



# Bosque del Apache

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# LAB NEWS

VOL. 27, NO. 3

FEBRUARY 7, 1975

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

## Sandia Instrumenting Underground Coal Gasification Experiment

The instrumentation by Sandia of an underground coal gasification experiment will enable a new Labs organization to begin development of a control technology for the in situ processing of coal, oil shale, and other fossil fuels. The Bureau of Mines experiment will be conducted from April through October at Hanna, Wyo.

Sandia will field hundreds of sensors at various depths in 18 instrumentation wells and over the surface. The instrumentation includes thermocouple arrays, surface and sub-surface resistivity probes, geophones for active and passive acoustic measurements, in-seam gas sampling systems, and gages to measure tilt and displacement of the overburden near the coal seam. Dave Northrop, supervisor of newly-created

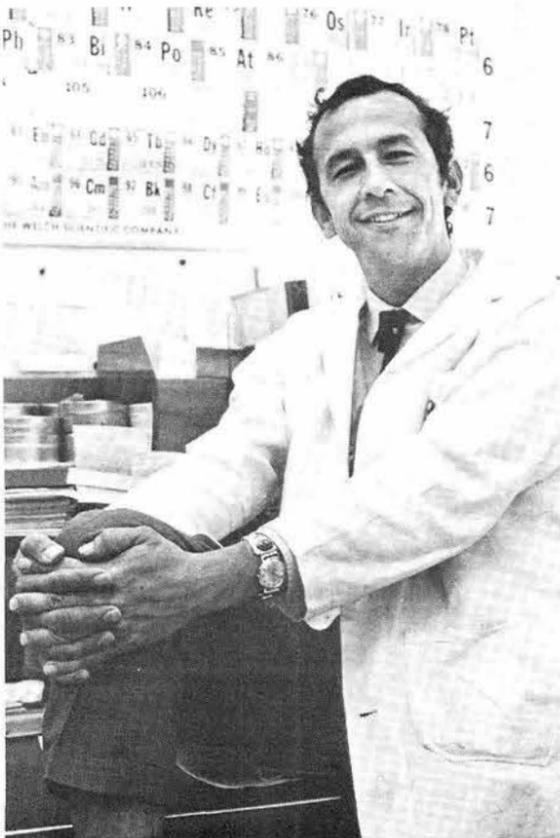
Underground Process Control Division 5732, reports that few measurements of the kind Sandia plans have been made before.

Intent of the experiment is to burn the 30-foot-thick coal seam, some 300 feet underground, by injection of air and oxygen. The burning coal will produce a combustible gas mixture — chiefly hydrogen and carbon monoxide — which could serve as fuel for an on site power plant. The process is environmentally attractive because it offers generation of electricity without the need for mining and with reduced atmospheric emissions.

In a previous Bureau experiment at Hanna, last year, results were encouraging. Over a six month period, gas production rates of 1.6 million cubic feet per day at an average heating value of 130 Btu per cubic foot were sustained. In that experiment Sandia examined the feasibility of making resistivity, acoustic, and thermal measurements; the work has pointed the way for the present expanded effort.

“To understand what happens during an underground burn,” Dave says, “will require careful analysis and correlation of the mass of data gathered. Hopefully, we’ll provide both a

(Continued on Page Four)



GIL CANO, a physicist working in Laser Plasma Physics Division 5243, has accepted an appointment from Governor Apodaca as Advisor to the Governor on Science & Energy. Gil will spend most of his time in Santa Fe but retains an office at the Labs. From Santa Fe he reports “. . . 10 to 12 hour days and the commuting is getting me down.” Gil’s PhD is from New Mexico State, and he has been with the Labs for 10 years.

## ERDA

Organization Chart

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# Afterthoughts

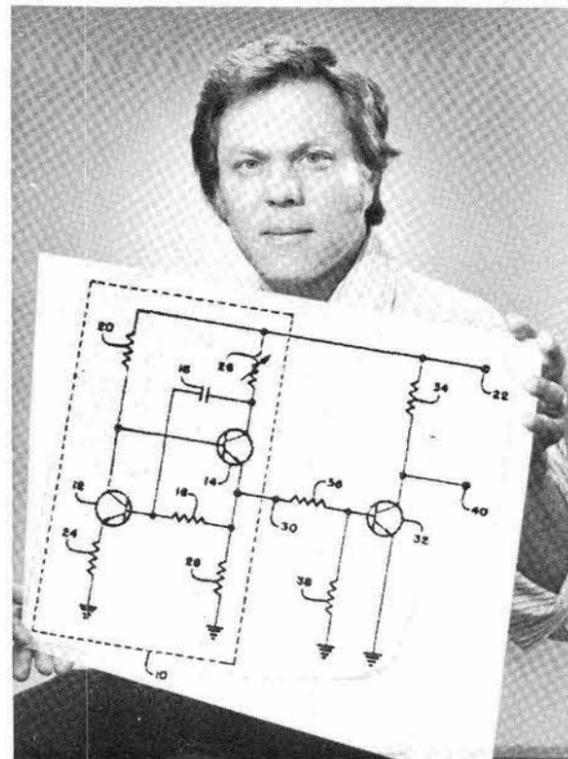
Our very own book-burners--This month's Incredible Gall Award goes to the self-appointed censor in Bldg. 892 who took it upon him/herself to remove several selections offered on the South Highway 10 book stand and to dump them in the trash (where they were found by the janitor). Today's book stands contain many that amply qualify as trash, but it was our impression that the buyer made that judgement. And since the 892 book stand is self-service, one wonders if this paragon of righteousness paid for the books he/she removed.

\* \* \*

The republic is not crumbling--There's a prof at Michigan State who should consider running for office. His name is David Klein and whenever he runs into a problem with a charge account bill requiring him to make telephone calls or to write letters, he charges for his effort--\$10 per letter, \$2 per call--then deducts the amount from his bill. And he refuses to talk on the telephone with department store employees who call on the grounds that they're being paid for their time but he is not. As he puts it, "I resent the arrogance of people telephoning you, unsolicited, and taking up your time. You have no reason to give them that time, when they have screwed up in the first place."

\* \* \*

"If God had wanted Texans to ski, he'd have given them a mountain"--sticker on the Purgatory ski lift. \*js



## Ron Husa Invents New Oscillator

The AEC was awarded a patent recently for a temperature stable RC (resistor/capacitor) oscillator invented by Ron Husa of Electronic Timers Division 2132.

The device is a self-starting, free-running square wave oscillator with selectable temperature coefficient and duty cycle. The circuit uses a minimum number of components — only one capacitor for timing — and can easily be hybridized (reduced to a tiny microcircuit device). Primary use for the device is to provide the time base for timers or coded switches.

This is the third device invented by Ron to be patented. The other patents were for a circuit which generates a pulse in response to a radioactive burst and for a constant volt second generator circuit.

Ron graduated from DeVry Technical Institute in 1960 with an associate degree in EE. He joined Sandia in January 1961 and has since worked on circuit designs for timers, radars and decoders.

## Events Calendar

- Feb. 7 — Western Athletic Indoor Track & Field Championship, 7:30 p.m., Tingley Coliseum.
- Feb. 7-9 — Old Town Studio, Tennessee Williams, "The Glass Menagerie," 8 & 2 p.m. (9th).
- Feb. 8 — Albuquerque Symphony Orchestra, all requests program, 8:15 p.m., Popejoy Hall.
- Feb. 8 — Music Vesper Series, "Guitar Workshop," 4 p.m., United Methodist Church.
- Feb. 8-9 — State AAU Indoor Track Championship, 8 a.m. to 2 p.m. Saturday, 8 a.m. to 5 p.m. Sunday, Tingley Coliseum.
- Feb. 9 — Ski Touring Club, Jemez Mt. race, 3-miles, Gulf Mart, 8 a.m.
- Feb. 9 — N.M. Mt. Club, snow shoe hike of Cienega, 6-7 miles, Western Skies, 8 a.m.
- Feb. 11-13 — Guild Theater, "The Producers," 265-0220.

- Feb. 14-15 — The New Mexico Ballet Company, "Winter Concert '75," 8:15 p.m., Popejoy Hall.
- Feb. 14-16 — Arts 7 Crafts Festival, Convention Center.
- Feb. 14-16 — New Mexico Sports Show, Tingley Coliseum.
- Feb. 15-16 — Albuquerque Dance Theater, 8:15 p.m., University of Albuquerque, stage 2.
- Feb. 15-16 — Alpha Kappa Alpha: Black Expo '75 Bi-Centennial Festival, Convention Center.
- Feb. 16 — N.M. Mt. Club, Cabezon Peak, Gulf Mart, 7:30 a.m.
- Feb. 17 — Community Concert Series, The Art Hodes Four (Jazz Group), 8:15 p.m., Popejoy Hall.
- Feb. 18 — Cultural Entertainment Series, "The Sunshine Boys," 8:15 p.m., Popejoy Hall.

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FEBRUARY 7, 1975



## LAB NEWS

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### SANDIA LABORATORIES

An Equal Opportunity Employer  
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&

lorena schneider reports on livermore

SINCE SEPTEMBER, when the LAB NEWS article on Dick Bassett's (2414) electric car appeared: Associated Press picked up the story; Dick has gotten 300 letters from the US, Canada, South America; the Premier of Manitoba called; Dick and his wife have been on three radio talk shows out of Washington, D.C., St. Louis, Charlotte, NC; he's lectured at schools; he's had to put together a data package to answer the technical questions; he still gets a couple of phone calls a day; and now this — a Congressional Certificate of Merit from Cong. Manuel Lujan. It's all been *Something of a Shock*, all right.



# LIVERMORE NEWS

VOL. 27, NO. 3

LIVERMORE LABORATORIES

FEBRUARY 7, 1975

## Sandian Named To National Recreation Board



Marlin Pound (8214), a director of the Livermore Area Recreation and Park District, has been appointed to the board of directors of the Commissioners — Board Members Branch (C-BM) of the National Recreation and Park Association. C-BM, the layman's branch of the association, has over 3300 members on 500 local park and recreation agencies.

As a director, Marlin will work with professionals in the parks and recreation field to determine the leisure needs of people throughout the country and to mobilize citizen effort to fulfill these needs. He says the primary C-BM emphasis for the year will be on education for local agency members, legislative support of NRPA objectives, and the strengthening of state affiliates.

