

A Solar Community



LAB NEWS

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

New Energy Source — Tapping the Sun

A Solar Community is a new concept in the use of the sun's energy as an electrical and heating source for a residential and small business community. The concept grew out of studies of solar energy which have been underway in Exploratory Projects Division 5712 (with support from other organizations) since last summer. The concept is new in that the proposed system is designed to provide for each of a community's energy needs — electricity, heating, air conditioning, and hot water. Other proposed systems provide either electricity or heating/cooling, but not both.

A solar community would be built around a series of collectors located in the center of the area, perhaps, for example, on the roof of a covered parking lot. These collectors would absorb the sun's heat and use it to heat water which would be stored underground in insulated tanks. The energy in the heated water would be used to drive turboelectric generators, operate air conditioners, and meet space heating and hot water requirements.

"Our studies indicate that solar power could satisfy 62 percent of an Albuquerque subdivision's needs, with costs running about 20 percent more than the present fossil fuel expense for an equivalent amount of energy," says Bob Stromberg, division supervisor. "At this point the concept appears sound, and we're defining the area in which Sandia may

be able to help in ameliorating the nation's energy problem."

Sandia proposes to apply to the solar energy problem the kind of overall systems approach that has been used successfully with major weapons programs. Under this approach, the entire solar community energy system is being studied and each subsystem must be designed to maximize the performance of the system as a whole.

Such an approach indicates that a solar community could feasibly be as small as 80 units — houses, apartments, small businesses — or as large as 1000. Solar power would be used for all its energy needs except during extended cloudy periods; then a conventional fossil-fueled system would take over. Albuquerque's climate, however, makes it among the best locations in the country for a pilot solar community — one which could be used to test the concept thoroughly and undergo the improvements which would make such communities feasible elsewhere in the U.S.

The systems approach on this program utilizes existing technology — no major breakthroughs are necessary for its success. The most cost effective values found to date suggest the following arrangement of the various subsystems. Cylindrical collectors would absorb heat from the sun in such a way as to raise the temperature of the water within to about 500°F. The heated water would be

stored in insulated underground tanks. It would then be used to heat high molecular weight fluids — iso-butane or n-pentane, for example — which would drive the turbines that generate electricity.

The exhaust heat from the turbines would not be wasted; it would heat water in a second set of tanks to approximately 200°. This water would then be pumped to the individual units for use in air conditioners, as hot water, and as a space heating source.

The systems approach indicates that temperatures in the neighborhood of 450° are preferable to the 1000° used in most power plants: turbines operating at the lower temperatures are not as efficient, but the loss is more than offset by a saving in the number of collectors, the major cost in any solar energy system.

The systems approach also suggests lower than usual temperatures for the air conditioning subsystem: air conditioners would utilize the cooling principle of the once-common Servel refrigerators — absorption of heat. Given the surplus of hot water, they are preferable, in terms of the system as a whole, to compressor-type units.

"A lot needs to be done," says Bob, "but the direction we're heading appears more cost effective than other solar energy systems. Ours utilizes the energy available to the fullest possible extent. We like it." •bh

Credit Union Reporter



by *Bill Prekker*
Chairman
Education Committee

Traveler's Cheques

The Credit Union is now providing members with Bank of America Traveler's Cheques. The cheques come in denominations of \$10, \$20, \$50 and \$100. No service charge will be made for these cheques.

New Director

At the April board meeting, the resignation of Bill Prekker from the Board of Directors was accepted. Bill Garcia (3321) has been appointed to fill this unexpired term on the board until the next annual meeting.

Interested in Flying?

The Board of Directors at its April meeting approved the acceptance of airplanes as collateral for loans. Interest rates have been set at 9.6% per year for new and one-year-old aircraft, and 10.8% per year for aircraft older than one year. Loan values are 75% of the retail price on new aircraft and Blue Book wholesale on all used aircraft, with a maximum repayment period of five years. Proof of insurance is required, and all insurance policies must contain a Breach of Warranty provision. If you're interested in picking up that Lear jet, see your Credit Union for financing.

Business Hours

Just a reminder to members that the Credit Union doors are open for business from 8 a.m. to 3 p.m.; the loan department closes at 2 p.m. Thirty minute lunch periods are observed in shifts so that the Credit Union can stay in full operation during the noon hour. Our security policy stipulates that the doors be locked at 3 p.m., but if an emergency arises, a phone call can be made to the Credit Union to get in after 3 p.m. Please try to observe established office hours.

Ticket Drawings

For the summer sports enthusiasts, the Credit Union has six box seats for each Albuquerque Dukes home baseball game and 10 seats to each of the six home games of the

new Albuquerque Thunderbirds professional football team. These tickets will be given away to the winners whose account numbers are drawn by random selection on the computer (two tickets to each winner). For Livermore members we have two box seats to each of the Oakland Athletics home games and later will have Oakland Raiders tickets.

Federal Insured Student Loan Program

The Credit Union has made application for and has been approved as a lender under the Federal Insured Student Loan Program. It will take a little time to work out all the details as to qualifications, limitations, repayment periods, forms, etc. Hopefully, we will be all set to go on this program by July 1 and will cover it in some detail in the next Credit Union Reporter.

* * * *

CU Bulletin Board

Meat Price Ceilings — Those price lists posted above meat counters have a purpose. The lists identify each cut of meat and give the highest price at which it may be legally sold. Each ceiling price represents the highest price at (or above) which at least 10 percent of a given meat item was priced in the 30 days preceding March 28, 1973. The rather involved calculations were verified by the Internal Revenue Service, and the IRS is currently monitoring meat outlets to assure compliance with the Executive Order. Nevertheless, the wise consumer would do well to check purchase prices against the ceilings. If the price being charged is higher, return it to the case or buy it, but provide the local IRS office (at 843-3371) with particulars.

Labs Host at Explosives Meet

Sandia Laboratories will host the Explosive Processing Committee Meeting in Albuquerque, June 5-7, 1973. DOD and AEC representatives will participate. The Symposium brings together experts with diversified experience in the processing of explosives and provides an opportunity for the exchange of technical information and processing data. Formal papers by members of the committee and by selected Sandia authors who are associated with explosives will be presented. Physical and chemical properties of new compositions, processing methods of explosives from raw materials to finished products, equipment characteristics and safety considerations will also be discussed.

Call Robert Buxton, Initiating and Destruct Components Division 2514, extension 4402 or 3778 for further information.

Variable Annuity Unit Value

June	1.691
May	1.755
Average 1972	1.737

SAO Manager To New Post



Laddie Otoski, manager of the AEC's Sandia Area Office since 1964, will succeed Charles McNeely as Assistant Manager for Administration at ALO. Mr. McNeely is retiring from the government after 42 years of service.

Mr. Otoski's government service dates from 1933 and includes work with the Civil Works Administration, Works Project Administration, and the Federal Works Agency before he joined the AEC at Los Alamos in 1948 as a budget analyst. In 1953, he became director of the ALO Budget Division, and in 1962 was appointed Deputy Assistant Manager for Administration.

Robert Scott, director of ALO's Budget Division, succeeds Mr. Otoski as manager of the Sandia Area Office.

Supervisory Appointments



KENNETH HYKES to supervisor Electrical Section 7511-4, effective May 1.

Ken came to Sandia in February 1958 to help implement a preventive maintenance program. He later transferred to the electrical construction inspection group. Before joining the Labs, Ken worked for 20 years as chief engineer for Allied Purchasing in Akron, Ohio.

During WWII, he served in the U.S. Navy, beginning with the invasion of Casablanca in 1942 and ending up in Japan in 1945. Ken has done work in electrical engineering at Akron University and UNM. He is a member of the Albuquerque Volunteer Fire Department and spends his leisure time in cabinetmaking, woodworking, fishing and hunting.

Ken and his wife Dorothy have a married daughter, and a son and daughter living at home. They live at 8039 Aspen N.E.

