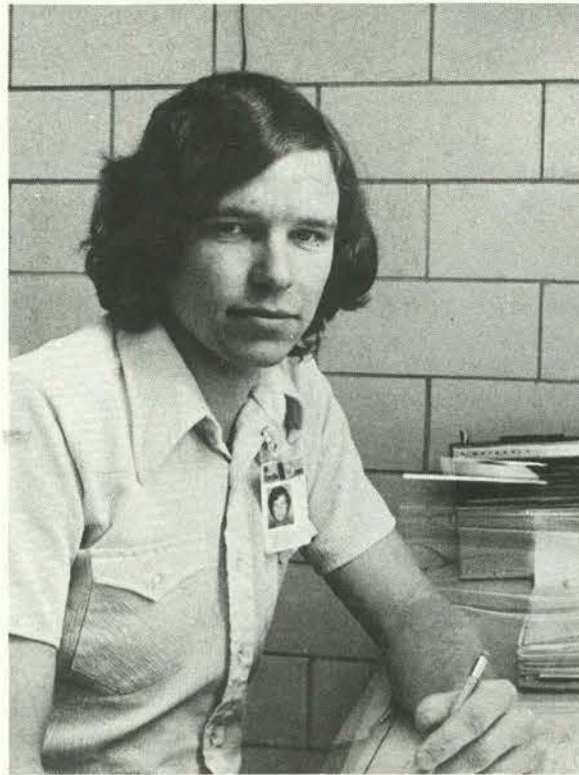
DAVE KELTON (9583) is now enrolled in the final class leading to his TI certificate in Mechanical Technology. He took his first course — Technical English — while still an apprentice machinist in 1972.

"When I became aware that the TI program was a stepping stone to a better job and more pay, it seemed obvious that taking courses was the way to go," he says. "And I was fortunate — several of the courses covered the same ground I'd been through in high school and T-VI. I was able to meet requirements without spending time in class. Other courses were definitely job-related and gave me skills that I could immediately put to use."

Dave, currently an SAT, prepares programs for the numerically controlled machine tools in the Development Shops. When he finishes the Strength of Materials course and is awarded the TI certificate, he will be eligible for an ESA rating.

AT 25 Dave is married, and the Keltons have three young children. After earning the TI certificate he plans to continue his education at the University.

"Been going to school ever since I can



DAVE KELTON (9583)
"—can't break the habit —"

remember," he says. "Can't stop now — might break the habit."

* * *

DORIS MORTENSEN analyses Safeguards-related data for Transportation Systems Division 1716. This semester she is taking two out-of-hours courses to complete requirements for a TI certificate in Information Systems Technology.

She joined Sandia as a grade 3 secretary in 1959. After a "floating" assignment she bid on a job as a data reduction clerk and became a grade 6 after two years.

"I left Sandia then to join my husband who was returning from Korea," she says. In 1963 Doris returned to Sandia as a division secretary.

"To be promoted, I knew I needed more training so I took my first TI course. For 14



DORIS MORTENSEN (1716)
"— taking courses for 14 years now —"

years now I've been taking courses — that's a long pull."

Doris has obtained a Certificate of Computer Technology Training.

Doris was promoted to SAT 1 in 1970 and to SAT 2 in 1974. Off-hours, Doris sews as a hobby and makes all her own clothes, as well as some of her husband's.

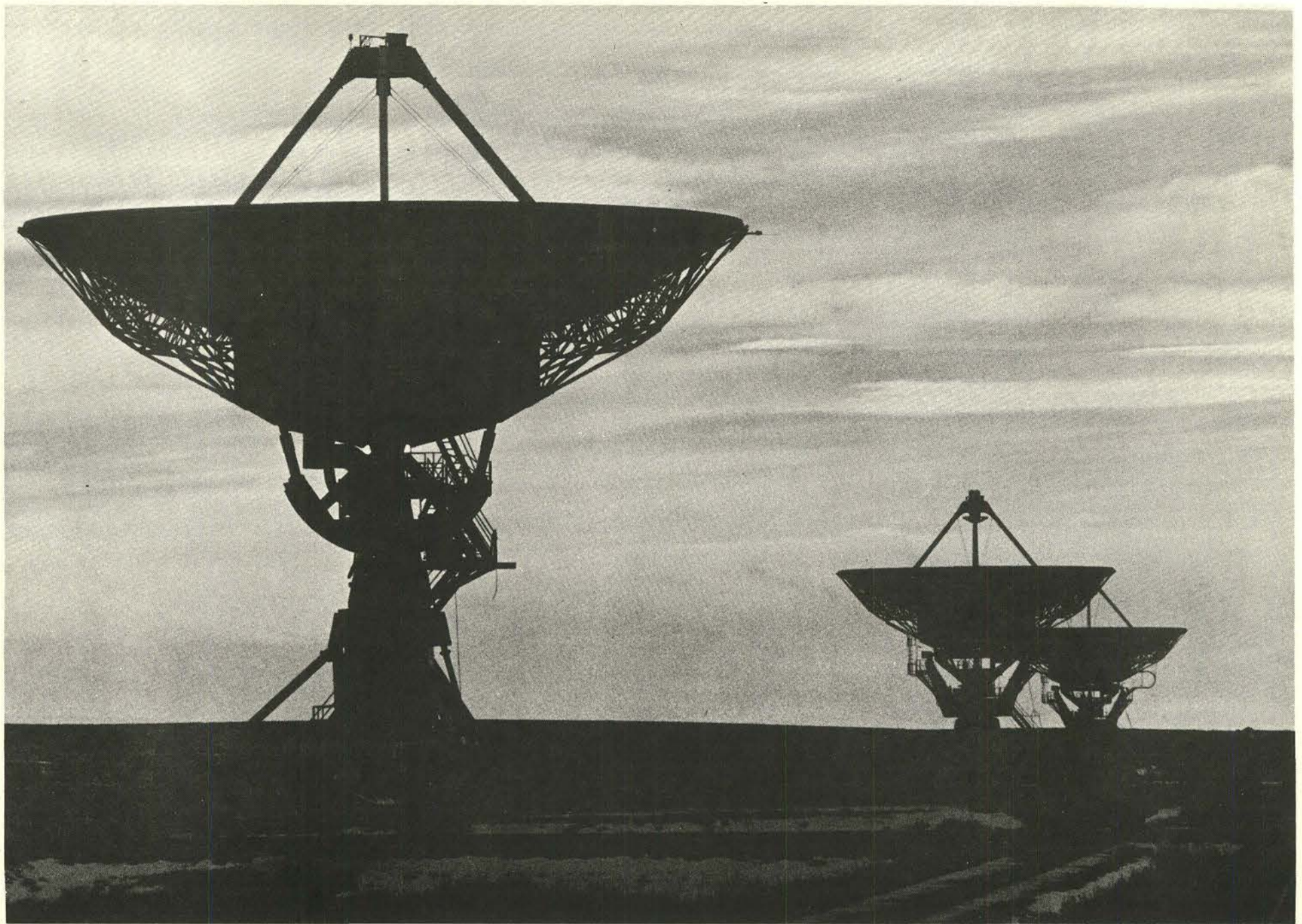
Her son is completing a Master's degree in EE this semester at UNM. Daughter Marla Kist is a Sandia division secretary. She holds a degree in education and is a Certified Professional Secretary.

* * *

"The TI program provides the Labs with valuable employees," Gene Bates says. "And it's one way by which Sandia offers a route to promotion. Many women and minority people have advanced under the TI program."



THOMAS PIKE (left), Chairman of the National Council on Alcoholism, was the featured speaker in a recent Sandia colloquium, where he described alcoholism programs on a national level. Here he talks with Jim Kelly, the Labs' Alcoholism Program Administrator.



VISTA NEW MEXICO

World's Largest Radio Telescope Under Construction West of Socorro

As you emerge from the Magdalena Mountains heading west on Highway 60 toward Datil across the Plains of San Augustin, the first sight of the eight parabolic antennas in a line across the horizon is not impressive. They are reminiscent of the radars at Tonopah Test Range. Then as time and the miles go by, the antennas slowly appear larger until their presence is overpowering: the antennas are *huge*.

Eight antennas are complete, each 25 metres in diameter and as tall as a 10-story building. Sometime in 1981 27 antennas will form a giant "Y"; two of the arms will be 21 km (13 miles) long and the third 19 km (12 miles) long. They will form what is called the Very Large Array (VLA), the world's largest radio astronomy observatory.

Controlled by computer, the VLA will function as one huge antenna to collect radio waves from the far reaches of the universe.

Relative to the energy source being observed, the entire Y-system will rotate as the earth turns, making a complete revolution in eight to 12 hours. This "exposure time" will generate a high resolution radio "picture" of the energy

source. The computer generates maps of the sky, some resembling weather millibar charts or others very similar to a photograph taken with an optical telescope.

Since radio (microwave) wavelengths are at least five orders of magnitude longer than visible light wavelengths, radio telescopes must be very large to obtain resolution and intensity comparable with that of optical telescopes.

In the recent past radio astronomy has brought two new words, "quasar" and "pulsar," into the language. Unknown and not visible before radio astronomy, these energy sources are not fully understood and a coherent theory of the universe is not possible until more is known about them.

The VLA will be the premier instrument in the world for scientific research on the physics of radio sources beyond the Milky Way, on the structure of the universe, on evolution of stars, and on the chemical constituents of gas clouds lying between the stars.

Funded by the National Science Foundation, the observatory construction will cost \$76 million. It will be part of the National Radio Astronomy Observatory network, which includes facilities at Green Bank, West Virginia, the University of

ANTENNAS, 25 metres in diameter and as tall as a 10-story building, line the Plains of San Augustin 50 miles west of Socorro. When completed in 1981, the Very Large Array—part of the National Radio Astronomy Observatory—will contain 27 antennas placed to form a giant "Y" within a 17-mile diameter circle.

Virginia, and Kitt Peak Observatory near Tucson.

When the VLA is completed, scientists from throughout the world will have access to the facility. A scientific advisory board will schedule experiments. The permanent operations staff will number about 60 persons.

Construction of the antennas takes place on site in a giant shed. Positioning tolerances for each huge structure and its elements are tiny, less than a millimetre. As soon as one antenna is completed, it is checked out and placed "on line." Forty hours of continuous operating runs are scheduled weekly.