A member of the local Recreation and

Park District board since 1967, and former board chairman, Marlin has been a board member of the California Association of Park and Recreation Commissioners since 1972. He has also been treasurer of the state organization and is currently on the Awards Committee.

## Sympathy

To Roberta (8265) and Bill Cole (8433) on the death of her mother in Santa Paula, Calif., Dec. 25.

To Evelyn Foote (8212) on the death of her mother in Provo, Utah, Dec. 23.

To Betty Hogan (8261) and retiree T.K. O'Kelley on the death of her sister, his wife, in Oakland, Dec. 23.

To Wayne Townes (8257) on the death of his father in Brentwood, Jan. 15.

To John Anderson (8166) on the death of his father-in-law in Salem, Ore., Jan. 5.

To Bob Bedford (8181) on the death of his mother-in-law in Ft. Worth, Tex., Dec. 28.

## Sandians Compete in 1st Livermore Marathon

Sandians Jerry Williams (8323) and Tom Jefferson (8322) were among some 250 runners who raced 26 miles — from SLL to Pleasanton, and back — in the first Livermore-Pleasanton Marathon. Although the course covered a fairly flat, scenic loop on little-traveled roads, three hills with a 100-foot elevation gain had to be surmounted.

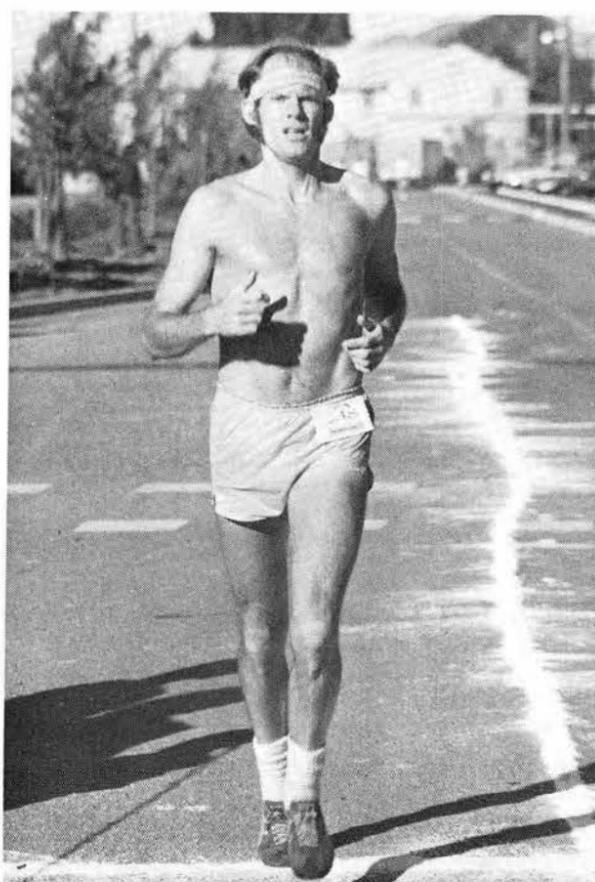
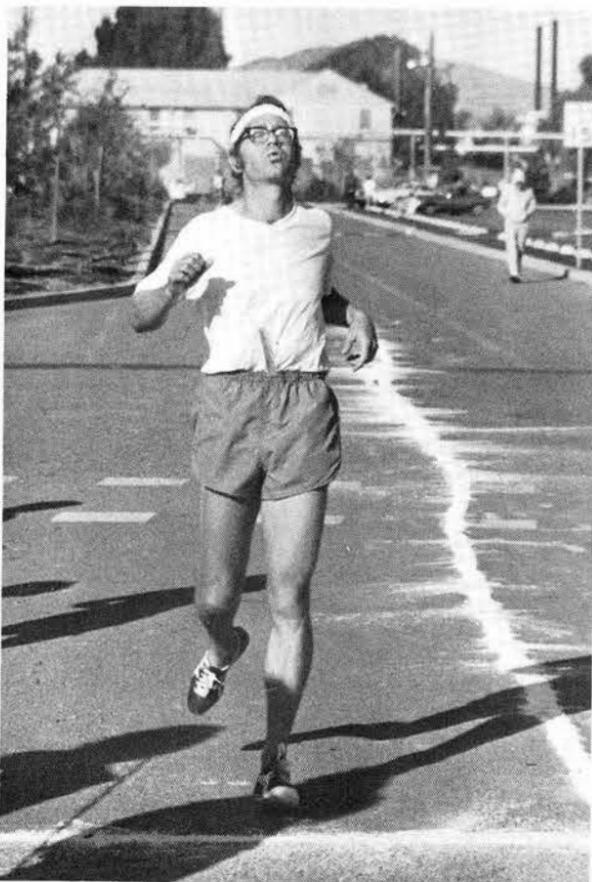
Officially sanctioned by the national Amateur Athletic Union, the event was sponsored by the Livermore Valley Running Club and the Livermore Jaycees. It was held in cooperation with LLL's Recreation Association's Road Runners Club. Tom serves as president of both running clubs.

Of the starters, 163 finished the race. Most of the finishers had times of under four hours.

Jerry, competing in his first marathon, had a time of 3:29:52, placing him 83rd overall. Tom, in his second marathon with a time of 3:41:43, placed 105th overall.

An unsanctioned, half-marathon race (13.7 miles) was held concurrently with the full marathon. In Pleasanton, a double-deck London bus returned the half-marathoners to the finish line at the Labs. About 85 finished this race, including about 25 runners from the full marathon.

Tom notes that the Valley Running Club is sponsoring its Fourth Annual Livermore 8.5-Mile Run in April. Anyone interested in participating should contact him on ext. 2120 for an entry form.



AT THE FINISH LINE in the first Livermore-Pleasanton Marathon are, left, Jerry Williams (8323) and Tom Jefferson (8322).



SOCIETY OF PROFESSIONAL ENGINEERS' Livermore chapter president Dick Wilhite (8254), center, and scholarship chairman Mike Soderstrand (8182) congratulate Debra Stoner (father Don Stoner, 8183), one of five local finalists in national scholarship competition.

## SPE Awards During Nat'l Engineers' Week

The Livermore chapter of the California Society of Professional Engineers has selected Debra Stoner (father Don Stoner, 8183) as one of five finalists competing for scholarships coordinated by the National Society of Professional Engineers. A student at Livermore's Granada High School, Debra is finalist for the NSPE-Armco civil engineering scholarship.

Local chapter awards of savings bonds, donated by Valley industrial and engineering firms, will be presented to the five students during National Engineers' Week, Feb. 16-22. The presentation will highlight the chapter meeting on Feb. 19 at Emperors Garden in Livermore. Scholarship chairman for the local chapter, Mike Soderstrand (8182) invites Sandia engineers who may be interested in SPE activities to attend the meeting. Contact him at ext. 2058.

Mike also serves as co-chairman for the Engineers' Week Scholarship Committee of the San Francisco — Bay Area Engineers' Council and is a coordinator for the national scholarship program of the Society of Women Engineers.

## Speakers

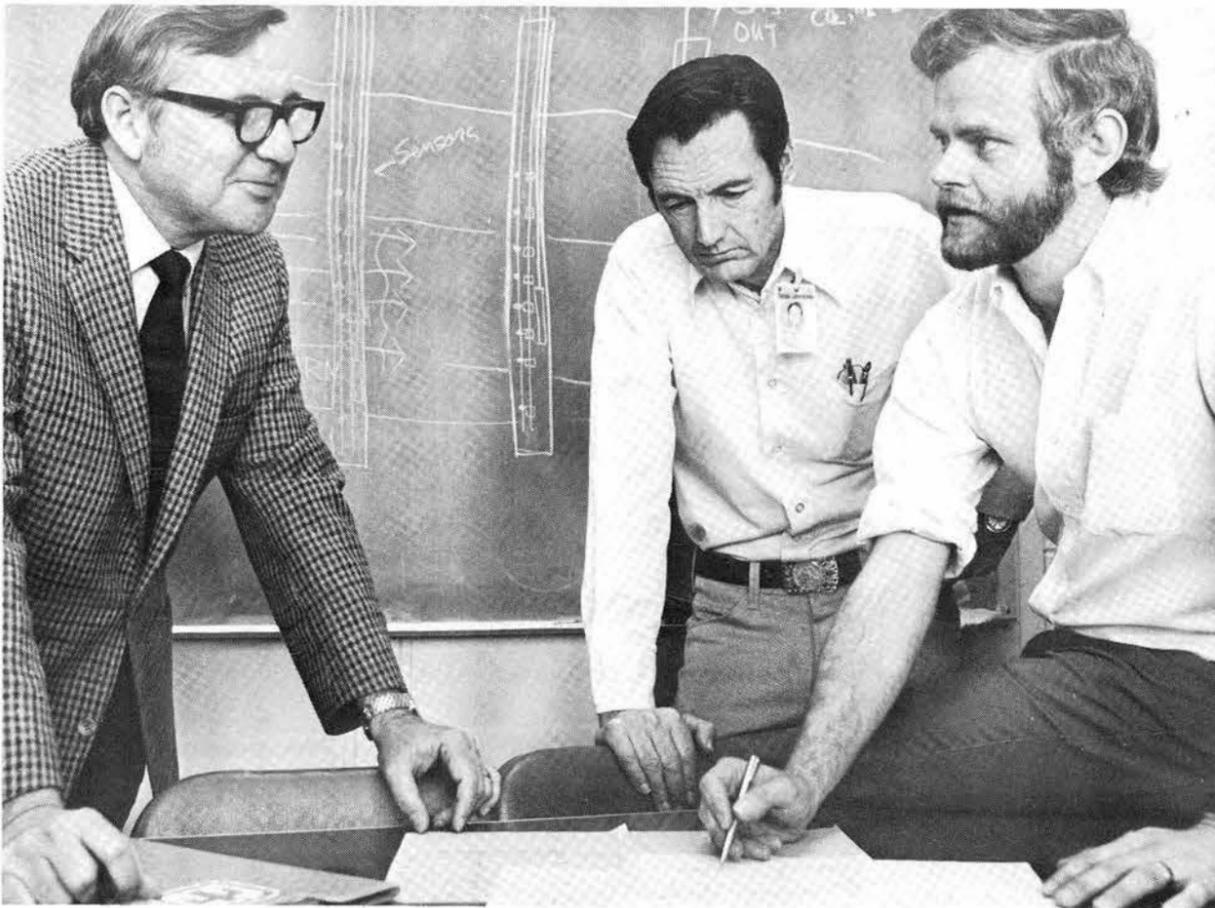
Tom Brumleve (8184), "A High Temperature Solar Energy System," and Joe D. Hankins (8322), "Cost Optimal Deployment of Mirrors, Associated with a High Temperature Solar Energy System," International Solar Energy Society Annual Meeting, Colorado State University, Ft. Collins, Colo., Aug. 19-23.