* * *



KENNETH HARP-ER to supervisor of Buildings & Facilities Design Division II, 7543, effective May 1. Since joining the Labs as a design engineer in June 1961, Ken has worked with this division. He had worked as a structural

engineer on the Bomark program at Boeing Aircraft in Seattle before coming to Sandia.

Ken has a BS in civil engineering from Wichita State University and, in 1967, was awarded his MS degree, earned under Sandia's Educational Aids Program, from UNM. He served in the Air Force from '58-'61.

Ken is a member of the American Institute of Plant Engineers, a past member of the board of directors of the Albuquerque Soaring Club, and a member of the Soaring Society of America. Last summer he served as a crew member for SSA's national meet. Ken likes to ski and is also active with Little League baseball and football.

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Editorial offices in Albuquerque, N.M.

Area 505 264-1053

ZIP 87115

In Livermore Area 415 455-2111

john shunny is editor

&

don graham ass't. editor

bruce hawkinson writes

as does norma taylor while

bill laskar takes/makes pictures

&

in livermore lorena schneider does all

LIVERMORE NEWS

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LIVERMORE LABORATORIES

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Jack Dini Appointed To AES Research Board

Jack Dini of Metallurgy Division 8312 has been appointed to a three-year term on the Research Board of the American Electroplater's Society. Through the nine-member board, the AES sponsors funded research at various universities and firms to further the fundamental knowledge of electroplating and metal finishing. The board's responsibilities include supervising research projects, selecting new projects, budgeting and approving all research publications.

A recipient of the AES J.J. Hanney Memorial Paper Award in 1968, Jack most recently completed a two-year term as chairman of the AES Books and Symposia Committee.

Since joining Sandia/Livermore in 1962, Jack has been involved in research and development primarily in electroplating, electroforming and printed circuits. Two years ago, he was elected a Fellow of the British Institute of Metal Finishing, an honor awarded to those who have made a marked contribution to the science or practice of metal finishing and have established a reputation in the field.

Sympathy

To John Anderson (8166) on the death of his brother in Ely, Nev., April 9.

To Vivian Lenz (8421) on the death of her father in Fremont, April 22.

To Art McMullen (8183) on the death of his father-in-law in Clinton, Okla., April 17.

To Barbara Farshler (8442) on the death of her father in Livermore, May 7.

Take Note

The "Rusty Five" team, captained by Paula Neighbors (8441), took first place in the Sandia Mixed Handicap Bowling League's winter competition after a roll-off event with the "Polly's Plotters" team, captained by Jan Inzerilla (8442).

Sandia men taking individual awards were Paul Dominguez (8161) for his high-scratch game of 277; Don Knape (a former Sandian) for high-handicap game of 264; Tom Imler (husband of Chris, 8440) for high-scratch series, 647; and Jim Swisher (8313) for high handicap series, 686. Bert Barker (8442) had the most improved average.

For the Sandia women, honors went to Paul Dominguez' wife Betty for her high-scratch game of 213; Terry St. Hilaire (wife of Bob, 8155) for high-handicap game, 253; Paula Neighbors for high-scratch series, 607; Mary O'Shea (8266) for high-handicap series, 669; and Cathy Imhoff (8433) for the most improved game.

* * *

In the recent local election, Jim Ackerman (8213) won his bid for election to a two-year term on the Sunol District School Board. He was one of three candidates filing for two vacancies. Jim has been active in the community, including especially the 4H organization. Since joining Sandia/Livermore in 1966, he has worked as a reclamation stockkeeper, computer scheduler and operator, and in stock analysis. Currently he is a plant property investigator in the Accounting, Budget and Financial Division. Before his Sandia employment, he was manager of a group of drug stores in the Bay Area.

Retiring



Ted Payne (8214)



Ray Raty(8267)

Congratulations

Mr. and Mrs. Steve Gray (8342), a son, Christian Michael, April 6.

Mr. and Mrs. Dave Ottesen (8313), a daughter, Rebecca Ann, April 28.

Mr. and Mrs. Monte Nichols (8314), a daughter, Linda Marie, April 27.

Mr. and Mrs. Pete Dean (8265), a son, David Richard, April 30.



ANNUAL BLOOD DONATIONS — 106 pints were donated recently by Sandians, 77 to the Sandia Blood Bank, 19 to Kaiser Health Care Plan and 10 individually specified.



BUY BONDS is the message of these Sandians — Bob McIntosh, Dorothy Mannahan, President Sparks, Trosie Stallard, and Bob Velasquez.

Take Stock In America— Bonds Are For Everyone

Next week Sandia's Savings Bond drive begins. Every employee will be contacted about either increasing his or her present allotment to Bonds, or about enrolling in the Payroll Savings plan if not now enrolled. These Sandians expressed their views about buying Bonds.

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MORGAN SPARKS (1). "The Department of the Treasury has again called upon business, industry and labor to join in the nationwide annual Savings Bonds campaign. Inflation is still causing concern and the international monetary situation is still in flux, making it all the more important that our national economy remain strong. The Savings Bonds program helps in those objectives and helps our country manage the national debt.

"I am strongly in favor of the Savings Bonds program, not only because of the national interest but because of its value to all who participate. It is an excellent way to save regularly, systematically, prudently, with complete safety. I hope each of you will join the Savings Bonds Committee in taking a new look at your own position as far as Bonds are concerned, and see if you don't agree that you should be taking advantage of this plan. And if you are already a subscriber, why not consider increasing your allotment? You will

be glad you did."

* * * * *

DOROTHY MANNAHAN (4734). "I work on the theory 'you can't spend it if you don't have it,' and for the years I've been buying Bonds, it's a theory that's worked very well. Some people say that you're better off putting your money in the Credit Union, but even for small investors some diversity is a good thing and, besides, Bonds have some built-in tax advantages that shouldn't be overlooked. And, if you're looking for a gift for a young person, a Savings Bond is universally appreciated."

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TROSIE STALLARD (9541). "I think of Payroll Savings as a service that Sandia offers to me — to make it easy for me to save. It's like buying something on an installment plan. And Payroll Savings is *not* a deduction — the Savings Bond is part of your take-home pay, and it grows with interest. You hardly miss the money that's set aside, and a stack of Bonds is the best kind of security."

* * * * *

BOB VELASQUEZ (7323). "I like the tax savings I gain with money put aside in Bonds

for my children's educational expenses. When you purchase E Bonds in your child's name — listing yourself as beneficiary — the accrued interest can be free from Federal tax when the Bonds are cashed to meet college expenses. And, if your Bonds are lost, stolen, damaged, or destroyed, the Treasury replaces them free of charge. Bonds are a good deal."

* * * * *

BOB MCINTOSH (4116). "I'm single, 30, make a good salary at Sandia, and find myself in a pretty high tax bracket. I'm also conservative when it comes to money matters. It didn't take me too long to figure out that over the long haul I'd have to invest my money in something returning on the order of nine percent to get the return I get on Savings Bonds — it's principally a matter of taking advantage of the tax breaks you get with Bonds. By being able to defer payment on the profit on Bonds until a time of reduced income — such as when you are retired — the Bonds' rate of return is effectively increased far beyond the stated 5 1/2%. (Ed. Note — Bob McIntosh practices what he preaches — his annual Bond purchases make him number 1 at the Labs. Bob is responsible for the tables at right which compare Savings Bonds with investment at 6% interest according to different tax brackets.)

FUN & GAMES

The Sandia Labs Intramural "A" League Volleyball championship was won by team members Don Bauder (4753), Dave Skogmo (2112), Emery Chavez (7632), Bob Workhoven (9342), Mike O'Neal (2414), Jack Houston (5114), Al Asselmeier (2111) and Rich Palmer (5214).

* * * *

The Coronado Duplicate Bridge Club is sponsoring an individual's tournament, June 5, 7 p.m., at the Coronado Club. For reservations, call Ralph Hopkins on 268-0885 by June 3.

