



BILL BLYTHE (1131), one of Sandia's engineering and construction coordinators at Nevada Test Site, is shown with one of the giant closure gates used in underground testing. Massive steel doors, powered by compressed gas, close within 16 milliseconds after firing, allow passage of initial burst of

neutrons but stop explosion debris. Division 1131 is currently developing a new gate design which will combine the functions of debris protection and gas sealing and make significant savings in construction costs. For story on Sandians who work year around at NTS, see page eight.

# LAB NEWS

VOL. 28, NO. 6

MARCH 19, 1976

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

## International Meet

### Sandia Livermore & ERDA Host Fusion Scientists

Plasma physicists and surface scientists from 17 nations met in San Francisco last month at a conference on "Surface Effects in Controlled Fusion Devices," co-hosted by Sandia Labs and ERDA's Division of Controlled Thermonuclear Research. Their chief topic goes to the core of the world's energy concern: how to build a container whose wall surface will withstand the plasma in a controlled thermonuclear reactor.

The five days of the conference were arranged for the 130 participants by an organizing committee headed by Walt Bauer, supervisor of Physical Research Division 8334. One highlight was a tour of Sandia/Livermore's ion implantation laboratory and LLL's controlled fusion facilities. Later, VP Tom Cook (8000) described Sandia's energy programs at the conference banquet.

The conference marked the first major effort to promote more dialogue between plasma physicists and surface scientists. This communication becomes increasingly important as rapid developments in magnetic confinement lead to greater necessity to understand the complex interactions occurring between the gas plasma and material surfaces.

The most critical materials problem involves the "first wall" — the material surface directly facing the plasma. The problem is twofold: first and most important, plasma-wall interactions must not introduce impurities that could inhibit the fusion reaction; and second, the wall itself must maintain its integrity in the intense plasma environment.

"From a practical standpoint, solving the wall problem is as vital as controlling and

prolonging the fusion reaction," Walt points out. "And, in fact, the physics and surface problems are closely coupled. Some present fusion devices are severely constrained by vacuum and wall-related effects, as we heard in the invited sessions."

Many of the conference papers dealt with mechanisms by which surfaces deform and interact with the plasma, as well as with methods of studying these interactions. Conference topics included surface blistering and exfoliation (blowoff of microscopic chunks of material), sputtering, gas trapping, surface chemistry, and techniques of surface and analysis.

Plasma scientists described the main reactor concepts — tokamak, magnetic mirror, theta pinch and laser — and discussed surface effects in each. On the final day new

(Continued on Page Three)

# Afterthoughts

Names for sale--All of us receive junk mail. At our house the daily yield of the mailbox (over and above the ever-present bills) is perhaps two or three pieces of third class mail. Some people get exercised about the stuff, but I don't. Indeed, I've devised a system that makes third class mail sort of fun, and I shall now reveal this system to the world. For free, with no thought of personal reward, however richly deserved.

The System consists of never using one's given surname or middle name (or the initials therefor) when ordering or paying for anything by mail; rather, one devises a code replacement for those two names, the code being a function of the thing ordered. Amos Clyde Jones orders Time magazine; he becomes T. I. Jones on the order blank. He sends a check to Reverend O'Malley's Girls Town and indicates that the contribution comes from G. T. Jones. He asks Recreational Equipment to send him a catalog--R. E. Jones.

This is fun? you ask. Well, not yet. But when G. T. Jones gets a flyer from Raunch House urging him to consider their offering of select and copiously illustrated publications--the kind our local DA worries about--then Amos Jones just may be titillated by the connection that he has discerned between Girls Town and Raunch House. We all know that our names are sold, traded and otherwise bandied about; the ploy described here can't prevent that but it does sometimes reveal the mysterious workings of this traffic in names.

(If you obdurately remain unconvinced that my system is fun, you can have your name "delisted" by writing to Direct Mail Marketing Assn., 6 E. 43rd St., New York City, 10017.)

\* \* \*

The definitive & final word on English--Frieda Salazar (9631) sends us an article whose title sums up the English problem neatly: "Nobody Don't Pay No Mind To English No More." \*js



**SMALL BUSINESS SUBCONTRACTOR OF THE YEAR**, Nobert Pohl (left) discusses circuit master with A.D. Pepmueller (3730), Sandia Labs' Small Business Liaison Officer. Mr. Pohl, owner of Service Circuits Inc., will compete with nine other regional winners for the national award. A supplier to Sandia of printed circuit boards, Mr. Pohl has also developed a "Portable Heart Monitor," worn like a wrist watch, which gives a digital readout of the wearer's heart rate.

## OMB Officials Visit Labs

Three officials from the Office of Management and Budget visited Sandia earlier this month for briefings. They are James Mitchell, Associate Director for Natural Resources, Energy and Science; Daniel Taft, Senior Budget Examiner; and Joan McEntee, Assistant to Mr. Mitchell. The three were accompanied by Maj. Gen. Louis Alder (Ret.), ERDA's Deputy Controller, and Maj. Gen. Joseph Bratton, Director of Military Application for ERDA.

The group listened to presentations on both weapon and non-weapon programs, including a discussion of weapon and nuclear material protection. This was followed by a tour of various facilities in Area V. President Sparks served as Sandia host to the group.

## Events Calendar

**March 19-April 4** — Barn Dinner Theatre, "Plaza Suite," 281-3338.  
**March 19-20, 26-27, 31** — Hockey at Tingley Coliseum at 7:30 p.m.  
**March 20** — Barber Shop Quartet, "Salute to America," 8 p.m., Convention Center.  
**March 21** — Community Concert Assn.: Franz Liszt Orchestra of Budapest, 8:15 p.m., Convention Center.  
**March 21** — NOVA on Channel 5, "The Overworked Miracle" (Antibiotics).  
**March 21** — NM Mt. Club, Fletcher Trail

(North Sandias), hike 5 miles, 9 a.m., El Dorado Square.  
**March 25, 27** — UNM Theatre Arts Dept.: "Lysistrata" by Aristophanes, 8 p.m., Rodey Theatre.  
**March 26** — UNM Theatre Arts Dept.: "The Birthday Party" by Harold Pinter, 8 p.m., Rodey Theatre.  
**March 26** — Albuquerque Civic Light Opera, "1776," 8:15 p.m., Popejoy.  
**March 27** — NM Mt. Club, Waterfall Canyon (Sandias), hike 12-14 miles, 8 a.m., Eastdale.  
**March 27** — Auction for Indian Pueblo Cultural Center, Sheraton Old Town.  
**March 27-28** — Color Breed Show, Horse Arena, Fair Grounds.  
**March 28** — Junior League, Festival '76 a bicentennial celebration, 10-8, Convention Center, free.  
**March 29** — UNM Speakers: Eugene McCarthy, Popejoy at 8.  
**April 1** — Audubon Wildlife Film: "The Bahamas — Top to Bottom," 7:30 p.m., Popejoy.

### Retirees, Take Note

Sandia retirees may purchase safety glasses at reduced rates through Jack Wohl, Sandia's contract optician. Jack is in Bldg. 814 Mondays and Thursdays from 10 to 3 p.m. Or call 242-4262 or 242-2253 for an appointment. Retiree must furnish his or her own prescription.

## Retiring



Phil Moya (3641)



Joe Mahboub (9550)

## LAB NEWS

Published every other Friday

### SANDIA LABORATORIES

An Equal Opportunity Employer  
 ALBUQUERQUE, NEW MEXICO  
 LIVERMORE, CALIFORNIA  
 TONOPAH, NEVADA

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john shunny is editor

&

don graham ass't. editor

bruce hawkinson & norma taylor write

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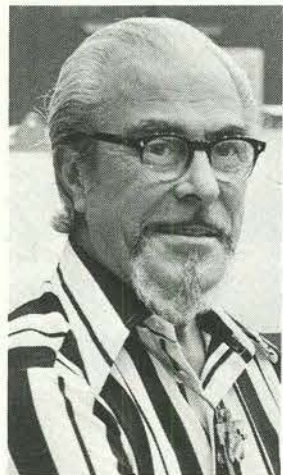
gerse martinez lends a hand

&

lorena schneider reports on livermore

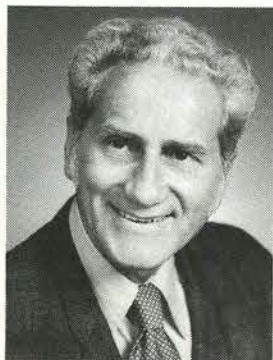
## Take Note

As reported last issue, an advance party from Sandia Albuquerque began setting up the Livermore shop in the fall of 1955. But we've learned that an *advance* advance team spent June through October 1955 in Livermore preparing for the later group. Bill Marsh was the section supervisor of the team; he stayed at Livermore permanently. Grover Hughes (now 1243) and Woody Hunt (now 9634) were the ones who came home again. All were part of Ralph Wilson's (now 3620) division.



Mike Gregory (8412)

## Retiring



Gene Helz (8424)

## Authors

Larry Weirick (8312), "Electrochemical Determination of Porosity in Nickel Electroplates on a Uranium Alloy," JOURNAL OF ELECTROCHEMICAL SOCIETY, Vol. 122, p. 7.

Rudy Johnson and Jack Dini (both 8312), "Analysis of Aluminum Plating Problem Reveals Copper Cyanide Solution Attacks Adhesive Bond Between Polyimide Film and Aluminum Conductor," INSULATION/CIRCUITS, Vol. 21, p. 31.

John Helms (8312), "Activation Treatments for Plating Nickel on Nickel," METAL FINISHING, Vol. 73, p. 21.

## Congratulations

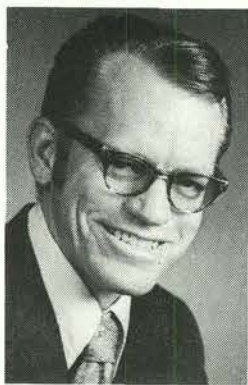
Mr. and Mrs. Art Hayes (8431), a daughter, Christine Robin, Jan. 27.

Mr. and Mrs. Pete Royval (8314), a daughter, Jennifer Lee, Jan. 27.

Mr. and Mrs. Gene Voelker (8113), a son, Gregory John, Feb. 18.

Mr. and Mrs. Al Ducharme (8254), a son, Alvin Joseph III, Jan. 5.

## Death



Dewey Farmer, a member of the laboratory staff in Specifications and Procedures Division 8433, died Feb. 13, after a short illness. He was 48.

Dewey joined Sandia/Albuquerque in Oct. 1952 and transferred to Livermore in March 1959.

Survivors include his widow, a daughter and two sons.

## Sympathy

To Betty (8264) and Paul Dominguez (8433) on the death of her father in Livermore, Feb. 25.

To Moe Robert (8256) on the death of his sister in Warwick, R.I., Feb. 11.

