



BACK TO BACK 6600's — Sandia's second 6600 computer is now being installed in the Scientific Computing Center in Bldg. 880. Paul Lemke (9421), left, is the

project leader for the new computer system. At right is Al Iacoletti, supervisor of Operating Systems Division 9421. Article and more pictures appear on Page Four.

LAB NEWS

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FEBRUARY 13, 1970

SANDIA LABORATORIES • ALBUQUERQUE NEW MEXICO & LIVERMORE CALIFORNIA



GORDON MOE

To White House Office of Science and Technology

Gordon Moe Joins Science, Technology Office in Washington

Gordon Moe of Systems Planning Staff 100 has taken a leave of absence from Sandia Laboratories to join the Office of Science and Technology, Executive Office of the President, in Washington, D.C.

Gordon joined Sandia in June 1960 and worked in a weapons project group for two years. In 1962 he transferred to systems engineering and was promoted to division supervisor in Advanced Systems Studies in March 1966.

He was president of the Coronado Club last year.

He received a BS degree in EE from North Dakota State University in May 1960 and participated in Sandia's TDP program for two years of advanced electrical engineering studies at UNM.

Coast Guard Sponsored

Terradynamics Projectiles Will Measure Ice Thickness

A team of five Sandians will begin tests next week in the Chukchi Sea off the northwest coast of Alaska to determine if small instrumented projectiles dropped from aircraft can be used to measure the thickness and hardness of sea ice.

Success of the tests, sponsored by the U.S. Coast Guard, could lead to development of a technique for quickly and remotely measuring some of the characteristics of sea ice in polar regions. Such measurements are now made primarily with hand-operated core drills and are limited to those areas accessible by ship or helicopter.

Using the proposed technique, the projectiles would be dropped from an airplane and, passing through the ice, would transmit data to a receiver on the plane. The data would be reduced to usable form by a computer after the plane lands.

The new technique might eventually be used to obtain a profile of ice thickness and hardness over broad areas — information which would be helpful in selecting shipping lanes in the polar regions.

The ice tests are an outgrowth of earth penetration studies, called terradynamics, which Sandia has conducted since 1960. Terradynamics deals with the various phenomena associated with the rapid pas-

sage of projectiles or penetrometers through the earth.

In the past few years, Sandia has developed terradynamics technology in field and laboratory tests to the point that it is now possible to make approximate identifications of sub-surface layers and their characteristics without need for on-site drilling.

The penetrometers have been dropped into a variety of earth materials — clay, silts, sand, water, mud, granite, and permafrost. Results from these tests indicate that the measurement of the thickness and penetrability of sea ice lies well within the capability of present terradynamics technology.

The penetrometers used in the current experiment range in diameter from 2½ to 5 inches, in length from 37½ to 75 inches, in weight from 25 to 100 pounds, and are equipped with a 20-foot-long trailing cable attached to a small parachute. The cable conducts signals from the instrument package in the penetrometer to a small transmitter located in the parachute.

As the penetrometer plunges into the ice — and through it, in some cases — deceleration data will be relayed from the

(Continued on Page Two)

Give A Kid A Chance

'Supertutor?' Maybe...Rewarding Activity? Definitely!

"Supertutor" is what some child might call you. There's no guarantee, but you can give it a try through the Albuquerque Tutoring Council. Posters on bulletin boards throughout Sandia Laboratories present some of the details and include request forms for additional information.

Send your coupon to the LAB NEWS and we'll see that it is directed to the proper place.

A number of Sandians are already tutoring. Here are some of their feelings about the activity.

For Don Bliss (7533) participation in the Albuquerque Tutoring Council program is merely continuation of education help he has been giving over the years to his own children and other youngsters in the neighborhood.

"Budgie," his pupil, is in the seventh grade, but he is far behind other 13-year-olds in math. "I started meeting with him once a week at his home," Don says, "and it wasn't long before I discovered that his basic problem was reading rather than math. He couldn't read well enough to understand the problem or the assignment."

Initially, Don found it helped to rephrase mathematical terms. Even such simple changes as saying "add" instead of "sum" or "multiply" instead of "product" made a great difference in the boy's understanding. In addition, they frequently refer to the dictionary to discuss definitions of words, spelling and synonyms.

"Most people think of physics, mathe-

matics, advanced sciences or other difficult subjects when they hear a student needs a tutor. Actually, the big need is for an adult to show an interest in the child and to be able to communicate with him," Don says.

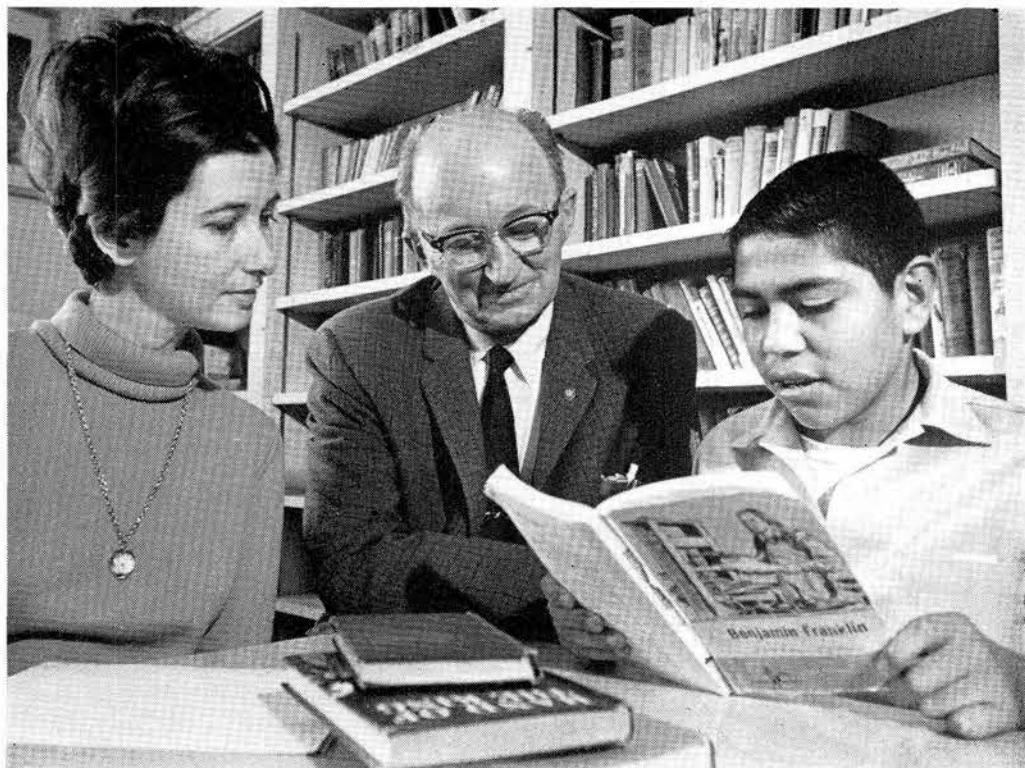
"Budgie's grades have gone up a little," he adds, "but the thing that gets me is how does a boy get to the seventh grade and not know how to read?"

Burt Edwards (9425) has reached some definite conclusions after a winter of tutoring David, a seventh grader. "I started tutoring with an idealistic approach," he says. "I thought that it would be easy to motivate a youngster to do well in school and I had hoped that math would become this boy's favorite subject. I know now that such goals are darned difficult to achieve."

