



LAB NEWS

VOL. 26, NO. 19

SEPTEMBER 13, 1974

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

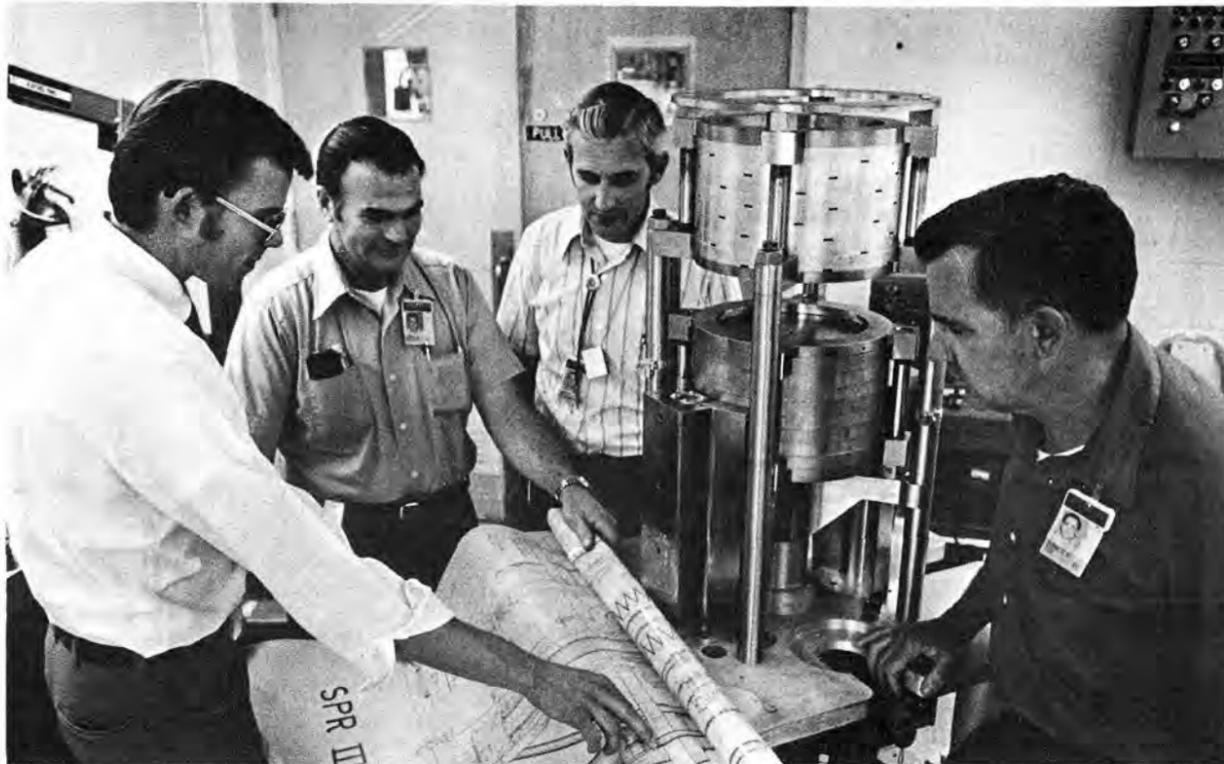


BILL GARCIA (3321) has had a long romance with the military, and his outstanding service was recently recognized when he was awarded the Navy's Achievement Medal. Bill is currently a Chief Petty Officer in Naval Security Group 9-21, a unit of the Naval Reserve, but his active service started back in 1940 when he joined the Army. Volunteers from Albuquerque in those days were assigned to either the 120th Engineers or the 200th Coast Artillery. As luck would have it, Bill got the former; the latter was sent to the Philippines, ended up on Bataan, and those who survived spent the war in Japanese POW camps.

Lab Hosts Laser, Electron Beam Conference

Sandia Labs was host earlier this week to the AEC-sponsored Laser and Electron Beam Fusion Meeting. Purpose of the gathering was to provide classified information on the AEC laser-fusion program to non-AEC organizations performing work relating to controlled thermonuclear reactions. Laser and electron beam fusion are being investigated as one means of producing energy in significant amounts.

Speakers from the AEC, Lawrence Livermore Laboratory, LASL, and Sandia made presentations concerning their programs. Representatives from many private concerns and from the military were present. Everet Beckner, Director of Physical Research 5200, represented Sandia and coordinated arrangements for the meeting.



NEW SPR III pulsed reactor is now undergoing mechanical testing in Area V. The reactor with dummy fuel elements — circular configurations at top of the device — is examined by (l to r) Ted Schmidt (5221), John Snyder (5221), Jon Reuscher (5221) and Don Cox (5222). Test cavity for components and systems is surrounded by circular fuel elements.

New SPR III Reactor Now Undergoing Mechanical Test

SPR III (for Sandia Pulsed Reactor, the third of a series of fast burst reactors designed and developed at Sandia) is now undergoing final mechanical evaluation in Area V. After these initial tests and upon approval by the AEC, the initial critical experiments will be conducted and nuclear testing will begin. Criticality is planned for January 1975.

SPR III will not replace SPR II. The two reactors will be interchangeable, with both using the same control and support systems.

SPR III has an exposure chamber that provides 40 times more volume than presently available with SPR II: 7" in diameter, 14.5" in length, versus SPR II's 1.5" x 8". SPR II produces a neutron fluence of 8×10^{14} neutrons/cm² in 40 microseconds; its fuel temperature reaches 450° C. SPR III will produce 6×10^{14} neutrons/cm² in a 55 microsecond pulse and reach 450° C. SPR III will be unique among pulsed reactors providing the highest combination of exposure rates and exposure volumes of any system in the country.

Other unique design innovations include improved fuel design plus external reflectors — three copper reflectors and one aluminum reflector — which initiate the pulse and provide steady state control of output.

Fuel failure under severe shock loads generated by rapid fission heating has and still does define the upper limit for reactor power. Considerable research has gone into improving fuel performance in the past several years.

Work on SPR III is centered in Reactor Source Applications Division 5221 initially under Dick Coats and currently under Jon Reuscher. Jon acted as project engineer throughout the design and development phase. Jon and Don Cox (5222) performed the SPR III mechanical design. Nuclear design was the responsibility of Dick Coats and Ted Schmidt (both of 5222). Dan Sasmor (5222) handled fuel selection and manufacturing, and followed production of the fuel through acceptance testing. The new control console was designed by John Snyder and Jeff Philbin (both of 5221) to meet all

(Continued on Page Two)



INVENTORS Ron Hill (5642), left, and Danny Hartley (8115) demonstrate their laser light trap device (LAB NEWS, June 15, 1973) which was recently patented by the AEC. The device employs the unique properties of ellipsoidal, spherical and flat optical mirrors to repeatedly reflect the laser beam through the focal region of the device. At the focus, the light is 100 times more intense than the intensity originally in one beam. The device is used for signal enhancement in Raman spectroscopy studies.

Afterthoughts

Law, order, & ambience--Yesterday Bruce returned from an errand to note, with expressions appropriate to the incident, that the seat had been stolen from his bike which was parked (and locked) outside the door of Bldg. 832. The seat had been firmly attached, so that its removal was a matter of more-than-casual resolve. A week or so back, a plastic water bottle was stolen from my bike. Ruben Urenda (2325) mentioned a few days ago that a bungee elastic cord had been lifted off the rack on his bike. And then there's the 10-speed Gitane, property of Ray Mosteller (1132), that was stolen in toto from where it was parked next to Bldg. 880.

That which dismays about this kind of sneak thievery is not so much the monetary value of the objects lost--relatively little except for the 10-speed--but rather the changed view one adopts of the world. No one willingly embraces paranoia, and many of us transplanted here from big cities, where paranoia is the norm, welcomed the relative openness and lack of suspicion of people in Albuquerque and the Southwest. This characteristic adds a great deal to the quality of our life, and it's really infuriating to see it eroded by the acts of a few.

* * *

The energy crunch isn't all bad--If someone had asked you a few years ago to list possible effects of an energy shortage, would you have listed "no neckties"? But there on network TV the other night was Mr. Sawhill, the nation's energy czar, making pronouncements in his flossy Washington office sans necktie, presumably in recognition of his agency's request that we all turn our air conditioners up (or is it down?). Now that's what I call a sensible man. Much of male clothing is irrational, but the self-imposed tourniquet around the neck should be a priority candidate for oblivion.

