

The Directorates

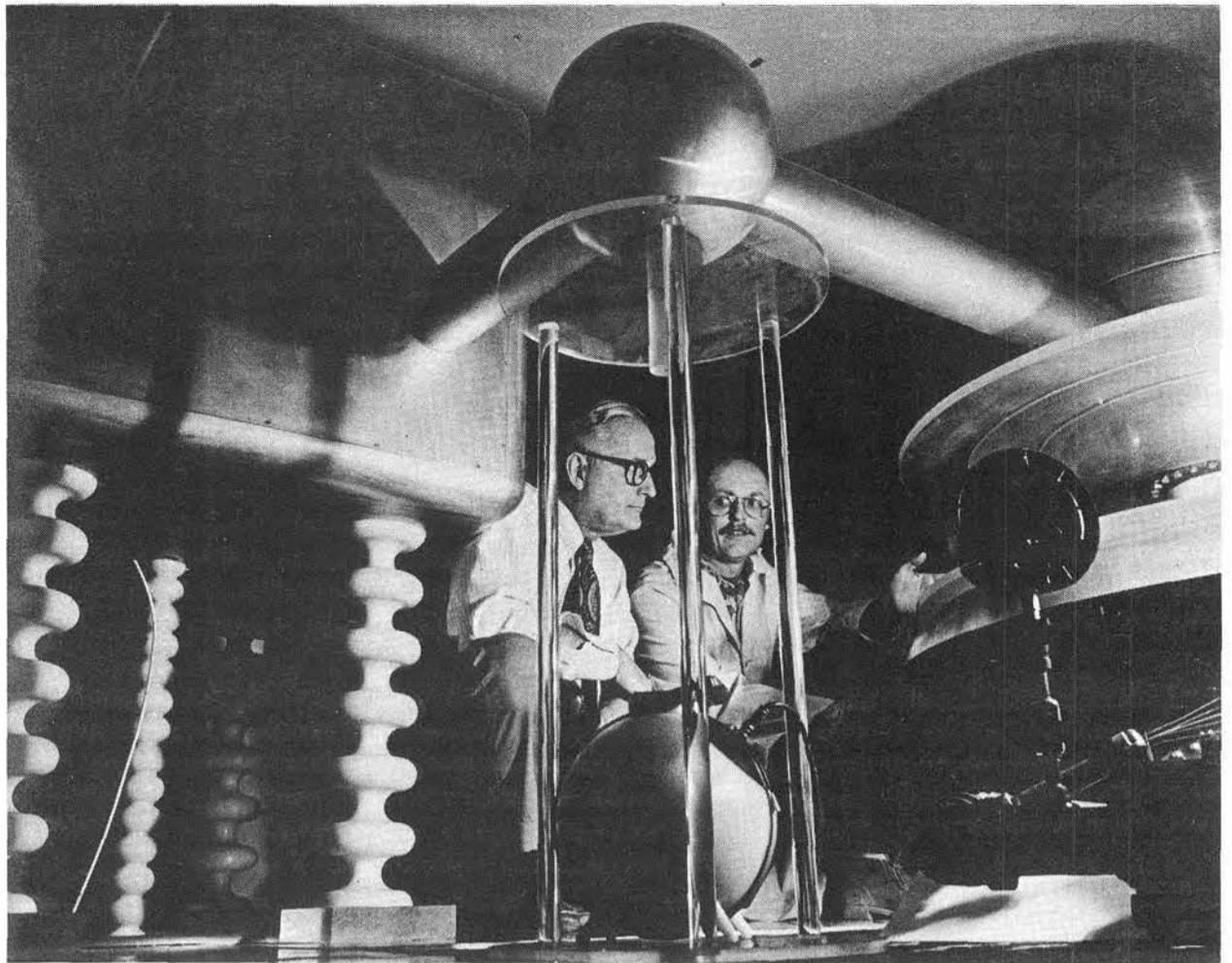
2300: Weapons Electrical Subsystems

There are two halves to the weapon equation. Some of us at Sandia help make sure weapons will detonate where and when they're supposed to; others expend equal effort to insure weapons won't detonate unintentionally, by accident or otherwise. People in Weapons Electrical Subsystems Directorate 2300 do both.

Jim King, 2300 director, explained to us how his directorate develops electrical components and subsystems. "Overall," he reports, "about 80 percent of our work goes directly into weapons. We develop neutron generators—and some of the most advanced radar fuzing systems around come out of 2300. So do unique signal generators and strong-link switches and a host of other components and systems."

Many elements of 2300 fit together as neatly as the complex pieces of a strong link switch. One group devises electronic components and sensors, another integrates these electronics into electro-

[Continued on Page Six]



FRANK BACON (2354) AND 2300 DIRECTOR JIM KING, left, discuss neutron generator research being conducted by Sandia for the National Cancer Institute. Objective is a small, intensive source for use in hospitals.

LAB NEWS

VOL. 30, NO. 6

MARCH 17, 1978

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



GOTCHA—Air Force Sgts. Coles, Turner and Goodwin are aiming to slow down speeders—the hard way (i.e., citations) for those who get caught. A "strict enforcement" campaign is underway in effort to reduce accident rate.

The Big Push

AP's To Issue More Paper

Colonel Kalman D. Simon, United States Air Force, is an affable, southern-speaking officer who runs Base Security. We interviewed him last week and came away with some noteworthy items.

First, Col. Simon likes Sandians. "They're courteous," he notes. "You're trying to get into a stream of traffic and they'll stop and wave you in. That's a little rare in most places." Also, Sandians (and DOEans as well) are really model drivers for the most part, accounting for a very small percentage of citations.

But the colonel is concerned about the Base accidents—40 in December, 25 in January, 33 in February. "That's high, and our safety people look at the statistics and tell us we aren't handing out enough tickets. They see a strong correlation between strict enforcement—more tickets—and a declining accident rate." So, by the time you read this, the AP's will be in their "strict enforcement" mode.

Half the accidents, incidentally, occur in parking lots. And, for reasons not clear, 40% occur on Tuesdays. One more

[Continued on Next Page]

Afterthoughts

The smoking issue--Last time we carried a tongue-in-cheek item on smoking (or, rather, non-smoking) which prompted one reader to write: "The Colloquium Committee... has for all practical purposes eliminated smoking in Bldg. 815. One cannot smoke in the library stacks, and there are more and more labs where smoking is not permitted.... Why not quit horsing around and simply ban smoking in all 'public' areas of the Labs?"

I can think of several reasons for not adopting such a ban:

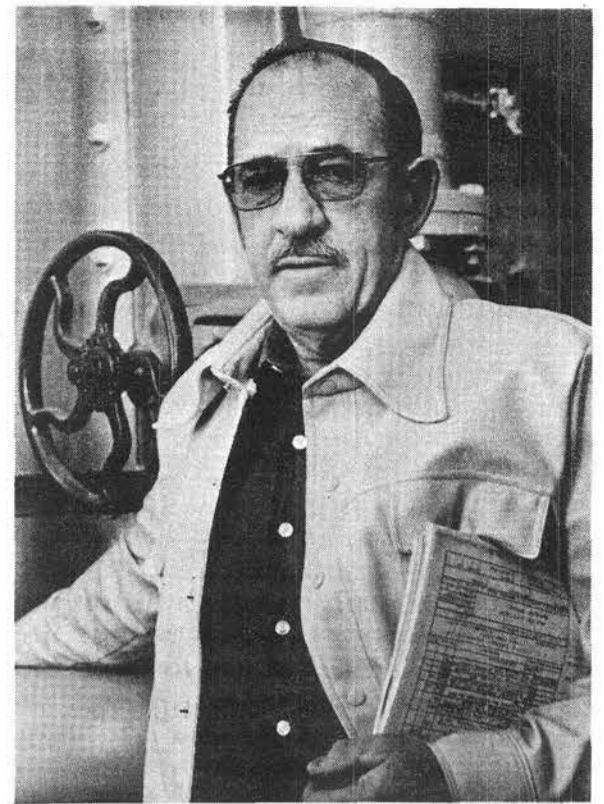
- it's unenforceable (do you plan to call Security each time you catch a furtive smoker?)
- for most, second-hand smoke is in the same category as a host of other minor annoyances: the guy in the next office who talks too loudly; the woman who, in matters of perfume, thinks that more is better; the fresh-air nut who chills off the entire office; people who earnestly sell lottery tickets to always-worthy causes; and so on, ad infinitum.
- medically, there's little or no evidence that health is compromised by second-hand smoke. That's a smokescreen issue anyway. How many of those who protest on that ground are equally fastidious about other health matters--proper diet, exercise, fastening seat belts?
- a ban could well have a divisive effect on the Sandia population; we'd be in two camps, smokers and non-smokers.
- finally and more important than all the rest, it is not really the business of Sandia Labs to tell you and me when we may not smoke. There's a limit to the degree of direction we can expect from an employer in matters not germane to the business.

* * *

English teachers, take note--"Classical English grammar should be understood as a system of guidelines useful in imparting a certain grace and clarity to our language, both written and spoken, but particularly written. The rules are there to be used or to be broken. Often the breaking of grammatical rules enhances style and clarity. But the knowledge of the rules and of how and why they work is always a tremendous asset." Thomas Middleton in Saturday Review, Jan. 21.

* * *

Profoundly disturbing question overheard in gym-- "Is there running after death?"
*js



NEAL ROZELL (9711-2)

Supervisory Appointment

NEAL ROZELL to supervisor of Mechanical Section 9711-2 of Plant Maintenance Department, effective March 1.

Neal joined the Labs in January 1952 as a refrigeration mechanic, a trade he had followed for several years in Albuquerque. He worked for a year and a half with the plant engineering group; the balance of his time has been with maintenance operations, primarily in the steam plant. His responsibilities as supervisor include the 24-hour-operation of the steam plant, as well as maintenance on all utility systems except the electrical system.

