

The Goal: Continued Excellence

With thousands of scientists, engineers and technicians scheduled to graduate next June, finding and hiring approximately 300 new staff members and staff assistants for Sandia doesn't seem like a particularly difficult assignment.

But it is — and it will be.

To meet next year's needs at Albuquerque and Livermore, over a hundred recruiters will visit some 60 schools and interview thousands of candidates.

"The competition is very keen for top scientific and technical people," George Banos, head of Staff Recruiting and Employment Division 3531 told us. "Like most R&D labs, Sandia doesn't hire large numbers of people. But the ones we do hire have to be top students who are interested in our work and who want to live in the West."

The numbers and mix of recruits vary from year to year, dependent on program needs and attrition. Each directorate submits its requirements annually and Sandia's President, Morgan Sparks, sets personnel ceilings.

Prior to each recruiting season, the Technical Recruiting Advisory Committee reviews results from the previous recruiting season, appoints PhD recruiters and approves plans for the coming year. This committee, chaired by Al Narath, VP 4000, is composed of one director representing each Vice Presidency: Bill Myre (1700), Jim King (2300), Bob Garcia (3500), Bob Peurifoy (4300), Dick Claassen (5800) and Leo Gutierrez (8400).

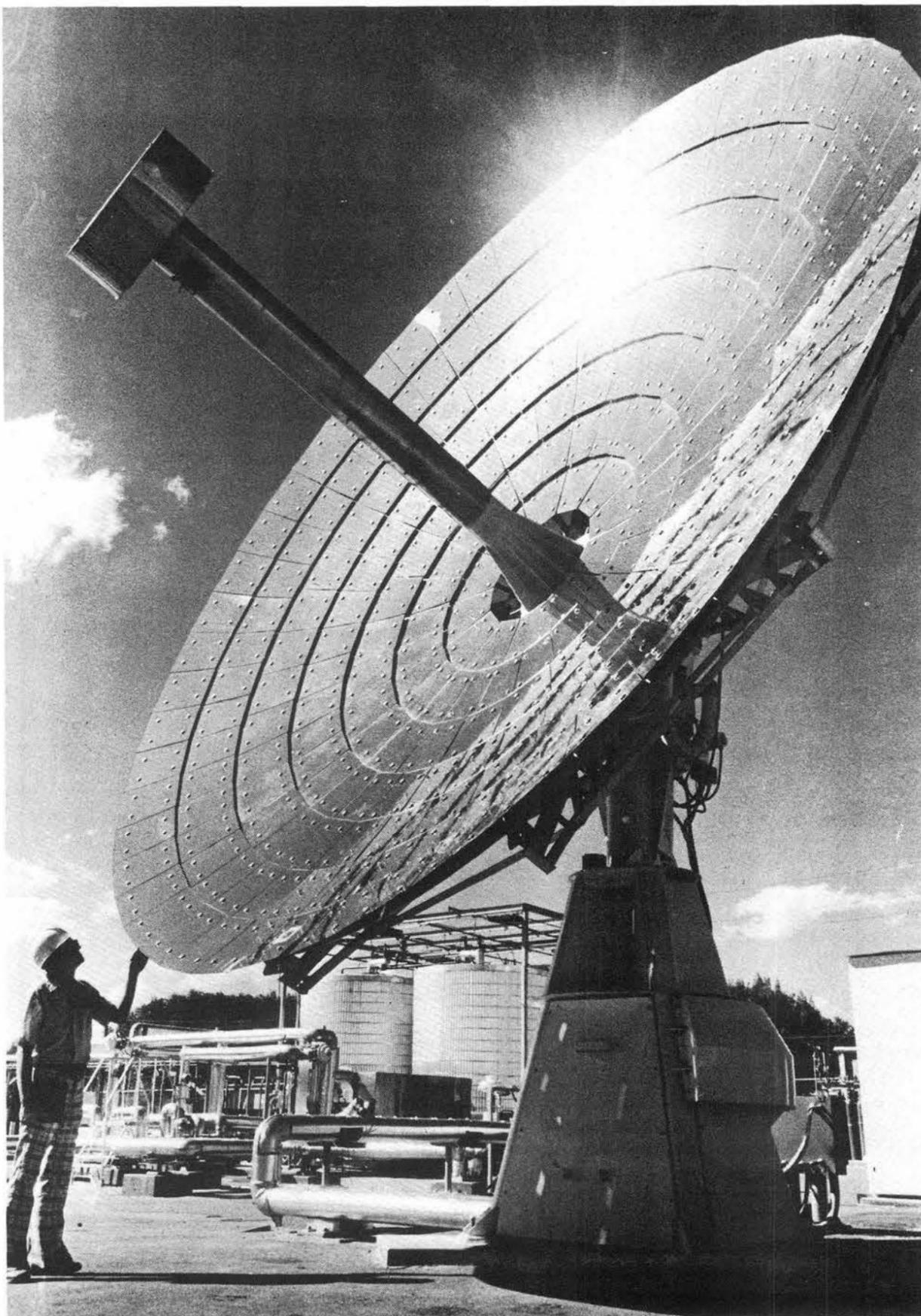
"This year," Al Narath says, "about 70 percent of our recruiting will involve college and university graduates (MTS/MLS/MAS) and about 30 percent technical institute graduates (ESA/SAT). And our recruiters, as they always do, will be seeking qualified minority and female candidates for staff

(Continued on page six)

Videotapes Discuss Health Problems

Most of us have medical questions — questions about first aid, heart attacks, hypertension, back pains, arthritis, the dangers of smoking (to mention a few). But somehow, when we're in the doctor's office, we seldom ask. Now there's another way.

Sandia Medical (3300) has a master library of videotapes available on preventive health subjects. And all it takes to view them is a phone call to Louise Bland at 4-1205 to set up a time to view the tapes. Produced for public television in association with the Harvard Medical School, the tapes are described as "authoritative aids to the understanding and prevention . . . of common health problems." The tapes range in length between 15 and 21 minutes and cover the following topics: First Aid, Common Skin Problems, Heart Attacks, Blood Vessel Disease, Urinary Tract Problems, Diabetes, Hypertension, Gum Disease, Gall Bladder Disease, Contraception, Menopause, Alcoholism, Low Back Pain, Colon Cancer, Venereal Disease, Arthritis, Glaucoma/Cataracts, Cervical Cancer, Ulcers, Breast Cancer, Strokes, Headaches, Smoking, and Obesity.



THREE HUNDRED SUNS concentrate on the absorber of this parabolic dish solar collector recently installed in the Labs' solar test facility. Designed by Raytheon, the collector began operation last month, and initial tests indicate 78% efficiency, higher than any previous collector tested. Leroy Torkelson (4721) is coordinating test program.

LAB NEWS

VOL. 30, NO. 21

OCTOBER 13, 1978

SANDIA LABORATORIES • ALBUQUERQUE NEW MEXICO • LIVERMORE CALIFORNIA • TONOPAH NEVADA

Transistor Co-Inventor To Speak at IEEE Meeting

A man who was on the research team that invented the transistor is featured speaker at a meeting of the Albuquerque section of IEEE on Wednesday, Oct. 25. Nobel prize winner Walter Brattain speaks at 8 p.m., while the meeting itself starts at 7 with a social hour and reception at the KAFB Officers Club West.

"Scientific Research and Incidents (some unexpected) Leading to the Discovery of the

Transistor Effect" is the title of his talk. Brattain, Shockley and Bardeen, working at Bell Labs, discovered the transistor effect in 1947. The team received the Nobel Prize in 1956.

Currently, Mr. Brattain teaches and conducts research at Whitman College, Walla Walla, Washington.

Afterthoughts

Modest Proposal -- Am I out of step with the times or does anyone else feel as I do that school buses should go the way of the dinosaur? Here we are, blessed with weather almost always good, seeking ways to conserve fuel, preoccupied with "cutting out the frills" in education, and concerned that our children are mostly passive spectators rather than active doers.

There's an obvious solution to these concerns -- the school kids should walk or ride a bike to school. The money saved could be applied to vastly more vital educational ends (like learning to read and write), the fuel savings would be significant, and the young people might just begin to grasp the reality that being physically active can be fun (as well as rewarding).

Furthermore, a walking or bike riding habit acquired during school days would likely carry over into later life, and these newly-arrived adults would find the notion of walking or biking to work and other places both familiar and congenial.

Of course, there would be exceptions -- for the disabled, for the circumstance where buses are used over truly long distances to achieve racial balance, and so on.

I suspect that the greatest opposition to a get-rid-of-the-school-buses movement would come not from the kids but rather from their parents. Witness the recent outcry by parents in the city when it appeared that children who live less than a mile-and-a-half away would have to get to school under their own steam. The proposition that a young person could indeed cope with a mile-and-a-half seemed totally alien to the grown-ups. Incredible!

It's not just the school buses that should go. Other school expenditures that have nothing to do with the educational process are a kind of extravagance. For example, school cafeterias, but more on that later.

* * *

The pause that distresses -- The fire alarm went off in our building the other day for no apparent reason and, as it continued to clamor, we decided to call that special number at the firehouse -- 117 -- where one breathlessly reports a fire. We were a bit nonplussed by our conversation, which went something like this:

"Are you reporting a fire?"

"Well, no, it's our alarm -- it keeps ringing for no reason."

"Where are you?"

"Building 814."

There was a long pause, then

"Ah, let's see . . . Building 814 -- is that on the east or west side?"

* * *

On photography -- "The lens removes reality from reality better than a surgeon, and allows us to witness killing with impunity, nakedness without shame, weddings without weeping, miracles without astonishment, poverty without pain, death without anxiety. It discovers a desirable titillation in overlooked, humble, ugly, out-of-the-way or unlikely objects, often reflecting the interest of a social class in what the camera considers exotic." -- William Gass, the New York Times Book Review.

*js

Events Calendar

Oct. 13-15, Nov. 10, 11 -- "The Shadow Box," Rodey Theatre, 277-4402.

Oct. 14, 15 -- NM Gun Collectors Association Fall Gun Show, Albuquerque Convention Center, 8 a.m.-6 p.m.

Oct. 15 -- Robert Shaw conducts the Atlanta Symphony, UNM Cultural Entertainment Series, Popejoy, 8:15 p.m., 277-3121.

Oct. 15-Dec. 15 -- Patric Swazo Hinds Memorial Show, Indian Pueblo Cultural Center.

Oct. 21, 22 -- Narciso Yepes, classical guitarist from Spain performs with the NMSO, 265-3689.

Oct. 22 -- Music Vesper Series sponsors the King's Singers, an ensemble from London, 1st United Methodist Church, 243-5646.

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Editorial offices in Albuquerque, N.M.