* * *

"The greatest pleasure I know is to do a good action by stealth, and to have it found out by accident." Charles Lamb

"Of all failures, to fail in a witticism is the worst, and the mishap is the more calamitous in a drawn out and detailed one."
Walter Savage Landor *js



IT'S hard to ride a bike that way, concludes LAB NEWS' Bruce Hawkinson. Sneak thief made off with seat (see Afterthoughts). Bike was parked near Bldg. 832.



PHOTOGRAM* PHOTOGRAPH above is the work of Joe Laval (3163). It's part of the publicity for Classic Theatre Company's *Midsummer Night's Dream* which director John Gardner (3141) calls a "swinging Shakespearian comedy." Phil Mead (3151) is in the show, Elliott Harris (3153) is doing sound, Dusty Cravens (1730) is supervising the magical effects, and Bruce Hawkinson (3162) is helping with publicity. The show runs Sept. 19 through 21 at 8:15 p.m. and Sept. 22 at 2:15 p.m. at Popejoy Hall. *Photogram: the result of a process in which the image is imposed directly on photo-sensitive paper (no negative); done in a darkroom, this one consists of three exposures of the model on a 40" x 7' sheet of photo paper.

Continued from Page One

New SPR III Reactor

newly adopted AEC safety standards.

Jim Powell (5243) headed an independent design review committee as required by AEC

regulations. Bill Sullivan (2112) of this committee made major contributions to the reactor electrical design.

Lloyd Bonzon and Berry Estes (both 5221) conducted extensive safety analysis, modeling and documentation for SPR III, and are responsible for planning of initial tests and operations.

Except for fuel elements, SPR III was fabricated entirely by Sandia organizations. The control console was fabricated by Process and Fabrication Laboratories 3600. Reimbursable and Special Project Division 9512 performed quality assurance functions for SPR III including 100 percent inspection of all parts. Many other Sandia groups assisted.

SPR III was designed primarily to satisfy AEC/DMA weapon environment simulation needs. In addition, use of SPR III in support of a variety of other Sandia research programs, such as reactor safety, is anticipated.

Sympathy

To Rocky Arroyo (9751) on the death of his wife in Albuquerque, Aug. 29.

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WILL GAUSTER (5111) points to area where he'll be spending the next nine months as guest scientist at Germany's Nuclear Research Establishment. Will plans research on metals with very high melting points.

Will Gauster Assigned To West Germany

Will Gauster, a physicist in Ion-Solid Interactions Division 5111, has been invited to be guest scientist at the Kernforschungsanlage (Nuclear Research Establishment) in Julich, West Germany. The assignment with Germany's national laboratory will last nine months.

During eight years at Sandia, Will has studied the thermal and mechanical properties of solids, performed research with lasers and electron beams, and taught Sandia's materials technology course. More recently, Will set up a positron annihilation experiment to study both equilibrium and radiation induced defects in metals. This study is part of a relatively new area of research into alloys for use in controlled thermonuclear reactors.

"Germany has done extensive research on breeder reactors," Will says. "I'll be running experiments at extreme temperatures, looking at metals with very high melting points. Their high temperature facilities are first rate."

Will, born in Austria, has been in the U.S. since 1950. His father, a scientist at Oak Ridge National Laboratory, was a professor at the Technical University of Vienna and continues to lecture there on occasion.

Will earned a BS in applied physics from Harvard and a PhD, also in physics, from the University of Tennessee. Thesis work in solid state physics was done on a National Science Foundation scholarship at Oak Ridge.

Will's family — wife Norma, and 2-and 4-year-old sons Eric and Stephen — will accompany him. "We all traveled to Vienna last year on vacation," Will says. "We're anticipating this move with lots of enthusiasm."

The Gausters will be leaving next week and Will's new assignment begins on Oct. 1.

Authors

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E.J. McGuire (5211), "Widths of 4s and 5s Multiplet Components in the Rare Earths" and "Multiplet Effects on the Widths of Photoelectron Peaks," Vol. 10, No. 1, PHYSICAL REVIEW A.

G.S. Snow (2521), "Elimination of Porosity in Pb(Zr, Ti)O₃ Ceramics by Liquid-Phase Sintering," Vol. 57, No. 6, JOURNAL OF THE AMERICAN CERAMIC SOCIETY.

F.P. Gerstle (5844) and G.J. Dvorak (Duke Univ.), "Dynamic Formation and Release of a Dislocation Pile-Up Against A Viscous Obstacle" and "A Dislocation Pile-Up Model of Dynamic Yielding and Flow in Steel," Vol. 29, No. 6, THE PHILOSOPHICAL MAGAZINE.

Workshops Coming Up

For Secretaries Only

Workshops for managers are nothing new. Workshops for secretaries are. A series of one-day workshops, reviewed and approved by the new Secretarial Committee, starts soon. Identical workshops follow, two per month, as long as there are secretaries volunteering to attend.

The workshop focuses on the different ways people interact with each other. The secretaries who attend will examine their own modes of interaction, and workshop instructors will work with participants to help them gain greater insight into the whole process of interaction.

Or, as Mary Quigley (3131), who planned the workshop, says, "We'll try to make each secretary aware of her own behavior and how it affects those around her."

The workshop is one of several projects of the Secretarial Committee. Formed to advise Personnel Director Bob Edelman (4200) on issues relating to the non-represented secretaries, the group has already designed an appraisal form which recognizes the complexities and potential responsibilities of a secretarial position.

The group has also recommended two new out-of-hours courses for secretaries, one on budgeting, the other on computer services.

But the present workshop is thus far the group's biggest undertaking. Edelman notes: "Workshops are one way of developing a valuable, but too often neglected, resource. And attitudes — not job competence — are often at the root of problems associated with the jobs of the secretary."

Adds Ann Michele (3100/9700), who chairs the committee, "Many secretaries would prefer upgrading of status to transfer. So we're working with both 4200 and 3131 to enrich the secretarial role. We feel the workshop is a start."

Two identical workshops are offered each month. Enrollment is limited to 24 per session. All Albuquerque secretaries are eligible. Approvals by supervisors and scheduling are handled through 3131. (In Livermore, a similar workshop is being considered. Call Evelyn Foote, X2442 for further information.)

One-Day Secretarial Workshop Registration

TO: Mary Quigley — 3131

Name (print) _____ Phone: 4- _____

Job Classification: _____ Organization: _____

Supervisor: _____ Phone: 4- _____

Secretarial Supervisor (if any): _____ Phone: 4- _____

Dates When I Couldn't Attend: _____

Signed _____ Date: _____



SECRETARIAL COMMITTEE with Bob Edelman (4200), its originator. Standing: Wynn Harlan (4730), Bob, Etta Moore (9510). Sitting: Thelma Foster (5100), Jo Sena (2000), Ann Michele (3100/9700), Edwina Manzanares (1650).



COMPULSIVE JOINERS— Rudy Johnson, left, and Jack Dini (both 8312) examine an electrochemically joined specimen of stainless steel and uranium. The two metallurgists have developed process for joining of materials previously not joinable.

Joining Materials By Electroplating

Electrochemical joining, or joining by electroplating, is an unusual means for joining that is becoming more widespread. Jack Dini and Rudy Johnson of Metallurgy and Electroplating Division 8312, who have developed and proven the technique in structural applications, both agree that the process has come of age.

"The principal advantages of the process," says Jack, "are that it can be done in a relatively low temperature range — 80 to 120°F — and it provides a means for joining materials that can't be joined by any other method."

"With low temperatures, the shrinkage stresses and distortion associated with high temperature joining operations are eliminated. In addition, no degradation is suffered because of recrystallization and grain growth in the materials which make up the joint."

Another important advantage of electrochemical joining is that the properties of the joint can be tailored to meet specific design requirements. "As an example," Rudy says, "the joint strength can run anywhere from 2000 to 200,000 pounds per square inch."

The process consists of first giving the parts to be joined a taper. After a light coating of each part with copper or nickel, they are mated, and the triangular segment between the tapered edges is built up by electroplating and machined to final tolerance.