Off the job, Neal and his wife LaTrelle enjoy fishing and "just roaming" in their travel trailer. Neal also enjoys working in any of the wood crafts, especially decoupage. The Rozells have two daughters and five granddaughters. They live in Albuquerque's North Valley.

Continued from Page One

APs to Issue More Paper


percentage: 75% of the accidents are the result of careless driving--someone day-dreaming, not really paying attention.

The Eubank gate is a problem. Cars whiz by the guard at speeds far above the stipulated 15 mph. If the guard has to stop a no-decal vehicle, the potential for rear-ends is high. "They simply have to slow down there or someone's going to get hurt," he adds.

We were surprised at the number of vehicles coming in and going off the Base daily: an average of 56,000.

How about security and all those vexing gate checks after hours? It doesn't appear that we can anticipate any slackening in these measures. "A few years ago, when it was easy to get on the Base, we had a high crime rate--larceny, burglary, assaults. And we found out the culprits were mostly non-Base people. We're better off today. Larceny alone is down 26 percent."

Colonel Simon concludes: "Please don't hassle the guard at the gate. It's really a pretty thankless job, but it has to be done, and the AP's are following orders."

 Two psychiatrists (both married to career women) contend in the *American Journal of Psychiatry* that marriage and careers do mix: "Women with careers," they say, "are more stimulating spouses and parents....The stresses of a dual-career marriage enhance personal growth and lead to a more rewarding marital relationship."

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20 Years Ago—

About 150 employees of Sandia Corporation are expected to participate in Hardtack, the forthcoming nuclear weapons test series at Eniwetok Proving Ground. The Sandia employees are among the 400 to 500 employees of the Atomic Energy Commission and Los Alamos Scientific Laboratory who will be present.

D. B. Shuster, Manager of Sandia Corporation's Full Scale Test Department, has been appointed Commander of Task Group 7.1, the scientific unit among the five task groups which make up Task Force 7 which will conduct the Pacific tests.

* * *

Jose Iturbi, noted pianist, will appear as soloist with the Albuquerque Civic Symphony at its March 25 concert at the Civic Auditorium.

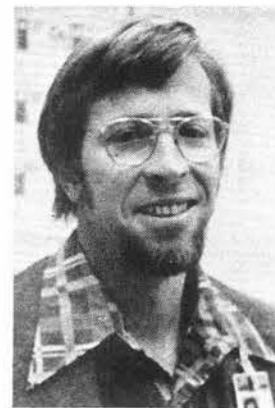
Sandians on the Civic Symphony Board of Trustees are Kimball Prince (6000), Charles Runyan (2120), and Howard Stump, Jr. (3164). Kenner Hertford, manager of the AEC's Albuquerque Operations Office, is also a member of the board.

LIVERMORE NEWS

VOL. 30, NO. 6

LIVERMORE LABORATORIES

MARCH 17, 1978



Jack Swearengen



Morey Reynolds

Supervisory Appointments

JACK SWEARENGEN to supervisor of Materials Science Division 8316, effective March 1.

Jack came to Sandia Albuquerque in 1970 after receiving his BS from the University of Idaho, MS from the University of Arizona and PhD from the University of Washington, all in ME.

At Sandia, he has conducted experimental and analytical studies on the relationship between microstructure and mechanical properties in metals and ceramics. Previously, he worked for FMC Corporation in Santa Clara, Calif., developing automation machinery.

Jack is a member of the American Society for Metals and the American Scientific Affiliation. An avid rail fan, he also enjoys outdoor sports—tennis, skiing, bicycling, softball, hiking and backpacking. He and his wife Nancy have a 12-year-old son. Currently house hunting, they plan to live in Livermore or Pleasanton.

MAURICE (MOREY) REYNOLDS to supervisor of Systems Control Division 8161, effective Feb. 16.

After joining Sandia Albuquerque in 1957 as a design engineer, Morey worked on the development of electronic components in R&D and manufacturing development organizations. In 1960, he transferred to Livermore's Systems Control Division where he has been program engineer for several major weapons projects.

Morey received a BS in EE from Carnegie-Mellon University in 1957 and, while in Albuquerque, completed work toward a master's degree in industrial administration at UNM. Previously, he served four years in the Navy as an electronics technician.

Morey is a noontime jogger and enjoys all types of water sports, especially scuba diving and sailing. He and his wife Mary live on Cartier Drive in Livermore. Their grown son, a graduate of the University of California at Davis, recently completed a tour with the Peace Corps in Malaysia.



SKIER BOB SCHULTZ prepares for blast off to slopes.

Schuss, Schultz, Schuss!

Many Sandians are avid skiers. But the avidest of them all has to be Livermore's Bob Schultz (8412). Instead of living near work and going off skiing every chance he gets, Bob's living near skiing and going off to work—"well, *almost* every day." He's not a footloose single either: there's wife Sharon and four offspring.

Bob has always like the mountains—camping in the summer, skiing in the winter. Sharon's scenery-sensitive too, and she has fewer allergy problems in the high country. But, when the senior Schultzes discussed selling their house in Livermore and moving into a leased home at the south shore of Lake Tahoe, it was the junior members of the family who cast the deciding, vernacular vote: Go for it! So

they did. Thanksgiving Day was moving day.

Currently, Sharon, college sophomore Christie, high school senior Heidi, high school freshman Jodie, and nine-year-old Bob Jr. are permanently ensconced at Tahoe. Bob generally avoids the 190-mile drive by utilizing a spare bedroom at the home of some friendly Livermore parents—his. Weekends, holidays, and occasional one-or-two-day minivacations he spends at home with the family in Tahoe.

The lease gives them a year to decide whether to buy up there or not. "It's too soon to know about that," says Bob, "but we know that so far we love it!"

Heimlich Maneuver Pays Off

Verne McNabney of Safety Division 8252 reports that contractor Security Inspector Barbara McKee (father Bert Folks, 8412) saved her brother-in-law's life recently by administering the Heimlich maneuver, a procedure for food choking emergencies. Barbara learned the technique as part of Sandia's yearly guard force orientation covering first aid.

Usually the choking victim is unable to breathe or make a sound, and Barbara's brother-in-law had these symptoms and was already turning blue when she noticed his plight while visiting her sister one evening. The first time she applied the Heimlich maneuver he didn't respond, but the second time she was successful in removing the obstruction. A call to the local hospital's emergency room verified that the right thing had been done to save his life.

Verne says that choking on food is rated the sixth-leading cause of accidental death in the U.S. When food lodges in the throat so that it prevents breathing, the victim has just four minutes before suffering perma-

nent brain damage from lack of oxygen. In less than four more minutes, death from asphyxiation will occur.

The first sign of choking is when a person suddenly becomes quiet and a look of alarm comes over his or her face. They may also clutch at their chest or throat and attempt to rise. Someone exhibiting these signs, Verne warns, must not leave the table alone because in a few minutes they may collapse. Often diners in restaurants mistake the cause of a victim's collapse as a stroke or heart attack, and this is why a fatal choking accident is sometimes called a "cafe coronary."

A film titled, "How to Save a Choking Victim: The Heimlich Maneuver," is available for showing in organization safety meetings. Call Verne on ext. 3086.

Congratulations

Mr. and Mrs. Cliff Yokomizo (8141), a son, Kirk Motomi, Mar. 1.

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W. C. "Scriv" Scriver (8400)

Text Processing Center Now Operating

Text processing is coming. (LAB NEWS, Sept. 7, 1976)

Text processing is here.

After a 30-day acceptance period, completed in February, Sandia is operating an ATEX 8000 composition system which makes the electric typewriter as old-fashioned as a feather quill.

The typist/compositor still works at a keyboard, but there the comparison with a typewriter ends. As letters are typed, they appear on a video display screen mounted at eye level above the operator's keyboard. Typos are corrected by moving a cursor (a bright dot of light on the screen) like a pointer to the offending area. Striking a new key replaces the wrong letter with the correct one. Insertions are handled the same way—moving the cursor and striking the appropriate command key. The keyboards are expanded, by the way—they contain keys for 241 characters.

A central computer stores, records, files and directs printing for the entire system. Text may be manipulated in seemingly magical ways—letter spacing may be altered, margins adjusted, columns of figures may be moved from one place to another on a page, type styles changed or the order of sentences and paragraphs rearranged. Another example: if you want to change the word "project" to read "program" in a manuscript, punching the appropriate keys will automatically make this change throughout the entire text.

The computer can store text for as long as needed, retrieve it at any time for alterations and print perfect copies at the rate of 45 characters per second.

"This is only the beginning," says Don Emrick, supervisor of Text Processing Division 2635 and responsible for the hardware and software of the system. "Currently, we have eight video-keyboard terminals here in Bldg. 894. These will be increased to 20 by May 1978. We are limited at the moment to only one Diablo impact printer, but we plan to obtain a phototypesetter which will expand current capabilities dramatically. We're waiting for DOE and congressional approval for this unit."

Don says Phase I of the word processing program is complete. Equipment "on line" includes the eight video-keyboard stations, a central PDP 11/35 computer, two rigid disc drives, a magtape drive, the Diablo HiType II impact printer and a Versatec matrix printer.

Users of the system (called "STEPS" for Sandia Text Editing and Processing System) are Lee Garner's Technical Writing Division 3151, responsible for publishing Sandia reports and proposals; Gerry Hurley's Weapon Manuals Division 1212, responsible for writing and publishing manuals used by the military; and Pat Quigley's Design Information and Specification Division 9633, responsible for issuing Sandia product specifications. All three groups rely on the composers/typists of Jan Willis' Publications Services Division 3152 for preparation of text material for printing.



VIDEO DISPLAY SCREEN and keyboard unit are operated by Mary Ann Seiler, right, while Senior Clerk Julia Polito (both 3152) observes. Part of a new text processing system, the station is one of eight now operating in Bldg. 894.

"At first, my people didn't like working with the new equipment," Jan says. "The keyboards are more complicated; some operations seemed slower and more difficult to perform. But we're still in a learning period. We like it better as we gain experience."