Area 505 264-1053

FTS 475-1053

ZIP 87185

In Livermore Area 415 422-2447

FTS 532-2447

john shunny is editor

&

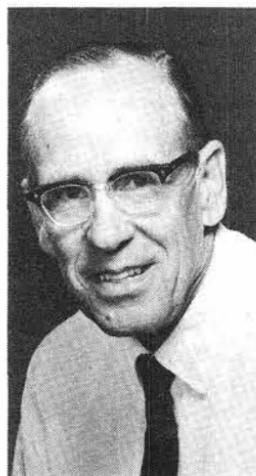
don graham ass't. editor

chuck cockelreas & norma taylor write

bill laskar does picture work

so does russell smith

bruce hawkinson & lorena schneider report livermore.



Death

John Smalley of Ion-Solid Interactions Division 5111 died Oct. 3 after a long illness. He was 63.

He had worked at the Labs since September 1958.

Survivors include his widow and three sons.



INVENTOR JON BARNETTE (5735) displays his recently-patented coded switch. Round mirror in Jon's right hand reflects the face of the switch containing control dials.

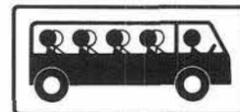
Jon Barnette's Coded Switch Receives Patent

DOE received a patent recently for a manually operated coded switch invented by Jon Barnette (5735).

The device, which has a number of independently rotatable code wheel assemblies, is designed for use in a weapon destruct system which would be initiated by the military commander of a nuclear weapons installation when there was imminent danger of being overrun.

"It's a kind of glorified padlock," Jon says, "and very effective against 'friendly fiddlers' or saboteurs." He designed the coded switch while a member of the Timers and Coded Switch Division.

Jon holds another patent for a multiple-code switch. He joined Sandia Labs in 1960 and was a member of the first Technical Development Program group.



Bus Notes

Jeff Gammon (3725) of the Employee Transportation Committee reports that the South Valley bus fare is going up; effective Nov. 1, the 20-ride ticket for Peralta will be \$20 (vs \$16), for Belen \$25 (vs \$20). The one-way cash fare will be \$1.25 and \$1.50 respectively. "Mr. Sanchez (the bus owner) states that the passenger load for most of this year has been nine less than his break-even point," Jeff says. "So he doesn't really have much choice." You can stockpile the present 20-ride tickets if you wish. They'll be available at the Credit Union through the end of October and will continue to be honored after Nov. 1.

Sympathy

To Fred Johnson (3533) on the death of his mother-in-law in Houston, Sept. 23.

To Ermelindo Marquez (3618) on the death of his brother Oct. 5 in Albuquerque.



NEW DIVISION SUPERVISORS are Gladys Rowe (3144) and Rod Quinn (2523).



RECENTLY APPOINTED department managers are Tom Martin (4250) and Glenn Kuswa (4240).

Supervisory Appointments

GLENN KUSWA to manager of Particle Beam Fusion Research Department 4240, effective Oct. 1.

Glenn joined Sandia as a staff member in March 1970 after completing his education at the University of Wisconsin, where he earned a BS in applied math and engineering physics and a PhD in physics. At Sandia, Glenn worked on diagnostic holography, collective ion acceleration, and fusion diagnostics development. From 1974-76 Glenn was on leave, working in Washington, D.C., for AEC's Division of Military Application in the Laser Fusion Office. He returned to Sandia as supervisor of the Electron Beam Research Division.

Glenn is a member of the American Physical Society and the American Association for the Advancement of Science. Off the job he enjoys gardening, skiing, backpacking and working with tools. Glenn,

his wife Patti, and their children — 8-year-old Kevin and 5-year-old Erika — live in NE Albuquerque.

* * *

GLADYS ROWE to supervisor of Library Reference Division 3144, effective Oct. 1.

Since joining the Labs as a librarian in 1966, Gladys has worked in the cataloging and reference divisions of Sandia's Technical Library Department. For the past six months she has been a member of the 400 Management Staff. Gladys has worked as librarian for a number of firms, including World Book Encyclopedia.

Gladys earned a BA degree from the College of St. Catherine (St. Paul, Minn.), and an MA from the University of Chicago Graduate Library School. She is a member of the Special Libraries Association. Off the job, she enjoys tennis, music, and cross country

skiing — a sport she became interested in last year — and she's hoping for lots of snow this winter. Gladys lives in the NE Heights.

* * *

TOM MARTIN to manager of Pulsed Power System Department 4250, effective Oct. 1. Tom came to the Labs in 1956 as a member of an advanced components development organization. Ten months later he went on military leave, serving two and a half years in the Air Force. Tom returned to Sandia in 1960 and again worked with the components group. He was promoted to supervisor of the Pulsed Power Division in 1965. Since then, he has been concerned with construction of the flash x-ray machines — Hermes I, Hermes II, Hydra, Nereus, Slim — and the electron beam machines, Proto I and II.

Tom earned a BS and MS in EE from Purdue University, an MS in ME from UNM, and has completed a number of graduate courses in nuclear and electrical engineering at UNM. Tom's off-the-job interests include electronics and construction. He built the barn on his small ranch in the South Valley where he and his wife Patricia live. Their two children live in Denver.

* * *

ROD QUINN to supervisor of Exploratory Batteries Division 2523, effective Oct. 1.

Rod joined the Labs in June 1967 as a staff member in the solid state materials research group and, for the next seven years, worked in the field of solid state chemistry. He then transferred to an explosive materials organization where he studied how the influence of oxidation and passivation on active metals affects their reactivity.

Rod earned a BS in chemistry, an MS in physical chemistry — both from SMU — and a PhD in physical inorganic chemistry from the University of Texas. He is a Fellow of the American Institute of Chemists, and a member of the Electrochemical Society and the American Chemical Society.

Off the job, Rod enjoys fishing, hunting, skiing and jogging. He and his wife Carolyn and their two children live in the NE Heights.

Take Note

If we look a little different, it's because LAB NEWS has a new printer, Modern Press. Our printing contract is renewed yearly, and this time around Modern was low bidder. A new printer means new type faces — thus, our somewhat changed appearance.

* * *

Attention adobe buffs: retiree John Southwick and his wife Marcia have just published *107 Ideas For Your Adobe*, a kind of catalog of architectural detail applicable to adobe homes. The content includes various treatments of exteriors, walls, shelves, bancos, kitchens, bathrooms, windows, doors, and fireplaces. Format is photographic with accompanying text. John says the publication costs \$2.50, is available in most book stores.

* * *

If classical music is your thing, then now is the time to get your season ticket for the forthcoming concerts of the New Mexico Symphony Orchestra. The season ticket saves up to 30% of the cost of single ticket admission. Coming up in concert are guitarist

Narciso Yepes, guest conductor Sarah Caldwell, harpist Heidi Lehwalder, violinist Franco Gulli, pianist Daniel Adni, soprano Anna Moffo and the NMSO and Chorus. Call 265-3689 for information and assistance.

Authors & Speakers

Have you published a paper? Or presented one at a technical meeting? Then tell LAB NEWS. Send us the pertinent information in writing, being sure to include the names of all collaborators. Address: A&S, LAB NEWS, Org. 3162. Papers about which LAB NEWS is so informed are the only ones here published.

Supervisory Appointment



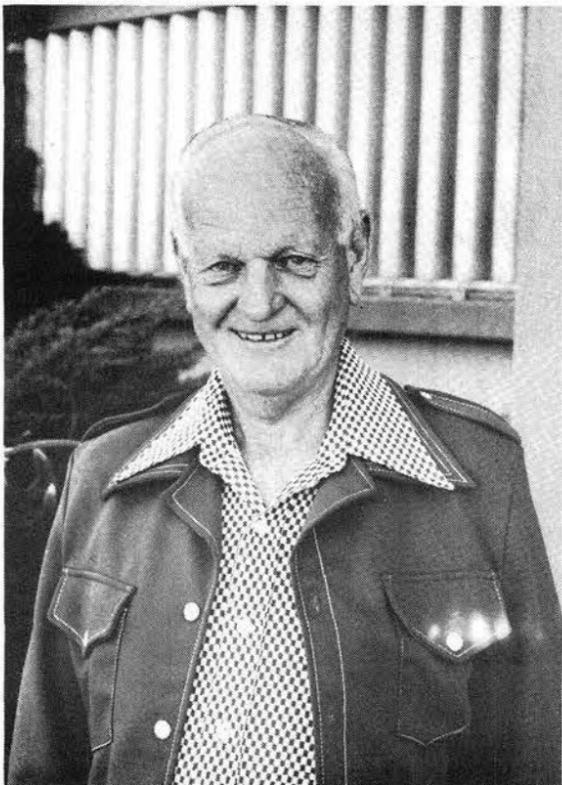
HANK WITEK to supervisor of Special Projects Division 8115, effective Oct. 1.

Hank joined Sandia in 1968 after receiving his BS in EE from Illinois Institute of Technology in Chicago. He subsequently earned an MS, also in EE, from the University of California at Davis under Sandia's OYOC program.

Following his return to SLL, he designed telemetry components in support of weapon programs and, later, held system analysis and definition responsibilities in support of various safeguards programs. For the past year he has been concerned with analysis of new weapon systems.

Off the job, Hank enjoys racquetball, camping and photography. He, his wife Mary, and their young son live on Foxswallow Circle in Pleasanton.

Retiring



Verne McNabney (8252)

LIVERMORE NEWS

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LIVERMORE LABORATORIES

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First Quantitative Test

Laser Measures Component Output

Until recently, there were two ways to determine the proper amount of explosive in an explosive actuator — destructive tests and what Ray Ng (8442) calls "engineering instinct." Ray has added a third — a variable explosive chamber system incorporating a laser and a pressure transducer that defines directly the explosive pressure output as well as the resulting actuator velocity over a period of time.

"Explosive actuators are the power sources for explosive valves. Because we didn't know the pressure output, all of our valves have been designed conservatively, with an excess of explosive, to guarantee that there would be sufficient force to operate the valve. But with new valve designs we need to know the pressure at each stage of valve operation, and our new technique makes this possible for the first time."

In use, the explosive actuator remains stationary while driving the tube-shearing plunger (see sketches). But during experiments, Ray discards the plunger and inserts the actuator into a slider which is in turn press-fitted into the experimental assembly. Fixed to the other side of the assembly is a pressure transducer. When Ray fires the explosive, the transducer remains in place while the actuator propels itself out. The resulting volume increase between actuator and transducer is sized to be identical to the volume between actuator and plunger in a working system.

Thus the experiment provides two measurements over time. One is the pressure as measured by the transducer — typically decaying from a peak of 500 MPa after firing. The other is the velocity — typically reaching 45 m/s at 100 microseconds.

The laser is necessary to measure velocity. Focused on the moving actuator, it allows a calculation of the actuator's velocity by noting the Doppler shift in the frequency of the light reflected from it as it moves. By acquiring both the velocity and pressure histories, the pressure vs. volume equation-of-state of the explosive can be readily calculated.