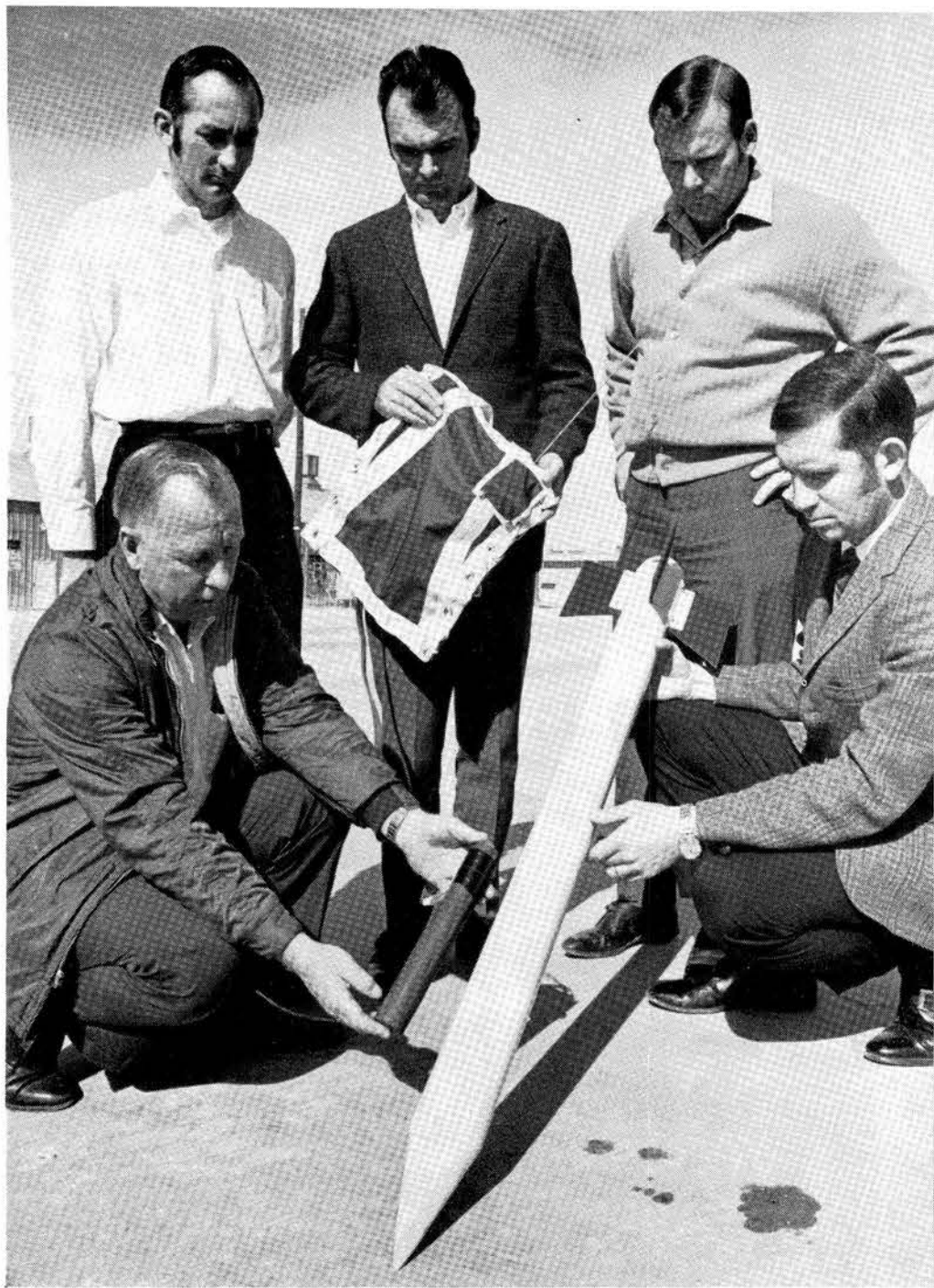
"I also feel that recent changes in teaching math have made it a much more difficult course than it was when I was in high school — and I graduated in 1961, not too long ago. I studied Concept of Function in college calculus, now it's given in junior high math. I can understand how many parents can't help their children with school work."

Burt started meeting David twice a week at the boy's home; now they meet once a week. "This is a good family," Burt says. "The parents are most appreciative of any help given David. He's quite capable but is just not motivated. David is real shy and one of his problems is that he doesn't al-

(Continued on Page Two)



COUNSELOR-CONSULTANT Mrs. Shirley Morrison goes over "Budgie's" progress with Don Bliss (7533), his tutor. The Sandian and the student meet once a week to review math problems.



ARCTIC BOUND on Feb. 14, members of Sandia's ice-study team examine a terradynamics penetrator and its parts. Don Fifield (7264), kneeling on left, holds an instrumentation package and Wayne Young (9327), kneeling on right, balances the 48-lb. projectile. Standing, l to r, are Les Harris (7264), Ray Wood (7281) who holds transmitter/parachute package, and Jack Kiker (9327).

Continued from Page One

Terradynamics Projectiles

instrument package to the transmitter and then to two receiving stations, one located in the drop aircraft and another in the ship which will serve as headquarters for the expedition. In the event that drops are scheduled in areas inaccessible to the ship, only the receiver located in the helicopter which drops the projectiles will be used.

The instrument package in the penetrometers consists of two accelerometers for sensing the deceleration of the projectile as it penetrates the ice, a voltage controlled oscillator, an amplifier, and associated electronic circuitry. The entire package, potted in plastic to mitigate shock, is about 14 inches long, 2 inches in diameter and weighs only 1½ pounds.

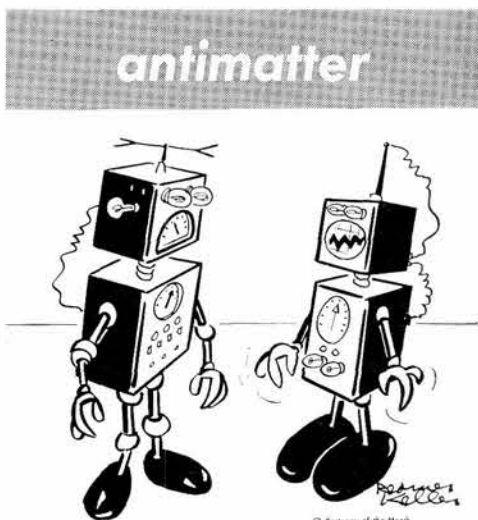
The project, to be conducted from aboard the Coast Guard Cutter Northwind, begins with loading of men and equipment at Nome, Alaska, on Feb. 17 and ends with return of the ship to port on March 18. Most of the voyage will be spent in the Chukchi and Bering Seas west and north of Kotzebue, Alaska.

The Sandia team conducting the tests include project leader Wayne Young (9327), Les Harris (7264), Jack Kiker (9327), Don Fifield (7264) and Ray Wood (7281).

Knowledge gained during the experiments will be used by the Coast Guard to develop a class of efficient, expendable penetrometers for research and operational use and to interpret data obtained from the use of such instrumented projectiles.

Information gained during the studies also may be helpful in determining whether the penetrometers can be used to measure the thickness of river ice. Thickness of such ice, now measured by core drilling crews transported by helicopters, is related to flooding during Alaska's spring thaw.

Variable Annuity Unit Value	
Feb. 1, 1970	1.571
January 1970	1.594
Average 1969 Value	1.697



"You half-watt!"

Local IEEE Section Honors Errol EerNisse

Errol EerNisse (5112) was presented with the first IEEE Albuquerque Section award plaque during a banquet at the Coronado Club Feb. 6. The Section plans to make the award annually to outstanding members.

Errol was honored for his contributions in the fields of piezoelectrics and ferroelectrics. He has written numerous technical articles and is co-author with Richard Holland (former Sandian) of a book entitled "Design of Resonant Piezoelectric Devices."

A member of Sandia Laboratories since 1965, he holds a BS degree in electrical engineering from South Dakota State University, and MS and PhD degrees from Purdue University. He has headed Device Physics Research Division since August 1968.

Authors

R. L. Kruse (1724), "A Note on the Adjoint Group of a Finitely Generated Radical Ring," Vol. 1, Part 4, JOURNAL OF THE LONDON MATHEMATICAL SOCIETY; "On the Subring Structure of Finite Nilpotent Rings," Vol. 31, No. 1, PACIFIC JOURNAL OF MATHEMATICS.

R. E. Nettleton (5151), "Ferroelectric Phase Transitions: A Review of Theory and Experiment," Vol. 1, No. 1, FERROELECTRICS.

J. C. Crawford (5153), "Ferroelectric Field Effect Studies at Low Temperatures," Vol. 1, No. 1, FERROELECTRICS.

Bruno Morosin (5131), S. F. Kaplan and M. I. Kay (both of the Puerto Rico Nuclear Center), "Neutron Diffraction Study on Paraelectric $\text{NaH}_2(\text{SeO}_3)_2$," Vol. 1, No. 1, FERROELECTRICS.

A. R. DuCharme (5331), "Application of Optimized Model Potential Theory to Stacking-Faults in hcp Metals," 31A, No. 1 (1970), PHYSICS LETTERS.

Congratulations

Mr. and Mrs. R. A. Trudo (5141), a son, Steven John, Jan. 25.

REMINDER: 1970 re-registrations will be processed for the N.M. Dept. of Motor Vehicles at the West Gate, Bldg. 199, from 9 a.m. to 4 p.m. each workday Feb. 16 - March 2.

Continued from Page One

'Supertutor' -- Rewarding

you know the assignment and is too timid to ask questions."