Larry Watkins (8342), Cliff Skoog (8344), and Ed Barsis (8342), "The Effects of Radiation on the Absorption and Luminescence of Fiber Optic Waveguides and Radiation Effects," SLL Technology Colloquium, Aug. 19.

George Thomas (8313), "Carbide Formation on Nb Surfaces During High Temperature H Irradiation," 21st National Vacuum Symposium, Anaheim, Calif., Oct. 8.

Dave Ottesen (8313), "The Use of Infrared Interferometry for Surface Analysis," SLL Technology Colloquium, Sept. 16.

Wes Estill (8314), "Automation and Electron Microprobe Analysis," Northern California Electron Microbeam Society Meeting, San Leandro, Calif., Sept. 27.



DISCUSS PROJECT — Ray Reed (1116), Jack Beyeler (1123) and Dave Northrop (5732) discuss instrumenting of an in situ coal gasification experiment planned by the Bureau of Mines at Hanna, Wyo., starting in April. Sandia is working to develop process control technology for the energy recovery scheme.

Continued from **Page One** **COAL GASIFICATION**

chemical and physical description of what occurs down there.

"Our ultimate objective is the development of an integrated process control system. Such a system would give the location, extent, and status-of-burn of an in situ combustion process, so that control systems could optimize the recovery process. To gain understanding, we'll emphasize development of numerical and analytical models reflecting the different instrumentation techniques."

Sandia participation in the first phases of

the Hanna experiment is funded by \$676,000 from ERDA.

The project is receiving support from throughout the Laboratories. Luke Vortman (1111) has contributed to the design of the project. Jack Beyeler (1123) is in charge of instrumentation fielding. Ray Reed (1116) has designed and will field an extensive thermocouple array.

Others contributing to the project include Bob Seavey (1735), Doug Garbin (1111), Sam Stearns (1111), Hank Kerr (1134), George Griswald (5731), Bill Beckham (5732), Burl Donaldson (2515), Barry Granoff (5825). Division 9415 is providing data reduction.

## The New Traffic Code, Bicycles & Autos

The city adopted a new traffic code on Jan. 1 which contains, among others, a section pertaining to bicycles. Section 16 is being reproduced and distributed to the 400 members of the Sandia Bicycle Association with the next newsletter. Certain subsections within it define the rights and obligations of bicycles in bike vs auto situations, and because such confrontations are reported to occur on Base we summarize these subsections below.

**16.5 - Traffic Regulations** — Bicyclists have the same rights as automobiles in the use of the streets, as well as most of the restrictions. The bicyclist has one advantage — if he dismounts and walks the bicycle, he becomes a pedestrian.

**16.6 - Traffic Control Devices** — The bicyclist is expected to obey all traffic control signals, signs, and other control devices applicable to vehicles. One important exception *on Base only*: STOP signs may be treated by the cyclist as YIELD signs.

**16.11 - Duty of Motorist to Bicyclist** — When approaching a bicyclist, the motor vehicle shall proceed with caution, pass at a reasonable speed, and keep a safe distance. "Safe distance" is defined as not less than five

feet; *on Base only* this distance is defined as six feet. Further, the motorist may not "harass or endanger a bicyclist by the movement or maneuvering of his motor vehicle" and, on Base, this prohibition extends to "verbal abuse."

**16.14 - Riding on the Right** — The bicyclist shall ride as near to the right side on the road as practicable. However, the bicyclist "may maintain his position on the right side of the roadway against a vehicle coming up behind him which is without room to pass in the same lane." "Practicable" is clearly the operative word here; the cyclist doesn't have to take to the gutter.

**16.15 - Traveling in Groups** — In the city two abreast is allowed except in business districts where single file is required. *On Base only* single file is required in housing areas, otherwise not more than two abreast.

**16.29 - Bicycle Equipment** — For night riding, a lamp is required on the front of the bicycle which emits a white light visible from at least 500 feet; a red reflector is required on the rear, or a lamp emitting a red light.

Irwin Janney (9412), past president of the Sandia Bicycle Association was a member of the city's task force that drafted the new traffic code for bicycles.

## Speakers

A.B. Campbell (9426), "Some Aspects of Spectral Analysis and Waveform Reconstruction," Symposium on Digital Signal Processing, Nov. 18, SLA.

J.W. Reed (5644), "Log-Normal Rain-Rate Distributions in Summer Showers," Fourth conference on weather modification, Nov. 18-21, Ft. Lauderdale, Fla.

C.E. Barnes (5112), "Neutron Damage Effects in GaP(Zn,O) Diodes," 1974 IEEE Specialist conference on the Technology of Electroluminescent Diodes, Nov. 20-21, Atlanta, Ga.

W.S. Saric (5641), "Boundary Layer Stability Experiments at Mach 2.4"; R.L. Fox (5643), "Distribution Functions in the Statistical Theory of Compressible Turbulent Fluids"; Saric, "Stability of Liquid Films Adjacent to Compressible Streams," 27th annual meeting of the Division of Fluid Dynamics, APS, Nov. 25-27, Pasadena, Calif.

G.A. Samara (5130), "The Study of Structural Phase Transitions at High Pressure: Soft Modes in Ferroelectrics and Dielectrics," Fourth International Conference on High Pressure, Nov. 25-29, Kyoto, Japan.

J.G. Fossum (2113), "Computer-Aided Numerical Analysis of Silicon Solar Cells," EE colloquium, Univ. of Ariz., Nov. 26, Tucson.

W.H. Smyrl (5631), "Studies of Plating Corrosion," annual meeting, American Institute of Chemical Engineers, Dec. 1-5, Washington, D.C.

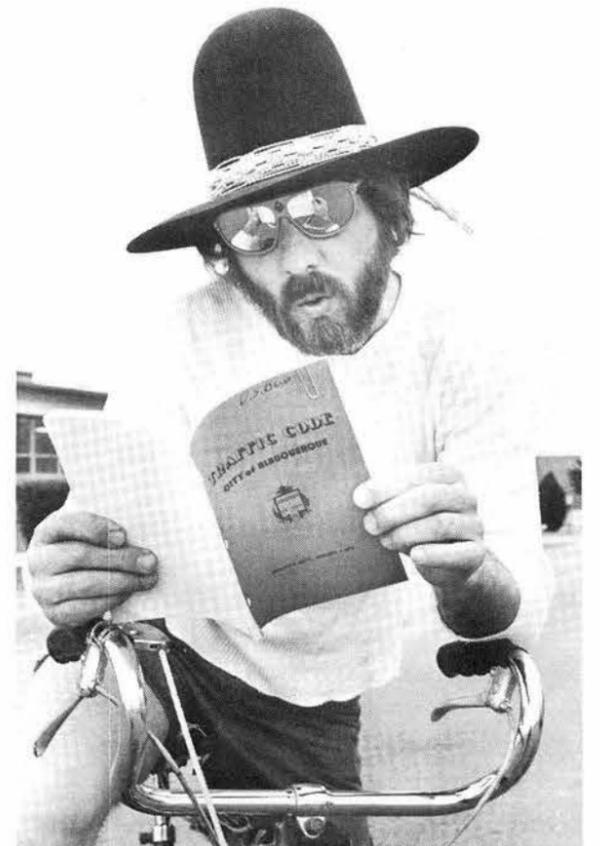
C.F. Melius (5211), "The H<sup>+</sup> + H<sup>-</sup> Neutralization Process Using The Molecular Wavefunction Approach"; J.M. Hoffman (5212), G.J. Lockwood and G.H. Miller (both 5226), "N<sup>+</sup> Radiation from Collisions of Various Ions with N<sub>2</sub> Gas"; Lockwood and Miller, "Electron Capture by C<sup>+</sup>, N<sup>+</sup>, and O<sup>+</sup> in Nitrogen Gas," Division of Electron and Atomic Physics Meeting APS, Dec. 2-4, Chicago.

D.J. Gould, E. Kjeldgaard (both 2515) and T.M. Massis (2516), "The Compatibility of PBX-9404 and Delrin"; Gould, D.K. McCarthy and Massis (both 2516), "Compatibility Testing Techniques for Gasless Pyrotechnics"; Massis, W.D. Harwood (9515) and Gould, "The Effect of Humidity on the Performance of HNAB"; H.S. Schuldt (2515) and R. Burnett (2513), "Long-Term Effects of Silicone Oils on PETN," Compatibility of Energetic Materials with Plastics & Additives meeting, American Defense Preparedness Association, Dec. 3-4, Picatinny Arsenal, Dover, N.J.

F.L. Vook (5110), "Use of Ion Beams to Study H and He in Metals," APS meeting, Dec. 5-7, Atlanta, Ga.

J.M. Peek (5641), "Scattering Theory and Molecular Degrees of Freedom: An Example," Department of physics and astronomy, UNM, Dec. 6.

E.P. EerNisse (5112), "Ion Implantation in Semiconductors," Integrated Circuits Seminar, EE Dept., Purdue Univ., Dec. 12, Lafayette, Ind.



THE MANIC biker is on the prowl again. Psychocyclist is really a functional illiterate, but here he reviews the bicycle section of Albuquerque's new traffic code. Accompanying article discusses major provisions of the code.

# Jim Kenagy Creates Beauty With Stained Glass

Jim Kenagy, manager of Machining Department 3640, is a craftsman of faceted stained glass windows. The Hoffmantown Baptist Church displays proof of his talent. Ten years ago when the building was constructed, Jim worked with the architect and builders and designed and assembled its 50 stained glass windows. More recently he completed a baptistry window in faceted stained glass measuring nearly seven feet on each side.

For 10 of his 23 years at the Labs, Jim supervised Sandia's glass and plastic shops. "Anyone would have learned something about working with glass during that time," he says. "And in my case I merely used what I had learned at Sandia to the benefit of the community. You might call it spin-off."

Windows admit light and exclude wind and weather. They're elements of the architecture, sometimes used as a decoration or to underscore the style of the structure. Colored glass enables the artist to control the quantity as well as the quality of light. The resulting aesthetic value of a stained glass window lies in its tones and hues — a mosaic of colored light.