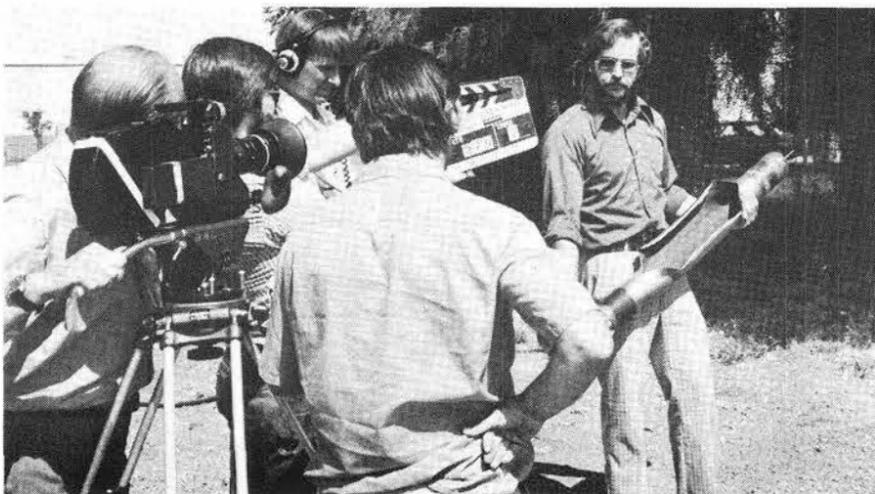
Two years ago Ray modified a laser system known as VISAR (Velocity Interferometer System for Any Reflector) for use in



TO MEASURE THE BANG of an explosive actuator, Ray Ng assembles these parts: (left to right) a pressure transducer, a housing assembly, a slider, and the actuator being tested. Laser focused on the actuator during its explosion provides velocity information.

measuring plunger velocities. Originally developed in Department 5160, the VISAR was redesigned to provide a more sensitive system than previously possible. This summer he incorporated VISAR into the VEC system.

"Besides the basic equation-of-state results, we are finding a number of other uses for the new system," he concludes. "Differences among different explosives and parametric studies on one explosive are areas of great interest. The results are also used to upgrade the MAVIS (Modeling and Analysis of Valve Interactions) computer code to make it more accurate in predicting valve operations. And, of course, the system is an excellent tool in providing the explosive data needed for future designs."



BBC FILMCREW concentrates on Steve Robinson (8314), who holds deliberately pressure-ruptured pipe segment. The crew, directed by Alec Nisbett (back to camera), is filming a documentary on the U.S. hydrogen economy for showing on British TV and on the PBS Nova series. SLL's hydrogen pipeline, designed to provide data on hydrogen embrittlement of gas pipelines, received most of the crew's attention.

Livermore Speakers

Bob Gallagher, Kathy Stimmell, Pat DeLaquil (all 8321) and Stu Keeton (8352), "The Evaluation of Road Transit Physical Protection Systems," Fifth International Symposium on Packaging and Transportation of Radioactive Materials, May 7-12, Las Vegas, NV.

Walt Bauer and Ken Wilson (both 8347), "Role of Plasma Material Interactions in the Magnetic Fusion Program," and Pat Gildea (8443), "Results of Tritium Tests Performed on Decontamination Systems," American Nuclear Society Third Topical Conference on Technology of Controlled Nuclear Fusion, May 9-11, Santa Fe, NM.

Jim Shelby (8342), "Physical Properties of Alkaline-Earth Aluminosilicate Glasses" and "Effect of Gamma Irradiation on the Physical Properties of Glass" and Chuck Hartwig and John Vitko (both 8342), "Hydrogen Solubility in Vitreous Silica," American Ceramic Society meeting, May 1-3, Detroit, MI.

Mike Soderstrand (8466) and Ed Fields (UC/Davis), "Digital Filters Using Bipolar Promes and Residual Number Arithmetic," IEEE Circuits and Systems Conference, May 17, New York City.

Steve Margolis (8322), "Theoretical Analysis of Steady, Non-Adiabatic Premixed Laminar Flames," and Rosemary Chang (8325), "The Application of the Generalized Inverse to Interpolation Theory," 78th National Meeting, Society of Industrial and Applied Mathematics, May 24-26, Madison, WI.

Carolyn Kramer (8313), "Molten Salt Corrosion of Selected Iron Alloys for Solar Thermal Electric Applications" and "Decomposition of Sodium Nitrate and Sodium Nitrite Solutions" and Bob Bradshaw (8312), "Electrostatic Effects Due to Ionsize on Transport of Lipid-Soluble Ions and Bilayer Membranes," 153rd Electrochemical Society meeting, May 21-26, Seattle, WA.

Ray Mar (8313), "Material Problems in Reversible Chemical Reaction Heat Storage," Invited Paper, ACEA Material Science Conference on Solar Energy Collection, Conversion and Storage, June 2, Argonne, IL.

John Pohl and Don Hardesty (8353), "Rates and Mechanisms of Combustion of Pulverized Coals," U.S. Environmental Protection Agency's Fundamental Combustion Research Workshop, June 26-28, Irvine, CA.

Steve Margolis (8325), "Eigensolutions of a Packed Bed Thermocline Degradation Problem," 8th U.S. Congress of Applied Mechanics, June 26-30, Los Angeles, CA.

Bill Wilson (8341), "The Development of Hybrid Models for the Solution of Metallurgical Problems," Seminar, Department of Themonuclear and Chemical Engineering, UCLA, June 6.

Rudy Johnson (8312), Jack Dini (8312) and Ron Stoltz (8316), "On the Mechanical Properties of Sulfanate Nickel Deposits," American Electroplaters' Society 65th Annual Technical Conference, June 26-30, Washington, D.C.

Bob Gallagher (8321), "Internal Energy Relaxation in Methane and Its Chlorinated Derivatives" and "Isotope Separation in Crossed-Jet Systems," 11th Rarefied Gas Dynamics Symposium, July 3-8, Cannes, France.

Charles Tapp (8460), "Available Materials and Processes for Thin-Film Hybrids," Hybrid Microelectronics Institute, University of Pittsburg, July 17.

Ray Ng (8442), "Experimental Determination of the Equation of State of Explosives and Pyrotechnics Used in Explosive Actuators," and Mike Birnbaum (8442), "Determination of Palladium/Aluminum Reaction Propagation Rates and Temperatures," Sixth International Pyrotechnics Seminar, July 17-21, Estes Park, CO.

Steve Robinson (8314), "Transmission of Gaseous Hydrogen — A Preliminary Technology Evaluation," Institute of Gas Technology Seminar, July 24-28, Chicago, IL.

Carl Melius and Bill Wilson (both 8341), "Trapping of Hydrogen and Helium Atoms in Nickel," Ninth International Symposium on Effects of Radiation on Structural Materials, July 10-14, Richland, WA.

Pete Witze (8352), "Application of Laser Velocimetry to a Motored Internal Combustion Engine," and Mike Dyer (8352) and Pete Witze, "Laser Velocimeter Measurements in a Constant Volume Internal Combustion Engine Simulator," Third International Workshop on Laser Velocimetry, July 11-13, Purdue University.

Bob Carling (8313), "Heat Capacity of a Petroleum Base Heat Transfer Fluid from 350 to 600°K," 33rd Annual Calorimetry Conference, July 25-29, Utah State University.



sandia laboratories policy statement

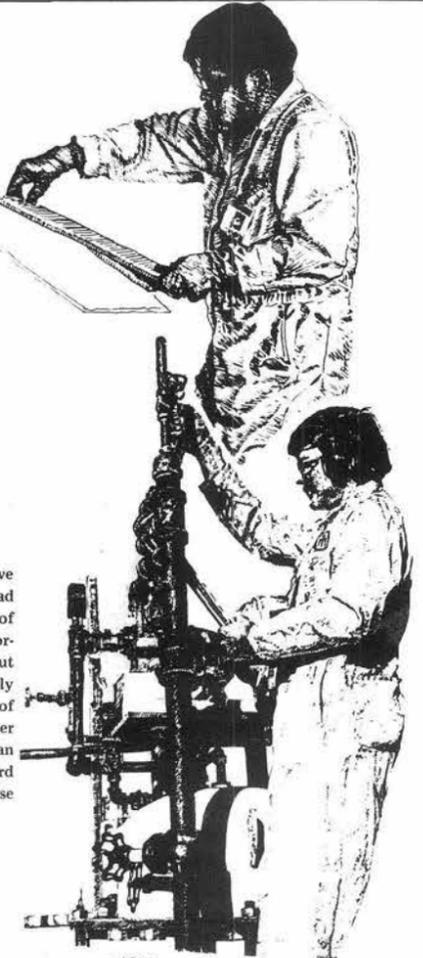
In launching the 1979 Affirmative Action Plan year, I wish to reiterate the Statement of Policy under which we have been operating. As President of Sandia Laboratories, I reaffirm our commitment to the principles of equal opportunity. We will continue our policy of conducting matters involving people without regard to race, color, religion, sex, or national origin, and in accordance with the laws and regulations concerning age, physical or mental handicap, and disabled or Vietnam Era veterans. This policy extends to every facet of our activities, including recruitment, hiring, compensation, transfer, training, advancement, and termination. Not only will we comply with all applicable laws, directives, and regulations of federal, state, and local governments and their agencies pertaining to equal employment opportunities, but also we will strive to develop the true spirit of these acts throughout the Laboratories.

I am happy to note again that our affirmative action efforts over the past years have had gratifying results. These efforts plus our conduct of business have advanced the cause of equal opportunity both in the Laboratories and throughout the communities with which we interact. Internally our progress is reflected not merely in numbers of minorities and women on roll but in their greater representation in the professional and technician classifications. The ultimate objective toward which we continue to strive is the optimum use of our personnel resources.

Our affirmative action program has been developed with the view of assuring good faith implementation of our equal opportunity policy by all Laboratories people. Information is regularly disseminated through the policy statements, employee news media and special meetings. Every supervisor is expected to be familiar with our affirmative action program and take an active and positive role in maintaining and promoting our equal opportunity commitment. Accordingly, responsiveness to this commitment will be a consideration in supervisory assessment and review programs.

Mr. J. R. Garcia, Director of Personnel and my Special Assistant for Equal Opportunity, will continue to monitor all equal opportunity activities and report to me on the effectiveness of our affirmative action program, including recommendations for necessary action to insure attainment of our objectives.

Morgan Sparks



making it happen at sandia

AFFIRMATIVE ACTION Plan for 1979 is the theme of this poster now being displayed throughout the Labs. Jim Walston (3155) is the artist. Text of the AA Plan for '79 has been distributed to all supervisors. Each vice presidential organization has prepared an individual AA Plan for the year.