* * * *

The Sandia Labs Tennis Association tournaments were held last month, with these results: Tom Kerschen (4731) defeated Bill Poole (9441) for the singles title. In the consolation bracket of the singles event John Walter (2326) defeated Bill Hereford (9425).

Winning the doubles tournament was the team of Charlie Chavez (7333) and Bob Scipes (4123). Their opponents were John

McKiernan (1642) and Don Johnson (2432). In the consolation bracket Harry Weaver (5154) and his partner Paul Percy (5132) defeated Art Hardeman (4116) and Skip McGee (4113).

The Sandia Golf Association Weekday Special Golf Tournament was held at Rio Rancho Golf and Country Club on May 18, with 116 members participating in the two-man best-ball event. Don McBride (5628) and Q. Simon (ret.) won the first flight with a net 63; second flight winners were J. Stang (ret.) and Jim Hann (1522) with 66; third flight — Ed Domme (2632) and George Horne (2634) with 63; and fourth flight — Ted Garcia and Ben Chavez (both 2631) with 59. Ivars Gals and Jim Davis (both 1254) won the low gross award with a 73.

The next tournament is the SGA open held at Arroyo del Oso and UNM on June 2 and 3. Al Asselmeier (2111) has the details.

Congratulations

To Mr. and Mrs. Ron Jacobson (5133), a son, Jake Edward, May 11.

To Mr. and Mrs. Donald Goodrich (7133), a daughter, Diana Jean, April 30.

'Harrison Issue' To Be Published in August

Charles Harrison, Jr. (2126), could hold something of a record in the area of published technical papers. The editor of IEEE Transactions on ELECTROMAGNETIC COMPATIBILITY wrote to Charles, telling him that the August 1973 issue of the publication could easily be called "the Harrison issue." Appearing in that issue will be nine papers and correspondence items authored or co-authored by Charles.

They are: "Response of a Terminated Transmission Line Excited by a Plane Wave Field for Arbitrary Angles of Incidence"; "Multiconductor Antenna Transmission Lines with Arbitrarily Positioned Load Impedances in an Incident Field"; "On the Excitation of a Coaxial Line through a Small Aperture in the Sheath"; "Receiving Characteristics of Impedance Loaded Slot Configurations"; "The Use of the Lorentz Reciprocity Theorem to Prove Equality Between the Open Circuit Voltage of a Receiving Dipole and Monopole"; "On the Transformation of a Definite Integral Occurring in Antenna and Transmission Line Theory"; "Load Currents in Missile Circuits Excited by a Plane Polarized Field"; "Note Regarding the Propagation of Electromagnetic Fields Through Slots in Missiles"; and "Comments on 'Shielding Performance of Metallic Cylinders' by D. Schieber."

Series E Bonds Vs Investment at 6%

By Tax Bracket

(Assumption: Bonds are held long-term so that tax payment on interest is deferred until a period of lower income, e.g., at retirement. Only Federal — not State — tax is then paid on Bond interest.)

Year		Beginning Principal	Annual Interest	Tax On Interest	Net Interest	End Of Year Principal	
1	E Bonds	\$18.75	.30	deferred	.30	19.05*	
	Investments at 6% (compounded quarterly):						
	Tax Bracket	22%	18.75	1.15	.25	.90	19.65
		24%	18.75	1.15	.28	.87	19.62
		26%	18.75	1.15	.30	.85	19.60
		28%	18.75	1.15	.32	.83	19.58
		30%	18.75	1.15	.34	.80	19.55
6	E Bonds	23.16	1.94	def.	1.94	25.10*	
	Investments at 6%:						
	Tax Bracket	22%	23.68	1.45	.32	1.13	24.81
		24%	23.54	1.44	.35	1.10	24.64
		26%	23.41	1.43	.37	1.06	24.47
		28%	23.27	1.43	.40	1.03	24.30
		30%	23.13	1.42	.43	.99	24.13
10	E Bonds	29.54	1.65	def.	1.65	31.18*	
	Investments at 6%:						
	Tax Bracket	22%	28.55	1.75	.38	1.36	29.91
		24%	28.25	1.73	.42	1.32	29.56
		26%	27.95	1.71	.45	1.27	29.22
		28%	27.66	1.70	.47	1.22	28.88
		30%	27.37	1.68	.50	1.17	28.54
15	E Bonds	38.74	2.16	def.	2.16	40.90*	
	Investments at 6%:						
	Tax Bracket	22%	36.06	2.21	.49	1.72	37.78
		24%	35.47	2.17	.52	1.65	37.12
		26%	34.89	2.14	.56	1.58	36.48
		28%	34.32	2.10	.59	1.51	35.84
		30%	33.76	2.07	.62	1.45	35.21
20	E Bonds	50.81	2.83	def.	2.83	53.64*	
	Investments at 6%:						
	Tax Bracket	22%	45.54	2.79	.61	2.18	47.72
		24%	44.54	2.73	.66	2.07	46.61
		26%	43.56	2.67	.69	1.98	45.53
		28%	42.60	2.61	.73	1.88	44.48
		30%	41.66	2.55	.77	1.79	43.44

*If you cash Bonds, this sum should be discounted by the amount of taxes appropriate to your tax bracket.

Events Calendar

- June 1-3 — San Felipe de Neri Church Fiesta, Old Town Plaza.
- June 2 — Sandia Bike Ass'n., bike ride to demonstrate support for Rio Grande bikeway, Zoo, 9 a.m., destination Corrales Bridge.
- June 2 — N.M. Mt. Club, San Pedro Parks, Gulf Mart, 7:30 p.m.
- June 2-3 — Fantasy Mountain Fair, by Mountain Craft & Soiree Society at the Thunderbird in Placitas.
- June 3 — River Runners, Taos Junction Bridge to Pilar, call Dick Rachkowski, 268-0928.
- June 3 — Sandia Bike Ass'n., tour to Los Lunas, meet at Stadium and Univ. Blvd. SE, 8 a.m.
- June 3 — N.M. Mt. Club, Cerro Blanco — Bosque Peak, Western Skies, 7:30 a.m.
- June 3, 6, 10, 13 — June Music Festival, Fine Arts Quartet presenting cycle of Bartok string quartets, Albuquerque Little Theater, 8:15 p.m.
- June 7-10, 14-17 — Corrales Adobe Theater, "The Fantasticks," 8:30 p.m.
- June 8 — Albuquerque Symphony Orchestra at Duke Stadium, 7 p.m.
- June 8 — Buffalo Dance, Santa Clara Pueblo.
- June 8-10 — "The Curious Savage," summer stock at Fine Arts Learning Center, Univ. of Albuquerque, 8 p.m.
- June 9 — N.M. Mt. Club, Cerro Pedernal, Gulf Mart, 7:30 a.m.
- June 9-10 — The Mime Experiment presents "The Follies of Arlechino," Old Town Plaza, 1 and 7 p.m.
- June 10 — N.M. Mt. Club, Tree Springs flower walk, Western Skies, 9 a.m.
- June 13 — San Antonio Fiesta, San Ildefonso, San Juan, Santa Clara, Taos and Sandia Pueblos.
- June 14-17, 21-24 — Old Town Studio, "Play It Again Sam," 8 p.m.

A Quasi-Ghost Town

Madrid, New Mexico's usual label is ghost town. With reason. Abandoned homes — windows broken, doors swinging, walls that can't remember paint, roofs that no longer protect but simply sag. Every year the piñons creep farther down the hillsides.

But it's not totally abandoned. The outskirts may be empty, but downtown is really very much alive. The filling station, the antique shops, the saloon-restaurant, the coal mine (now a museum) attract a constant stream of visitors and patrons.

Memories of the way it used to be are strong. Nostalgia is the antique shops' stock in trade. The saloon is dim and large — anything but intimate. It was built to accommodate a minefull of hard-talking, hard-drinking, hard-coal men on a Saturday night. Even a good crowd of tourists doesn't fill the vacuum they left behind.