Stained glass windows can be leaded or faceted. In leaded windows, the glass is joined by strips of lead; the glass plus the network of lead lines produce the desired effect. Leaded windows lend themselves to depictions of people and real-life scenes.

On the other hand, faceted glass windows do not, and their beauty is more abstract, deriving from color saturation, hue, opaqueness and transparency. Fabrication is different too.

The glass Jim uses, from a factory in West Virginia, comes in inch-thick segments 8 to 12 inches on a side. It's heavy stuff.

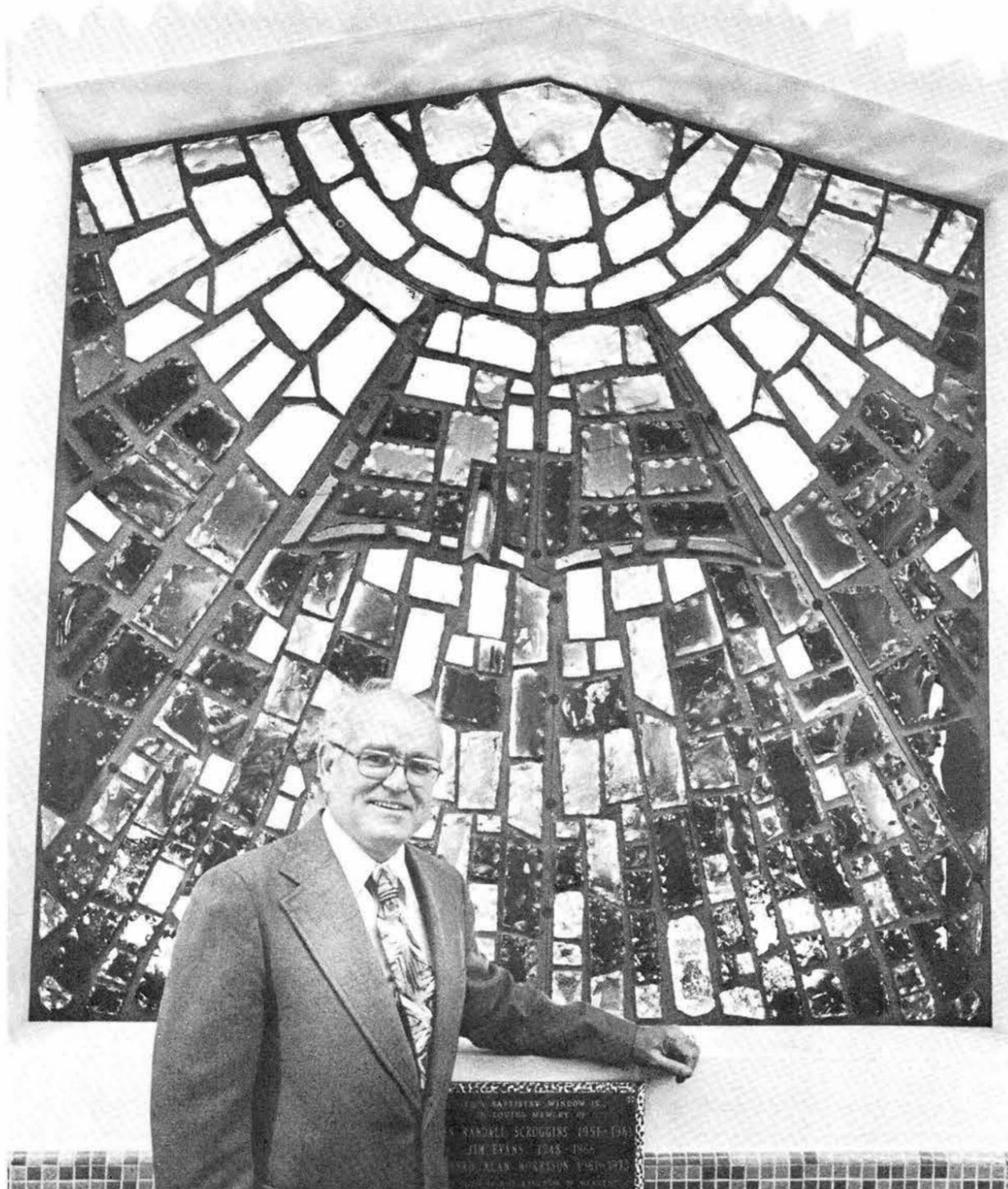
Once the design is conceived, Jim cuts metal templates and lays out his pattern. The glass is cut with a diamond saw to fit each template, and Jim then "facets" the pieces by standing the glass on edge and chipping the edges with chisel and mallet. A rippled effect results as the individual facets create highlights, just as facets on a diamond enhance light effects.

The faceted pieces are placed within a frame, a layer of sand is brushed into the spaces between the glass, epoxy is poured onto the sand and more sand sprinkled over it. The sand adds texture to the connecting medium.

After the baptistry window had cured, Jim added the metal frame and reinforcements. Because of its size, the window was constructed in five segments. Nine men were required to transport and install the 400-pound window. Working in his garage, Jim completed it in about nine months. He worked for a year on the earlier windows.

The baptistry window was commissioned in the memory of three young church members by the parents of one of the boys. By any measure, it's a highly professional job — the glass company was so impressed that they urged Jim to start his own business. •nt

JIM KENAGY (3640) made 50 of these stained glass windows for the Hoffmantown Baptist Church. Chips on the edges of the chunks of glass are called facets; shape and depth of the facets, which enhance effect of light, are controlled by the angle of the chisel and the force of the mallet.



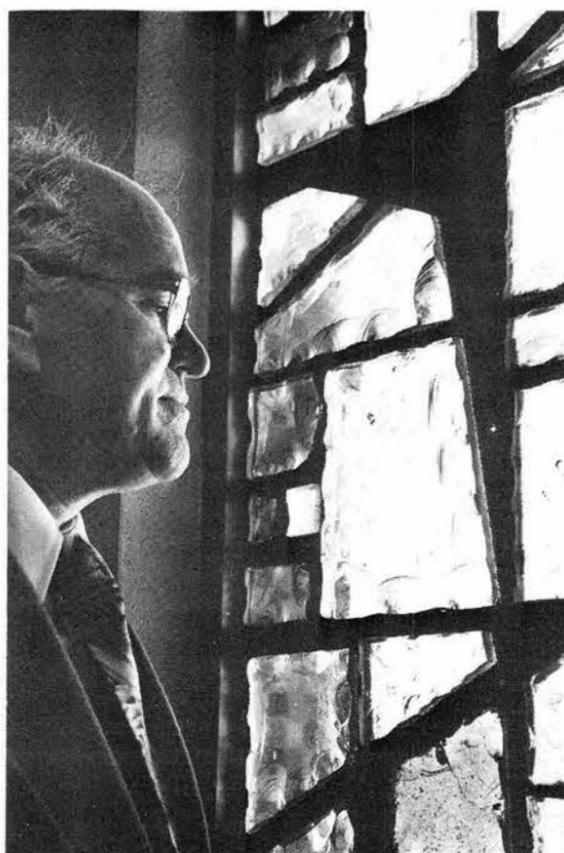
JIM'S baptistry window which was installed last November. With its full color spectrum — from palest yellow at the top through oranges, reds, blues and greens — and lighted from behind, the window presents an endless variation of color and pattern.

## Take Note

The name of Oak Ridge National Laboratory (ORNL) was changed to Holifield National Laboratory (HNL) effective Jan. 2. The action was taken by the Senate and House of Representatives in recognition of Chet Holifield's "outstanding leadership over a period of 32 years in the House of Representatives where he had a significant role in developing the Atomic Energy Act of 1946." Holifield also served on the Joint Committee on Atomic Energy from its inception.

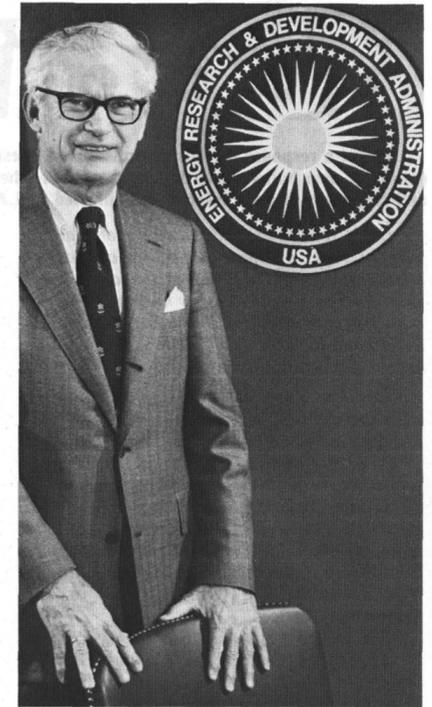
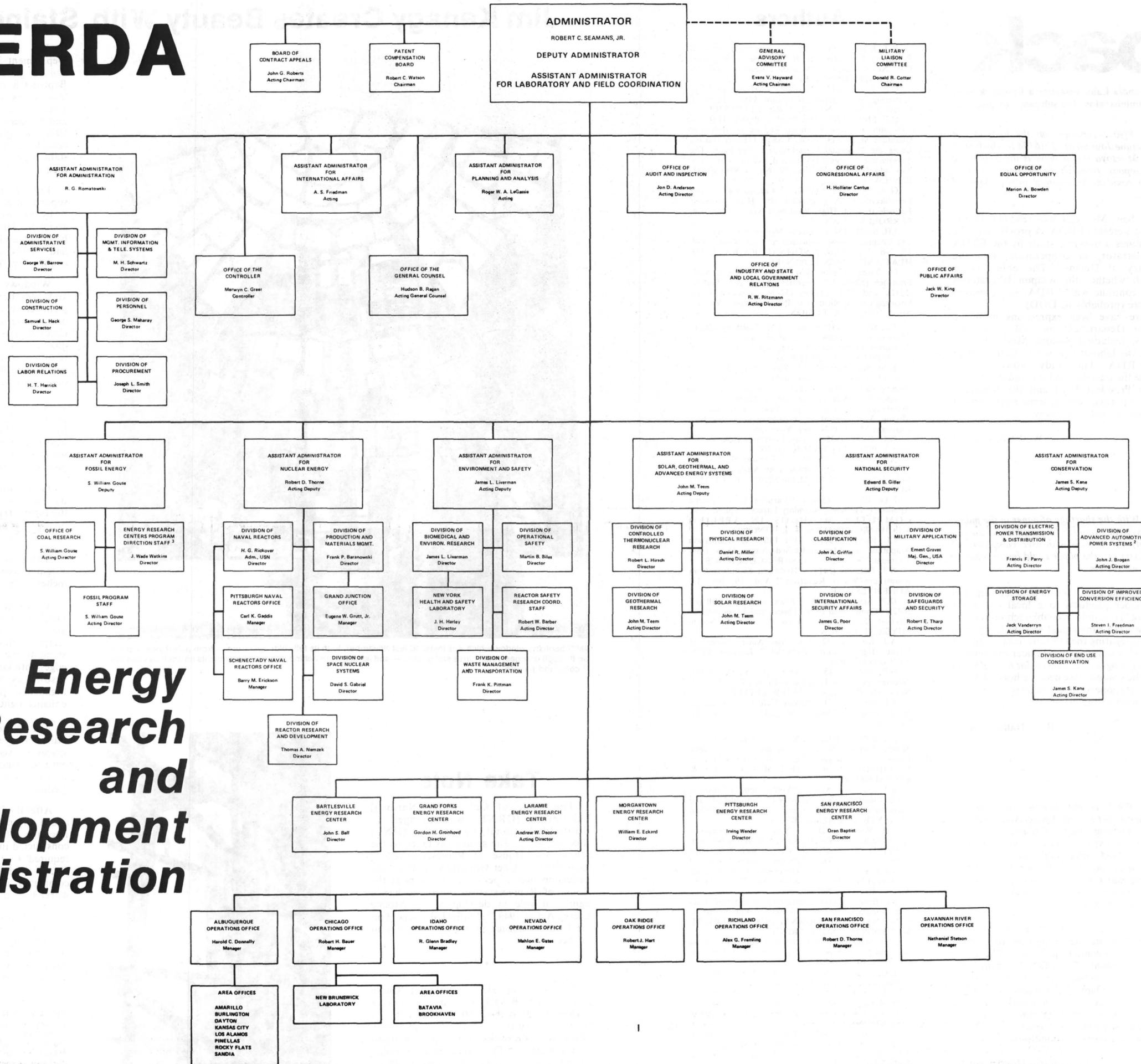
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Donald Amos (5122) will present "Curve Fitting with B-Splines" (coauthor Dave Saylor, 5162) at the 5100 Seminar Feb. 11. On Feb. 18, Gary Carlson (5167) will discuss "First Wall Problems in an Electron Beam Fusion Reactor." The seminar meets Tuesday mornings at 8:30 in rm. 201 of Bldg. 806.