Phase II of STEPS includes procurement of a phototypesetter capable of producing many different typefaces with proportional spacing in complex formats. This machine will set equations and incorporate illustrations with book-quality typographical reproduction. Output is 2000 characters per second.

Looking to the future, Don Emrick sees

possible addition of equipment to microfilm documents and to make offset printing plates; also, perhaps, an on-line inkjet printing press. He sees many more customers using the system from terminals throughout the Labs.

"Technology progresses," he says, "and plans change. By the year 2000 all of this might be feasible and more—much more."

Even printing the LAB NEWS?

"Even printing the LAB NEWS."

How about writers?

"Fortunately (or unfortunately), we will still need writers."

Whew! •dg

Oil—It's Recyclable Too

After our recent roundup on recycling (LAB NEWS, Jan. 6, 1978), several readers called to remind us that a lot of Sandians change oil in their own cars. "Does anybody," they ask, "recycle oil?" A quick phone survey disclosed a recycling effort in Albuquerque of major proportions.

•Mesa Oil (4701 Broadway SE) recycles 500-800 gallons of oil a day. Through a series of heatings and coolings, they drive off water, clean out detergents with sulphuric acid and filter out impurities with powdered clay. The reclaimed oil is used mostly for lubrication in lumbering and mining. Some people use it for crankcase oil but the Mesa people don't recommend it. Mesa gets most of its oil from service stations but will accept oil from individuals (they don't buy small quantities) at their plant from 7-4:30 weekdays and up to noon on Saturday. On

Saturdays a phone call in advance might save you a fruitless trip.

•American Fleet Service at 1213 Indiana NE collects oil from facilities like the Kirtland AFB Motor Pool. The manager there told us that refining technology is getting better all the time, and that one day soon it will be possible to clean up crankcase oil, put the proper additives back in, and market recycled oil meeting all Federal specifications for automobile engines. American Fleet accepts oil for recycling at their office location.

•Continental Oil's formal oil recycling program is no more, but the Conoco Car Clinic at San Pedro and Central gladly accepts oil. During normal working hours, we were told, almost any Conoco station does. And Conoco has an oil barrel behind their office at 3203 Broadway SE for the collection of used oil.

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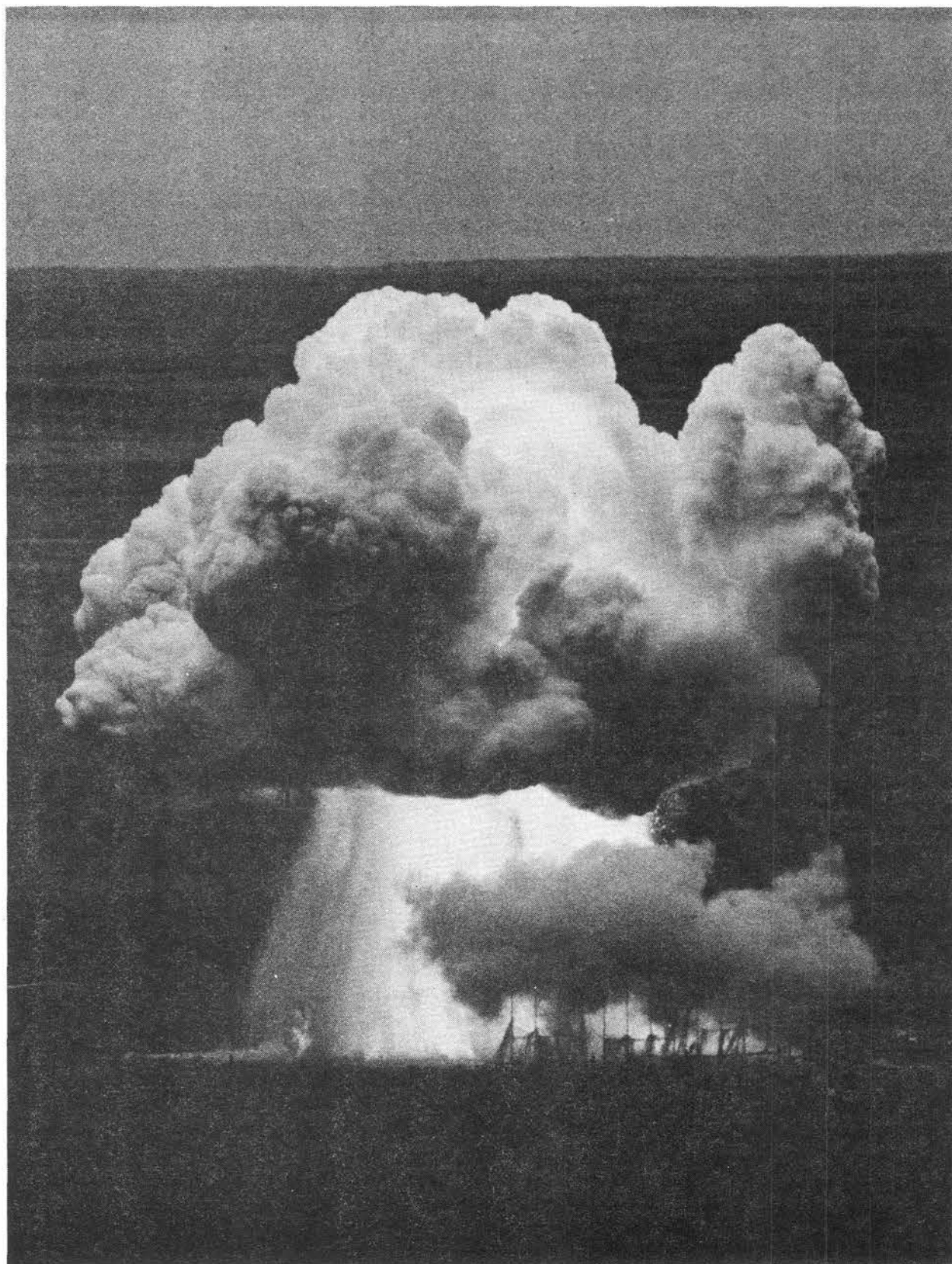
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FAMILIAR MUSHROOM-SHAPED CLOUD and a burst of light with brightness equivalent to 12 suns were produced last week to simulate the wave shapes of light and thermal radiation from a nuclear explosion.

Two giant arrays of oxygen-filled plastic bags, some 15 and some 25 feet in length, were injected with aluminum powder which was then ignited like a massive flash bulb. Though spectacular, intensity was much less than that of a nuclear explosion.

Purposes were to develop a simulation source for U.S. Army field training; to provide signal attenuation vs. distance data for use in the Nuclear Burst Detection System under development by Division 1245; to provide intense thermal radiation to test flashblindness goggles (Division 2524); to test U.S. Army optical detection equipment, and to test samples of aircraft paint for KAFB's Naval Weapons Evaluation Facility. Project leader Ron Glaser (1245) pronounced the tests successful. Next step: to test a system with five times greater output next month at Ft. Ord, Calif. Science Applications Inc. provided the explosive light source.

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Sandians Invent Improved Solar Collector Device

DOE has been awarded a patent for an improved flat plate solar energy collector invented by two Sandia department managers, Ray Brin (9410) and Tom Pace (9420).

Their idea is simple, efficient and economical. Essentially, a flat plate solar collector is a shallow box with one side of transparent glass or plastic to admit sunlight. The other surfaces inside the box are painted black to absorb thermal energy. Ray and Tom have filled the box with waste aluminum lathe turnings sprayed with flat black paint to increase the energy absorbing efficiency of the collector.

A small fan forces air through the box where it absorbs the heat from the lathe turnings; the air then is ready to perform useful work such as heating a home, heating water, etc.

The new solar collector is able to heat air to approximately 100°F above ambient temperature, winter or summer. It can be easily adapted for many applications.

"It's an inexpensive, useful device," Ray says. "I plan to rig one up to heat my garage. Tom plans to build one for his greenhouse."



RAY BRIN (9410) AND TOM PACE (9420) display blackened aluminum lathe turnings which greatly enhance heat absorption in their newly-patented flat-plate solar energy collector. Glass pane covers the collector box when in use.

Continued from Page One

2300: Weapons Electrical Subsystems

mechanical subsystems. Out of this work has come PAL (Permissive Action Link) systems for command and control of weapons, guidance and control systems for advanced delivery vehicles and a wide variety of weapon switching devices. They also develop special safety strong-link switches—switches physically strong enough to survive catastrophic events like airplane crashes, fire and high voltage discharges like those encountered in electrical storms.

In weapon systems, two strong-link switches are used in tandem—each requiring a unique activation signal. To function, these switches require input signals supplied by a human pushing a button or turning a key—or environmental conditions like deceleration.

"We've developed unique signal generators that go into the cockpit of an aircraft," says Jim. "Activated by the pilot, these coding devices provide the first input in a sequence of electrical signals required to arm a weapon. Strong-link switches in the weapon activate when they sense the specified environmental conditions. Detonation of the weapon then depends on two other 2300 subsystems—the radar fuzing circuits and the neutron generator."

Some 15 percent of 2300's design and development work deals with advanced development, mostly for Exploratory Weapons Systems 1300. A key project there is advanced radar fuzing systems—systems that are cheaper, smaller, more sensitive

(and at the same time less vulnerable to jamming). Based on its demonstrated capabilities, this group was responsible for Sandia's being selected by the Navy to develop radar fuzing for the Poseidon, the first instance of a Sandia-developed radar fuze to be used in an RV.

Because of their expertise in neutron generators, 2300 is also working on a number of spin-offs. "One of our projects is for the National Cancer Institute," says Jim. "They've asked us to help develop an intense neutron source for use in hospitals. Neutrons show promise in the treatment of some forms of cancer and clinical trials are already underway. Our design goal is to produce a small neutron generator (using the reaction of deuterons on tritons)—a generator small enough to be rotated about the patient much as x-ray therapy machines are used today. To minimize treatment time (and patient discomfort) the neutron generator will have to produce about 10^{12} neutrons per second (which translates to a treatment time of about 5 to 10 minutes maximum)."