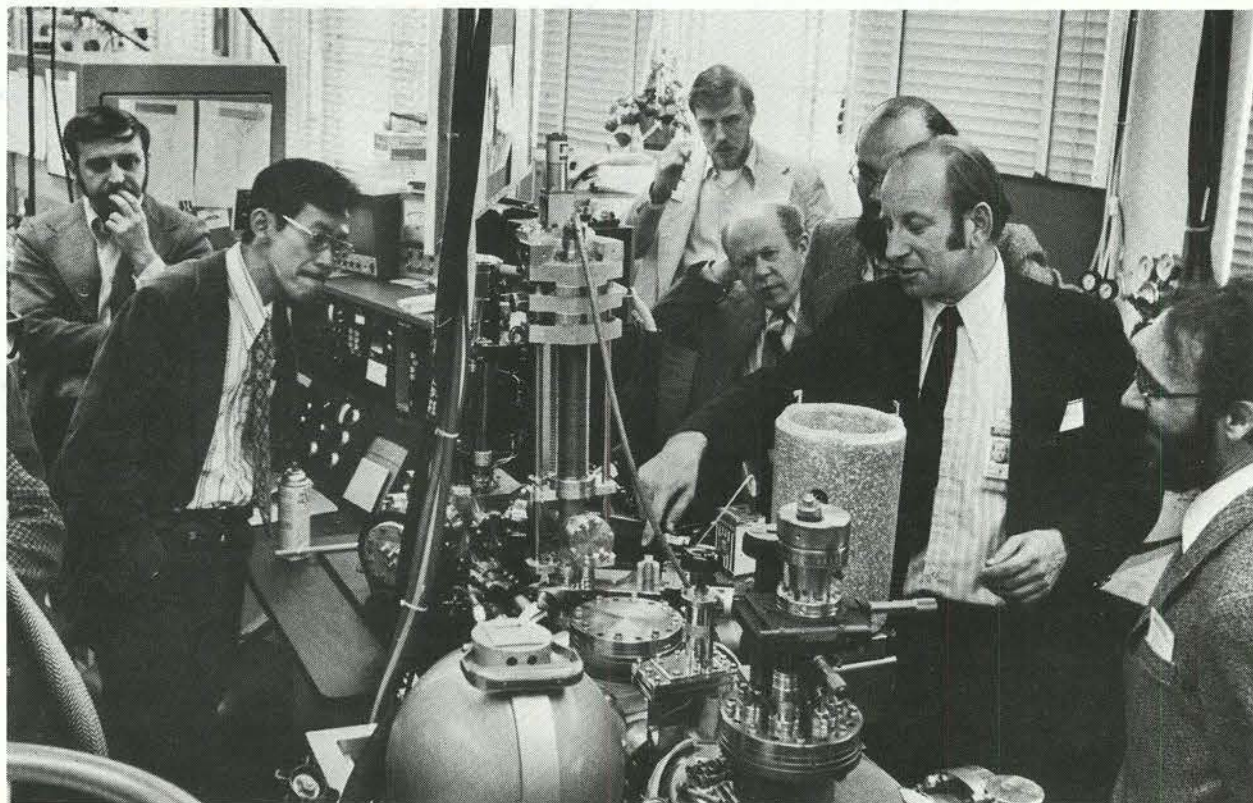
To Duncan Tanner (8159) on the death of his father in Long Island, N.Y., Feb. 5.

# LIVERMORE NEWS

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LIVERMORE LABORATORIES

MARCH 19, 1976



DURING TOUR OF SLL ION IMPLANTATION LAB, Walt Bauer (8334) describes implantation target chamber for helium re-emission measurements. Scientists from 17 nations attended the five-day conference.

## Continued from Page One

## SLL Hosts Fusion Conference

confinement machines were discussed, including the Impurity Study Experiment (ISX), a moderate size tokamak being built at Oak Ridge solely for the study of impurities and plasma-wall interactions; Poloidal Divertor Experiment (PDX), a Princeton University machine to study mechanisms for reducing impurities in large, high-temperature tokamaks; Divertor Injector Tokamak Experiment (DITE), a new tokamak experiment at Culham Laboratory, England; Axi-Symmetric Divertor Experiment (ASDEX), a large tokamak now under construction at Garching, Germany; and TEXTOR, a tokamak being designed for studying first wall effects in Julich, Germany.

Sandia authors presented 12 papers, reporting work in major areas of surface research such as:

—The influence of helium permeability on bubble and blister formation in helium-implanted glasses. This work, by Pete Mattern (8334), Jim Shelby (8334), George Thomas (8314) and Walter Bauer, marks the first time that blister formation has been inhibited by systematically varying a physical parameter. Certain glasses are attractive CTR materials because of their permeability; any implanted gases diffuse much more readily than from other materials. Glasses could be utilized in insulation applications in tokamaks and as a first wall liner in theta-pinch reactors.

—The measurement of blister growth rates from in-situ observations. Video recordings of ion implantation experiments showed clear differences in deformation modes under different implant conditions. The work by George Thomas and Walt Bauer also gave evidence that blister growth at high temperature is caused primarily by

coalescence of subsurface bubbles.

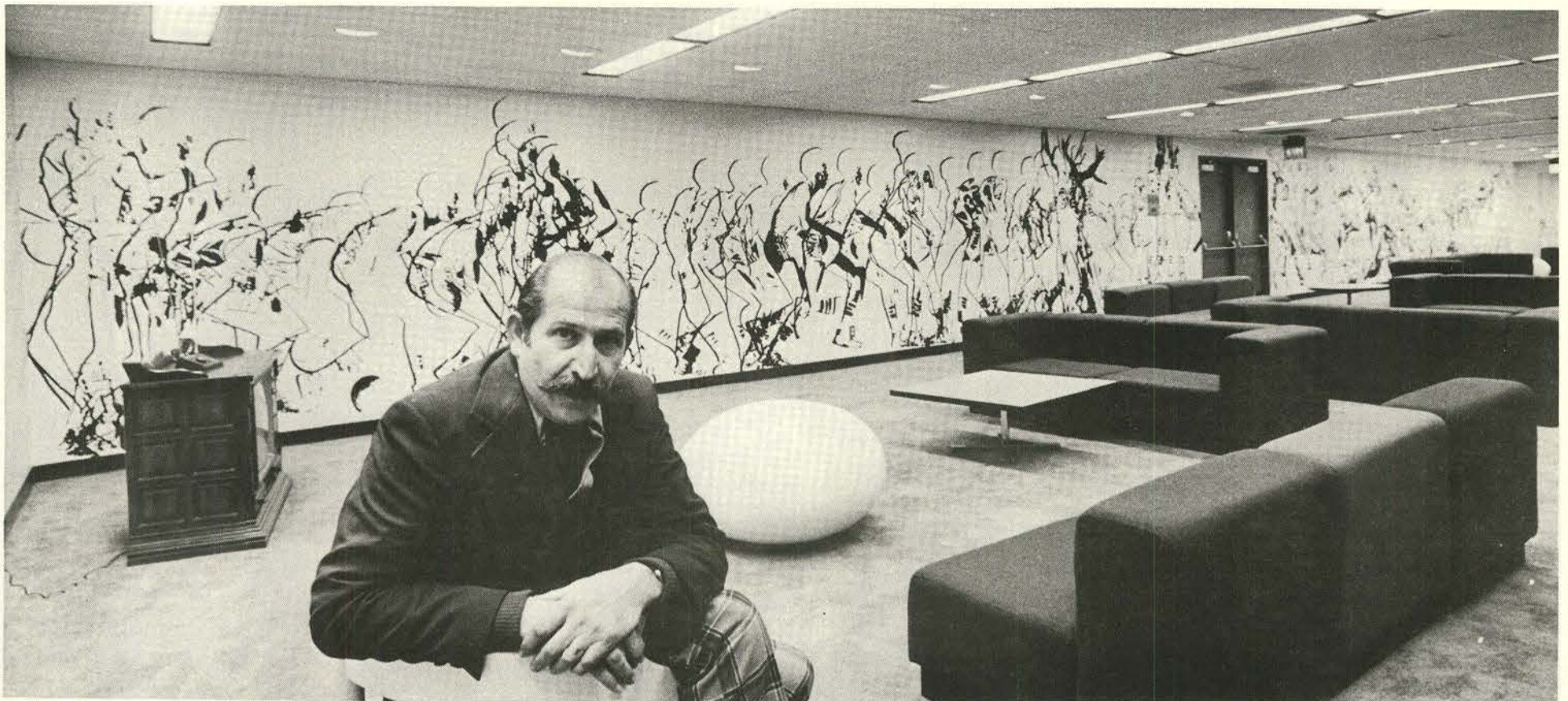
—The determination of depth distribution of implanted ions. Ron Musket (8334) reported a new technique which may be of value in detecting deuterium and tritium distributions in the near surface region following fusion reactor operation. Bob Blewer (2353) and Bob Langley (5111) discussed Rutherford backscattering experiments which may lead to better understanding of blistering mechanisms. John Panitz (5114) described a technique to measure depth profiles of contaminant species with better resolution than has previously been possible.

—Theoretical calculations to model the complex interactions between helium gas and metal defects occurring during surface bombardment. The calculations were reported by Mike Baskes and Bill Wilson (both 8341).

Sandia papers and their authors were:

K.L. Wilson (8334) and G.J. Thomas (8314), "20 KeV Helium Implantation of Aluminum"; G.J. Thomas and W. Bauer (8334), "In-Situ Observations of Ion Implanted Surfaces"; M.E. Malinowski (8334), "The Effect of Absorbed Carbon Monoxide on Deuterium of Titanium Thin Films"; R.R. Rye (5114), "Reaction of Atomic Hydrogen with Chemisorbed Species"; W. Bauer and G.J. Thomas, "Helium Implantation Effects in SAP and Aluminum"; P.L. Mattern, J.E. Shelby (both 8334), G.J. Thomas and W. Bauer, "The Dependence of Blister Formation on He Permeability in Glasses";

R.S. Blewer (2353) and R.A. Langley (5111), "Depth Distribution and Migration of Helium in Vanadium at Ambient and Elevated Temperatures"; R.G. Musket (8334), "Depth Profiles of Deuterium in Titanium from Gas Emission During Sputtering"; J.A. Panitz (5114), "Surface Characterization and Depth Profile Studies of Implanted First Wall Materials with Angstrom Resolution"; R.A. Langley and J.M. Donhowe (Univ. of Wis.), "Study of the V-Be Diffusion Couple Using Ion Beams"; M.I. Baskes and W.D. Wilson (both 8341), "Theory of the Production of Helium Clusters in Metals"; S.T. Picraux (5111) and J. Bottiger and N. Rud (Univ. of Aarhus), "Enhanced Hydrogen Trapping Due to Ion-Produced Damage."



NEW PHOTOGRAPHIC MURAL in the Peter McDavid Honor Lounge in the University Arena is the work of Joe Laval (3163). From 1100 negatives Joe chose 80 to combine in a high contrast treatment to produce the abstract images. The

mural, applied to the wall in sections like wallpaper, covers the 85-ft. wall length of the lounge.

### Recreation Notes

## FUN & GAMES

**Softball** — Do you like peanuts and beer? Then join the Sandia Softball Assn. where the standard post-game treat is just that. Teams are now being formed, based on work organization where numbers permit, and Bruce Whittet (9651) reports that this season will see 7 men's slow-pitch, 1 men's fast-pitch, and 1 women's fast-pitch teams. Bruce would like to add an additional men's slow-pitch team to this line up. Call him on 4-3734 to sign up.

\*\*\*

**Fitness buffs** — UNM's Human Performance Lab director, Dr. Hemming Otterbaum, will lecture and give demonstrations on stress testing on Saturday, March 27 at Johnson Gym, 10 a.m. Two subjects will undergo the stress tests. The program is free and is sponsored by the Southwest Masters Running Club and the Human Performance Lab.

\*\*\*

**Running** — Roadrunners meet on Sunday the 28th at Rio Grande Park at 1:30. All runners, joggers, actual or would-be, are invited to participate in the low key events on the schedule.

\*\*\*

**Sandia Bicycle Assn.** — Ever biked 100 miles? How about 50? The Fourth Annual Tour of the Rio Grande Valley is coming up next month on Sunday, April 25th. If the wind doesn't blow, the 100-miler is leisurely, arduous, and fun. There are a number of rest stops where you can restore yourself and exchange sympathetic noises with your fellow cyclists. The Tour starts at 6:30 in the morning on the UNM campus, heads south along a well-defined route to a point south of Belen, then returns northward back to the campus. Fifty milers turn around at Los Lunas. A hundred or so bikers usually turn out for the Tour, and you get your very own "Tour of the Rio Grande" patch upon

completion (which you casually reveal to thunderstruck friends). Call LAB NEWS, 4-1053, for Tour literature and entry forms.

\*\*\*

**Boating** — The next event in the Coronado Club's Outdoors Indoors series features speakers on boating places and boating safety. A slide show on sailboating off Baja is likely to make you trade your 900 hp Merc for a catamaran. It's at 7:30 April 5, and it's free to all Sandians and ERDAns.

\*\*\*

**Quickie Ski Trip** — Call Bob Burnett at 4-3066 today and you can be at Taos Ski Valley tomorrow. The bus departs at 6, returns about 7:30. Your \$8 covers transportation, coffee and donuts, beer and soft drinks, but not your lift ticket.