DEAN IRVIN (3543), Colonel Dean Irvin that is, has made a second career of his reserve affiliation with the Army. His efforts were recently recognized with the bestowal of the "Strength in Reserve" award — a bronze replica of the Minuteman. Now a retired reservist, Dean continues to work on Army matters throughout the state.



commuting information DIAL 4-RIDE



Restaurant food can be good, bad or indifferent. It can even be nutritious. Concerned that so much of it isn't, Mike Jacobson, the Director of the Center for Science in the Public Interest, devised the following message which he leaves for the manager when he pays his bill: "Dear Restaurant Manager: I eat at your restaurant but am concerned about the nutritional quality of the food. How about whole grains: whole wheat bread and rolls, brown rice, whole wheat pasta, etc? Go easy on the salt. I can use the salt shaker on the table if I want more. Serve fresh, properly cooked (or raw) vegetables, and I will love you forever. When was the last time you offered fresh fruit for dessert? Cut the grease. I don't need your help in having a coronary. I enjoy eating out, but I also enjoy eating a healthful diet. Won't you help? P.S. I would also like to eat without cigarette smoke polluting the air." We're sure McDonald's will be amenable to the message.

Continued from page one

RECRUITING '79

positions at both Livermore and Albuquerque."

Sandia has three recruiting teams, each with a 3531 coordinator. Andy Fuller coordinates the PhD recruiting team, John Wheeler the BS/MS team and Julian Lovato the TI recruiters. Peggy Burrell handles special programs (Work Study, OYOC's and MBA's). Since Sandia does its own PhD and Tech Institute recruiting, recruiters for these teams are trained by Staff Recruiting and Employment Division 3531.

BS/MS recruiting is done as part of a Bell System team made up of recruiters from Sandia, Bell Labs, AT&T, Western Electric and local telephone companies. These teams are trained at AT&T workshops and recruit cooperatively, concentrating on the needs of the entire Bell System instead of just the organization they represent.

College and Tech Institute recruiting isn't the only source of new employees, but it is the major source. "Some of our new employees are the result of current employee referrals," George Banos explains, "and some come from mail applications generated by advertisements in professional journals and newspapers. We're always on the lookout for top people."

Each recruiter can plan on devoting about two work weeks per year to the recruiting program — and when they're on the road they can count on doing about 15 intensive interviews a day.

A Continuing Project

Tom Zudick Photographs Artists

The current display, "Artists of New Mexico," in the Bldg. 802 foyer is part of a project that has been more than 10 years in the making and is still ongoing. Tom Zudick (3171) is the photographer.

Tom has now photographed 83 artists, most of them in their studio settings, and many of them using a multiple image technique, superimposing faces within a portion of a painting. The effect is both striking and dramatic, revealing an insight into the artist's painting technique. Tom also includes sculptors, calligraphers, musicians, potters, weavers, jewelers and photographers among his "artists."

Originally, the project was part of a fine arts degree at UNM.

"It became more than that when Raymond Jonson and Van Deren Coke of UNM's art faculty encouraged me to document members of the original Taos colony — Emil Bistram, Will Shuster, Dasburg and others including Georgia O'Keeffe. What a fabulous lady. Talking with these people was a marvelous experience.

"I've discussed the possibility of a book," Tom says, "but where do you stop? More artists are becoming recognized every day — and who is the authority on which ones to include? I know that I'm not finished. There are many more to photograph, much research remains to be done."

Tom works with a twin lens reflex mounted on a tripod and prefers natural light. He uses a medium-fast black and white film, processes it himself and does his own printing on archive-quality photographic paper.

"The darkroom part of photography is very important to me," Tom says. "A photo-

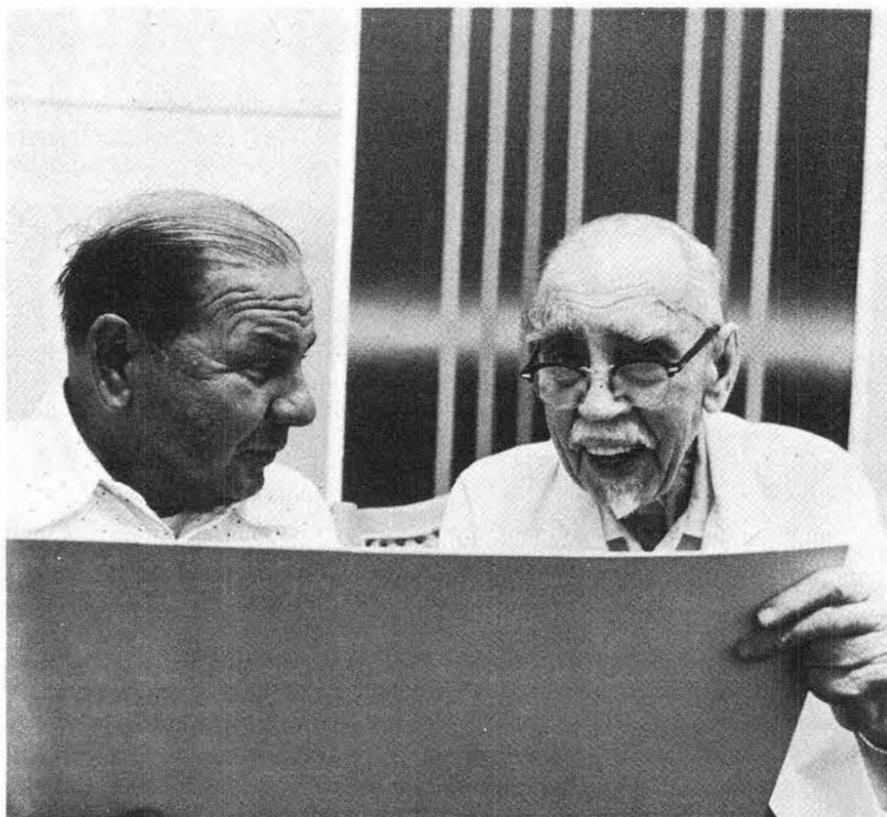


PhD RECRUITER Nestor Ortiz (4413) and Al Narath (VP-4000, left center) discuss Sandia's PhD requirements for the coming year over lunch. Narath, Chairman of the Technical Recruiting Advisory Committee, briefed recruiters on needs of Labs during morning session of recruiter training seminar.

"Recruiting has its frustrations," George sums up. "You work long hours at the schools and sometimes you don't locate the kind of candidate you're looking for — or what you have to offer isn't what the candidate is looking for.

"But the rewards are there, too — and the incentive. The foreword to our recruiter's

manual says it all: 'No activity . . . is more important to the continuation of the Labs' high level of excellence than the recruitment of technical professionals. You, as recruiters, have responsibility for locating and selecting . . . those persons on whom to a large degree the future of Sandia Laboratories depends.'



PHOTOGRAPHER Tom Zudick (3171) confers with UNM's Raymon Jonson on his "Artists in New Mexico" project. Jonson Gallery will show the exhibit early next year.

grapher gets two chances to be creative — first, when he sets up his picture and arranges the subjects and lighting and then again in the darkroom when he makes the final print. I usually make a dozen or so before I achieve the effect I want. There's a great deal of manipulation possible with the image in the darkroom. I do work in color but it's not as satisfying. I have it commercially processed."

Sandians that Tom includes in his

"Artists of New Mexico" are Tillie Pierce, Dick Strome, and Janet Jenkins (all 3155), Ken Miller and Wayne Gravning (both 3153) and Joe Laval (3163).

"It's a continuing project," Tom says. "They're many more on my list to photograph."

Another showing of Tom's photographs is scheduled early next year at UNM's Jonson Gallery.

feed *back*

Q. I am on the mailing list for several electronics catalogs and product indexes, such as Electronic Engineers Master (EEM), Integrated Circuits Master, and the Gold Book (an electronic products index). These indexes are useful in my work, since they keep me informed on what sort of equipment is available.

Though these publications are free, about this time each year I receive requests for voluntary contributions to help defray printing and mailing costs. It's indicated that without volunteer funds from subscribers, it may not be possible to continue to make the catalogs available.

Can company funds be used for this purpose? May I voucher a nominal sum?

A. It is the policy at Sandia that goods and services required in the performance of job assignments be obtained through the official procurement channels. Voluntary contributions by individual employees for goods and services cannot be vouchered to Sandia.

Copies of the Electronics Engineers Master and of the Gold Book are maintained in the Reference Room of Sandia's Technical Library. These copies are available to all employees. Although we were able to locate guides and handbooks, manuals and bibliographies on integrated circuits, we could not find the Integrated Circuits Master which you mentioned. However, we believe that the many other reference sources located in the Library should supply any information you might need.

Sandia currently subscribes to over 10,000 commercial catalogs which are on film and indexed by product and by company name. In addition, films of specifications and standards of military, federal and industrial organizations are maintained. All of these films are updated every two months. This information is available to all employees and is located in the two Design Information Centers of Division 2433: Bldg. 836, room 262, and Bldg. 892, room 118. Reader/printer machines are located in these centers for viewing and copying the film.

C.R. Barncord — 3200

Q. Can something be arranged for Sandians with respect to parking at UNM? Many of us attend classes there, and the 30-minute travel time isn't enough when you have to hunt for a place to park.

A. Historically, we have found that 30 minutes for travel to UNM is adequate. Actual driving time from the Labs to the campus is approximately 20 minutes. If an individual then parks in the "free" lots on the north campus and rides the shuttle bus to the main campus, little inconvenience is experienced. (Shuttle buses run every 7 minutes from both the east and west lots on the north campus.) There is also a 35-cent parking lot one block south of Central and one block east of University Blvd. but no shuttle is available.

With main campus parking at a premium, negotiations with the University for "blocks" of spaces for Sandia students would be useless.

Permits are allotted on a priority basis which is:

1. Faculty and staff
2. Handicapped
3. First come, first served for students.

And, as students have found, the University has no problem with selling all available spaces in a very short period of time.

In the future, Education and Training will issue a notice prior to the beginning of each semester, in the Weekly Bulletin, to remind Sandia students to arrange for parking permits early.

J.R. Garcia — 3500

Q. What can be done to make courses such as quantum mechanics, modern physics, vector analysis, linear algebra and partial differential equations available in the out of hours program?

A. "Quantum Mechanics" was offered two years ago but was cancelled when only three people enrolled. We plan to offer it again in spring 1979 and it will be presented if there is enough interest. Other plans include offering "Partial Differential Equations" in spring 1979, "Modern Physics" in spring 1979 (tentative), "Linear Algebra" in spring 1979 and "Vector Analysis" in either spring or fall 1979. Except for "Modern Physics," instructors have already been named for all of the courses. We appreciate your suggestions and will be pleased to discuss with you any other courses that you think would be valuable to you and others.

J.R. Garcia — 3500

Q. I come in and leave by way of the South Valley Gate. The dirt road after you leave the gate is almost always a mess. Any chance of its being improved? Will the Air Force continue to keep this Gate open?

A. The road outside the South Valley Gate belongs to the city and we have had only occasional success in getting them to maintain it. You are welcome to try — the telephone number is 766-7755. We understand that the city has an agreement with Operating Engineers Local 953 to allow the road to be used as a training project for heavy equipment operators.

We checked with the Air Force and there are no plans to close the South Valley Gate.