The neutron generator group is also developing a system to help estimate U.S. uranium reserves. A probe containing a neutron generator and neutron detectors is lowered down a test borehole. A stream of neutron pulses is sent into the surrounding ore body. The uranium fissions, sending some neutrons back to the probe. This return signal tells the location and concentration of the uranium. "Our cal-

culations," says Jim, "suggest this technology could be used in assaying other types of ore deposits, as well, so there may be applications in commercial mining operations."

In addition, 2300 is also developing tracking and control mechanisms for solar programs and instrumentation for oil shale conversion projects. "Our efforts in these fields are expected to expand gradually," Jim sums up, "but in the foreseeable future our primary emphasis will continue to be on weapon subsystems."

Sympathy

To Bob (2523) and Charles (1223) Clark on the death of their father in Albuquerque, Feb. 10.

To Len Hansen (5133) on the death of his mother, Feb. 5.

To Dwight Allensworth (5131) on the death of his father, Feb. 28.

To Felix Padilla (3425) on the death of his brother in Albuquerque, March 2.

To Verna Ann Clark (9573) on the death of her mother-in-law in Albuquerque, Feb. 23.

To Bruce Higgins (9573) on the death of his father-in-law in Albuquerque, Feb. 17.



The following (taken verbatim from TV Highlights) describes a program we didn't even consider watching: "Composer-musician Webster Lewis, backed by his 50-piece orchestra and the Post Pop Space Rock BeBop Gospel Tabernacle Chorus, performs a lively concert of soaring spirituals, jazz and rock."

Medical Has Video Tapes On Health

Want to know more about your aching back? Sandia Medical has a video tape library for employees, designed to aid in the understanding of common health problems.

Wanda Cupp (3320), Health Education Coordinator, maintains the library. About half of the tapes came out of AT&T's Health Education Program; the others are from different sources.

"Thus far," says Dr. Judy Ewing (3322), "the tapes have been used on an individual basis as a supplement to physician care. But they are very informative and we want to make them available to everyone."

The tapes can be viewed in Bldg. 813, room 117 from 12:30 to 4:45 p.m. Call Louise Bland (3322), 4-1205, for a viewing time.



LOUISE BLAND (3322) tunes in a video tape from Medical's tape library. The tapes cover common health problems and are available to all employees.

Medical Library Of Video Tapes

Back Safety (29 min.)
Low Back Pain (20)
A New Way To Lift (10)
Low Back Pain (16)

Breast Examination (6½)
Breast Cancer (20)
Cervical Cancer
Menopause (10) & (15)
Hysterectomy (10)
Birth Control (8)
New O.B. Patient (10)
A Matter of Choice (birth control, 21, in Spanish)
It's Up to You (importance of Pap test, 13)
Contraception (18)
Venereal Disease (16)

High Blood Pressure (17, in Spanish)
High Blood Pressure (30)
Blood Vessel Disease (21)
Hypertension (16)

Allergies (28)
Nerve Deafness (15)
New Prescription for Life: a. The Heimlich Maneuver; b. The CPR Exercise (60)
First Aid (19)
Common Skin Problems (15)

Stanford Heart Health Test (60 min. w/test)
The Role of Exercise Training in Adults (62), cardiovascular fitness, Ralph La Forge, Lovelace-Bataan Post Coronary (20)
Heart Attacks

Life Story of Dealing with Cancer of the Colon (14)
Colon Cancer (20)
Urinary Tract Problems (17½)

Diabetes (18½)
Gall Bladder Disease (17)
Arthritis (19)
Ulcers (16)
Strokes (18)
Headaches (15)

Gum Disease (19)
Glaucoma Cataracts (17)

Alcoholism (16)
Smoking (19)
Obesity (14½)

Using Linear Image Sensor

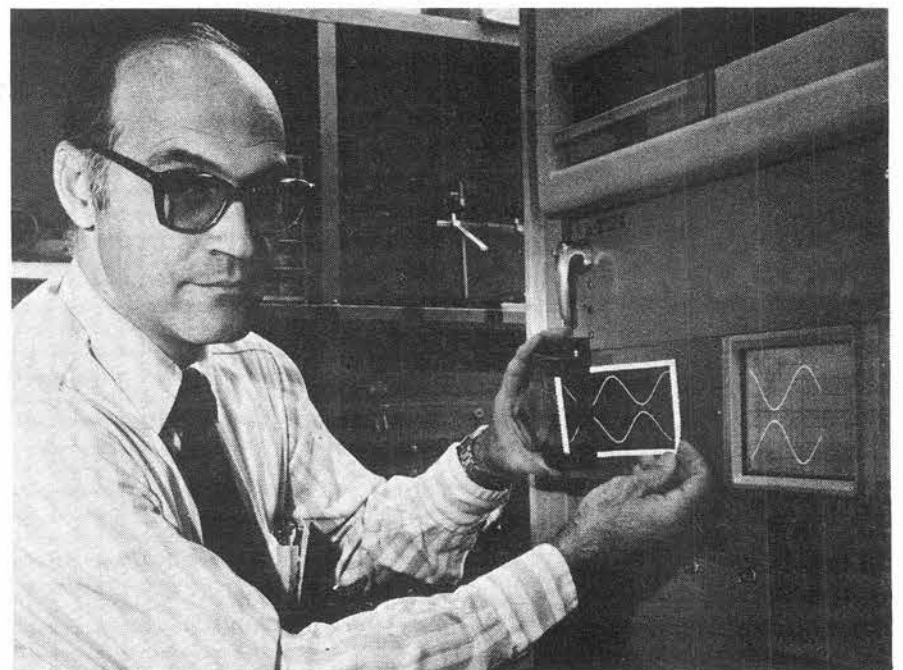
Digitizer Takes Data Directly From Photo

Using a new system developed by Automated Test Systems Development Division 2532, waveforms recorded on photographs can be digitized in a little over 30 seconds.

Principally the work of Tom Evans (with an assist from Gordon Bachand and Danny Sanchez, both of 2532), the print digitizer is an extension of a vidicon system Tom perfected in the early 1970's—a system which digitized the output of a TV camera looking at traces of current and voltage on an oscilloscope, fed the digitized data to a computer for analysis and simultaneously displayed the stored data on a TV monitor.

In the new system, an image sensor replaces the TV camera and looks at a photograph instead of an oscilloscope—a procedure only recently made possible by linear image sensors with good resolution and high dynamic range.

The print to be digitized (which contains such data as waveforms of fire set performance) is placed in a holder on a rotating image drum illuminated by a variable intensity lamp. In 32 seconds, 500 linear scans are made of the print. Digital logic circuits convert the video signal from each scan into a pair of 10-bit values which are stored in one of two internal memory units. One notable feature of this system is its capability of distinguishing the waveform from the graticule lines found on many prints.



TOM EVANS (2532), principal developer of a new print digitizer system, examines polaroid photo after the waveform has been digitized. Process takes a little over 30 seconds. Visual display on TV monitor confirms that waveform has been digitized and the data already stored in the computer memory.

In Phase II of the print digitizer project, the present working model will be miniaturized. Tom and Hal Pruitt (2532) are already at work on a desktop model. In addition to miniaturizing the system (which will significantly decrease its cost), Tom and Hal also plan to extend its capabilities. The current model handles only two pulses; the Phase II version will handle four—two for calibration and two for data.



If your feet are cold, put on a hat. We uncovered (or was it discovered?) this astonishing piece of advice in an item on cold weather survival. Turns out (at 40°F) that an unprotected head will allow up to 50 percent of the body's heat production to simply radiate away. This fact forces us to reassess the motivation of those who sit in restaurants and other public places with hats and caps clamped resolutely in place. We always assumed they had bad manners. Perhaps they just have cold feet.

Fun & Games

Biking—By now most SBA'ers have received and noted the "Uniform Bicycle Code for KAFB," three-and-a-half pages of constraints, definitions and exhortations which undoubtedly have some redeeming social value. For example, there is the prescribed method for a left turn, otherwise known as the dart-into-oblivion: "The approach for a left turn will be made as close as practicable to the right-hand curb... The left-hand turn will be completed after insuring that drivers approaching from behind understand the intentions of the cyclist and that the rider has the right-of-way." Actually, what you do is stop these drivers and have them sign this form, see...

Just in case you bogged down, there's one point that's not made explicit in all the verbiage: you may no longer treat Stop signs as Yield signs on the Base. This enlightened measure is taken to provide for your safety. It assumes that in your customary befuddlement as you go off Base you will forget that you are *off-Base* and zip through all those Stop signs.

New subject. LAB NEWS (4-1053) has entry forms and information on the 6th Annual Tour of the Rio Grande Valley, aka The Century. It's set for April 23. Riders can go the full 100 miles or make a 50-mile circuit.

* * *

Golf—Al Kaping (3732), SGA-VP, reports that the coming season will be busy. Twelve tournaments are planned, starting with the first on March 25 at the Belen Country Club. Other out-of-towners are set for El Paso, Socorro and Los Alamos. Also, both evening (9 holes) and weekend (18 holes) league play are being offered. Three golf balls go to the member who shoots the best net score each week. If you don't have a current handicap, you can establish one after five rounds. Call Al on 4-4238 for membership forms and more information on SGA.

* * *

Square dancing—Bob Wayland (5311) is promoting a refresher course in this activity which starts on Friday, March 31. Place: Mountainside Methodist Church, first left off N. Hwy. 14 from I-40 east. A total of 10 sessions, run by instructor Buddy Jones, is planned. Cost is \$20, but the first session is free. Call Bob on 299-2587 for further information.

* * *

Runners, bikers & swimmers—The second annual Triathlon of Albuquerque will indeed be held, probably in early May, depending upon the availability of the Olympic pool (now being renovated). TOA offers a pleasant morning's activity: a ten-mile bike ride followed by a five-mile run followed by a quarter-mile swim, no breaks. Last year's times ranged from 65 to 111 minutes for the three events. We'll keep you posted.