Parts up to 40 inches in diameter and as small as one-eighth of an inch have been joined, and the process has been used on a variety of shapes and materials. Metals that have been electrochemically joined include beryllium to beryllium, beryllium to stainless steel, stainless steel to aluminum, stainless steel to copper and to itself, and uranium alloys to steel and aluminum.

The joints have passed tensile, compressive, bending and corrosion tests.

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General Stores Items: Up & Up

Every trip to the store these days finds prices completely out of sight. The same is true of the items purchased by Sandia. Ernie Alford, supervisor of Materials Management Division 8256, says, "Ours isn't a basket of groceries, but we continue to see elevating prices."

Here's what Ernie is up against:

	Was	Latest Price
Silastic Adhesive	\$38.06	\$48.15
	carton	carton
Acetone Reagent	.99	1.40
	pint	pint
Steel Alloy Bar	5.32	7.50
	foot	foot
Electrical Wire (Type E)	56.25	64.00
	1000 ft.	1000 ft.
Toggle Switch	.72	2.07
	each	each
Computer Paper	4.56	5.59
	1000 sh.	1000 sh.
Bond Paper	1.47	1.97
	ream	ream
Liquid Detergent	2.00	3.15
	gal.	gal.
Test Lead	3.96	5.06
	each	each
Nitrogen Gas	1.60	2.28
	cyl.	cyl.
Relay, General Purpose	14.74	17.29
	each	each



LEAP '74 — Planning by the Livermore Employees' Assistance Plan Committee is underway for this year's campaign, to be held the week of Sept. 29. Chairman John Marion (8332), right, and Vice Chairman Bill Ryan (8264) discuss campaign poster and the theme, "People Helping People."

Take Note

Gordon Bennett (8413) has been named program chairman of the Livermore Fly-Fishermen and will serve as representative to the Northern California Council of Fly-Fishermen. The local group meets the second Wednesday of each month in the Carnegie Building at 7:30 p.m.; anyone interested in fly-fishing is most welcome. Other Sandia members include Gene Neau (8416), who edits the club's monthly bulletin, Jim Harter (8254) and Bill Thompson (8254).

* * * *

Gene Aas (8266) took first place in the annual Seniors Golf Tournament, sponsored by the Sandia Employees Golf Club at Livermore's Las Positas course, with a low net of 69. The regular division trophy went to Mike Baker (14-year-old son of Doyle Baker, 8163) who shot a low net 65. Roy Tackett (8362) and "Ollie" Olivotti (8412) co-chaired the tournament.

Festival '74 Sept. 28-29

Mark your calendar for the weekend of Sept. 28-29 when the annual Festival of the Arts, sponsored by the Livermore Cultural Arts Council, will be held. It runs from 10 to 6 at the Veteran's Memorial Building, Carnegie Hall and First Presbyterian Church.

Festival '74 carries a mask theme, with emphasis on audience participation. Refreshments will reflect several ethnic backgrounds. In addition to a juried art show and various performing arts, a new segment being featured this year is environmental art experience. Artists-in-action will be on the scene both days. Admission is free to all events.

Managing director of Festival '74 is Don Wagner (8212). Sandians working with him include facilities committee chairman Marlin Pound (8214), program chairman Joe McManus (8265), and beverage chairman John Miller (8157).



LIVERMORE'S FIRST PARTICIPANT in Sandia's new Work/Study Program is Gary Dahlby. He begins study this fall toward his engineering degree at UC/Davis under a scholarship arrangement covering tuition, books, fees and living expenses. Each summer he will work at the Labs. A June graduate of Granada High School, Gary was valedictorian of his class.



FROM ANY VIEW, front or back, summer students in the Jackson Street Elementary School science classes were fascinated by recent holography and radiography demonstrations by (standing from left) Dan Tichenor, Alec Willis and

Lutz Dahlke (all 8344). The Sandians showed holograms of a dinosaur scene and two Hummel figurines, and radiographs of a teddy bear, toy car, train engine and human body.



Retirees' Picnic '74

Nearly 800 showed up last week for the annual retirees' picnic at the Coronado Club. The food was good, the wine flowed, the weather cooperated, spirits were high, and Morgan Sparks (right) handed out goodies to three senior retirees — checks representing increased pension payments. The increase affects 1200 other retirees as well. The three recipients are, from left, Niveo Fisher, Charles Glaese, and Wilbur Schaffer.

Sandia Bicycle Ass'n — Word has just been received that the Zia Park gate (end of Ridgecrest) will be open in the morning and evening for bicyclists. Since motorized traffic is not permitted in Zia Park (except for residents), this gate offers minimum traffic to bikers and is an excellent way to get on Base.

Days are getting shorter, and lights will soon be needed for cycling. The best arrangement we've seen is the cave explorers head lamp — a three or four battery pack is carried in a pocket while the lamp is attached to your helmet. Principal advantage is that the wearer can direct the light. The head lamps can be purchased locally at mountain climbing equipment stores, or you can order one from Recreational Equipment (the cooperative) in Seattle.

Tours: A pleasant, moderately hilly ride is to go from the State Pen on North 14 southwards to Madrid. The road is good, traffic is light, scenery is mesa and mountains, and the distance is 15 miles. En route you can stop at Cerrillos and gawk at the tourists.

* * * *

Sandia Runners Ass'n. — Next big deal local event is the 5th annual Tour of Albuquerque Marathon, Sunday, Oct. 20. The course runs, generally, east on Montgomery, out Tramway and around to the Coronado Airport, thence south on the frontage road back to Montgomery, 26 miles and 385 yards. In SRA, Jim Harrison (4731)

claims other SRA'ers don't stand a chance once he gets out front.

* * * *

Judo Class — A new judo class for Sandians will begin in the judo practice room of the Base Gym Sept. 20. Instructor will be Capt. John Gowan (AFWL), second degree black belt holder. For information call Jim Wolcott (5821), ext. 7951, or Ivan Moore (1610), ext. 1032.

Recreation Notes

FUN & GAMES

Horseshoe Association — Retired member Bill Sweatman, formerly of Mechanical Calibration Section, is the champ of the recent 1974 Horseshoe Tournament held at Los Altos Courts. Leo Bressan (9532) was second place winner. Bob Schuch (5226) took Class B honors and teamed with Jim Reed (3647) to win the doubles crown. Louie Eversgerd, retired from Plant Maintenance Division, took second place in Class B. Gary Carlson (5167) was the Class C champ while Leroy Paulson (9412) was second. Paulson

and E.C. Saxton (9412) took second place doubles honors.

Bob Schuch, horseshoe association president, reports that two regulation horseshoe courts will be installed at the Coronado Club soon.

* * * *

Attention Bowhunters — Howard Tessler (9324), VP of the Albuquerque Field Archers, urges all Sandia bowhunters to attend a bowhunter clinic stressing hunter safety, regulations and equipment checks. It's scheduled for Saturday, Sept. 21, at the AFA field range. The following day, Sept. 22, will see a broadhead animal target competition with prizes and things like that. Call Howard at ext. 4898 for more info.

* * * *

Sandia Bowling Association will host the first tournament of the new season Oct. 5-6 at Fiesta Lanes. The tourney will be a scotch doubles event open to Sandia AEC employees, and spouses. Send entries to Mary Ward (9615) or John Nakayama (1711). John says that if you don't have a partner, the tournament managers will get you one.

* * * *

Ski Biz — Walt Westman (9513) and Allen Church (1132) are officers, again, in the Rocky Mt. Division of the US Ski Ass'n. Walt is a Director, while Allen is head of the Southwest Ski Council. Both have promised fresh snow every Friday night during the season.

feed back

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

Q. Do bicycle riders think they don't have to obey traffic laws? Many riders breeze through a STOP sign as though it weren't even there. They then wonder why so many of them have close calls with larger vehicles. Why give them bicycle paths if they can't even use the streets and highways properly?

A. Most bicycle riders do respect the traffic laws because they realize that an irresponsible act could bring serious injury to themselves. However, it must be conceded that there are some bicyclists who disregard stop signs and stop lights. The executive committee of the Sandia Bicycle Association has discussed this problem and is trying to find a solution. I talked to Col. Simon, commander of the base security police, about the possibility of issuing citations to cyclists violating traffic laws. His response is that there is not enough manpower to patrol during the rush hours when the bicyclists are moving. Hopefully, through comments in the Lab News and the SBA Newsletter, all bicyclists will become aware that they have the same responsibilities (and rights) as a motor vehicle.