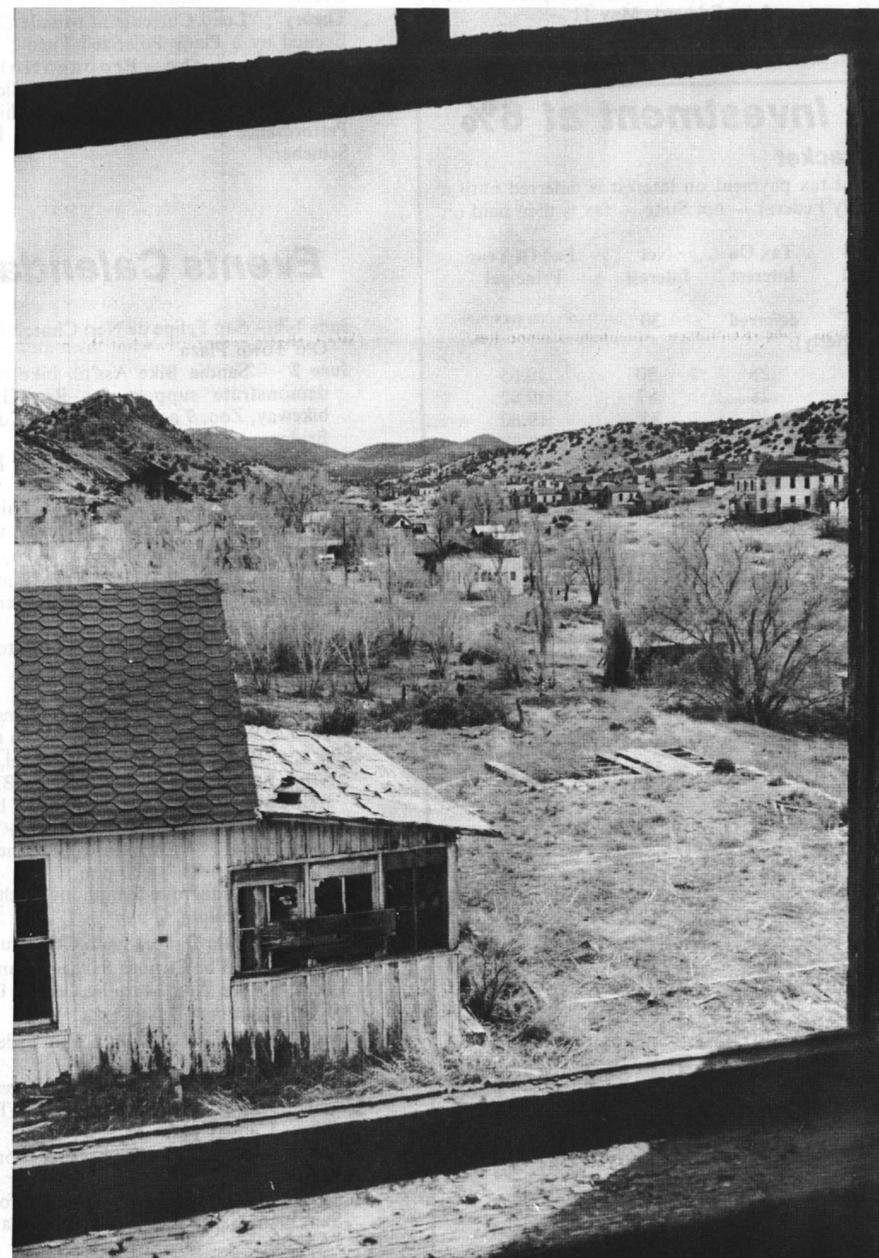
The museum costs 50 cents (kids free). And here the way it used to be is strong

indeed. The visitor wanders among a bewildering array of mining equipment. Much of it was used on the surface; but other pieces were used to work the underground coal seams.

* * *

Mining began in Madrid about 1835, but it was the arrival of the Santa Fe railroad through Glorieta Pass that made commercial production feasible (in 1880 or so). Coal was vital to the new railroad — a spur track from Madrid to the mainline at Waldo made delivery simple.

Madrid was unique in those days: its coal mines produced either anthracite (hard) or bituminous (soft) coal — in fact, the No. 1 mine featured bituminous on its left side, anthracite on its right. Whichever the demand, Madrid could fill it. Production reached a peak in 1928 when 87,000 tons of anthracite and 97,500 tons of bituminous departed Madrid by the trainload.



MADRID: As New Mexico towns go, it was a pretty good size.



HOUSES weren't luxurious, but were adequate and substantial.

Production declined slightly then rose again in the early forties when the remote boys' school in the Jemez Mts. doubled its usual order, then doubled that, doubled it again, and still needed more. "My dad probably knew what was going on (at the place we know now as Los Alamos)," says Joe Huber. His father bought Madrid in 1947, and Joe's recollections are vivid. "I don't think the men did though. They just knew a lot of coal was moving out and that the number of men on-roll was climbing back up to the 750-man peak it had reached in the late twenties."

Just as the arrival of the railroad started it all, the arrival of natural gas after WWII signaled the end. By 1954 the mines were shut down completely. And Madrid went from company town to ghost town.

* * *

In its heyday, Madrid left its mark on New Mexico. From 1920 to 1950 it boasted one of the finest baseball parks in the state. It featured New Mexico's first electrical scoreboard (electricity was cheap — the generator was powered by "bugdust," the fine grains of coal that had little market value). The ballpark was one of the first to sport electric lights for night games. And the Madrid ballclub was one of the saltiest in the area. How could a man swing a pick all day and then play ball — well — at night? Simple. Like many college athletes today, the good ballplayers somehow managed to end up on the softer jobs — no hardrock stuff for them: the reputation of the town was at stake.

Madrid had culture — the Band was known, if not heard, for miles around — and aesthetics too. The Fourth of July celebration was dynamite — literally. Every year the powdermen came blinking out of the mines to rearrange a mountaintop or two as a climax to the fireworks display.

But it's the Christmas decorations that old-timers remember best. The practice began on a small scale in 1922; by the late thirties no New Mexico Christmas season was complete without a trip to Madrid to marvel at the dioramas, wreaths, and decorated piñon — with the whole valley bathed in the light of 40,000 light bulbs. A hundred thousand people used to gape through the town, some by car, some by special train. And reportedly,

some by commercial planes whose pilots just happened to get a bit off course. The lights were turned off for the last time on Dec. 7, 1941.

* * *

Madrid is unique today too. Until last month, all the buildings and all the land (360 acres) were for sale, lock, stock, and specter. The new owner, Fred Ballentine, is a ghost town buff who intends to restore buildings that are structurally sound to their turn-of-the-century condition. And he plans to upgrade the museum so that visitors no longer will spend half their time asking, "Now what was that used for?" If he can get some of the old-timers (like Pete Garcia or John Ochoa) to assist the new curator, he'll end up with a first-rate museum. Ballentine plans a "quality tourist" area which reflects as faithfully as possible Madrid's early period. "Even the eventual 200- to 300-room hotel will be built in 1890's style," he states. He's saying the right things — in fact, he's already stopped calling it MadRID and now says MADrid as the natives do.

So Madrid is on the upswing again — if you want to see it the way it is now, now's the time. • bh



LOCOMOTIVE hauled coal to the mainline.

Letter to the Editor

Dear Editor:

I was a participant in an absolutely ludicrous event at the Coronado Club on the night of Wednesday, May 23rd.

MASTERCARE, which has approximately 2700 Sandia subscribers, is in deep trouble. And about 10 people, other than the 20 who were nominees for the Board of Directors, showed up.

About 10 o'clock, just before we all departed for home, Don Ledden, Administrative Manager of MASTERCARE, gave a speech of righteous indignation. Here's what he had to say to the 2671 Sandians who never showed:

1. I am disappointed that people did not come to the meeting. MASTERCARE is not like an insurance company where you have no access to the Board of Directors. MASTERCARE subscribers can set policy.