* * *

Skating—When you fall and your bindings fail to release is when you got troubles.



SANDIA BASKETBALLERS wound up the season last week. In B-league play, (shown in this photo) the season leader, team #7, was knocked out of the tournament in the semi-finals. Team #12 went on in the finals to defeat #1, 42-38. In the A-league, team #4 with a record of 8 & 6 gave the season leader, team #1, a struggle all the way. The latter finally pulled out a 51-47 victory.

The Harvard Medical School *Health Letter* states that some 40% of ski injuries to the lower extremities are caused by faulty release of bindings and, in the same item, gives a do-it-yourself binding check:

Toe release: With the ski boot on and in the binding, bend your knee forward and inward, thus exerting pressure on the inner edge of the ski. You should then be able to effect toe release with further forceful internal rotation of the lower leg—that is, by continuing to turn your knee inward.

Heel release: With the ski flat on the

floor and someone standing on the tail, you should be able to step forward with the other leg (no ski on) and pull the heel being tested upward enough with your own muscle strength to effect release.

The proper binding setting is a little tricky, but I've followed this method for years with no significant problems. Above all, if you buy a pair of used skis, don't assume that the bindings are properly set for you or your children's configuration—check the setting.

feed n'iback

Q. Would it be possible for Sandia to ask the U.S. Post Office to install a mail box at Gate 7 by Building 880?

A. We have in the past requested that the postal officials place additional drop boxes for use by Laboratories personnel. Their answer has been that anyone on base is close enough to the Post Office as to make extra boxes unwarranted.

This time when we asked, the answer was that following a recent Postal inspection by the Western Regional office, the local postal officials were ordered to reduce mail drop boxes by 68. Two of these were on KAFB. They also reminded us that the Post Office is under pressure to conserve gasoline just like the Labs. They have reduced the number of pick ups also.

K. A. Smith—3100

Q. On several occasions I have spent minutes trying to get an outside line. How come?

A. A recent Air Force telephone traffic study indicated a need for 12 more outgoing city trunks, in addition to the 188 trunks we have now. Six of these new trunks are being installed now and equipment for the other six trunks is on order.

The addition of these 12 new trunks should considerably reduce the likelihood of a busy signal on an outgoing call.

R. E. Hopper—9700



Apparently one thing we can't overdose on is laughter. After showing 100 cartoons to several hundred volunteers, a British research team reports people quickly reach a "state of humorous arousal in which they find each cartoon funnier than the last."

Take Note

Harriet Mason (9515) is a secretary at Sandia, but in off-hours Harriet is a volunteer fireman (fireperson?) with Bernalillo County Fire District 10, which operates chiefly in the Tijeras Canyon area. She writes to us: "Our staff has come to an all-time low and we are desperately trying to get new volunteers...we need volunteers." If you live in that area, it's obvious you have a stake in insuring a well-staffed fire department. Besides, this may be the chance to realize your boy or girlhood dream as you tool down the road in Big Red (or is it Big Chartreuse?). Call Harriet on 4-2331 or at home on 281-3052 for details.

* * *

In case you hadn't noticed, the Labs' unofficial bulletin boards occasionally resemble an unmade bed. We find this distressing because the LAB NEWS office bears nominal responsibility for monitoring the boards. So we're hoping to tidy up the boards but, with more than 20 of them, some always get overlooked. It would help if people observed the groundrules: no political, religious or commercial notices or petitions; for ads, use a 3 x 5 card and show date posted, your name and organization, and your home phone; and remove cards within five working days. We immediately remove any ad that does not bear a date. If you have some worthy-cause poster you wish to put up, then run it past Org. 3162 (that's us) for clearance before you do so.

* * *

The Friends of the Albuquerque Public Library are again having their Annual Book Sale. It starts March 30 at the Main Library and runs through March 31 and April 1. The early bird gets the goodies, so there's a modest admission charge on Thursday the 30th, 5 to 8:30 p.m. It's free on the 31st and 1st. Reference and non-fiction books are offered along with children's books, paperbacks and magazines. Proceeds support special projects of the Library.

* * *

The March issue of *New Mexico Magazine* carries an article by Karen Shane of Community Relations Division 3163. Title is "And Still They Come—To New Mexico's Salubrious Climate and Health Giving Waters." Karen takes a look at the health seekers, primarily TB victims, who came to New Mexico in the 1800's and on through the late 1930's.

* * *

The 25th International Field Emission Symposium will be held in Albuquerque on July 17 to 22 at the University of New Mexico. The symposium, hosted by Sandia, is a yearly workshop, and special sessions are being offered on surface science, metallurgical applications, field desorption mass spectroscopy, and electrical breakdown in high vacuum. Abstract deadline is June 2nd. Abstracts should be mailed to the local organizing chairman, John Panitz, Org. 5114.



KAREN SHANE (3163) adjusts painting by noted Indian artist Charles Lovato in Bldg. 802 entry. Karen lined up the exhibit, which includes other works by Lovato and by Helen Hardin, Jerry Ingram, and Pablita Velarde. Exhibit will hang for several weeks.

Credit Union Reporter

The Kids Can Save at Credit Union Too

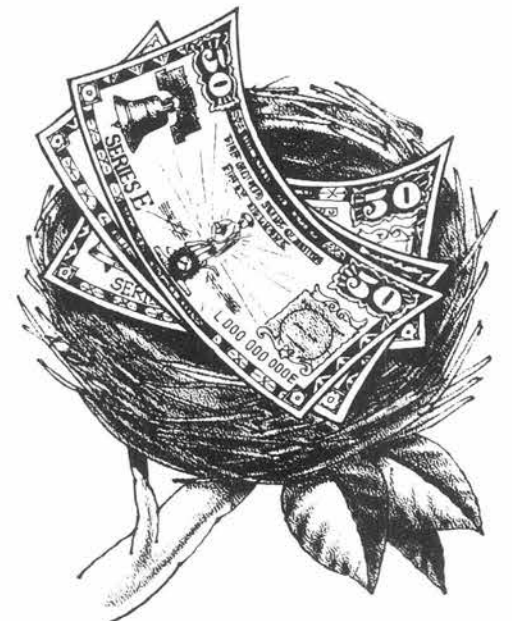
Thrift is a foreign word to young people (and a few who aren't so young), and one way parents can nurture this virtue in their offspring is to encourage them to bank a portion of their money. Enter the Credit Union, which now offers three different kinds of accounts for the children of members: the dependent account, the custodial account, and the young adult's account. Here are the elements of each.

Dependent account: Opened by the primary member (that's you—the Sandia employee) for a child who lives with you, this account may not exceed \$40,000 in its total of yours plus the child's monies, unless the overage consists of dividends. The latter are reported to IRS under your social security number as interest earnings. You may set up the account with yourself as the sole owner or, if you prefer, as a joint tenancy account with the dependent, or as a joint tenancy account with anyone you wish. These accounts can be pledged as collateral for share loans, and withdrawals are largely handled in the same manner as for a regular account. Primary purpose of a dependent account is to enable the child to have a savings account with a good interest rate. A separate statement is prepared quarterly for each dependent account.

Custodial account: For a child under 18 who lives with you, this account falls under the Uniform Gifts to Minors Acts and money in the account belongs solely to the child, but is under the control of the custodian. The account has the \$40,000 limit, and dividends are reported under the child's social security number as interest income to the child. The custodial account cannot be set up in joint tenancy, nor can it be pledged as collateral on a loan. A withdrawal is made in check form (not in cash), and you cannot transfer money from the custodial account to your checking account or, for that matter, to any other account. To save for a child's education is the purpose of the custodial account, and the account is closed out when the child reaches age 18.

Young adult's account: For the young adult between 16 and 23 and living with you, this account may also have up to \$40,000 plus dividends. Dividends are reported to IRS as interest earnings under the social security number of the young adult. A joint tenancy is permitted, and the account can be used as collateral for a share loan. Other loans are available as well, provided you—as primary member—act as co-signer. Withdrawals over \$500 are by check. The young adult's account offers a good means for the young person to gain credit experience. After age 23, the account becomes strictly a savings account, and it is closed out at any time that the young person no longer resides with you.

Feather your nest.