The 200-ton antennas are moved into position by a specially-designed transporter which travels along two sets of railroad tracks 18 feet apart. Moving the antennas by rail solves not only the task of initial placement but also provides great flexibility to the VLA — antenna stations are not fixed.

In about March a visitors center will open. The site is about 50 miles west of Socorro. Visitors will be able to observe construction activities, the antennas, and the operations center of the computer complex as they proceed on a self-guided tour.

Take Note

The YWCA is offering a special three-part lecture series for parents called "Education—The School and You." Leader of the discussion is George Follansbee, retired Headmaster of the Albuquerque Academy Junior School. The series will be held on Mondays, Feb. 7, 14 and 21, from 8 to 9:30 p.m. at the Northeast YWCA, Candelaria at Parsifal NE. For reservations or further information call 247-8841.

* * *

This is the time of year that the Kirtland Officers Wives Club offers ten \$500 academic scholarships to people associated with the Base, including "married and unmarried dependents of (among others) Sandia Labs employees." This means both your spouse and children may be eligible. Scholarships are awarded on the basis of academic merit and financial need. Applications for the scholarships may be picked up (don't call, please) in the LAB NEWS office Bldg. 814.

* * *

In case you hadn't heard, your Social Security deduction has a new base. That is, the amount of your salary on which the tax is levied. The new base is \$16,500, as compared to \$15,300 last year. The percentage — 5.85 percent — will not change, and the maximum amount of 1977 Social Security tax that can be deducted is \$965.25, up from \$895.05 last year. It's getting so we'd settle for the deductions from the paycheck and let the other interested parties divvy up the remains.

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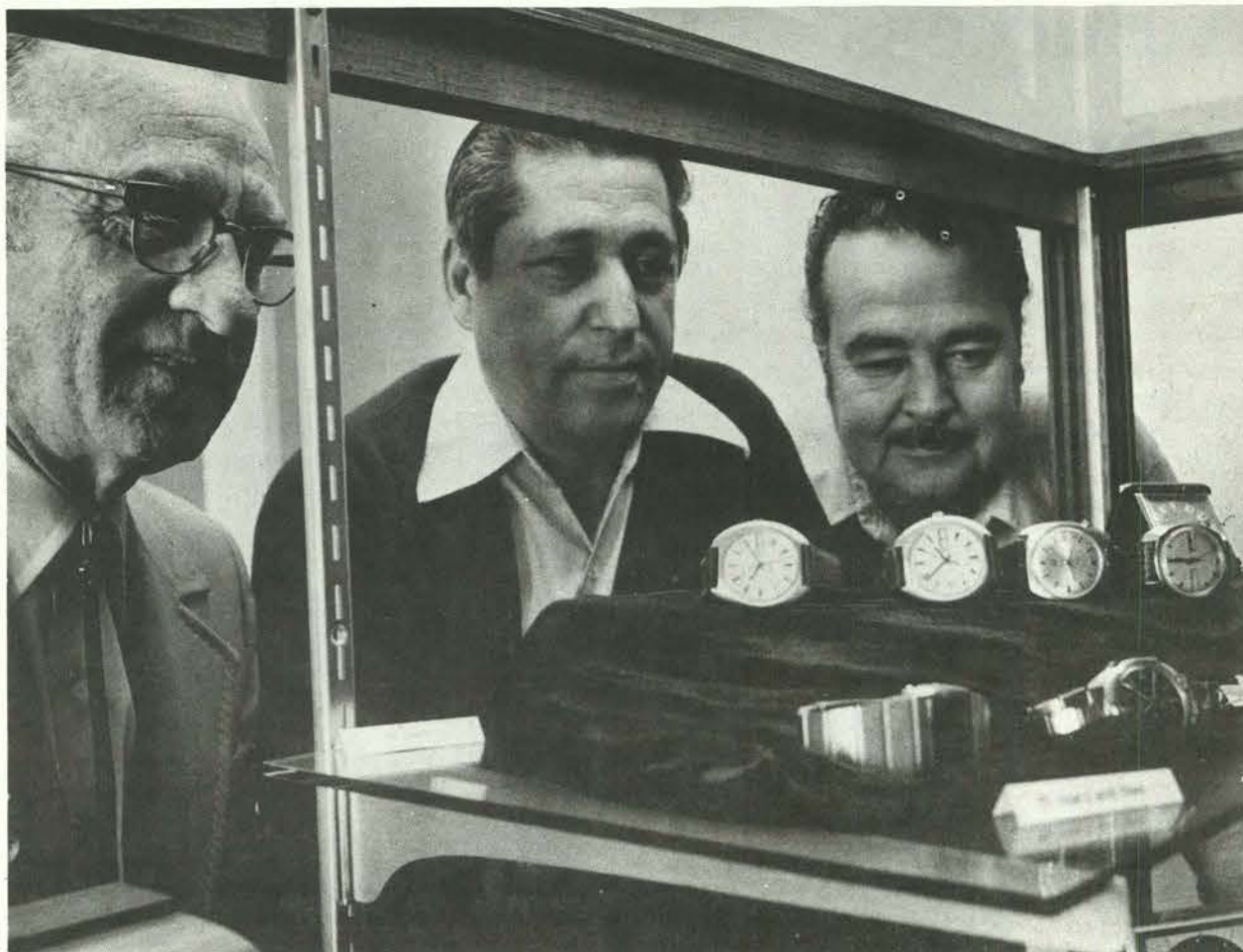
Gerda Krefft (5112) will present "Ion Implantation Induced Defect Studies in MgO" at the 5100 Seminar Tuesday, Feb. 1, in Bldg. 806, Rm. 201, at 3:15 p.m.

* * *

Before making plans for vacation, it might be fun to attend the annual travel show at the Convention Center on Feb. 5 and 6. Participants in "Viva Travel '77" include national and international representatives from ski areas, airlines, travel agencies and resort areas. Tickets—adults, \$1; children, 75¢—are available from Shirley Dean (3001/9001), Bldg. 892, Rm 212.

* * *

New Mexico sections of ASME and ANS are sponsoring a joint dinner meeting on Feb. 4 at the Santa Fe Hilton. Guest speaker is Professor Klaus Keil of UNM, whose topic is the Viking mission to mars. He recently received the NASA Exceptional Scientific Achievement Medal for his work with lunar rock fragments. Dinner will be served at 7:30, at \$6.50 per person. If you take the chartered bus, the tab is \$10 per person. It leaves UNM at 5:30. Reservations: Tom Feldman, 277-6313 or Joe Abbin, 296-7678.



THE THREE ROOKIES in the Purchase Analyst group haven't even hit the 25-year service mark yet. But it won't be long. Loren Blakely, Mike Barela, and Jack Chavez study the watches they'll receive April 11, April 16, and February 14, respectively.

SANDIA'S PURCHASE ANALYSTS

Experience? Two-thirds of a Millenium

For a group their size, the 25 Purchase Analysts in the Purchase Services Section 3725-2 probably have the most Sandia experience at the Labs: an average of 26.7 years per person, a combined total of over 667 years.

"The PA's serve as liaison between a line organization and the buyer," explains Bob Durand, section supervisor. "That means we prepare purchase requisitions, assist a buyer in understanding an organization's needs and schedules, expedite deliveries from commercial suppliers, process shipments of materials or equipment that apply to an order, and keep the line informed about any slippage in schedules."

The PA's work individually or in small groups among the line organizations they serve. Being located with their major users means that PA's are usually aware early of

upcoming needs. When an emergency buying situation arises, the PA often handcarries a requisition through the approval channels and to the buyer.

"Our goal is to minimize the time our customers — the people we work with — have to spend in obtaining the supplies and equipment they need to do their jobs. Our years of experience are invaluable here," says Bob.

Fun & Games

Softball — Teams are now organizing and practice sessions starting for the upcoming season. Openings exist on men's slow and fast pitch teams and in the women's fast pitch league. If you wish to play, contact Tom Massis (2516), 4-1540, or Dora Montoya (5410), 4-4052.

* * *

Volleyball — Three leagues are now organizing — A-league for more competitive players, B-league for recreational players and C-league for women (although women may play in the other two leagues). The 10-week season starts in March. If you wish to join a team, call Dick Pettit (5842), 4-2109.

* * *

Colorado River & Grand Canyon — River runner Mark Percival (2351) reports that a 10-day expedition down the Colorado from Lee's Ferry to Lake Mead is being organized, launch date July 5. Cross Tours is the outfitter. Advantage of organizing own group rather than signing on as individual is economic — outfitter grants significant discounts to groups. Call Mark's daughter, Edith, at 299-0535 for further details.

Laura Bidwell of the League of Women Voters is looking for a consumer advocate to research pending legislation relating to the pricing of natural gas in New Mexico. According to Laura, gas prices in our state are among the highest in the nation, in spite of the fact that the gas is produced here. Call her on 256-0718 if you want to get involved.

* * *

Safety's Jerry Jercinovic (3440) has been elected chairman of the City-County Emergency Medical Services Board for 1977. The 13-member Board develops policy regarding emergency medical services and the transportation of patients. Seventeen rescue units now operate in the Albuquerque area, plus 8 ambulances of the Albuquerque Ambulance Service.

A Success Story

Retiring

A Sandian called us the other day with the kind of personal success story that we like to carry in LAB NEWS. He prefers to remain anonymous, so we'll simply call him Jack.

Jack is a survivor. At age 49, he's back at work following open heart surgery, a procedure which, while increasingly common, remains nonetheless radical. What's remarkable in Jack's case is the quickness of his recovery: eight days after surgery he was home and exercising; and 21 working days following the operation he was back at Sandia on half-days. The average patient who has undergone this surgery takes up to three months to get where Jack is in one month.

The surgical team went after the blood vessels in the heart region — they were badly clogged. Jack has had a congenital problem with high cholesterol for years. The surgeons transplanted sections of veins from his leg to replace the clogged vessels.