In response to the rest of your statement, I am compelled to state that most close calls a bicyclist has with larger vehicles are due to lack of consideration on the part of the motorists. They crowd him when passing, they tailgate, and they frequently fail to yield right-of-way to the bicyclist even though by law they should. Ideally, the bicyclist and motorist would be separated, with the cyclist using bicycle lanes and paths that have been suggested for the city and base. It is important to the safety and well-being of both motorist and bicyclist to have adequate thoroughfares designed for their needs.

Dave Barnes, President
Sandia Bicycle Association

Q. Now that Sandia has implemented the ESA/EDA training program, is there any type of similar plan under consideration with regard to the administrative areas? Sandia is overlooking many talented people at the lower levels, specifically some of the division secretaries. They should be given the same opportunities based upon their capability for growth and not upon their age.

A. We are not contemplating establishing a formal program for training employees to work in the administrative areas. You have indicated the reason for not establishing such a program, i.e., we have a large number of people in clerical assignments who are obviously capable of handling staff assignments but we have only a limited number of openings. Therefore, Sandia will not sponsor such a program at this time.

Age is not nor will it be a factor in selecting employees to fill vacancies. Of the 19 employees promoted to administrative staff classifications during the past year, the average age is 40 with a range of 25 to 54.

R.J. Edelman - 4200

Q. With reference to the four-day work week: Why not poll the employees as to their preference? Another AEC contractor, namely EG&G Inc. of San Ramon, is now on a four-day week and has not found it to be any great burden.

A. The possibility of shifting to a four-day week has been considered from time to time. There are many considerations in making a decision as to the working hours of any business establishment. Employee preference is one. A poll such as you have suggested would only provide a consensus at best. Our recent experiences with the change in the length of the lunch period has demonstrated that it is difficult to obtain anywhere near an overwhelming majority to agree on what is most appropriate.

A number of Labs activities would be severely hampered by a four-day week. The computer group, among others, fits this category.

In relation to the four-day week, there are legal considerations in addition to the normal business considerations. Current Federal statutes require overtime payments to certain types of employees who work more than eight hours in a day. Changing to longer work days, therefore, has implications in overtime pay.

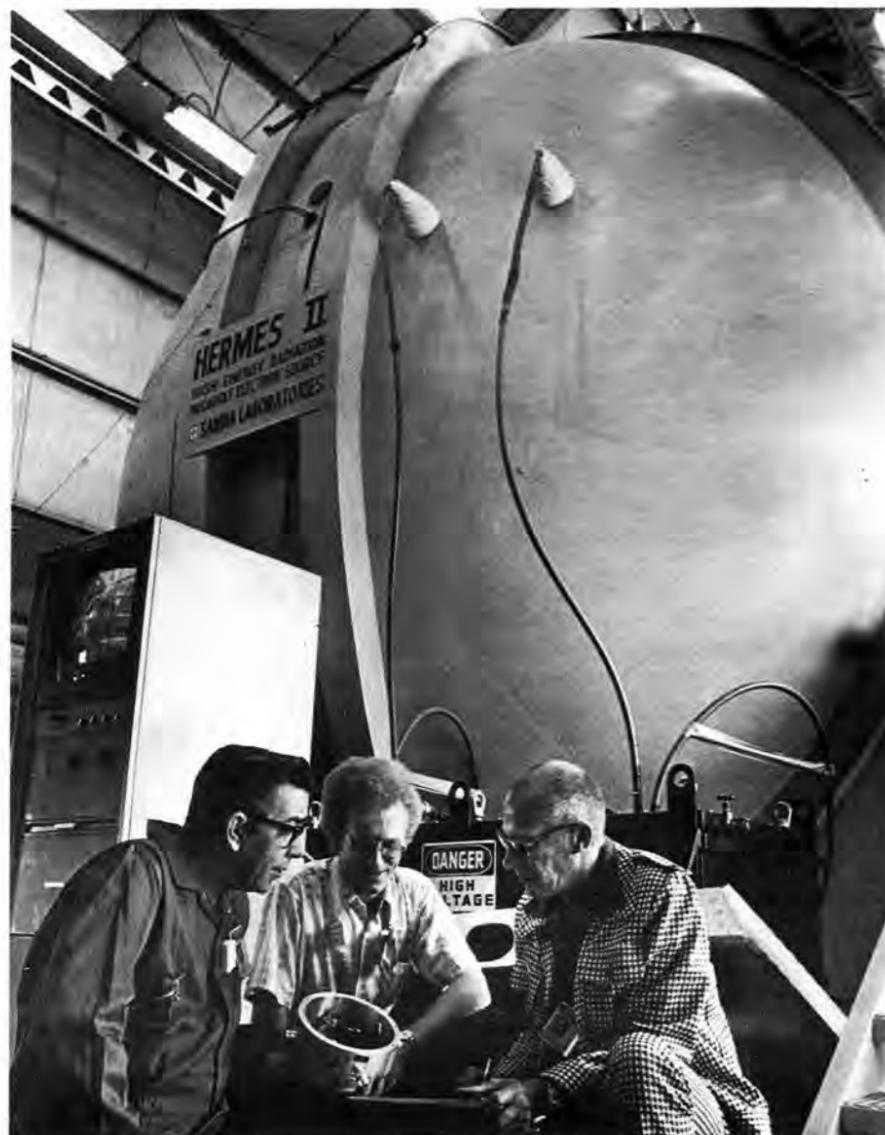
In summary—the question of shifting to a four-day work week has been and will continue to be examined. There are, however, no plans to change at this time.

R.J. Edelman - 4200



POOL REGULATIONS
ALL FEMALES AND MALES WITH LONG HAIR—WEAR BATHING CAPS
RUNNING AND HORSEPLAY WITHIN POOL AREA IS PROHIBITED
PERSONS WITH OPEN SORES, COLDS, SKIN IRRITATIONS PROHIBITED
NO FOOD OR BOTTLE OF ANY TYPE PERMITTED IN POOL AREA
NO PETS OF ANY KIND PERMITTED
CHILDREN PERMITTED—SWIM ONLY—ACCORDANCE—POOL REGULATIONS
OBEY YOUR Life GUARDS

POOL, SWIMMING, OLYMPIC has recently been refurbished. You can swim there if you can bring yourself to comply with all the neat regulations. Hours are 1100-1300 & 1600-1900, closed on Mondays. No spouses, no dependents, no hanky-panky. But have fun. Facility is west of Base Gym.



TEN THOUSANDTH ZAP of Sandia's giant Hermes II flash x-ray machine was performed Thursday, Sept. 5. Experimenter Cliff Evans (2115), center, discusses his target component with Walker Simmons, Manzano Laboratories, left, and Jess Harness (5226), facility supervisor, prior to shot. Operating to produce either x-rays or electron beams, the machine's output is 12.5 megavolts, 100,000 amps. Hermes II was first fired in April 1968, became operational in January 1969, and is used to subject materials, components and systems to large doses of x-ray energy. It is the largest and most long-lived facility of its kind in the world.

Everything You Always Wanted to Know About Judo But Were Afraid of The Kind of People You'd Have to Ask

To many people, judo connotes a world of violence and mayhem, a world of physical threats and physical threats carried out — for (and with) kicks.

It's not an accurate reflection. The judo types we talked with — Tony Anaya (9713), Bill Shurtleff (9344), and John Olsen (5213) — are really gentle guys who have found in judo the answer to a question that might be thusly phrased: "How can I stay in shape but not go on a diet, get some exercise but not get bored at it, enjoy some competition but not risk much danger, walk alone on dark streets but not worry (much), and have fun too?"

Judo is simply not as martial a martial art as is karate, for example. Judo in fact means "gentle way." Its aim is not to kill or dismember or maim. Its aim is rather to enable the practitioner to stroll with dignity (and with all systems intact) away from an encounter with an assailant. Or to retire victoriously from the competition mat with the applause of the spectators and the congratulations of the loser ringing in the ears.

Unlike some Oriental imports, judo isn't mystical. The goal is simply "maximum efficiency with minimum effort and with mutual welfare and benefit."