# ERDA

# Energy Research and Development Administration



ROBERT SEAMANS, first head of the Energy Research & Development Administration, comes to that job with wide experience. He was Secretary of the Air Force from 1969 to 1973 and, before that, held high office in NASA. He gained his ScD from MIT and has been associated with that school since the early 40's. Mr. Seamans visited Sandia in the late '60's while working with NASA.

## ERDA Begins

"To guide and promote energy research and development to meet immediate and long-range needs," thus is stated the mission of ERDA by its first administrator, Robert Seamans, in an announcement sent to all employees of the new agency.

The announcement includes the organizational chart reproduced at left, appropriately labeled "interim" at this early date. A second chart showing functional assignments in ERDA will be reproduced in the next issue of LAB NEWS.

For the record, ERDA came into official existence on Jan. 19 under provisions of the Energy Reorganization Act of 1974. The Act transfers to ERDA certain functions of AEC, the National Science Foundation, The Environmental Protection Agency and the Dept. of Interior.

ERDA headquarters is located temporarily in the Reporters Bldg. in Washington, D.C. (7th and D Sts. SW). Several of the Assistant Administrators, as well as Mr. Seamans, will be located there, but the AA's for Nuclear Energy and National Security will be in Germantown, Md. (AEC's site).

Mr. Seamans concluded his statement to ERDA employees with this charge: "Now we must move on with the job to be done. The needs for early results of our research and development programs are among the most crucial in the history of man. Each of us has the privilege and opportunity to make a significant contribution in meeting these needs. The individual and collective potentials are great. I will depend on each of you to make the most of them."

# feed *li*back

## Authors

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. I've been in the Sandia pension plan for over 20 years and have yet to see a financial statement distributed to the participants. Why? Have we not a right to know how much money is in the plan and how it is being invested? Is Sandia not in violation of the new pension laws by not disclosing this information?*

A. The Labs has at all times complied with the existing Welfare and Pension Plans Disclosure Act Requirement. In November 1973 a copy of the U.S. Labor Department reporting form D-1 Supplement was sent to all Sandia Department Manager offices, and an article appeared in the December 14, 1973 issue of the Lab News advising employees that information concerning the Pension Plan was available for their perusal in the Department offices.

For the past six years Sandia has sent to all employees a Personal Annual Benefits Statement which contains complete Pension Plan information updated to the time of the issuance of the statement. The 1974 Benefits Statement will be sent to all employees about February 1, 1975.

If you participate in the Variable Annuity Option and if you are interested in the information contained in Prudential's Quarterly Report of the Variable Contract Account Investment Fund, you may see the report by contacting the Benefits Administration Division.

You and all Sandians can be assured that Sandia will be in compliance with the new Employee Retirement Income Security Act of 1974, just as we have complied with existing laws in the past.

R. J. Edelman - 4200

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*Q. Two Sandia engineers from the solar energy group are now stationed in Germantown to help develop the ERDA five year plan. They report that verbal presentation is about the only way to present proposals and ideas because the AEC people (now ERDA) just do not have time to read and thus can only make quick judgments. It would surely be to our advantage to get in there and verbally sell ourselves, wouldn't it?*

A. The observation that personal contacts are vital in selling new projects to government sponsors in Washington is correct. I can assure you that Sandia understands this and is acting accordingly.

Two areas of new initiatives for Sandia, now funded at a substantial level and growing, are reactor safety and waste disposal, and physical security in several areas other than weapons. This new work would not have been gained without extensive personal selling.

We are just now succeeding in attracting important support for solar energy work, and we are optimistic that our involvement in this area will increase. There are several other proposals of energy related R&D that we are actively pursuing. All of these activities involve developing and following up personal contacts.

Even in our weapons work, personal face-to-face communications remain an important part of our interface with AEC (ERDA).

Morgan Sparks

*Q. Please comment on the item in the Albuquerque Journal of 12/16/74 in which Sen. Joseph Montoya stated there is the possibility that weapons research being done in New Mexico could be transferred to the Dept. of Defense.*

A. Sen. Montoya was referring to the bill which created ERDA. A provision of the bill requires a one-year study by the ERDA Administrator, in cooperation with the Secretary of Defense. The object is to establish whether the weapon laboratories should continue with ERDA, or be moved elsewhere (probably to DOD).

There have been expressions from the Defense Department as well as several senators, including Senator Montoya, that suggest the laboratories would likely remain with ERDA. The study, however, will examine the question and the findings will be sent to President Ford and the Congress. Sandia is participating in some early parts of the study, already underway.

W. J. Howard - 2

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*Q. With the shortage of paper in the public school system, would it be possible for Sandia to supply the schools with used computer tab runs? Later on, the paper could be recycled by the school system.*

A. Sandia Labs sells its used tab runs and other paper products to a local outlet for recycling. To supply the public school systems with used tab runs would require many man hours segregating the tab runs from the mixed paper. This is not required under our present recycling program. However, for several years the public schools have been authorized to use surplus stationery; this includes paper that can be used in the classroom.

R. J. Hansen - 4800

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*Q. What is the function of receiving inspection if not to note damaged materials (as well as verifying orders of course)? On three occasions recently we have received material which "passed inspection" but which was broken or damaged. In all cases the fact that Receiving had OKed the shipment left us (i.e. Sandia) holding the bag — we had no claim against the shippers.*

A. Practices in the Receiving organization include inspection for visible damage to incoming packages. There are certain shipments for which no claims are filed such as uninsured parcel post or small value items. Damage to packages can, of course, also occur after material leaves the Receiving organization. Please contact the Receiving supervisor if future material is received in a damaged condition.

R. E. Hopper - 9700

R.T. Johnson (5155), "Low-Temperature Electrical Resistivity Characteristics of Fast-Neutron-Irradiated CdS: New Concepts in Neutron Detection," Vol. 23, No. 1, RADIATION EFFECTS.

C.E. Land (5113), "Variable Birefringence Light Scattering, and Surface-Deformation Effects in PLZT Ceramics," Vol. 7, No. 1-4, FERROELECTRICS.

C.F. Melius (5211) and W.A. Goddard, III (CIT), "Ab initio Effective Potentials for use in Molecular Quantum Mechanics," and "Charge-Transfer Process Using the Molecular-Wave-Function Approach: The Asymmetric Charge Transfer and Excitation in Li + Na+ and Na + Li+," Vol. 10, No. 5, PHYSICAL REVIEW A.

G.A. Samara (5130), "Vanishing of the Ferroelectricity in Displacive and Hydrogen-Bond Ferroelectrics at High Pressure," Vol. 7, No. 1-4, FERROELECTRICS.

J.H. Smith (1543), "Electric Merger of Crocco-Lees and Chapman-Korst Approach to Near Wake," Vol. 17, No. 12, INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER.

G. Yonas (5240), J.W. Poukey (5241), K.R. Prestwich (5245), J.R. Freeman (5241), A.J. Toepfer (5242), and M.J. Clauser (5241), "Electron Beam Focusing and Application to Pulsed Fusion," Vol. 14, No. 5, NUCLEAR FUSION.

J.E. Schirber (5150) and C.J.M. Northrup (5824), "Concentration Dependence of the Superconducting Transition Temperature in PdH<sub>x</sub> and PdD<sub>x</sub>," Vol. 10, No. 9, PHYSICAL REVIEW B.

H.M. Stoller (5840), B.L. Butler (5844), J.D. Theis and M.L. Lieberman (5826), chapter — "Carbon Fiber Reinforced-Carbon Matrix Composites — in Composites: State of the Art, published by The Metallurgical Society of the American Institute of Mining, Metallurgical and Petroleum Engineers, Inc., copyright March 1974, New York City.

G.C. Stoker (9352), "Fast Converter Hold Peak," June 7, 1974, ELECTRONIC DESIGN.