R.W. Hunnicutt — 3600

Q. Our current SLA phone directory has become outdated — some pages are nearly a year old. My book is also so crowded that the pages are tearing out. How about a new and larger binder with updated pages?

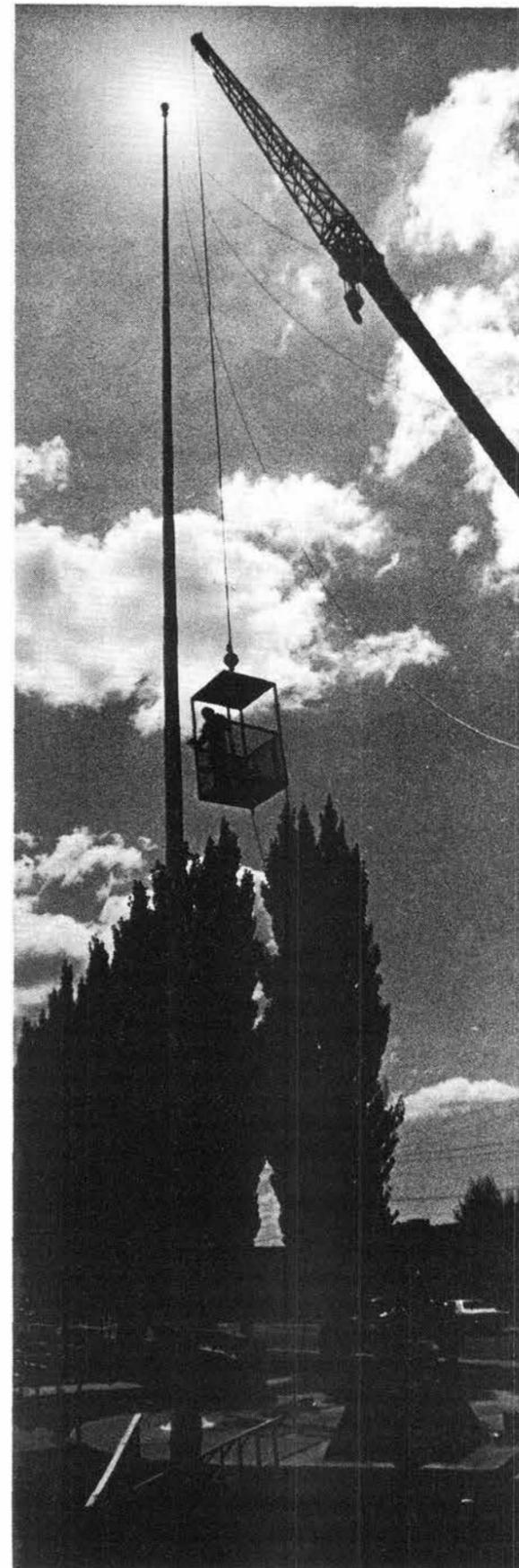
A. Updated pages for the alphabetic section are issued twice a year. The latest issue is dated June 1978. This section is kept current by secretaries who submit to Personnel Records, Division 3533, employee data changes on Form SF 4010-EH. Updated pages for the organizational section are issued when

Congratulations

Art Ahr (2635) and Pat Thatcher (3410) married Sept. 28.

current information is furnished by the concerned supervisor to Section 3152-1. Soon, we expect to publish the book with output information from the Atex Computer System (it now comes from the Univac 1108) and, at that time, we plan to change the binder size. Until that time comes, you may wish to get a larger binder from the stock room.

K.A. Smith — 3100



HOW DO YOU PAINT A FLAGPOLE? First find one (try the West edge of the parade ground). Then get a crane, one with a long boom. Find a basket with safety fencing on all four sides. Hook it to the boom. Then one sunlit day when the air is warm and the wind is calm, hoist aloft a painter. He'll make short work of the pole. LAB NEWS photographer Russell Smith caught the painter mid-pole.

Book Review

One of the few redeeming spinoffs to our city's continued growth has been the emergence of stores that offer bargains. And a bargain, as everyone knows, is one of those rare things twice blest, giving one economic benefit but also that exaltation of spirit that comes from having made a "good buy."

That's the premise underlying this handbook by JoAnne Fredrikson and Lorraine Price, who list and describe within it some 150 stores and outlets which either (a) offer merchandise and services consistently below the normal retail price, or (b) offer selected merchandise and services occasionally below the normal retail price.

Here's an example of category (a):

"The Family Wearhouse, 210 Central SW . . . What we recommend here are the tables of Wrangler, Levi and Lee men's pants at \$5 per pair or 2 pairs for \$9. These are discontinued styles, patterns and fabrics, but they'll wear just like the newest denims . . ."

And of (b):

"Grand Central Inc., 700 Juan Tabo NE . . . Watch daily newspapers for coupon

Money Matters: A Guide To Bargains in Albuquerque

specials. Listen for announcements of 'red light' specials offering 15-minute sales daily."

Money Matters addresses itself to a dozen categories of outlets: arts & crafts, auctions & flea markets, auto needs, bookstores, clothing & shoes, discount/catalog stores, food, hardware & building supplies, home furnishings, liquors, 2nd hand and thrift stores, and miscellaneous. Under the last-named you will find, for instance, a list of beauty schools where a student will operate upon your hair for a fraction of the normal charge. Of course, you may have to leave town for a few weeks afterwards . . .

Money Matters is a useful handbook. For some reason or other, it overlooks our favorite food outlet, the Grower's Market (3rd and Tijeras, Saturday mornings) where amateur gardeners sell surplus produce, but it otherwise offers a wide selection of *le bon marché*. You can buy a copy at Tasha's Paperback Book Exchange, The Book Rack, Pauline's Sportswear or, by mail, to Money Matters, P.O. Box 6413, City, 87197. It's \$2.50 by mail, otherwise \$1.95.

*js

Where's Charlie?

A Short Course In Organizational Number Changes

Using your phone book these days is a little like the old carnival game of guessing under which of the three walnut shells you'll find the dried pea. Publication Division 3153, the keepers of the phone book, has done a monumental job keeping up with recent wide-ranging organizational number changes. The problem (which won't be solved for at least another month) is with the alphabetical listings.

Say you want to send something through internal mail and you don't know the individual's organization number. You look up the name in the alpha section and then flip to the organization listed. Chances are it no longer exists by that number. And unless you saved your old phonebook pages and annotated them with the new numbers, you're flat out of luck. And the problem is complicated because some directorates remained intact (and only their numbers changed), some were broken up and redistributed and some were slightly reorganized.

With the help of the friendly folk in Accounting Department 3250, we've worked out a brief conversion table that may help. There were well over 200 organizational number changes but the ones listed below, properly used, will give you a fighting chance of working your way out of the quicksand. In 1200, for example, everything stayed the same except for 1260 and 1280 which became 5510 and 5520. Divisions 1261, 62 and 64 became 5511, 12, 14. This pattern holds for the other numbers, too: 1300 became 5600, 1310 became 5610, etc. And now to the table:

| FROM | TO | FROM | TO | FROM | TO | FROM | TO |
|------|------|------|------|------|------|------|------|
| 1260 | 5510 | 5120 | 5640 | 5400 | 4400 | 8010 | 8201 |
| 1280 | 5520 | 5160 | 5530 | 5430 | 4550 | 9500 | 1400 |
| 1300 | 5600 | 5200 | 4200 | 5700 | 4700 | 9600 | 2400 |
| 1350 | 1250 | 5300 | 4500 | 5724 | 4416 | 9700 | 3600 |

Fun & Games

Biking — Question: if you were conveniently able to take your bike on the plane with you on a business or pleasure trip, would you do so? For the Labs' many Livermore travellers, such an option is intriguing because of the good biking conditions in that city. You'd still have to rent a car upon arrival to get from the airport to Livermore and back again, but once there the bike could become primary transportation. LAB NEWS has received a circular describing something called the "Bike Bag," which measures 47" x 46" x 9". You remove the wheels, stick them in pockets in the bag, then insert the bike itself. "The bag is easy to carry," says the circular. "An adjustable shoulder strap and a carrying handle on each side distribute the weight . . . Both sides are silk screened with 'fragile' and the international 'handle-with-care symbol.'" The Sandia Bicycle Association has some money in its treasury, and it's been suggested that a Bike Bag (cost around \$70) might be used on a loan basis by members. (SBA money has also been spent on tools and tire repair items for use by members.) But there's no point in buying one unless SBA'ers will use it; so call LAB NEWS on 4-1053 if you would use the Bike Bag if it were available.

Skiing — Ski Swap at the State Fair Grounds Oct. 20 to 22 is the principal ski business this month (see photo), but there are two other events. The Salomon Film Festival takes place at Popejoy on Oct. 17, and the C-Club Ski Club meets on Oct. 24 with a fashion show, Purgatory preview, and a chance to win a pair of skis.

Running — Tour of Albuquerque takes place this Sunday, Oct. 15. A number of Sandians are running in the event, and we'll carry results in the next issue.

Roadrunners meet Sunday, Oct. 22nd, at 1:30 p.m. at Burton Park (Carlisle and Kathryn SE).

Bowling — The Sandia Bowling Assn. is sponsoring a mixed team, doubles, and singles sanctioned tournament for members on Oct. 21 and 22 at Holiday Bowl. For SBA

membership forms or tournament entry forms contact Dan Puetz, 4-8017, or Wally Granfield, 4-3437.

Ultimate frisbee — Larry Kovacic (1471) called to invite Sandians and friends to attend the second Rocky Mountain Ultimate Frisbee Open on Oct. 14 and 15 and UNM's Johnson Gym fields. So what's ultimate frisbee? A kind of soccer-like game, 7 players to a side (male and female), only instead of a soccer ball . . . well you get the idea. Larry says teams from five states will participate.

SKI SWAP '78
 Saturday Oct 21 9 to 4
 Agriculture Bldg.
 State Fair Grounds

• Skis • Boots • Poles • Clothing

BUY — Order yourself and your family some downhill gear under great sale prices. Ski Patrol are on hand to give advice Saturday the 21st to 4.

SELL — Your equipment is bringing it to the Agriculture Bldg. Friday the 20th from noon to 9 pm. Registration fee 25 cents per item. It will be a 10% commission is charged proceeds buy medical and other supplies for use on the hill by the Sandia Peak Ski Patrol, an all volunteer group.

PAYOFF PICKUP — Sunday the 22nd from 2 to 4 pm. Present receipt to pick up your check or unsold items.

Sandia Peak Ski Patrol

SKI SWAP CHAIRMAN Norm Elliott (5622) says they'll have 8,000 items, more or less, of ski equipment at this year's Swap, set for Oct. 20 (register items for sale), 21 (the sale day) and 22 (payoff/pick-up), at the State Fair grounds. Sandia Peak Ski Patrol sponsors Swap, uses proceeds to buy medical supplies and rescue equipment for use on the hill. Norm says Patrol treated 368 victims of skiing accidents last season.