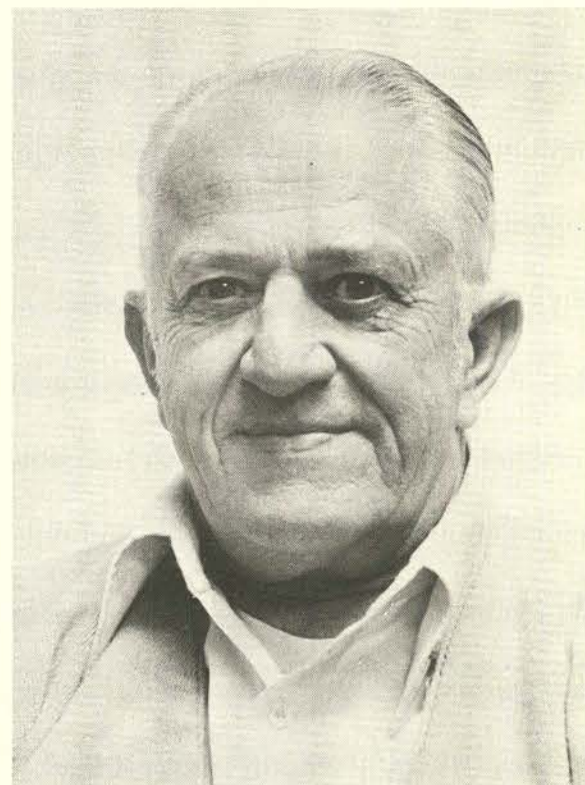
"While they had my chest open, the surgeons were able to examine my heart and make some judgement about its condition," says Jack. "They pronounced it excellent, notwithstanding the blood vessel problem. And the reason for its excellent condition almost certainly relates to the running I've done over the past few years."

For eight years, Jack has been getting up in the morning and running three miles, four days a week. Is this why his heart is in such good shape? The evidence does not justify a categorical "yes," but Jack firmly believes his running was a lifesaver and his doctors agree that running was a major factor in his heart's health.

Jack is back at running now. In fact, within 30 days after the operation he was able to run two miles and had already walked 130 miles. Doctors have urged him to get as much exercise as he can without undue fatigue. The fact is Jack is running now as if his life depended on it.



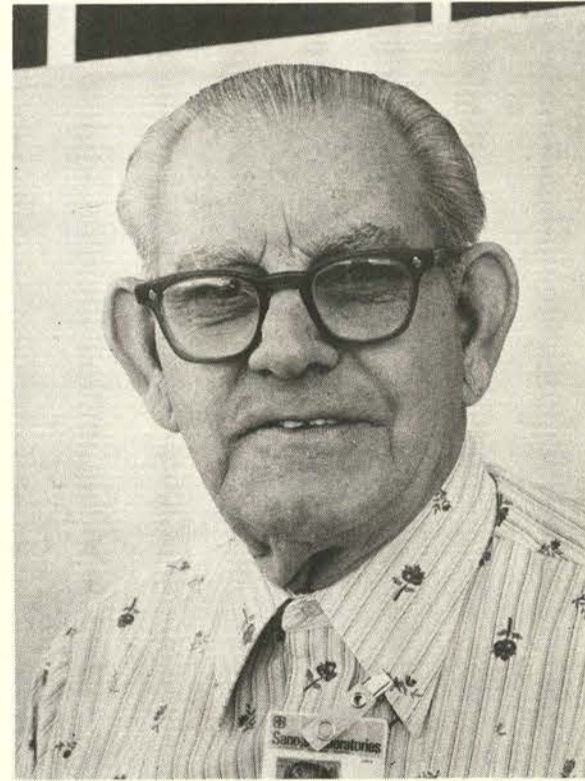
Vivian Messersmith (3732)



Ed Ashland (1752)



Hugh Martin (9335)



Henry Williams (9581)

Nearly 198,000 Employed In Nuclear Energy Effort

Nearly 198,000 people are employed in nuclear energy-related activities, according to a recent ERDA survey. The survey canvassed both privately owned firms and government-owned, contractor-operated facilities. Results showed that engineers, scientists and technicians account for nearly half the total number; that about 39% of the 58,400 engineers and scientists were engaged in R&D activities; and that the Pacific region, primarily California and Washington, accounted for the largest number of employees in nuclear activities. Greatest employment gains between '73 and '75 occurred in nuclear reactor operations (a 60% increase) and in the design of nuclear facilities (a 40% increase).



Dollie Harris (3141)



Mary Kelley (3621)



DOWN THE RUNWAY to the Museum of Albuquerque travels a convoy of energy devices: wind turbine model (in the box), a focusing reflector, a crane for unloading big stuff, a heliostat on its yoke, and (far right) another heliostat yoke. These and other devices are featured in **ENERGY AND SOCIETY: THE NEXT 30 YEARS**, an exhibit running Jan. 30 through March 13 at the Museum. Three symposiums on Feb. 5, 12, and 19

complement the exhibit. Among the speakers: Sen. Pete Domenici, Lewis Binford, Iben Browning, Glen Brandvold (5710), Arlyn Blackwell (8110), Wendell Weart (1140). The symposiums are designed to educate the general public about the energy question—call the Museum at 766-7878 for more info.

One-Stop Shopping

At your LAB NEWS office (Bldg. 814 just east of the Base Cafeteria, Rm. 6, no phone calls), you can:

GET

- Organ donor stickers (see photo cutline elsewhere)
- Bumper stickers (SPEEDING IS HAZARDOUS TO YOUR WEALTH and CAR POOLERS DO IT IN GROUPS)
- KAFB Officers' Wives' Club scholarship applications (see "Take Note")
- Tel-Med directories (recorded medical info)
- Triathlon of Albuquerque info (for jocks only)
- LOOKING BACK (the picture booklet of Family Day fame)
- Commuter bus schedules and maps

SEE

- Retiree Job Reference Service listings
- Wholesale price catalog (buys on calculators, other goodies)
- Old LAB NEWS stories (you look them up)

GIVE

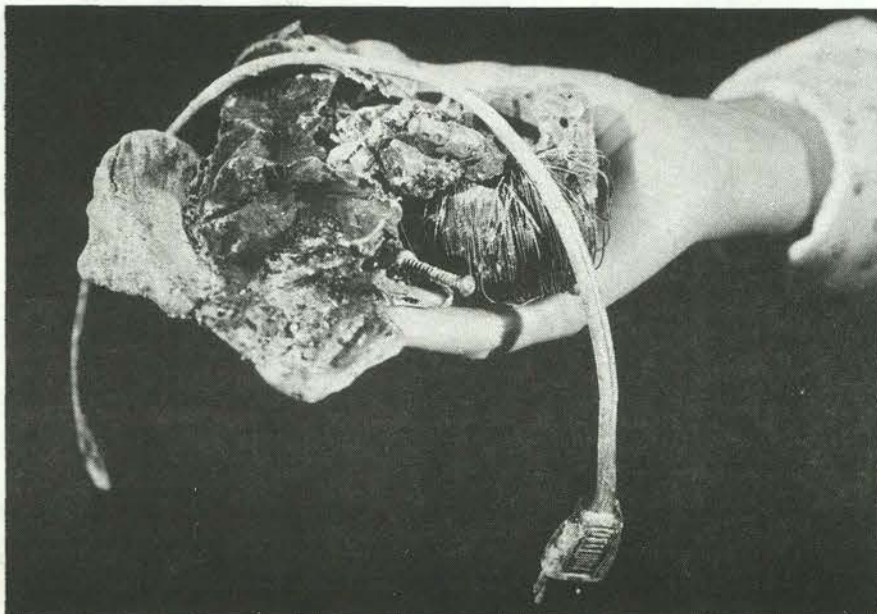
- Books and records (for resale by the South Hiway 14 Charity Project)

BUT YOU CAN'T GET

- Income tax forms
- Garbage bags



IT GOES—Four wheel drive enthusiasts will be intrigued by this latest addition to the equipment inventory of Gordo Miller's Mobile & Remote Ranges Division 9414. Take one 4 x 4, remove wheels, add "Unatrack" (at \$450 per track), bring snow or sand, and move out. Doug Pastor is behind the wheel on the road to Capillo Peak in the Manzanos, where the group maintains special communications equipment.



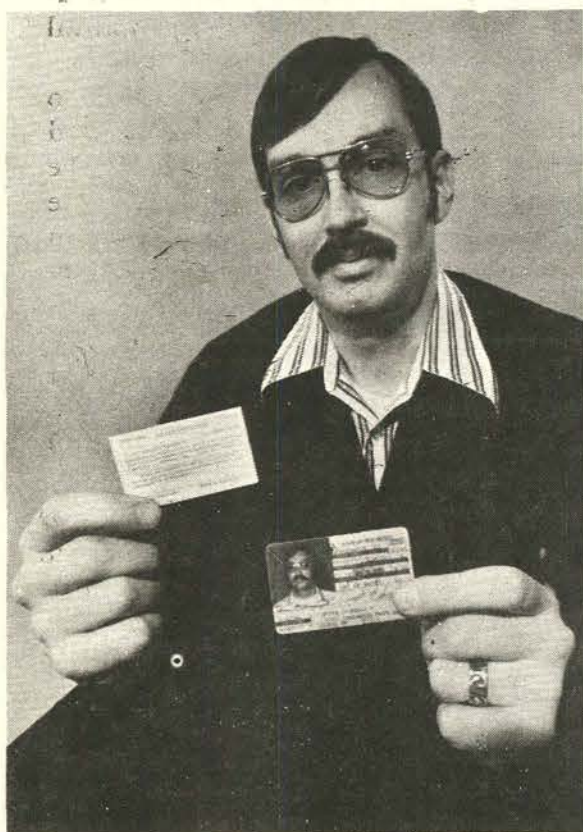
ONCE UPON A TIME this mess in Penny Heidich's (3411-2) hand was an electric can opener. It didn't shut off after use one evening; then it spent all the next day melting itself, the kitchen counter top, and the contents of the cabinet below it. Penny returned to find extensive smoke damage to the entire house. Says Penny with a certain vehemence: "Unplug everything with a motor in it!"



sandia PEOPLE Report



WASHINGTON VISITOR — Director of Microelectronics Bill Spencer (2100) was host to Don Cotter, Chairman of the Military Liaison Committee, on a tour of Sandia's Semiconductor Development Lab (Bldg. 870). Mr. Cotter also conferred with President Sparks on the Lab's weapon programs.



HANDY WAY to become an organ donor is to sign form (a gummed sticker) and place it on the reverse side of your driver's license. In case of an accident, police can make the necessary arrangements immediately. Forms, provided by the Department of Motor Vehicles, are available in the LAB NEWS office, Bldg. 814, from Russ Smith (3162).