John most enjoys the competitive side. Contestants, matched by weight class, compete in three (or five) minute matches. "The most dramatic, aesthetic way to win is a complete throw. That demands 100% control over your opponent's body."

Other ways to win: an arm bar, a choke, or a long hold-down or pin. Yes, judo resembles wrestling — the high school/college kind, not the TV debacle.

Bill prefers polishing each of the formalized movements (or *katas*). With 40 of these (plus their variations) to work on, he finds judo a continuing challenge.

Tony, like Bill, is a black belt. His tastes lean toward matwork (that's what happens after both contestants are horizontal) and

instruction. "I was fascinated by judo hearing about it when I was a kid. But it wasn't till eight years ago that instructors were available here. I've been involved with judo almost every spare moment since then. And I'm still fascinated."

Tony's daughters are taking up the sport when it's easiest to take it up — young: one is five, the other twelve.

"But middle-aged people join our club often. And most do well, though they have to spend more time learning not to be afraid of falling. You see, once you learn to fall right, there's very little danger in the sport. Maybe a stubbed toe or a mat burn once in a while, but nothing major."

To talk with the three is to hear one unsolicited testimonial after another: "Mention the agility and grace you learn." "And for poise, self-confidence, and tremendous physical conditioning, it's the only way to go."

"And whole families can take it up. Against kids, we bigger guys cut our effort by half, say, so even the smaller kids can throw us once they learn some basics." "Women too. Most take up judo because it's a great way to defend yourself; you don't have to worry about thugs, rapists, and weirdos anymore. You see, few of the types with overloaded hostilities have the discipline to go far in judo."

"One more thing — as sports go, it's cheap. Classes cost next to nothing at, say, the Y. Here at the Club, we have to pay the rent. But even so, the package plan for beginners runs only \$15 a month for two lessons a week plus free practice on Saturday. And the rates drop after you're no longer a beginner. Equipment? Just a loose jacket made of heavy cotton to protect against mat burns. It's called a *gi* and runs about \$25 and should last a couple of years."

More info? Talk with any of the three.

•bh



Tony Anaya

John Olsen

Take Note

La Verne Keyonnie (4526, presently on loan to Mail Services Section 3148), a graduate of Southwestern Indian Polytechnic Institute, was recently elected to Who's Who Among Students in American Vocational and Technical Schools. She was selected in recognition of outstanding merit and accomplishment during the 1973-74 school year. La Verne joined the Labs in June after completing an 18-month business education course at SIPI. Her home is in Winslow, Ariz.

* * * *

Live in Southeast Albuquerque? Tired of driving to work? Albuquerque Limousine Service has openings for new riders who live east of Yale, west of San Pedro. Five bucks a week includes front-door pick-up, Tech Area gate delivery. Call Rich Ciccarello at 842-9873 for more information.

* * * *

The Albuquerque Lesser Symphony Orchestra is beginning its 3rd year of weekly rehearsals. Amateur instrumentalists gather each Monday evening at the Univ. of Albuquerque to experience orchestra music "from the inside," and more are always welcome. Sandians enjoying ALSO are Paul Field (2325), Ian Fritz (5132), John Gieske (9352), Ken Touryan (5640), Gary Derbenwick (2113) and Clarence Mehl (4010). If you're interested, come over Monday — rehearsals are held in the new theater.

* * * *

At the September meeting of the System Safety Society, the speaker is Dave McCloskey, supervisor of Fuel Cycle System Analysis Division (1722), and his subject is "The Nuclear Power Reactor Controversy." Guests are welcome, 7 p.m., Sept. 19, the Mesa Room of the Kirtland East Officers Club.

* * * *

Paul Bailey (5121) will present "Thermal Instability of Explosive Materials" at the 5100 Seminar Sept. 17. "Solving Non-stiff Ordinary Differential Equations — The State of the Art" will be discussed by Lawrence Shampine (5121), on Sept. 24. The Seminar meets Tuesdays at 8:30 p.m. in Rm. 201 of Bldg. 806.



GERALDINE, Tony's younger daughter, takes her dad for a spin.

UNM Speakers Series: Culture, Controversy & Comedy

Yearly at this time the Speakers Committee at the University shapes up its fall and winter lecture series. Though aimed chiefly at students and faculty, the lectures are open to the public as well (for a fee) and offer, in their subject matter and speakers, something for everyone. Here's what the coming season looks like.

Harrison & Tyler, Sept. 19 — "Patti Harrison and Robin Tyler are humanists, jesters, and feminists — in that order. America's only female comedy team . . . the only all-woman show ever allowed into Viet Nam, entertained at many women's prisons, organized the first NOW Chapter outside the US."

Erick Von Daniken, Oct. 7 — "Author of three books: *Chariots of the Gods*, *Gods from*

Outer Space, and the recent *Gold of the Gods*." Von Daniken's the guy who claims the earth was visited in ancient times by astronauts from outer space.

Thomas Szasz, Nov. 18 — ". . . one of the most controversial figures in psychiatry today . . . the foremost proponent of the argument that psychiatric hospitalization is frequently abused."

William Cohen, Dec. 5 — "Representative Bill Cohen, the 38-year old Maine Republican, is widely known for his involvement with the impeachment hearings."

Khig Alx Dhiagh, Jan. 30 — ". . . director of the I Ching Studies Inst. in Los Angeles. His topics are on the origin, theory, history, and practice of acupuncture."

Maya Angelou, Feb. — "Black feminist

author of *I Know Why the Caged Bird Sings* . . . has appeared frequently on national television."

Herbert Marcuse, March — "A professor of political philosophy, Marcuse is one of the most influential philosophers in America today."

And there's a gaggle of other names the committee is dickering with: Woody Allen, David Frye, Dr. Sol Gordon (the sex man), Harry Browne, Howard Cosell, and Bella Abzug.

For six bucks, you get a season ticket to all lectures. Mail a check payable to ASUNM Speakers Comm. together with stamped self-addressed envelope to Popejoy Hall at UNM. Or you may attend individual lectures, @ \$1.50 per ticket.

Deaths



Gertrude Cleary, secretary to Reproduction Division 3147, died Aug. 30 after a short illness. She was 59.

She had worked at Sandia since January 1960.

Survivors include her husband and two sons.



Leonard Clausen, technical writer in Weapon Manuals Division 1612, died Aug 31 after a short illness. He was 53.

He had worked at the Laboratories since September 1954.

He is survived by his widow and three sons.



John Bodene of Manufacturability Information Division 9627, died Sept. 1 after a short illness. He was 57.

He had worked at the Laboratories since February 1954.

He is survived by a daughter.



William Dobbins of Materials and Energy Components Division 9515 died Sept. 2 after a long illness. He was 57.

He had worked at Sandia since 1948.

He is survived by his widow, two daughters, a son and three grandchildren.

New UCF Agency

Jim Day Heads Diabetes Detection Program

Newest agency of the United Community Fund is the New Mexico Diabetes Association, Inc. Accepted into UCF this year, the Diabetes Association has a \$24,000 budget with which it maintains an office and conducts a number of local and state programs.

Jim Day, medical technologist in Industrial Medicine Division 3322, is a member of the Association's board and heads one of its most important programs — diabetes detection.

"Diabetes is one of the more insidious killer diseases today," Jim says. "It ranks fifth in disease-caused death. The tragedy is that diabetes can be successfully controlled. There is no reason why anyone should suffer. The problem is detection of the disease — which again is a simple matter — but many people do not know that they have the disease."

Jim explains that a simple test using a drop of blood and an instrument called an Eytone meter can tell within 60 seconds whether or not diabetes is present in a person.

The Association has made this simple test available to people in Albuquerque at various times during the past six years. In a few weeks, the Association will conduct clinics at local shopping centers.

(A diabetes detection program was started at Sandia in 1967 — it is now part of every physical performed by Sandia's medical organization — and 58 previously unknown diabetes cases have been diagnosed since that time.)

"Once detected, diabetes can be controlled by diet, exercise and medication," Jim says.

The Association estimates that more than 11,000 people in New Mexico have diabetes and are not aware of it. Finding those people and helping them on the road to proper care is the goal of the Association's detection program.