The tutor has helped the boy to study on his own and he seems to be doing better.

The Tutoring Council points out that it is a good idea for tutors to develop a friendship with the student. Burt recently took David to a Lobo basketball game. They had seats down front in the sixth row and it's hard to tell who had the better time.

Lloyd Davis (2622) first became involved in a tutoring project when he attended college. He was among a group of students who assisted in a poverty program in Trenton, N.J., by going to a school and tutoring up to four students at a time.

After he came to Sandia, he read about the Albuquerque Tutoring Council in LAB NEWS. "I enjoyed helping students before and felt I would like to continue in such a program," he says.

Lloyd started last summer. Every Thursday after dinner he drives across town, picks up Rick, a seventh grader, and takes him to a nearby library. For the next hour Lloyd helps the teenager with math or other subjects. "Normally the problems are interrelated," the Sandian says. "Sometimes it's not a matter of teaching him anything, it's more a question of personal contact — just being with him and demonstrating your interest."

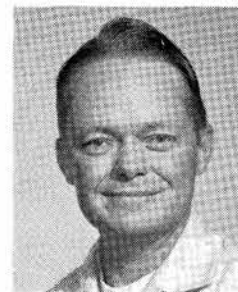
At first Lloyd wondered if one hour a week would be a long enough period to meet with his student. "It proved to be about the right length of time: I had forgotten that some children have short attention spans," he added.

What kind of educational background do you need to be a tutor? For most of the kids who need help, a high school

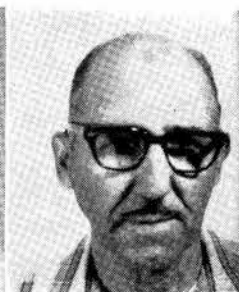
Credit Union Statement

As part of its normal audit procedure, the Supervisory Committee of the Sandia Laboratory Credit Union recently mailed statements to retired members and members on leave of absence with account numbers from 1 to 4999.

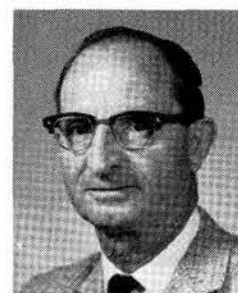
If you are retired or on leave of absence, and your account number is in this series, please notify Karl Waibel (4117), Committee Chairman, if you have not received your statement.



William Price



George Baca



James Brandolino

Deaths

William "Bo" Price, supervisor of Product Engineering Division 1552, died Jan. 29, after a short illness. He was 52.

He had worked at Sandia Laboratories since August 1951.

Survivors include his widow, two daughters and three sons.

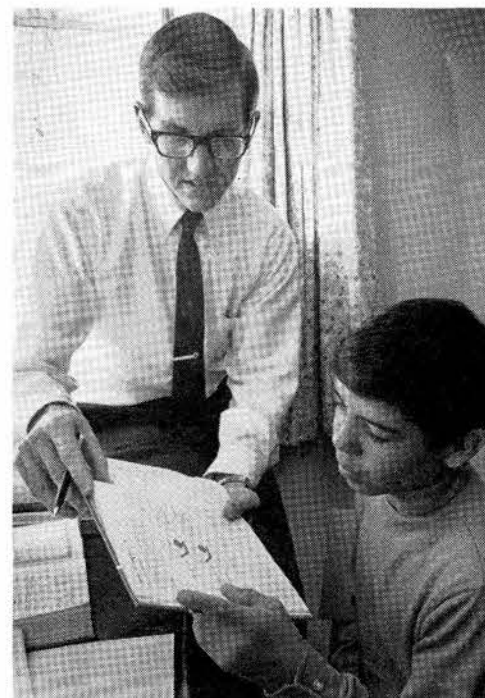
George Baca, a janitor in Division 4574, died Jan. 27 after a brief illness. He was 60.

He had worked at Sandia since 1958. Survivors include his widow, a daughter and a son.


James Brandolino, a laboratory assistant in Heat, Plasma, Climatic and Towers Division 7323, died suddenly Feb. 3. He was 54.

He had worked at Sandia Laboratories since April 1952.

Survivors include his widow and one son.



UNDER THE ALBUQUERQUE Tutoring Council program, Burt Edwards (9425) is helping David, a seventh grader, to improve in math and to learn to study on his own. Burt finds tutoring a very rewarding experience.



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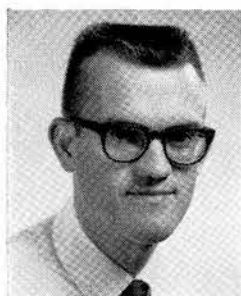
SANDIA LABORATORIES

FEB. 13, 1970



MOON ROCKS on display at LRL/Livermore recently attracted many Sandians. Carolyn McGregor (left) and Mary Gelinis (both 8231) are shown viewing the lunar samples which were collected by the astronauts on the Apollo 11 space journey in July. LRL scientists are conducting experiments on the rocks, including pressure and shock tests, to determine their properties.

Ken Marx Teaches at Univ. of Calif. Davis-Livermore



Ken Marx (8341) has been teaching as a part-time instructor in the Department of Applied Sciences at the University of California at Davis/Livermore since the spring quarter of 1969. Two mornings each week, he conducts a course called Mathematical Methods which deals with mathematical techniques used in physics and engineering. Topics such as vector calculus, Fourier analysis, applications of complex variable theory, and partial differential equations are covered.

Ken, who joined Sandia in 1961, works in the Analytical Division doing studies on electron beams and electromagnetic pulse effects. Previously, he worked in Livermore's Test Department, primarily in telemetry and environmental testing.

While on educational leave, Ken gained his PhD degree in applied science under a fellowship awarded him in July 1965 by the Fannie and John Hertz Foundation. He earned his BS degree in electrical engineering from Oregon State University in 1961.

Ken believes the location of the Department of Applied Sciences in Livermore is most advantageous, both from the standpoint of the students and the faculty. "Students have the opportunity to communicate with people at Sandia and LRL who are experts in their fields," he says. "At the same time, they can undertake thesis projects and make use of some of the best research facilities in the world. The part-time faculty members have the oppor-

tunity to teach several hours a week while continuing their research jobs at the labs.

"I find I enjoy teaching, but it's more work than I had imagined," Ken comments. "I always seem to spend twice as much time preparing a lecture as I think it should take. You don't realize how superficial your understanding of some concepts are until you try to explain them.

"Teaching has enhanced my respect for good teachers," he adds.

Engineering of Toys Subject of Colloquium

The "life process" of a toy from conception through design, development and testing to its use by a child will be discussed by Martin Sheps of Mattel Toymakers at the Sandia Laboratories Livermore Colloquium on Tuesday, Feb. 17.

Mr. Sheps will demonstrate and explain the operation of a number of toy mechanisms, and will discuss the interaction of the many technical disciplines that play a part in the creation of a toy including acoustics, chemistry, optics, materials, and energy sources. These mechanisms will be on display following the colloquium.

A graduate of Newark College of Engineering, New Jersey, and Johns Hopkins University, Mr. Sheps was previously associated with Black & Decker Manufacturing Company where he was chief engineer of the Consumer Products Division. He was responsible for design and development of all tools used in homes and light-duty trade applications. At Mattel, Mr. Sheps is currently Director of Product Engineering.

Tickets are required for admission. Alec Willis (8351) is host.



"... I KNOW traffic said 'economy class' — but there's gotta be a limit ..."

Take Note

Bob Norvill, supervisor of Special Assignments Division 8233, was recently elected vice president in charge of environmental affairs of the Livermore Chamber of Commerce for 1970. He has been a member of the Chamber's board of directors for five years and last year served as vice president in charge of economic development.

H. A. (Blitz) Krieger (8131) and Frank Mahncke of the Arms Control and Disarmament Agency presented a joint technical paper before the Arms Control Panel of the 24th meeting of the Military Operations Research Society (MORS) held recently in San Diego. The paper was entitled "A Field Test of the Demonstrated Destruction of Nuclear Weapons."

Jerry Weber (8172) and Dick Sundahl (8151) have been elected vice president and secretary, respectively, of the newly formed Del Valle Sailing Club in Livermore. Carl Anderson (LRL) will serve as president.

The club plans to promote all aspects of sailing, including water safety, racing, and basic instruction. El Toro and Flying Junior fleets have been established and others are to be formed soon.

The next meeting is scheduled for Feb. 16 at 7:30 p.m. at the Livermore Recreation Center. Anyone interested in sailing is welcome. Members need not necessarily be residents of Livermore.

