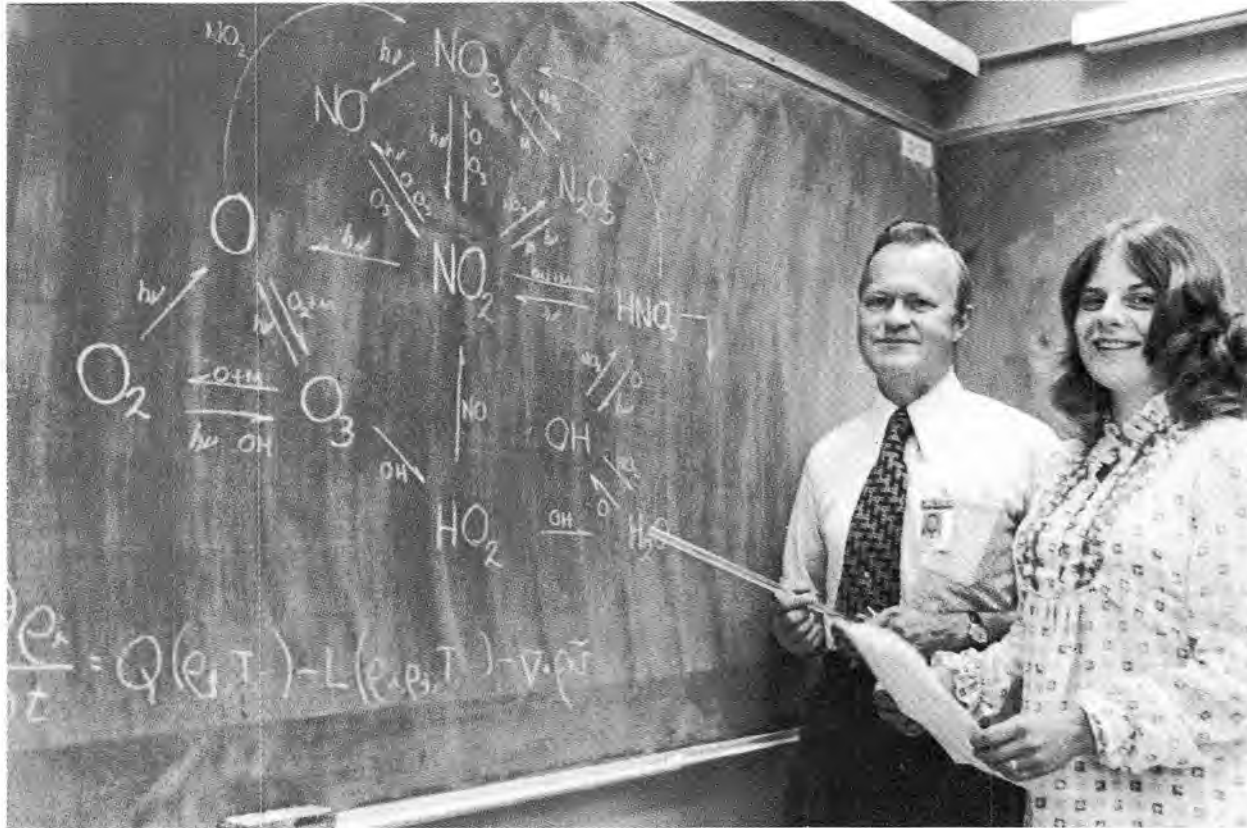


Labs to Work on DOT Program



UPPER ATMOSPHERE CHEMISTRY, induced by supersonic aircraft, is studied by Frank Hudson and Molly Ellis of Effects Studies Division 4712. Work is for the US Department of Transportation Climatic Impact Assessment Program (CIAP).

Sandia Laboratories has a small but key part of the US Department of Transportation Climatic Impact Assessment Program (CIAP).

CIAP will assess the effect on climate, people, plants and animals of any changes of the upper atmosphere caused by high-altitude supersonic aircraft. It has been estimated that by 1990 as many as 500 of these aircraft, Anglo-French, Russian, and perhaps U.S., may be operating.

A number of environmental questions must be answered before necessary Federal decisions can be made.

Among these questions are:

What is the effect of nitric oxide in the aircraft exhaust on the ozone density in the stratosphere with the consequent change in solar ultra-violet light transmitted to the earth's surface?

What are the possible changes in global climate from modification of the chemical composition or aerosol particle density of the atmosphere?

It is to provide a scientific foundation for answering such questions that the DOT was asked to undertake this environmental assessment program. Because of the magnitude and complexity of the problem, the DOT in turn has called on laboratories with established programs in the technical fields concerned. These include the laboratories of other government agencies (AEC, NASA, NSF) universities, industry, and foreign research institutes. Over 100 closely correlated studies are under way.

Results of the ambitious study will begin to be published next year in six monographs: "The Natural Stratosphere of 1974," "The Engine Emissions in the Stratosphere of 1990," "The Perturbed Stratosphere of 1990," "The Perturbed Troposphere of 1990 and 2020," "The Biological Effects of the

(Continued on Page Four)

LAB NEWS

VOL. 25, NO. 13

JUNE 29, 1973

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

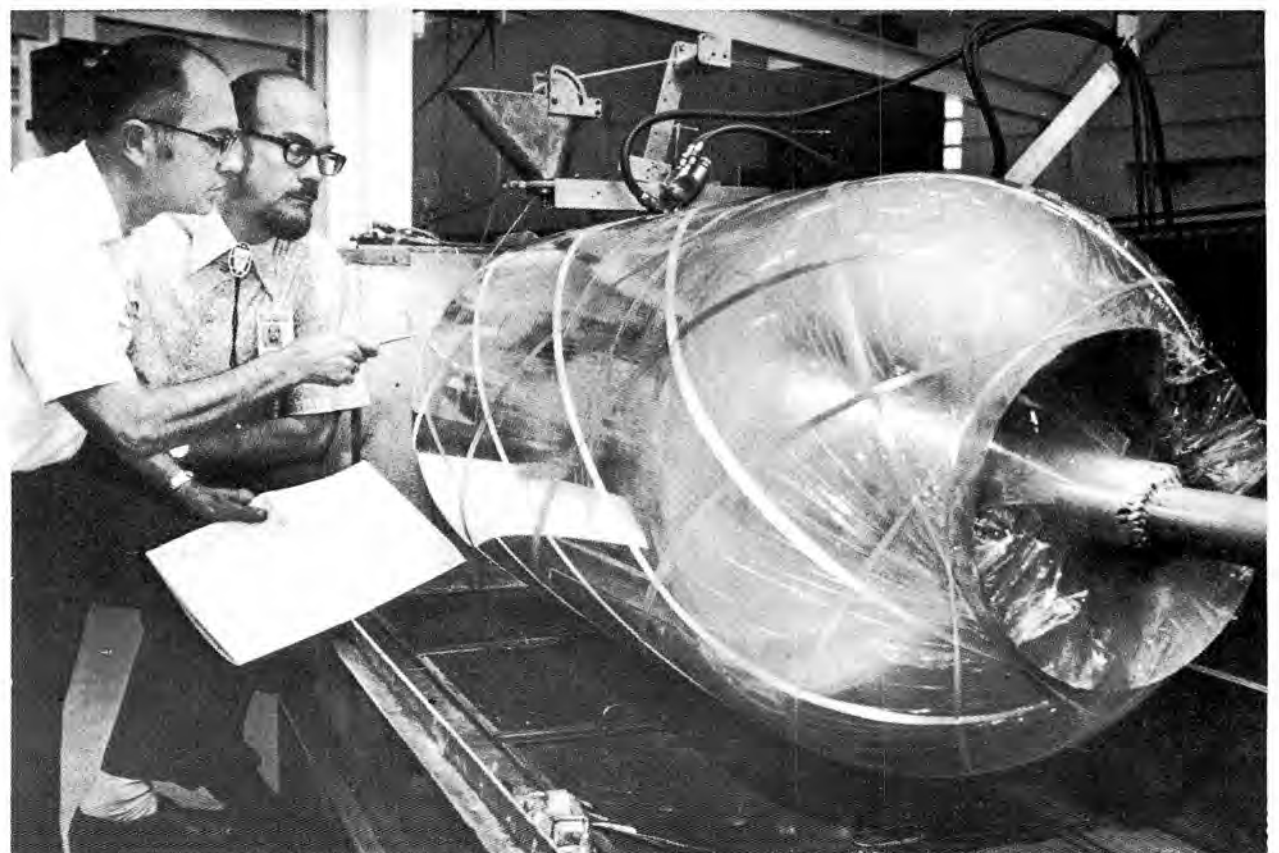
Materials & Energy

Needed: Some Greater Sense of Urgency

Back in the year 1798 an English economist concluded that "a happy society will always be hindered by the miseries consequent on the tendency of population to increase faster than the means of subsistence." He was saying that too many people want too many things, and if you've had occasion recently to buy, say, some lumber, perhaps you weren't rendered miserable (as predicted by Thomas Malthus, above), but you certainly came away with an appreciation of what happens when a material is in short supply.

Wood is just one of many materials in short supply today, and if Malthus were still around he'd probably feel his prediction that the earth can support only so many people is about to be realized. And he'd find support. A new group called the Federation of Materials Societies has compiled and issued a report — "Conservation in Materials Utilization" — which underscores this country's prospect of shortages in many materials vital to our national needs. The report was prepared at the request of the National Commission on Materials Policy, a group which itself is preparing congressional recommendations for a viable materials policy for our nation to the year 2000. Doug Ballard (9351) was chairman of the ad hoc group that put the

(Continued on Page Four)



MATERIALS CONSERVATION is doubly illustrated here. The filament wound shape is designed to specific requirements and its materials are, accordingly, a reflection of those requirements. In addition, the filament winding process of itself is characterized by little wastage. Ralph Rayner (left) of Composites Development Division 7123 discusses process with Doug Ballard (9351) who chaired national committee that published report on conservation of materials.