Speakers

C.B. Bailey (2642), "Attaining Portability of FORTRAN Programs"; M.R. Scott (2642), "An Initial Value Method for Integral Operators — Kernels Depending on a Parameter"; H.A. Watts (2642), "SOSNLE — Solution of Simultaneous Nonlinear Equations"; R.E. Jones (2642), "A Comparison of the Quadrature Routines ANC6 and QNC7"; F. Biggs (5223), "A Statistical Interpretation of the Use of Smoothing in Data Analysis," Numerical Analysis Special Interest Group Meeting, May 14-16, SLA.

N.J. Magnani (5331), "Acoustic Emission and Stress Corrosion Cracking of U-4 1/2 wt%Nb"; J.F. Gieske (9352) and R.E. Allred (5314), "A Nondestructive Measurement of the Elastic Constants of Unidirectional Borsic Fiber-Reinforced Aluminum Composites," Third International Congress on Experimental Mechanics, May 14-18, Los Angeles.

A. Owyong (5214), "Nonlinear Refractive Index Measurements in Laser Media," Symposium on Damage in Laser Materials, May 15-16, Boulder, Colo.

C.E. Land and W.D. Smith (both 5113), "Ferroelectric Ceramic Surface-Deformation Devices for Image Storage and Display," Society for Information Display for 1973 International Symposium, May 15-17, New York City.

H.C. Monteith (9344), "Computers," five science classes, John Adams Jr. HS, April 2; "Creativity and the Scientist," Science Youth Days Program, April 5-6; "The Great Pyramid of Egypt," First Presbyterian Church, April 15; and "ESP Research in Russia, England and America," Duke City Civitan Club, April 17.

H.D. Sivinski (5250), "The Planetary Search for Extraterrestrial Life," Springer, N.M. High School Honor Society banquet, April 7.

O.L. Wright (7220), "History of Sandia Base," Military Order of World War, April 24, Albuquerque.

E.L. Burgess (5156), "Electric Power For Space," Spring Meeting of the N.M. Institute of Mining and Technology, Sigma Xi Chapter, May 15, Socorro.

J.S. Philbin (5221), "Analysis of the Storage of Reactor Fuel and Other Fissile Materials in the SPR Vault," UNM, Nuclear Engineering Dept., May 7-11, San Cristobal, N.M.

L.P. Robertson (3132) conducted a workshop, "Motivation and Motivational Instruments," N.M. Adult and Continuing Education Ass'n. Conference, May 11-13, Las Cruces, N.M.

R.T. Meyer (5324), "Pulsed Laser Induced Vaporization of Graphites and Carbides," Conference on Mass Spectrometry & Allied Topics, May 20-25, San Francisco.

J.W. Poukey, J.R. Freeman (both 5241) and G. Yonas (5242), "Simulation of Relativistic Electron Beam Diodes"; L.P. Mix, J.G. Kelly, G.W. Kuswa, D.W. Swain (all 5242), and J.N. Olsen (5213), "Plasma Parameters Affecting High-Current Field Emission Diode Properties"; J.G. Kelly, "Generation, Transport and Compression of an Annular Intense Relativistic Electron Beam with Return Current Feedback Through the Cathode"; J.E. Boers (2414), "Digital Computer Simulation of Charged Particle Beams and Electrostatic Lenses," Symposium on Electron, Ion and Laser Beam Technology, May 21-23, Cambridge, Mass.

2. People have to use common sense in seeking medical assistance. While we emphasize the preventive aspects in this program, subscribers must use some judgment as to what help is really needed. Where, previously, a mother used to give her child with a temperature an aspirin and keep watch on the situation, she now rushes the child to a doctor.

3. Both the doctors and the hospitals are receiving only 70% of their billing costs. How would you like to have your salary reduced by 30%? If utilization of the plan continues this way, you will soon be involved one way or the other.

4. Your alternatives: Many doctors may drop out if the future promises them only 70% of their normal income. Or, you face the risk of having your benefits reduced. Or MASTERCARE could possibly go out of business.

5. Subscribers must get involved and find answers to the problems. Utilization has to be such that the program can sustain itself. Those you select as Board Members are going to have a tough job because they are going to have to get you off your collective duffs and into committees to deal with all the problems.

6. How are we supposed to communicate with you? Someone said our error was in sending out the notice of the meeting about three weeks in advance. Mailing is expensive. And if we sent it out later that probably wouldn't have been right either. So what do you think we should do?

Well, that's essentially what the man said. And I'm sitting here pondering why I care — I'm not even a member of MASTERCARE.

Mary Quigley - 3131

Sympathy

To Hugh Howe (7633) on the death of her husband in Albuquerque, April 27.

Deaths

Gordon Marney, a dismantler in Redistribution and Marketing Division 7222, died suddenly May 18. He was 51.

He had worked at the Laboratories since September 1951.

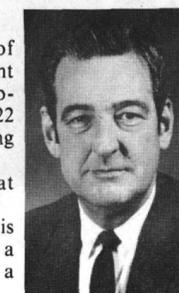
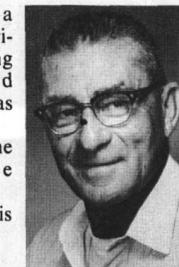
Survivors include his widow and a daughter.

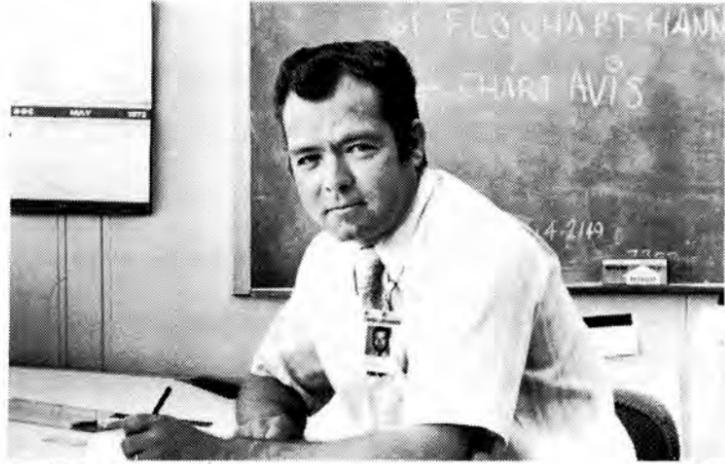
* * * *

Fred Schneider of Materials Development and Mechanical Subcontract Division 7322 died May 19 after a long illness. He was 52.

He had worked at Sandia 27 years.

Survivors include his widow, two sons, a daughter and a granddaughter.