Gene Simpson (8125) won the first place trophy in the nighttime ping pong tournament which has been underway at Sandia Laboratories Livermore since last July. Del Houser (8223) took the runner-up trophy. Twenty-four employees participated in the singles tournament, the first to be held in Livermore. Play was on the basis of double elimination. Simpson's name will

Sandian Becomes Professional Engineer In California

Steve Cvitovich of Plant Engineering Design Division 8254 was recently registered as a professional engineer in electrical engineering in the State of California, after passing a written examination held last August.

To qualify for registration, applicants must present evidence of satisfactory engineering experience and pass the written examination which consists of two parts — the "Engineer-in-Training" examination and the "Professional" examination.



LIVERMORE VISITOR—Maj. Gen. F. W. Nye (left) visited Sandia Laboratories Livermore recently, the first time since his appointment as Commander, Field Command, DASA, for discussion of research and development activities with Vice President Tom Cook (8000) and others on the staff.

appear on the "traveling trophy" to be displayed in the Sandia trophy case in the lobby of Administration Bldg. 911. H. A. (Blitz) Krieger (8131), coordinator for the tournament, says plans are to make it a yearly event.

Herb Zenger of Safety Engineering Division 8262 was one of the speakers at the 20th Annual Governor's Industrial Safety Conference held in San Francisco Feb. 5-6. He discussed "Accident Proneness! Supervision or Employees?"

Nancy Martin (8253) and Eve Marion (wife of John Marion, 8133) are two of the four singers in the Livermore Barbaree Chapter of Sweet Adelines quartet featured in a recent Livermore show, "The Sound of Barbershop." The quartet has performed for many private groups and clubs during the past year and hopes to make "The Sound of Barbershop" an annual event.

Congratulations

Mr. and Mrs. Hugh Coleman (8131), a son, Matthew Marion, Dec. 20.

Mr. and Mrs. Jim Rogers (8321), a son, Glenn Matthew, Jan. 16.

Sympathy

To Bertha Frick (8253-1) for the death of her mother in Livermore, Dec. 26, and her sister in Carson City, Nev. Jan. 19.



VISITING SANDIA LABORATORIES LIVERMORE recently for technical briefings was Rear Admiral W. H. Livingston (seated, right), Deputy Commander, Field Command, DASA. Shown with him are (from left) Captain J. L. McDonnell, USN, FC/DASA, Livermore Branch; Jim King, Director of Applied Research 8300; and Leo Gutierrez, Director of Systems Development 8100.

6600 + 6600 = 2x Plus Capacity



REALLY STACKED — A portion of the Computing Center's tape library.

"What this means is that we will have the capability to solve larger and more complex 'hydrocode' problems and various large scale digital simulations. The lengthy and complex solution-processes in these problems require a staggering number of individual computations by the computer and, consequently, large amounts of computing time."

The speaker is Al Iacoletti, supervisor of Operating Systems Division 9421, and he is referring to the almost completed installation of Sandia's second Control Data 6600 computer, a facility which will more than double the present computing capacity of the Scientific Computing Center in Bldg. 880. The new computer will include an extended core element capable of storing a half-million 60-bit words for rapid access by the computer's central processing unit, which in itself contains 131,072 words of storage. Each 60-bit word contains the binary equivalent of a 15-digit decimal number. Sandia's present 6600 computer will also be connected to this extended core storage element.

Some of the physical phenomena that are the subject of the hydro-code calculations are radiation transport, energy deposition, thermal shock generation, stress wave propagation, dynamic tensile failure, thermal diffusion, ablation and heat conduction, aerodynamic heating and flow fields, hypervelocity impact, and blast propagation effects.

"These problems typically involve the solution of large systems of differential or linear equations which are intricately related," Al says. "Because of this coupling relationship, the formulations require the concurrent use of large amounts of fast access memory. Moreover, there is usually a direct correlation between the accuracy of the approximating difference equations employed and the associated core requirements."

Paul Lemke, project leader for the 6600 systems effort, states, "The availability of

the extended core storage (ECS) unit will be a big boon in the solution of the very large scientific computing problems. Large arrays of data can be shuttled from either computer to ECS at a speed that permits the transfer of the entire 131,072 words of central memory in .013 seconds."

The new 6600 computer, extended core unit, and other associated processing equipment will be installed in Sandia's Scientific Computing Center in the Bldg. 880 annex adjacent to the present 6600 computer. Other major computers in the Center include a Control Data 3600, two IBM 7090 computers and a UNIVAC 1108.

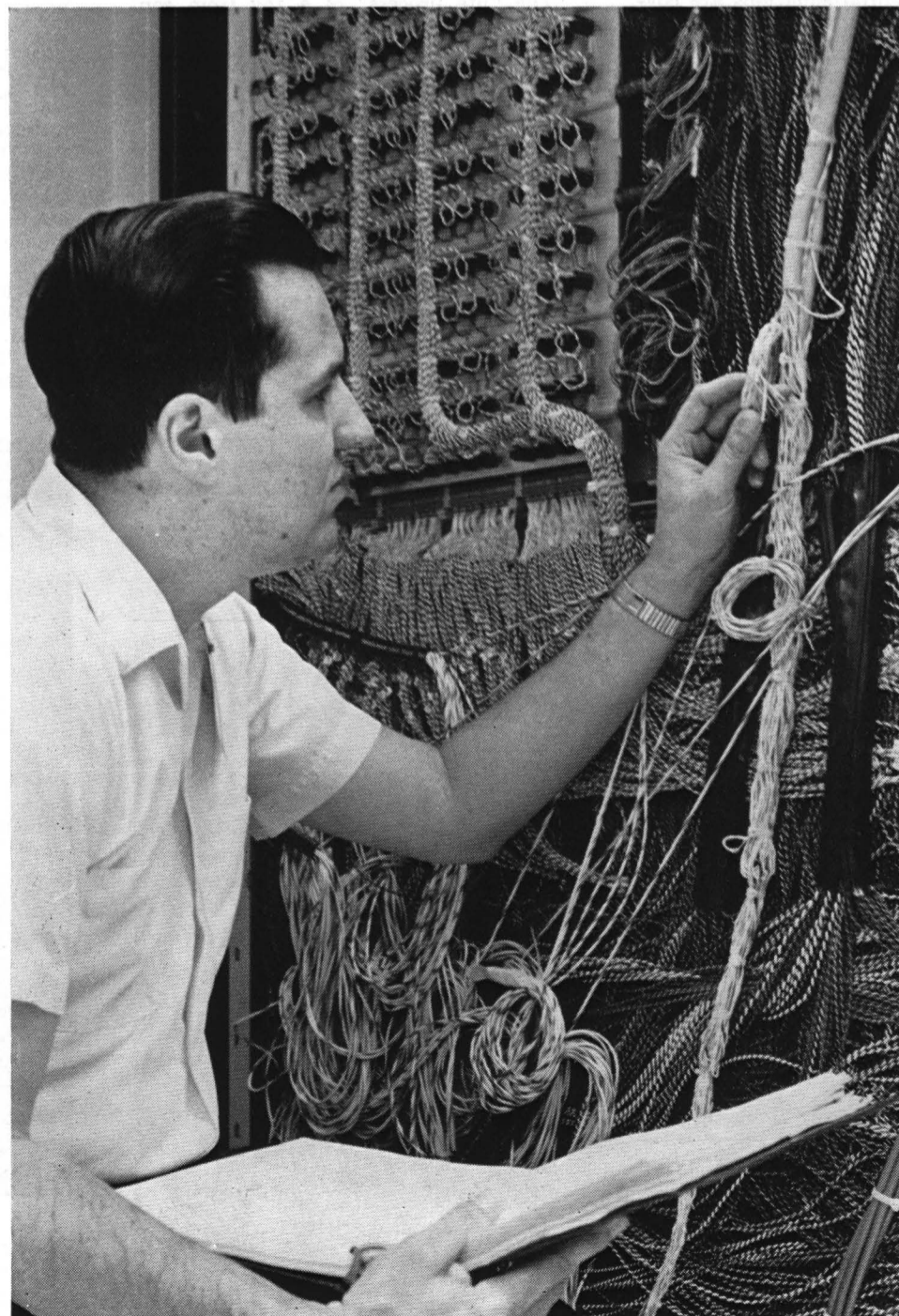
The 6600 system, one of the most advanced scientific computers, actually consists of 11 computers. The large powerful central processor is surrounded by 10 small input-output computers. Instructions can be issued by the central processor at a maximum rate of one instruction every 100 nanoseconds. The 6600 is theoretically capable of performing two million multiplications of 15 decimal digit accuracy every second.