The agency also conducts an education program with this goal in mind. In various ways, agency volunteers spread the message that one in 50 Americans has diabetes, that people over 40 should have a test at least once a year, and that increased thirst, constant hunger, frequent urination, loss of weight,



SIMPLE TEST for diabetes, which requires a drop of blood, a reflectance meter and 60 seconds, is demonstrated by Marybelle Manzanares (3321) and Jim Day (3322). Jim heads the New Mexico Diabetes Association's detection program. A number of clinics will be set up in local shopping centers during National Diabetes Week Nov. 17-23.

intense itching, slow healing of cuts and bruises, changes in vision and becoming tired easily are possible symptoms of the disease.

The New Mexico Association is affiliated with the National Diabetes Association which conducts basic research on diabetes.

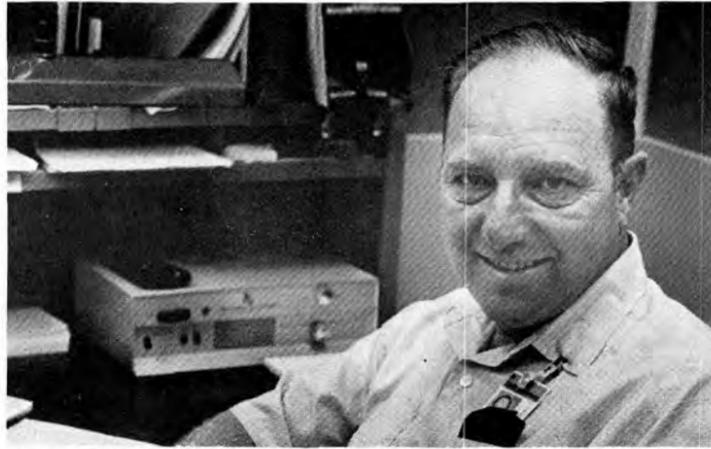
As a member of UCF, the agency is in part supported by contributions from Sandia employees who pledged some \$323,700 to UCF agencies this year.



MILEPOSTS

LAB NEWS

SEPTEMBER, 1974



James Porter - 2633

25



Emma Dale Daniel - 5213

10



Trish Self - 3732

10



Paula Stonach - 9632

10



Merlin Manteufel - 9541

20



Iona Ratcliff - 8433

10



Bill Ryan - 8264

25



Antonio Salazar - 9713

20



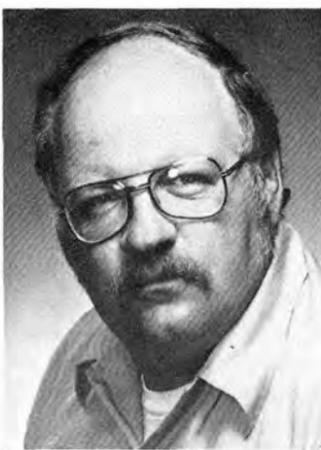
Larry Miller - 2336

15



Roy Hunter - 4152

15



Peter Thoma - 3622

15



Wendell Weart - 1111

15



Dale Haskins - 1561

20



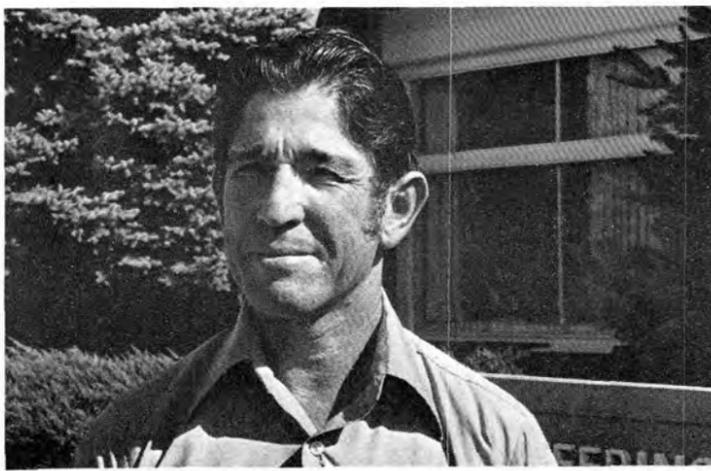
Don Markwell - 8367

20



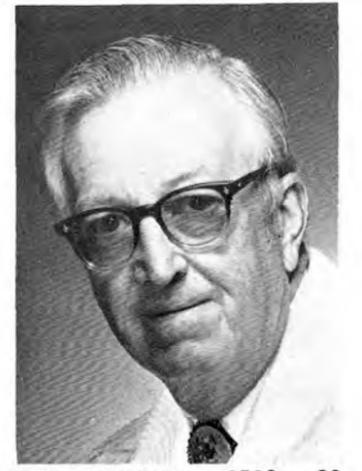
Dave Schafer - 9473

20



Frank Garcia - 9715

15



Mathis Madlener - 2522

20

Speakers

R.P. Clark (2523) and E.V. Forsman (2522), "Development and Performance of a Miniature High-Voltage Thermal Battery," B.H. Van Domelen (2523) and R.D. Wehrle (2522), "A Review of Thermal Battery Technology"; D.O. Lee and W.P. Schimmel (both 1543), "An Axial Temperature Differential Analysis of Linear Focused Collectors for Solar Power," Intersociety Energy Conversion Engineering Conference, Aug. 26-30, San Francisco.

J.L. Colp (5716), "Magma Tap — The Ultimate Geothermal Energy Program," Circum-Pacific Energy and Resource Conference, Aug. 26-30, Honolulu.

F.L. Vook (5110) and S.T. Picraux (5111), "Use of Ion Implantation to Determine Lattice Locations of ²H and ³He in Transition Metals"; D.K. Brice (5111), "Transport of Ion Deposited Energy by Recoiling Target Atoms"; J.A. Borders (5111), "The Formation of Substitutional Alloys in FCC Metals by High Dose Implantation," 4th International Conference on Ion Implantation into Semiconductors and Other Materials, Aug. 26-30, Osaka, Japan.

D.M. Mattox (5834), Invited Paper, "Surface Cleaning and Adhesion in Metal/Metal and Metal/Oxide Thin Film Systems," Gordon Research Conference, "Science of Adhesion," Aug. 26-30, New Hampton, N.H.

P. J. Chen (1540) and K. W. Schuler (5163), "Determination of the Initial Slope of the Stress Relaxation Function of Non-Linear Viscoelastic Materials Using Composites," IUTAM Symposium on the Mechanics of Viscoelastic Media and Bodies, Sept. 2-6, Gothenburg, Sweden.

STATE FAIR GATE supervisors discuss schedules. These Sandians (and others) take vacation in order to help during the 16-day Fair. From left are Ken Smith (3733), assistant gate director; Gerse Martinez (3162), main gate supervisor; Al Lujan (3612), assistant gate director; and Gene Medina (9423), director of gates. The Fair, biggest show in New Mexico, attracts thousands of visitors, requires almost 300 gate and parking employees. The show will continue through Sept. 22.



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 Monday.
A maximum of 125 ads will be accepted for each page.
RULES:
1. Limit 70 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

TRI-BAND beam, Hy-Gain model TH3-MK2, \$75. Richardson, 268-7843.
BUNDY clarinet, \$95. DeVargas, 299-0477.
MAYTAG washer, dbl/tubs, \$35; table, 4 chairs, \$30; Goodyear H-78-14 Polyglas tire (whitewall), \$20. Surface, 298-1394 after 5 weekdays.
CRAFTSMAN table saw, 8", 45 degree tilt, 3/4 hp motor, adjustable metal table, \$70; 20" power mower, 3 hp, works, \$15. Lambert 344-9012.
4 750-16 8-ply mud/snow tires, good casings, a little tread; 8 ft. metal roll-up garage door, complete. Workhoven, 281-3246.
CAMPER, 8 ft. cab-over, '73 Idletime, sleeps 4, ice box, sink, stove, \$700. Walling, 296-4173.
ENGLISH Springer Spaniel puppies, AKC registered, liver & white color. Barth, 345-0172.
ELECTRONIC equipment: power supplies, scopes, counters, pulse generators, misc. components. Johnston, 247-1448.
RUGER, 22 cal. carbine, \$50. Roth, 877-4997.
SOLID walnut dining room set, 2 arm chairs, 4 sides, oval table & large buffet. Harrelson, 344-0285.
BUNDY alto saxophone, \$200. Thompson, 299-0092.
19 CU. FT. upright Maytag freezer, w/key lock, needs some repairs, best offer. Simpson, 299-1895.
COLOR dot & bar generator, Heathkit tube type,