Credit Union Reporter

Federal Insured Student Loan Program

As announced earlier, your Credit Union is an approved lender under the Federal Insured Student Loan Program. Any member, or spouse or child of a member, is eligible for loans under this program. Applications (we have them) will be accepted beginning July 2nd.

The school selected by the student completes the portion of the application which recommends the amount of the loan and certifies the student's enrollment, his costs, and academic standing. Additional financial information may be required by the school or lender. Upon receiving the application, the Credit Union then determines whether or not the loan is to be made and, if so, in what amount. For students eligible for interest benefits, the federal government pays the Credit Union the total interest accruing during the time the student is in school, that is, until the repayment period begins. Interest rate on these loans is 7% per annum.

With this type of loan, if the student defaults, the federal government assumes responsibility for recovery of the loan. If the student dies or becomes permanently disabled, his or her obligation is discharged by the federal government. The student is required to execute a notarized affidavit that the loan will be used solely for educational expenses.

A maximum of \$2,500 per academic year may be applied for. Total outstanding loans may not exceed \$7,500 for undergraduate or vocational students, but this maximum may be extended to \$10,000 for graduate students.

An insurance premium, one quarter of one percent per annum, is charged through the period ending 12 months after the anticipated date of graduation. The Credit Union deducts this premium from the loan or collects it from the borrower at the time the loan is made.

The repayment period, established by the Board of Directors, begins nine months after the student graduates or ceases to be enrolled on at least a half-time basis. Repayment will normally be made in equal installments over a period of five years, although the required minimum payment of \$360 per year may shorten this period. Loans may be prepaid at any time without penalty.

Repayment may be deferred for up to 3

By
Bill Prekker
Chairman,
Education
Committee



years while the borrower is in the service, or is serving as a full-time volunteer in the Peace Corps or VISTA; deferral may also be granted for any period during which the student returns to a full-time course of study at an eligible school. However, the borrower is encouraged to make at least partial payments during such periods of deferment in order to reduce the principal amount of the loan. Interest payments by the government are resumed at this time for those students who previously qualified for such payments.

CU Bulletin Board

At June's regular meeting, the Board of Directors declared second quarter dividends at an annual rate of 6%, to be credited to shares of record on June 30, 1973. A 6% dividend, payable quarterly, is the maximum allowed by federal law.



JIM KING, Associate Director of Chemical Physics Components 2500, is the 1973 winner of the C.B. Sawyer Memorial Award for Outstanding Contributions in the Field of Quartz Crystals and Devices. The award, presented at the 27th Annual Frequency Control Symposium, was given for "major contributions to the understanding of the fundamental properties of quartz crystals, and methods for improvement of these properties in synthetic quartz." Jim's research with quartz includes work at Bell Labs and at Sandia. At the latter HERMES II was used in work aimed at improving the quality of synthetic quartz and determining transient radiation effects on the properties of quartz resonators. Jim also chaired the "Radiation Effects in Quartz Crystals" session, presented one paper, and co-authored another at the Symposium.

Events Calendar

- June 29-July 1** — New Mexico Arts & Crafts Fair, State Fair Grounds.
- June 29-July 1 and July 5-8** — "The Cocktail Party," Corrales Adobe Theater, 8:30 p.m.
- June 29-July 1 and July 6-7** — "South Pacific," Civic Light Opera, Popejoy Hall, 8:15 p.m.
- June 29** — Forest Service Lecture, "Wildlife of Sandia Mountains," UNM Anthropology Hall, 7:30 p.m.
- June 30** — N.M. Mt. Club, Sandia Crest Loop, Western Skies, 9 a.m.
- July 4** — Dances, Ceremonial at Nambe

- Waterfall, Nambe Pueblo.
- July 6** — Forest Service Lecture, "Your Land," UNM Anthropology Hall, 7:30 p.m.
- July 6, 11, 14, 28** — "La Boheme," Santa Fe Opera.
- July 7, 13, 21, 25** — "The Marriage of Figaro," Santa Fe Opera.
- July 8** — N.M. Mt. Club, Spirit Lake, Gulf Mart, 7 a.m.
- July 9** — Lecture Under the Stars, North Mall UNM, "Chinese Medicine," Dr. John S. Biggs, 8 p.m.
- July 11-13** — Rodeo de Santa Fe.
- July 12-14** — "Night Watch," Old Town Studio, 8 p.m.

LAB NEWS

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SANDIA LABORATORIES

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don graham ass't. editor

bruce hawkinson writes
as does norma taylor while
bill laskar takes/makes pictures
&
in livermore lorena schneider does all



WHEN an engineer goes into politics, that calls for a new word and Harry Kinney's associates at Sandia recently proclaimed him "The Best Technopolitician Ever". How that bludgeon above the inscription fits into the picture we'll leave to your imagination. Bill Alzheimer made the presentation. Harry has left Sandia to work for Senator Domenici.

Variable Annuity Unit Value

July	1.683
June	1.691
Average 1972	1.737



PhD Awarded Clark Lemmon



Clark Lemmon (8111) received a PhD degree in mechanical engineering recently from Brigham Young University. His thesis was entitled, "Finite Conductance Element Method of Conduction Heat Transfer."

Joining Sandia/Livermore in Sept. 1970, Clark's work in Aerothermodynamics Division has involved heat transfer studies and the development of several related computer codes.

He received both his BS and MS degrees in mechanical engineering from Brigham Young University. While completing course work under a National Science Foundation grant, he was a part-time instructor in thermodynamics, heat transfer, and fluid mechanics courses at the University.

Take Note

The Livermore Cultural Arts Council is presenting its sixth annual Sommerfest tomorrow night, June 30, from 6 to 11:30 p.m. at the "Barn" in Livermore. In addition to food and singing and dancing to music by a Bavarian band, the evening offers entertainment by a San Francisco German folk dance group. Proceeds from Sommerfest '73 support such community projects as Livermore's annual Festival of Arts in October, the Heritage Committee's program to preserve the Livermore depot, the "Sunday at the Barn" free weekly programs, and the project to establish a cultural library. Biermeister and chairman of this year's Sommerfest beverage committee is Marlin Pound (8214), with Bob Gaeddert (8210), Don Wagner (8212) and Clyde Taylor (8413) among those assisting on the committee. Tickets (\$1.75 for adults and \$1 for children 6-16) will be available at the door.

* * * *

During the spring major flooding has occurred in the Mississippi and Missouri River areas, and nearly 100,000 people in 20 states have been affected. Support of these areas by the Red Cross, plus continuing work with last summer's victims of Hurricane Agnes, the Nicaragua earthquake, and flooding in Puerto Rico has completely exhausted the disaster budget of the National Red Cross. To help meet the urgent need, the Livermore Employee's Assistance Plan (LEAP) has contributed \$200 from its emergency reserve.

* * * *

Congratulations

Mr. and Mrs. Hugh Coleman (8111), a son, Andrew William, May 24.

Mr. and Mrs. Art Van Hook (8415), a daughter, Cynthia Jane, May 19.

Mr. and Mrs. Don Osbourn (8434), a daughter, Julie Dawn, June 2.

Mr. and Mrs. Bob Phillips (8362), a son, Robin Stanley, June 5.

Sympathy

To Wes Estill (8312) on the death of his mother-in-law, in Livermore, June 10.

To Fred Hohmann (8257) on the death of his brother in Texas, June 5.

To Lou Guintard (8423) on the death of his father in Lake Charles, La., June 12.

LIVERMORE NEWS

VOL. 25, NO. 13

LIVERMORE LABORATORIES

JUNE 29, 1973



LOOKING OVER LIVERMORE'S GENERAL PLAN, now under major review, are steering committee member Tony Thompson (8313), center, housing subcommittee chairman Roger Everett (8364), left, and open space subcommittee chairman Gary Drummond (8442).

A New Plan for the City of Livermore

Over 200 volunteers, a number of them Sandians, are working on a major review of the general plan for the City of Livermore.

Adopted in 1959, the present general plan has been modified at various times with the intention of making it valid through 1990. However, changes in conditions such as public attitudes toward growth and recent laws and federal directives make a new general plan advisable.

This spring a Citizens General Plan Review Committee was established to advise the City Council on the future goals of the community and the way in which these goals might be accomplished. The committee report, due April 1974, will be the basis of a revised plan that the Council, with assistance from a professional consultant agency, will prepare.

Tony Thompson (8313) is a member of the project steering committee. Six subcommittees have also been established to study major topics identified by the Council and the steering committee.

As chairman of the housing subcommittee, Roger Everett (8364) gathers information to aid in assessing current housing and to

develop goals for the future. Responsibilities of Gary Drummond (8442), who is chairman of the open space subcommittee, involve assessment of current open space and determination of future needs.

Other Sandians serving on the six subcommittees are Hans Birnbaum (8423) and Ray Faltings (8413), housing; Ed Holbrook (8443), commercial; Arnie Rivenes (8363) and Gene Voelker (8113), community facilities; and Larry Weirick (8313), education and public safety.

Speakers

Bob Huddleston (8441), "Best Chebyshev Approximation by Rational Functions," Mathematics Symposium, Texas Christian University, January 1973.

Bill Ashurst (8364), "Dense Gas Fluid Transport via Non-Equilibrium Molecular Dynamics," Symposium on Application of Computers to Fluid Dynamics Analysis and Design, Brooklyn Polytechnical Institute, January 1973.

Al West (8313), "Atomic and Molecular Beam Scattering from Characterized Crystal Surfaces," Middle Atlantic Regional Meeting, American Chemical Society, Washington, D.C., Jan. 15, 1973.

Jack Dini and Rudy Johnson (both 8312), "Joining by Electroplating," American Electroplaters Society, Los Angeles, Jan. 10, 1973.