ECP REPRESENTATIVE Ray Chavez accepts plaque in behalf of org. 3500 denoting 75% Fair Share participation in United Way. Looking on are John Moawad, United Way Director, President Sparks, and Lloyd McKee, campaign chairman. Other Sandia organizations awarded the Fair Share Plaques: 1150, 1210, 2551, 3160, 3240, 3253, 3510, 3520, 3530, 4010, 4110, 4360, 6010, 9510, 9520, and 9654.



CHIEF SCIENTIST for the Air Force, Robert Naka, was guest at the Labs of John Galt (left), director of Solid State Sciences Research 5100. Mr. Naka was accompanied by Maj. J. Williams and Lt. Col. C. Cabell.



MORE THAN 1.5 MILLION aperture cards, the active file of Sandia drawings and specifications, are maintained in the Master Film Bank in the basement of Bldg. 802. The files are the responsibility of Drawing and Distribution Control Section 9631-1 under Chris Padilla. Christine Baca, Florence Brewster and Angie Rivera pull and file an average of 2000 cards daily. In addition, duplicate active files are maintained in Film Banks in Bldgs. 836 and 892. More than two million additional cards are in the archive and inactive files.

feed back

To get a response to your comments and questions about Sandia Labs, complete a Feedback form [available near bulletin boards] and return it to the Feedback administrator. The substance of questions and responses of wide interest is published in LAB NEWS.

Q. What is the purpose of the chain link fence surrounding Bldg. 893 & MO 71-77? Also the fence west of Bldg. 893 & the perimeter fence south of Bldg. 634?

Those of us who have business or park, because of car pooling, near Bldg. 805 or Bldg. 893 must now walk around this fence north of Bldg. 893.

A. The Area I perimeter fence has been altered to go around Bldg. 893 and MO's 71-77 so that these facilities can be located outside the confines of Tech Area I. The nature of the work performed in these facilities calls for their being situated outside a security area.

Still to be installed as part of this project is a remotely controllable gate to the west of Building 893 which will provide access to K Street that runs west to Main Street. Until that work is completed, Building 893 and MO's 71-77 must remain within the confines of Area I. The Mardix Booth north of MO's 71-77, as well as the gates east of Building 893, are left open to allow access to Building 893 from within Area I.

D.S. Tarbox, 3400

Q. Carpools are great—especially since one of the "perks" is a reserved parking spot.

Providing reserved spots as an incentive for carpools is a childish form of motivation and results in discrimination against the single driver.

I recommend either eliminating reserved spots for carpools or providing all drivers with a reserved spot.

A. As you are probably aware, the reserved spaces for car pooling were established in 1973 as an incentive for saving gasoline in connection with the energy conservation drive. This inducement for car pooling is not unique, but is typical of a number of means that are in effect nationwide. Other forms of incentives in certain metropolitan areas are (1) freeway express lanes are limited to car poolers or (2) tolls for bridge crossings are reduced for poolers.

We currently have better than 500 car pools that transport approximately 1400 employees. This is an average of better than 2 people per pool and includes almost 25% of the Sandia Albuquerque employees. With this type of response, and the obvious energy savings that result, the Parking Policy Committee feels that providing special parking in these instances is in order.

We realize that you and a number of others are unable to participate in the program for any number of reasons; however, we at Sandia are fortunate in having ample parking space and are not required to pay a monthly parking rate as is necessary for many.

D.S. Tarbox, 3400

Q. I recently had occasion to help my wife, who works at UNM, with some detail work that involved computer printouts. Instead of 11" x 15" pages they use a page 8½ x 14 3/8" and have the same amount of print by printing 8 lines per inch vs 6 lines. One would think it might be less expensive, but the fact that impressed me most was how easy the smaller pages are to use since they obviously take up less desk space.

Is this a practical size for Sandia's use?

A. Thanks for your suggestion that the Computing Center consider the use of 8 line per inch paper. We have standardized on single ply 11" x 15" in the interest of efficiency and production. When more than one copy is needed, we use the Computer Forms Printer (CFP) to reproduce reports. These reproductions are reduced to 8½" x 11" paper. With this reduction, eight lines of printout per inch are quite difficult to read. Since over 300,000 pages (eight months' average is 317,912 pages) of 8½" x 11" paper come off the CFP's each month, the six lines of printout per inch are more acceptable than eight lines per inch. In addition, a switch to eight lines per inch would require a change to many current "print instructions" and in the scientific area we would have to modify the operating system. In the scientific area, we do not have the requirement for multiple copies but it is often characterized by full page printouts.

Incidentally, the paper attached to your Feedback question is called "Easy Eye" paper. It makes the eight lines per inch easier to read, but is much more expensive than the paper we currently use.

You are right about smaller size paper being easier to handle and it can be used; however, with current supplies and equipment we are committed to the 11" x 15" size.

L.E. Hollingsworth - 2600

Q. Sandia prohibits smoking in clean rooms because it contaminates delicate equipment, so why don't our lungs deserve the same protection? They are equally delicate, and more than that, they are irreplaceable. What we need is a NO SMOKING policy in all Sandia buildings.

A. You make a good point. But while Sandia is aware of the problem, and we've taken some action (the "Consider Others" signs, and the "Thanks For Not Smoking" signs in General Stores) the rights of smokers, as well as rights of non-smokers are involved. So, our official position is somewhere between the one we'd have if either side had its own way.

Society itself doesn't seem to have an answer to this problem, yet, and I hope

Sandians will proceed, with some mutual cooperation, to live with the situation. Medical evidence may ultimately lead to a better understanding of the effects of smoke, and I'm sure Sandia will be quick to respond.

W.J. Howard-2

Q. Regarding the Weekly Bulletin listing job opportunities:

1] As an MAS, am I eligible to nominate myself for MTS jobs? 2] Am I eligible to nominate myself for MLS jobs? 3] Does the posting supervisor decide whether I am eligible, or is this decision made by someone else? 4] If I find a supervisor who wants me for an MTS or MLS job, will the classification committee review my classification? Will the review occur before or after the supervisor chooses me? 5] How can I know that my nomination was not "lost in the shuffle"?

A. Responses to your questions are presented in the same sequence.

1 & 2. Yes. An MAS is eligible for self nomination to either an MTS or MLS job. The applicant may, however, be eligible without being qualified.

3. The selecting supervisor is responsible for determining the requirements of the job and may disqualify those who do not meet the requirements. The supervisor thus decides who is qualified but not who is eligible.

4. If the selecting supervisor chooses an MAS for an MTS or MLS opening, the candidate must be reclassified before job selection can be completed. Reclassification is subject to review by the Classification Review Committee and final approval by the President.

5. Selecting supervisors are asked to contact all candidates for an advertised vacancy. If you are a candidate and the selecting supervisor fails to communicate with you about your application, you can follow up through your Personnel Representative. The Personnel Representatives have access to all nominations for job vacancies and can get the answers to your questions about your own nomination.

J.R. Garcia - 3500

Q. Could some means be devised so that the casual driver would be able to recognize the portion of parking aisles that are reserved? That would at least keep me from driving down an aisle that has no general parking.

A. Thank you for your suggestion regarding the marking of reserved parking aisles. This step has been under study for some time.

Signs are planned which will indicate reserved parking areas. These will be erected shortly by Plant Engineering.

D.S. Tarbox - 3400

MILEPOSTS

LAB NEWS

JANUARY 1977

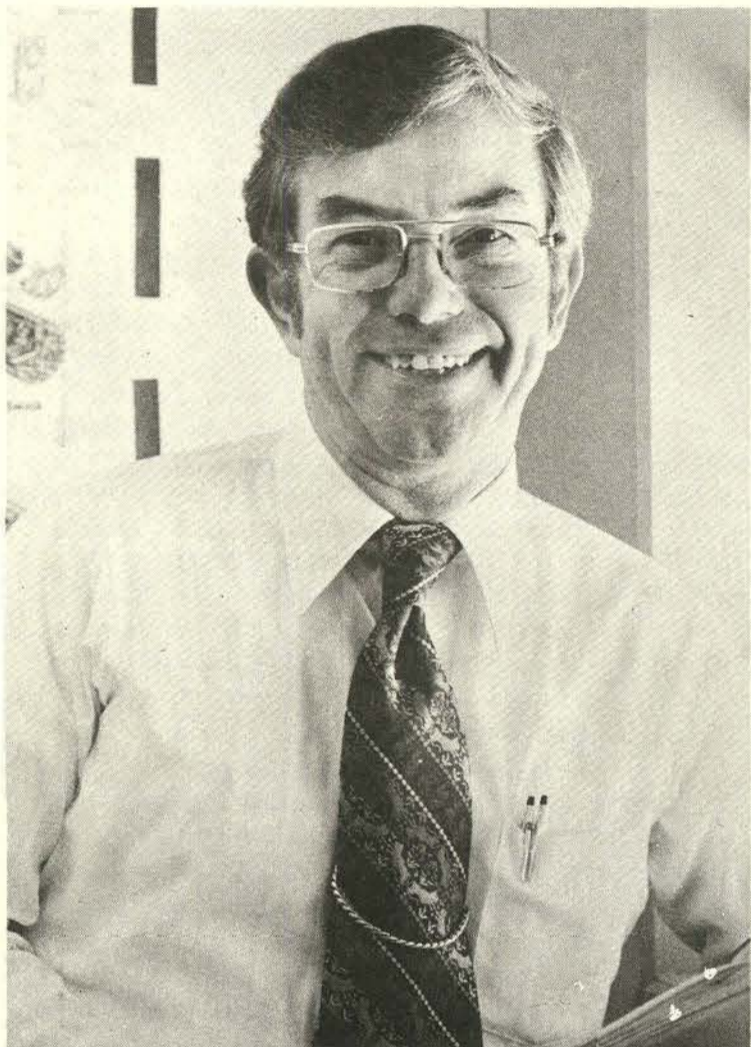


Ted Huebner - 3713 20



Ramona Grandstaff-9631

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Jack Reynolds - 3711

25



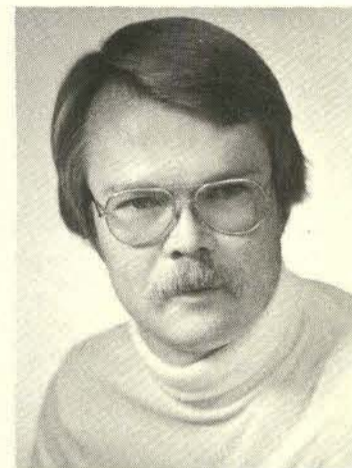
David Brown - 2623

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John Lindman - 1123

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Curt Cofield - 8183

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Paul Pewe - 3431

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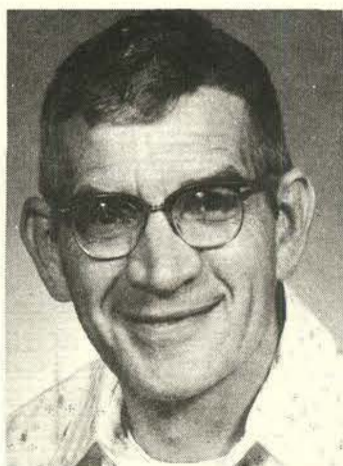
Virginia Miller - 9571