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

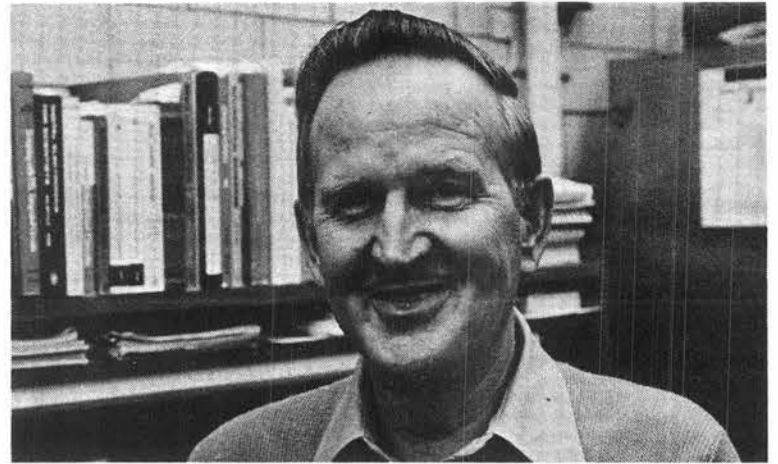
MILEPOSTS

LAB NEWS

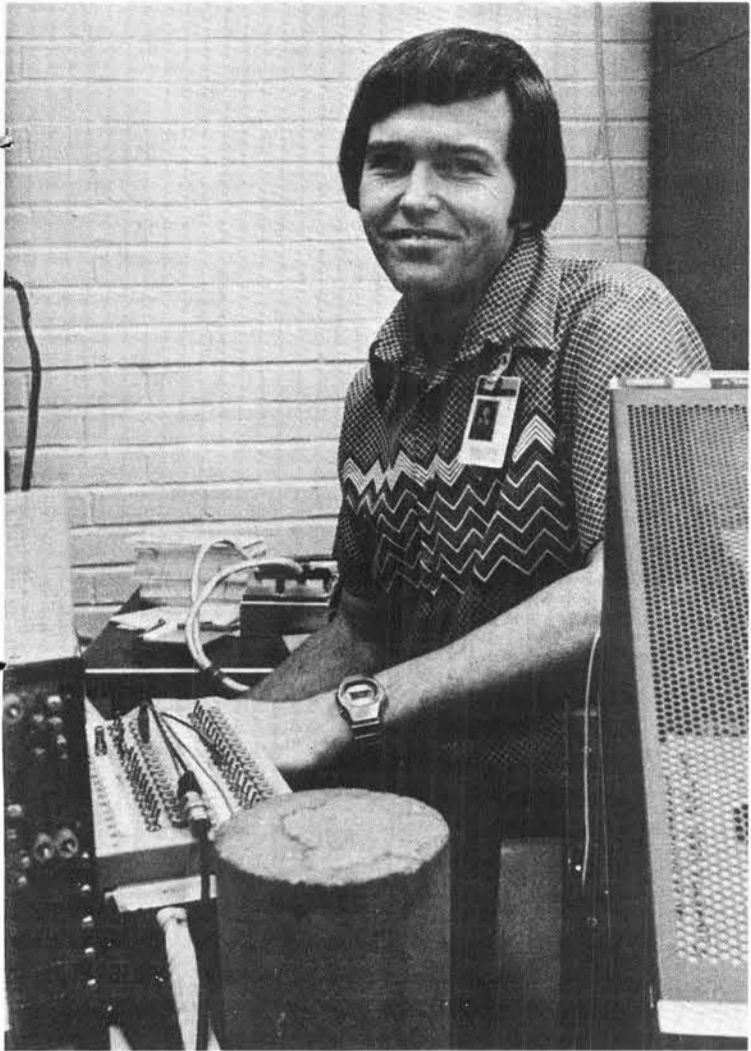
MARCH 1978



Elmer Borbely - 2627 25



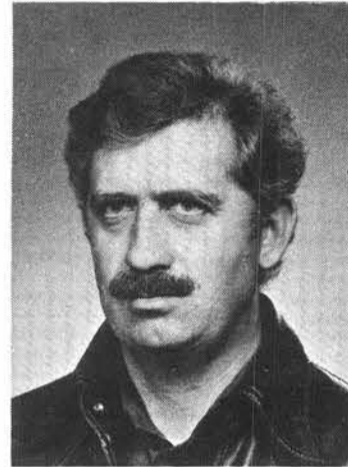
Norm Berg - 9526 25



Charles Looney - 1242 15



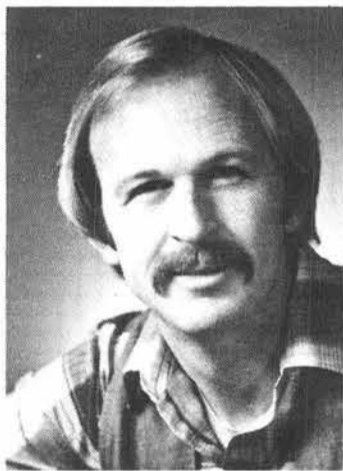
Mary James - 3253 20



Wayne Young - 1324 15



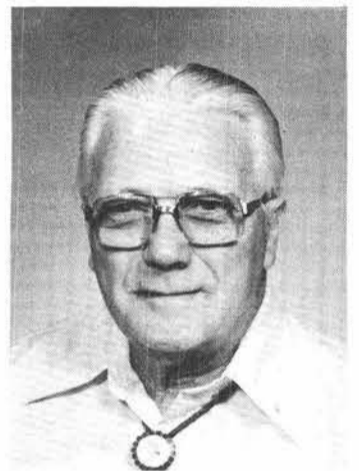
Lawrence Shampine - 5122 10



Conrad Stayner - 8412 15



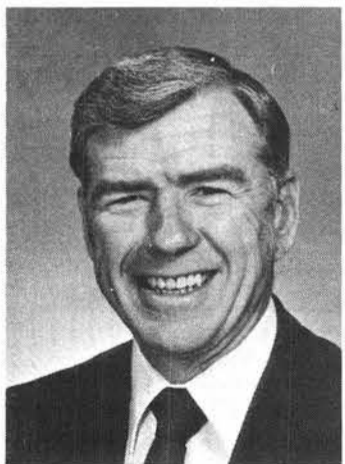
Victor Schulze - 1244 15



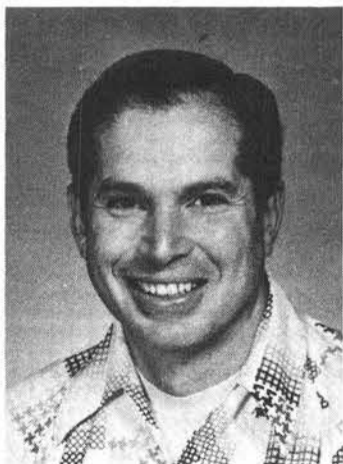
Clarence Sandin - 9751 25



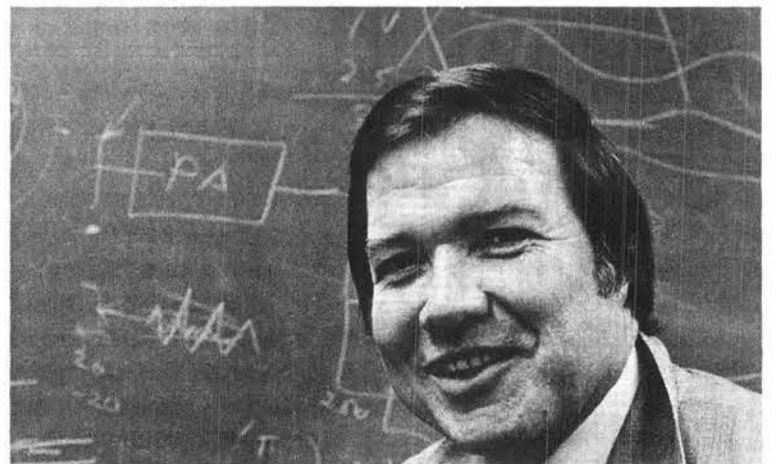
Celso Sanchez - 9718 15



John Willis - 2153 20



James Lohkamp - 4343 15



James McIntire - 1733 15



Don Stone - 4113 15



Perry Lovell - 8252 15



Verna Clark - 9573 25



William Sieger - 1284 20

Atmospheric Tests: If You Were There, Call 1-800-638-8300

The U.S. stopped testing nuclear weapons in the atmosphere in 1963. But the memory of those tests—Crossroads, Greenhouse, Hardtack, Plumbob, Dominic (to name a few)—is still strong in the minds of many Sandians. Between 1945 and 1963, close to half a million Americans (military and civilian) were present at U.S. nuclear tests in Nevada and in the Pacific. The Defense Nuclear Agency (DNA) would like to talk with them all, but realistically is aiming for about 300,000.

There's been enough publicity in recent weeks that most Sandians are at least aware that DNA is trying to contact anyone who was present at an atmospheric test of a nuclear weapon. Having been on Christmas Island for the entire Dominic series in 1962, we wondered why. We started by calling the toll free number in Washington, D.C. (1-800-638-8300).

An interviewer, one of a host hired to conduct the survey, first made it clear that we had to waive our right to privacy. After confirming that the information we were about to give could be used in any way deemed necessary by the government, we were asked a number of standard questions about which tests we were at, how close we were, whether or not we were wearing film badges. They wanted to know where we

lived, how we could be contacted. They also wanted to know our general state of health, how long since we'd had our last physical. At the conclusion of the interview, we were told we might be contacted again for more information.

Our interviewer had no answers when we asked why DNA was conducting the survey, and we were referred to the Office of Public Affairs, Defense Nuclear Agency, for further information. There we learned that DNA, at the specific request of Congress, is building a data base of current health information on people exposed to radiation during atmospheric tests. Once the data base is established, it will be turned over to the Research Council of the National Academy of Science and to the Center for Disease Control in Atlanta, Georgia. They will correlate current and historical information, investigate and analyze to determine what link, if any, there is between exposure to nuclear detonations and the incidence of cancer.

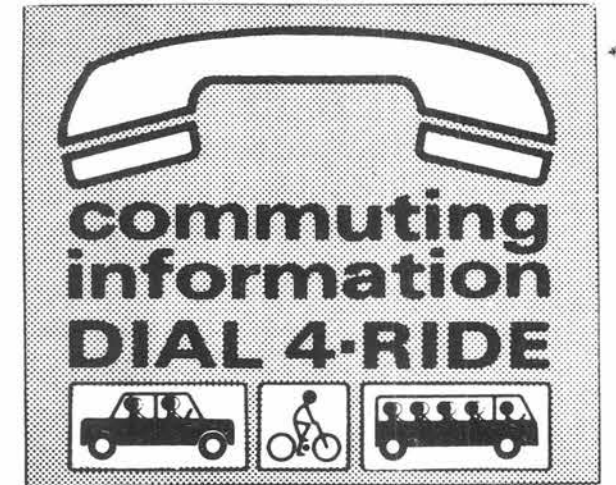
Since DNA hopes to be contacted by roughly 300,000 individuals, the toll free survey will be in effect indefinitely. It's a little difficult to get through to them, but there are lots of phones and lots of people answering them (and nobody, we were

assured, is leaving their phone off the hook).

At the request of DNA, Sandia and the other integrated contractors will play no part in this initial survey. It's strictly voluntary. But since our own health and welfare (and future standards for exposure to radiation) are under study, you might consider picking up the phone. If you've been there, you know that once seen, heard, felt, the impact of a nuclear detonation is monumental, etched indelibly in the memory.

Here's a chance to share those memories.

•cec



JUNK • GOODIES • TRASH • ANTIQUES • KLUNKERS • CREAM PUFFS • HOUSES • HOVELS • LOST • FOUND • WANTED • & THINGS

CLASSIFIED ADVERTISING

Deadline: Friday noon prior to week of publication unless changed by holiday. Mail to: Div. 3162 (814/6).