GEORGE WRIGHT (5628) heads ASTM committee which recently completed work on a new standard for testing for heat of ablation. One of the tools used in the work was the HEAT facility in Area III which produces a jet of high energy gas to simulate heat of reentry.

Sandians Formulate New Heat of Ablation Standards

Next month when the American Society for Testing and Materials publishes Part 30 of its voluminous *Annual Book of ASTM Standards*, the work will contain a new section on "Standard Method of Test for Heat of Ablation." The new standard is one of the outgrowths of three year's work by a committee headed by George Wright of Reentry Vehicle Aerothermodynamics Division 5628. Ron Pope (1543), Ned Keltner (9331) and Bob Sheldahl (5628) are also members of the committee.

Ablation is an energy dissipation process. It keeps man-made missiles and spacecraft from being consumed when they turn into flaming meteors as they reenter the atmosphere from space.

The new standard covers methods of determining the heat of ablation of materials subjected to the thermal environments of reentry. It provides a measure of the ability of a material to serve as a heat protection element.

The standard provides for measurement of the properties of cold wall heat of ablation, effective heat of ablation and thermochemical heat of ablation in environments simulating the thermal environment of a ballistic missile.

"We are now working on standards for heat transfer rate measurements in the more severe ablating environments," George says, "standardizing calorimeter instruments that measure into the 10, 15 and 20,000 BTU per square foot per second ($17\text{kW}/\text{cm}^2$) category — two orders of magnitude more severe than the environment that ablative materials of Apollo spacecraft survived.

"We should presently be looking toward a program of standards development for environments even more severe than those encountered during the reentry of ICBMs — say the entry of spacecraft into the atmospheres of the giant planets such as Jupiter."

The ASTM standards work is performed on a "time available" basis at Sandia. ASTM standards provide a service to engineers and scientists throughout industry.

"ASTM is currently forming a new committee to formulate standards on thermal analysis," George says. "I would be happy to talk with anyone interested in assisting in the work of either the committee on space simulation or thermal analysis."

Continued from Page One

Stratospheric Study

Tropospheric Changes," and "The Social and Cost Measurements of the Biological Changes."

Frank Hudson (4712) is directing Sandia's work in CIAP. In earlier studies, Frank developed a comprehensive model of stratospheric chemical kinetics. It treats 33 chemical substances and 177 photo and chemical interactions. As output, the model gives the compositional behavior of the stratosphere. Principal use of this mathematical simulation of the atmosphere is to determine the physical processes bringing about either observed or hypothesized behavior.

Molly Ellis (4712) is responsible for numerical analysis and computer codes. Bob Luna (5644) is contributing calculations on meteorology and global dynamics and Dirk Dahlgren (4712) on transport processes.

Provisions of the Sandia contract include:

- Determine pertinent stratospheric characteristics and identify important species and processes relevant to CIAP for both normal and perturbed stratosphere

- Develop simplified chemical kinetic models for use in wake and global dynamic calculations
- Perform studies to determine optimum conditions for experiments involving stratospheric chemical release
- Investigate instrumentation problems in perturbed stratosphere measurement programs.
- Study the global dynamics of trace materials in the stratosphere
- Advise the CIAP program office on priorities for theoretical, laboratory and field studies

"A major part of the program," Frank Hudson says, "consists of continuous improvement of the methods and updating of inputs to allow increasingly refined and effective study of an extremely complex problem. Sandia's many years of experience in all phases of atmospheric studies, and existing upper atmosphere research programs — supported by sounding rockets and balloon experiments — put us in a unique position to contribute to CIAP." • dg

Continued from Page One

Materials and Energy

comprehensive report together and we discussed it with him.

"It's more accurate to think of the energy crisis really as a part of a larger materials crisis," notes Doug. "Because over and above the fuel shortages — and fuels are merely one type of material — there is a worsening picture with respect to many of the basic materials of our industrialized society — steel, bauxite, copper, zinc, tin, and the like."

Although the report starts with bleak reference to shortages and our growing dependence on importing raw materials, its tone is generally positive and constructive. The materials people who contribute to it represent 16 technical societies with interest in and knowledge of all types of materials — both mundane and exotic. A sampling of their recommendations:

- designers can conserve materials by favoring abundant over scarce materials, and by selecting materials that are renewable or, at least recyclable. This suggests the need for more complete and factual knowledge of materials properties so that a designer will know the full range of materials available to do the job.
- greater standardization would reduce the variety of sizes, shapes, grades, tolerances, etc., that contribute to waste. For example, our domestic steel industry currently produces some 330 different grades of steel; confusion about these many grades tends to create conservatism in design and a consequent overgrading of material for many applications.
- in processing and fabrication, greater effort should go into the production of finished forms or products (precision

castings, forgings and powder metallurgy) from raw material with minimum waste.

- the recovery of reusable waste and scrap should be maximized.
- R&D efforts should be undertaken early enough to develop plentiful substitutes for materials forecasted to be in short supply.
- materials designed to meet specific requirements represent high efficiency in terms of materials utilization and, because composites show great promise as "designed" materials, a major R&D effort should be made in this area.
- more systematic study should be made of the ceramics and plastics as substitutes for certain scarce metals.
- the present deficiency in materials education for all engineers should be corrected.
- materials characterization is now inadequate for many materials and their greater utilization is inhibited as a consequence; steps need to be taken to correct these inadequacies by systematic destructive and nondestructive evaluations of the physical properties of uncharacterized materials.

Having labored on the report and attended at its birth, Doug has become a missionary about the materials crisis and has made presentations on the subject before a number of technical groups. The latest was the keynote address at the Ninth Symposium on Nondestructive Evaluation in April of this year. "Missionary zeal is needed here," he notes. "Only two broad courses of action are really open to us. One is to expand the supply of materials and the other is to reduce the demand by conserving all types of material and maximizing their effectiveness throughout their life cycle. This is an area where all engineers and scientists can make positive contributions. If we don't develop some greater sense of urgency about critical materials shortages, this country will face some problems which could make the current gasoline shortage seem minor in comparison." • js



Up the Education Ladder

Herb Stanley (7515) is not the kind of guy who gets his kids off to college and sits back waiting till they're well-educated enough to support their old man. When Herlethia and Verendia went off to UNM to become economist and dental assistant, respectively, Herb settled into the series of "self-study" courses offered by Howard Shelton's Engineering Education and Technical Training Division 3132. (All the courses, introductory to advanced, are listed in the Out-Of-Hours Course Catalog out soon.) Says Herb, "I didn't want to be left too far behind my girls in terms of education."

Herb works while most of us relax or sleep — he's a custodian on the 5 p.m. to 1:30 a.m. shift. So he juggles his sleep/relaxation time to allow some work with an Auto-Tutor several times a week. He likes the device and the kind of study it permits. "Going at your own pace is a wonderful idea," he says. "No one pushes you. After all, it's hard for a guy my age — I retired after 23 years in the Air Force — to compete with youngsters in a regular classroom."

Auto-Tutor programs are divided into frames with each one providing a bit of new information and a multiple choice question about it. The student reads the blurb, then pushes a button to make a choice of answers. If he's right, the program advances to the next frame. If he's wrong, the machine jumps the program to an explanation of why it's the wrong answer, then returns to the question.

"Herb's got the kind of determination it takes," says his supervisor, Lloyd Wilson. "We're giving him all the encouragement we can, but the necessary drive is his."

So far Herb has finished all the introductory algebra available and is now taking trig. "One of these days," says Herb, "I'll be ready for electronics courses — that's what I really want to get into."

He's on his way — frame by frame. •bh



MAKE A CHOICE, push a button, read a bit, learn the subject. Herb Stanley likes the self-pacing possible with the Auto-Tutor.



THE PSYCHO-CYCLIST (NO. 1) — Here he jeopardizes self, others, and bikers' right to use the Los Altos overpass. Model Bike Rider Joyce Sanchez (4711) demonstrates the right way — walk your bike.

Biking is a Breeze

When *Scientific American* devotes its cover article (March 1973) to "Bicycle Technology," you know a bike is neither just a child's toy nor a passing fad. When the federal Department of Transportation runs TV commercials promoting biking, you realize that the bureaucracy no longer believes that only motorized vehicles can transport. If the 13.9 million bicycles purchased last year in the USA (vs. 11 million autos) all entered the Tech Area through Gate 4 next Tuesday morning, well we might have to add another guard.

Sandia is not an organization to be bypassed by the winds of social change (or any other kind), and it has a growing number of bike commuters. Most belong to the Sandia Bicycle Association, which can no longer qualify as a fledgling group — they've even got dues (for those who want to vote; anyone can get the newsletter) and a hard-working

board of directors. Membership has climbed from 40 or so in spring '72 to about 325 now. They've approached the military occasionally — for better Base access — and have, now and again, enjoyed some success. They've supported pro-biking legislation at both the state and local levels.

And they bike to work. A recent count at the Tech Area I gates showed 189 riding on a good day, 160 or so on a day with a 40% chance of precipitation. About 75% of the Sandia bikers use the special bikers' entrance at Gate 4.

Not all SBA'ers bike to work — many bike for fun, not for the profit that accrues from selling that commuter car. Biking is fun — if you have a good lightweight bike (the less they weigh, the more they cost) and if you can find a route that's relatively carless. That *Scientific American* article notes that a person on a bike is "first in efficiency among traveling animals and machines in terms of energy consumed in moving a certain distance as a function of body weight." All of which explains at least in part why biking is fun: it's not much work.

* * * *

Whether biking is a means to work or an end in itself, watch it. Certainly a bike has all the privileges — and the responsibilities — of a car on a city street. What it doesn't have is speed, weight, and protection. In a car-bike confrontation over contested territory, the biker always loses even when he's in the right.