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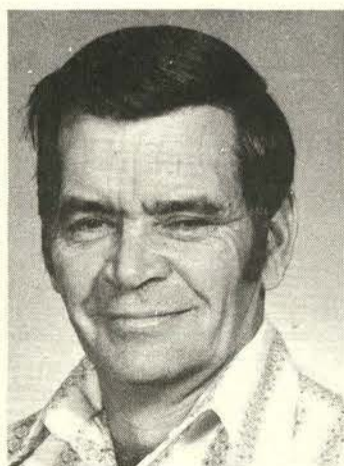
James Reese - 9656

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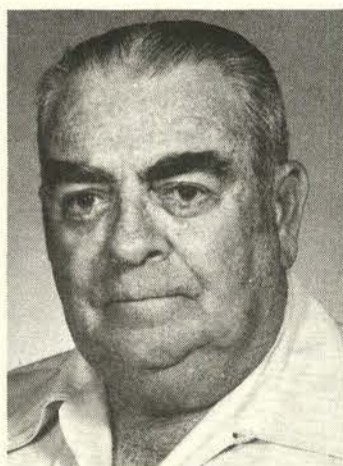
George Martin - 9651

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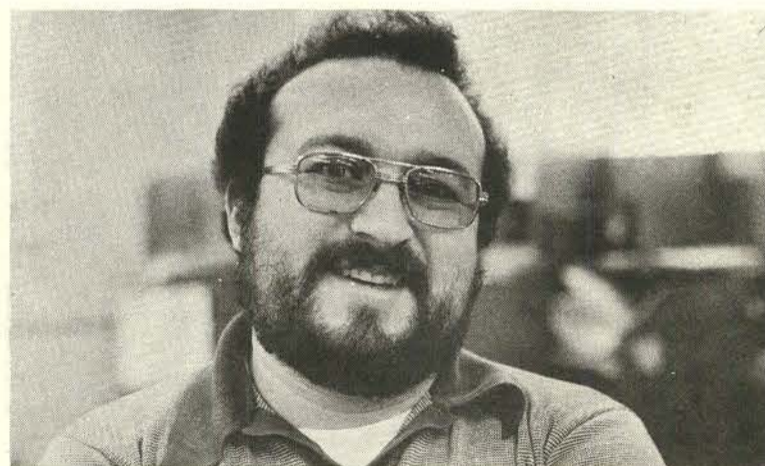
Donald Hoffheins - 3413

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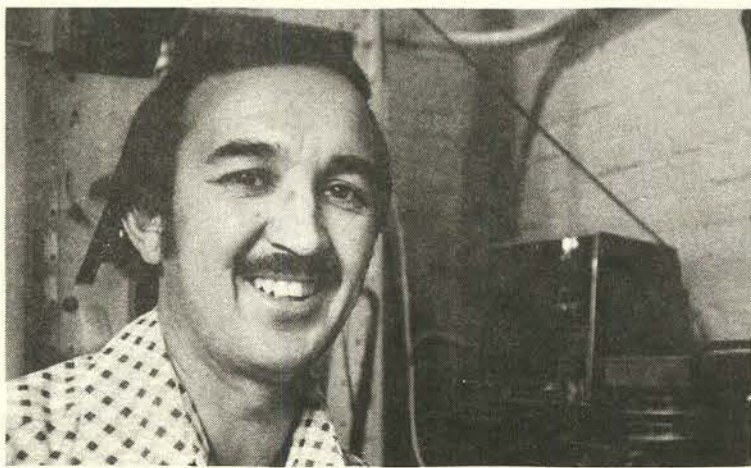
George Lester - 9711

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Cecil Tafoya - 3171

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Jim Sanchez - 3424

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John Patterson - 9583

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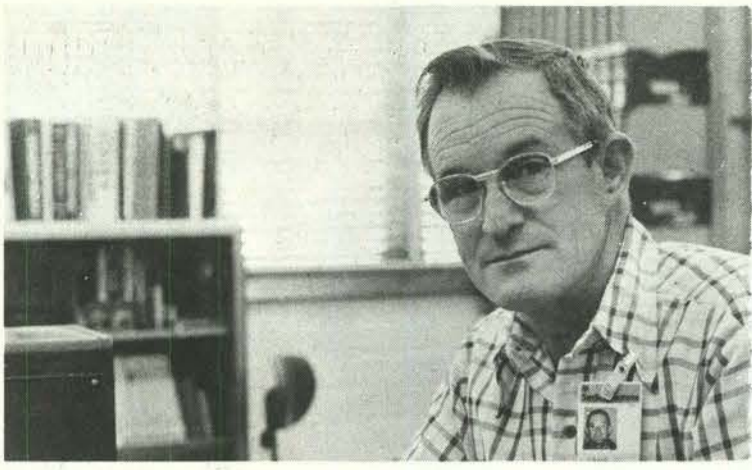
Douglas Weaver - 2141

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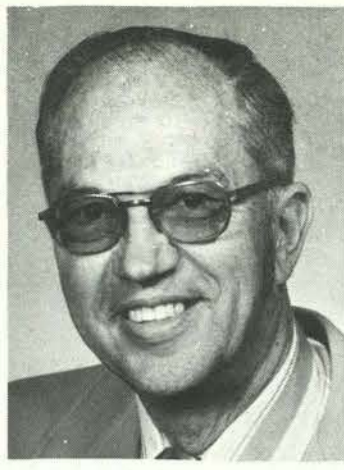
Ken Wischmann-5813

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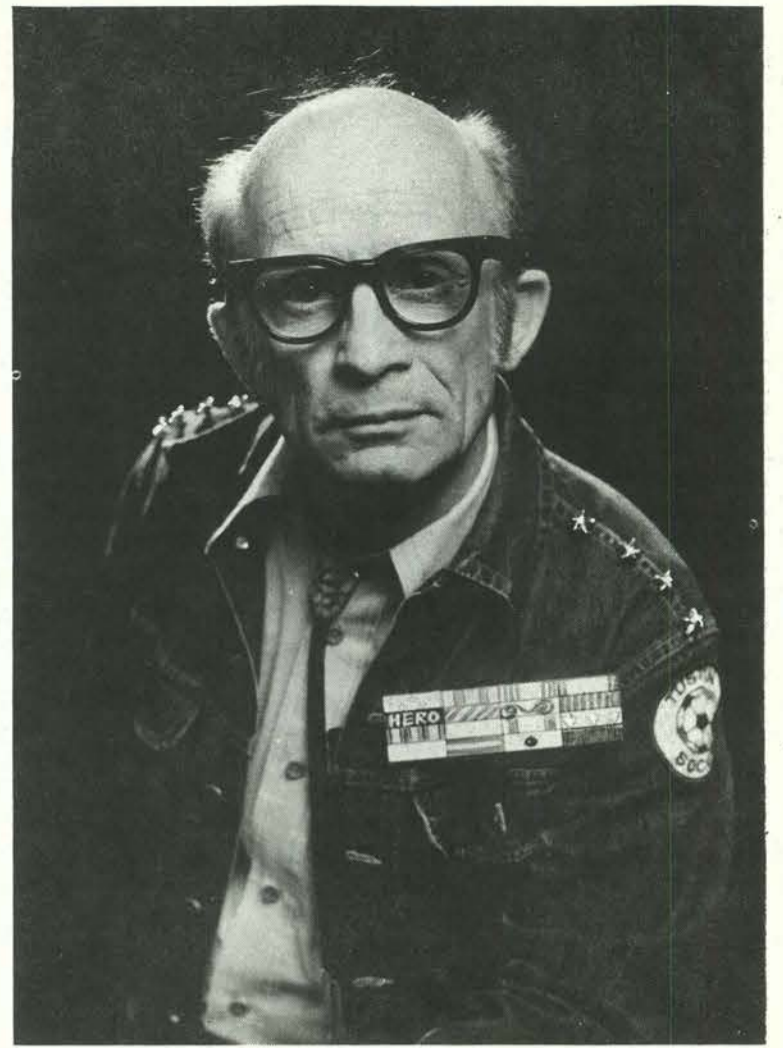
Frank Conrad - 5821

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Ralph Rayner - 9572

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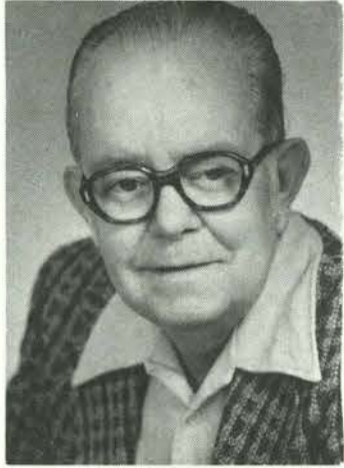
Jim Walston - 3155

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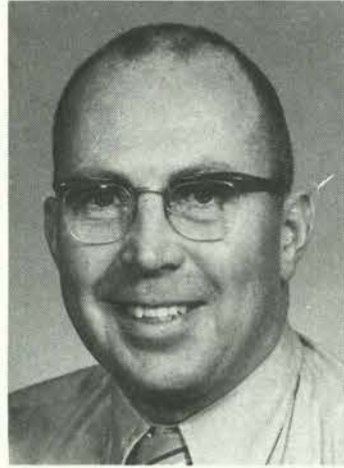
Donald Shadel - 1131