assembled, \$55; 5,800 BTU AC, \$75. Butler, 296-8095.
REMINGTON gun, model 700-BDL, \$170; scope, \$65; case, \$15; shells, \$9; new; all for \$190. Wright, 898-1479.
NORGE refrigerator, large freezing compartment, \$50. Sullivan, 298-0148.
SAILBOAT, 13 ft. Banshee, 88 sq. ft. sail, sits 2 adults easily, 3/4 hp motor. Kroth, 293-9565.
30" ELECTRIC range, clock & timer, \$50. Stathis, 268-4037.
2-HORSE trailer, \$400. Harrell, 281-3251.
GAS RANGE, new avocado, \$135; electric dryer, \$75. White, 293-2219 after 5.
CLOSET DOORS & frames, interior doors, wrought iron rails, etc., Barnard, 256-7772.
LAWNMOWER, Sears, rotary, 20" cut, 9.0 cu. in. engine. Randall, 821-0388.
SEMI-KNOBBY motorcycle tire, 19", \$7; knobby motorcycle tire, 18", \$4; 1 19" rim w/spokes for motorcycle, \$5; chrome music stand, \$4. Fletcher, 298-2142.
CYCLISTS: 2 27" Mavic alloy rims for tubular (sew-up) tires. Also spokes & nipples for same, \$10 for the pair. Stuart, 265-7315.
GAS RANGE, 4-burners & oven. \$25. Pollard, 294-4201.
SILVER FLUTE, Artley Philharmonic, straight line keyboard, retails \$650, sell cash \$450. Fisher, 266-2266.
2 STUDDER snow tires, Firestone, 4-ply, nylon, G-78-15, fair tread, both for \$6. Wyant, 298-0371.
SKI BOOTS, used one season, Raichle fibre jet, size 7-1/2 w, \$40; Henke, Size 7-1/2 m, \$20; A & T Banana ski poles, \$10. Champe, 299-0066.
OLDS Ambassador French horn & B-flat trombone, good student instruments. Plumlee, 281-3224.
CLARINET, B-flat, Bundy, \$60. Traeger, 298-0728.
CLARINET, Vito, case & stand, \$65; electric guitar & amplifier, Harmony, \$90. Olson, 299-3615.
FLUTE w/carrying case, \$65; 20"

girls Schwinn bike w/banana seat & basket, \$25. Peterson, 256-7514.
19" RCA portable, B & W television w/cart, about 10 yrs. old, \$60. Miller, 255-7716.
SOFA, 96" long, blue, reversible cushions. Smith, 299-8133 after 5.
CELLO, 3/4 size w/case, pitch pipe & music stand, \$150. Keck, 265-9463.
MINIATURE Schnauzer female puppy, well bred, shots, Levine, 255-7601.
GIRL'S 20" bike; B-flat clarinet; accordion; '73 Ford shop manual; electric portable barbeque; gas range, Tucker, 255-5335.
SEARS 23" color TV, \$160; hardwood dining set, six chairs, \$75 or best offer. Hale, 298-1545.
AVOCADO electric dryer & washer, needs some repair, \$75. Chaves, 765-5814 or 766-5696 after 5.
LIGHT blue naugahyde couch, converts to double bed; 26" girl's 3-spd. bike; std. size foam rubber mattress. Guilford, 255-6294.
FULL size student violin & case, \$60; Singer Zig-Zag sewing machine in maple cabinet w/drawers, \$75. Berg, 299-7334.
20 GAL. Aquarium, complete w/accessories, decorative metal stand, \$65; 15 gal. aquarium, all accessories, fish, metal stand, \$35. Vogel, 256-0975 after 4:30 p.m.
RABBITS, \$2, \$3, \$4; portable washer, \$30; washing machine, needs pump impeller, \$18; camper door, needs glass, \$15. Bassett, 898-1840.
CUT STONE, 30 cu. ft., asst. sizes, \$20. Wilson, 256-9345.
BIKE, 24" Schwinn Stingray, \$40; lawn seeder, \$10; irrigation gates, 15", \$30 ea. Irrigation ditch templates, 19", \$10. Harley, 898-0594.
ONE FIFTH share Mooney Mk20A dual Navcom, IFR certified, low time engine, prop; recent annual. Elliott, 256-7909.

TRANSPORTATION

'71 PLYMOUTH Duster, 6-cyl., 225 engine, AT, \$1750 or best offer. Stoeber, 296-3717.
'72 VEGA GT Coupe, \$1975. Baczek, 255-3429.
23 MPG camper, customized VW, 76" bed, lots of storage. Westman, 255-6048.
'61 CHEV. 4-dr. Preston, 344-4059.
'71 PONTIAC LeMans, 9-passenger (3 seat) wagon, AC, AT, PS, PB, beige color, \$2500. Chavez, 265-1146.
'54 CHEV. 4-dr., \$175. Fuller, 294-3089.
HODAKA Super Rat, 100cc, set-up for racing, Reed valve, booster ports, extended swinging arm, shocks, \$350. St. Clair, 293-4890.
BICYCLE, boys 26", single speed, \$20. Coleman, 299-2377.
'59 PORSCHE, \$700. Mason, 296-7627.
'70 RAMBLER Rebel, 4-dr., 6-cyl., AT. Anderson, 299-5727.
'69 VW bus, 7 pass., low mileage, radio, curtains, \$1450. Huddle 265-6248.
'74 MERCURY Comet, 2-dr., less than 8,000 miles, 6-cyl., std. trans., \$2775, \$300 below book, will consider older car in trade. Lewis, 298-2877.
'61 VW bug, runs good but needs new starter; 1-spd. boys bike. Long, 296-2590.
'64 DODGE Polara convertible, 4 nearly new steel belted radials, \$300; Schwinn Varsity 10-spd., ladies, fenders, straight handle bars, \$80. Berman, 296-5640.
'69 OPEL Rallye, \$845 or best reasonable offer. Watterberg, 294-6759.
'73 HARLEY Sportster, stock, black, 1000cc, \$1900. Tischhauser, 293-9768.
'71 INTERNATIONAL Travelall, 2-WD, V8, AC, AT, PS, PB, \$2900; 19' Kenskill travel trailer, self contained, \$1800. Caskey, 296-6372.

schools. Nielsen, 255-2045, 621 Georgia SE.
GLENWOOD Hills, contemporary tri-level 4-bdr., large den w/wet bar, professionally landscaped, terms. Forsythe, 299-2785.
3-BRM home, 1117 Dorothy NE. Patterson, 877-6037.

WANTED

8x8x16 CINDER BLOCK, rebar, durawall. Callender, 294-0601 after 5.
GOOD home for a 1-yr. old English setter male, has shots and one month professional training. McVay, 296-8640.
SMALL to medium chest type freezer. Thatcher, 299-0332.
SHOE skates, roller, size 7 or 7-1/2 & 3 to 4; radio control equipment. Fisher, 299-9235.
HONDA TRAIL 90, will trade Indian jewelry, rifle or pay cash. Wilkinson, 299-8327.
REGULAR (non automatic) front hubs for CJ2A '49 Jeep. Wentz, 298-2630.
TRADE: Ford Econoline camper van for 4-wheel drive vehicle in good condition. Miller, 281-3189.
PERSONS to share expenses of flying Cessna 172 to Houston for 2 weeks this Thanksgiving. Green, 292-3728.
KODAK pocket Instamatic. Baxter, 344-7601.
WOULD LIKE to trade Iris bulbs for any bulbs, geranium slips or mums. Mayer, 294-3368.
BOOK, "Painting the Southwest Landscape in Watercolor" by Peirce. Berg, 299-7334.

LOST & FOUND

LOST — Man's silver frame polaroid sunglasses; Man's black rimmed safety glasses, bi-focal, black case; Man's black pipe. LOST AND FOUND, tel. 264-3441, Bldg. 832.
FOUND — Multi-blade pocket knife; Man's gold rim sun glasses w/green lens; Man's brown and white rim bi-focal glasses; Man's turquoise ring. LOST AND FOUND, tel. 264-3441, Bldg. 832.