A.E. Hodapp (5625), "Effect of Transverse Products of Inertia on Reentry Vehicle Trim Angle Behavior," Vol. 11, No. 10, JOURNAL OF SPACECRAFT AND ROCKETS.

F.G. Blotner (5640), "Variable Grid Scheme Applied to Turbulent Boundary Layers," Vol. 4, 1974, COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING.

J.E. Houston (5114), "The Effect of Modulation Amplitude on Electron-Excited Auger Data from Titanium," Vol. 42, No. 1, SURFACE SCIENCE.

N.J. DeLollis (5813), "Hydrogen Evolution from Aluminum/Water Reaction," Vol. 19, No. 33, ADHESIVES AGE.

D.P. Aeschliman, D.L. Evans and R.A. Hill (all 5642), "Comparison of H<sub>2</sub> Theory and Experiment at Electron Densities near 10<sup>15</sup>cm<sup>-3</sup>," Vol. 10, No. 6, PHYSICAL REVIEW A.

A.J. Russo (5642), "A Laser Anemometer for Large High Velocity Particles," January 1975, APPLIED OPTICS.

S.T. Picraux (5111) and F.L. Vook (5110), "Deuterium Lattice Location in Cr and W\*," Vol. 33, Nov. 1974, PHYSICAL REVIEW LETTERS.

T.P. Wright (5241), "Strong Field High Frequency Plasma Response," Vol. 18, No. 2, THE PHYSICS OF FLUIDS.

J.H. Biffle (1541) and E.B. Becker (Univ. of Texas), "Finite Element Stress Formulation for Dynamic Elastic-Plastic Analysis," Vol. 5, No. 3, COMPUTER METHODS IN APPLIED MECHANICS & ENGINEERING.

R.K. Quinn (5154), et al, "Voltammetry in Sulfolane I: The Electrochemical Behavior of Benzaldehyde and Substituted Benzaldehydes," Vol. 46, (1974), ANALYTICAL CHEMISTRY.

W.E. Warren (5121), "A Note on Low Frequency Power Radiation," Vol. 41, No. 4, THE JOURNAL OF APPLIED MECHANICS: Warren with L.E. Pope (formerly 5133), "The Phenomenological Theory of Interface Shear Stress as Generated by Hydrostatic Pressure in Martensitic Materials," Vol. 22 (June 1974), ACTA METALLURGICA.

S.E. Benzley (1541), "Representation of Singularities with Isoparametric Finite Elements," Vol. 8, No. 3, INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN ENGINEERING.

D.H. McDaniel (5245), "Radio Frequency Fields in Magneto-Active Plasma," Vol. 45, No. 8, JOURNAL OF APPLIED PHYSICS.

R.G. Easterling (1643), "An Illustrative Comparison of Statistical Data Analysis and Inference," January 1975, JOURNAL OF QUALITY TECHNOLOGY.

M.B. Gens (1542), "The Dynamic Environment of Landing Craft," Spring 1974 SHOCK AND VIBRATION BULLETIN.

A.D. Swain (1642), "The Human Element in Systems Safety: A Guide for Modern Management," Book published by Industrial and Commercial Techniques, Ltd., London.

# Bosque del Apache Offers Geese, Cranes



South of Socorro, near the village of San Antonio, is found the Bosque del Apache Wildlife Refuge, a 57 thousand-acre blend of marsh, water, and woods that supports some of this continent's more spectacular birds. For Albuquerqueans, the Refuge is an easy drive and qualifies as a pleasant one-day outing.

When we visited the Refuge last month, the waterfowl and crane populations were near their peak. From the 15-mile loop road we saw huge flocks of snow geese, some flying but most floating on one of the many ponds. According to the Refuge calendar, the months of December, January and February are best for seeing the sandhill crane, mallards and other ducks, and snow and Canada geese. On our visit we saw all these and other bird species as well. The populations of the birds run into the thousands and tens of thousands.

Later in the year, in spring and early summer, most of the waterfowl and all of the cranes have migrated north, but shorebirds and songbirds have arrived. The waterfowl remaining at the Refuge have begun nesting and, by June, it is possible to see the young ducks and geese in the early morning. The brochure warns: "Insect repellent is recommended during the summer months."

The staff at Bosque del Apache appear to be determined to preserve the rustic quality of the Refuge. The loop road is dirt, single file and entirely adequate. Signs are unobtrusive and non-cute. There are no facilities (except for a privy or two), so bring a blanket if you plan to picnic. A pair of binoculars will enhance your bird watching. •js

## Dr. Philips Joins Labs Medical Staff

Newest member of Sandia's Medical staff 3300 is Dr. Harry Philips who joined the Labs last week. He comes here from a post as medical director of Bob Jones University Hospital, Greenville, S.C.

Dr. Philips succeeds Dr. Jack Fitzpatrick who resigned to return to private practice in San Benito, Tex.

No stranger to Albuquerque, he visited here many times during the 10 years he previously worked as a medical missionary on the Navajo reservation. In addition to being a physician, Dr. Philips is also an ordained Baptist minister. His work with the Navajos was sponsored by the Baptist Bible Fellowship, headquartered in Springfield, Mo.

He earned his MD from the University of Kansas in 1950 and interned at the Camp Pendleton Marine Hospital. He was in the U.S. Navy and served as a physician with the Naval Air Transport Command.

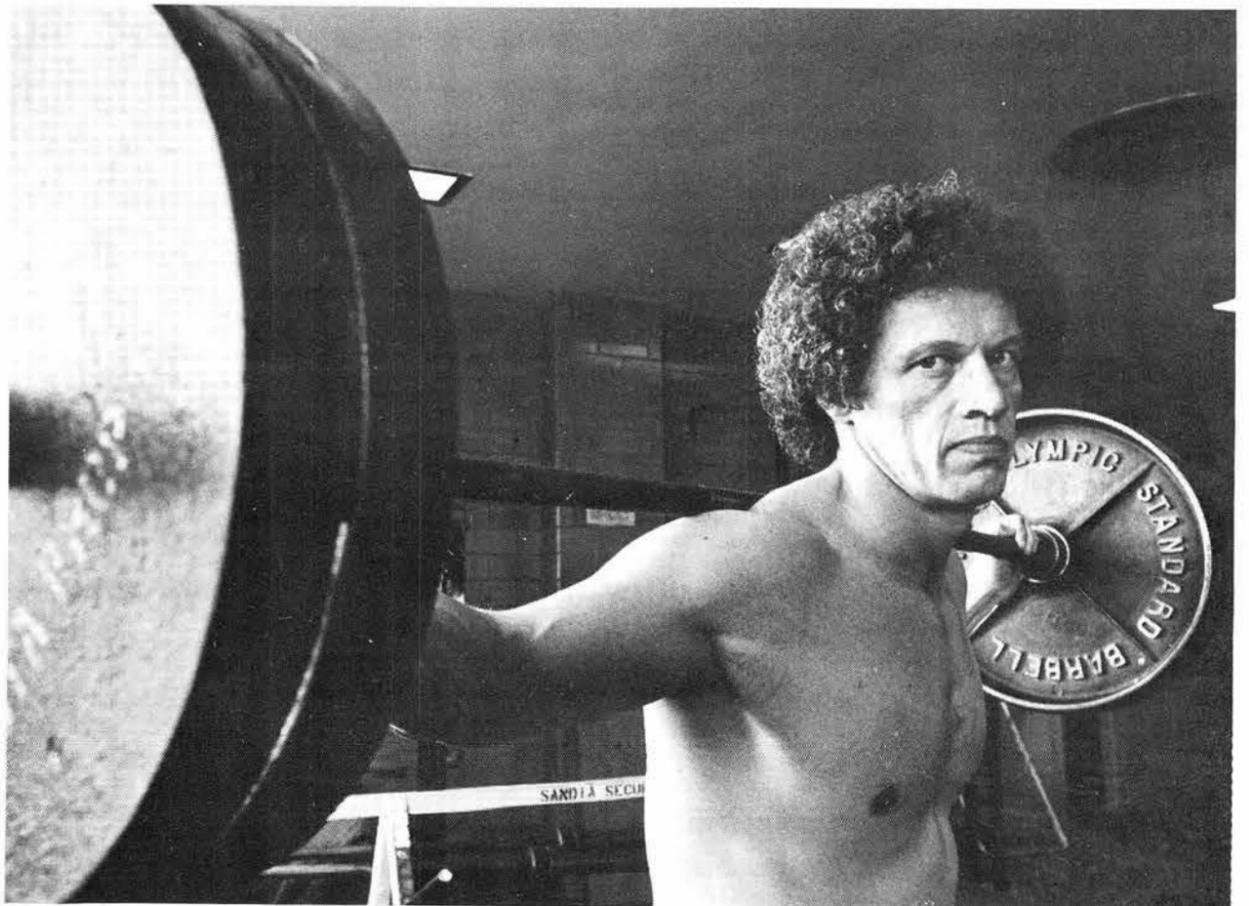
Dr. Philips is married and has five daughters — four of them married — and a 12-year-old son. His single daughter is in her last year of pre-med studies at UNM.



Dr. Harry Philips

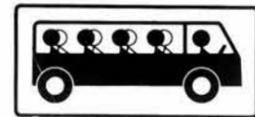


PRESTON HERRINGTON, an engineer in Instruments and Sensors Division 1255, holds a citation awarded to him by AEC in recognition of his efforts in support of Project da Vinci — last November's manned balloon flight for studying lower atmosphere phenomena. Onlookers, from left, are John Eckhart (1250), President Sparks, Keith Smith (1255), Bill Gardner (1200) and, in back, Glenn Fowler, VP of org. 1000.



WEIGHTLIFTER Chuck Barnes (5112) set a New Mexico record for his class (165 lb.) last month by bench-pressing 325 lbs. Here he warms up with a mere 225. (A bench-press is a lift from a supine position.)

# Credit Union Reporter



## Bus Notes

### Annual Meeting

Seven hundred members attended the annual meeting on Jan. 23 at the Coronado Club. New board members are Mollie Miller (0212) and Otis Cox (4123). Alan Pope (5600) and Earl Simonson (4152) were re-elected to the board, and Ralph Campbell (3171) was reelected to the credit committee. Assets of approximately 20 million dollars were reported; 10,000 loans to members were made during 1974.

Jose Jojola (9713) won the microwave oven and Jim Freese (5824) the color TV.