LAB NEWS is interested in and concerned about forms of transportation alternative to what the DOT calls the "individually driven commuting vehicle." A bicycle is a great alternative. Elsewhere in this issue is the first in a sometime series of biking do's and don'ts. Whether you pedal for fun or for profit, take heed. •bh

SANDIA 87%					
ORG	TOTAL POP	PARTICIPATION (INCLUDES NEW)	NEW	% PARTICIPATING	%
1	7	7	1	100%	100%
2	9	9	1	100%	89%
100	8	8	1	100%	78%
1000	765	705	97	92%	79%
2000	836	723	89	86%	75%
3000	288	243	54	84%	66%
4000	352	340	66	97%	72%
5000	687	565	123	82%	62%
6000	15	14	2	93%	80%
7000	1626	1343	120	82%	74%
8000	874	713	217	82%	56%
9000	939	905	164	96%	78%

FROM 74% to 87% is a pretty good jump, and that's what Sandians did during the just completed Savings Bonds Drive. Chart shows early returns. Goal was 85%. Org. 4100 reached 100%, while Orgs. 1500, 1600, 4200, 5600, 9300 and 9500 exceeded 95% participation.

Stalking the Wild Bumper Sticker

Maybe we aren't as obsessed by the purity of our automobiles as the Vance Packards tell us we are. For how can we explain our willingness to, nay insistence upon, convert(ing) our cars into four-wheeled billboards? The causes we espouse on our bumpers range from the sacred to the profane, from the silly to the merely confusing.

Roaming Sandia's parking lots seeking graffiti *interesti* demands real stamina, most of it mental. Why, for example, would anyone want P.S.* I LOVE YOU (*PALM SPRINGS) on an otherwise attractive New Mexico car? Or a Confederate flag? or BIG SKY COUNTRY — MONTANA on twin mud flaps?

Several vehicles sport NEBRASKA NO. 1: GO BIG RED! tags, apparently referring to some sort of athletic endeavor. Others for the athletically oriented: SKI: ENJOY NATURE AT ITS PEAK and TAKE A FRIEND TO COURT: PLAY TENNIS.

Anthropomorphization? We've got it. LOVEABLE ELMO waits patiently for his master/mistress near the Credit Union.

Among the confusing: FIGHTER PILOTS DO IT BETTER. OK, what? How



about SUPPORT US KIDS? You mean we have a choice? Or I'D RATHER BE FLYING. Well, actually, there are several activities preferable to jockeying through rush hour traffic. Then there's SAILORS HAVE MORE FUN. "Than who, I mean 'whom'?" one asks. Does this have anything to do with our now coed fighting ships?

Confused by PASS THE WORD: BUY THE BIRD on a front tag? Don't be. Just as you're being run over, you'll note a small eagle with a smaller UNION LABEL under it.

Also confusing is EAT MORE POSSUM. Reporter confesses he's not eating more possum, but then he's not eating any less either. And then there's TRESPASSERS WILL BE VIOLATED. Consider yourself warned.

HAVE YOU THANKED A GREEN PLANT TODAY? is somewhat plaintive. There's some recalcitrant grass in our yard I could never bring myself to thank.

Of worthy causes, a plethora. In addition to the political and religious messages (not included here for the customary reason), we have FIGHT LITTER and PREVENT FOREST FIRES (as well as its plainer counterpart PREVENT RANGE FIRES — or is that an injunction to housewives firing up the stove?).

And we noted FIGHT SMOG — RIDE A HORSE. Along the same vein, POLLUTION — THE BEGINNING OF THE END. And (Pantex forgive us) SKI TEXAS. And (Livermore this time) DON'T CALIFORNICATE NEW MEXICO. And (your turn, Chamber of Commerce) UNDEVELOP! And KEEP YOUR CITY CLEAN: EAT A PIGEON.

Our favorite? Simple, direct, to the point: BUMPER STICKER. But probably the most eloquent of all: BAN BUMPER STICKERS. •bh

"APPLY a sage poultice and call me in the morning" was Dorothy Cowboy's advice to Oscar Berlier (both 7510) for skin irritation on forearm, the result of a spider bite. Poultice, a favorite Navajo remedy, appeared to help. Roots of yucca plant (at right) are used to make a kind of soap which Dorothy says "is good for dandruff".



Navajo Remedy Helps White Eye

Back in January Oscar Berlier (7513) awoke from a sound sleep in the middle of the night with one strong itch. It was on his forearm and it persisted. In fact, in the course of the next few weeks, a red and inflamed swelling developed that became a source of some concern. So Oscar went to a dermatologist, who pronounced him the victim of a spider bite and prescribed medication. Several months and several dermatologists later, Oscar still had his welt and was somewhat weary of the whole business.

Then one day Dorothy Cowboy (7511) learned of his affliction and its probable cause and said something like the following to Oscar:

"Go out on the mesa, find some sage, pick some leaves and make a poultice with them which you will then apply to your arm."

"Sure — why not," Oscar replied.

We'd like to report that Oscar is now proudly showing off a completely sound forearm — but we can't. He's still got a welt but, according to him, it is a lot better than it was. Was it the sage poultice that led to the improvement? ¿Quien sabe?

Dorothy is a blood Navajo, articulate and outgoing, with a more than casual interest in the herb remedies the Navajo people have historically used. Most are passed on from generation to generation by word of mouth. Their proximity to nature has meant for the Navajos many insect bites, and the sage poultice is a favorite unguent. The longer leaves from a species that Dorothy calls sand sage may also be used as a poultice, or they may be boiled and the extract taken internally. "The taste is bitter, but the substance is supposed to help. . .," says Dorothy.

Perhaps the most popular herb is a root called na'bii' in the Navajo language which seems to be an all-purpose elixir. Chewed upon to a mushy consistency, it is applied to bites, including snake bite. Dorothy states that not many Navajos suffer snake bite, but that their sheep do and na'bii' is applied to the bite by the herder. The sheep usually recovers.

Deer hairs, reduced to ashes, are also applied to spider bites, and for that universal affliction — warts — Dorothy cites a remedy that's a lot simpler than that of Tom Sawyer and his spunk water and incantations at midnight. "Take a cactus needle, prick the wart, and then have a dog lick the wart." Now that's an elegant medical procedure.

In his book *American Indian Medicine*, author Virgil Vogel describes how, in the winter of 1535-36, the three ships of Jacques Cartier were frozen fast in the St. Lawrence River. The crewmen subsisted on ship's fare and scurvy soon became rampant, with many men dying. But Cartier had the good fortune to encounter a local Indian chief, Domagaia, who had been cured of the same disease with "the juice and sappe of a certain tree." In short order, Indian women had gathered branches from this tree, boiled the bark and leaves, and the resultant potion was given to the scurvy Frenchmen, who quickly recovered. At the time, Europeans believed bad air to be the cause of the disease.

Summing up the contributions to medicine by the American Indian, Vogel says this: "Only after . . . centuries, did some of the Indian discoveries attract the attention of scientific medicine. Much was found to be worthless, but an astonishing number of Indian drugs and treatments were found to be of enormous value." •js



BERYL HEFLEY of Sandia's Technical Library is shown with his just-published book, co-authored with former Sandian Stanley Swihart. According to the jacket the text covers ". . . automation of clerical library functions. It is practical in approach, (without ignoring theory) and stresses enough detail to be of wide practical application." Publisher is Melville, a division of John Wiley & Sons.

FUN & GAMES



THAT'S Chairman Dennis of the Sandia Runners Association with the new measuring wheel checking the quarter-mile oval north of the gym. (It's nine yards short.) Wheel measures in feet and inches, will be used to chart other running courses, and is available on an overnight basis to any employee. Check it out at the guard lieutenant's office in Bldg. 801 — someone is always there.

Update on Sandia Runners Association — Dennis Mottern (5533) reports that 65 Labs and AEC people are now charter members of the Association. A few statistics: the average SRA'er runs 2.7 miles 4 times a week for a total of 11.4 miles per week. Pete Richards (5132) at 5 miles a day, every day, for 35 miles a week holds the number one spot, with AEC's Jim Tollison and Bob Lowrey, 4 miles a day, every day, not far behind. That crew, and several others, are now training for the LaLuz Trail race in August — about 7½ miles up to the Crest, at 10,678 feet and a good way to clear the sinuses and blow your mind.

SRA now has a measuring wheel (see photo) and Dennis hopes that, with its help, SRA can generate some accurate maps of running courses. Security reports continuing flak about runners on the roadway. Our suggestion: be discrete. If you must run on the road, run against traffic (some don't) and in single file. If a looney in a vehicle seems determined to prove his manhood by not budging one inch as he bears down on you, you don't lose face by running briefly on the shoulder.

Equipment: Les Baumann (9550) can get running, tennis, and basketball shoes (and other athletic gear) at a pretty good discount. He's at the gym daily after five, with samples, or you can reach him at his home on 299-9493. The wholesaler expects price increases in a few weeks and you may want to get your order in now.

Join the Sandia Runners Association by sending the following to LAB NEWS: name, organization, E-number, phone, and the number of days per week you run and the distance covered.

* * * *

Lyle Kruse (5323), president of the Sandia Labs Horseshoe Association, invites all and sundry to enter the 1973 Labs horseshoe tournaments. Singles will compete Saturday, Aug. 11, and doubles the following week, Aug. 18, starting at 9 a.m., at Los Altos courts so that the large number of interested Sandia retirees may compete.

You qualify to enter by pitching 100 shoes and recording results on an official score sheet or, if you were in last year's tournament, by submission of your scores in it. A player may compete in both singles and doubles. Lyle has the score sheets and the scoop plus info on introductory horseshoe pitching classes for those interested. Call him on ext. 1017.