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Dick Jacobson - 8123

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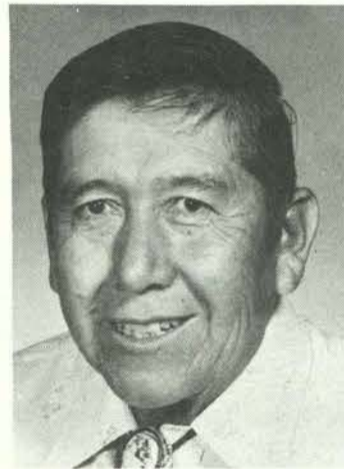
John Risse - 1713

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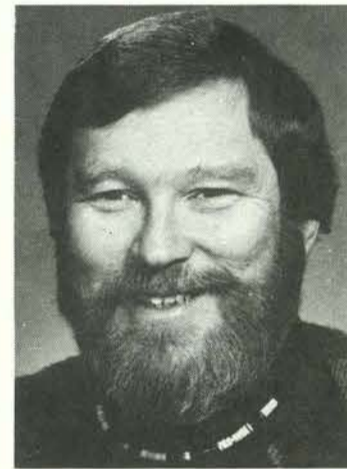
Eleanor Slutts - 6010

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Candelario Garcia-3421

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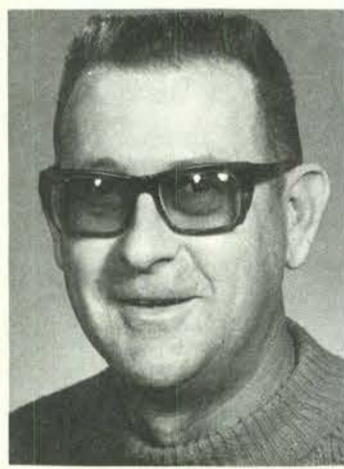
Elliot Harris - 3153

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Wes Estill - 8314

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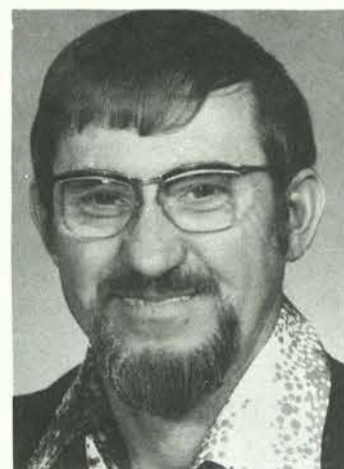
Robert Fueger - 3430

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Russell Acton - 5842

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Ted Baggett-3155

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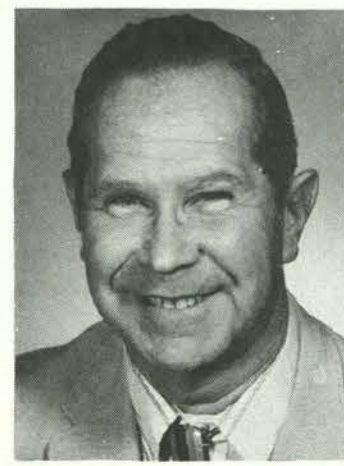
Al Eno - 9652

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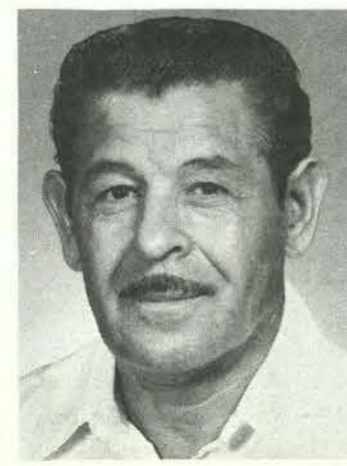
Leo Chavez - 3414

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Donald Scranton - 2136

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Lorenzo Garcia - 9573

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Doris Brown - 8265

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Natalie Vytlacil - 2634

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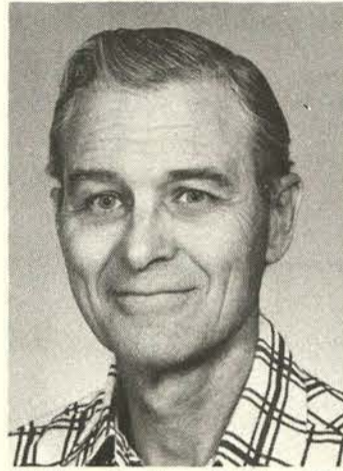
Cliff Schafer - 8366

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Ruth Brooks - 3521

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William Seaburn-9584

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Albert McMurry - 9584

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Glenn Riggins - 9423

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Carl Wiseberg - 2327

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Louis Roper - 9712

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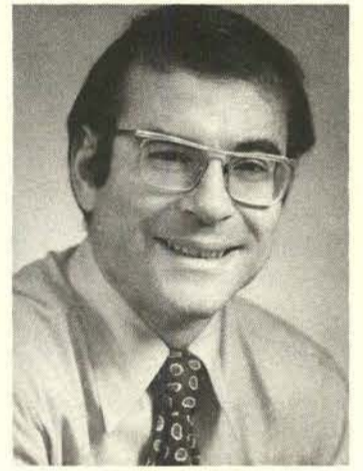
Theodore Smart - 9424

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Ed Thuman-4281

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Marty Abrams - 8111

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Don Osbourn - 8431

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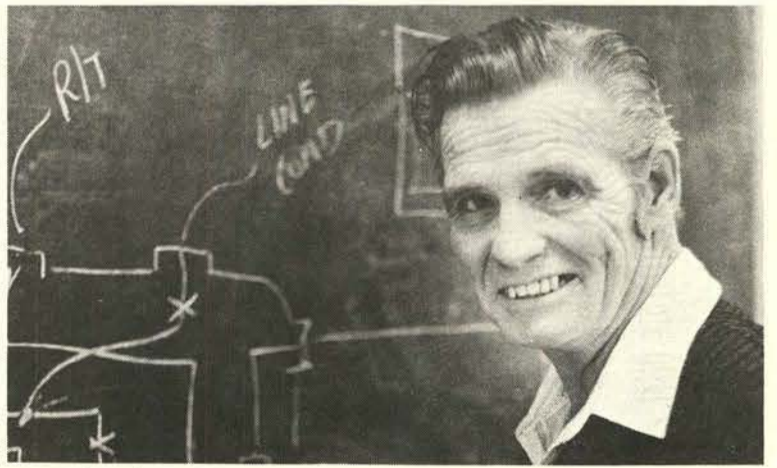
Thad Werner - 3141

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Wallace Hunt - 3411

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Virgil Bailey - 2533

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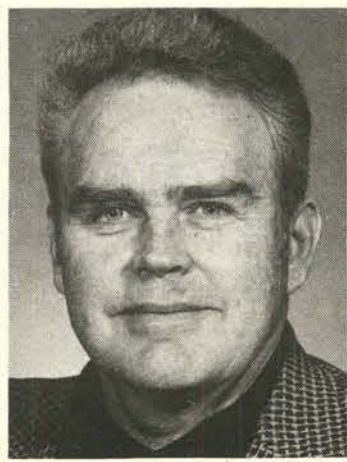
Berry Gilkes - 3171

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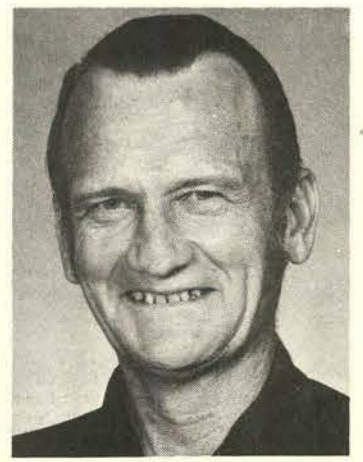
Robert Brooks - 1211

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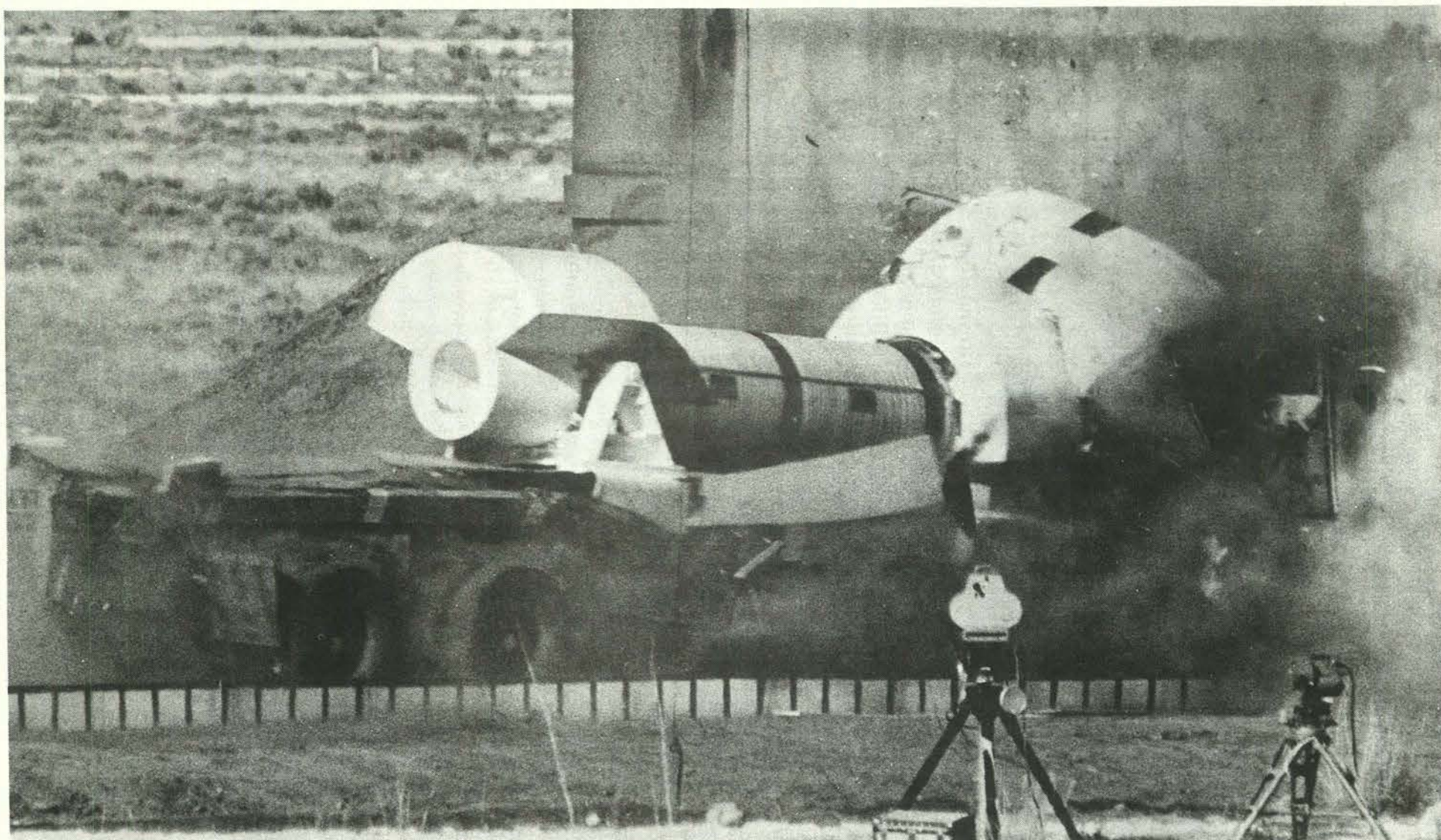
Edwin Johnson - 9512