## Get Forms Now For T-VI Signup

Pre-registration for T-VI's summer trimester runs from March 29 through April 9, while registration itself takes place April 26 and 27 for those accepted into classes.

Sandians may enroll in T-VI evening courses on a cost-free basis provided the course is job-related or relates to a job to which the employee may logically aspire.

Pre-registration forms and T-VI catalogs may be obtained from Ruth Brooks of Education and Training Division 4231, Bldg. 632. The T-VI forms as well as Sandia enrollment cards must be validated by Division 4231 if you wish to take the course at no cost. T-VI classes start May 10.

PAGE FOUR  
LAB NEWS  
MARCH 19, 1976



February 25, 1976

Dear Mr. Morgan sparks

Thank you for the bus for the Freedom Train. It was fun. I hope that you went to the Freedom Train. I had so much fun. I hope you had fun if you went.

Your bus kid  
Karen Gerhardt

4609 Burton S.E  
Albuquerque  
New Mexico 87108

WHEN THE LABS made a contribution to help get some third graders over to the Freedom Train, the kids from Mrs. Robert's class at Whittier School graciously sent thank you notes. This is one of them. Mr. Sparks has assured Karen that he had fun on the Freedom Train too.

## Take Note

Last summer one of the better things to happen to Albuquerque was the Growers Market, where amateur gardeners collected each Saturday morning in the Civic Auditorium parking lot to sell their surplus produce. The stuff was fresh, usually cheap, and it was fun to meander through the growers' displays of vegetables and fruit. A woman from town, Theo Bird, organized the Market pretty much on her own on a purely voluntary basis and, by the end of the season, some 160 growers had participated as well as countless consumers. Theo reports that a combination growers/consumers meeting is scheduled for March 22nd, 7:30 p.m., in the hospitality room of the Plaza Del Sol Bank on Lomas and 2nd. Purpose is to gain opinions from both groups about how this year's Growers Market should be set up.

\* \* \*

Ken Sarason (4311) has sent us tickets to a concert that should be a highlight of this bicentennial year. It's the USAF Academy Band, playing at the Convention Center on Tuesday, March 23, at 8 p.m. The concert is sponsored jointly by the Air Force Association and the Chamber of Commerce. Ken has additional tickets and if you'd like some (no charge) call him on 4-7467.

\* \* \*

Two speakers on fusion energy are scheduled in the next couple of weeks at UNM's Kiva as part of the lecture series, "Critical Materials Problems in Energy Production."

Dr. Donald Steiner, ERDA, Oak Ridge, will present an overview on fusion on Thursday, March 25, at 3:30 and 5 p.m.

On April 1, Dr. R. Behrisch, Max Planck Institute, Muchen, West Germany, will discuss first wall problems in a fusion reactor. Times are 3:30 and 5 p.m.

Interested Sandians are invited. For additional information, call George Samara (5130), 4-2945.

\* \* \*

Dick Meyer (5824), on a two-year leave-of-absence to act as science and research advisor to the Western Governors' Regional Energy Policy Office in Denver, has been named that organization's Assistant Staff Director and Vice President. Dick continues as science and research advisor, promoting and coordinating state-supported energy research and development programs among 10 western states.

\* \* \*

Elefio Montoya, a draftsman in Division 9655, recently won the new car raffle conducted by the Sandia High School Orchestra to raise funds to attend a Vienna music festival. Elefio was the recipient of a Ford Granada, a lovely thing, he said, for the couple of hours before he turned it back to the dealer. He is still driving his '55 Chevy pickup to work, but those rattles come from all that loose change in his jeans.

The young musicians are still raising money, and tomorrow they've scheduled a flea market and bake sale from 8 to 5 at the Sandia High school cafeteria. Their next public appearance will be in concert at the city's bicentennial celebration at the Convention Center on March 28 at 6:30 p.m.

## Sympathy

To Dick Schwoebel (5820) on the death of his wife, March 8.

To Joyce Coffee (3624) on the death of her step-father in Amarillo, Feb. 23.



A METRE STICK (never a "metric yard stick") is one cigarette length longer than a yard. That's just one of the ways to make metrics memorable in Bob Holloway's (9623) Metrics for Secretaries course. Bobbi Voelker (4200) reviewed the course from the secretary's point of view.

## Secretaries Go Metric

Think metric. Type metric. That's the goal of a series of Metrics for Secretaries courses that began last week. By summer, over 200 secretaries will have learned to handle the metric units they're likely to encounter on the job.

The first session of the two-and-one-half-hour course gives the secretaries a working knowledge of the metric system with particular attention to SI (International System of Units), the accepted version for technical work.

The second session focuses on metrics as applied to a Sandia secretary's job. Since each organization is establishing its own timetable

for metrication, each secretary must know enough about the subject to accommodate the needs of the organization. The course therefore reviews relevant portions of the Office Procedures Manual and discusses the reasons behind the metric methods Sandia uses.

"We orient the course so it helps the secretary relate to the needs of the customer — the division staff and the supervisor," says Bob Holloway (9623), who compiled the new course. "Last week's classes indicated we were definitely meeting a need in the technical organizations."

Secretaries are automatically scheduled for the course; no enrollment is necessary.



ON THE OCCASION of his 25th service anniversary, Jake Young (3646), center, had to check the company watch to see if it was working. (It was.) Jake retired Feb. 20. From left are Jim Kenagy (3640), Paul Plomp (3646), Jake, Ernie Peterson (4220) and Ed Peterson (3646).

# Sub Service: High Adventure, Deep Peril

*A while back, we talked with Sandia veterans of the B-17 — the Flying Fortress of World War II. Their still fresh memories contained the stuff of adventure, and we reported some of them in LAB NEWS (Sept. 5, '75). We switched to another service more recently, talking with a group of Sandians who served in submarines in WWII.*

\*\*\*

They were members of the Navy in what was called "the Silent Service." The silence derived from a wise Navy policy of not publicizing the considerable exploits of its submarines because it was reasoned that to do so could inform the enemy of his success rate in antisub actions. Japanese records reviewed after the war showed a total of 468 "positive sinkings" of our submarines, while the actual number sunk by enemy action was only 41. Thus, total censorship encouraged the enemy in his belief in the efficacy of his antisubmarine measures. Translated into a real life situation, this meant that Japanese submarine hunters frequently let up in a depth charge attack prematurely, confident they had nailed their still very-much-alive prey. Silence was a paramount virtue.

Life on the wartime submarine was not for the claustrophobic. At any time, anyone of the community of 80 or so could almost always reach out and touch another man. Bunks, torpedoes, dining facilities, all were mutually inclusive. Patrols in enemy waters lasted 45 to 60 days, and it was entirely possible for a crew member to spend the entire patrol below decks. Actually, most preferred their confined spaces to that foreign and sometimes hostile upper world.

The submariners' contribution to the war effort was incalculable. Like England, the islands of Japan were almost totally dependent upon ship-borne imports. The relatively small number of American subs operating in the Pacific sank 826 enemy ships and damaged 371. In addition, threat of the submarine off their shoreline inhibited all Japanese sea operations.

Here are a few personal recollections of Sandia's submarine veterans. Like the B-17'ers, the submariners had more exciting tales than we have space.

**Jeff Haycraft (9711)** — "I joined the Navy back in '34, but didn't qualify in subs till '38. My first one was the Tarpon. I did all my sub service in the engineroom.



"We were anchored 20 miles out in Subic Bay off Manila when the war started. That weekend we didn't get our usual liberty — I think our admiral was just a little suspicious of events. We did lose one sub there to Jap bombers on Dec. 8, but our boat got away.

"I made six patrols. Our worst experience, we had to stay submerged during 31 hours of depth charging. We were in a bad way, taking water in the stern and way down around 500 or 600 feet — the sub was designed for 300 — when the skipper released some air unintentionally. The Jap must have figured he'd got us when he saw the bubbles, because he went away and we were finally able to surface. I think the 31 hours may have been a record. You know, you could hear those destroyers coming at you — sounded just like a train approaching."

\*\*\*

**Larry Horner (9512)** — "We got caught on the surface once by a destroyer near Honshu. In the fog we thought it was a sampan. The captain cleared the bridge and we made an emergency dive to 100 feet where we leveled off. The destroyer started working us over with depth charges, in fact one of them hit our deck and rolled off. When it exploded it knocked out the breakers and lights, and the force of the explosion blew us almost to the surface. I was at the plotting desk during all the excitement and I remember getting hit on the head by stuff from the shelf — parallel rulers, dividers, and an old tennis shoe. To this day, I still don't know what it was doing there.

"We got her back down and outwaited him. You know, clearing the bridge for a dive was pretty frantic. There's just that one hatch everyone had to go through. I stood watches with a yeoman who'd been left topside once on the Argonaut — he was just about the

fastest man to clear the bridge I ever saw!"  
"The patrols were harrowing, but one thing that really helped was that we would all have two weeks' rest and recreation after each patrol at the Royal Hawaiian Hotel in Honolulu.

"Flushing the john on a submerged submarine was a little tricky. You had to follow about four or five steps, just so. If you fouled up, the contents came back at you . . ."

\*\*\*

**Neal Humble (9742)** — "Speaking of emergency dives, we once made 65 feet in 27 seconds on the Haddock. Our skipper was Commander Roy Davenport, the only man in the Navy to get 5 Navy Crosses.

"I spent time as a radioman on eight different subs, two of them, the O-6 and R-2, dating back to the first World War. Most submariners were there because they loved it — I know I did. But after 11 war patrols I was down to 103 pounds, and my hands shook so I couldn't hold a cup of coffee, so I was taken off sea duty.

"My shortest patrol, 19 days, was on the Haddock. We sank three destroyers, a tanker, and a troop transport on that one. But then we had one on the Flying Fish that lasted 84 days and fired only three torpedoes. We ate tuna fish and rice for the last 27 days of that patrol. To this day I can't eat tuna fish.

"We were off Saigon in late '44 watching our 3rd Fleet go by on its way to Japan; we fell in behind the procession and gave recognition signals to the American destroyer who was the tail-end Charlie. He must have thought the flashing signals were gun fire because he came after us, we went down, and that's when we took our worst beating — 124 depth charges. We even fired smoke signals from underwater, but he just used them for a new bearing and kept blasting us. All that skipper could see was the Navy Cross for getting an enemy sub.

"Off the coast of Japan we wanted to enter the harbor at Nagoya to lay mines but the entrance was blocked by nets. We watched the fishing boats entering the harbor — they'd blink their running lights twice, the nets would open, and in they'd go. So we trailed in behind some of them, blinked our lights twice and in we went. We laid the mines, returned to the harbor entrance about 3:30 in the morning, blinked our lights, and out we went!

"No, I never did get tattooed, but I had a near miss. In San Diego on liberty my buddies gave me a few too many beers. When I woke I was lying on a table in a tattoo parlor, chest shaved, with the battleship Maine across it and the artist inking his needles. I escaped."

\*\*\*

**George Bennett (4361)** — "What made for a successful sub? A good skipper, one interested in getting the job done, not in getting back home. But he had to be assigned a good hunting area and needed a good crew behind him.



"I made seven war patrols on four subs. After graduating from the Academy, I went down to Australia in May '42 to join the SS44. Most of our patrols were off Guadalcanal. The hairiest sight we picked up there was 17 Jap destroyers. Another time, we



UNDERSEA vets Jeff Haycraft, Larry Horner, George Bennett and Neal Humble gather around WWII 40 mm gun, standard armament on most subs. Neal claims his salty watch cap is original issue.



SUBMARINERS gather for classic shot on the USS Piranha in August 1945 at Midway Island. Subs were named after fish. Just behind the trophy flag showing

number of ships sunk is Larry Horner (9512) who served as an officer aboard several subs.

sighted three DD's (destroyers) and got the lead ship. The other two worked us over pretty heavily.

"After that we patrolled in the New Guinea area. It was mostly military traffic, heavily escorted, and we never got anything except a hell of a lot of depth charges. Later I had patrols in the China Sea, Yellow Sea, and off the coast of Japan on the Sunfish. We sank about 20 ships — they were successful patrols.