\* \* \* \*

### 1975 CU Officers

Elected officers and committee appointments for 1975 are: Earl Simonson, president; Clarence Sandy (9533), vice president; Bill Bristol, treasurer; and Bill Olheiser (ret.), secretary. Committee chairmen are: Joe Holdridge (4121), supervisory; Otis Cox, operations; Bill Bristol, executive; Clarence Sandy, education; Joe Miller (4154), data processing; and Don Wagner (8212), building.

### Recreation Notes

## FUN & GAMES

*Sandia Runners Ass'n.* — An organizational meeting to form a Masters track club will be held tomorrow, Saturday the 8th, at 3 p.m. at Albuquerque Federal, 4901 Central NE (the round bank opposite the Hiland theater). Runners, joggers, and run-for-fun people over age 30 are urged to attend. Purpose of the club is to stimulate interest and participation in running by 30-plus men and women and to gain recognition of their efforts. Refreshments and several speakers are on the program.

Note the Events Calendar in this issue for dates and times of the track meets being held this weekend in Tingley Coliseum.

Fourth annual Portales Marathon, for runners and bicyclists, will be staged Feb. 15. Separate trophies will be awarded for winners in both categories.

\* \* \* \*

*Sandia Bicycle Ass'n.* — Elsewhere in this issue the new traffic code is discussed with particular reference to bicycles. Base bikers are urged to check this article.

\* \* \* \*

*Volleyball* — The Sandia Volleyball Association is now organizing teams for three leagues. Play will start March 24, according to Richard Pettit (5842), president. Anyone who has not previously played but who would like to join a team is urged to contact Pettit, ext. 2109.

\* \* \* \*

*Sandia Rifle and Pistol Ass'n.* — Practice has begun for the spring shooting season, with events planned in five categories: air rifle, air pistol, .22 rifle, .22 pistol, and .22 international slow fire pistol. The range is located in the basement of Bldg. 202D (enter through the archway on Gibson Blvd. one-



MOLLIE MILLER (0212) AND OTIS COX (4123) are newly elected members of the Credit Union Board of Directors.

half block west of Wyoming), and practice is held Wednesday nights, 7 p.m.

The NRA's National Industrial Recreation Association Postal Matches will be fired during the month of March. NRA International Indoor Postal Matches will be fired during April.

Two team and two individual awards were won by last year's competitors. The air rifle team of Dave Overmeir (9324), Ken Nowotny (2342), Bob Klett (4734) and Mac Weaver (9743) won the southwest region event. The air pistol team of Bill Stephenson (2411), Dick Vivian (1211), Bob Davis (9321) and Dave Bennett (2513) took 2nd place. Two individual awards went to Dave Bennett — 3rd place in air pistol and 9th place in .22 pistol.

Call Dave Bennett (x3119), Dick Vivian (x4355) or Mac Weaver (x7885) if you have any questions on this activity.

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*Sandia Softball Ass'n.* — Anyone interested in playing softball this season should contact team managers or call Joe Santana (x2648) or Fidel Perez (x5554) as soon as possible.

\* \* \* \*

*SWGA* — The Sandia Women's Golf Association membership drive is on for 1975; all Sandia and ERDA women may join. The Association hosts tournaments, in and out of town, and lessons from a Pro are offered. The drive ends Feb. 14. Dues, \$2, should be sent to Kathy Brady (0212).

A combination membership party and get acquainted cocktail hour will be held at the Coronado Club on Feb. 12 after work.

\* \* \* \*

*Tennis anyone?* — The Sandia tennis ladder opens Feb. 15. Doubles and singles entries accepted through Feb. 12. Call John Walter (x7390).

*The Night of the Storm* — Something of an odyssey for riders of Helweg's Mountain Bus on Jan. 21. The big Bluebird, radial mud-and-snows and all, couldn't quite make it up the Spear Cross incline in the snow, ice, and wind of Tijeras Canyon. Even unflappable driver Tommy was flapped.

Then came a jolt from the rear. It wasn't a skidder skidding — it was Joe, Mt. Bus mechanic, in a 4WD pickup, and he was nudging the bus up the hill. It looked like a poodle herding an elephant, but it worked — on that hill and on others.

But it wouldn't work on North 14 — the road was barricaded by vehicles in various stages of abandonment. So Tommy drove east on US66 to NM44, then north and west on Frost Road, dropping off end-of-the-line passengers, and arrived in San Antonio. North 14 was bad from that end too, but Mountain Bus had two 4WD mini-schoolbuses waiting there to take the remaining riders home. It was almost dark by then, and driving was, if anything, worse, but everyone made it home — thanks to some fine driving and good teamwork by the bus company people (and some advanced positive thinking by the riders).

*The Buses on Order* — Jeff Gammon (3733) has compiled a page of info on what Albq Transit is doing toward acquiring several new (but few additional) buses. If you'd like a copy, send him a mail envelop with your name and organization under his on the outside. Don't call, please.

Consultants Simpson & Curtin have not yet completed their study (due last Nov. 30) which, we hope, will recommend one to four new bus routes for Sandians. As the sign near La Cueva/Embudo Canyon puts it: Watch this space for further developments.

*The Course We Need* — Klaus Bowers (2000), head of the Education Committee, recently received a letter proposing a new course. Excerpts: Good old Sandia No. 3 broke down — again — this morning. The bus driver stared at the engine (which ran fine), but he didn't know how to "jimmy" the shifting linkage into a forward gear. "Gee," said he, "the maintenance guys do it all the time." Fifty-two of us hitch-hiked in from Winrock. We suggest a Sandia course called "City Bus Maintenance." Then each time a bus stalls, one of the Sandians aboard would likely know the procedure for coaxing the old guy/gal back to life. Make it In-Hours rather than Out-of-Hours; after all, the Labs would net a considerable gain in person-hours of attendance.

## Coin Show This Weekend

The Albuquerque Coin Club will hold its Twelfth Annual Coin Show at the Convention Center tomorrow and Sunday. Big news for this event is that for the first time since 1934 visitors will be able to purchase modern gold coins; trading in both gold and silver coins is expected to be heavy.

Competitive exhibits, dealer displays, and offerings by stamp dealers and collectors are scheduled. The public is invited to bring their old, unusual or foreign coins for a free evaluation.

Jack Reed (5644) is president of the club, and retirees Lou Jamme and Richard Jackson are members of the board of directors. Meetings are held on the last Monday of each month at the First National Bank East Central branch hospitality room at 7:30 p.m.



BEN GARDINER (3621) and EARL SIMONSON (4152) are officers in Flotilla 24 of the Coast Guard Auxiliary, sponsor of two boat safety courses being offered this month.

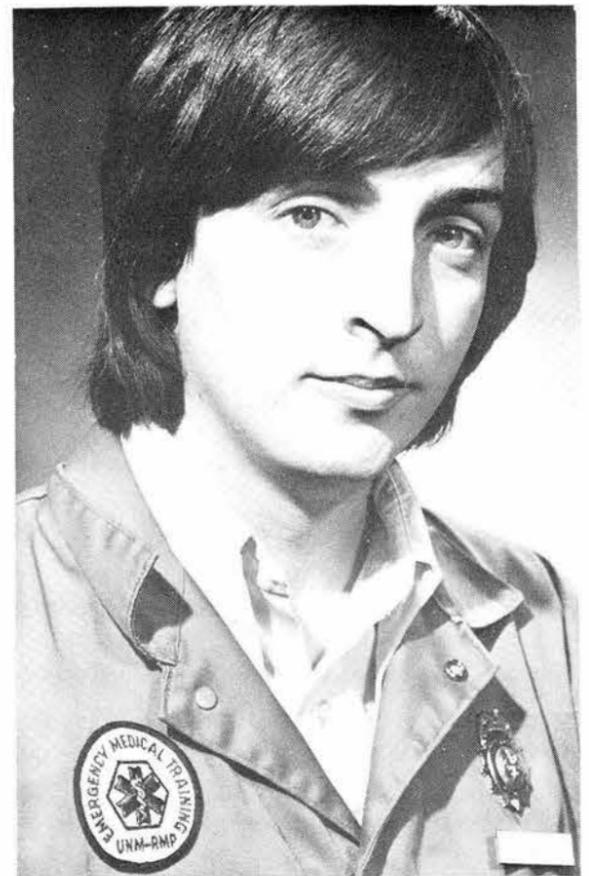
## Power & Sail Boat Safety Courses Offered

Considering our location, one rather astounding statistic is that some 7000 boats reside in Bernalillo County. And if you've been to Elephant Butte on a summer weekend, you sometimes get the feeling that the other 6999 boats have decided to gang up on you.

Which is one reason that Ben Gardiner (3621) and Earl Simonson (4152) urge boat owners to take boat safety courses being offered this month. Both are officers in Flotilla 24 of the Coast Guard Auxiliary. Earl declares: "You'll spend as much on a boat as on a car, the dealer hands you the boat keys, however, and you're on your own — no

licensing, no training, and you'll quickly find that boat handling isn't all that simple."

Courses offered are (1) Principles of Safe Sailing — seven lessons beginning Feb. 20, 7 p.m., at Citizens' State Bank on Louisiana and Menaul and (2) Boating Safety & Seamanship — 12 lessons beginning Feb. 18, 7:15 p.m., at the Coronado Club, room B-5. The fee is four dollars. Call Ben on 298-0116 or Harold Barnett on 299-9395 to make your reservation. Another reason for taking one of these courses: your boat insurance premiums are significantly reduced with successful completion.



GETTING UP NIGHTS is the norm for Gary Laabs (9654). A member of Bernalillo County Volunteer Fire Dept., District 3, he responds to many calls for rescue and firefighting in the South Valley. Recently he spent two weeks vacation time in Farmington taking the 81-hour Dunlop Emergency Medical Technician-Ambulance Training course sponsored by UNM's School of Medicine. He returned with paramedic's expertise and the fancy patch.

LAB NEWS  
PAGE ELEVEN  
FEBRUARY 7, 1975



### 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

- CEMENT mixer, electric motor, mounted on small trailer, \$75. Harris, 294-1291.
- AFRICAN violets, most in bloom, 50¢ & up. Miller, 268-5992.
- VEGA engine, 110 hp, complete, includes radiator, muffler, runs but has scored cylinder, \$65; Renault engine, complete, \$50. Bassett, 898-1840.
- BICYCLE, Spider, w/new tires, tubes, rims, seat, handle bars, \$30; golf clubs, bag & cart, \$30. Graeber, 298-0662.
- INFANT furniture: crib, bathtub, potty chair, jump chair, swing, playpen. As a package, \$30. Woods, 296-4741.
- TWIN-SIZE mattress, \$5; stroller, high chair, \$5; lady's ski boots, 6-1/2-N. Kennedy, 298-0704.
- RCA stereo console, AM/FM radio, phono, walnut finish. Schamaun, 298-5192.
- MASTERWORK stereo with AM/FM radio & 2 speakers, \$65. Roth, 268-3186.
- GENERAL Electric Drop-In range & cook-top, 27" wide,

complete with all controls, everything works, \$45. Bower, 299-5765.