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Vernon Smith - 3172

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SHIPPING CASK for spent nuclear fuel survived 60 mph impact in Area III. The truck and trailer were propelled by rocketsled into a massive concrete barrier. The cask, weighing 20 metric tons, was filled with water containing blue dye. There were no leaks. Three more tests are scheduled in the series—another truck into a concrete barrier at 80 mph, a locomotive into a trailer to simulate a crossing accident, and a high speed

rail car impact coupled with a jet fuel fire. Last week's test received widespread coverage in the national media. Project engineer is Richard Yoshimura (5432). The tests are conducted by Coyote Test and Track Division 9332 under Dave Bickel. Bob Lucas is test engineer. Harold Rarrick is test project manager.

JUNK • GOODIES • TRASH • ANTIQUES • KLUNKERS • CREAM PUFFS • HOUSES • HOVELS • LOST • FOUND • WANTED • & THINGS

CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday.

RULES

1. Limit 20 words.
2. One ad per issue per category.
3. Submit in writing. No phone-ins.
4. Use home telephone numbers.
5. For active and retired Sandians and ERDA employees.
6. No commercial ads, please.
7. Include name and organization.
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

SPEAKERS, Fisher 3-way, 10" woofer, 5" midrange, 3" tweeter, \$125 pair or best offer. Dyckes, 299-7280.
ICE AUGER, Sheaffer, 255-9473.
POOL TABLE & equip.; ping-pong table; radial arm saw. Clem 296-5204.
OLD INDIAN DRUM, \$35; WWI gas mask, complete w/case, \$35; 1932 *Hobbies* magazines, 6 for \$20. Smitha, 881-1001.
NEW SET "Learn Spanish" records w/text book, \$6; new sleeping basket for small dog, \$3. Arnold, 898-1467 after 5:30.
SELF-CONTAINED water flush toilet for RV, \$60; chain saw, \$60. Ward, 869-3580.
ELECTRIC fireplace, 20,000 BTU, 220, \$200. Pennington, 256-9506.
EARLY AMERICAN lighting fixture w/5 amber lanterns, \$45; Keystone 8mm movie camera; CO₂ handgun; ski boots, 8 1/2; ladies Bagboy golf-cart. Chandler, 296-3323.
ZOOM LENS, Vivitar series 1, 70-210 mm, Nikon mount, new. Pearlman, 299-6079.
DINETTE TABLE, 35"x58" & 6 chairs. Eldredge, 881-4528.
RESVI ski boots, size 7 1/2, \$35. Mistretta, 821-0611.
GUITAR, Aria, \$60. Barnaby, 265-4353.
ELECTRIC ORGAN, Baldwin Orga-sonic w/bench, 2 keyboards, recently cleaned, below book value at \$495. Rex, 299-6264.
SOUND SYSTEM: Soundesign AM/FM/FM stereo receiver w/8-track Discrete Quadrasonic tape player, 4 speakers; BSR record changer, new,

\$395. Tripp, 292-3667 after 6.
HUMIDIFIER, Pencrest, room size, 9-gal. capacity, auto. controls, variable fan speed, \$40. Giovanis, 296-2839.
INSULATION, 2" fiberglass, silver backing, 200 + ft.², \$14. Claassen, 255-4347.
FRIGIDAIRE 30" elec. range, self-cleaning, gold, \$200; Toro Whirlwind rotary lawnmower, \$75. Carter, 296-4127.
TAP, CO₂ tank & regulator for draft beer dispenser, \$50 or best offer. Copeland, 266-4944.
GORDON SETTERS, AKC, available late Feb., males only, show quality. Raybon, 299-2135 after 6.
19' MINIMOTOR HOME, 17,000 miles, sleeps 6; 2 mantle Coleman lantern, \$10. Westman, 881-0471.
PICKUP truck bolt-on travel trailer hitch, 400#/rated, 2" receiver, \$40; Sears 1.5 cu. ft. portable refrig., coppertone, purchased Sept. '76, \$70. Gregory, 268-2022.
70 ROADRUNNER 15' trailer, self contained, new 3-way refrig., includes hitch & elec. brake control, \$1695. Wetherholt, 299-5736.
REMINGTON adding machine, \$40; Remington rifle, 700 bdl, heavy barrel 243, 3-9 scope, \$150 or trade for old guns. Zaluga, 344-1564.
SKIS: Yamaha 180cm; Domestic sewing machine, straight/reverse stitch; compact stereo receiver w/changer & cassette; port. stereo; radio. Campbell, 298-9265.
DOUBLE SINK, cast iron, white, \$10; elec. counter top range, wall oven & hood, \$10. Robertson, 299-7561.
SOFA, Scandinavian design, teak frame w/cane inserts, rust-colored fabric cushions, \$95. Nicovich, 299-1430.
WOLLENSAK 8mm movie camera, \$25; Waring 20 hair setter, new, \$15; intercom telephone set, \$8; set twin bedspreads; pole lamp. Hoffheins, 298-0017.
5' long hanging chlorophytum comosum (spider plant), \$15. Rigby, 298-1767.
SAMSONITE suitcase, 29"x21"x10", beige, \$20; belt massager, Slimline, heavyduty, \$25. Hoge, 255-9011 after 5.
COAXIAL CABLE, RG-11A/U, 75' roll, or by foot; assorted UG-series connectors; shielded audio cable, 50' Van Deusen, 299-4328 after 6.

BICYCLE, 10-speed, \$50; ski boots, size 8m, Flo Foam, new, \$215, sell for \$40. Stevens, 299-6068.
GERMAN SHEPHERD, 7-mo.-old male, AKC reg., black/tan, large animal. Miller, 268-7150.
BED, king-size, 3 wks. old, orig. price \$465, sell for \$385; turquoise 24" choker, bracelet, heavy silver. Cianciabella, 268-7150.
BOOT for hookup between camper/shell and pickup for 15"x58" opening, 6 mos. old, \$60. Kohut, 296-8537.
COUCH, burnt orange color, naugahyde, 90" wide, 32" high. Minter, 256-9225.
CARBINE, Ruger 44 magnum w/ scope, sling, powder, primers, empty cases, bullet mold, dies and ammo. Vandi, 255-0685.
ROCKING SOFA, solid maple, Tell City Model 8203.5, 68" long, fabric cushions & skirt, \$125; hump-back trunk, \$20; Doman-Delacato Reading Development Program for pre-schoolers, \$10. Stevens, 296-6326.
GUITAR, electra/copy of a telecaster, 2 pickups, lt. wood grain coloring, Ortiz, 831-0274.
CARTON CARRIER, \$10; manual typewriter, Royal, office-size, \$15; pup tent, \$10; chicken wire, \$11/roll, 2' wide & \$18/roll, 3' wide. Nelson, 265-7482.
CORNER DAYBED (2) group, complete w/bolsters (green) & bedspreads (figured green), \$80. Brass, 299-6016.
DINETTE, sturdy 5-piece set, \$40. O'Connel, 255-6575.

TRANSPORTATION

71 VW super beetle, \$1000. Potter, 256-1169.
74 HONDA 350-four, padded sissy bar & crash bar, low mileage, \$995 or make offer. Montoya, 881-6898.
2 MINI-BIKES, 100cc Honda engines, \$200 ea. or both for \$350. Taylor, 299-2269.
76 CHEVY VAN, 3/4 ton, V8, AT, AC, PS, PB, stereo, Cruise Control, paneled and customized interior, many extras. Tollison, 298-9360.
68 FORD Galaxie 500, PS, PB, FAC, 60,000 miles, \$675. Bell, 296-5814.
73 VW beetle, AM radio, radial tires, extras, 42,000 miles, \$1895. Coburn, 268-6844.
71 CHEV. Impala, 4-dr., PS, AT, AC, Blue Book price. Cordova, 299-1652.

76 MONZA coupe, vinyl top, auto., low mileage, Haycraft, 299-3220 after 5.
'66 MUSTANG, AT, 200 cu. in. 6, 88,000 miles, \$850. Wempe, 293-5652.
76 HARLEY-DAVIDSON Superglide, \$3000. Johnson, 345-7509 after 5.
'67 DATSUN Roadster, 1600cc, 55,000 miles, will consider trade for small pickup. Joseph, 293-1694.
BICYCLES: boy's & girl's, both 14" wheels, single speed, \$15 ea. Drumheller, 296-1023.
71 BUICK Riviera, all the extras, tan/tan vinyl roof, recent valve job, \$1975. McCampbell, 281-3054.
74 BLAZER, CB radio, w/t tires, AT, tach, yellow/white, 42K miles, best offer above \$5400. Cianciabella, 268-7150.
71 VW BUG, rebuilt engine, \$1150. Geisler, 299-2168.
RENAULT R-16 4-dr. automatic, AC, 30 mpg, radial tires 60,000 miles. NADA, \$1675, sell for \$1500. Morrison, 877-7425.
'66 DODGE D200 3/4 ton camper special, \$859. Bradley, 298-2263.
14' BOAT, 50 HP Johnson outboard, trailer, \$900. Falacy, 881-1802.
73 FORD Torino, automatic, 8-cyl., AC, PS, 4-dr., \$1700. Stevens, 867-5713.