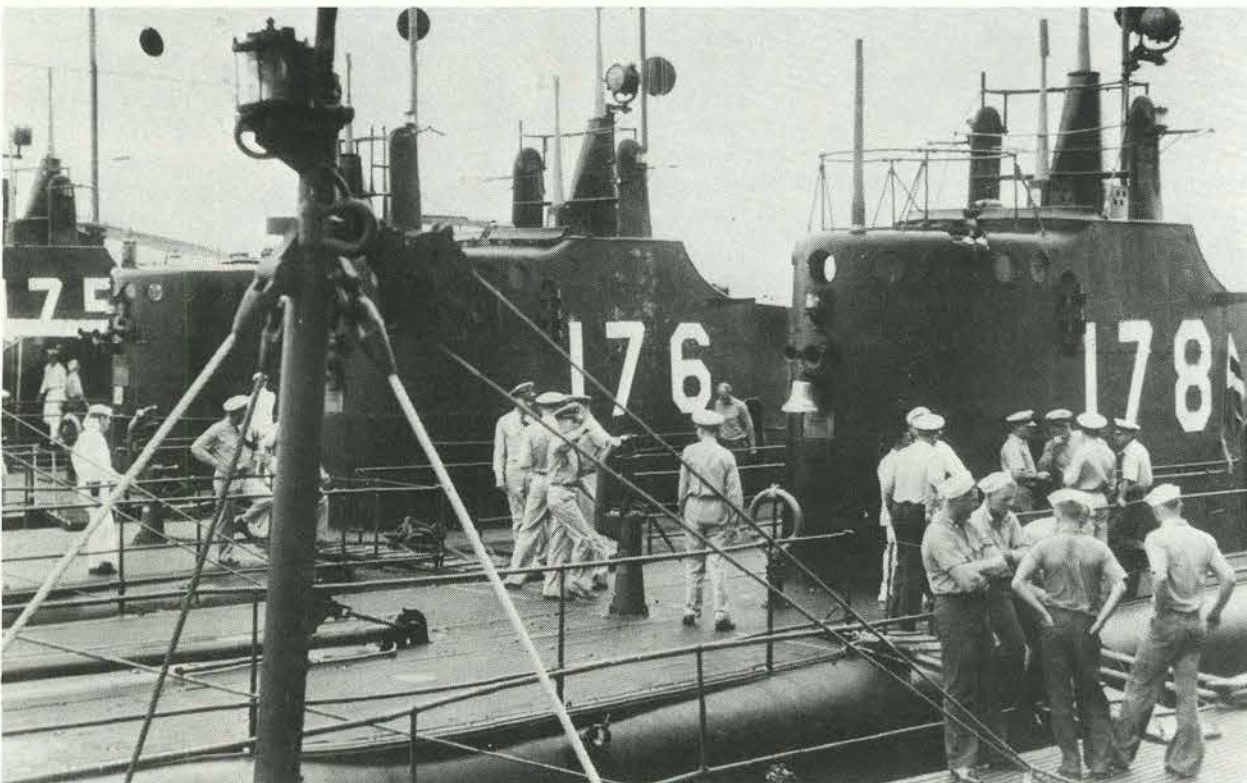
"Our closest call came when our own torpedo made a circular run and was heading straight for us. It was a magnetic type and when it went over us it exploded, but fortunately we were deep enough to escape damage. Then there was the time our own aircraft laid a string of bombs across us. One bomb actually hit the bow — but it was a dud."

\*\*\*

One final note. Neal Humble has asked that we remind all submariners from all periods of service of the national convention of Submarine Vets to be held here in Albuquerque this summer, July 30 to August 1, at the Old Town Sheraton Inn.



NEAL HUMBLE (9742), at left, and friends during Hawaiian interlude. Submariners (accent always on the 3rd syllable) had two weeks of recreation on the island between patrols.



JEFF HAYCRAFT (9711) served aboard the SS-175 (in background). The sister sub lying alongside, the SS-176, was grievously damaged in a battle with hostile ships in March 1942 in the Pacific. Her skipper finally scuttled the boat, and the entire crew was picked up by a Japanese destroyer. They spent the rest of the war as POW's.

—SATURDAY—

NOVEMBER	26	JANUAR
S M T W T F S		S M T W T
1 2 3 4 5 6 7		3 4 5 6 7
8 9 10 11 12 13 14		10 11 12 13 14
15 16 17 18 19 20 21		17 18 19 20 21
22 23 24 25 26 27 28		24 25 26 27 28
29 30		31

*Christmas 1942*  
*8,000 miles from home, within sight of the Japanese coast.*  
*Chow.*  
*Roast Turkey - dressing*  
*green bean, asparagus*  
*sweet potato, fruit cake, mince*  
*pie strawberries & whiffers*

BACK in '42 on patrol, Neal clipped this page from the calendar.

*Menu*

H.M.S. COSSACK & H.M.S. COMUS

CAPTAINS' H.U.K. DINNER

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CONSOMME COMEDSDRON

FILET de DOIGTS SEA-FOX  
avec  
SAUCE MENHADEN

COTES de PORC PILAU au PUTNAM

POMES de MER a l'HENLEY

PETITS POIS au KEITH & a l'OWENS

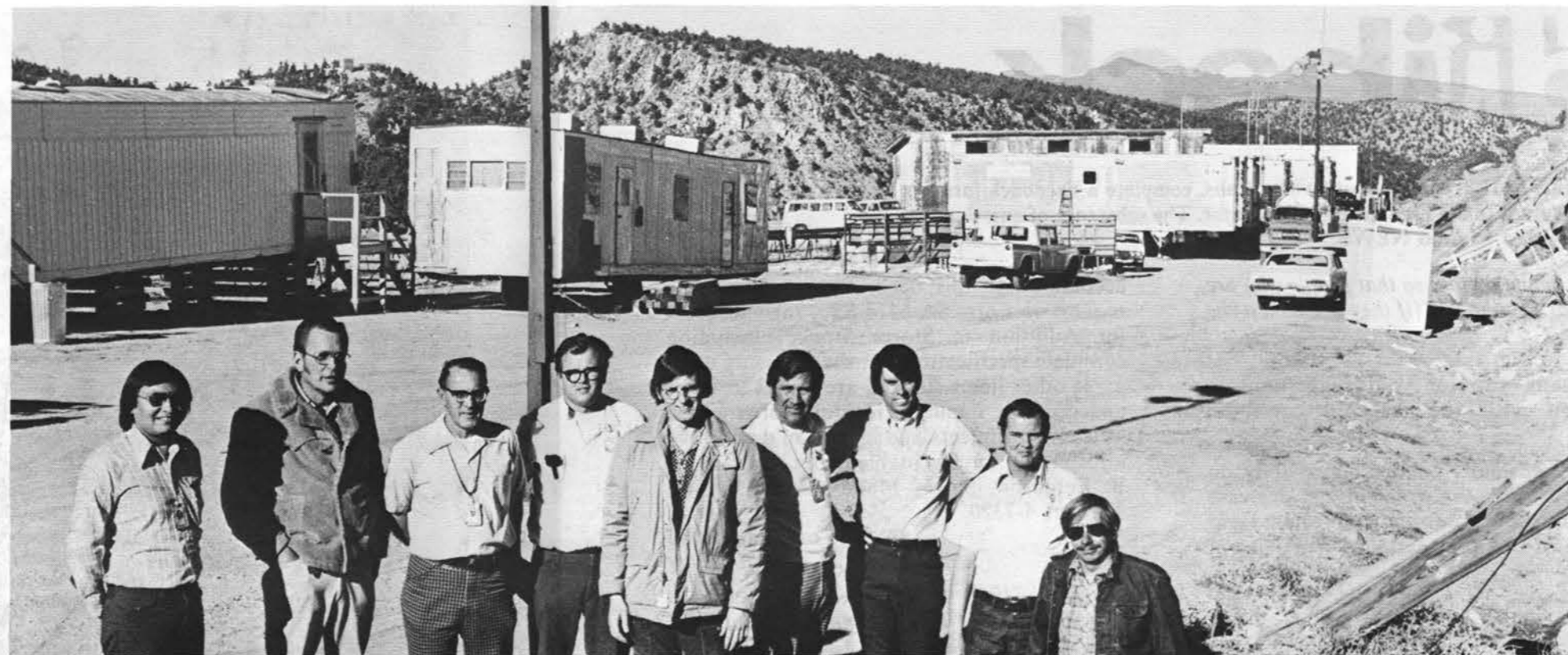
SOUFFLE CHOCOLATE au SICILY

CAFE COMEDSDIV

GEORGE BENNETT (4361) was pleased to attend this dinner given by British colleagues. Menu offers one-of-a-kind delicacies.



ADAM TRUJILLO (1135) talks to remote stations at NTS from the CP-1 operations room. In background are maps, weather charts and data screens used during underground test operations.



ELECTRONICS SUPPORT at NTS is provided by Mercury Instrumentation Section 1125-1. At an instrumentation site on the mesa high above an underground test tunnel are (l to r) Leonard Livingston (1126), Hank Passmore (1131), Stan Brooks (now

retired), Gary Miller (1125), Mike Burke (1125), Tom Towne (1125), Stan Dains (1125), Chuck Wimmer (1131), and Jerry Chael (1125). Cables from trailers extend 1500 ft. down through the mountain to the tunnel instrumentation below.



RAY FOSTER (1131) provides documentary photography services for Sandians at NTS.



MIGHTY EPIC is the name of an underground nuclear test to be conducted in this tunnel in late spring. Finishing an inspection at the site are Sandia NTS engineering and construction men Al Purington and Smokey Byrne (both 1131).



AT THE "MONASTERY" RF facility which overlooks Yucca and Frenchman Flats at NTS are Sandy Sandgren, Henry Stuckert and Chuck Smith (all 1125).

## Sandians at NTS

Throughout history people have formed loyalties to a place, a particular piece of real estate.

The Nevada Test Site is an unlikely place to inspire such feelings. It is an area of land larger than the state of Rhode Island. It's barren, unproductive and remote — the very reasons it was chosen back in December 1950 as the site within the continental United States for testing nuclear weapons.

The weapons business has changed radically since those first atmospheric tests in January 1951, but through the years Sandians who work at NTS, even for a short time, have formed strong attachments to the place.

For B.G. Edwards (1131), Sandia's NTS resident manager, and the 28 Sandians assigned to NTS on a permanent basis, the place has great appeal.

"The work is important," B.G. says. "Weapons testing has become a very complex business requiring extensive technical facilities to complete the underground experiments. The Test Site can be looked upon as a large physics and engineering laboratory."

Mission of the resident NTS Sandians is to work with the Sandia groups — weaponeers, experimenters and effects study people — who conduct the underground nuclear tests. Activities include instrumentation of experiments, seismic measurements, arming and firing of devices, construction design, supplying cable and providing downhole television inspection of experiments and device emplacement.

As resident manager, B.G. coordinates all Sandia activities with the many agencies that use the Nevada Test Site — ERDA, LLL, LASL, DOD and various contractors. He brings to the job 23 years of field test experience and an intimate knowledge of NTS and Sandia operations.

As a participating agency at NTS, Sandia provides some key services for all underground tests — instrumenting, monitoring and recording ground motion of various types and providing the downhole television inspection services. A & F Systems Division 1132 performs the arming and firing of nuclear devices for LLL and provides LASL with arming and firing hardware.

A large part of the effort of the NTS Sandians is devoted to the Labs' participation in an underground event, such as the upcoming "Mighty Epic" test set for late spring.

Extensive cable installations for the hundreds of data channels, RF links and instrumentation trailers are provided by Mercury Instrumentation Section 1125-1 under Sandy Sandgren. Ten Sandians work year around on this job, mostly at remote locations on the test site.

"We're constantly beset by the long distances between work locations," B.G. says. "To cut down on travel time, we work 10 hours a day, four days a week. NTS contains about 1300 square miles of desert, dry lakes and mountains. Mercury is 65 miles from Las Vegas. Area 12 is 45 miles past Mercury. CP-1 — the main control point — is 25 miles from the Mercury gate, and then Pahute Mesa, for instance, is another 55 miles from there. To get to Area 12 is a minimum of two hours and 15 minutes of commute time — four and half hours a day. This means that the man on an NTS job has great freedom for individual initiative. And also great responsibility. Maybe that's why we like working at NTS."