In addition to extended core storage, this peripheral equipment is also included in the 6600 installation:

- Twelve magnetic tape transports
- Single card reader (1200 cards per minute)
- Three printers (900 lines per minute)
- One card punch (250 cards per minute)
- Disc file (capacity 171 million characters)

The system will be augmented during this year with two 1200-line per minute printers and a high speed multiplexer which will drive up to four interactive graphics consoles.

The control programming system on the 6600 rivals the complexity of the multi-million dollar hardware installation. Such software systems, which are the responsibility of Division 9421 systems analysts, make the full capabilities of modern computers available to Sandia scientists and engineers.



PICK-A-WIRE, ANY WIRE — Ron Domres (9421) examines wiring in new extended core storage (ECS) unit of Sandia's second 6600 computer. ECS, now being installed, can store half-million 60-bit words for rapid access by the computer's central processing unit.



WHERE THE ACTION IS — This busy place is the present 6600 computer console area where operators communicate with the machine, change tapes or perform needed services on the various printers and card readers.



WILFRED OTERO (9411) awaits a tape being rewound. The tape is reeled at a rate of 400 inches per second.



COMPUTER OPERATOR Mary Couch (9411) assigns tape to an executing program. Requests for tape appears on console screen.

Take Note

A new Optimist Club is being established in the Northeast area and prospective members are invited to attend the charter breakfast meeting, Thursday, Feb. 19, at 7 a.m. at the new Ramada Inn, Eubank and I-40.

The 10 existing Optimist Clubs in Albuquerque jointly sponsor the annual soapbox derby and a boys' oratorical contest. In addition, the individual clubs have their own special projects.

For further information call Dick Koogler at 265-5995, or Al Valdez at 256-3534.

Speakers for the next two meetings of the 5100 Staff Seminar are William Abel (5132) and Carleton Seager (5152).

Mr. Abel will discuss "Some Basic and Some Useful Properties of Liquid Solutions of He³ and He⁴" on Tuesday, Feb. 17. Mr. Seager will present "Hall Mobility in Insulators" on Tuesday, Feb. 24.

The seminars meet in Rm. 201 of Bldg. 806 at 8:30 a.m.

The Sandia Laboratories All-Stars emerged in second place in a recent Intra-Base basketball tournament between the Laboratories, KAFB, Manzano and Sandia Base. The Sandia team won the championship.

Fire Prevention Efforts Cited

Sandia Laboratories is again a winner in the fire prevention contest of the National Fire Protection Association. The Labs placed fourth for its fire prevention program. In the past three years Sandia placed fifth, third, and first in that order.

The annual contest was entered by some 125 North American organizations. Basis of the award is a scrapbook outlining Sandia's fire prevention program. Material for the book was gathered by Ray Cohrs (4551), fire protection engineer. The book was designed and prepared by Ken Miller (3417-4). Sandia's program included continuous inspection of buildings, tests of fire protection systems, checking of fire extinguishers, periodic training of the fire teams, fire drills, fire extinguisher demonstrations involving all employees, a continuing fire prevention education campaign, and Fire Prevention Week activities.

Ray cited a number of Sandians as having made significant contribution to the successful program:

Vern Duke, fire protection engineer, and Walt Smith (both 4551), fire inspector; Tom Silva, fire alarm electrician, Junior Woellhart and Abe Metzgar, sprinkler mechanics, Gabriel Maestas, sprinkler mechanic helper, and Ernest Montoya (all 4511), fire extinguisher mechanic.

Security inspectors also assisted in the fire prevention activities by checking buildings during non-working hours.

Mathematical Curiosities Arise From the Numerical Palindrome

A palindrome is generally defined as a word (madam, radar, deified) or a sentence ('Step on no pets) which reads the same backwards as forward.

But, obviously, a number may also be a palindrome (1001, 606, 777). Recently, a Sandia Laboratories mathematician observed that those numerical palindromes which produce yet another palindrome when squared or cubed (11 x 11 = 121) exhibit several curious properties.

For example, though no more palindromes would normally be expected to appear in a series of squares than would appear in any collection of numbers selected at random, such is not the case. To the contrary, mathematician Gus Simmons (100) learned that of the 31 squares which appear in the numbers 1 to 1000, six are palindromes. Fourteen numbers under 1000 produce palindromic squares; of these 14 roots, 10 are themselves palindromes. The number 676 is the smallest palindromic square derived from a non-palindromic root (26).

Though the number of palindromic squares is infinite, the largest so far derived from a non-palindromic root is 9,420,646,460,249 (3,069,307 x 3,069,307).

The behavior observed for squares is repeated with cubes — numbers multiplied by themselves twice (1, 8, 27, 64, 125). For

example, 2201 is the smallest number which is not itself a palindrome but whose cube (10,662,526,601) is.

There is an infinite number of palindromic cubes, and the same is true for fourth powers. Intuitively, then, an infinite number of palindromes should be present in the products of numbers multiplied by themselves to form the fifth, sixth and higher powers.

However, an exhaustive search involving all numbers less than 2,500,000,000,000 (2.5-trillion) failed to discover a single instance of a number greater than one whose fifth, sixth, seventh, eighth, ninth or tenth power was a palindrome.

It is therefore conjectured that, if any whole number greater than one is multiplied by itself beyond the fourth power, the resulting product will never be a palindrome.

Gus also is intrigued with the proposition that any number will eventually become a palindrome if it is reversed and added enough times (i.e., 174+471=645; 645+546=1191; 1191+1911=3102; 3102+2013=5115).

"This is a kind of folk theorem," Gus says. "Among mathematicians everyone knows it. But — like the oddies we've found in palindromic squares — no one knows where it came from."

Women Receive Bulk of Social Security Benefits

The average young secretary takes a look at her W-2 form at the end of the year, notes the amount deducted for Social Security, and probably thinks, "What a waste! That's money I'll never get back."

What she doesn't realize is that more women qualify for social security benefits than men, and most women will probably receive the benefits over a longer period of time.

Today, 51 percent of the 25 million social security beneficiaries are women and 15 percent are children — and women also manage most of those benefits. In other words, women receive or are responsible for about two-thirds of the benefits paid out under the plan.

The law is "non-discriminatory" in that the working woman and the working man receive the same maximum under social security; however, in addition to her own monthly payment, a woman is guaranteed benefits based on her husband's contributions if they are more than she has in her own right.

Social security was developed during the 1930's to insure workers and their families against loss of job earnings because of retirement, disability, or death. Special consideration is given to the needs of widows, orphans, the aged and the disabled. Since the law assumes that a woman is usually dependent on her husband for support, a homemaker can qualify for a monthly check as a wife, or as a mother with young children, or as a disabled widow after the age of 50, or simply as a widow from age 60 on.

If you have questions about your rights under the law, consult the local Social Security office for information.

Aerial Circus at High Noon



MODEL PLANE ENTHUSIASTS display a part of their collection of U-control and radio-control model planes. From left are Dick McAvoy (7345), Fred Snyder (7323), Melvin Johnson (7326), Bill Jacklin

(7326), Duane Arlowe (7345), and Bryan Cason (7326). The group "flies" during noon hours on clear days.

Tethered by 60-foot control lines, the model plane buzzes like an angry hornet as it races 'round and 'round. At the center of the plane's circle, Bill Jacklin (7326) hangs onto the control handle and grins.

"Built it myself," he yells over the noise of the plane's tiny one-horsepower motor going full throttle, "from a kit. Some of the guys design their own."

The "guys" are a group of Sandians in Area III who use the concrete impact area

at the end of the old rocket sled track as a base for flying model airplanes just about every clear and calm noon hour. They fly "U-control" models, as those with control lines are called, while other members of the group build and fly radio-control model planes. Duane Arlowe (7345) is one of these.

"Didn't mean to, but I flew this one right through the rungs of a steel ladder on a tower," Duane says. "Tore the wings off but the fuselage and motor were repairable. So it was back to the drawing board."

Duane is about the most experienced "pilot" of the group. With the transmitter controls he can work the elevator, rudder and ailerons on his plane. Tiny servo-mechanisms on board the plane respond to the transmitter signals. An experienced pilot can make the model planes perform any maneuver that full-scale aircraft can (including crashing).

"But it's tricky," Duane says. "When the plane is coming toward you, the controls are reversed. That's hard to remember. If you fly the plane upside down, the controls change. Landings and takeoffs are also critical. It takes practice."