REAL ESTATE

BRICK 3-bdr., den, 1-3/4 bath, SE location close to bases &

<p>FRIDAY</p> <p>13 — HAPPY HOUR IRISH SPECIAL Adults \$2.95 Under 12 1.95 RHYTHMAIRES Lounge Barbara</p>	<p>SATURDAY</p> <p>14 — SHRIMP PEEL Dine 6:30-8:30 Dance 8:30 on Members \$4.90 Guests 5.90</p>
<p>20 — HAPPY HOUR ROAST BEEF BUFFET Adults \$2.95 Under 12 1.95 CHEWIWIE QUINTET Lounge Yolanda</p>	<p>21 — TEEN DANCE MARSH LUNG 7:30-10:30 Members 25¢ Guests 50¢</p>

WASTE — away your early evening at tonight's Irish Special buffet at Happy Hour. Corned beef and cabbage, of course, plus trimmings. Plus dancing.

NOT — a chance of going unless you ordered your tickets by Sept. 3. But if you have, you're already salivating — the shrimp boat arrives from the Gulf tomorrow night. Eat all you can peel, then dance off the calories.

WANT — a generous slab of roast beef handcarved to your liking? Then make the Roast Beef Buffet at next Friday's Happy Hour.

NOT — a disease suffered by miners in the Okefenokee but a new band — the Marsh Lung — to play for teenagers on the 21st. Tickets in advance, please.

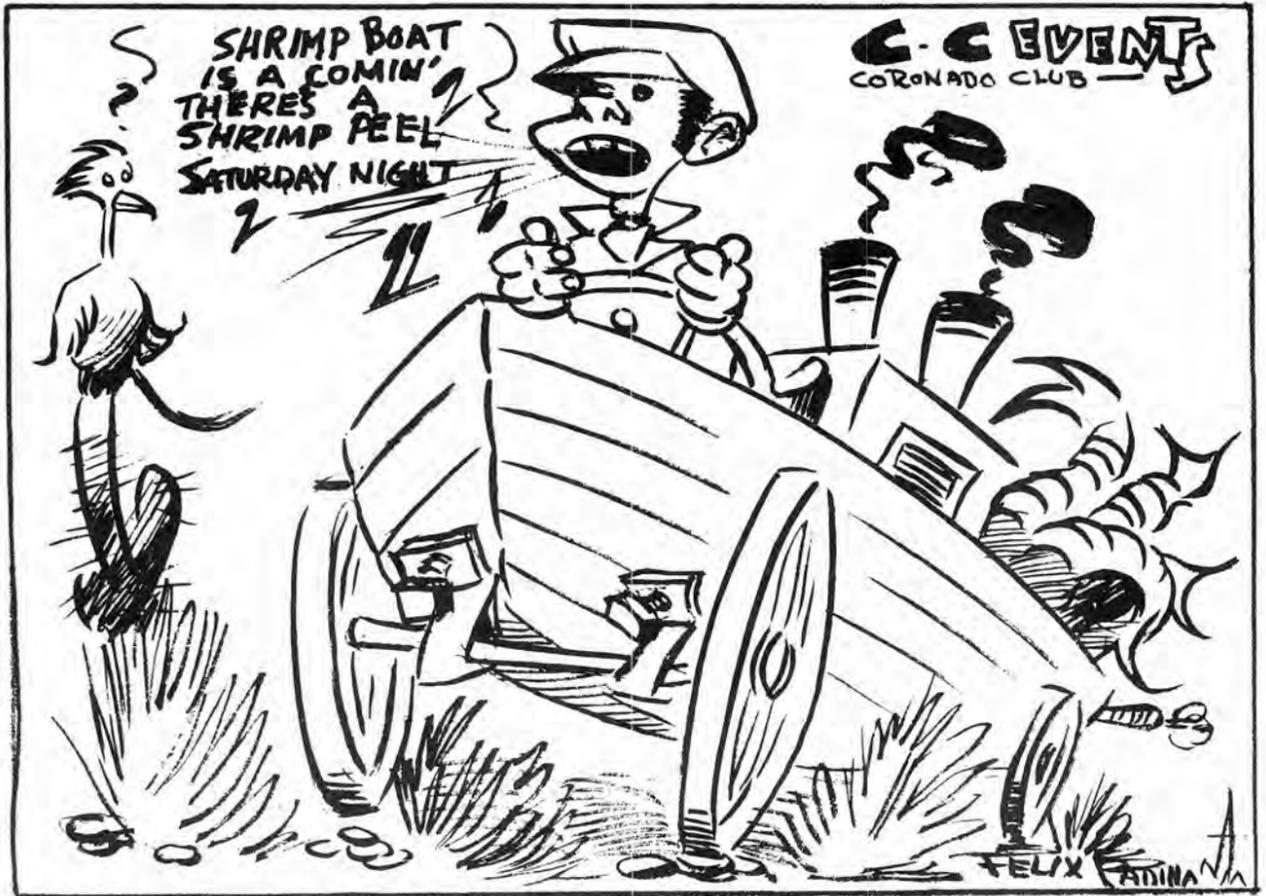
SKI — or at least long for snow with sympathetic sufferers. Do something positive too — learn all about skis and boots, courtesy the Spaulding Ski Clinic at the first meeting of the Ski Club's 74-75 season, 7 on the 17th. Bring the family, learn about Keystone too (and maybe win a week for two there). Other freebies as well. If you're not a member, come to the meeting and sign up — all kinds of advantages for beginners and experts, juniors and adults.

"Frugality is a fair fortune, and the habits of industry a good estate."

B. Franklin



Take stock in America. Buy U.S. Savings Bonds.



SWIM — all winter under the Aquatic Club's bubble. Sign up at the Office.

or all of three packages: Greece, Caribbean, Mexico City.

TRAVEL — still time to sign up for any

MORE INFO — 265-6791.

CHEWIWIE QUINTET • CABBAGE • BARBARA • BUBBLE

Events Calendar

- Sept. 15 — N.M. Mt. Club, Jemez Red Rock, 5-6 miles, 8 a.m., Gulf Mart.
- Sept. 15 — Albuquerque Chamber Orchestra, 8:15 p.m., Keller Hall, UNM.
- Through Sept. 21 — Zoo Benefit Mini Fair, animals & rides, Winrock.
- Through Sept. 22 — New Mexico State Fair, Fair Grounds.
- Sept. 18, 25 — Municipal Band Concert in east courtyard, 7 p.m., Winrock Shopping Center.
- Sept. 19 — Harvest Dance, St. Joseph's Fiesta, old Laguna village, Laguna Pueblo.
- Sept. 19-21, 8:15 p.m. — Classics Theater Co., "A Midsummer Night's Dream, Sept. 22, 2:15 p.m., Popejoy, UNM 277-3121.
- Sept. 19-21, 8:00 p.m. — Old Town Studio, Agatha Christie's "The Mouse Trap". Sept. 22, 2 p.m. 242-4602.
- Sept. 22 — Music Vesper Series, Mary Costa,

- soprano, 4 p.m., First Methodist Church, 4th & Lead.
- Sept. 22 — N.M. Mt. Club, Sandia Crest to I-40, 16 miles, Western Skies, 7 a.m.
- Sept. 22 — Faculty Performance, Sean Daniel, baritone, 8:15 p.m., Keller Hall, UNM.
- Sept. 25 — Harvest & Social Dance, St. Elizabeth's Day Celebration, Laguna Pueblo.
- Sept. 25 — "Don Juan in Hell," 8:15 p.m., Popejoy Hall, UNM.
- Sept. 27 — Albuquerque Symphony Orchestra, 8:15 p.m., Popejoy Hall, UNM.
- Through Sept. — Barn Dinner Theater, "Marriage Go-Round," 281-3338.
- Through Sept. — Quivira Photo Gallery, 111 Cornell SE, oil paintings, Webb Young, water colors by Jack Dietrich and Secundino Sandoval.



AUSTRIAN-BOUND Sandians and friends exuberate their way up the gangplank as the C-Club-sponsored trip gets under way. All who made the trip are invited to bring their slides, movies, and memories to share with others (even those who didn't get to go) at 7:30 on the 24th.