RULES

1. Limit 20 words.
2. One ad per issue per category.
3. Submit in writing. No phone-ins.
4. Use home telephone numbers.
5. For active and retired Sandians and ERDA employees.
6. No commercial ads, please.
7. Include name and organization.
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

- CROCHETED AFGHANS, hand made to your order, approx. size 40x70, \$20. Barham, 298-7304.
- DAISY BB GUN (rifle) w/BB's, \$7.50. Moyer, 881-3879.
- WESTINGHOUSE refrigerator-freezer-ice maker, \$225. Palmer, 294-7434.
- GE DISHWASHER, 2-cycle pot scrubber, gold, portable, can be built-in. Madrid, 294-5780.
- AKC Newfoundland puppies, whelped 1/31, champion bloodline, lg. gentle dogs, \$350. Eagan, 281-5696.
- GE STEREO, AM/FM combination, walnut cabinet, \$100. Cassell, 881-4136.
- CAMPER, Travette 8' cab-over, sleeps 4, \$1200 or best offer. Schneider, 296-2487.
- FREE female Collie/Shepherd puppy, 5 mos. old, she looks like "Lassie," to good home. Smythe, 247-9209 or 831-2836.
- CARPET, approx. 130 yds., earth tone shag w/thick padding, less than 4 yrs. old, \$300. VanSlambrook, 821-4680.
- 75 IDLETIME 8' cab-over camper for Datsun or Toyota trucks, sleeps 4, \$700 or best offer. Sandoval, 293-6261.
- TELESCOPE, reflecting type w/8" parabolic mirror, 56" focal length, conduit box construction, \$95. Silva, 877-2423.
- REGINA elec. sweeper (Elektrik-broom), 3-spd., \$15; Japanese 8mm movie camera, \$18; wanted: old knives and daggers. Smitha, 881-1001.
- TIMBER WOLF German Shepherd cross pups, \$200. Banach, 281-5507.
- SKI BINDINGS, Look, Model GT. Reed, 298-1126.
- BUNK BEDS, white French provincial, foam mattresses, \$150; typewriter

- stand, dbl. leaf, \$50. Jones, 296-1755.
- TURQUOISE WATCH BAND, man's, fits lg. wrist, appraised at \$450, make offer. Jeffery, 298-1231.
- DIVAN, nylon upholstery, green, Early American; recliner chair, naugahyde nylon; blue swivel rocker. Wilson, 299-1721.
- ELECTRIC GUITAR & amplifier, \$50. Warren, 256-1334.
- ETAGERE, red oak, new, 72"x32"x18", 5 shelves (2 moveable), \$150. Vandevender, 298-5097.
- GROW LAMP, lg. w/fiberglass bottom, 2 lamps, fluorescent, \$20. Kindschi, 256-0531.
- PORCELAIN bathroom sink, \$10; maple gate leg table, \$25. Peterson, 256-7514.
- PIANO, Wurlitzer Spinnet, \$550. Flesner, 265-2136.
- REESE receiver for equalizer hitch, welds to auto frame, rated for trailers to 550 lbs. tongue wt., \$15. Giddings, 298-6221.
- 73 MITCHELL Fishing Hut, deluxe, furnace, ice box, intercom, 20-gal. water tank, cooktop, sink, AC/DC, propane, \$1350. Cooper, 299-7157.
- CONN Caprice organ, \$400. Campbell, 299-4830.
- TENT TRAILER, sleeps 4, new tires, \$400. Campbell, 294-6000.
- STOCK TRAILER, tandem axle, 14', \$900; elec. clothes dryer, \$50. Wilkinson, 299-8327.
- PIANO, Kimball upright, \$300. Wilhelm, 255-4932.
- OVATION 6-string acoustical guitar, factory pickup & preamp, case, cord, lifetime warranty, sells new \$525, will take \$300. Miller, 242-1894.
- SPRINGFIELD Model 67H pump shotgun; British .303 rifle; small Whirlpool window AC. Lyons, 296-8866.
- .357 FRONTIER MODEL, \$95; .170 Plainsman CO₂ pistol, 50-shot BB, \$15. Szyper, 836-2077.
- 30-GAL. AQUARIUM w/complete setup, wrought iron stand, \$90 or best offer. Naranjo, 294-7714 after 6.
- DANISH MODERN end table & matching coffee table, \$20; steel casement window w/glass, 37"x51", \$15; cabinet, 24"wx18"dx32"h, \$10. Davis, 294-0139.
- 3" UNIMAT metal lathe, w/3 jaw, 4 jaw & drill chucks, \$200. Stark, 881-2781.
- FREE PUPPIES, German Shepherd cross; family ski lift pass, 2 days. Angel Fire, \$15. Stevens, 299-6086.
- SET of corner beds, springs and mattresses, & corner table, \$125; antique shaving mirror, \$60. Pope, 255-6702.
- 300 FEET 1 1/2 galvanized pipe, 20-foot lengths, 50 cents/ft. Rupe, 881-2214.

- AMERICAN RIFLEMAN magazines, 286 consecutive issues, dating back to mid-1954, some in leather binders, best offer over \$200. Stearns, 281-3439.
- 77 LAYTON travel trailer, fully self-contained, AC, 6' refrig., tandem wheel. Anderson, 10505 Sierra Bonita NE, 296-3558.
- CAVOVER CAMPER, jacks, \$1150; 30x60 mirror, \$35; platform rocker, \$20; movie screen, \$25; refrigerator, \$75; fluorescent fixture, \$5. Falacy, 293-2517.
- CAMPER SHELL, insulated, long-wide-box. Jensen, 821-6178.
- CAMPER trailer, 14', stove, oven, sleeps 4. Ezell, 821-1768.
- WOODEN Screenshot, 36"x80" w/ wood grille, \$5; auto trailer hitch, frame mounted, \$10. Riggins, 299-7778.
- UTILITY TRAILER, \$100; 2 7x18" oval van windows, \$15 ea.; complete dbl. bed, \$150; push lawn mower, \$5. Worrell, 299-0381.
- AFRICAN BERMUDA GRASS sod, free, you dig. Graham, 293-8823.

TRANSPORTATION

- 73 TR6, conv., yellow, 38,000 miles, luggage rack, AM/FM, one owner, \$3300. Hardeman, 265-4373 after 5.
- 77 FORD LTD HT, AC, PS, stereo, all power, 6400 miles, warranty, \$5400. Berman, 296-5640.
- PORSCHE 911-S TARGA, AM/FM, CB, new top, 5-spd., air, 32,000 miles, trades considered, \$11,000. Eagan, 281-5696.
- '61 MGA, \$1800 or best offer. Boulware, 256-3362.
- '56 CHEVY, 2-dr., HT, 327, Holley Hi Rise, 4-spd., low mileage. Sander-son, 293-4225 between 7:30 a.m. & 6 p.m.
- '71 AMERICAN HORNET, yellow, AC, radio, low mileage, \$850. Dain, 881-0639.
- '68 FORD Camper Special, 7500 GVW, 390V8, auto., AC, PS, PB, dual tanks, HD bumper, 44,000 miles, \$2200. Cooper, 299-7157.
- '74 CHEV. El Camino, PS, PB, AT, AC, w/shell, \$3500. Wilhelm, 255-4932.
- '75 CUTLASS 2-dr., lt. blue, 33,000 miles, fully equipped, white leather interior, \$3200. Miller, 256-3755.
- '66 CHRYSLER, 4-dr., AT, PB, PS, radials, many miles, runs fine, make offer. Neel, 821-4270.
- 10-SPD. BICYCLE, new tires & back wheel. Lyons, 296-8866.
- 10-SPD. BICYCLE, 27", Sears, \$40.

- Riney, 299-1457.
- '74 VW BUS, 7 passenger, 27,000 miles, AM/FM 8-track stereo, AC, \$3850. Rea, 299-9315.
- '68 OLDSMOBILE, Vista Cruiser, \$495. Bailey, 298-5131.
- '76 CHEVY PU, 6-cyl., 3-spd., LWB, \$3500 or ? Naranjo, 294-7714 after 6.
- '74 DATSUN B210, 4-dr., AT, new radials, 26,000 miles, \$50 over book. Newman, 299-2729.
- '77 PACER sedan, under warranty, 11,300 miles, 4-spd., AC, PS, AM/FM cassette, \$3500. Merideth, 262-1078.
- '74 PINTO Squire wagon, radio, AT, AC, 29,000 miles, Halpin, 7609 Harwood NE, 277-2326 day, 299-7710 after 5.
- '72 FIAT 850 Spyder, convert., 45 mpg hwy. Johnson, 299-0346.
- '73 DUSTER, 6-cyl., AM, FM, CB, needs body work on front, \$800; 10-spd. bike, \$50. Rupe, 881-2214.
- '77 DATSUN B210, 4-spd. drive, 2-dr., deluxe, radio, 4000 miles. Anderson, 10505 Sierra Bonita NE, 296-3558.
- DODGE COLT coupe GT, 15,000 miles, AM/FM, AT, custom paint, vinyl roof, \$3495. Sherwood, 299-2169.
- '73 VOLVO 1800ES hatchback, 46,000 miles, leather interior, AC, AT, AM/FM stereo, \$5900 or best offer. Cokelraas, 256-7570.
- '73 VEGA hatchback, 4-spd., AC, new radials, shocks, battery; 48,000 miles, \$875. Watterberg, 294-6759.
- '67 DATSUN 411 stn. wgn., steel belted radials, radio, \$650. Huddle, 881-2971.
- '76 DATSUN B-210, \$2700. Barnes, 898-2375.
- '72 SCOUT II, 304 CID, 4-wd, AT, PS, PB, 69,000 miles, soft top, \$1850. Cover, 887-3860.