The radio-control models represent a considerable investment in time (as much as 200 hours of construction) and money (\$50 for the motor, \$300 for the electronics). For this reason, Fred Snyder (7323) is learning to "fly" with "The Coffee Can." This remarkable airplane was put together from existing parts of U-control models, and the coffee can was in inspiration to protect the motor.

"If you cream one and the motor gets dirty, it's quite a job to tear it down and clean it," Fred says. "When I've had enough experience with radio-control, I'll build and fly a pretty airplane."

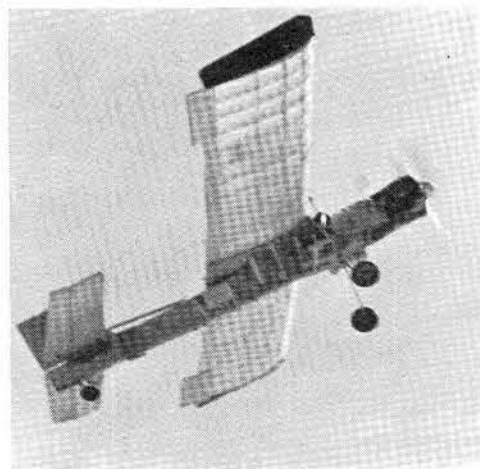
A pretty airplane is one like Bill Jacklin's Citabria, a one-sixth scale model of the high wing sport aircraft. Bill invested a good 200 hours in the painstaking construction of this model. So far he hasn't flown it.

"I'll build a coffee can trainer to learn with," Bill says.

"THE COFFEE CAN" is displayed by Fred Snyder. Fred assembled the plane from leftovers of U-control planes to serve as a trainer for learning radio-control flying. Yuban coffee people have not volunteered any support for airborne endorsement.



U-CONTROL model streaks around Bill Jacklin at the end of 60-foot control wires.



IT FLIES—"The Coffee Can" is airborne but shortly after this photo was taken the plane cracked up. Damage was minimal, which is the point of the rugged construction.



SCALE MODEL CITABRIA looms in the foreground as Bill Jacklin weighs risks involved in flying the radio-controlled plane. It represents a considerable investment in time and money. Bill is an expert in U-control flying but relatively inexperienced in radio-control. As yet, he has not flown the plane.



Service Awards

20 Years



Anita Padilla
7300



Helen Smith
3135



Samuel Tabet
4513



Chester Wolowicz
7623

15 Years



John Anderson
1516



Albert Gower
4543



Donald Grab
2331



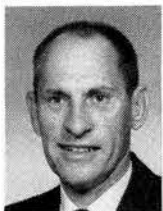
Robert Hannigan
7414



Kenneth McNabb
4573



Clarence Meyer
9133



David Poli
7415



Everett Westfahl
2615



T. J. Williams
2312

10 Years

Carl Smith 7250, Bill Dawson 8252, Kenneth Timmerman 7325, Gabe Gutierrez 8253, David Kendall 2444, Cyrus Hall 2491, Clifford Jacobs 9213, Ruth Dunker 8253, Glen Whiting 2334, Nadine Sheppard 2334, Carl Klecoka 9415, Robert Alvis 1222, Rand Rozelle 7651, and James Clark 7323.

Engineers' Week Luncheon Set Feb. 27

"Engineering — Environmental Design for the 1970's" is the theme of Engineers' Week to be observed Feb. 22-28 with displays, speakers and a luncheon.

The luncheon will be held Friday, Feb. 27, at the Midtown Holiday Inn. Speaker for the occasion will be George Putnicki, an executive in the Federal Water Pollution Control Administration. He will present "A Clean Water Program."

Engineers' Week is being promoted in Albuquerque by a committee representing various engineering organizations. Sandians on the committee include John Leroy (2321), Steve Neff (4214) and Stan Kimball (2626).



FRIENDLY GET-TOGETHER of yoga devotees (l to r) Linda Peterson (1730), visitor Swami Vishnu Devananda, Gary Peterson (5133), Dee and Harvey Frauenglass (3415-4) resulted in new yoga center for city.

Meditate Your Way into Simple Exercises Done Strenuously

When some people get involved in a special interest, there's no telling where it will end. Take, for instance, Linda (1730) and Gary Peterson (5133) and their involvement in yoga.

Linda and Gary didn't exactly meet at a yoga center, but it wasn't long after their introduction that both were enrolled in yoga exercise and philosophy classes. As Gary says, "It became our common thing."

So when they were married a year ago, the ceremony took place at the yoga center and their yoga instructor — who was an ordained minister — read the vows. It was a standard ceremony except that readings of the prophet Kahil Gibran replaced other religious messages.

The couple tried continuing yoga at home, but found they missed the class

discipline. Back they went to yoga school, this time to a class taught by Dee Frauenglass, wife of Harvey Frauenglass (3417-4).

Then the big revelation! Swami Vishnu Devananda, head of a whole string of yoga centers, visited Albuquerque. The Frauenglasses and the Petersons all got charged up by this Indian approach to yoga. "It's ideal," Gary explains. "You do simple exercises strenuously, you learn to cope with tension, you learn why diet is important (vegetarianism and no smoking). The main idea is discipline. Even the approach to meditation is different. You strive for overall spiritual attainment — not just coping with situations."

Now the two couples have started their own yoga center. That's known as becoming involved in an interest.

Speakers

N. C. Anderholm (1224), "Observation of Dynamic Tensile Failure in Lead Using Laser Generated Shock Waves," American Physical Society Annual Meeting, Jan. 29, Chicago.

S. J. Buchsbaum (5000), "Controlled Thermonuclear Fusion: Why? How? When?" University of Colorado, Jan. 21, Boulder.

C. J. Miglionico (5422), "Electron Fractographic Study of the Uranium Alloy, Mulberry," New Mexico Chapter of the Society of Aerospace and Process Engineers, Jan. 26, Albuquerque.

A. D. Swain (1642), "The Human Element in System Development," and F. W. Muller (7425), "Subsystem Requirements and Tradeoffs," 1970 Annual Symposium on Reliability, Feb. 3-5, Los Angeles.

L. V. Rigby (1642), "The Nature of Human Error," 20th Annual Conference of the Textile and Needle Trades Division of the American Society for Quality Control, Feb. 12-13, Charlotte, N.C.

J. M. Hueter (3134), "Creativity," Hoover Junior High School faculty at In Service Conference, Jan. 26, Albuquerque.

Walter Herrmann (5160), "Experimental Observations of Constitutive Relations,"

Drexel Institute of Technology, Feb. 6, Philadelphia.

R. T. Meyer (5224), "Research Applications of Time Resolved Mass Spectrometry," New Mexico Section of the American Vacuum Society, Jan. 21, Albuquerque.

D. M. Darsey (7524), "System Calibration Using Complex Step Response Program," Fifth Annual ISA Symposium, Jan. 22, Albuquerque.

Albert Narath (5100), "Nuclear Magnetic Resonance Studies of the Electronic Structure of Transition Metals, Alloys and Intermetallic Compounds," Westinghouse Research and Development Center, Feb. 5, Pittsburgh.

E. R. Burgess (5321), "Radioisotopic Power Supply for Space Use," American Society of Certified Engineering Technicians, Jan. 26, Albuquerque.

Sympathy

To James Hole (1213), for the death of his father, Jan. 25 in New York City.

To Helen Melancon (4153), for the recent death of her father in Austin.

Free Hunter Safety Course to be Offered

It's the quiet time of year for hunters, all the better reason for a hunter safety course to be offered now.

The Albuquerque Chapter of the Wildlife and Conservation Association in cooperation with the State Game and Fish Dept. will offer two courses at the Coronado Club. The first group will meet Feb. 24, 26, March 3 and 5 from 7-9:30 p.m.; the second class will meet during the same hours on March 10, 12, 17 and 19. The course is free, according to Gerry Wilson (7523), president of the Albuquerque Chapter.

Instructors include Gerry, Pat Walter (7511), Tom Harrell (4364), Ted Blaz (7612), Ken Romine (9511), and Larry Horner (7414). Enrollment is limited to 40 persons and both children and adults are encouraged to take the course.

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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.

FOR SALE MISCELLANEOUS

DYNA PAT - 4 Preamp Stereo 70 Amp & FM - 3A Tuner, \$350. with orig. cartons, books & warranties. Also, 1 pr. Rectilinear IV speaker systems, cost \$480. will sell for \$325. Staley, 898-0279.