Retirees Travel 3000 Miles in Small Boat

Retirees Ken Kerns and H.H. "Pat" Patterson recently completed a 32-day, 3000-mile journey in a small 20-ft. boat from Bellingham, Wash., (near Seattle) to Glacier Bay in Alaska. They traveled the "Inside Passage" and thus were almost completely sheltered from the open Pacific by a string of islands, bays, sounds and channels.

"Fantastic is the only word to describe the scenery," Ken says. "It's a world of blue and green and white — trees, millions of tall beautiful trees, snow-capped mountains thousands of feet up from the water's edge, hundreds of jewel-like islands, icebergs and glaciers, great stretches of empty shoreline. Very few people. But the folks we did meet were extremely friendly and helpful."

Pat agrees. "It must be like the early days of the frontier West — when there's few people, they need each other."

Ken's boat, the "Viandante" (translation: "tramp") shows Albuquerque as its home port, and this prompted a string of comments and conversations along the way. The men slept on board (except for motels in Juneau), anchored in protected coves at night, averaged from 70 to 140 miles per day. Since high tides sometimes brought the water level up 22 feet, anchorages were carefully selected. Only one man left the boat at a time, but they did anchor early, spending a couple of hours each day exploring the shoreline.

"We kept meals simple," Ken says, "and chores to a minimum."

Preparation for the trip included months of planning — gathering information and navigational charts. Pat built a special radio direction finder from a kit. A VHF and CB completed the radio equipment.

"Except for a valve replacement which tied us up two days, we had very little trouble," Ken says. "The weather was mostly rain and drizzle, some cold nights but nothing to complain about."

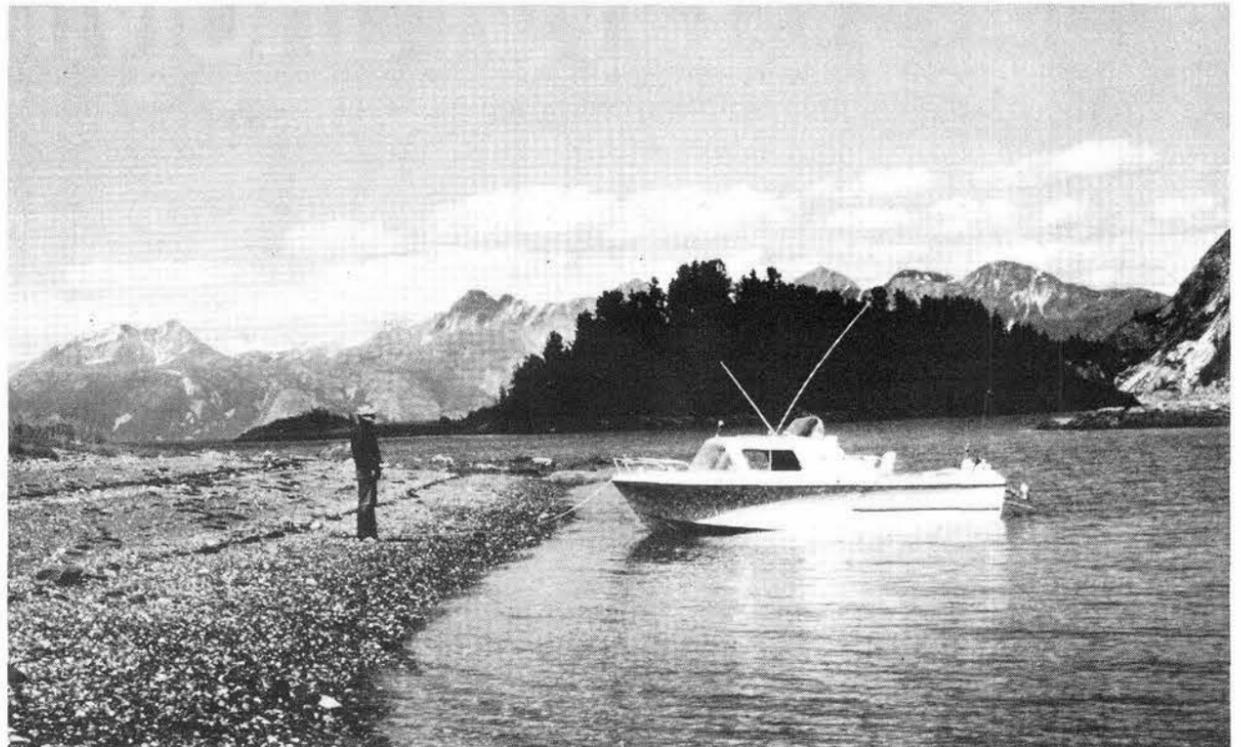
One of the highlights of the trip was being surrounded by schools of humpback and killer whales for two days. The icebergs and glaciers were also spectacular.

"It's interesting," Pat comments. "The glacier ice is millions of years old — fossil water — compacted by tremendous pressures. It lasted about three times longer than standard ice in our ice chests."

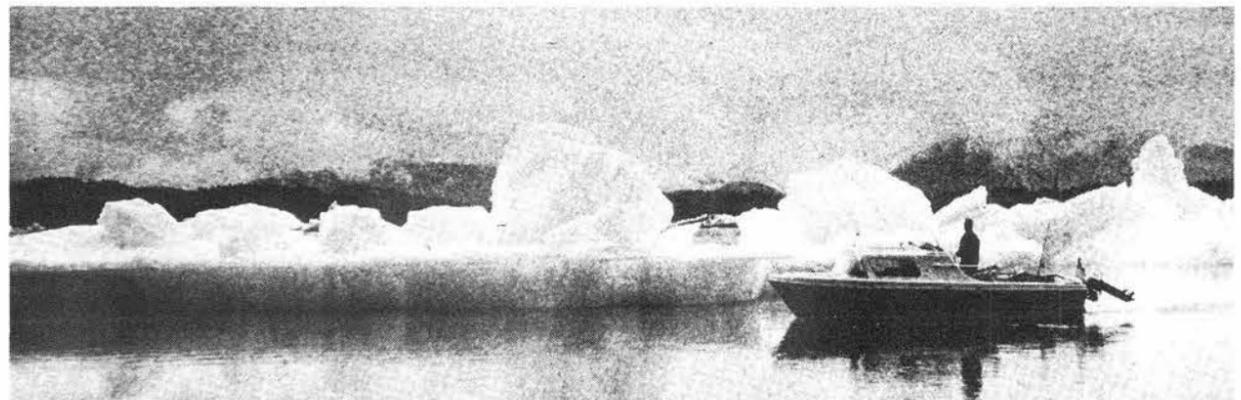
The men trailered the boat to Bellingham, a four-day trip each way.

Ken, an administrative assistant at Sandia, retired 10 years ago. He spends several months each year traveling in his boat — trips up the Mississippi or Tennessee rivers or the Sea of Cortez — or traveling in his motor home. Currently, he's touring New England.

Pat retired two and half years ago as manager of an instrumentation development department. (Pat originated the COIN program.) He now divides his time, teaching flying in Albuquerque, managing property in Tennessee, visiting Oregon, and working in an isolated Seri Indian village in Mexico where he assists a missionary in a kind of "private peace corps."



PAT PATTERSON checks anchorage at Glacier Bay. High tides reached 22 ft.



LARGE ICE PACK, small boat in Glacier Bay.



KEN KERNS pilots the Viandante on a typical drizzly day.



GLACIER ICE from an iceberg is brought on board the Viandante by Pat.



GRADUAL MELTING of icebergs in Glacier Bay produced fantastic shapes.



HUMPBACK WHALES followed the boat (or vice versa) for two days. Killer whales were also numerous.



For those who argue that art has no utility, we note the following from *Saturday Review*: "Important new evidence shows that the arts are not only beneficial in themselves but promote marked improvement in math, reading, science and other subjects deemed 'essential' by educationists." Seems art stimulates a child's natural curiosity and — perhaps literally — expands the capacity of his brain. "The arts," concludes the article, "even help children discover their own worth and identity and thereby point the way to future happiness."