• dg



JOHN BROUILLARD (1131) readies equipment for measuring ground shock very close to the nuclear device for an upcoming LASL underground event.



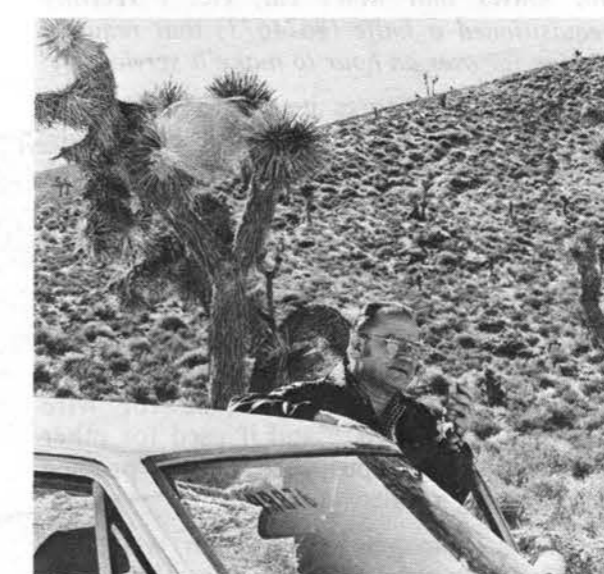
PROVIDING CABLE, miles of it, to Sandia groups at NTS is a continuing activity. Gene Jones, operations support leader, talks with Sandy Sandgren (both 1125).



ARMING AND FIRING nuclear devices are Sandia responsibilities at NTS. Readying equipment are Lyle Hake and Larry Skenandore (both 1132).



LEO BRADY (1131) heads seismic and geophone data gathering activities at NTS.



B.G. EDWARDS (1131) is the Sandia resident manager at NTS. He coordinates Sandia activities with other NTS agencies.



DON SHADEL (1131) readies a downhole television camera. Unit has built-in light source and wide angle lens.



# feed<sup>back</sup>

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

*Q. What kind of air filtration system is used in the heating and ventilating system in building 806? For a long time my allergies have bothered me greatly in my office. Now, however, the situation is approaching the intolerable. I believe that the allergic symptoms are due to large quantities of dust entering through the ducts. I taped the vents shut, but this has been only of marginal help since air enters from ceiling openings. Raising the window is of no use since air flows out.*

*Would it be possible to clear or replace the air filters much more frequently than is now done? Everyone would benefit from the cleaner air, not just the allergic. The unobstructed flow of air would also greatly reduce fuel consumption.*

*Please help!*

A. An operations engineer from the Plant Engineering staff has visited your area, and found that the final air filters do need attention. The mounting frames will be repaired and fresh filters will be installed soon. Thank you for helping us to pinpoint the difficulty. The outward flow of air through the window is normal, in that the building is automatically pressurized above outdoor ambient pressure. With your window sill registers taped and the window open, air would flow into your room from the return air plenum above the ceiling, carrying with it "house dust" from other areas. You may wish to consider removal of the tape and closure of the window, once filter bank repairs have been made; in this way you would receive air from which the major portion of the house dust has been removed.

R. E. Hopper, 9700

*Q. We work in the trailer complex south of the cafeteria inside the area. The temperature at 8 a.m. is always between 50 and 55 degrees. The buildings never warm up before 10:30 or 11. We really feel there should be something done to get the heating started a little bit earlier. Such cold temperatures are not conducive to work.*

A. The control of the temperature in all trailers and small buildings is through individual thermostats. The responsibility for night and weekend setbacks has been delegated to an energy monitor or his assigned building contact person. Instructions have been given to energy monitors to set thermostats no lower than 55°. However, if this results in unsatisfactory morning temperatures they should adjust the thermostats to a higher setting. Jim Robinson, 4-7569, is the responsible mechanical maintenance supervisor for your area. I have requested him to contact the energy monitor and to adjust the thermostat setting to provide a more comfortable environment. If conditions do not improve, please contact Jim at the above extension.

R. E. Hopper, 9700

*Q. How about (1) stating that car pool reserved spaces are only reserved till 8:30 a.m., and (2) reshuffling all reservations once a year*

*(based on reapplication) so that people who are not now car pooling will (if they are honest) be eliminated.*

A. Thank you for your suggestions in connection with the reserved car pool situation.

We are currently conducting a study on how best to solve the problem and decrease abuses. Your suggestions are appreciated and will be taken into consideration in arriving at a solution.

L. J. Heilman, 9500

*Q. Each morning the lights in most work areas are turned on by the earliest arrival. If only the minimum needed lights were then turned on, and others turned on at 7:50 or 7:55, a saving of many KW hours could be realized each day.*

*Lights are left on in many areas after 4:30 that are unneeded. If all but the minimum needed lights were turned off at 4:30 or 4:35 and others (except entrance lights) were turned off by the last to leave, again many KWH could be saved.*

*Basically, it boils down to encouraging actively all lights off except from 8 to 4:30.*

A. Your suggestion for energy conservation through light reduction was received with appreciation. In particular, that part of the recommendation concerning the turning on of all lights at an early time prior to 8:00 a.m. is most pertinent.

Light reduction at the close of day is part of the energy monitors' standard instruction, but if lights are left on, the Security Guard Force is responsible for turning them off as they make their patrol duty tours.

Thank you for your interest in the advancement of our Energy Conservation Program.

L. J. Heilman, 9500

*Q. Why does Sandia persist in spending dollars to save pennies in these tight budget times? I am currently thinking of General Stores' buying pens that write badly, or not at all; knives that won't cut, etc. I recently requisitioned a knife (#674673) that required honing for over an hour to make it serviceable!*

A. General Stores items are stocked by request and are procured based on specifications provided by the requester. The product meeting the specifications at the lowest price is purchased. The written specifications are not compromised to gain a price advantage.

The electrician's knife (#674673) is described as having "one pen knife blade and one locking screwdriver blade for wire stripping with clevis," and if used for other than the intended purpose, it could provide discouraging results.

Stores Management Division welcomes your help in maintaining quality stock.

If a need exists to stock a sharper variety of knife, General Stores is willing to

accommodate this need. Please submit the request on Form SA 6470-S (5/75), "Request for Addition to Stores Stock," including complete specifications for the necessary item.

If other items stocked are found to be of unacceptable quality, General Stores would welcome comments and improved descriptive information for acceptable items. Contact W. B. Ferguson, Stores Management Division 3727, at 4-7350.

L. S. Conterno - 3700

*Q. In 1967 Sandia Labs conducted an "Inventory of Professional Specialties." Wouldn't it be useful to have such a manpower tool updated?*

A. You are correct, we did have an Inventory of Professional Specialties in 1967, or at least we had a fairly complete inventory, but the system was never utilized to any significant degree. Discussions have taken place regarding the pros and cons relative to the usefulness of such a system vs. the expense of keeping such an inventory updated. It is felt that for the relatively small population of professional, technical, and craft skills that comprise the likely basis for having a skills inventory, such a system cannot really be cost justified.

R. J. Edelman - 4200

*Q. Most offices at Sandia have some background noise that may cause distractions. However, radios seem to be totally out of place and should be prohibited, as company policy, except perhaps during the lunch period or break time. What can be done to establish and implement such a policy?*

A. The Laboratories does not object to radios being used as a source of background music if it does not interfere with the conduct of normal business. Supervisors are responsible for policing the use of personal radios to insure their volume is kept low enough so the work of other employees is not disrupted.

It seems to me that reasonable people ought to be able to work out a satisfactory arrangement in this regard. If you cannot work out such an arrangement, I suggest you first discuss the matter with your supervisor. If that doesn't resolve it, discuss the matter with your personnel representative or call me on 4-8021.

R. J. Edelman - 4200

*Q. Whatever happened to the staggered lunch hours? The 839 cafeteria is crowded between 11:30 and 12:15 and almost deserted by 12:40. Plus, they are often out of food by 12:45 (or even earlier).*

A. We have received comments similar to yours concerning the availability of hot food during the 12:30 - 1:00 lunch at the 839 Cafeteria.

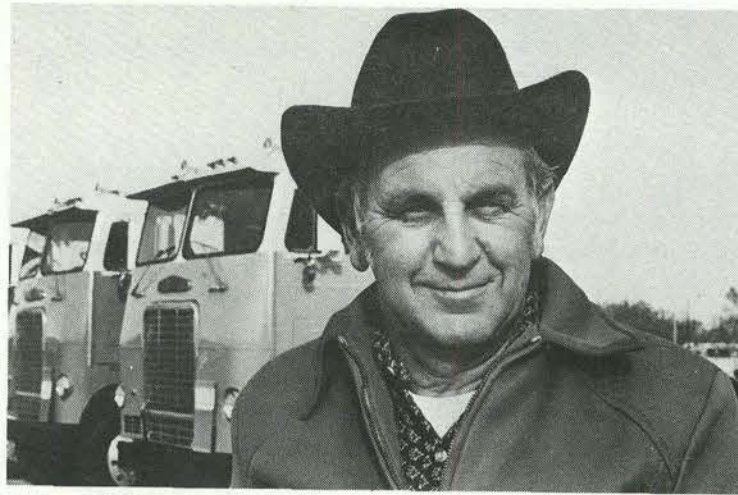
This matter has been brought to the attention of Dave Foster, Szabo Manager, and he assures us that this situation will be remedied. If the matter is not resolved by the time you receive this response, please contact Dave Foster at 265-6791.

R. J. Edelman - 4200

# MILEPOSTS

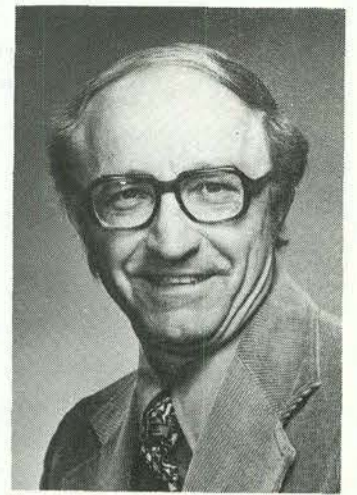
## LAB NEWS

March 1976



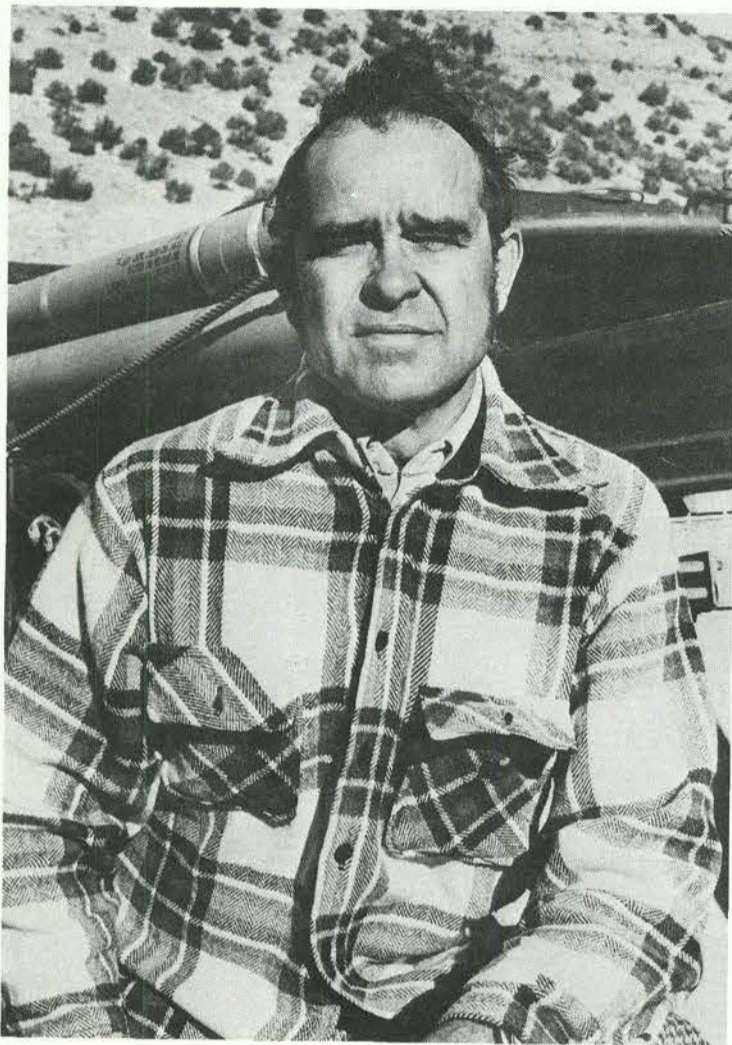
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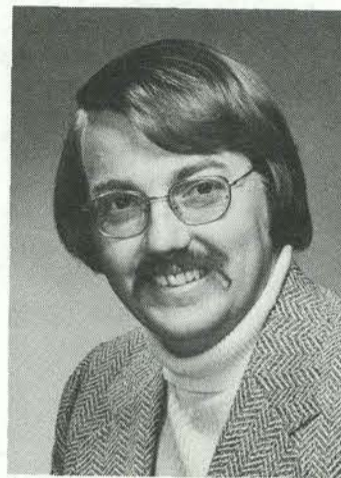
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A.C. Carabajal-9335