David Barton — 1522

10



Gene Harling — 9400

15

MILEPOSTS

LAB NEWS

June 1973



Jose Ortiz — 2632

10



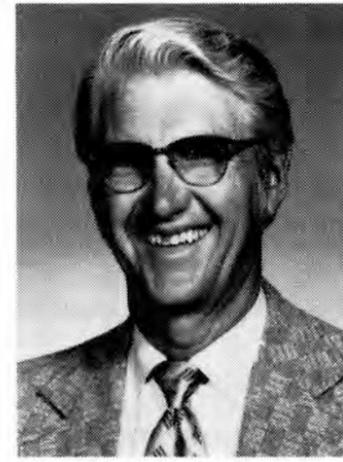
Roy Hay — 7513

15



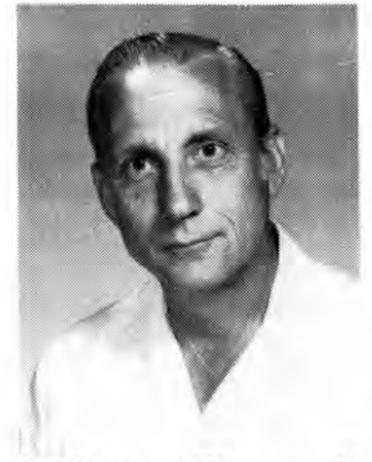
William Harwood — 9515

20



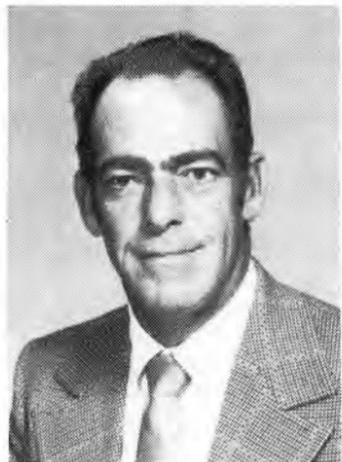
Eugene Carter — 2122

25



Ross Sinkey — 1253

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Jack Marceau — 2134

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Jack Reed — 5644

25



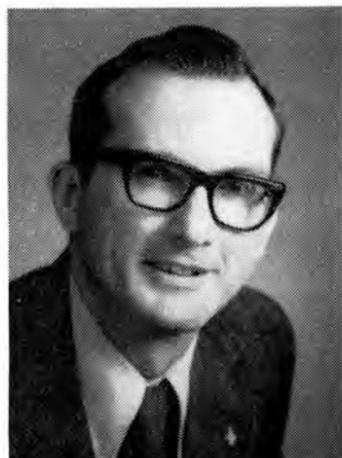
Jay Chamberlin — 9531

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Melvin Brock — 2343

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Don Benton — 8443

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Margaret Boyd — 7331

10



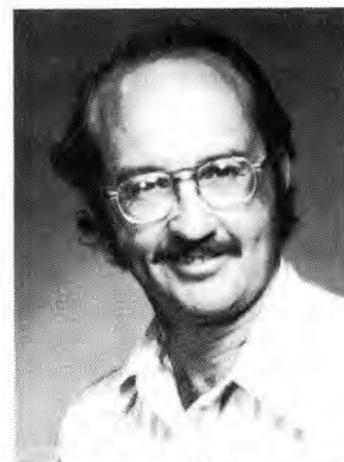
Lynn Zirkle — 8166

10



Bob Ware — 8161

25



Glenn Elliott — 2341

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Jessie Waddles — 7517

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Rupert Byers — 5166

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Ray Beall - 7221 25



Ferd Thome - 8261 15



Harold Short - 8442 15



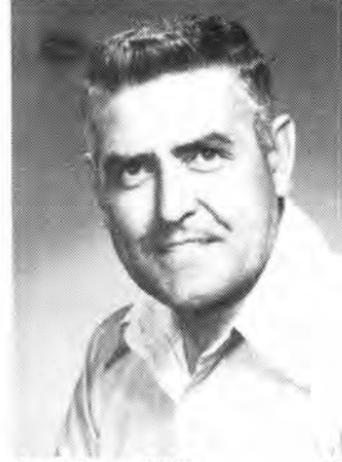
George Treadwell - 5714 20



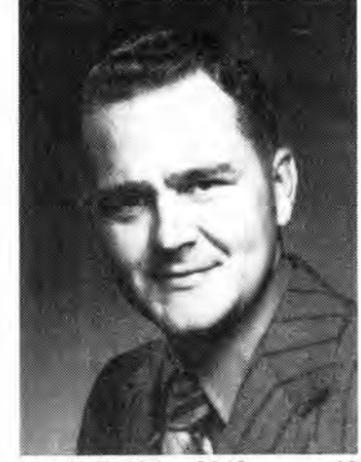
Jim Wright - 8151 15



Leota Hofhert - 3147 20



Joe Salas - 7222 10



Marvin Daniel - 2342 10



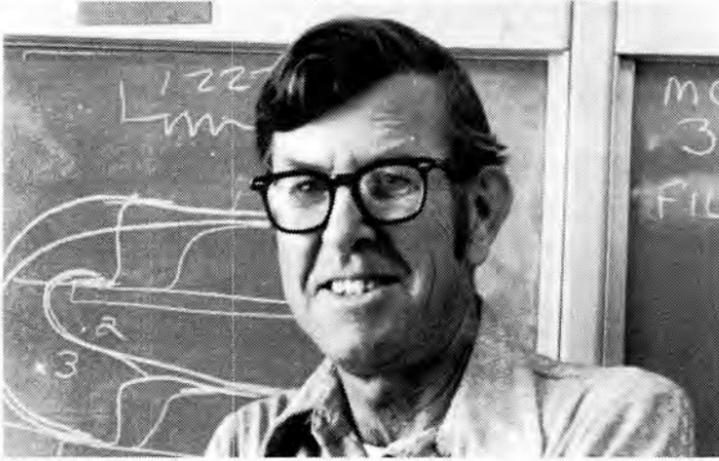
Jack Hubner - 8264 15



Lewis Ellis - 2442 15



Charles O'Keefe - 4251 25



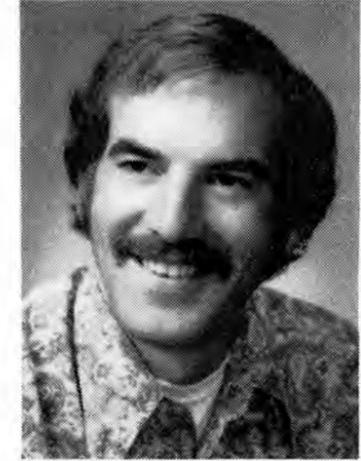
Coy Moss - 2121 15



George Anderson - 8330 20



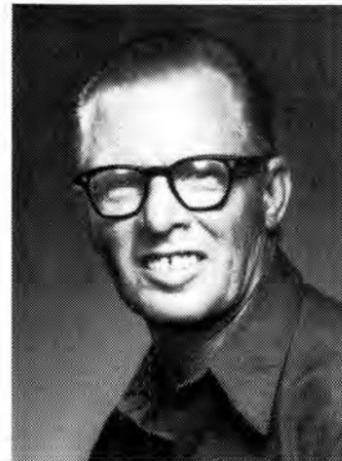
Jim Duggar - 8415 15



Larry Brown - 8333 10



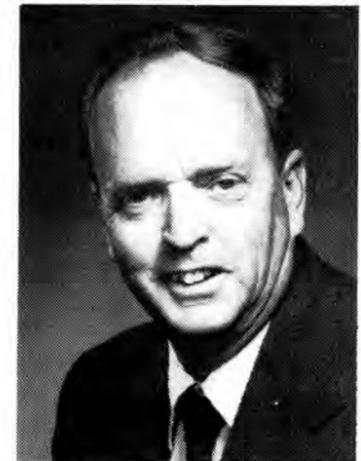
Ernie Gurule - 9343 20



Lewis West - 7518 25



Melvin Smith - 7131 10



Herbert Gentry - 7517 25



SURROUNDED by tons of paper, pressman Ray Garcia discusses job schedules with supervisor Cid Dalin.



SHAWKEET HINDI, head of Photolithographic Section, discusses the best way to reproduce negative copy with Jeff Tingley.

450,000 Impressions Per Week

Sandia's Print Shop

One of the busiest places at Sandia Labs is the Print Shop in the basement of Bldg. 802. Here schedulers, camera operators, negative strippers, platemakers, pressmen and bindery operators produce literally tons of printed material each week. Score is kept by calling each 8 1/2 x 11 page one unit or impression and production averages more than 450,000 impressions weekly.

"The bulk of the material is in the form of technical reports and weapons manuals," says Shawkeet Hindi (3147-1) who shares responsibility for Print Shop operations with Cid Dalin (3147-2). Other "big jobs" are the continuing Management News Briefs, Sandia Bulletins, Organization Change Notices and, on occasion (like right now), the company phone book.