POLE LAMP, walnut w/gold pole & 3 white shades. Montoya, 265-9542 after 5.

ARROWS, aluminum, 24SRT-X, 1916, 26 1/2" long, 6 ea., \$9. Tesseler, 296-1025.

SNOW TIRES, 2, just recapped, 6-00x15, will fit VW, \$10 ea.; 19" Zenith slim line portable TV, \$50. Hu-chen, 296-2600.

EARLY AMERICAN loveseats, avocado green upholstery, \$100 pr. Calek, 255-9765 or 282-3285.

MINK STOLE; robot camera; car top rack; truck mirrors; parts for '62 Greenbrier Corvair. Harris, 299-6664.

AMMO: .45 ACP Remington target master 185 gr. S.W.C., \$5/box of 50; bullets: .30 cal. full jacket, 140 gr. tracer, \$8/1000, \$1/100. Ristine, 298-8383.

5 GAL. heavy duty gas can w/flexible spout, \$6; men's heavy overcoat, reg. or med. size, \$15. Smith, 299-7151.

'67 MONTESA Lacrosse scrambler, extras, \$475 or trade for car of equal value. Cobb, 877-6256.

COMMERCIAL fiber glass 17' deep V boat mold w/enough fiberglass for 3 boats, \$2200. Connolly, 344-1658 or 296-3005.

SINK, double bowl, enameled steel, \$12; 4-drawer chest, \$10; table & 4 chairs, maple, \$15. Koletar, 255-4751.

SEWING MACHINE, Western Electric model, mahogany cabinet, attachments, just professionally cleaned & adjusted, \$25. Watson, 268-1517.

ROLLEICORD CAMERA w/filters, hood, auxiliary lens, \$42; Weston light meter, \$6; EICO 460 wideband oscilloscope, \$50. Gunderson, 298-2133.

BOY'S dark blue dress suit, size 20 husky. Hall, 298-3568.

BABY CRIB, 6-yr. deluxe, firm mattress, \$35; trade for good 28" girl's bicycle or Microscope. Smith, 268-1228.

70 HP, 6 cyl., 2 cycle engine, has electric starter & alternator, will run horizontal or vertical, \$50. Meikle, 299-4640.

AIRBOAT-McCulloch powered 72HP model 4318A, rebuilt spare engine included, over \$1000 invested. Best offer over \$350 takes all. Becker, 247-4966.

160 LB. weight set w/heavy duty bench for bench pressing, situps etc., \$35 complete. Snelling, 268-5895.

21" ADMIRAL color TV, \$85; Ducati motorcycle, \$150; 283 Hi-performance Chevy-Corvette engine & powerglide trans., complete, \$200. Kraft, 299-2157.

TAPPAN electric stove, \$50; outdoor charcoal w/rotisserie & cover, \$5; 410 Remington single shot w/shells, \$25. Venner, 268-8703.

CAMPING EQUIPMENT — Coleman stove, \$10; thermos lantern, \$10; camp stools, other misc. items. Martin, 256-7015.

MAHOGANY coffee table w/3 matching occasional tables, \$30; Kodak 8mm movie camera, \$25. Back, 247-9483 evenings.

HEATHKIT DX 100 transmitter, \$65 or will consider trade for M-1 carbine or S&W 38 or 22. Elliott, 299-2762.

TRUCK TIRES, 6-50x16 w/tubes, has 9/32 rubber, \$15 ea. or all four for \$50. Mahaffey, 265-0798.

REGISTERED Weimaraner pups, 2 1/2 mos. old, shots have been administered, \$75 ea. Barnes, 877-0841 after 6.

TWO 6-00x16 tires, 4-ply, for pickup, or will trade. Clark, 268-4843 after 5:30.

STEVENS 22 auto. rifle, \$20; Winchester 22 pump, \$40; Winchester 30-30, trade for 45 auto or M1 carbine. Zaluga, 344-1564.

CANVAS carry-all, Royal portable typewriter w/case. Ganzals, 264-1950.

ADMIRAL console television, 21", as is, works, \$15. Cox, 268-2068.

CUSTOM 30-06 rifle hand-in-let birds-eye maple Mennicher stock, sling, Leupold scope, \$135; new .45 auto., \$50; hide-a-bed, \$75. Bland, 298-8459.

MOBILE HOME, '65 Princess, 10x50 2-bdr., FR kitchen, AC, skirt, \$2900. Carlson, 898-0135, 898-4564 after 6.

SINGLE WHEEL utility trailer, spare tire, bumper hitch, \$35. Ashworth, 296-2855.

SEAR'S polishing scrubbing machine, \$15; Sear's carpet sweeper, \$10; Chevrolet 14" wheel, new recap, \$15; gasoline stove, lantern. Harrington, 296-6707.

REMINGTON auto. shotgun, 20 gauge, Lyman adjustable choke, recoil pad, glowworm sight, \$85. Hubbard, 299-7818.

3-SPD. Chevrolet pickup transmission, '54-'61, \$25. Houghton, 299-3386.

DISHWASHER, '69 Kenmore portable, used 2 mos., \$150. Ellis, 298-0488 after 5:30.

APT. SIZE refrigerator, 7 cu. ft., GE, \$25. Kampfe, 298-2295.

KASTINGER ladies ski boots, 4 buckle, size 7, \$20; Spanish style couch, \$180; Kohler-Campbell spinet piano, mahogany, \$400. Hollingsworth, 299-8171.

40" ELECTRIC STOVE, lg. oven, \$35. Belden, 296-4778.

BABY BED & mattress w/matching chest, bassinet w/mattress, liner & skirt, bathinette, folding high chair & other baby items. Hart, 256-2811.

LEICA III-f 50mm 1.5 lens, 35mm WA, 85mf2, 90mm f4; all lenses screw mount, camera cases, accessory cases, all or part. Taylor, 256-3221.

BERETTA JAGUAR .22 LR 3 1/2" barrel, new, \$55; want small Martini action & stock for Win. 52-C. Svensson, 344-7700.

SMALL ORGAN, \$15; floor buffer, \$17; swing set, \$20. Villanueva, 299-9219.

CLASSICAL GUITAR Goya-15, retails over \$200, asking \$135 including hardware, would trade for stereo tapedeck of comparable value. Cockletras, 898-3106.

LUDWIG DRUM SET, white pearlized, 24" cymbal, 2 tom toms, bass drum, pedal & stool, etc. Phelps, 344-0441.

5-GAL. aquarium, complete, filter, pump & one fish. Hill, 265-4577.

FAIRCHILD HLH-1 cinephonic 8mm recording projector, zoom lens, camera, 3 lens turret, battery charger, microphone headset, \$190. Miller, 298-2659.

CARS & TRUCKS

'56 MERCEDES 220S sedan, Phipps, 299-3151.

'62 CADILLAC, AC, all power, selling to settle estate, make offer Saturday only, 1300 Las Lomas. Hueter.

'59 CHEVY Nomad, station wagon, R&H, factory air, PB, PS, AT, make offer. Scott, 242-7359.

'69 FORD pickup, 3/4-ton, lwb, custom cab, AT, PS, air, heavy-duty battery, alternator. Connolly, 1-865-7607.

'61 RAMBLER wagon, AT, 54,000 miles, \$300. Brown, 299-3189.

1932 FORD 5-window coupe, street rod, 324 chromed Olds chromed, car disassembled, unfinished, \$675 firm, between 6 & 7 p.m. Bolles, 298-5255.

'69 PONTIAC Bonneville, 2-dr. HT, vinyl top, AC, PS, PB, FM radio, Sear's radial tires, \$3200. Wilson, 299-8864.

'66 DODGE sportsman van, 225 cu. in. slant 6 engine, heavy duty trans., 6-ply tires. Chavez, 299-5102.

'62 3/4-ton pickup, lg. bed, low mileage. Eden, 344-5919.

'60 Studebaker Lark, \$30. Everything works (more or less). Wolfe, 268-6864.

REAL ESTATE

4 BDR., 1 3/4 bath, 4 3/4 VA loan, fireplace, AC, central heat, 1/2 garage, covered patio. Mautino 298-6267 after 5:30.

3 BDR., 1 1/2 baths, den, fireplace, carpeted, drapes, furn./shed, central heat, AC, sprinklers, also 2 bdr. rental unit furnished, walled, \$19,500 FHA. Chavez, 243-0646, 1223 Stover SW.

WANTED

CARE for your children in my home over weekends, responsible mature person. Weiss, 242-4319.

CANOE, 11 to 14 foot, Tiefsa, 299-2763.