* * * *

Take Note

Newspapers piling up? Don't bury or burn them. Ernie Sanchez and David Chavez (both 3147) need stacked and tied bunches of newspapers for a charitable project — assisting in the purchase of a cancer therapy unit for St. Joseph's Hospital. They're working on the project with Mr. and Mrs. Condrado Abreu who recently lost their 14-year-old daughter to leukemia. Deliver your papers to 1509½ Edith NE or call 243-5375 to arrange for pickup (or to make a donation, if you wish).

* * * *

At the Awards Night meeting of the New Mexico Section of the American Society of Mechanical Engineers, John McKiernan (1642) and Richard Bice (9000) received, respectively, the Region VIII Appreciation Award and the ASME Public Service Award. John served as Region VP from July 1970 until the present time.

* * * *

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LAB NEWS
JUNE 29, 1973



Don't Care for Violins

Charlie Simpson — Fiddler on the Hoof

"For a swingin', foot-tappin' good time, attend an Old Time Fiddling contest!" That's the word from Sandian Charlie Simpson who adds that it's even more fun to enter the competition.

An old time fiddling contest in late April was part of the annual Ralph Edwards Celebration at T. or C. Charlie and Glenn Morehouse (both 9343) were among entrants from across the country in the four-day elimination contest. "Glenn knows all about these contests," Charlie says, "and he talked me into entering. I had never attended one, even as a spectator." Contestants are grouped by age, and Charlie and Glenn competed against 13 other fiddlers in their group. Glenn didn't place and Charlie finished fourth. The winner just happened to be the national fiddling champion for the past two years.

Each fiddler plays a "set" — 1) a breakdown or hoedown, 2) a waltz, and 3) a piece of his choice but representing a type different from the first two categories, e.g., ragtime. The fiddler plays a different set each time he appears in the elimination. Charlie says a typical set might include 1) "Soldier's Joy," 2) "Over the Waves," and 3) "Lone Star Rag." Three judges award points on authenticity of the tune, rhythm, tone, and



CHARLIE AND KAREN SIMPSON tuning up.

clarity. A contestant can play with or without piano accompaniment. Charlie's 15-year-old daughter Karen is his accompanist.

"Most contests limit the music to that published prior to 1910, so it really is old-time music," Charlie says. "The old-timers have an age category of 71 or older, and they are fun to listen to and to watch. Some of them follow the contest circuit, meeting old friends and comparing notes (literally) on new "old" tunes they've mastered. Most of them play by ear — published music of this era is hard to find — and they all have a certain style depending on the part of the country they're from. You can recognize where they're from by their playing just as you can by their speech."

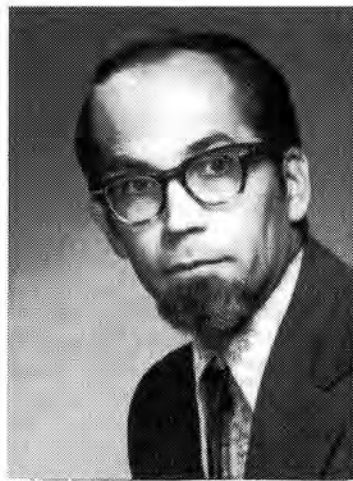
Charlie also plays the fiddle by ear. An older brother taught him the basics when he was 14. For years he's played western swing dance music. "I think my background made playing in the contest easier," he says. "I was used to performing for large groups, and one of the contest rules is the music you select must be danceable.

"Those four days of fiddle music were really great. Why, there were even fiddlers playing as they strolled the streets." • nt



Alice E. Moore - 3141

10



Robert Graham - 5133

15

MILEPOSTS

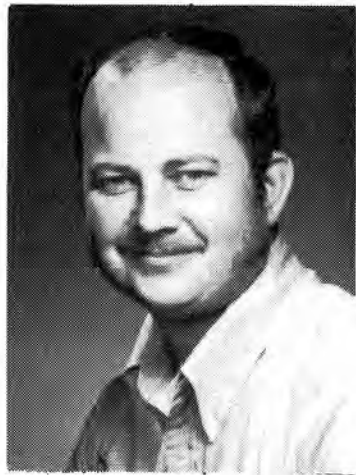
LAB NEWS

June 1973



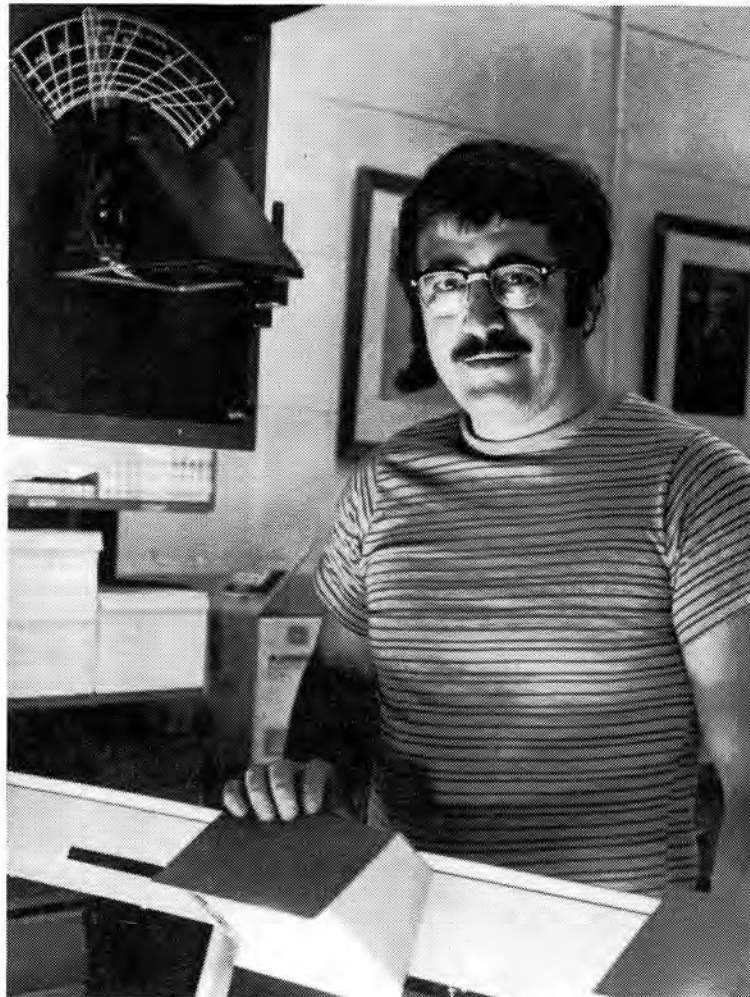
Wade Adkins - 7613

10



Ted Welton - 7654

10



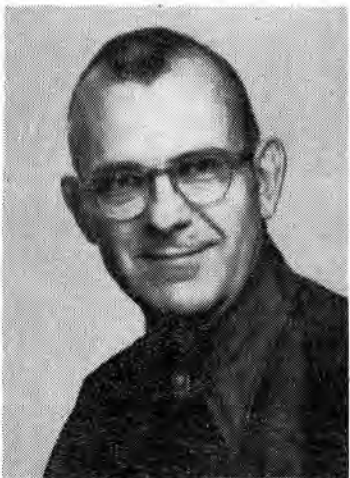
Ernest Sanchez - 3147

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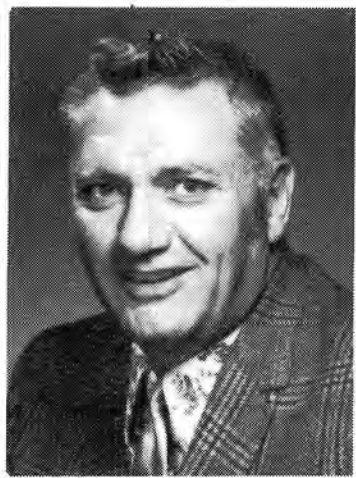
William Arris - 9511