REAL ESTATE

1/2 ACRE, Rio Rancho; 1 acre, Horizon Land Corp., Belen. Wood, 836-3263.
HOUSE, NE Heights, low down payment, terms available. Murray, 881-7869.
MOSSMAN TOWNHOME, 2-bdr, den, all amenities included, 1530 sq. ft., assume \$56,500 or 80-90% loan obtainable. Swearingen, 881-5079.
R1 LOT, Rebonito Subdivision, lot 16, Block 6, Blair St. NE, 100'x110', \$5250. Chandler, 265-2364.
HOFFMAN BRICK, near Coronado & Winrock, 1650 sq. ft., 3-bdr., den, 1 1/2 bath, fp, auto. sprinklers front & rear, \$39,900. Bradley, 265-2981.

FOR RENT

3-BDR. HOUSE, NE, near Base-schools-shopping, den, rec. room, carpeted, new drapes, range, disposal. Buck, 296-5963.
LG. 2-BDR. Duplex, SE, private patio, maintained lawn, stove, refrig.

dishwasher, disposal, carpet, drapes, garage w/auto. dr., no children or pets. Konnick, 265-1409.

WANTED

12" WOOD LATHE. Silva, 898-6249.
COOK STOVE, gas or elec. 24 or 30" Stevens, 296-6326.
PRESSURE COOKER; cross-country skis & gear, men's and women's. Boes, 292-1690.
BABY BED & stroller/pram in good to usable condition. Thalhammer 298-8521.
SHOP manual for full sized '66 Mercury. Kramm, 281-5379.
SOFA-BED. Marder, 268-9643 or 256-7805.
2 EA. 300' 8mm film reels & cans; will trade 400' reels & cans. Burger, 299-8626.
EXERCYCLE, at least repairable condition. Kelsey, 266-6460.
CHILDREN'S SLED; 30' extension ladder. Zanner, 281-5570.

LOST AND FOUND

LOST — Turquoise stone from watch band. Reward. Reis, 299-3808. Men's dark grey clip-on sunglasses, Rx dark green sunglasses, screw type green jade earrings in silver setting, brown comb case w/nail clippers, man's photo-grey Rx glasses w/silver rims, gold bar tie clasp w/chain, ladies brown-rim bi-focal glasses w/black case & night light, man's black fur-lined glove.
FOUND — Hubcap with "Z" in center (maybe from Datsun 240Z or 280Z sportscar), black-rim sunglasses in case (AO 6M), ladies' small black gloves, man's left-hand black knit glove w/leather palm, men's black rim sunglasses, ladies' left hand brown fabric glove, 9 keys on ring (1 marked Nissan), 7 keys on ring (1 skeleton, 3 Sears made) — both sets of keys found at Coronado Club — men's orange gloves w/brown leather palms. **LOST AND FOUND**, Bldg. 832, tel. 4-1657.

OLD — favorites ham and chicken head (that is, end) the buffet line tonight. The ham is baked, the chicken country-fried, the potatoes sweet, the beans green, and the salads several and succulent. The band? Contrary to the calendar, it's *Tequila Sunrise* doing light rock, Latin, Western, and well. (Buffet: \$3.25 adults, \$1.92 kids)

FOLKS — holding out for roast beef *au jus* will have to fast till the Feb. 4 Happy Hour. By then the generous Club portions of everything (baked potatoes with sour cream, buttered peas, lots of salads) will be most appreciated. For dancing, the *Scotsmen Quintet* playing Music To Be Tight By. Also, in the subterranean depths of the El Dorado Room, it's Singles Night — see below. (Buffet: \$3.25 adults, \$1.92 kids)

KNOW — how to spend 23 carefree days (and 22 careless nights) in Australia, New Zealand, and Fiji? Sign up for the March 26 - April 16 travel package just announced. You'll fly there and back. You'll have a rental car with unlimited mileage so you can see what you want to see in both super-friendly Australia and super-spectacular New Zealand. You'll have passes for lodging in Flag Inns in Brisbane, Surfers Paradise (it is), and Sydney in Australia; Christchurch, Mt. Cook National Park, Queenstown, Franz Josef Glacier, Wellington, Rotorua, Auckland, and other towns in New Zealand. On Fiji you'll take an all-day cruise on a topsail schooner sailing to Malolo Lai Lai (an almost stereotypical South Sea Island paradise) and back to Nandi on Fiji. You'll see the famous spear dance done by amateur but inspired dancers; you'll try to remember that the hands are the things to watch during the story-telling dances called *mekes*. The package is \$1622 each (dbl. occ.) or \$1749 (single) assuming four people per car, the Office and tour director Bruce Hawkinson have complete itineraries, and *deposits are due by Feb. 10.*



MORE — travel follows: the Club has five trips going! For example, Yucatan (March 20 - 27). You'll fly to Merida, then head for Uxmal and its archaeological wonders. After three nights there, travel to Chichén Itzá and its Mayan ruins (see pp. 74-75 in the Jan. 17 *Newsweek*). Lots of time for loafing or optional sidetrips too. It's \$511 dbl. occ., \$566 single or \$481 triple or quad occupancy. More info from the Office or from tour director Joe Shelby. Sign up soon. *Pre-trip meeting is Feb. 1 at 7:30.*

ABOUT — time to make that decision on Rio de Janeiro. Your hotel, the Rio Othon Palace, is on the fabulous Copacabana Beach where the girl from Ipanema sometimes comes walking. Bask, or take an optional excursion or two. It's April 23 - May 1, its tour director is Nancy Sanchez, and it's \$669 dbl. occ. or \$758 single.

BEING — on your own in London means you stay where you want to, go where you want to, see what you want to — in London or England or the British Isles or the Continent or wherever. This trip is simply airfare — the most economical around. Choose the departure dates and durations you like best: June 3 for 3 or 4 weeks; June 8 for 3 or 4 or 5 weeks; June 15 for 2 or 3 weeks. The June 3 airfares are \$499, the later ones are \$515. Tour director Ed Neidel can tell you why — and how you may be able to save even more by leaving with a group of 10 or more.

YOUNG — ones have not been overlooked in the Club travel plans. A Disneyland-Universal Studios (visit their frontier saloon and you can say you've been inside a universal joint) - Marineland (not to be confused with Camp Pendleton) package is slated for April 6 - 10 (APS vacation). You'll fly out; see the three main attractions (including a 15-ride ticket book at Disneyland); have time for options like Knott's Berry Farm, Busch Gardens, the Queen Mary, Lion Country Safari, sport fishing; stay in the Howard Johnson motel across from Disneyland; fly back; and have a great time. The price: \$219 for each of the first two adults in the hotel room, \$199 for the third, \$192 for the fourth (if the third and fourth are under 12, it's \$159 each). Tour director is Joe Shelby. *Pre-trip meeting is Feb. 2 at 7:30.*

THAN — late is what early is better (than) when it comes to a Chinese New Year. It's complete with authentic provincial but most cosmopolitan foods. You'll be able to play chopsticks without toting along your piano. The entertainment: Frank Treon will demonstrate the amazingly physical, but at the same time mental and spiritual, martial art known as Gohn-Dagow. It was developed centuries ago by Chinese monks, but today Frank is the only master of the art in the world. Music for dancing later is by the *Mellotones*. They're not exactly Oriental — they use an eight-tone octave (if they're tuned up right) — but they'll have you on the dance floor doing the Great Leap Forward before you can say Hua Kuo-feng. Chinese New Year is Feb. 19.

Pick up tickets (\$5.75 members, \$6.75 guests) by the 12th.

YOUNG — and old alike will have another great time on Feb. 5 as Variety Night presents *The Circus*. Live is Far-Fo the Clown, a most entertaining magician. On the cinemescap screen it's *Toby Tyler*, a Disney production about a youngster who joins the circus. Buy supper at 6, or come at 7 for the show.

FOLKS — of the single persuasion get it all (including themselves) together after work one week from tonight in the El Dorado Room. A guaranteed non-surly bartender at a guaranteed economical bar, a guaranteed talented pianist (Yolanda!) at a guaranteed music-making piano, lots of guaranteed free popcorn. Hosts/hostesses Bev Williams, Joe Shelby, Paul Rosenkoetter, Faye Barnes, Bruce Hawkinson (any and all) are pretty sure you'll have a good time. A date is *not* necessary, and guests are welcome. It's half a buck at the El Dorado Room door (guest fees waived in the Club lobby for attendees).

KNOW — how to make the Lobo game even more exciting? Go in a bunch. Take a Lobo bus (get your ticket beforehand and get your self there well before 6:55 on game night). Afterward enjoy a special drink in a logo-inscribed glass that's yours to keep. For the Colorado State Rams game on the 3rd, the special drink is a Ram Hammer; for the Wyoming game on the 5th it's a Cowering Cowboy.

ABOUT — \$69 is all you'll spend to spend Feb. 18 - 20 in El Paso/Juarez. By the purest of coincidence, the Lobo-UTEP game is on the 19th, and you'll get game tickets, bus fares, lodging, and other goodies. Add \$29 if you're a single accommodator, deduct \$10 if you're a Wolfpacker. But get your \$20 deposit in *today*. Nancy Sanchez has the detailed itinerary.

BEING — possessed of a mind that's sound and a body that's a sight, you may want to exercise in the pleasantest way possible: dancing, of course. Learn to dance in four easy lessons (and two hard ones) in the Mike Haley-taught, six-Thursday-evening series beginning Feb. 17. Classes for beginners (ones that teach you how to stand erect on two left feet) from 7 to 8:30; classes for intermediate/advanced (ones that teach you how to choreograph 1930's movies) from 8:30 to 10. The price is only \$35 per couple, \$20 per single; non-C-Club members: add \$5 and join the wait list. Sign up before the 17th.

OLD — myths about color (it's unAmerican to discriminate on the basis of; it's surprising to find a horse of another; it's great to win with flying) will be widely ignored when color specialist Dottie Mella tells the Sanadoes about the effect of color on their lives: what colors do to them, what color choices say about them, how color enhances communication. Make reservations with Vicky Clark by the 3rd.