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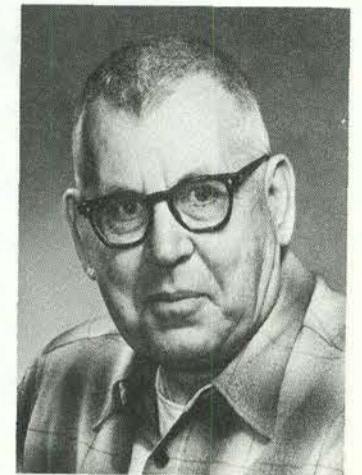
William Olsen - 4338

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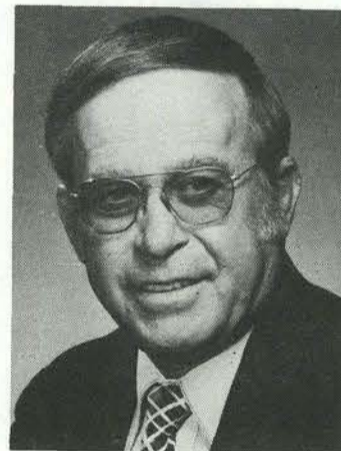
Junior Woellhart - 9711

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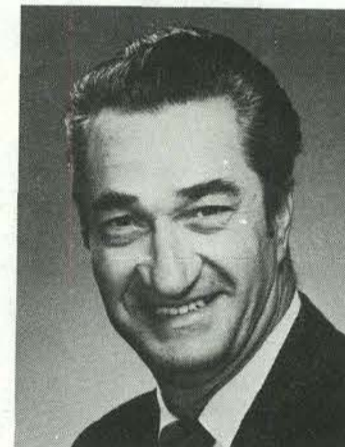
Ira Hamilton - 1134

30



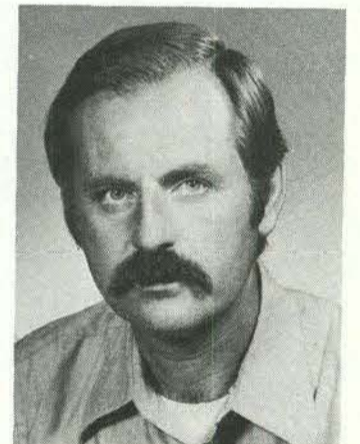
Dalton Savage - 1751

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Orville Howard - 1732

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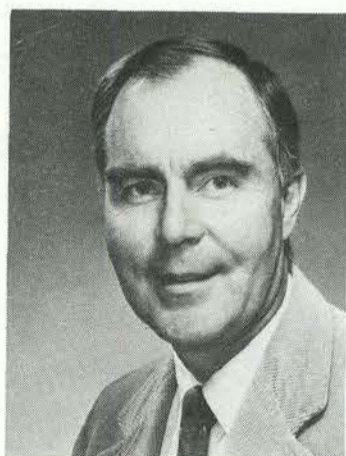
Mike Forrestal - 5233

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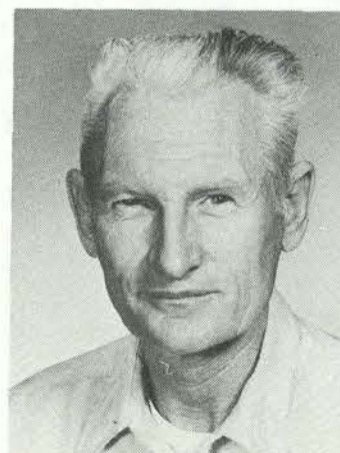
Jim Coughlin - 1212

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Lawrence Bennett - 9344

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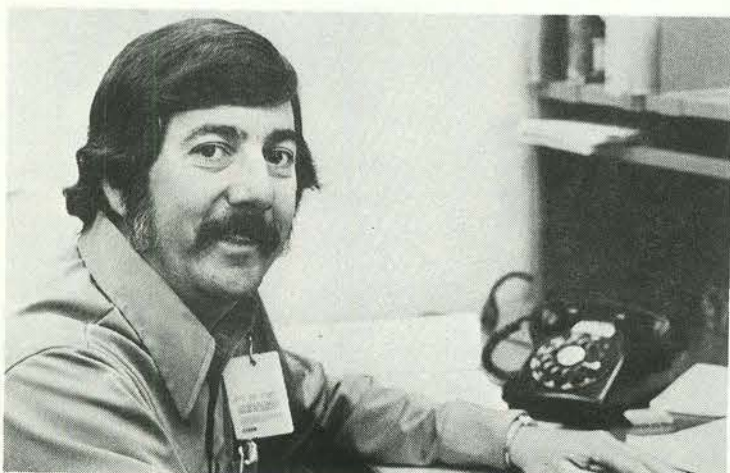
William Foy-9412

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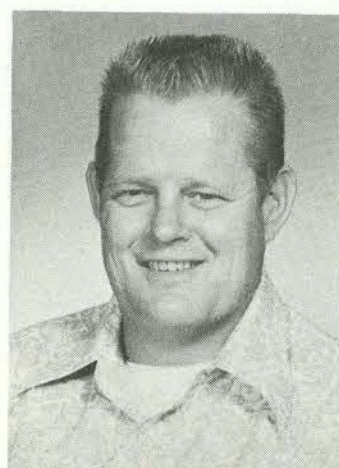
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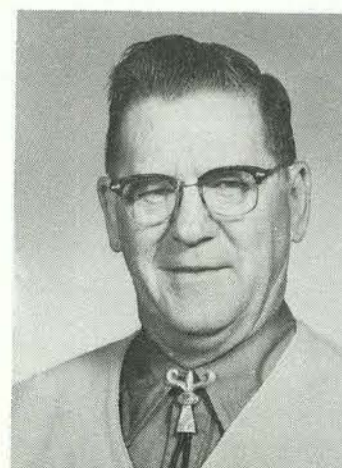
Tom Cleveland-3645

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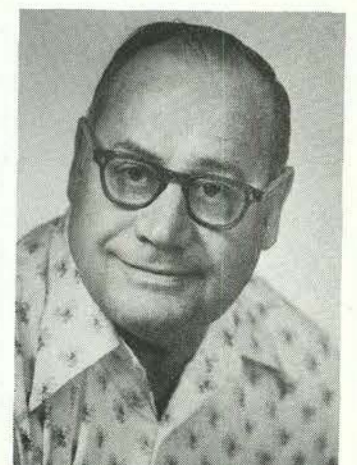
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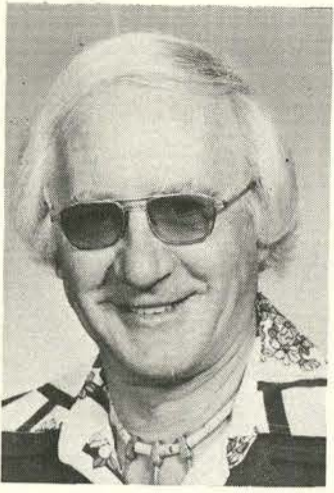
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Earl Deno-8257

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Ray Schultz-9520 30



Tom Edrington-1313 15



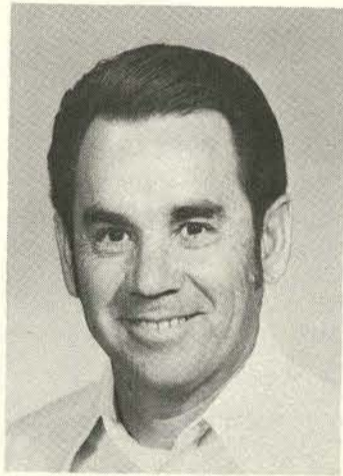
John Schamaun-1341 15



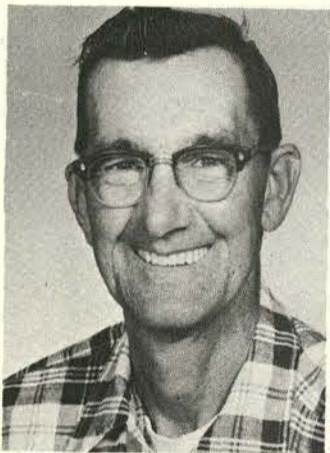
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Allen Dale-9623 25



S.D. Carrillo-3220 20



Francis Thatcher-9718 10



Harry Cherb-9753 25



Gene Lucero-3617 25



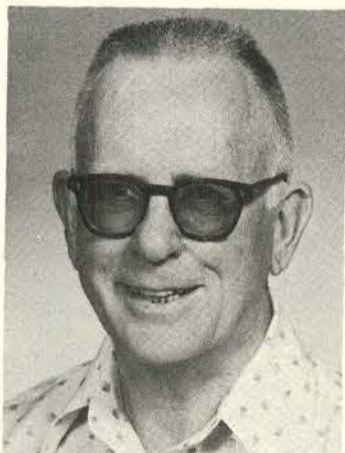
Richard Wahlberg-1715 20



Milton Zimmerman-1253 20



Herb Filusch-1242 20



Jack Benson-9514 20



Roland Cleveland-9634 20



Dorcas Gabaldon-2121 25



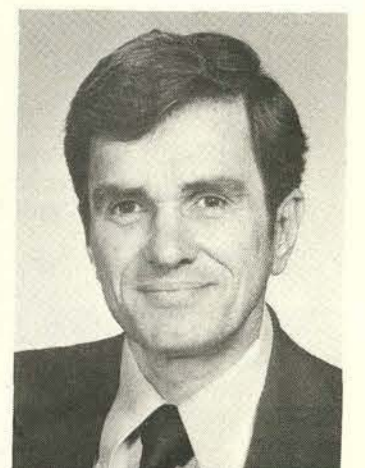
Boney Vigil-2632 20



James Phillips-2532 25



Gus Gustafson-1713 25



Richard Heckman-5842 15

# Speakers

J.M. Hueter (4231), "Creativity in the Volunteer Organization," Junior League of Albuquerque Training Conference, Dec. 9, Albuquerque; and "Creativity — Choice or Chance?" Bernalillo County Medical Society Auxiliary, Jan. 26, Albuquerque.

D.P. Peterson (9624), "Computing," Grant Jr. High science class, Jan. 8, Albuquerque.

G.E. Brandvold (5710), "Sandia Energy Programs," N.M. Institute of Chemists, Jan. 9.

G.V. Barton (5711), "A Career in Solar Energy," Eisenhower Middle School career education program, Jan. 16.

H.C. Montieth (5413), "Biorhythm," Jan. 16, Downtown Optimist Club; and "The Great Pyramid of Egypt," Jan. 26, American Association of Retired Persons.

D.W. Ballard (9351), "An Engineering Viewpoint on Problems of Materials Conservation," Jan. 28, UNM Civil Engineering Club.

D.W. Schaefer (5814), "Soft Core Liquids," Dept. of Chemistry, Columbia University, Feb. 3, New York City.

P.J. Slater (5121), "Central Vertices in a Graph," 7th Southeastern Conference on Combinatorics, Graph Theory & Computing, Feb. 9-12, Louisiana State University, Baton Rouge.