25



Alfred Hoge - 2326

25



Dave Doleshal - 1611

25



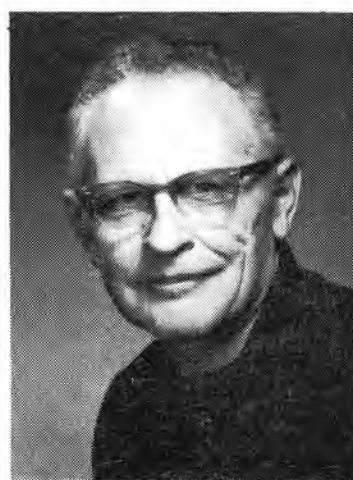
Otis Cox - 4113

10



George Adkins, Jr. - 5623

20



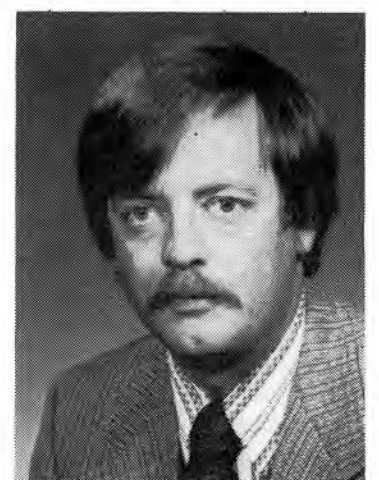
Orrin Smith - 5212

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Margaret Harper - 3147

20



James Gover - 2115

10



Charles Sain - 9341

20



Douglas Robertson - 2633

10



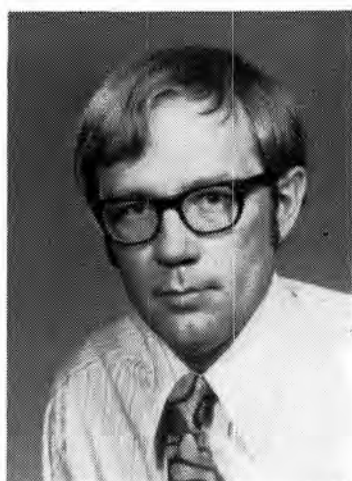
Thomas Eagar - 9514

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Walter Cordek - 1131

20



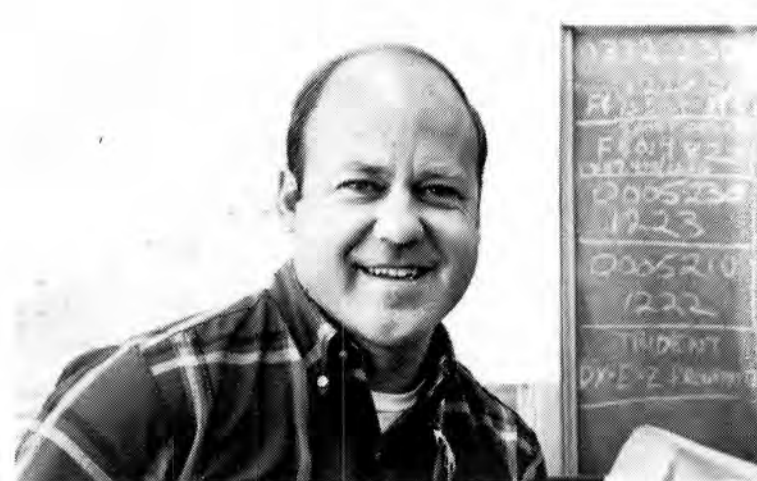
James Solberg - 9353 10



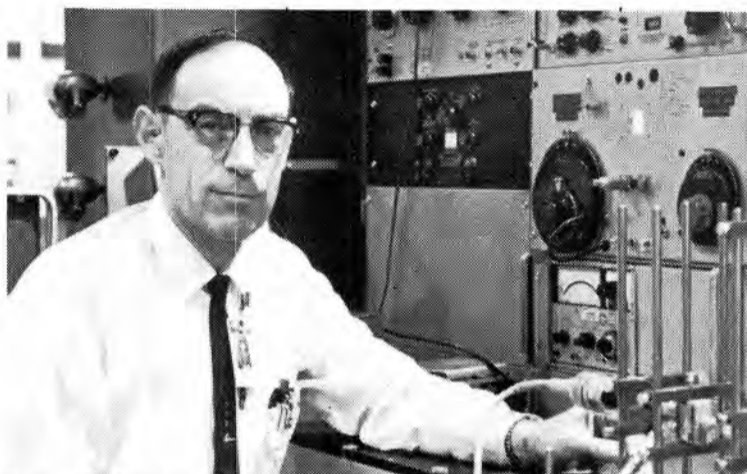
Pete Hernandez - 9425 20



Earnest Roberts - 7611 10



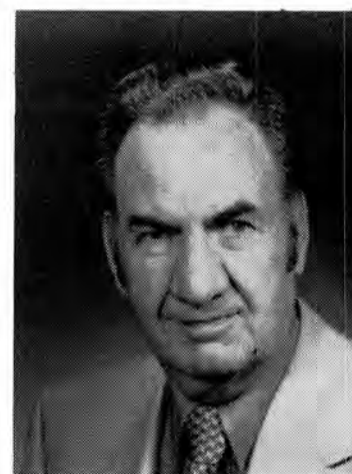
John Middleton - 1536 15



James C. Drake - 9532 20



Ruth Birdseye - 1612 15



John Haaland - 1613 20



Antonio Skender - 3148 20



Leonard Kracko - 1126 15



James Avis - 1522 20



E. W. Kenderdine - 2336 15



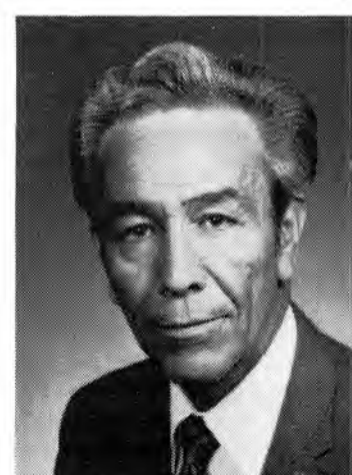
James Ney - 5715 10



Nita Clark - 9343 15



Clyde Dunlap - 1554 25



Frank Gurule - 7333 25



Dick Damerow - 2442 10



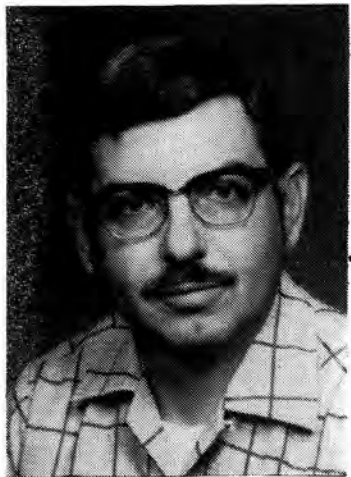
R. C. Dougherty - 2411 15



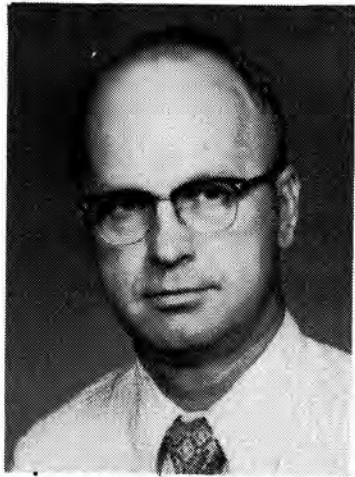
Don Doak - 1544 15



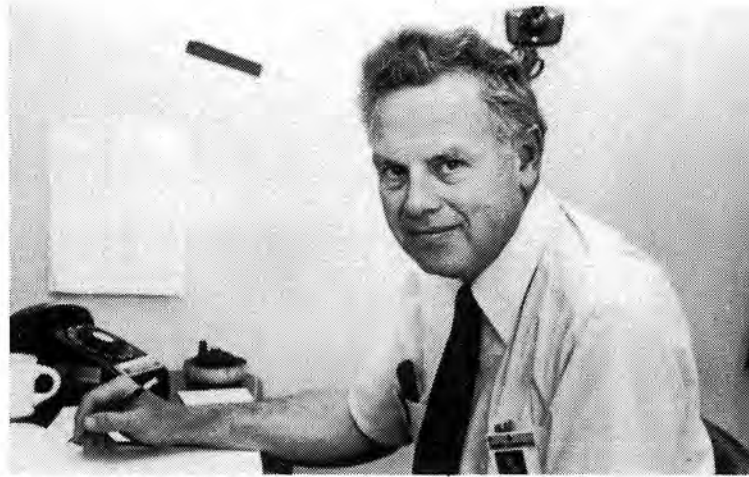
Dan Callahan - 7332 15



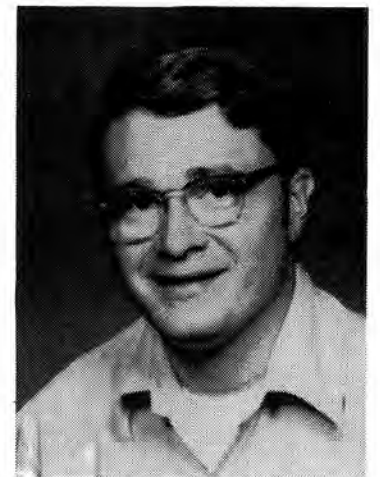
John Smith - 7614 15



Stan Booker - 9532 15



Glenn S. Mills - 2132 20



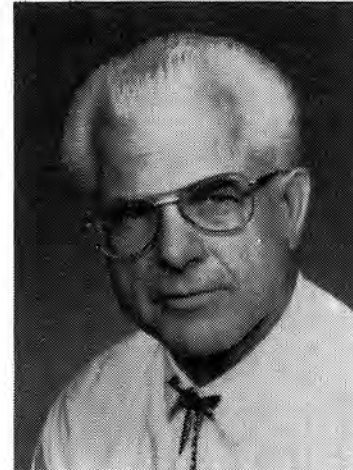
Richard Johnson - 2122 15



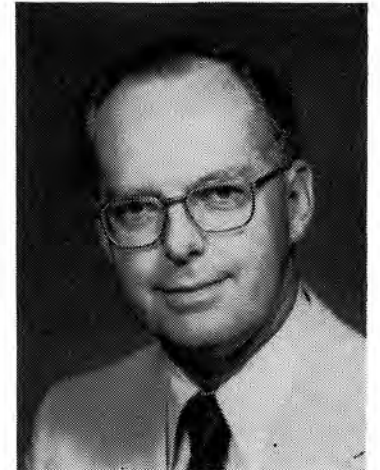
Michael Norris - 100 20



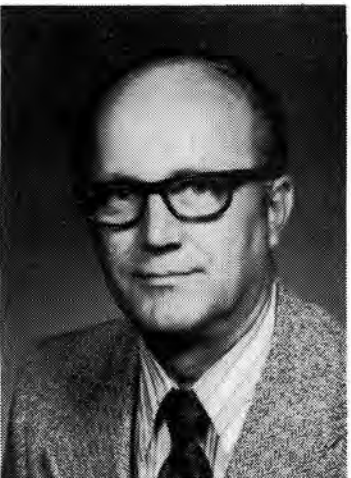
Marian Goddard - 9425 15



Bruce Coleman - 9535 15



Harold Bennett - 4733 15



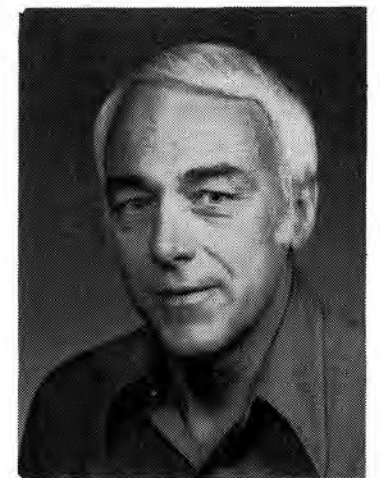
Wayne Olson - 1233 15



Lenard Wilhelmi - 7614 15



E. V. Forsman - 2522 20



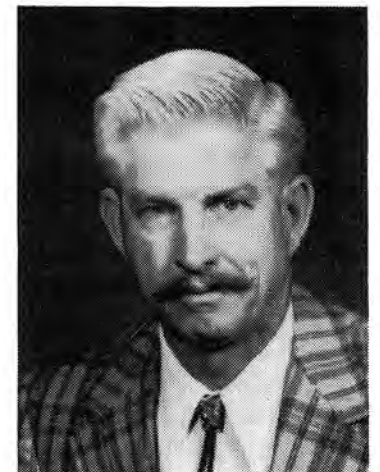
Dick Volk - 2414 15



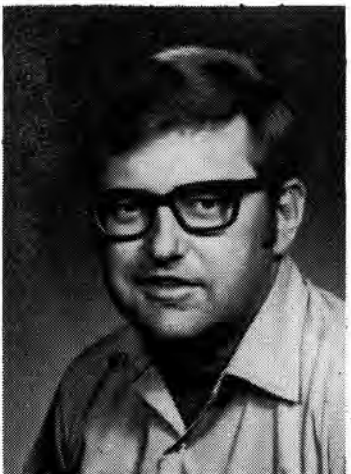
Dave Overmier - 9324 10



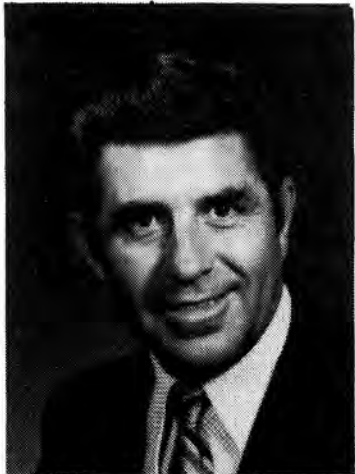
Howard Bluestein - 1535 20



Jack Stewart - 9474 20



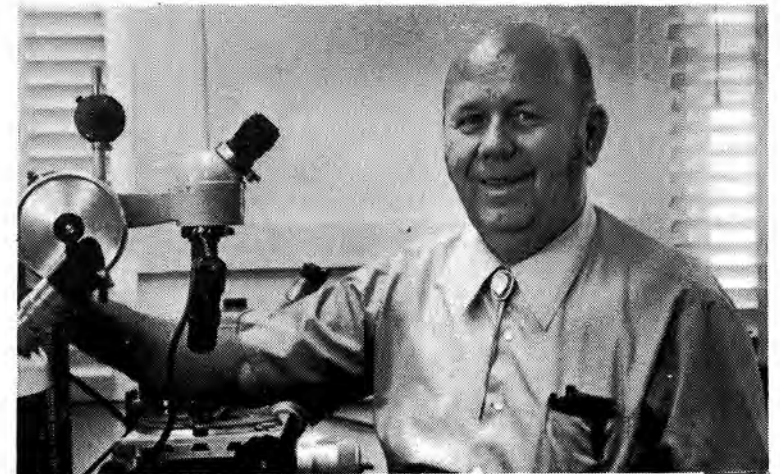
Kenneth Jones - 7615 15



Adolfo Sanchez - 7553 25



Charles McKeever - 2415 20



Bert Neumon - 2434 25



Bus Notes

The Los Lunas bus has passed its trial period and will continue as a regular commuter bus. "We're happy to carry Sandia commuters," says Leo Sanchez, charter bus owner. "We're getting good support — a full busload — and we intend to offer the best possible service."

Jim Graham (7146), South Valley bus honcho, reports that he's working with the Transit Company on a proposal involving feeder buses out of the South and North Valleys and West Central. Somewhere downtown these would transfer Sandians to an express bus direct to work. "We'll keep you posted," says Jim.

On the basis of a recent survey, headed by John Southwick (9532), a Mountain Bus route would begin around 7 a.m. at Sandia Knolls, then stop at Sandia Park, the 14/44 junction, Cedar Crest Hardware, Piñon Ridge, the Stop 'N Shop, Sierra Vista Road, Casa Loma Road, Cedar Crest Post Office, the 14/66 junction, Canyon Estates, and finally at Gate 6, Sandia. Negotiations with possible carriers are underway.

It appears that a Belen bus (serving Los Chavez, Belen, Adelino, Tome, plus any overflow from the Los Lunas bus) could get the support it needs if some kind of Area I to Areas III/V shuttle bus service can be worked out to the satisfaction of management and Area III/V employees. Such a shuttle could, of course, serve all bus commuters and perhaps bikers too.

The Far East (Albuquerque) bus proposal, like the one for the South Valley, is currently under consideration by the Transit Company and the Albuquerque DOT. The need for commuter service is obvious. The issue: where to find the equipment to meet that need. The City intends to respond to both proposals in a couple of weeks.

Sympathy

To Jim Mashburn (9484) on the death of his wife in Albuquerque, June 11.