REAL ESTATE

- '74 WESTERN MANSION mobile home, 14x70 2-bdr., Western landscape, patio cover. Tuthill, 821-0344 after 5.
- '72 SKYLINE mobile home, 14' wide w/lg. refrig. AC, set up in Coronado Park w/golf facilities. Dees, 898-8049.
- ACADEMY ACRES, 3-bdr., 1 1/2 bath, LR, den w/fp, 1330 sq. ft., dbl. garage, landscaped w/sprinklers in front, \$44,900, 7 1/2%. Richards, 821-9046.
- HOLIDAY PARK, 3-bdr., 1 1/2 bath, FR w/fp, formal dining, garden kitchen, backyard access w/RV pad, storage shed, more, \$55,900. Cook, 294-2348.

FOR RENT

- 4-BDR., Arroyo Del Oso, unfurnished house, 1 1/2 baths, den, carpet, drapes, built-in stove, dishwasher, \$390/mo. McKenzie, 299-2359.
- LAKE FRONT CABIN, Vallecito Lake near Durango, modern 3-bdr., fp, boating, fishing, horseback riding, available April. Croll, 881-7235.
- UNFURNISHED 3-bdr., 1 1/2 bath, newly built house, w/garage & lg. fenced yard, close to Eubank Gate, \$325/mo. Lipkin, 881-6038.

WANTED

- SERVICE MANUALS for 1968 Ford & 1966 Plymouth. Brooks, 256-3920.
- ROWING MACHINE. Coleman, 299-2377.
- FOR NEIGHBORHOOD CENTER work: 18 or 24" world globes, may be damaged; 80-slide carousel trays for Kodak projectors. Shepherd, 296-1238.
- TWIN SIZE box spring and mattress. Peterson, 256-7514.
- CHEVY engine, 250 cid 6. Baxter, 344-7601.
- SHOP MANUAL for 1970 Chevy C-10 pickup. Hansen, 898-6641.
- 7X50 BINOCULARS. Coalson, 298-0061.
- 15" WHEEL, with 5 holes, with or without tire, tire size: GR78x15. Hall, 298-8617.
- AIR COMPRESSOR and/or air tank capable of painting. Dees, 898-8049.
- HOME for English Pointer, watchdog, will hunt, needs lg. yard or acre to run, not for children. Long, 294-5153.
- WORLD BOOK ENCYCLOPEDIA. Falacy, 293-2517.

LOST AND FOUND

- LOST—Approx. 15 keys on green tab, man's plaid woolen scarf, silver Cross pencil, man's dk. blue cardigan.
- FOUND—Brown fur hat, man's black vinyl glove w/buckle, man's brown knit glove w/leather palm, brown leather coin purse w/small change, brown knit tie, black/white nylon scarf, black knit glove w/leather palm. LOST AND FOUND, Bldg. 832, 264-1657.

Coronado Club Activities

There's Green Beer Tonight

IN HONOR of St. Patrick's Day, the Club is serving green beer and Irish coffee tonight. A choral group called The Enchanters sings Irish songs at 7 and a macho guy named Charlie Baca sings macho songs at 8. Naturally, corned beef and cabbage are on the buffet.

LITTLE KIDS six and under enjoy the annual Club Easter Egg Roll. Fun and games for the different age groups. Prizes, cartoons and goodies galore. It's free to member's kids, but members only, please.

SQUARE DANCERS will get organized at a meeting Monday, March 20, at 7:30. To be called the Coronado Grand Squares, the group will elect officers, then dance with Cal Campbell as caller. For more info, call Mel Olman (1233), 4-7701.

CORONADO SKI CLUB meets for the last time this season March 21 at 7 p.m. New officers will be elected, slides of members and activities will be shown, and refreshments will be served.

TRAVEL—The Club has contracted for a six-day raft trip down the Colorado River through the Grand Canyon from Lee's Ferry to Whitmore Wash, starting July 19. Return to Lee's Ferry by horseback, bus and plane. Cost for the works is \$375. Deposit \$50 now to hold your spot.

Air Fare only trips to London or Frankfurt are available at reduced rates. Depart May 31 for 21, 28 or 49 days for \$449. Depart May 31 for 105 days for \$479 or leave Aug. 16 for 21, 28 or 42 days for \$469. These trips on World Airways depart from Denver. There's another package available from Condor Airlines departing from Denver for Frankfurt Sept. 11 for 14, 16 or 21 days for \$459. Travel Director Ed Neidel (2166), who lives in the Club lobby Fridays from 6 to 7 p.m., has all the scoop. He can help with special rates on land tours in Europe also.

SANADO WOMAN'S CLUB plans a special tour of the Indian Pueblo Cultural Center in Albuquerque Friday, March 31. Call Roberta Lindrith, 255-6968, if you plan to attend.

Events Calendar

- Mar. 17—Concert by The Minnesota Symphony, Popejoy Hall, 277-3121.
- Mar. 17—St. Patrick's Day Corned Beef and Cabbage Supper, Ag Exhibit Hall, State Fairgrounds.
- Mar. 18—"California's Mission Trail," travel film, Popejoy Hall, 7:30 p.m.
- Mar. 18, 19—Boat Inspections, Racetrack Infield, State Fairgrounds.
- Mar. 21—Sportsmen Concerned for New Mexico meeting with the film "Wild Turkey; Trophy and Tradition," Desert Inn, 918 Central SW, 7:30 p.m.
- Mar. 30—"Oklahoma!" Albuquerque Civic Light Opera, through April 19, 344-2317.



TRAVEL DIRECTOR Ed Neidel (2166) offers special rates on air fare only trips to Hawaii. For example, one week departing Aug. 20 costs \$279. Other departure dates, land tour and hotel options and longer visits are also available. See Ed in the Club lobby tonight between 6 and 7.

FRIDAY	SATURDAY
<p>17—HAPPY HOUR CORNED BEEF & CABBAGE BUFFET</p> <p>Adults \$3.50 Under 12 1.92</p> <p>The Enchanters —7 p.m. Charlie Baca—8 p.m.</p>	<p>18—SHRIMP PEEL NOSTALGIA NIGHT</p> <p>Cocktails 6 p.m. Dinner 6:30</p> <p>PHIL LENK TRIO with THE SEASONAIRES</p>
<p>24—HAPPY HOUR RAINBOW TROUT BUFFET</p> <p>Adults \$3.50 Under 12 1.92</p> <p>ELTON TRAVIS</p>	<p>25—EASTER EGG ROLL</p> <p>9:30 a.m. Member's children 6 and under</p>

Speakers

- J. A. Wisniewski (5122), "Sparse Matrix Methods Applied to Pathfinding Algorithms"; C. B. Bailey (2644), "Applications of Intelligent Alphanumeric COM Systems"; N. K. Ruiz (5166), "Structured Programming in FORTRAN Using the FLECS Translator"; D. H. Schroeder (2648), "A Proposed Minicomputer Network"; C. A. Morgan (5121), "Contracting for Computer-Related Services," Rio Grande Chapter, ACM, Feb. 10, Las Cruces, N.M.
- J. C. Cummings (5216), "Raman Spectroscopy in Reaction Flows: I. CW Chemical Laser II. Laminar Diffusion Flame," Fluid Mechanics Seminar, Feb. 10, Pasadena, Calif.
- B. Granoff (5731), "Effects of Mineral Content on Coal Hydroliquefaction"; R. R. Boade and R. L. Parrish (both 5734), "A Hydrofracture/Explosive Oil Shale Rubblization Experiment," Third Rocky Mountain Fuel Symposium, Feb. 10-11, Albuquerque.
- H. C. Hardee and D. W. Larson (both 1262), "Upmelting in Magma Bodies," "Surface Heat Flux Distribution Above Magma Sources," "The Extraction of Heat from Magma Bodies"; T. M. Gerlach (5831), "Magma as a Potential Source of Fuels," and "Simulation of Volatile Atmospheres for Magma Energy Research," AAAS Annual meeting, Feb. 12-17, Washington, D.C.
- D. M. Mattox and D. J. Sharp (both 5834), "Characterization and Use of a Kaufman Ion Source for Low Energy Hydrogen Ion Bombardment Studies," 7th annual Symposium on Applied Vacuum Science and Technology, Feb. 13-15, Tampa, Fla.
- E. Engi (5741), "Valued Renewal Processes," 8th annual meeting of the American Institute of Decision Sciences, Feb. 15-17, Jacksonville, Fla.
- F. Biggs (5231), "Megawatt Solar Power Generators," The Albuquerque Museum, Feb. 19.

Medical Sponsoring Coronary Lectures

It's unfortunate but true that a significant number of people reading this will be (or already have been) afflicted with a coronary problem—in other words, they'll have a heart attack. It may or may not be fatal. The melancholy statistics reveal that we Americans are more likely to die from this than from any other cause.

What can the individual do to avoid, or at least better his chances with, heart disease? For starters, gain some knowledge on the subject. To this end, Medical is sponsoring a four-lecture series on coronary disease starting next week on Wednesday, March 22, at 10:15 a.m. in Bldg. 815. Dr. Jon Abrams, chief of cardiology at UNM's School of Medicine, will present the first lecture: Coronary artery disease—sudden death, angina pectoris, and myocardial infarction.

Subsequent lectures, all in Bldg. 815, are as follows:

Risk factors—high blood pressure, exercise and obesity	Dr. Abrams	March 29 at 4:45 p.m.
Risk factors—diet and cholesterol	Dr. Philip Eaton, chief of endocrinology & metabolism, UNM School of Medicine	April 5 at 4:45
Medical & Surgical treatment of heart disease	Dr. Paul Cochran, clinical associate professor of medicine, UNM School of Medicine	April 12 at 4:45

It's not necessary to sign up for the lecture—just show up.



Intellect magazine (a modest title if we ever heard one) reports that the day is not far off when one credit card with our Social Security number and thumbprint will do it all. "You will pay for everything by credit card," they say, "newspapers, cabfares, donations, tolls, theaters, tuition, children's allowances. Even panhandlers will have to carry credit card apparatus and fill out a slip for each contributor."