W.L. Holley (3311), "Sandia Laboratories' Proposed Electron Beam Fusion Facility and Related Potential Operational Health Physics Problems," Health Physics Ninth Midyear Topical Symposium, Feb. 9-13, Denver.

B.W. Lindsay (2142), "Data Structures for Geometric, Logical and Topological Analysis of Integrated Circuit Masks," IEEE Conference on Data Structures and Pattern Recognition, Feb. 11-13, Albuquerque.

R.S. Blewer (2553) and R.A. Langley (5111), "Depth Distribution and Migration of Helium in Vanadium at Ambient and Elevated Temperatures"; R.A. Langley and J.M. Donhowe, "Study of the V-Be Diffusion Couple Using Ion Beams"; S.T. Picraux (5111), J. Bottiger and N. Rud (U of Aarhus, Denmark), "Enhanced Hydrogen Trapping Due to Ion-Produced Damage"; R.R. Rye (5114), "Reaction of Atomic Hydrogen with Chemisorbed Species"; J.A. Panitz (5114), "Surface Characterization and Depth Profile Studies of Implanted First Wall Materials with Angstrom Resolution," Conference on Surface Effects in Controlled Fusion Devices, Feb. 16-20, San Francisco.

J.P. Brannen (5413), "Computer Aids in the Study of Trophic Web Stabilities," Biology Symposium, UNM, Feb. 4.

B.T. Preas and B.W. Lindsay (both 2142), "Automatic Circuit and Design Rule Analysis of IC Masks," IEEE International Solid-State Circuits Conference, Feb. 18-20, Philadelphia, Pa.

P.J. Modreski (5831), "A Different Look at Minerals: Projecting Thin Sections," Second Biennial Mineralogical Society of America-Friends of Mineralogy Meeting, Feb. 15-16, Tucson, Ariz.

S.L. Pohlman (5831), "Corrosion: Everyone's Problem," NMIMT, Feb. 17, Socorro.

D.G. Schueler (5719) and B.W. Marshall (5715), "Photovoltaic Systems Definition Project of the ERDA National Solar Photovoltaic Program," ERDA National Solar Photovoltaic Program Review Meeting, Jan. 20-22, Lake Buena Vista, Fla.

A.G. Beattie (9352), "Frequency Analysis of Acoustic Emission Produced by Compression Tests of Cast Iron," the 15th meeting of the U.S. Acoustic Emission Working Group, Jan. 20-23, Fort Lauderdale, Fla.

P.H. Holloway (5825), invited paper, "Detection and Analysis of Grain Boundary Diffusion in Engineering Devices," Dept. of Metallurgical Engineering and Materials Science, Jan. 26, Gainesville, Fla.

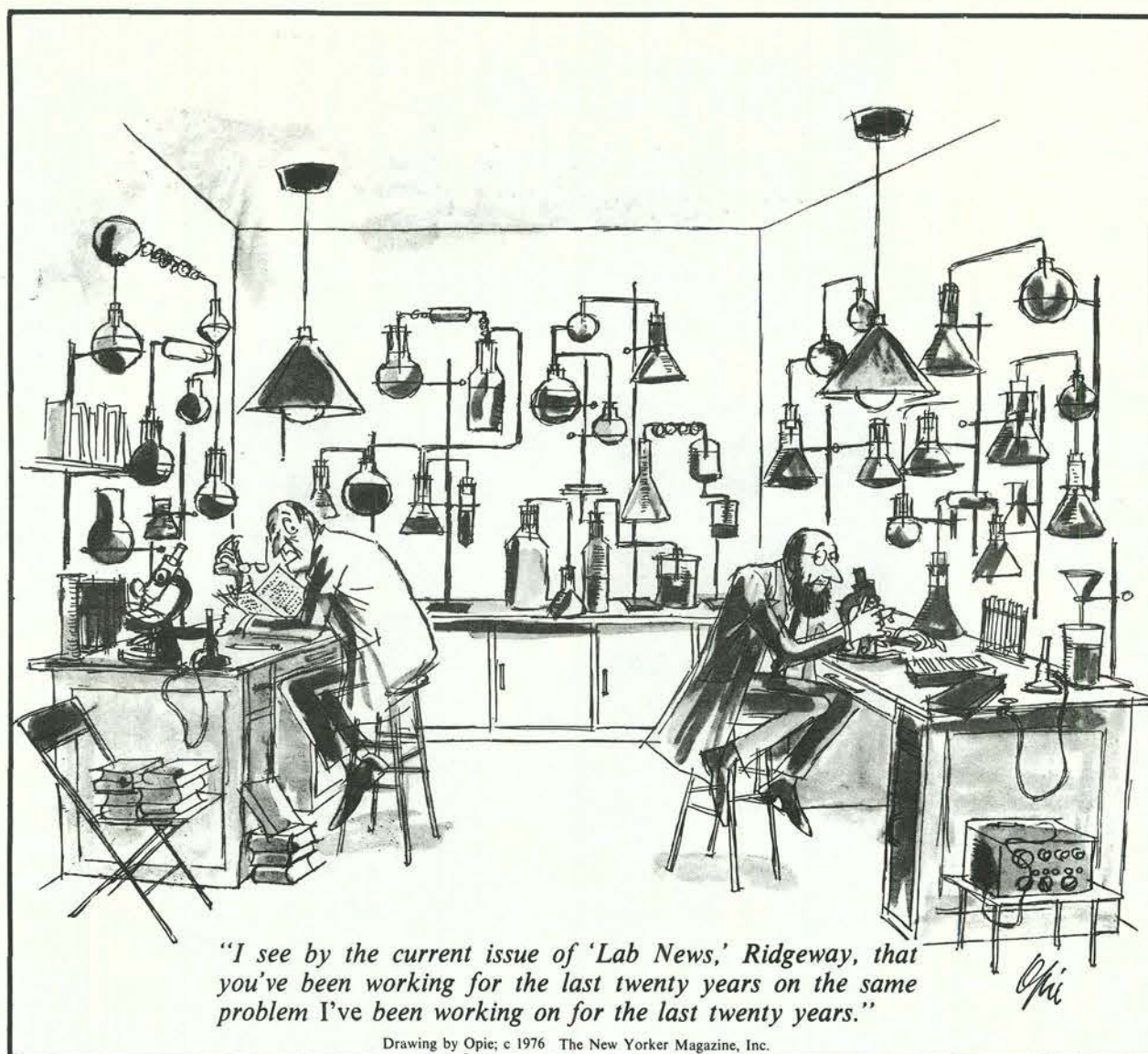
G.J. Hochrein (1323) and G.F. Wright (1333), "Analysis of the TATER Nosetip Boundary Layer Transition and Ablation Experiment," AIAA 14th Aerospace Sciences meeting, Jan. 26-28, Washington, D.C.

D.M. Ellett (1150), "Earth Motions Resulting from Large Distributed Chemical Explosive Detonations," Conference on Explosives and Blasting Techniques, Jan. 28, Louisville, Ky.

J.A. Alcone (5742), "Solar Powered Irrigation Project," N.W. Water Well Drillers Association, Jan. 30, and National Council of State Legislators, Nov. 4, 1975, Albuquerque.

J.N. Olsen (5242), "Calculation of Pulse Shaping by Saturable Absorption and Amplification in Iodine Lasers," Meeting of the German Physical Society, Feb. 1976, Hannover, Germany.

L.C. Beavis (2353), "Helium-3 Release from Young Erbium Tritides"; D.F. Cowgill (2353), "Dynamic Ion-Damage Profiling"; P.H. Holloway (5825), invited paper, "Atomic Transport and Thermocompression Bonding in Chromium/Gold Thin Film Metallization";



*"I see by the current issue of 'Lab News,' Ridgeway, that you've been working for the last twenty years on the same problem I've been working on for the last twenty years."*

Drawing by Opie; © 1976 The New Yorker Magazine, Inc.

PHYL WILSON (3161) who brought this drawing to our attention wanted to know if the *New Yorker* magazine is on the LAB NEWS mailing list—it isn't.

J.A. Leonard (5712), "Energy Programs at Sandia Laboratories," 5th annual symposium of the Florida Chapter of the American Vacuum Society, Feb. 2-5, Tampa.

T.M. Schultheis (9423), "On-Line Processing of Real-Time Field Acquired Data," Instrumentation Meeting, Jan. 28, Laramie, Wyo.

R. S. Claassen (5800), "A Perspective on Materials in the Energy Program," Distinguished Lecture Series II, Joint Center for Materials Science, Jan. 22, UNM.

M. L. Knotek (5155), "Flash Desorption Studies of B-Alumina," Ford Research and Development Center Seminar, Feb. 18, Dearborn, Mich.; and "Studies of the Surface Properties of Solid Electrolytes," Research Seminar, Michigan State Univ., Feb. 20, East Lansing.

F. G. Yost and F. P. Ganyard (both 2152), "Measurement of Solder Spreading Kinetics"; S. L. Pohlman (5831), "Characteristics of Chrysocolla Pertinent to Acid Leaching"; W. R. Hoover (5844), "The Critical Energy Release Rate As a Failure Criterion for B-Al Composites"; R. C. Reuter (5715) and F. P. Gerstle (5844), "Thermal Stress Behavior in Cylindrically Orthotropic Structures"; G. J. Jones (2334), J. E. Selle (ORNL) and P. E. Teaney (Mound), "<sup>238</sup>PuO<sub>2</sub>/T-111 Compatibility Studies"; T. R. Guess (5847) and F. P. Gerstle (5844), "Deformation and Fracture of Resin Matrix Composites in Combined Stress States"; J. C. Swearingen (5847) and R. W. Rohde (5832), "Characterization of the Deformation of States of Metals"; T. V. Nordstrom (5832) and F. G. Yost (2151), "Sintering of Thick Au Films," AIME Annual Meeting, Feb. 22-26, Las Vegas, Nev.

J. T. Cutchen and J. O. Harris (both 2521), invited paper, "A Review of PLZT Electrooptic Shutter Application," 1976 SAE Automotive Engineering Congress, Feb. 23-27, Detroit, Mich.

B. D. Hansche (9352), "Binary Computer Generated Holograms as Spatial Filters," The Topical Meeting on Image Processing, Feb. 24-26, Pacific Grove, Calif.

M. Scott and H. A. Watts (both 2642), "A Systematized Collection of Codes for Solving Two-Point Boundary Value," Conference on Numerical Software, Feb. 24-25, SLL.

M. Scott (2642), "Computational Solution of Linear Two-Point Boundary Value Problems via Orthonormalization," joint seminar—Computation and Planetary Atmospheres Sections of the Jet Propulsion Laboratory, Feb. 26, Pasadena, Calif.

D. R. Begeal (2413), "Stable Oxide Surface Layers as Hydrogen Permeation Barriers," 1st World Hydrogen Energy Conference, March 1-3, Miami Beach, Fla.

P. S. Pickard (5422), "Preliminary Core Design Calculations for the ACPR Upgrade"; R. L. Williams, R. D. Meyer and F. V. Thome (all 5421), "Circuit Designs for Measuring Reactor Period, Peak Power,

and Pulse Fluence on TRIGA and other Pulse Reactors"; F. V. Thome (5421), "Prediction of Annular Core Pulse Reactor Pulse Fluences that are Perturbed by Experiment Interactions with the Reactor Core"; J. S. Philbin, B. F. Estes and F. V. Thome (all 5421), "Neutron Radiography Facility Annular Core Pulse Reactor"; F. M. Morris (5421), P. S. Pickard and D. J. Sasmor (both 5422), "Fuel Element Development of the ACPR Upgrade," TRIGA Reactor Owner's Conference, March 1-3, Salt Lake City, Utah.

G.W. Hughes (1243), "Mathematics," Los Altos Kiwanis Club, Feb. 5, Albuquerque.

J.A. Leonard (5712), "Sandia's Solar Total Energy Project," Albuquerque-Bernalillo County Medical Assn., Feb. 5.

R.A. Holloway (9623), "Conversion to the Metric System and the Effects on The Businessman," National Assn. of Accountants, Albuquerque Chapter, Feb. 10.