To Jack Mortley (9344) on the death of his son in a motorcycle accident in Albuquerque, June 5.

To Marvin (7513) and Frances (7121) Aaron on the death of her father in May and her mother in June in Vancouver, Wash.

To Duane Alger (7518) on the death of his mother in Lansing, Mich., June 9.

To David Williams (5315) on the death of his mother-in-law in Albuquerque, June 14.

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

CLASSIFIED ADVERTISING
Deadline: Friday noon prior to week of publication unless changed by holiday.
A maximum of 125 ads will be accepted for each issue.

RULES

1. Limit: 20 words
2. One ad per issue per person
3. Must be submitted in writing
4. Use home telephone numbers
5. For Sandia Laboratories and AEC employees only
6. No commercial ads, please
7. Include name and organization
8. Housing listed here for rent or sale is available for occupancy without regard to race, creed, color, or national origin.

MISCELLANEOUS

GOLF CLUBS, 4 woods, 9 irons, putter, bag, cart, \$55. Poole, 298-6025.

CAMPER SHELL for LWB, 26" high, insulated, paneled, all lights, \$175. Dean, 299-3281.

GOLF CLUBS, left-handed, bag, 8 irons, 3 woods, Wilson fiberglass, \$50. Milton, 299-4586.

VACATIONER camping trailer, Wards Western Field, sleeps 4, carpet, 2 foam mattresses, 2 spares. Sefcik, 7405 Gladden NE, 298-5109 after 5:30.

FURNITURE, olive green sofa, GE refrig, Sears humidifier, dinette set w/4 chairs. Nissen, 296-3387.

BLACK PORTABLE bar w/2 stools, leather, never used, \$85; green couch, \$40; woman's clothing, sizes 7 & 8; upright Amana freezer, \$55. Rhoden, 294-0619.

3-DRAWER chests, matched pair, \$10 each; 5-drawer chest, \$15; corner step table, \$5; 2 20" boy's bikes, 26" girl's bike. Rueb, 299-4805.

NORITAKE CHINA, service for 12 with all extras, never unpacked, platinum on white, \$75. Cockerleas, 265-7570.

QUEEN BOX springs, 6 mos. new, \$65; CB radio & antenna, \$35; \$269 deluxe dishwasher, \$125. Lassiter, 298-2461.

TENT, Sears side room, 10' X 13', carrying case, accessories, ext. frame, \$55. Marrs, 299-3865.

SLIM GYM exerciser, new, reasonable. Martello, 299-5807.

CAMERA, Leica 111 f3.5, 50 & 90mm Leitz Elmar lenses, other accessories, \$250. Geck, 299-5095.

CONTAFLEX CAMERA, single lens reflex, 45mm Zeiss Tessor f2.8 lens, Synchro-

Compur shutter, leather case, \$45. Coleman, 299-2377.

REMINGTON model 12A pump action .22LR rifle, \$49.50; Winchester model 62A pump action .22LR rifle. Smitha, 266-9977.

AIR CONDITIONER, refrig. type, window unit, 17,000 BTU/hr., squirrel cage, \$65. Basham, 266-2642.

COLOR TV antenna, \$20. Orzel, 296-1803.

ANTIQUES: china closet, \$195; pine table, \$125; couch, \$350; end tables, \$40 & \$55; miscellaneous, \$10 to \$20. Cockerleas, 256-7570.

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

TEAK A-1500 reel-reel tape deck, mikes, accessories, tapes, \$250. Earl, 877-0364 or 1044 Sunset SW after 5.

BELL MOTORCYCLE helmet, shorty model, size 7-5/8, \$15. Bennett, 298-1142.

FREE German Shepherd female, 9 mos. old. McAvoy, 869-2223.

20-TON hydraulic press, auto mechanic's heavy duty model, with adapters, \$299. Jordan, 255-7000.

SAMOYED PUPPIES, AKC registered. Demaree, 296-1344.

SEARS POWER reel mower, \$25; GE 20" 3-spd. fan, \$10; man's 3-spd. bike, \$10. Olman, 298-5024.

CAIRN TERRIER puppies, superior bloodlines, AKC reg., show quality, reasonable. McIlmoyle, 268-6532.

CAMP STOVE, Primus, 3-burner, used twice; rollaway bed. Merrill, 298-7371.

GARAGE SALE, 1102 Washington NE. Harrison, 296-7880.

TWO TIRES, F70-14 Kelly Springfield, \$20 each; misc. items. Gleicher, 294-8777.

GARAGE SALE — toys, 10-speed bike, Honda trail bike, photo items, etc., Sat. & Sun., corner Chelwood & Princess Jeanne. Souther.

TRANSPORTATION

'68 DODGE Coronet 440, AT, AC, 318 CID, below book. McDonald, 298-0610 after 5.

24" GIRL'S bike, \$15. Payne, 299-5966.

BOY'S bike, 5-speed, Schwinn Stingray, thornproof tubes, \$35. Benson, 299-3315.