Workhorses of the shop are two large Harris presses and two Davidsons. The Harris presses can handle "signatures" of up to eight

pages (8 1/2 x 11). The Davidsons can print front and back sides of a signature simultaneously. In addition, three 8 1/2 x 11 Multilith presses handle volumes of work at the Rapid Service Center.

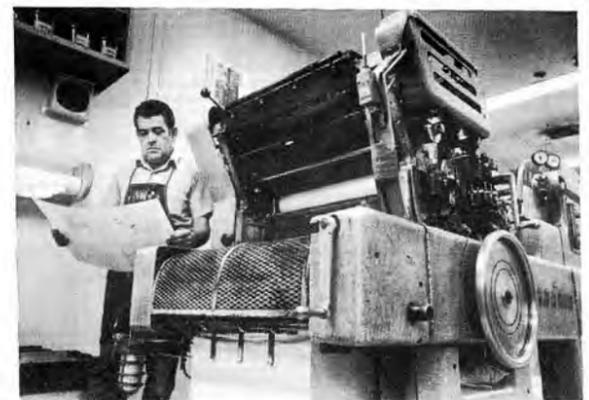
The Rapid Service Center is a duplicating shop specializing in quick production documents needed yesterday. The Center can quickly and inexpensively produce 25 or more copies of documents containing up to 100 pages.

A consulting service is part of the Print Shop operation. Roger Williams helps customers with technical problems (Will this photo reproduce with all this fine detail?). Roger also works with the outside suppliers who print the bulk of color work for Sandia — brochures, posters, etc.

Overall supervision of the Print Shop is under Art Jones (3147). • dg



JOHN CHIFALO, copy camera operator.



FRED PENA operates Harris press.



LOU WIGLEY, JOHN CARTER operate the Macy Collator which assembles eight pages at a time.



LEOTA HOFFERT operates collating machine.



EDITH WORLEY opaques negatives as part of the platemaking process.



BUS PASSES ARE HERE! Connie Rossignol of the Albq Dept. of Transportation, presents Jeff Gammon (7337) with Pass No. 1 in recognition of Jeff's efforts in arranging for passes good on all Sandia Special buses. Red Turner, assistant manager of the Credit Union, has a special interest in the transaction — CU manager Bill Bristol has okayed the CU's selling of the passes to all Sandians. The particulars: 22 rides for \$6; available at the CU from 8 a.m. to 3 p.m.; also available through company mail (send your check made out to "Credit Union" — \$6 for each pass — to Bus Pass, Credit Union); each ride thereafter will cost you one ticket punch; there's no time limit; they're good on Sandia Specials only, not on regular route buses. No more scurrying for exactly 30 cents twice a day!



Bus Notes

Still some red tape — that's all — delaying the start of the Los Lunas special bus. All those who responded to the recent survey will be notified of the start date as soon as possible says Bob Martin (2115), the local honcho.

* * *

The Far East bus route looks good at this point. Some 250 people have said they'd ride a bus at least a couple of days per week. Farrell Perdreauxville (5722) is still tabulating results, but a new route would likely begin north of Montgomery and end up following Chelwood Park Blvd. down to I-40 before heading express for Sandia.

* * *

Within the next week or so, surveys of two areas will determine interest in special bus routes. One, headed by Jim Graham (7146), will check out the South Valley again — this time with a tentative route established. The other, spearheaded by John Southwick (9532), will go to Sandians in the North Ten/Tijeras area.

* * *

Biggest news: bus passes are here! See the presentation of Pass 1 in the picture on the left. Take advantage of a pass. Ride the bus.

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.
 A maximum of 125 ads will be accepted for each issue.

RULES

1. Limit: 20 words
2. One ad per issue per person
3. Must be submitted in writing
4. Use home telephone numbers
5. For Sandia Laboratories and AEC employees only
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

SINGLE CAR GARAGE DOOR, all hardware & wood frame, \$30. Welton, 299-8507.

WALNUT veneer dresser, 3'w x 5'h, \$25. Kjeldgaard, 296-2212 after 5:30.

WATER SKIS and tow rope, \$15; red flagstone. Gholson, 299-2663.

7.65 ARGENTINE Mauser, as issued, \$50 or best offer. Maak, 281-5402.

'72 APACHE MESA solid state camper, blower heat, gas-AC/DC refrig., dbl. gas, 12V battery, other extras. Lerma, 268-0613.

SINGER slant needle model 500A, maple cabinet, \$130. Kelly, 298-6035.

B&W CONSOLE TV, \$25. Rodriguez, 265-5192.

REGISTERED cream colored male toy poodle, 6 mos. old. Barnes, 298-8215.

FRIGIDAIRE frost-proof refrig.-freezer, 14 cu. ft., top freezer, turquoise, \$100 firm. Norris, 255-6926.

FLUTE, Artley Wilkins model, solid silver, orig. cost \$550, sell for \$450 or best offer; Small upright Whirlpool freezer, 12½ cu. ft., \$150. Fisher, 266-2266.

FLYING CLUB MEMBERSHIP, 1965 Cessna Skylane, dual Nav-comms, x-ponder, autopilot, fresh annual, 8-man club, \$1600. Frasier, 299-6933.

WESTINGHOUSE washer & dryer, 6 yrs. old, \$95 for the pair. Johnson, 296-5957.

AUTO MECHANICS heavy-duty 20-ton hydraulic press w/adapters, \$315. Jordan, 255-7000.

'69 WARDS Vacationer tent trailer, sleeps 4, \$395. Harker, 265-7328.

COVER: all weather car cover, fits Corvette, new cost \$42, make offer. Marchi, 299-3653.

TIRES, 5 ea., H78-15 (8:55x15) belted, General Jumbo 780. Burnside, 256-7249 after 5:30.

CHINESE ELM fence posts, 8', 50 cents ea. Sedillo, 877-2422 after 5:30.

LAFAYETTE SK-128 biaxial speaker & walnut finish enclosure, 8 ohms, 25 watts, \$15. Leisher, 281-5258.

12 STRING YAMAHA GUITAR FG 230 w/Victoria hardshell case, strings, strap & capo. Hobbs, 268-6461.

WATER PUMP, 180 gpm, 2hp, 220 vac, 3 ph., 20' hd. Malmstrom, 298-9640.

MEN'S IRONS: new Wilson staff standard, D-3 swing weight, med.-light, regular shaft, No. 2 through pitching wedge, 38½". Durkee, 298-9278.

FENCE POSTS, round cedar, 8', some straight, some crooked, 75 cents ea. or 30 for \$20. Jefferson, 299-1125.

FLOOR MODEL vibrator, \$60. Claassen, 255-4347.

BABY GOODS: crib, playpen, stroller, toys, etc. Easterling, 299-7828.

HOOVER Dial-A-Matic vacuum cleaner. Aronson, 266-0231.

THE GREAT BOOKS w/bookcase, \$295. McMaster, 296-7881.

BUMPER mounted motorcycle carrier, \$17; bamboo fly rod in hard case, \$5. Klett, 298-7892.

MISC. power tools, household

items, new Leroy lettering set. Bayer, 296-8346.

SEARS power lawn mower, 20" rotary, fair condition, grass catcher included, \$15. Freyer-muth, 299-2053.

TRANSPORTATION

MOTORCYCLE, 250cc trail, '68 Montessa Scorpion. Knott, 256-3197.

'68 YAMAHA DT-1 250cc motorcycle, dirt or street, \$325 w/bumper carriers. Magnani, 299-8693.

'70 DODGE pickup, ½-ton, 8' sweepline, air, PS, 318 cid, 4-spd., custom cab, 29,000 miles, below NADA. Valerio, 266-3204.

'71 YAMAHA 250 MX, \$600. Roth, 877-4997.

'69 YAMAHA 250 Enduro, w/extras, \$350 or swap for economy car. Hansche, 296-1387.

'71 KAWASAKI Mach 3 plus extras, \$650. Rodriguez, 265-5192.