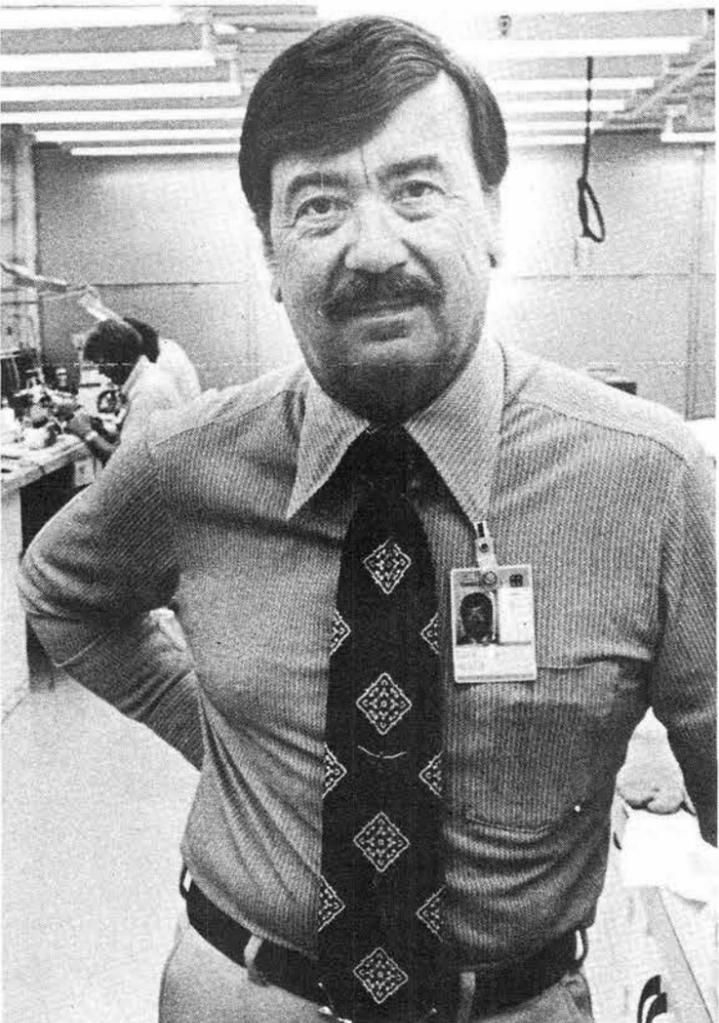
MILEPOSTS
LAB NEWS
OCTOBER 1978



Yvonne Riley - 3155 15



Teddy Chavez - 1473 30



T.A. Allen - 1473 30



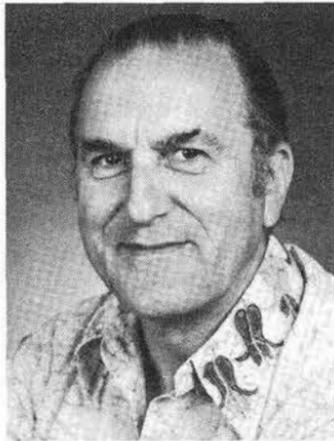
Arthur Ducharme - 4413 10



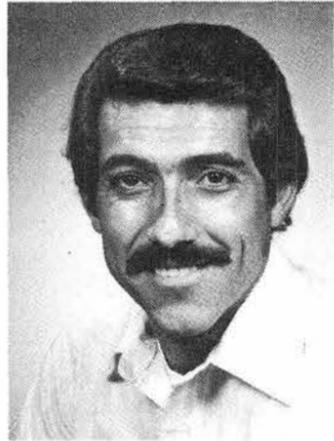
Clarence Johnson - 8423 20



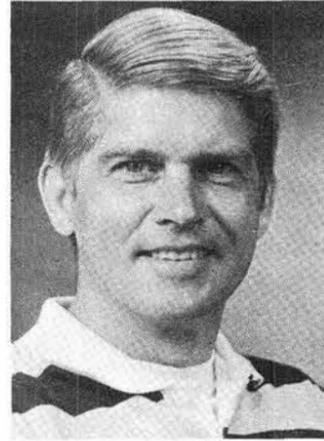
Irl Vance - 1483 10



Lou Reis - 8423 20



James Landavazo-2421 10



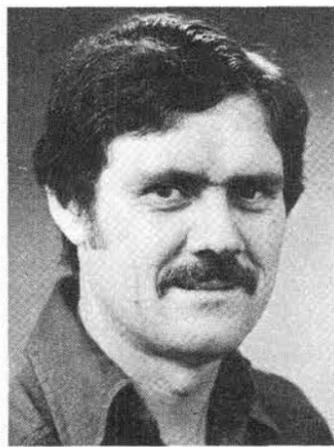
Robert Reuter - 5524 10



Joe Vanderpoorten-8412 20



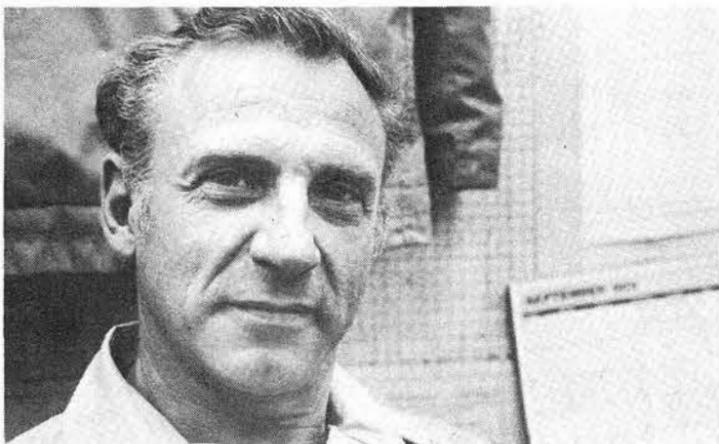
Andy Myers - 1483 15



Norman Wing - 5112 10



Mary Kolesar - 1550 15



Stan Kurowski - 2514 20



Samuel Wallace - 1754 10



Bernardo Vigil - 2451 10



Elefio Montoya - 2455 10

Rod Dominguez Joins Labs

Rod Dominguez (4314) is the first participant of Sandia's Work/Study Program to join the Labs as a regular employee. Rod was one of the first group of 11 students to participate when the program started in the summer of 1974. As a Work/Study participant, he received a stipend from Sandia, and the Labs also paid college tuition and for his books.

His first summer at Sandia, Rod worked in Coyote Canyon measuring pollutants in the atmosphere. He returned in the fall to New Mexico State University as a sophomore, an EE major. The following two summers Rod again worked at the Labs — in '75 with an electro-optics group, in '76 with Bill Spencer (now 8100) in microelectronics.

The next year Rod earned his Bachelor's degree in EE, graduating with honors in May 1977. At NMSU he was a member of several honorary fraternities and a member of the student senate. Occasionally, he played lead trumpet with a rock band.

After graduation, Rod returned to the Labs and worked with Tom Workman's

weapons group performing computer analysis of electronic circuits. He qualified for the OYOC (One Year on Campus) program and spent last year at Stanford, again graduating with honors and a Master's in EE.

"I'm grateful to Sandia," Rod says. "The Labs made it possible for me to get the education I needed."

Now married and making plans to build a solar home, Rod is also looking forward to taking in-hours technical courses and eventual work toward a PhD.

Currently, there are 22 participants in Sandia's Work/Study Program — 18 administered from Albuquerque and four at Livermore.

Selected while seniors in high school or in the first two years of college, Work/Study participants pursue an engineering or scientific curriculum and must maintain high grade points. They work summers at the Labs until finishing BS degrees. Sandia does not guarantee employment after completion of the program.



ROD DOMINGUEZ

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. Mail to: Div. 3162 (814/6).

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

- TRASH BAGS, city approved, \$4/box, \$20/case of 6. South Hwy. 14 Project. LAB NEWS office, Bldg. 814.
- VIOLIN, STUDENT-SIZE, \$75. Miyoshi, 821-9118.
- STEREO CASSETTE DECK, Akai CS702D: dolby, limiter, front load, \$140. Garrison, 881-1851.
- STAINLESS FLATWARE, 57 pieces, \$15; Winfield handcraft China, white with green bamboo pattern, 27 pcs w/lg serving dishes, \$75. Shieler, 881-8723.
- BUNDY FLUTE, \$75. Jackson, 883-8834.
- SINGER SEWING MACHINE w/-cabinet, 30 yrs. old, \$30; free-standing brass fireplace screen, 31" X 39", \$35. Jewell, 256-0414.
- '68 MUSTANG bucket front seats, never used. Angel, 299-4615 evenings.
- HERCULON HIDE-A-BED and matching love seat, \$200. Byrne, 293-6117.
- CORNER SEATING UNIT, custom made: two lounges pivot to make extra-wide bed, walnut frame. Claassen, 255-4347.
- MEDITERRANEAN-STYLE Sofa, \$40; recliner, \$25; variable speed electric potter's wheel, \$125. Smathers, 298-0613.
- RECLINING CHAIR, Stratolounger, brown vinyl; Bauer T-4 dual 8mm movie projector. Parisi, 881-0181, 9 a.m.-5 p.m.
- SALTON HOT-TRAY CART, new, \$32; DuMont cabinet stereo radio/phonograph, \$75; Carousel slide trays: 80 slide, \$1.50; 140 slide, \$2.50. Treadwell, 296-4626.
- MARTIN CLASSICAL GUITAR, 00-28C, rosewood, w/hard case, electric metronome, sheet music, \$500. Engel, 243-6886 after 5 p.m.
- BATHROOM FIXTURES, yellow; gas dryer; black fireplace screen w/andirons, mediterranean style. Whitham, 266-9313.

- ELECTRIC GUITAR, Gibson SG special. Fisher, 881-8072.
- HARDWOOD DESK, 4 dwr., maple finish, 18X42" top, \$65. Scheibner, 299-5993.
- MARLIN RIFLE, Model 336, 30-30 cal. For trade or sale, \$75. Stuart, 299-9190.
- CAMPING TRAILER, pop top, '69 Vista Liner, sleeps 8, gas, water, icebox, \$750. Nagel, 298-2779.
- TRUCK TIRE CHAINS, fit 8.75X16.5 to 10.00X16.5, used twice, \$35. Hobbs, 268-6461.
- STUDENT DESK and chair, three drawer w/pullout board, 20x34" top, solid wood, \$30. Gregory, 268-2022.
- RCA COLOR TV, 14", \$100; aquarium, 10 gal. complete setup, \$10. Damrau, 881-4576.
- SHARP 40-CHANNEL CB TRANSCEIVER, MAGNETIC BASE ANTENNA, \$100. Fisher monaural AM/FM console w/Girard turntable (needs bearings), \$75; Rotel stereo AM/FM receiver/amplifier, 25W/C, \$200. Dahl, 256-1067.
- SHELTIE PUP, 3 mons., male, house-broken, sable & white, AKC reg., \$125. Anthes, 293-0926.
- BUNK BEDS AND LADDER, 4 mattresses, frame complete, \$45; dbl or queen size frame on casters, adjustable, \$20. Stang, 256-7793.
- MATCHED LIVING ROOM SET plus lay-z-boy, \$400; kitchen table w/6 chairs, \$40. Barnard, 831-4114 after 6 p.m.
- PORTABLE TV cart, \$5. Palmer, 883-3660.
- COMET SPORT TRAILER, 15', \$850 or offer; Simmons highrise fold-away bed, queen size, \$90. Shaeffer, 255-9473.
- G.E. WASHING machine, 4 yrs. old, \$90; Couch, \$35. Falacy, 293-2517.
- HOOVER FLOOR polisher, \$20; 2 kitchen cabinets, \$25 ea.; work bench, 2.5 X 5', \$10. Watterberg, 294-6759.
- 35mm CAMERA, rangefinder, Kodak f3.5 lens, leather case, \$12. Auerbach, 296-1489.
- YAMAHA GUITAR, child size, \$85. Konkel, 299-5108.
- SWAN MARK II Linear amplifier, \$550; Pachinco machine, \$30. Cochrell, 298-2068.
- CHEVY GMC wheels for 3/4 ton 8-hole, 6.75 X 16.5", four/\$80; four 9.50 X 16.5 10-ply Goodyear tires, some tread, \$10 ea. Cook, 869-6921.
- BAR AND TWO bar stools. Jeffery, 298-1231.
- SEARS WASHER and electric dryer, \$85 for both. Johnson, 298-7020.

- 20 GAL. AQUARIUM w/fish, 2 filters, many extras, \$70; Sears swimming pool, 15' X 3', \$65; porta pot, \$10. Davis, 294-0139.
- DOWN COMFORTERS from Germany. Orear, 256-1941.
- BABY CRIB, mattress, clothes, carseat; boy's clothing, sizes 4-6; 2 used tires; electric hedge trimmer. Arranaga, 294-5581.
- ROCKWELL TABLE SAW, 10", accessories. Used 5 hrs., \$215. Guttman, 243-6393.