J.W. Reed (5443), "Sonic Booms," Los Altos Kiwanis Club, Feb. 12.

H.C. Monteith (5413), "Mind, Matter and the Human Response," APS Science Teachers Assn., Feb. 17.

R.P. Stromberg (5711), "Solar Energy Research," Santa Fe Contractors Assn., Feb. 17.

A.E. Kaping (3732), "Day Control," Los Altos Kiwanis Club, Feb. 19.

J.H. Scott (5700), "Sandia Energy Projects," Albuquerque Rotary Club, Feb. 19.

R.T.G. Lassiter (4232), "I'm OK, You're OK," American Businesswomen's Assn., Feb. 23, Albuquerque.

H.C. Walker (1140), "The Carlsbad Project," Hobbs Rotary Club, Feb. 26.

N.J. DeLollis (5813), "Going Metric," Albuquerque Federal Statesmen's Club, Feb. 26.

W.B. Leisher (5233), "A Flux Compression Topping Stage"; G. Yonas (5240), "Engineering Concepts in Fusion," 16th ASME Symposium, Feb. 26-27, Albuquerque.

P.J. Modreski (5831), "The Behavior of Mica in the Earth's Mantle," Seminar in the Departmental Colloquium Series, Feb. 26, UNM.

F.A. Hasenkamp (9351), "NDE of Reactor Components at Sandia Laboratories," ASNT spring convention, March 1976, Los Angeles.

R.L. Ward (5441), "The Molecular Biology of Herpesvirus Infections," Seminar at UNM Biology Dept., March 6.

L.C. Bartel (5732), "Model Calculations of the Resistivity as a Result of the Reaction Zone in an In Situ Coal Gasification Experiment," 29th annual meeting, Midwestern Societies of Exploration Geophysicists, March 7-9, Dallas.

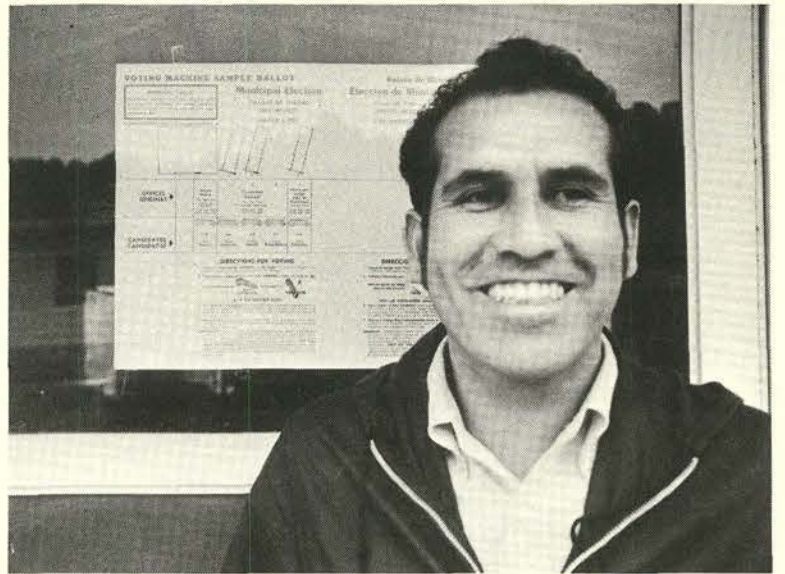
# sandia PEOPLE Report



"1776," the prize-winning musical that celebrates America, is being presented at Popejoy by Albuquerque's Civic Light Opera next week (March 26-28, 30, 31 & April 2-4). Dick Schwoebel (5820), Phil Mead (3151), Duane De Werff (2136) and players all, here suggest that an English drum and a 50-star flag evoke 1776 (after all, someone once noted that drama calls for the willing suspension of disbelief).



BARBARA RUSH (200) has this thing about animals, in fact she's resident Director of the Animal Humane Association and is forever dreaming up ways to separate money from people so that Shep (he's the one in the middle) can get his daily victuals. This time John Chambers (left), tax consultant and a former manager of H.&R. Block, also a director of the Humane Ass'n., has volunteered his services to taxpayers needing assistance with the understanding that fees for this service go to the Association. So your money really is going to the dogs . . . Call John on 255-5523 if you're interested.



JUST ELECTED Mayor of the Village of Tijeras, Felix Garcia (9722) shows off his victory smile.



EMERY POSTENRIEDER (4252) was pleasantly surprised to learn he had been selected by the Duke City Exchange Club to receive this award "... in recognition of outstanding service to the community." Emery was, among other things, president/manager/coach of the Mile High Little League and chairman of his church's education board which initiated kindergarten schools on South Broadway. He has also held office in the PTA and was associated for 4 years with the Boy Scouts.



THE MAD BIKER is back. This is his happy expression because he's learned that Sandia bikers no longer need a key to open the gate on the Los Altos overpass. Instead, there's a bike/man-size opening. But don't try riding through unless you want a cheap lobotomy.



FRIDAY	SATURDAY
19 — HAPPY HOUR BBQ RIBS BUFFET Adults \$3.50 Under 12 1.92 Watermelon Mountain Jug Band MIDNIGHT SPECIAL	20 — SHRIMP PEEL Cocktails @ 6 Dinner @ 7 Members \$5.95 Guests 6.45 UP COUNTRY 8:30 - 12:30
26 — HAPPY HOUR POT ROAST BUFFET Adults \$2.75 Under 12 1.75 SOL CHAVEZ & DUKE CITY BRASS Denny In Lounge SINGLES NIGHT	27 — TEEN DANCE OASIS 7:30 - 10:30 Members 25¢ Guests 50¢

A — Caribbean Cruise. That's the latest addition to the travel menu at the Club. Sail aboard a luxury liner from Miami to Haiti, Puerto Rico, Virgin Islands, other exotic ports of call. From \$659. Or sign up now for Hawaii, Las Vegas, the Bicentennial Tour, and/or Greece. The Club has dates, prices, and detailed itineraries.

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FOOL — around tonight with the Watermelon Mountain Jug Band, easily the most exciting thing to happen at the Club since the Air Police discovered our instantaneous extradition policy. After the Jug Band, it's Midnight Special for dancing. Before and during the Jug Band, barbecued ribs, corn-on-the-cob, home-fried potatoes, and those great salads.

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AND — next week, a brand new entree: pot roast (which is *not* Mother Nature's way of saying "Hi") served with potatoes, vegetables, tossed salad, and Other Things. Good news on the dance band front — and the dance band back. Yes, back is Sol Chavez and the mighty Duke City Brass. At 9:30 in the Lounge, mighty Denny leads the Loungine Symphonette through the O.K. Chorale. Denny's quite a leader of men — and a follower of women.

HIS — name is Tal. His goal is to mystify you. He'll bring his five-person Magic Show to the Club April 3 for Variety Night. Following his show is *The Misadventures of Merlin Jones*, a lighthearted look at some extraordinary electroencephalograms (the kid can hear brain waves crashing against the cranium or something). Food, including some great salads, is available at six; showtime is at 7.

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'MONEY — you save by buying Commonwealth movie tickets at the Club can go for lots of buttered popcorn, a babysitter, or even your \$2.50/month Club membership. Buy them by the bunch.

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ARE — you single? Then head Clubward immediately upon close-of-business next Friday. It's another Singles Night in the El

Dorado Room, and it's open to any Sandia or ERDA single with 50¢ left from payday. Relax with some hors d'oeuvres, rejuvenate with some beverages, recuperate with some Denny-music, rejoice with the dancing, and relate with some People.

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SOON — time to relieve a long, dusty, dry spell with a fresh Oasis. That's the band on the stand for the Teen Dance next Saturday.

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POPULAR — Shrimp arrive for a Peel tomorrow evening. (They arrive by special motorcoach at the Crustacean Bustation.) If you've picked up your tickets, you're ready to rip into those shells.

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MORE INFO — 265-6791.

Our Town

## Action for Newborns

Modern medical talent and technology can keep a brain-damaged adult alive almost indefinitely. The same talent and technology will also keep alive a seriously ill newborn infant and will *prevent* brain damage as well. But the sad circumstance is that demand for such intensive care exceeds supply.

Gaining intensive care facilities for these infants is the goal of a new group called Action for Newborns. Sandian Ray Peabody (1132) is a charter member: "Our twin grandchildren were born 10 weeks prematurely. Typically, premies have respiratory problems because their lungs are simply not ready to function at birth. In the case of Jeannie and Jennifer, the problem was acute, and a few years ago this would have meant a couple of severely brain-damaged kids. But we were lucky — we got them into the newborn intensive care unit (ICU) at BCMC, and they're now healthy, normal one-year-olds."

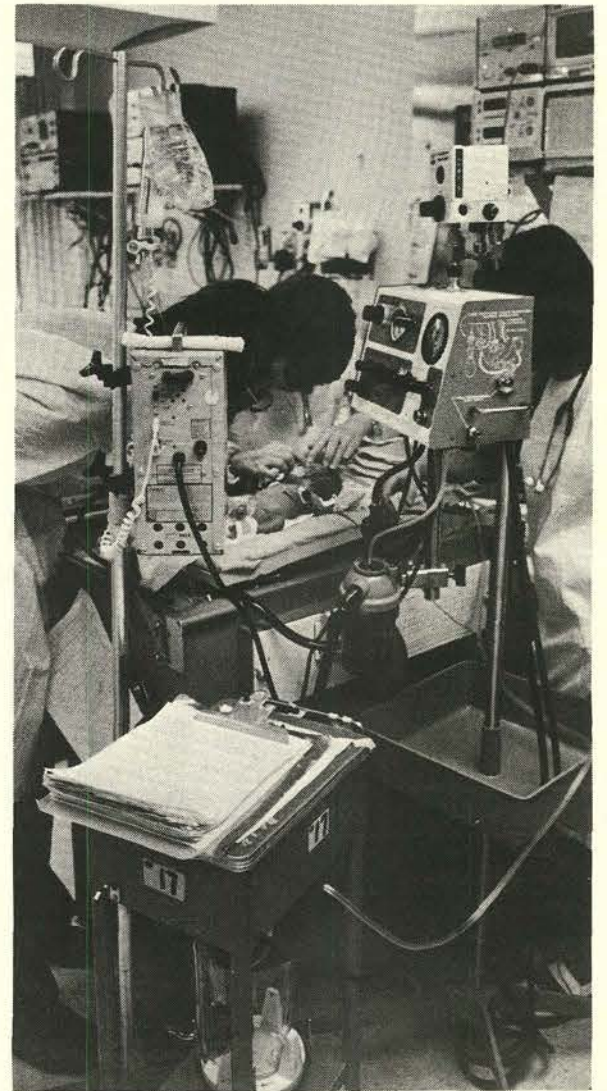
"Action for Newborns is a sort of alumni group composed primarily of people like us who have had children at the facility, though anyone interested can join," says Chuck Henry, current president of the group. "Our objective is simply to support newborn care in the state."

The care involves both special equipment and special people. The equipment continuously monitors each infant's heart rate, blood pressure, respiration, temperature, and other vital signs such as oxygen and carbon dioxide levels and pH balance. The staff is built on the skills of a new medical specialist — the neo-natologist. The two at BCMC (and the only two in the state) are Dr. Luann Papile and Dr. Herb Koffler. They point out that if the low birthweight baby — under three pounds — can be kept alive, it has a 90 percent chance of undamaged survival.

Because only BCMC offers this service, transportation of seriously ill newborns from outlying areas is important. They are flown to Albuquerque inside an Icolette, a portable monitoring unit, escorted by a specially trained nurse. In 1971, only 12 babies came to the Center from outside Bernalillo County; in 1975 the number was 171.

An immediate goal of Action for Newborns is to equip the new wing of BCMC which will someday replace the present, overcrowded newborn intensive care unit.

"This will take money," says Chuck.



CONCENTRATION of medical people and equipment gives this seriously ill newborn the best possible chance for a healthy, normal life.

"That's why we're appealing to other parents. Together we hope to convince groups like the state legislature that, expensive as specialized care for the seriously ill newborn may be, it's far cheaper than life-long institutional care for a brain-damaged human being."

Anyone who would like to help should call Chuck at 296-4656. • bh