'72 RANCHERO GT, 12,000 miles, 351 CI, AT, radio, PS, PB, \$3050. 1309 Las Lomas Rd. NE. Hueter, 842-5482.

'41 DODGE TRUCK, 4-spd. trans. Lucero, 898-3885.

'66 MUSTANG convert., 289 eng., 3-spd. floor shift, new top & recent tune-up. Sly, 1924 Snow Ct. NE, 299-3141.

'72 HONDA CB500; '69 Camaro Z-28. Vick, 299-2949.

'65 OLDSMOBILE Vista-Cruiser, 2 seat, AC, R&H, new front tires, orig. owner, \$500. Warren, 256-1334.

'72 CHEV. Blazer, 4wd, 4 spd., 350 V8, PS, stab, hitch channel & ball, positraction, 14 mpg, 20,000 mi., \$4025. Wallis, 281-5361.

TRAIL BIKES: Yamaha 125 Enduro, 1969; Yamaha 90 En-

duro, 1971; both adult ridden; 1970 Ford window van, ¾ ton, V8, AT, Shane, 296-4430.

1966 MUSTANG convert. 4-spd., 289 4-barrel, practically new, radial tires, \$750. Reed, 299-7425.

1971 VW SQUAREBACK, AM-FM radio, 23 mpg, 25,000 miles, under book, \$1775. Shunny, 265-1620.

1967 FORD ¾-ton pickup, 390 V8, AT, heavy duty suspension & cooling, new tires, \$1500 or best offer. McConnell, 255-2488.

27' DODGE MOTORHOME, AC generator, AC, engine converted for butane & gasoline, sleeps 6, 40,000 miles, \$5800. Rosenberg, 299-3418.

REAL ESTATE

SIPAPU SKI LODGE AREA, 1/3 acre, 150' from Rio Pueblo River, electricity on property, water 30' below. Cockrill, 268-5502.

½ ACRE LOTS, construct a home or move in mobile home, electricity on property, ½ mile east of Peralta, low down, terms. Shuman, 869-2618.

3-BDR. DR, LR fp, cfa, ac, 1530', owner will ref. VA, 10813 Princess Jeanne NE, see anytime. Wetherholt, 299-5736.

WANTED

COMBINATION TRUNDLE BUNK BED. Ebinger, 299-1597.

GIRLS balloon tire bike. Stromberg, 255-6131.

BUY, RENT OR BORROW — service manual for '66 Dodge stn. wgn. Adams, 299-0855.

16" GIRLS BIKE w/wo training wheels. Gottlieb, 298-9859.

HOME FOR DOG, part Dachshund, part Corgy. Janes, 299-7201.

DAYTIME CHILD CARE in our home, in NE heights near Lomas & Tramway. Moss, 296-3877.

USED MANUAL typewriter. Swayze, 268-5222.

FOR RENT

2-BDR., 2-bath, lg. LR w/fp, located in Village of Jemez Springs, \$150/mo. Pritchard, 294-7060.

4-BDR. HOUSE, LR, dining area, new carpet, built-in stove, AC, fp, NE location, first & last months rent plus deposit. Shipley, 298-2433.

3-BDR. HOUSE, AC, central heat, walled yard, landscaped, carpet, \$165/mo., first & last months rent, available July 1. Patterson, 243-6219.

1973 DODGE van camper, self-contained, many extras, daily or weekly rates. Fox, 299-5736 or 266-6606.

WORK WANTED

PRIVATE beginning tennis lessons, taught by qualified teenager, \$1 per half hour. 296-7062.

BEGINNING PIANO taught by qualified teenager, \$1.50 per half hour, references available. 296-7062.

LOST AND FOUND

LOST — Men's gray plastic raincoat, gold Bulova wristwatch, Hallmark walnut mechanical pencil, black key case w/6 or 7 keys, personalized checks in check book cover, men's glasses w/black frames & may have clip-on sun-glasses attached, man's lt. blue jacket, silver Cross pencil. **LOST AND FOUND**, Bldg. 832, Tel. 264-3441.

FOUND — Silver color cabinet key. **LOST AND FOUND**, Bldg. 832, Tel. 264-3441.

How About a Talking Duck?

HAPPY HOURS — Tonight, Club manager Jim Schultz will spread a fantastic Bavarian buffet while Paul Plus II holds the bandstand. Denny Gallegos and guitar will entertain in the main lounge. Next Friday, June 8, the buffet will feature a Roman-Italian spread and the Prisoners loose on the bandstand. John Salazar, singing guitarist, will be in the main lounge. On June 15, a Latin buffet will be spread, The Rhythmaires will play for dancing, and Denny will return to the lounge.

* * *

FAMILY VAUDEVILLE NIGHT Saturday, June 9, is an extravaganza with entertainers of the Albuquerque Light Opera presenting selections from "South Pacific." The movie will be "Everything's Ducky" starring comedians Mickey Rooney and Buddy Hackett with a talking duck. (A talking duck?) Anyway, Happy Hour prices will be in effect and, during the evening, several sets of tickets to the Light Opera's production of "South Pacific" will be given away. The fun starts at 6:30 p.m., super sandwiches will be available, and admission is free to members and families.

* * *

SANADO WOMEN will meet at the Club at 1:15 p.m. Tuesday, June 12. Speaker will be anthropologist Frank Hibben, UNM.

* * *

CINEMA CLASSIC this month is a twin bill of terror type films from a few years back. "The Pit and the Pendulum" stars Vincent Price while the original creeps themselves — Bela Lugosi and Boris Karlof — turn "The Black Cat" into something else. Free to members, the show starts at 7:30 p.m. on Wednesday, June 13.

* * *

TEENAGERS mark Saturday June 16 for your monthly bash. Magic Sam will be wired into the bandstand and MC Human Hank Stone of KQEO will keep things stirred up. Member parents should pick up tickets for their youngsters.



SWIM SEASON is going full blast at the Coronado Club's three pools. Bob Keeling (4142) and Joyce Sanchez (4711) enjoy the new third pool just acquired by the Club from the military. Open to all employees during the noon hour for lap swimming, the pool is located directly south of the Club's patio. Entrance is on B Street.

Security's **Believe It or Else!**

**BURN
BABY
BURN**

A BURN BARREL, CONSPICUOUSLY EXPOSED, WAS COMPLETELY OVERLOOKED BY THE RAPID SERVICE DUPLICATING CENTER'S MONITOR. THE RESULTING INFRACTION DID NOT GO UNNOTICED!

THE SECRET OF BEING A BORE IS TO TELL EVERYTHING. VOLTAIRE

Take Note

If you have a good voice, an interest in reading scientific materials, and some free time, Science for the Blind would like your help. Science for the Blind is a non-profit group that provides blind people throughout the US with taped articles from such periodicals as SCIENTIFIC AMERICAN, IEEE TRANSACTIONS, and PHYSICS TODAY. They need readers. If you'd like an audition tape, send your name, organization, and home address to LAB NEWS. If you have your own reel-to-reel tape recorder, fine. If not, you can borrow one through Div. 7211 for the purpose.

* * * * *

Cool off by attending a noon-hour ski movie. The 30-minute, sound, color film, produced at Vail, Colo., was obtained by Bill Stamm (7543). The movie will be shown June 13, 12:20 p.m. in Bldg. 887, room 121.

Thomas Howard (2441) and Robert Frazer (9423) have been elected to Phi Kappa Phi honorary fraternity at UNM. Both are receiving degrees in engineering. Persons elected to this largest and second oldest honorary society in the U.S. must have an overall grade point average of 3.7 or above.

* * * * *

Jean Langston, secretary to the Electronic Components Directorate 2400, was named New Mexico's Secretary of the Year in a competition sponsored by the New Mexico Division of the National Secretaries Association. Last year, she was named Albuquerque's Secretary of the Year. Jean will compete with six other division finalists to represent the Southwest in competition for International Secretary of the Year at the Association's International convention which will be held in Denver from July 17-21.