TRANSPORTATION

- SCHWINN TANDEM BIKE, 5-sp, barely used, \$150. Bloomquist, 296-9701.
- '74 MUSTANG II, 4-sp., AC, AM/FM, 8 track, vinyl roof, \$2300 or offer. Silva, 345-7626.
- '77 FORD F-150 supercab pickup, H.D. 1/2-ton, 8' bed, 3-sp., 6 cyl., burns regular, \$4695. Williams, 264-4105.
- '77 MGB, red, 9000 miles, whitewalls, AM/FM, 8-track stereo, luggage rack, \$5300. Wicker, 883-7775.
- BIKES: dirt bike w/cross bar pad, goose neck pad, frame pad, knobby tires, Motor Cross handlebars, astubular front forks, \$35; Man's 10-sp., \$40. Shipley, 298-2433.
- MEN'S SCHWINN varsity 10-sp. w/chrome fenders and generator lights. Mahn, 883-4767 after 5 p.m.
- '77 CUSTOM Nitro-methane drag bike w/arctic cat trailer, east coast winner, Honda 350 engine, best offer. Manley, 265-2514.
- '75 SUZUKI, GT380, Windjammer III fairing, backrest, luggage rack, \$750. Paul, 296-6500 after 5 p.m.
- '74 AUDI 100LS, AT, AC, AM/FM stereo, 55,000 mi., \$2750. King, 299-9184.
- '65 CORVETTE roadster, 350 CID, 4-sp., custom paint, removeable hard-top, new tires, sportwheels, luggage rack, AM/FM radio, \$5000. Daut, 255-2529.
- '74 VOLVO 164E, AT, AC, PS, new Michelins, AM/FM radio. Green, 865-6686.
- '75 MARK IV, full power, low miles, \$7500. Perryman, 294-6113.
- '69 MUSTANG convertible, new paint, top, upholstery, \$2500 or offer. Hymes, 243-4198.
- '75 BULTACO Alpina 350 dirt and trail cycle, street legal. Seidner, 256-9417.
- '71 KAWASAKI 500 street bike. Angel, 299-4615 evenings.
- '69 PONTIAC wagon, 75,000 mi., PS, PB, AC, power tailgate, \$1100 or offer or trade. Liguori, 256-3613.

- '70 CAMARO, V8, AT, AC, PS, PB. Castellano, 265-8219.
- '73 T-BIRD, AT, AC, AM/FM 8-track, full power, tilt steering wheel, cruise control, new battery, \$3000. Casaus, 821-0981 after 5 p.m.
- '73 HONDA 500 CB, full dressed w/Windjammer SS fairing, lowers, bags, luggage rack, \$900. Claude, 268-2777.
- '77 CHEV 3/4-ton 4X4 pickup, Silverado, PS, PB, AC, dual tanks, 13,000 miles, \$7195. Johnston, 869-3196.
- VW RABBIT, 4 dr., AM/FM, stereo tape, regular gas, consider older car in trade, \$2450. Atkins, 298-5762.
- '61 FALCON SW, 4-dr., \$275; '70 Honda 175, 6000 mi., \$300. Arning, 256-9229.
- '71 PLYMOUTH Satellite wagon, blue, AT, PS, radio, heater, AC, luggage rack, 318 CID engine. O'Connor, 292-0592.
- '68 DODGE window van, new tires, some built-in camping gear, \$1900. Scranton, 299-4902.
- CAMPING TRAILER, sleeps six, butane stove, water, sink, two spare tires & wheels, \$500. Day, 881-2664.
- BOY'S BIKE, 24" wheels, \$17. Gerwin, 881-0028.
- '75 CHEVY 4X4 1-ton van, PS, PB, sunroof, dual tanks, dual bat, CB, \$6000. Thomas, 281-5332.
- '64 FORD 1/2-ton pickup, new engine, beefed up suspension, new brake drums & shoes. Lucero, 242-2012.
- '70 MAVERICK, 6 cyl., 3-sp., w/AC, or '71 VEGA wagon w/steel sleeved engine. Dees, 869-6949.
- '71 FORD LTD, AC, PS, PB, radio, new tires, paint, upholstery, battery. Miller, 299-4331 or 255-8751.
- '73 FORD MAVERICK Grabber, V8, AT, PS, radio, \$1450 or offer. Headrick, 299-0119 after 6 p.m.
- '74 DATSUN Pickup w/camper shell and boot, 4-speed, \$2100. Falacy, 293-2517.
- FIFTH SHARE in '66 Cessna Skymaster, 6 place, 160KTS cruise, full IFR, autopilot, \$5400. Vigil, 265-6691 anytime.
- '64 CHEVELLE Malibu SS, 2-dr., AT, PS, AC, one owner. Johnson, 298-0296.

FOR RENT

- 3 BDR HOUSE, partially furnished, fully carpeted, new stove & refrig, 2 miles from Eubank gate. Andrews, 255-7159 or 256-7328.
- 1 BDR APT, unfurnished, carpet, drapes, stove, refrig, laundry facilities and lighted parking, no pets, 544 Charleston S.E. Montoya, 255-8437.

WANTED

- ASSISTANT for pouring ready-mix concrete pad, available abt. 2 hrs. on weekday morning. Miyoshi, 821-9118.
- EXERCYCLE, stationary bike for exercise. Stump, 898-2546.
- ELECTRONIC TECHNICIAN to repair Kenwood stereo receiver/amplifier. Gonzales, 836-0224.
- CHEVY RIMS, 15", 6-hole. Sisneros, 344-3864.
- 5 GAL (20-lb) propane tank. Sherwood, 299-2169.
- DOG HOUSE for large dog ASAP. Roybal, 299-0938.
- PRIVATE TUTOR for conversational Italian during lunch break and/or 1 eve/wk, fee negotiable. Spellman, Org. 3155 or 243-6455.
- GRAND CANYON transportation or drive my car north to south rim between Oct. 26 & Oct. 28. Ewing, 298-1404.
- BJ COUNT strategists interested in forming study group. Cochrell, 298-2068.
- CARPOOLER from Paradise Hills or Rio Rancho. Arnold, 898-1467 after 5:30 p.m.

LOST AND FOUND

- LOST — chain link bracelet (14k gold); gold Timex; 2-Loop gold earring for pierced ear; trifocals in brown leather case.
- FOUND — bifocal black frame glasses, black carrying case; man's gold wedding band; book "The Magic of Thinking Big"; gray frame bifocal glasses; white/silver key #E45132; black lunchbox with "Thermal" thermos; brass key #HL33; 9 keys on ring; gold-colored bracelet; small piece of turquoise. LOST AND FOUND, Bldg. 832, 264-1657.

REAL ESTATE

- TRI-LEVEL IN NE, 4 bdr., den w/fp, landscape, sprinklers front & back, fully carpeted, 4804 Bach Ct. NE, \$65,900. Novak, 293-3653.

Coronado Club Activities

Go Anytime To London

TONIGHT'S HAPPY HOUR features veal cordon bleu on the buffet, Shalako on the bandstand. Happy Hour next Friday will see the return of Yolanda and La Ultima to the bandstand, the club's famous baron of beef to the buffet spread. Call 265-6791 by Wednesday to reserve Friday buffet tickets.

SINGLES MINGLE on Saturday, Oct. 21 starting at 8 p.m. in the El Dorado room. Dancing, munching goodies and entertainment by belly dancer Faye Joy are part of the program. Singles also wing it to Las Vegas for three days, two nights Nov. 10-12 with the Castaways as headquarters. The package, with many freebies, costs \$164 (dbl) or \$192 (single) and must be paid by Oct. 17. Call Hazlet Edmonds, 4-9481, for more info.

TICKET DEADLINE for Oktoberfest is Oct. 21. The event (scheduled Oct. 28) includes a fantastic German food spread, entertainment by International Folk Dancers and music for dancing by Der Polka Schlingels. Pick up your tickets at the Club office — \$6.50 for members, \$8 for guests.

TEENAGERS should enjoy a disco event Saturday, Oct. 21, from 8 to 11. Member parents must pick up tickets at the Club office.

TRAVEL — Pre-trip meeting for Mazatlan travelers is set Tuesday, Oct. 17, at 7:30. The Mazatlan package — seven nights at the Playa Mazatlan with a Fiesta night and a cocktail party — is still open. Call the Club office (265-6791) for more info.

The Club announced in this month's calendar a "go as you please" trip to London for one or two weeks any time between now and May 1979. The package includes round trip (from Dallas) air fare, vouchers for accommodations in THF hotels, breakfasts, and either a rental car or Brit-Rail pass. Prices



FASHIONS for ski slopes will be modeled at a Ski Club meeting Oct. 24 by Barbara McHaffie (5112) and Jak Strascina (1472). Also, the word on Purgatory will be given by Paul Souder (4362) while some lucky member wins a pair of skis. Free tickets to the Salomon Film Festival (set Oct. 17 at Popejoy) are available at Mountain Sports, the outfit providing the fashion outfits.

are \$499 (dbl.) for seven days, \$699 (dbl.) for 14 days.

C-CLUB JUNIOR BOWLERS could still use a few more players. Youngsters through high school age are eligible to join. Call Ciss Kelly, 4-6989, or Charlie Kaspar, 4-1496, for more info. The group bowls Saturday mornings at San Mateo Lanes.

LOBO BUSES to all home basketball games will leave the Club 30 minutes prior to game time. It beats fighting traffic. Season ride tickets are \$16.80 for 15 games. Call 265-6791 to reserve your seat.

UPCOMING EVENTS — Kids Halloween Party, House of Horror, Oct. 31; Singles Mingle Nov. 3.

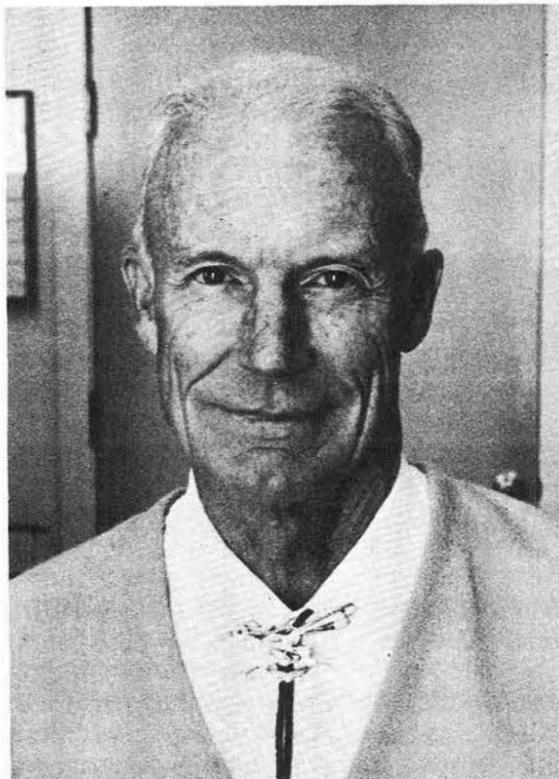
FAA Offers Air Traffic Course

General aviation and student pilots interested in the principles of air traffic control are invited to enroll in the FAA-sponsored "Operation Rain Check." This free, nine-hour course will meet for three evenings, 7-10 p.m., at the FAA Air Route Traffic Control Center, beginning Oct. 17. All facets of air traffic control, including radar services, flight plan processing, and control of instrument flight rule traffic will be discussed. Participants will sit at a radarscope at the Center with a controller and observe actual control of live traffic.

Applications for the course may be obtained at most airports or by calling the FAA Air Route Traffic Control Center, 821-2020, ext. 236. The Center is located at 6900 Los Angeles Drive NE.



Retiring



Oren Worden (1213)



Elmer Kraft (9582)