- BUMPER pool table w/cues & stand, \$125. Tripp, 299-2511.
- JAPANESE sword, WWII, with scabbard, \$55; deer antlers, \$6. Smitha, 293-1177.
- DURST M300 enlarger w/Schneider Comparon 50mm lens, polycontrast filter kit & other accessories, \$75. Durham, 298-0733.

SET of tire chains, like new, for 15" tires, \$10. Smith, 299-6873.

SQUASH blossom necklace, bracelet & earrings, authentic Zuni needlepoint, will sell below retail, terms. Barton, 281-3349.

CB RADIOS, 3-watt, 6 channel, Allied, \$75 pr. or trade for oscilloscope. Adams, 881-4351.

E-Z LIFT trailer head for E-Z lift type 3 w/square tube, \$15. Sample, 296-1771.

SOLID-OX welding outfit, never used, \$20. Watterberg, 294-6759.

BICYCLE, Schwinn, 20" Stingray, \$30; sewing machine, Fleetwood (Pfaff), \$15; irrigation gate, 15", \$20; golf clubs, set, \$5. Harley, 898-0594.

SEARS Deluxe lady's 3-spd. bicycle, blue, chrome fenders, white sidewall tires, used 4 months, \$60. Snodgrass, 268-8820.

ELECTRIC hospital bed & table, half price; oscilloscope w/extra tube; multimeter & tube tester, all with operating instructions. Williams, 299-9150.

SEARS A/C, 8000 BTU, model 7311, 115 volts, window sized, 1 yr. old. Eiffert, 294-7668.

NAILS, No. 43 8" cement coated; No. 26 1-1/2" roofing; rollaway bed; low double chest; girl's 3-spd. bicycle. Windham, 293-8107.

'72 12 X 52 2-BDR. mobile home, refrigerator, stove, carpet, drapes, 2-spd. A/C, \$600 cash & assume loan at \$68/mo. Rogers, 298-0961.

#### TRANSPORTATION

'70 FORD LTD, make offer. Hendrix, 299-8872.

'63 CORVAIR Spider, new overhaul, minor work needed, \$200. Schmedeman, 299-2077.

'69 GTO, 1-owner, A/C, A/T, silver w/black vinyl top. Lopez, 266-7535.

'70 MONTESSA Capri 360cc, 40 hp. Carlson, 299-6610.

'61 GMC 1/2-ton pickup, 4-spd., V6 w/camper & jacks, sleeps 4, \$1000. Gorney, 898-2667.

'61 AUSTIN Mini 850cc w/extra engine package, \$350. Guttman, 247-3448.

'64 650 TRIUMPH, needs work, \$150. Kim, 299-1868.

'65 CHEV. 1/2-TON pickup, V8, 4-spd., positraction, swb, shell, 56,000 miles, '75 lic., nearly new truck tires, \$895. Senter, 255-0594.

10-SPD., man's bicycle, 27" tires, 21" frame, dual control brakes, \$65. Slusher, 268-0238.

'72 CHEV. Impala, full power, A C, \$450 below book. Sarason, 299-2443.

HONDA SL-100, '70, 2,800 miles, \$235. Hawn, 299-7835.

'58 PLYMOUTH sta. wgn. without engine & trans., good body, engine accessories included, first \$35 by 2/12. Leroy, 296-2953.

AMMCAT ATV, all terrain vehicle, 20 hp Sachs engine, 6 balloon tires, electric start, snow treads, \$600. Gubbels, 299-8089.

SNOWMOBILE, Skiroule RE-440, w/trailer, 3 yrs. old, \$595 or best offer. Bryan, 294-0045.

BICYCLE, boy's 20" Stingray, girl's 24" Murray w/handbrakes, \$24 & \$19. Church, 299-2175 after 4.

'71 DODGE 3/4 ton truck, LWB, AC, AT, PS, PB, 19,000 miles, w/camper shell. Adams, 292-0530.

#### WANTED

SHOP manual for '65 Chevrolet. Hohimer, 298-1528.

GREGG shorthand-Anniversary Edition book & phrases of shorthand simplified. Savage, 255-8956 after 9 p.m.

HIDE-A-BED, prefer blue, green or gold. Prevender, 299-5253.

USED camper jacks; used ping pong table, reasonable. Myers, 821-8318.

PING PONG table, folding type. Moss, 298-2643.

STUDENT clarinet. Gieske, 296-7709.

BULLET mold for 45 ACP, four cavity, H&G No. 68. Smailer, 881-7981.

CHASSIS manual for '63 Pontiac Grand Prix; Encyclopedia, late 60's or 70's; student desk & bookcase. Sarkis, 877-4146.

20 GALLON aquarium w/usual

equipment, also metal stand to hold this & 10 gallon aquarium. Sektnan, 293-7961.

BEDROOM furniture (dressers, desks, etc.) for boys' storage shed, metal preferred. Ross, 296-9794.

#### REAL ESTATE

10 ACRES Edgewood & Moriarty on county road with power, \$9500, \$1500 down. Coalson, 298-0061.

CONCHAS Lake lots. Frye, 299-7265.

27 ACRES irrigated mountain land, scenic, wooded, fenced, water & electricity. Jolly, Canjilon, N.M., 684-3544.

#### FOR RENT

APT., 3-bdr., 1-1/2 baths, garage, patio, stove, refrig., cleaning deposit, lease, \$175. Erwin, 299-2418.

LUXURY motor home, sleeps 6, full bath, refrigerator, stove, A/C, generator, \$245/wk., insured. Roberts, 298-9163.

#### LOST AND FOUND

LOST — If your child came home from the Coronado Club Teen dance Sat. Jan 25th with a tan coat, please contact Liza Gentry, 296-5876; key ring w/3 keys; safety glasses w/black frames; Falcon pipe; slide rule; roll of stamps; key ring w/nail clip; silver and turquoise earring; brown and silver bifocal glasses. LOST AND FOUND, Bldg. 832, tel. 264-3441.



NO MATTER HOW APPROPRIATE, a card is just a discard. Give your Valentine a Memorable Experience — C-Club's Special Buffet Feb. 14.

(Haven Morgan, 4212, at Super Drug)

(Tom Cleveland, 3645, at Bachelor Pad)

FRIDAY	SATURDAY
7 — HAPPY HOUR SWISS STEAK BUFFET Adults \$2.75 Under 12 1.75 <i>The M's On Stage</i> NATURAL PERSUASION	8 — SOUL SESSION GIN MILL 8:30 - 12:30 Members Free Guests \$1.00
14 — HAPPY HOUR VALENTINE'S SPECIAL Adults \$3.00 Under 12 2.00 <i>Ruiz &amp; Villa On Stage</i> UP COUNTRY	15 — MARDI GRAS Gulf Seafood Plus Cocktails 6:30 Dinner 7:00 Dancing 8:30 FREDDIE WILLIAMS

TO — make it to Mardi Gras, get your tickets today or tomorrow (\$5 and \$6). Else you'll miss Wild Costumes, Wild Music, Wild Turkey.

ERR — on the side of Art (Sanado's Art Show, that is). It's a great place to browse among (or buy some of) the 200 paintings by Sanado artists, professional and amateur. Open to everyone 5 to 9 on the 10th. Sanado meeting on the 11th from 11:30 to 1:30 with fancy lunch, art show awards, and the UNM Collegiate singers. Reservations today with Anne Tapp.

IS — your heart downcast at the thought of a Greece-less future? Weep no more. Instead see or call Chet Fornero for solace. He's got a 15-day Mediterranean cruise lined up: DC-10 to Athens; sail on the *SS Bon Vivant* to Malta, Naples, Rome, Cannes, Barcelona, Tangier, Lisbon; jet home; 4 meals a day; from \$999 with final payment due Feb. 25; members and guests. Info at Club too.

HUMAN — foibles being much in vogue, Las Vegas is the place to exploit them. Round trip bus with open bar, three nights at Castaways, other goodies for \$99 (dbl occ); May 13-16.

BUT — what to do, if you don't send a Valentine? Take her/him to the Special Buffet for Valentine's Day. Hand carved ham, roast

beef, Ruiz and Villa, Up Country — all at Happy Hour Feb. 14.

IT — is now much nicer under the Aquatic Club's bubble over the pool — new heater and blower mean no fog and cold air. Season ticket is only \$2.50 (cont. membership). Snug swimming during snow storms. Openings for kids who'd like to be on the swim team too; see Coach Reed Barnitz guarding the pool 5 to 6 Tues. and Thurs., or call 255-4812 or 255-4211 for info. Prefer the diving team? Eric Jones at 296-1755.

FEELS — so good to let loose at a Soul Session. Gin Mill's a new group, right there in the mainstream, lots of current. Tomorrow night.

DIVINE — trip coming up, dahlings. Switzerland's *simply* delightful even if you *don't* have a secret bank account there. Lake Thun is such an *in* place — go now before it gets so crowded that absolutely *no* one ever goes there. A mere \$499 (plus 10%, a tip for the pilot, likely), and you spend 8 *fabulously* exciting days, 7 *deliciously* sinful nights at one of those oh-so-Continental resort hotels. Private bath, of course. Call 265-6791; ask for Sophia.

MORE INFO — 265-6791 (Club closed 17th).



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Sympathy

To Paul Silva (9718) on the death of his brother in Gallup, Jan. 12.

To Pete Ortiz (9718) on the death of his grandson in Albuquerque, Jan. 17.

To John Snyder (5221) and Dean Snyder (9331) on the death of their father in Sandwich, Ill., Jan. 26.

To Robert Pedersen (9533) on the death of his mother-in-law, Jan. 17.

To Joseph (3622) and Paul (2514) Langdon on the death of their mother, Jan. 19.

To Luciano Mora, Jr. (3622-1) on the death of his brother-in-law and sister-in-law in an auto accident in Albuquerque, Jan. 25.