FOLDING wheel chair for elderly person, must have brakes. Devor, 255-4890.

TRADE: my 45 brass cases for your 38 special nickel plated brass cases at 2-1 ratio. Mosteller, 256-3227.

OPPORTUNITY to speak before before clubs or civic groups, your subject or mine, to educate, inform or entertain. Long, 296-2590.

EXERCYCLE, 2-spd. in good condition. Small, 299-0023.

BABYSITTING: will care for 2 toddlers or preschool children in my NE heights home, walled play area, clean, responsible, good care. Chavez, 265-1146.

BOOK called BOY SCOUT GAMES, need for troop library. Arning, 256-9229.

UTILITY TRAILER for general hauling, prefer 4'x6' w/standard size tires. Jeffs, 268-3154 after 5.

ENCYCLOPEDIA or reference set, recent edition. Allen, 268-3654.

SANDIANS interested in forming an audio group to increase their musical library by taping interchange or loaned records or tapes. Garrison, 256-7267.

PHOTO ENLARGER for student. Wentz, 298-2630.

FOR RENT

FURNISHED 2-bdr., fireplace, walled yard, walking distance to University, \$155/mo., water paid. Westman, 255-6048.

1 BDR. Mountain bungalow, near North 10 & Rt. 44, fireplace, 2 car garage, furn./shed, utilities paid, suitable for 1 or 2, \$125/mo. Carnicom, 282-3421.

LOST AND FOUND

LOST—Approx. 4 keys on chains, keys on snap type ring, man's black leather glove (rt. hand), pr. black leather mittens. LOST AND FOUND, tel. 264-2757. Bldg. 610.

FOUND—Ladies sun/lasses, knit scarf, ladies black leather glove, ladies' head scarf. LOST AND FOUND, tel. 264-2757. Bldg. 610.

SOCIAL HOUR



**mexican
buffet
6-8
dancing
6-9
tonight**

Mary
Johnston
(8263)

CORONADO CLUB

Events Calendar

Feb. 12-14, 19-21—The Music Theatre's production of "My Fair Lady." Menaul High Auditorium. Curtain — 8 p.m. For information call 255-2952.

Feb. 13-15—Melodrama Theatre presents "The Drunkard" or "The Fallen Saved." Old Town Studio, 1208 Rio Grande NW.

Feb. 14—Hidden Canyon in the Sandias. N.M. Mountain Club, leader Bill Tryon, tel. 299-6895.

Feb. 14-15—Snowmobile Safari from Pagosa Springs to Chama.

Feb. 15—Dances at San Juan Pueblo.

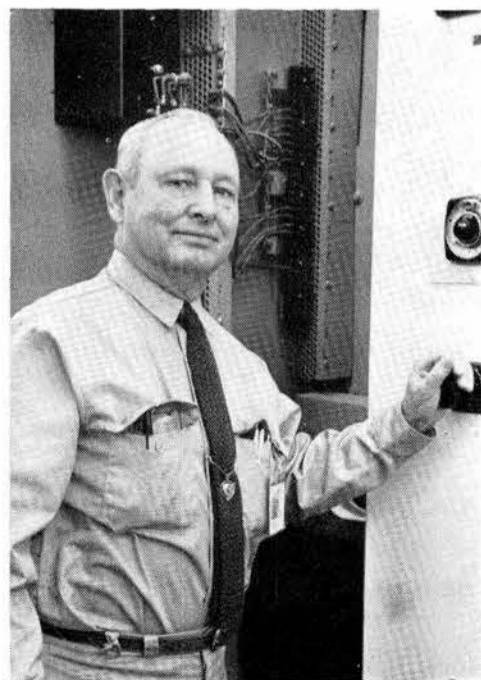
Feb. 19—Albuquerque Symphony Orchestra with piano soloist Ruth Laredo, Popejoy Hall.

Feb. 20—"Hamlet." Popejoy Hall.

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Coronado Club Activities

Mexican Buffet Tonight; Soul Session Set Feb. 28 at Club

Social hours every Friday night dominate the remainder of the Club's February calendar. Another soul session, featuring social hour prices, on Saturday, Feb. 28, will end the month on a happy note.

Social hours start right after work on Fridays with special prices in effect until 9 p.m. The buffet is spread from 6 to 8 p.m. while the band plays for dancing from 6 to 9 p.m. Then the TGIF crowd moves to the main lounge where Pat Reich and piano entertain with a sing-along until midnight.

Tonight the Club's famous Mexican food will be the buffet feature while Tommy Kelly and the smiling Irishmen play for dancing. The buffet costs \$1.25 for members, \$1 for kids.

On Friday, Feb. 20, seafood will top the buffet menu. Frank Chewiwie will make the happy music.

Rex Elder will be on the bandstand Friday, Feb. 27, while the Club's kitchen staff wheels out the chuckwagon roast beef.

In the meantime, the midweek social hours continue on Tuesday evening from 5 to 8 p.m.

* * *

Teen Go Go

The kids continue to turn out in droves for these monthly teen dances. The chaperones wear cotton in their ears and everybody has a great time. Tomorrow night a group called The Bounty Hunters will be wired into the bandstand from 7:30 to 10:30 p.m. Member parents should pick up tickets (25 cents for members, 50 cents for guests) by tonight for their youngsters.

May 5-8 Tour to Mexico Filled; Space Remains for May 11-14

The signup party for the Coronado Club's Puerto Vallarta, Mexico, travel package was tremendously successful, according to Chet Fornero (4335), tour director.

"The May 5-8 tour is completely filled," Chet says, "and some 60 spaces have been sold for the May 11-14 trip. There is every likelihood that the required 141 persons will register for the second tour. It's still a first come, first served situation."

The four-day travel package includes first class direct jet flight to Puerto Vallarta, three nights at the luxurious Posada Vallarta resort hotel, plus breakfasts and dinners at the hotel. A drawing will be held also during the second tour and one lucky traveller will receive a free trip.

The travel package costs \$149. A deposit of \$25 must be paid at the time of registration and the remainder of the fee by March 10. Refunds are possible through March 24. Register at the Club office.

"If the second trip is more convenient for some of those now registered for the May 5 departure," Chet says, "every effort will be made to accommodate the preference."

Soul Session

More than 300 troopers have turned out for each of the last two soul sessions, so the one on Saturday, Feb. 28, offers the same entertainment buy — it's free to members, 50 cents for guests. Rod King and the Knights will be on the bandstand from 8:30 to 12:30 making their big modern rock sound with some swing on the side for those of us who still remember. Happy hour prices will prevail all evening. No reservations are required.

* * *

Bridge

Duplicate Bridge meets Tuesdays at 7 p.m. Coronado ladies bridge meets Thursday, Feb. 19, at 1 p.m. For information about the ladies group, call 299-9168 or 299-1025. Newcomers are welcome.

* * *

New England Seafood Dinner

Saturday, March 14, is the date set for the Coronado Club's next New England seafood dinner and it's not too early to start thinking about reservations. Attendance will be limited to 300 persons and tickets must be picked up by March 2. This allows for those lovely Maine lobsters to be flown in special for the occasion. King crab cocktail will also be on the menu. A free wine taste and dancing to the Gappy Maestas orchestra is included in the \$6 ticket price (guests \$6.50).

Golfing Starts Feb. 23 With Pre-Season Tourney At UNM, Arroyo del Oso

The Sandia Employees Golf Association (SEGA) will start 1970 golfing with a pre-season tournament at Arroyo del Oso and UNM (South) golf courses Feb. 23. Any Sandia or AEC employee who wishes to play in the tournament should contact Dick Ashmore (2321) or Russ Armstrong (2235) for the UNM course or Thurm Moyer (7415) or Ralph Campbell (3425) for Arroyo del Oso.

Purgatory Is Destination For Coronado Skiers

Big things are planned by the Coronado Ski Club for the three-day Washington's birthday weekend. Members plan a repeat of last year's successful trip to Purgatory ski area near Durango, Colo.

Paul Souder (1514) says arrangements are being made for special ski lift rates and a dinner party will be held at the ski area lodge on Saturday, Feb. 21. Informal parties at the Spanish Trails Motel recreation room are planned for Sunday. "Fun type" skiing contests will be held all three days.

Members are urged to make their own motel reservations as soon as possible.

For further information, call Paul at 282-3121.

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3816 Anderson Ave. SE 87108



JIM PINKERTON
Supervisor, Electrical & Electronics 4213-3
3816 Anderson Ave. SE 87108