'62 FORD station wagon, \$300. Villa, 298-0435.

TRAILBIKE, modified Heathkit, 2-spd. trans., wide tires, for sand and mts., needs work. Allred, 294-1393.

'61 INTERNATIONAL pickup, 6 cyl., 4-spd., positrac. Netz, 281-5595.

'69 BRONCO, 362 CID, 4WD. Pinkham, 299-9241.

'70 FORD Fairlane/Torino, 2 dr., 351-V8, AT, PS, factory AC, 20,000 miles, 1-owner. Denish, 345-0764.

'72 HUSQVARNA 360 Enduro, street legal, 450 adult miles, \$995 or trade for car or 4WD vehicle. Larsen, 265-0004.

'62 OLDS, new tires, carb., batt., muffler; AT, PS, PB, AC, all work; brakes don't; \$150. Rutter, 299-5872 after 5.

'72 GMC 3/4 Custom truck, PS, PB, AC; with 9-1/2' Mobile Traveler camper. Barber, 298-7908.

'70 DUCATI 450 Scrambler, set up for dirt, extras, \$475. Roth, 877-4997.

'65 DODGE Monaco, loaded, new tires, 16 mpg, \$600. Hammons, 296-6339.

BULTACO, 250cc Alpina, 8 mo. old, 600 mi., make offer. Gudice, 265-0913.

'68 DATSUN 510 sta. wgn., AT, AC, radio, new tires, 45,000 miles. Hall, 298-6283.

'66 DUCATI 2500 Scrambler, new tires and batt., extra frame and engine parts, \$250. Butler, 296-8095.

BIKE, boy's 20" Schwinn Stingray, thornproofs, saddle basket, \$30. Esterly, 256-9251.

'67 OLDS 442, rebuilt engine and trans., many extras. Prevender, 299-5253.

BIKE, girl's 24", blue, balloon tires, basket, \$10. Williams, 268-0045.

'72 FORD 1/2-ton pickup, 360 V8, PS, AT, LWB, Ranger, 16,500 miles; 8' cabover camper; together or separate. Houghton, 299-3386.

BIKE, 20" convertible; tricycle. Hitchcock, 299-2581.

'61 CADILLAC Sedan DeVille, all power, \$1000 in reconditioning, sell for \$750 or best offer. Predika, 855-4530.

'67 SAAB, good tires, plus extra

wheels/tires, engine, trans., running gear, complete body. Illing, 867-2837.

'68 PONTIAC TEMPEST, OHC-6, radio, AC, \$495. Boverie, 255-1071.

'65 FORD GALAXIE 500, 2 dr. HT., factory air, PS, \$495 or best offer. Barham, 298-7304.

'72 ROVER CAMPER (division of Coachman), used 3 times, 10-1/2' self-contained, gas-elec. refrig., gas stove/oven, gas heater, dbl. sink, sleeps 6, \$1900. Hightower, 299-4528 evenings.

'65 FALCON WAGON, AC, AT, etc., \$495; Rambler Classic, stick, 4-dr., 18,000 miles, \$550. Sherwood, 299-2169, 2326 Hoffman NE.

GIRL'S BIKE, 3-spd., front caliper, rear coaster brake, \$25; Bundy trumpet, Richards Topical Encyclopedia set for children. Sasser, 298-1439.

PALOMINO GELDING, excessively gentle, wants loving attention and care. Cafferty, 898-3102.

REAL ESTATE

HOLIDAY PARK 3-bdrm., 1-3/4 baths, paneled & carpeted den w/tp., sunken living room, large lot, trailer access, gas BBQ, good view, 1650 sq. ft., 6% loan. Gover, 296-3928.

3 BDRM, 1-3/4 baths, cathedral den, covered patio, heated garage, extras, year old. Lawrence, 299-9118.

4 BDRM Lori home, San Gabriel, corner, 2100 sq. ft., professional landscaping, sprinklers, humidifier, 5 yrs. old, low 40's. Lauger, 9801 Coda Pl., 296-3197.

HOFFMAN BRICK, remodeled and redecorated, new electric kitchen, all landscaped. Stewart, 298-3332.

40 ACRES near Red River, within Carson NF, trout stream, all-weather road, elev. 8500', timbered. Saylor, 299-9006.

MOUNTAIN SITE for cabin, 1-3/4 acres, timbered, near Angel Fire, will rough-in cabin to suit. Netz, 281-3607, or Shinkle, 299-8486.

23 ACRES fronting on Chama River, 2 miles from Heron Lake; 5 acres in same area. Baack, 296-2312.

119 ACRES in Sandia Mts., near La Madera. Pawley, 255-8435.

FOR RENT

2 BDRM. house, adjacent NMMI campus Roswell, \$75/month. Smith, 298-7365 evenings.

OR SALE, 2 bdrm house, 335 Alcazar NE. Rusty, 255-0568.

OR SALE or lease, 1/2-acre mobile home site; children, horses, pets welcome, good view, quiet, 20 mins. from Albq. Salazar, 865-6142.

CORRALES ADOBE, 1 bdrm., brick, fp., 1000 sq. ft., \$180/month; penthouse eff. apt., 500 sq. ft., util. pd., \$115/month, pool, tennis, lease. Meyer, 898-5224.

OR SALE, 4 bdrm. custom built, 2 years old, 1-3/4 baths, Netherwood Park, price mid-50's. Micha, 2559455.

WANTED

TO BUY or copy: schematic for Eico Model 2036 stereo amplifier. Scheiber, 299-4743.

SCISSORS JACK, heavy duty. Baxter, 344-7601.

PHOTOGRAPHIC ENLARGER. Fisher, 299-9235.

BICYCLE, girl's 26", English style, 3-speed or single, reasonable. Young, 296-1963.

HOME for lovable, abandoned puppy; too many pets already. Gammill, 266-4659.

TRAILER HITCH for '67-'69 Plymouth Fury or Dodge Coronet series station wagon. Aeschliman, 298-7846.

WORK WANTED

TEENAGE BOY wants custom leather belt, wallet, etc. work; samples available. Hart, 266-6811.

DRESSMAKING and alterations, reasonable, experienced. Foesch, 296-6837.

LOST AND FOUND

LOST — dark green man's wallet; 3 or 4 keys on key ring with initial "M" on blue shield. LOST & FOUND, tel. 264-3441, Bldg. 832.

FOUND — pale green lady's scarf; VW keys in black case; lady's wrist watch, gold with red stones; key, possibly for Safety Deposit Box; small turquoise and silver pendant. LOST & FOUND, tel. 264-3441, Bldg. 832.

Fun & Games On the 4th

HAPPY HOURS — Tonight, a Captain's table seafood buffet will be spread while Frank Chewiwie plays for dancing. Barbara Clark will entertain in the main lounge. On July 6, Sol Chavez and the mighty Duke City Brass will make the happy music, Bavarian food will be the buffet feature, and Denny Gallegos will hold the main lounge.

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TOMORROW NIGHT starts the Club's first Saturday Session which replaces the old monthly Soul Session. The idea is the same — free admission to members and Happy Hour bar prices — but the kind of music will vary. Tomorrow from 8 to midnight, the Shilohs (formerly Country Images) will play for dancing.

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INDEPENDENCE DAY at the Coronado Club will be celebrated with the traditional family picnic fun and games. The triple pools will be open for swimming from 11 a.m. to 6 p.m. and the snack bar will be in operation all day featuring a picnic special — hot dogs, beans and soft drink for 75 cents. Games for all adults and kids will begin at 2 p.m. The American Legion Drum and Bugle Corps will present a concert from noon until 2 p.m. It's free to members, but members only please.

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TEENAGERS should enjoy the monthly bash scheduled from 7:30 to 10:30 p.m., Thursday, July 12. Mountain Ash will be on the bandstand and a disc jockey from KQEO will be master of ceremonies. Member parents should pick up tickets for their youngsters.

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TRAVEL NEWS — Twenty-five seats (or more) remain on the Club's Mediterranean package scheduled Oct. 14-29. This one includes a week at Palma de Majorca and then another week cruising on the RHMS Queen Frederica. Prices start at \$699. Deadline for registration is July 31.

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LASSO ONE in time to make it to the Club's Saturday Session — free admission, Happy Hour bar prices and dancing to the Shilohs. Hugh Taylor (3153) and Dorothy Sanchez (AEC) urge you to be there about 8 p.m.

Salt
some away.



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Labs Dollar, People Figures Announced

Sandia Labs payroll for fiscal year 1973 amounted to approximately \$95 million at Albuquerque and \$14.9 million at Livermore. For FY '72, corresponding figures were \$89.4 million and \$14.3 million. Salaries of some 60 employees at Tonopah Test Range are included in the Albuquerque figures.

At the end of FY '73, 6,425 persons were on roll at Sandia Labs, including 875 at Livermore. The total is about 800 less than at the end of FY '72.

Assets of AEC installations operated by the Labs totaled \$317.7 million at the end of FY '73, compared to \$301.4 million in FY '72. Purchases by Sandia in New Mexico were approximately \$25.3 million for FY '73. More than 99 percent of the amount, or \$25.2 million, went to Albuquerque firms.

About that Cheesecake

LAB NEWS gets more comment, pro and con, about our back page, ah, artwork than on any other feature of the paper. Now the prestigious *Ragan Report*, a national weekly survey of company newspapers and magazines, has a few words: "The pictures of women almost always appearing on the back page of John Shunny's LAB NEWS make us think that he's coming up fast as a challenger to Union Carbide's Dick Henderson who has been the unchallenged master in the art of 'wholesome cheesecake.'" Just to set the record straight, assistant editor Don Graham dreams up the photo ideas and Bill Laskar does the picture taking and a little darkroom magic (sometimes). We're happy someone out there likes us and, really, some of our best friends are women.